

Finchwood Park Parcel 6, Finchampstead

Operations and Maintenance (O&M) Manual

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Appendix 2	- Proposed Drainage Layout

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1. Scope of the O&M Manual

Background

- 1.1 Morgan Civil and Structural Ltd were instructed by Vistry Thames Valley to provide an Operations and Maintenance (O&M) Manual for Finchwood Parcel 6 site drainage in support of reserved matters planning.
- 1.2 This O&M Manual will confirm ownership and maintenance requirements for the drainage system for the future property owners and can be utilised as part of the conveyancing information during sales.

Scope

- 1.3 This manual is intended to give an overview of the operation and maintenance for the range of SuDs features included with the drainage strategy and in relation to typical details only.
- 1.4 Ownership and responsibilities of the drainage strategy features will be confirmed within this manual.
- 1.5 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.
- 1.6 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 Proposed Drainage and Ownership

- 2.1 The proposed site layout has been included in **Appendix 1**. This layout shows the proposed development of Finchwood Park, RG40 4BJ, a new community off Nine Mile Road, Finchampstead.
- 2.2 As part of the planning application, Morgan Civil & Structural has produced a drainage design for Parcel 6 of the Finchwood Park site, along with supporting technical note, ref 128057-MCS-XX-RP-TN-01. The latest issue of the Drainage Strategy is included in **Appendix 2**.

Proposed Asset Ownership

- 2.3 As stated, this document will outline asset ownership and future maintenance responsibilities for Parcel 6 drainage.
- 2.4 It is intended for main foul and surface water drainage in adoptable highways to be offered for adoption under a Section 104 agreement.
- 2.5 Where possible, SuDS features will also adopted under the S104 agreement, however where serving highways only it will be offered to Wokingham Borough Council as part of a Section 38 highways adoption.
- 2.6 Any SuDS features not included under Section 38/104 adoptions will be maintained for it's lifetime by a resident's management company, to be appointed by Vistry.
- 2.7 Individual plot drainage will be maintained by the residents served by it, or where numerous properties are served the resident's management company may take responsibility.
- 2.8 It should be noted any drainage assets being offered for adoption under a S104 agreement will be subject to the adopting Water Authorities (ICOSA) own Operations and Maintenance Requirements.

3 Pipework and Inspection Chambers/Manholes

- 3.1 Pipes are the main conveyance across the site with the network as can be seen on the proposed drainage strategy in **Appendix 2**.
- 3.2 Inspection Chambers and Manholes are the main means of access to the underground drainage network. They are located at any change in direction of underground pipework, or where determined necessary due to pipe length by the Building Regulations Part H or Sewerage Sector Guidance, Appendix C.
- 3.3 Pipes, Inspection Chambers and Manholes are proprietary products, and the materials can vary across the site and as such, where used, the manufacturer's recommendations should be followed. Regardless of the product used the pipes and chambers will be fully compliant with the drainage specification.

Operation

- 3.4 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 during rainfall events. These have been designed to be self-cleaning for smaller diameter pipes, and for larger diameters the risk is reduced due to the overall pipe size.
- 3.5 Access for maintenance is provided through access chambers, manholes, rodding plates and rodding eyes.

Inspection and Maintenance Regime

- 3.6 Regular inspection and maintenance is important to identify areas which may have been obstructed/clogged and may not be draining correctly thus exposing the development to a greater level of flood risk.

Maintenance Schedule	Required Action	Typical Frequency
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	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
Monitoring	Initial inspection should be provided as post construction CCTV survey.	Monthly for three months after installation
	Inspect for evidence of poor operation via water level in chambers and if required, take remedial action	Three monthly, 48 hours after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 3.1 Maintenance Schedule for Pipes and Inspection Chambers/Manholes

4 Swales

- 4.1 Swales have been used as a method of conveyance within the site and can be seen serving the central highway of the development in the proposed drainage strategy at **Appendix 2**.

Operation

- 4.2 The swales are intended for interception, slowing of flows at source and water quality treatment to highway runoff. It is meant to be a dry planted feature except during rainfall events. These have been designed to be surface features with perforated underdrains enabling conveyance of flows in rainfall events.
- 4.3 Access for maintenance is provided through downstream access chambers, and via surface level.

Inspection and Maintenance Regime

- 4.4 Regular inspection and maintenance is important to identify areas which may have been obstructed/clogged and may not be draining correctly thus exposing the development to a greater level of flood risk. Maintenance responsibility for the swales will be placed with the adopting authority, or residents management company.
- 4.5 The following table outlines general maintenance requirements for swales:

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly, or as required
	Cut grass – to retain grass height within specified design range	Monthly (during growing season) or as required
	Manage other vegetation and remove nuisance plants	Monthly at start, then as required
	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect infiltration surfaces for ponding, compaction, silt accumulation, record areas where water is ponding for > 48 hours	Monthly, or when required
	Inspect vegetation coverage	Monthly for 6 months, quarterly for 2 years, then half yearly
	Inspect inlets and facility surface for silt accumulation, establish appropriate silt removal frequencies	Half yearly
Occasional Maintenance	Reseed areas of poor vegetation growth, alter plant types to better suit conditions, if required	As required or if bare soil is exposed over 10% or more of the swale treatment area
Monitoring	Repair erosion or other damage by re-turfing or reseed	As required
	Relevel uneven surfaces and reinstate design levels	As required
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface	As required
	Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip	As required
	Remove and dispose of oils or petrol residues using safe standard practices	As required

Table 4.1 Maintenance Schedule for Swales.

5 Bioretention systems (Rain gardens)

- 5.1 Rain gardens have been specified for use adjacent to carriageways and/or footways. They are intended to intercept, slow flows, provide water quality treatment at source and provide biodiversity.
- 5.2 Rain gardens may contain proprietary products and as such, where used, the manufacture's recommendations should be followed.

Operation

- 5.3 Rain gardens are intended for interception and the slow of flow at source. They are meant to be dry planted features except during rainfall events.
- 5.4 Parcel 6 rain gardens have been designed to be surface features with perforated underdrains enabling conveyance of flows in rainfall events, and connection to the wider surface water network.
- 5.5 Access for maintenance is provided through downstream access chambers, and via surface level.

Inspection and Maintenance Regime

- 5.6 Regular inspection and maintenance is important for the effective operation of rain gardens. It is important to identify areas which may have been obstructed/clogged and may not be draining correctly thus exposing the development to a greater level of flood risk.
- 5.7 The following table outlines general maintenance requirements for rain gardens.