Create Homes

Operation & Maintenance Plan
For Surface Water Drainage System

Spout Farm
Longridge

Ironside Farrar Limited
3 Worsley Court
High Street
Worsley
Manchester
M28 3NJ

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APPENDICES

1.0 INTRODUCTION

The housing development at Spout Farm, Longridge is served mainly by a conventional adopted surface water drainage system but does include a combination of conventional and elements of Sustainable Drainage Systems (SuDS).

The development of the site by Create Homes, is for a total of 34 residential units, comprising a mixture of detached and mews dwellings as shown on the Preliminary Drainage Layout, drawing no. 30429/1.

The surface water drainage design for the site restricts flows to 12.9l/s maximum, slightly above the equivalent Qbar greenfield flow from the undeveloped site (12.4l/s) and uses various components to achieve this; the system is described below and this plan addresses only the operation and maintenance of the unadopted portion of the system.

2.0 SURFACE WATER DRAINAGE COMPONENTS

- Underground Oversized Pipes: a system of linked, oversized attenuation pipes are provided within the development with flows restricted using a vortex flow controller. The pipes and associated manholes are located under the adopted estate roads and will be operated and maintained by United Utilities under a S104 Agreement.

- Underground Off-Line Cellular Storage: the excess volumes in higher return period rainfall events (greater than 1 in 30 year return period) will be temporarily stored in off-line, underground cellular storage that will return flows to the wider drainage system when levels fall. The cellular storage does not have any other inlets and are not designed to accept flows from sources other than the adopted drainage network.

3.0 SUDS OWNERSHIP RESPONSIBILITY

- As detailed above, all the underground, oversized pipes, manholes and flow controls will be adopted under a S104 Agreement with United Utilities.

- There are no unadopted surface water drainage components located in the curtilage of individual dwellings and the homeowners will **NOT** be responsible for the operation and maintenance of any SUDS component.

- Underground Cellular Storage are in shared spaces and will be maintained by the Management Company.

4.0 OPERATION AND MAINTENANCE REQUIREMENTS

As with all traditional drainage systems, SuDS need to be inspected and maintained regularly to ensure that they operate correctly and efficiently. If SuDS are not properly maintained, then there is a risk that the components become overloaded during periods of prolonged heavy rainfall potentially resulting in localised flooding within the development. Recommendations for the maintenance of the SuDS components are detailed in the following section.

As part of this process it is recommended that inspection and maintenance records are retained by the appointed Management Company to track the progressive performance of the SuDS over time. The inspection records should include the following:

- Sediment condition and depth
- Water observations (sheen, smell, etc.)
- Unscheduled maintenance needs
- Components that do not meet performance criteria and require immediate maintenance
- Common problem areas, solutions and general observations
- Aesthetic conditions

For Health and Safety reasons as well as practicality, SuDS systems should be maintained during periods of dry weather wherever possible. Adhering to the recommended maintenance regimes outlined below will minimise the risk of maintenance activities being required when a fault becomes apparent, usually during a rainfall event.

Off-Line Underground Cellular Systems

As detailed above, flows will enter and leave the Cellular system **ONLY** from the adopted surface water drainage system via a catch-pit manhole; there will be no private drainage connections direct to the system. The cellular units will be wrapped in an impermeable geotextile to ensure water from the surrounding ground cannot enter the system. The cellular storage units will be in shared spaces and maintenance of the system will therefore be undertaken in conjunction with the regular maintenance of the area.

The following operation and maintenance requirements refer to the recommendations in The SUDS Manual (CIRIA C753) and from the manufacturer. Regular inspection and maintenance are required to ensure the effective long-term operation of underground storage systems.

Table 2.1 Underground Cellular System maintenance activities & schedule

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any areas upstream of the system that are not operating correctly (i.e. rainwater pipe gullies, silt traps, inspection chambers). If required, take remedial action	Monthly for first 3 months, then six monthly thereafter
	Visual inspection of silt traps to ensure no obvious build-up of silt or other blockages. Check to ensure there is no standing water in the chambers	Monthly for first 3 months, then six monthly thereafter (and after large storm events)
	Visual inspection of surface cover to tank for signs of damage that may expose tank.	Monthly for first 3 months, then six monthly thereafter
Remedial Actions	Repair/rehabilitation of inlets, outlets and vents. De-silt tank and inlet catch-pit as required.	As required, de-silting six monthly.
Monitoring	Inspect/check all upstream drainage inlets and outlets to ensure that they are in good condition and operating effectively	Annually and after large storm events
	Survey interior of tank for sediment build-up	5 yearly