Upper Parliament

Liverpool

Drainage Strategy

&

Maintenance Strategy Document

Client Name:

Our Ref: 1168

Date: 18/02/19

Services to be Provided: Drainage Strategy & Maintenance Strategy Document

1. Assessment of Drainage Options

The site has been assessed for the suitability of infiltration type surface water drainage systems in accordance with BRE Digest 365; however, it has been found that the subsoils are not permeable. The site Ground Investigation report indicates that firm clay is present across the site borehole logs. In addition soakaway test will be carried out to demonstrate infiltration rates are poor. Both these points validate that an infiltration drainage solution is not viable.

The site has been assessed for the viability of a surface water connection to a combined existing sewer. The site has no surrounding watercourse or ditch courses that can be utilised for a surface water outfall.

The site is brownfield and therefore is surrounded with a positive sewer network. Copies of the United Utilities sewer records have been obtained and verified on site as generally accurate. According to the records the surrounding sewers are combined surface and foul water.

It is therefore determined that drainage connections from the proposed development should be routed to the existing combined water public sewer network via a proposed diverted combined sewer located within the development site. A S106 & S108 application will be undertaken according to the Water Industry Act to United Utilities for sewer connections.

2. Drainage proposals

Details of the proposed drainage are shown on the following drawings:

1521-SCE-00-00-DR-C-0001-P05-Drainage_Strategy

The main sewerage for the development will remain private with spate foul and surface water connections to the existing public sewers within the site. This therefore ensures that the main sewerage infrastructure shall be owned and maintained by the client or management company. United Utilises and the Lead Local Flood Authority have been consulted to agree a surface water discharge rate of 6.5l/s into the surface water sewer network.

The sewer system has been designed in accordance with Sewers for Adoption 6th Edition and therefore includes the design for attenuation of flows for up to a 1 in 100

year + 40% climate change storm events without flooding. The outflow to the public sewer will be controlled by a hydrobrake flow control device manhole. Attenuation has been provided in the form of cellular storage. This attenuates up to and including the 1 in 100 year + 40% CC return period for a site impermeable area of 600m2. The hydrobrake has been designed to restrict surface water flows to a discharge rate of 6.5l/s. details of the hydrobrake can be found in the calculations in and hydro-international details.

It is agreed with united utilities that foul drainage will discharge with a free discharge to a proposed combined manhole before connecting to the existing combined sewer.

A proposed maintenance plan shown in Table 2 breaks down the maintenance responsibility and regimes of the other various assets.

Table 2: Proposed Maintenance (in accordance with best practice and CIRIA C753 – The SuDS Manual).

Drainage Asset	Responsible Organisation	Maintenance Work	Frequency
Pipework / Manholes	Private Ownership / Management Company	Inspect pipe work and clear blockages	Annually or after severe storms.
		Inspect manholes and clear blockages	
		Repair any defects in network	
Hydrobrake	Management Company	Inspect structure and remove any debris/litter on structure	Six monthly or after severe storms.
Catchpits prior to attenuation	Management Company	Inspect structure and remove any debris/litter on structure	Three monthly or after severe storms.
Cellular Storage	Management Company	Inspect structure and remove any debris/litter on structure	Annually or after severe storms.