

Drainage Maintenance Plan

Scout Stores

75 Marlborough Road

Lancing Business Park

Lancing

West Sussex

Introduction

This document is a SuDS management and maintenance plan for re-development of the Scout Stores, 75 Marlborough Road, Lancing.

The proposals are for the demolition of the existing buildings and construction of a replacement warehouse.

Surface Water Drainage Scheme

As full infiltration of surface water runoff is considered unlikely due to ground conditions, surface water runoff is directed to a nearby stormwater sewer, using the existing offsite connection.

Runoff from the car park and roof is routed and attenuated by a geocellular tank underneath the car parking area. The geocellular tank provides storage volume sufficient to reduce runoff to a maximum of 2.0/s (as close to pre-development greenfield runoff rates as possible) for all events up to and including 100yr+45%CC storm event.

Responsibility for Maintenance & Emergency Events

All onsite SuDS and drainage systems will be privately maintained by the property owner who, at the time of writing, is the Scout Association. The nominated person will be responsible for implementing and managing the maintenance plan and responding to unforeseen and emergency situations as they relate to the SuDS.

The responsible person is:	Nathan Cox
Contact telephone number is:	07852 535508
Contact email address is:	nathan.cox@scouts.org.uk

SuDS Features Checklist

There are many types of SuDS features, and they vary from simple landscaping details to complex control structures. SuDS features are all aimed at mitigating flood risk both on and off the site and managing runoff as it flows to site outfalls.

The following list of SuDS features have been used at the Scout Stores site. The inspection and maintenance programme for each element is in the table below.

Rainwater Harvesting (Water Butts)

Small above ground chambers that intercept and store rainwater from rainwater downpipes, for watering garden and amenity areas. Rainwater harvesting tanks are located at the rear of the building.

Bioretention/Rain Garden Areas

Bioretention areas are planted areas with engineered topsoil over drainage layers that allow water to soak into the ground. They are located at the rear of the building.

Permeable Pavements – Pedestrian Areas

Permeable pedestrian surfaces around the footprint of the building have been designed to be self-draining using infiltration to subsurface zones.

Permeable Pavements – Vehicle Parking Areas

Permeable surfaces designed to mitigate potential risk of contamination from fuel or oil leaks from vehicles in parking areas. The pavement build-up also provides interception storage upstream of the hydrobrake chamber.

ACO Drainage Channels

Narrow open channel drains with gratings that intercept surface water runoff from impermeable areas. They are located in the loading ramp and also the vehicle entrance at the front of the building

Inspection Chambers

600mm diameter buried chambers positioned at changes in direction or changes in gradient of buried pipework. They allow access to buried pipework for inspection and maintenance. They are located at various points around the front and rear the building.

Catchpit

600mm diameter buried chambers around the site, positioned at changes in direction or changes in gradient of buried pipework. They are similar to inspection chambers and allow access to buried pipework for inspection and maintenance. However, unlike simple inspection chambers, their other function is to intercept and store debris in a wet-sump. This helps to prevent debris which may enter the drainage system from reaching sensitive SuDS devices such as the attenuation chamber and hydrobrake.

If debris continued to get lodged and trapped in the attenuation chamber, it would slowly reduce its capacity and functionality. Debris that got washed downstream and lodged in the hydrobrake chamber could cause flooding as the system backs-up when surface water is unable to escape at the design discharge rate.

Attenuation Chamber

The attenuation chamber is a large rectangular buried chamber below the car park and apron at the front of the building. It is formed from plastic crates and is designed to store surface water runoff from the roof for a 1:100 year storm event with increased capacity to allow for climate change. The attenuation chamber is connected to the hydrobrake chamber and the function of these two SuDS features is to match surface water runoff discharge rates from the site, as close as possible to greenfield runoff rate.

By Pass Oil Interceptor

This device traps and stores oil and fuel spills or leaks while allowing “clean” water to drain away into the network. Fuel or oil spills are held in the interceptor until arrangements can be made for them to be removed and disposed of by authorised and licenced companies. The interceptor is located at the front of the building in the soft landscaping and receives flows from the ACO channel drain serving the loading ramp.

Hydrobrake (Flow control device)

The hydrobrake is a device located in chamber **SWHB** which is situated within the loading ramp at the front of the building. This chamber receives stormwater from all the upstream drainage features that are mentioned above and it is the penultimate chamber before stormwater exits the site via an existing on-site chamber.

The hydrobrake’s function is to limit the stormwater discharge rate from the site as near as possible to the greenfield runoff rate. It does this across a spectrum of storm events up to and including a 1 in 100-year storm event with a 45% increase allowance for climate change, known as the climate change factor.

Hydrobrake units take various forms such as small openings in steel plates known as orifice plates or vortex units which induce spiralling circulation motion of the water as it discharges. Hydrobrakes can be slots or V-notches in steel plates, which are sometimes referred to as weirs.

Flood routes

Flood routes which are sometimes referred to as exceedance routes, allow water volumes exceeding the capacity of the SuDS system to escape from the site without causing damage to property. These routes are indicated around the whole site on drawing 1804-500 with green arrows and show the anticipated route of escaping flood water.

Schedule of Maintenance

The following table identifies each of the SuDS features and their planned inspection, maintenance and repair.

Always refer to the latest set of Haworth McCall drawings and the Flood Risk Assessment and Drainage Strategy report. These documents will be held in the Health and Safety File provided by the Principal Contractor at the end of the construction phase and should be available at all times on site..

Reference drawings as follows, will be stamped As-Built.

- **1804-500 - FOUL AND STORMWATER DRAINAGE PLAN**
- **1804-510 - CONSTRUCTION DETAILS SHEET 1 OF 2**
- **1804-511 – CONSTRUCTION DETAILS SHEET 2 OF 2**
- Haworth McCall Consulting's **Flood Risk and Surface and Foul Water Drainage Strategy** report provides further information and details of the site, its geology, potential sources of flood risk, details of offsite drainage assets and flood risk mitigation measures etc

SuDS Maintenance Programme

Item	Description	Interval
All SuDS drainage features	Remove all chamber lids and undertake a visual inspection for damage or construction faults. Remove any debris, oil spills, self-seeded plants. Avoid using weedkiller to prevent chemical contamination.	After the first heavy rainfall but no later than 6 months after practical completion
Rainwater Harvesting (Water Butts)	Check connections to rainwater pipes and overflow pipework to ensure they are storing water and directing surplus rainwater to the drainage system. Remove build up debris at the bottom of water butts as necessary	1 visit annually
Bioretention/Rain Garden Areas	Remove litter and invasive self-seeded weeds and strim margins to 50mm	Strim and weed monthly during growing season. Litter picking monthly
Permeable Pavements Pedestrian Areas	Sweep all paving regularly. Sweep and suction brush in autumn after leaf fall	1 visit annually
Permeable Pavements Vehicle Parking Areas	Sweep all paving regularly. Sweep and suction brush in autumn after leaf fall	1 visit annually
ACO Drainage Channels	Remove gratings, remove and clean litter baskets and clean out sump units	1 visit annually
Inspection Chambers	Lift chamber lids and remove any debris Jetwash and CCTV inspection of all connecting pipework	1 visit annually 1 visit every 10 years
Catchpit	Lift chamber lids and remove any build-up of silt or debris if the loss of sump depth is 50% or more	1 visit annually
Attenuation Chamber	CCTV inspection and remove any debris	1 visit every 10 years
Bypass Oil Interceptor	Remove lids after every oil or fuel spill and dispose of oil and fuel using a licenced carrier Lift chamber lids and remove any debris or oil or fuel	Immediately after every oil or fuel spill or 1 visit annually
Hydrobrake	Lift chamber lid and check or repair bypass door operation and orifice plate. Remove debris	1 visit annually
Flood routes	Keep flood routes clear of any items at all times. Remove self-seeded plants/weeds and strim grassed areas to 75mm	Strim and weed monthly during growing season.