

Sanan Consulting Limited,
Chartered Structural Engineers,
Laburnum House, 62-64 Chestnut Grove,
Wavertree, Liverpool L15 8HS.
Tel: 0151 280 1129; e-mail: office@sananconsulting.co.uk

Proposed residential development
at former Merseyside Dogs Home,
Greensbridge Lane,
Halewood, Liverpool.
for
BBE Developments Ltd.,

Storm Water / SuDS Maintenance Plan

Ref.: 24565
June 2024

DOCUMENT CONTROL

Project No :	24565
Report Status :	Preliminary
Version No :	1.0
Project Engineer :	Jon Hale
Date of Issue :	24/06/2024

This report has been prepared by Sanan Consulting with all reasonable skill, care and diligence, within the best practice and guidance current at the time of issue within the scope of works which have been agreed with the Client. This report is confidential to the Client and Sanan Consulting accepts no responsibility whatsoever to third parties to whom this report, or any part thereof is made presented, unless this is formally agreed in writing by a Director of Sanan Consulting before any reliance is made. Any such party relies upon the report at their own risk. Sanan Consulting disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

Version	Date Issued	Purpose of Issue	Author	Reviewed	Approved
V1.0	24/06/2024	Planning Application	JH	EKS	EKS

Contents

1. Introduction
2. Site Drainage Components
3. Maintenance Schedule
4. Management Company

1. Introduction

- 1.1.** This strategy and maintenance proposal is to be read in conjunction with the following Sanan Consulting documents:
 - Proposed Drainage Layout drawing number 24565/100
- 1.2.** SuDS are an environmentally friendly approach to managing rainfall that uses landscape features to deal with surface water. SuDS aim to:
 - Control the flow, volume and frequency of water leaving a development area.
 - Prevent pollution by intercepting silt and cleaning runoff from hard surfaces.
 - Provide attractive surroundings for the community.
 - Create opportunities for wildlife.
- 1.3.** The considered drainage solution comprises of a series of combined pipework, permeable paving to an attenuation pond that discharges into the Netherley Brook on the western boundary.
- 1.4.** The proposed surface water networks are designed to accommodate all storm events up to the 1 in 100 year storm event, plus an additional 45% to cater for climatic change.
- 1.5.** A plan of routine inspection maintenance should be adopted and adhered to in order to prevent failure due to inadequate maintenance. This document describes the drainage systems used and provides a framework of future maintenance procedures.
- 1.6.** The SuDS proposed on the site have been designed for easy maintenance to comprise:
 - Regular day to day care – litter collection, grass cutting and checking inlets and outlets where water enters or leaves a SuDS feature.
 - Occasional tasks – managing pond vegetation and removing any silt that builds up in the SuDS features.
 - Remedial work – repairing damage where necessary.

2. Site Drainage Components

- 2.1.** The site drainage network is shown on Sanan Consulting drawing reference 24565/100
- 2.2.** The main drainage components are:
 - 2.2.1.** Roof water drainage collected through above ground gutters to vertical rainwater down pipes and collected into the below ground drainage network.
 - 2.2.2.** Surface water runoff from external paved areas is discharged into trapped gullies and linear channels. In addition, areas of external paving will drain into permeable paving and pass through tree pits before connecting back into the below ground drainage network. Requires periodic inspection and de-silting of all trapped gullies and channels.
 - 2.2.3.** The pavement areas, roads, and car parking require periodic sweeping as this will remove silt and contamination directly from the paved surface before becoming mobilised during rainfall events and transported into the drainage system.

3. Sustainable Drainage Maintenance Specification

3.1. Generally

Litter – collect all litter and other debris and remove from site at each visit.

Avoid use of weedkillers and pesticides to prevent chemical pollution.

Avoid de-icing agents wherever possible to allow bio-remediation of pollutants in permeable paving.

Protect all permeable, porous and infiltration surfaces from silt, sand, mulch and other materials that can produce fine particles.

3.2. Permeable surfaces

Permeable surfaces including permeable block paving, porous asphalt, gravel or free draining soils that allow rain to percolate through the surface into underlying drainage layers. They must be protected from silt, sand, compost, mulch, etc. Permeable block paving and porous asphalt can be cleaned by suction brushing.

Regular maintenance, **monthly** – brush regularly and remove sweepings from all hard surfaces

Occasional maintenance, **annually** – brush and vacuum surface once a year to prevent silt blockage and enhance design life.

Remedial work, **as required** – monitor effectiveness of permeable pavement and when water does not infiltrate immediately advise Client of possible need for reinstatement of top layers or specialist cleaning.

Recent experience suggests jet washing and suction cleaning will substantially reinstate pavement to 90% efficiency.

3.3. Basin, Swales, Attenuation Facility

Basins are depressions in the ground that store water in extreme storms and generally remain dry. Water levels rise after rain and then drop to the normal level as the excess soaks into the ground or is released slowly to a watercourse or drain. Some water is often held back in a pond or wetland for final ‘polishing’ treatment or amenity interest.

Regular maintenance, **monthly or as required** - Mow grass access paths and verges surrounding basins, ponds and wetlands areas to circa 50mm.

Occasional maintenance, **annually or 3 yearly** – Where silt accumulates on apron or area in front of inlet or outlet remove.

3.4. Inlets, Outlets, Controls and Inspection Chambers

Inlets and outlets structures may be surface structures or conveyance pipes with guards or headwalls. They must be free from obstruction at all times.

SuDS flow control structures can be protected orifices, slots weirs or other controls at or near the surface to be accessible and easy to maintain. They may be in baskets, in small chambers or in the open.

Inspection Chambers and rodding eyes are used on bends or where pipes come together and allow cleaning of the system if necessary. They should be designed out of the system where possible.

Regular Maintenance, **monthly**– Inspect surface structures removing obstructions and silt as necessary.

Trim vegetation 1 meter surround to structures and keep hard aprons free from silt and debris.

Occasional maintenance, annually – remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.

3.5. Maintenance Schedule

The rate of build-up of silt and debris within the drainage system varies from site to site and is dependent upon individual site characteristics. Therefore, the frequency of actions below should be adopted as a minimum standard for a period of 24 months after the completion of the development. The period will be sufficient to assess the system performance over 2 complete seasonal cycles after which the maintenance activity schedule may be reviewed accordingly.

Action	Frequency
Clear external areas of litter including bin and recycling enclosures.	Monthly
Clear guttering of leaves and debris.	Twice yearly. Spring and Autumn after leaf fall
Inspect all access points for sediment.	6 Monthly and after heavy rainfall. Remove debris /silt as required.
Petrol/oil Separator	Inspect bi-annually and also when alerted by the audible/visual alarms. Remove oil and contaminants
Inspect all manholes chambers for siltation and debris.	6 monthly and after every major storm event. Remove debris/silt as encountered.
Vortex Flow Control Unit.	3 monthly inspect and remove debris.
Catchpits immediately upstream from storage tank.	Minimum 6 monthly and after every major storm event. Remove debris/silt as encountered.
Attenuation Ponds Remove litter and debris. Cut grass to retain grass height within operational range. Manage vegetation and remove nuisance plants. Inspect inlets and outlets for blockages. Reseed areas of poor vegetation growth and alter plant types to suit better conditions if required.	Attenuation Ponds Remove litter and debris. Cut grass to retain grass height within operational range. Manage vegetation and remove nuisance plants. Inspect inlets and outlets for blockages. Reseed areas of poor vegetation growth and alter plant types to suit better conditions if required.

4. Management Company

- 4.1.** The drainage network for the development will be managed by a management company set by BBE Developments Ltd., Soloman House, Belgrave Court, Fulwood, Preston PR2 9PL (contact: Mr. Nabeil Nasr) - prior to adoption by United Utilities.