Job No. P22-999

simpson CONSULTING ENGINEERS | tws

UNIT 9,
SOVEREIGN HARBOUR RETAIL PARK
THE CRUMBLES EASTBOURNE,
EAST SUSSEX, BN23 6JH,

SITE SURFACE WATER AND SUDS MAINTENANCE PLAN

7th June 2024

1. Introduction

This SUDS Management and Maintenance Plan sets out the principles for the long-term management and maintenance of the surface water Sustainable Drainage System (SUDS) to be constructed at Sovereign Harbour Retail Park, The Crumbles Eastbourne, East Sussex, BN23 6JH.

The purpose of this document is to set out the basis of the development of surface water and SUDS maintenance and to ensure that CBRE Group Inc. the adopting management company is entrusted with a robust inspection and maintenance programme, ensuring the optimum operation of the surface water drainage network is continually maintained for the lifetime of the development and to prevent the increased risk of flooding both on site and off site in accordance with the National Planning Policy Framework (NPPF).

All those responsible for maintenance should follow relevant Health and Safety legislation (Health and Safety at Work Regulations 1999) for all activities listed with this report including lone working, if relevant and Risk Assessments should always be undertaken.

CBRE Group Inc or any contractor employed by the Management Contractor shall carry out periodic maintenance of all SUDS features in accordance with this report. Inspection checks shall be carried out by qualified and competent persons, at the minimum intervals listed within this report and the appropriate work carried out.

The storm water drainage strategy for the development is utilising SUDS features to intercept and convey all pluvial surface water runoff with the designed aims to attenuate and discharge via infiltration to the below ground sub-strata.

The surface water drainage system collects rainwater runoff from the two drive through pods roofs via the rainwater down pipes, external hard standing paved area gullies/channel gullies with silt trap sumps, permeable asphalt car parking spaces and overflow via channel gullies, this flows within the manholes and surface water drainage pipe system into the 3no. surface water storage tank which have natural infiltration to the existing ground below strata.

The proposed Surface water drainage system utilises the following:

- Building roofs drains to roof gutters with RWP's draining to below ground pipes/manholes and then to the 3no. below ground modular surface water tanks which store surface water during storm events and discharge to ground via infiltration at the base and sides of the tanks.

- The access roads drain to road gullies, channel gullies and permeable porous asphalt car parking areas and then to the 3no. below ground modular surface water tanks which store surface water during storm events and discharge to ground via infiltration at the base and sides of the tanks.

- External terrace paved terrace areas drain to access road and car parking areas and then to the 3no. below ground modular surface water tanks which store surface water during storm events and discharge to ground via infiltration at the base and sides of the tanks.
- Below the porous asphalt surface car parking areas, the build-up includes aggregate and filter membrane.
- The 3no. modular surface water tanks have silt trap manholes at each end which connect to a perforated pipe with gravel surround and filter membrane over the top of the tanks that then drains into the modular tanks for storage and infiltration to below strata.
- Landscaped areas infiltrate to soil.

Refer to SIMPSONTWS as built drawings for the layout and details drawings for the installed surface water drainage and SUDS features as below:

P22-999_PH01 - proposed surface water and foul water drainage layout (sheet 1 of 3)
P22-999_PH02 - proposed surface water and foul water drainage layout (sheet 2 of 3)
P22-999_PH03 - proposed surface water and foul water drainage layout (sheet 3 of 3)
P22-999_PH04 - proposed surface water and foul water drainage Details (sheet 1 of 2)
P22-999_PH05 - proposed surface water and foul water drainage Details (sheet 2 of 2)

P22-999_EFP01 - surface water overland flood flow route in the event of system exceedance

P22-999_EW01 – proposed External Works Layout
P22-999_EW01 - proposed External Works details

Refer to the site O&M building maintenance documentation for full details of drainage products & manufactures brochures & drawings for installed drainage and external works.

2. ONSITE MAINTENANCE OF THE SUDS AND SURFACE WATER DRAINAGE SYSTEM

All drainage has been CCTV'd after completion of the development to confirm no defects. A copy of this is to be available in the CDM building maintenance documentation as well as all relevant drawings.

All drainage is to be visually inspected every 3 months for the first year and then every 6 months for the second year then once every year.

The inspection is to include RWP's, Gutters, trapped Gullies, Channel Drain Runs + Gratings + Sumps, Manholes, Silt Traps, Surface Water Storage/infiltration Chambers with special attention to the inlet manhole chambers.

The inspections are to be undertaken to check that there is no build-up of debris/soils within the above ground and below ground surface water drainage system and that there is free flow of water within.

If any debris is noticed it is to be removed and if the build-up is significant the joints upstream are to be checked by CCTV to confirm these are not the ingress points. If they are then joints are to be sealed or pipes relined to stop any further ingress.

The maintenance will require the lifting of all manhole covers, channel gratings, gully covers and pressure vacuumed cleaning out of any debris within all manholes, sumps and silt traps, channel and gully pots.

The 3no. surface water storage/infiltration chambers are accessed through the manhole access covers at inlet manholes and to be inspected and any significant debris/silt build up is to be removed and the chamber pressure vacuumed cleaned through to remove debris.

Regular on-site maintenance of the external hard standing areas, porous asphalt is to be undertaken by the nominated maintenance contractor with brushing and vacuuming three times/year at end of winter, after autumn leaf fall, or as required based on site-specific observations of clogging or manufactures recommendations. Jet washing on site is not to be undertaken and all debris is to be bagged and removed from site.

PERMEABLE PAVING MAINTENANCE PROCEDURE

Do not store loose material on the permeable paved areas which may block the open joints between paving blocks, if necessary, lay down an impenetrable membrane first and clean up and remove after checking joints are clear.

Undertake visual inspection of the permeable areas as part of the regular maintenance noted above, if areas are blocked or areas of water ponding then clean out the joints either sweeping the joints with a stiff brush or vacuum the contaminated aggregate out and either wash or replace the aggregate (6mm aggregate). NOTE automated vacuum suction brushes should be angled 30^{o} to avoid aggregate migration. Any vegetation growing within the joints should be removed manually or treated with a Glyphosate based weed killer.

Table 1: Below Ground Drainage System - Operation and Maintenance Requirements

Maintenance schedule	Required action	Frequency
Regular maintenance	Remove all litter and debris from external hard landscaped areas and adjacent landscaping, which may pose a risk to the performance of the system.	Monthly.
	Remove build-up of sediment / silt in catch-pits and dispose of oils / petrol residues using safe standard practices.	As required.
	Stabilise and mow adjacent landscaped areas and remove weeds.	
Remedial actions	Repair or rehabilitate inlet and outlets to ensure they are in good condition and operating as designed.	
	Remediate any landscaping, which has raised to within 50mm of the level of adjacent hard landscaping.	
Monitoring	Check of all inlets / outlets for blockages or evidence of physical damage with any necessary remedial action or clearance carried out if required.	On a monthly basis for the first 3 months of operation, thereafter every 6 months & following severe rainfall events.
	Inspect all surfaces for ponding, or silt accumulation. Record areas where water is ponding for more than 48 hours and carry out any remedial work deemed necessary.	After severe storms.

Table 2: Geocellular Infiltration Tanks - Operation and Maintenance Requirements

Maintenance schedule	Required action	Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for first 3 months of operation, then every 6 months.
	Debris removal from catchment surface (where may cause risks to performance).	Monthly.
	Where rainfall infiltrates into blocks from above, check surface of filter for blockage by silt, algae or other matter. Remove and replace surface infiltration medium as necessary.	Monthly / after severe storms.
	Remove sediment from pre-treatment structures.	Annually, or as required.
Remedial actions	Repair/rehabilitation of inlets, outlet, overflows and vents.	As required.
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually and after large storms.