

**FONTWELL AVENUE, FONTWELL
WEST SUSSEX**

OWNERS MANUAL

**Relating to Surface Water Drainage
Maintenance and Management**

The site has been designed in accordance with Sustainable Drainage Systems (SUDS) techniques.

The SUDS Manual (CIRIA C753) states that “Sedimentation is one of the primary removal mechanisms in SUDS. Most pollution in runoff is attached to sediment particles and therefore removal of sediment results in a significant reduction in pollutant loads”.

In order to remove sedimentation, the surface water drainage design utilises catchpit manholes upstream of the surface water storage/infiltration devices and attenuation tanks.

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1) Explanation of the Surface Water Drainage System

The Principle of SUDs has been adopted for the whole of the site, calculations have been carried out using Micro Drainage with a storm return period of 100 years and an allowance of 40% for climate change plus 10% urban Creep.

Drainage Network

Surface water from proportion of the site will be infiltrated via the infiltration basin in the southwest corner. The remaining dwellings will be drained by their respective soakaways. All roads, footways and parking courts and associated parking bays to dwellings are to be drained directly by infiltration into permeable paving with a granular sub-base.

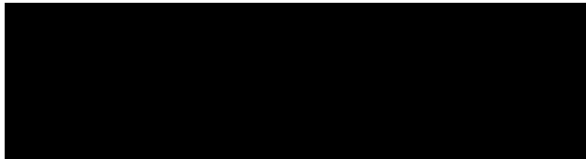
2) **Operating and Maintenance Responsibility**

Dandara Homes Southern are responsible for maintaining the surface water drainage systems on this site during the construction period. Trinity Estates will be the Management Company responsible for the long term maintenance of the SuDS. The Management Company will appoint a managing agent who will ensure that the SuDS are operated and maintained as set out in this document. The maintenance and operation will be funded through contributions from the Residents to the maintenance company.

Details of the management company is as follows:

Trinity Estates

Vantage Point,
23 Mark Road,
Hemel Hempstead,
Hertfordshire,
HP2 7DN



3) Maintenance Schedule for Permeable Paving and Distribution Tanks

Maintenance Schedule	Required Action	Frequency
Regular maintenance	Brushing & vacuuming	Three times/year at end of winter, mid-summer, after autumn leaf fall, or as required based on site-specific observations of clogging or manufacturers' recommendations.
Occasional maintenance	Stabilise and mow contributing and adjacent areas.	As required.
	Removal of weed.	As required.
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving.	As required.
	Remedial work to any depression's, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users.	As required.
	Rehabilitation of surface and upper sub-structure.	As required (if infiltration performance is reduced as a result of significant clogging).
Monitoring	Initial Inspection	Monthly for 3 months after installation.
	Inspect for evidence of poor operation and/or weed growth.	3-monthly, 48h after large storms.
	If required take remedial action.	
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually.
	Monitor inspection chambers.	Annually.

4) Maintenance Schedule for Cellular Soakaway

Maintenance Schedule	Required Action	Recommended Frequency
Regular maintenance	Inspect for sediment and debris in pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may be causing blockages	Annually (or as required)
Occasional maintenance	Remove sediment and debris from pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	As required, based on inspections
Remedial actions	Reconstruct soakaway and/or replace or clean void fill, if performance deteriorates or failure occurs	As required
	Replacement of clogged geotextile (will require reconstruction of soakaway)	As required
Monitoring	Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually
	Check soakaway to ensure emptying is occurring	Annually

5) Maintenance Schedule for Filter trenches and porous pipework

Maintenance Schedule	Required Action	Recommended Frequency
Regular maintenance	Litter and debris removal from trench surface, access chambers and pre-treatment devices.	Monthly (or as required).
	Removal and washing of exposed stones on the trench surface.	Annual (bi-annual the first year) or when silt is evident on the surface.
	Trimming of any roots that may be causing blockages.	Annual (semi-annual the first year).
	Remove weeds on the trench surface.	Monthly (at start, then as required).
Occasional maintenance	Removal of sediment from pre-treatment devices.	Six monthly
	Remove tree roots or trees that grow close to the trench.	As required.
	At locations with high pollution loads, remove surface geotextile and replace, ad wash or replace filter media.	Five yearly.
Remedial actions	Clear perforated pipework of blockages.	As required.
	Rehabilitate infiltration or filtration surfaces.	As required.
	Replace geotextiles and clean and replace filter media, if clogging occurs.	As required.

	Inspect inlets, outlets and inspection points for blockages, clogging, standing water and structural damage.	As required.
Monitoring	Inspect pre-treatment systems, inlets, trench surfaces and perforated pipework for silt accumulation. Establish appropriate silt removal frequencies.	Half yearly.

6) **Maintenance Schedule for solid wall pipes**

Maintenance Schedule	Required Action	Recommended Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then six monthly.
	Debris removal from catchment surface (where may cause risks to performance)	Monthly
	Inspect chambers and manholes for evidence of pipes operating correctly and take remedial action if necessary, to include jetting of pipework.	Monthly for 3 months, then annually

7) Maintenance Schedule for Filter drains

Maintenance Schedule	Required Action	Recommended Frequency
Regular maintenance	Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices	Monthly (or as required).
	Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly
	Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six monthly
	Remove sediment from pre-treatment devices	Six monthly or as required
Occasional maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (eg NJUG, 2007 or BS 3998:2010)	As required.
	At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
	Clear perforated pipework of blockages	As required.

8) Maintenance Schedule for infiltration Basins

Maintenance Schedule	Required Action	Recommended Frequency
Regular maintenance	Remove litter, debris and trash	Monthly
	Cut grass – for landscaped areas and access routes	Monthly (during growing season) or as required
	Cut grass – meadow grass in and around basin	Half yearly: spring (before nesting season) and autumn
	Manage other vegetation and remove nuisance plants	Monthly at start, then as required
Occasional maintenance	Reseed areas of poor vegetation growth	As required or if bare soil is exposed over 10% or more of the swale treatment area
	Prune and trim trees and remove cuttings	As required
	Remove sediment from pre-treatment system when 50% full	As required
Remedial actions	Repair erosion or other damage by re-turfing or reseed	As required
	Realign the rip-rap	As required
	Repair or rehabilitate inlets, outlets and overflows	As required
	Rehabilitate infiltration surface using scarifying and spiking techniques if performance deteriorates	As required
	Relevel uneven surfaces and reinstate design levels	As required
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and pre-treatment systems for silt accumulation; establish	Half yearly

	appropriate silt removal frequencies	
	Inspect infiltration surfaces for compaction and ponding	Monthly

9) **Maintenance Schedule for grilles**

Maintenance Schedule	Required Action	Recommended Frequency
Regular maintenance	Litter and debris removal	Monthly (or as required).
Occasional maintenance	Check moving parts and locks. Oil and ensure free moving. Replace when necessary.	Six monthly
Remedial actions	Remove build-up of sediment.	As required.
Monitoring	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	

10) Reasons for Maintenance

Surface water contains variable amounts of sediment which settles out at certain locations and could cause blockages if left.

Road gullies also trap oil and prevent it entering the surface water sewer system.