



PRECAST CONCRETE SUDS SOLUTIONS

Factsheet 2: Stormwater Treatment SuDS

With the introduction of the new sewers adoption code Design & Construction Guide (DCG) in April 2020, water authorities can for the first time adopt sustainable drainage systems (SuDS). This factsheet familiarises contractors, specifiers and asset owners with a range of precast SuDS which can be used to treat stormwater runoff.

Precast SuDS treatment systems have been in use for decades and already have a proven track record of both performance and durability. Within a SuDS scheme, such components are usually employed within an integrated approach where a combination of natural and engineered solutions is employed to manage and treat stormwater runoff at source.

Why precast?

A successful implementation of a SuDS development is likely to depend on such an integrated approach.

Precast SuDS treatment components come with a variety of advantages that make them a preferable option from a whole life point of view:

Precast collection systems are significantly more durable and resistant to blockage and irreparable damage compared to some other alternative options and can last for decades with proper management and maintenance. They are easy to service and can regularly take 4,000 psi water pressure during cleaning.

Precast SuDS treatment systems can resist fire damage, FOG build-up and attacks from rodents attracted to some natural features within SuDS. Another advantage is accessibility and the ability to remove pollutants and silt during annual maintenance operations. Precast treatment SuDS are also more sustainable and can be used in light or high traffic surfaces, car parks, footpaths or lawns.



Durable



Resists fire



Flexible in use



Easy to maintain



Resists rodents



Sustainable

SuDS Treatment components

A variety of surface water precast treatment components are available for use in SuDS schemes:

Soakaways

Soakaways are below-ground manhole structures designed to allow stormwater to infiltrate into the ground. Soakaway chamber rings include perforations and are surrounded with aggregate or other filler material to enable infiltration below ground.

Soakaways can be built under lawns or car parks with some distance from buildings to avoid any impact on foundations.



Vortex separators

Hydrodynamic vortex separators are used to treat surface water runoff by capturing and retaining contaminants and insoluble particles such as silt.

Vortex separators are usually seen as an efficient replacement to conventional gravity separators as it needs a significantly smaller footprint.



Road gullies

Receives stormwater runoff from paved surfaces such as roads, footpaths, car parks and other hard standing surfaces.

Gullies help prevent blockages and excessive sedimentation and acts as a first line of treatment to remove some pollutants attached to silt.



Filter gullies

Filter gullies are basically gullies fitted with filters to enable the removal of FOG. They can be used in areas where an increased level of pollution and run-off from vehicles is expected.

Filter gullies also have all the advantages of normal road gullies and would require regular cleaning and possible maintenance for the fitted filters.



High-capacity gullies

High-capacity road gullies have an enhanced capacity in terms of runoff collection and separation of silt and debris. It rapidly removes water from roads prone to flooding. In highway areas prone to flooding, high-capacity gullies can be installed in clusters, with some units designed to collect silt and others to manage surface water.

Units are modular in sections weighing less than 1 tonne for easier handling.



Concrete pipes

Concrete pipes can be used for a wide range of applications in SuDS scheme. One use is to offer attenuation with some level of treatment to remove FOG and debris from stormwater during storage.

The system uses gravity separation to remove silt, heavy metals and FOG.



Precast troughs & channels

A modular system comprising of trough, and riser, for varying heights, and lid for easy maintenance access.

This efficient trackside infiltration drainage option is used where the risk of siltation from run off is medium to high and a high hydraulic capacity is required.



Treatment chambers

'Treatment chamber' refers to a wide range of pre-configured chamber units used to remove foreign objects, debris and pollutants from stormwater runoff.

Pollutants range from litter, oil and grease to silt contaminated with heavy metals and other pollutants.



Catchpits

Catchpits are basically access chamber units to treat surface water runoff. The chambers have an integral sump below the outlet invert level. This is to allow for the collection and gravity settlement of silt and other solid matter and debris.

Catchpits are used in conventional piped systems to reduce downstream blockage and can effectively perform the same function within a multi-functional SuDS system.



Filter catchpits

Filter catchpits are catch pit chambers pre-fitted with filters to help with further removal of oils and silt.



Rainwater filter chambers

Rainwater filter chambers are underground rainwater harvesting pre-tanks structures, constructed using chamber rings, to remove leaves and grit prior to rainwater storage.



For product information, please contact BPDA members

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