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# STORMCLEANSER™



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## HYDRODYNAMIC SEPERATOR

FP McCann has designed and developed the enhanced StormCleanser™ for the treatment of urban catchment stormwater run-off.

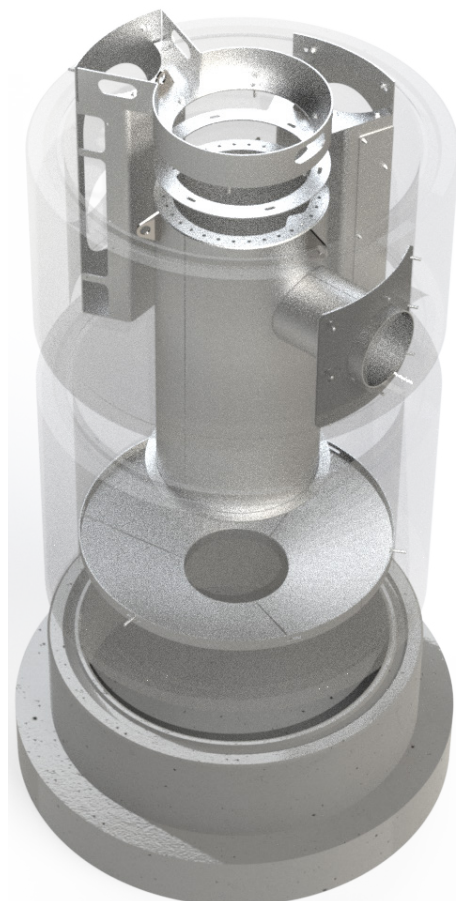
The StormCleanser™ provides a cost-effective solution for designers, engineers and contractors involved in the provision of Sustainable Drainage Systems (SuDS). This unit has no moving parts, requires no power, and is constructed within standard precast concrete chambers.

The standard units come factory fitted in precast chambers and could also be installed on-site as required. The modular stainless steel built assembly is designed to provide installation simplicity. The separator internal assembly is fabricated out of stainless steel (304L/316L), per BSI BS EN 10088-2-2014. Stainless Steel material grade and composition, provides exceptional longevity due to high corrosion resistance. The lifespan of the internal assembly outlasts the lifespan of a typical precast concrete structure (100+ years).

The enhanced StormCleanser™ design allows for an inlet at varying angles with respect to the outlet. Moreover, the design also enables configuration with multiple inlets, at different orientations and of various sizes. The symmetric inlet design provides the freedom of clockwise or counter-wise flow direction, and allows the vortex formation with minimal hydrodynamic losses and turbulence.



Fixed flow direction separators tend to lose efficiency especially when a higher flow inlet is placed ahead of a lower flow inlet. The changeable flow direction provides drainage engineers the freedom to set the desired orientation of multiple inlets. StormCleanser™ allows for preferential flow direction of the main inlet, providing optimum performance for a wide range of configurations. StormCleanser™ is developed with state-of-the-art hydraulics technology, using Computational Fluid Dynamics (CFD) modelling and full-scale experimentation.





## OPERATION

The StormCleanser™ is specifically designed to remove suspended solids, hydrocarbons, and floatable debris from the stormwater run-off. Water and pollutants enter the system via the inlet pipe, where the internal geometry enables low energy forced vortex flow patterns. This allows the floatables to gather and solids to settle to the bottom of the treatment chamber for subsequent removal.

Settled sediment is retained within the sump storage of the unit, allowing easy access for suction cleaning. Re-suspension of the solids is minimised by the provision of a baffle plate (Catch Skirt), positioned above the sediment storage sump. A central core allows for convenient suction hose entry down to the sump for cleaning and maintenance. If there is a stormwater surge in excess of maximum treatment flow rate, it overflows a weir, bypasses the treatment zone and directly discharges through the outlet pipe. This helps to minimize the effects of scour within the treatment region and prevents wash out of retained sediment downstream.



## FEATURES

- Developed at inhouse high-flow Hydraulic Rig, and rigorously tested against actual rainfall inlet conditions
- High retention at most frequent rainfall events per annum
- High treatment flow rate to size ratio preventing oversized separators in the drainage design i.e. minimise footprint
- Wide range of chamber sizes (Ø1200 – Ø4000mm) and pipe sizes (Ø150 – Ø900mm)
- Tested using extremely fine sand particles starting from 2µm
- Modular and innovative design for multiple inlet orientation
- Choice of flow direction providing optimal configuration performance
- Complies with SuDS legislation

## APPLICATIONS

- SuDS based drainage networks
- Housing Developments
- Retail Parks
- Commercial Centres
- Leisure Facilities
- Industrial Developments
- Highway Drainage Products
- Car Parks, Roads, Motorways and Trafficked Areas
- Existing surface water sewer discharges

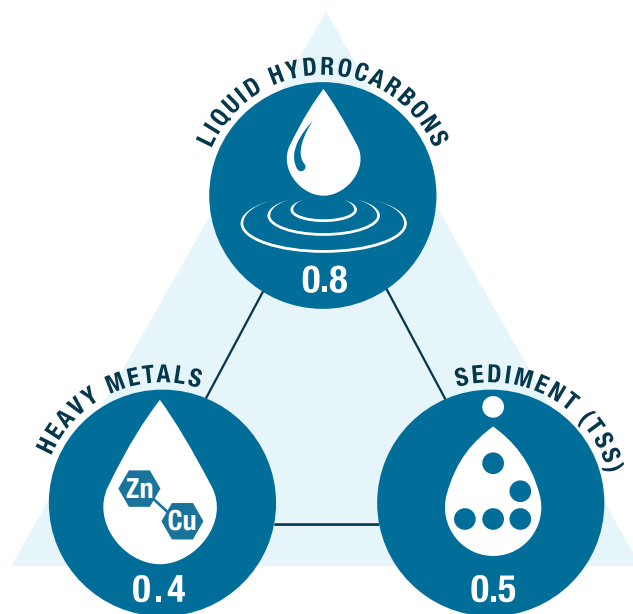
## SPECIFICATIONS

MODEL	TANK DIAMETER	MAX TREATMENT FLOW RATE	PIPE SIZE	MIN. SEDIMENT STORAGE CAPACITY	MIN. OIL STORAGE CAPACITY	MAX. HEAD LOSS AT TREATMENT FLOW RATE
	(mm)	(L/s)	(mm)	(m³)	(L)	(mm)
PRE-SC1200	1200	43	300	0.50	320	240
PRE-SC1500	1500	67	375	0.82	630	300
PRE-SC1800	1800	96	450	1.23	1085	360
PRE-SC2100	2100	131	525	1.75	1725	420
PRE-SC2400	2400	172	600	2.38	2575	480
PRE-SC2700	2700	217	675	3.13	3670	540
PRE-SC3000	3000	268	750	4.01	5035	600
PRE-SC3600	3600	387	900	6.20	8703	720
PRE-SC4000	4000	477	900	8.00	11938	800

### Notes:

- MTFR is per WRc specified Weighted Annualised Removal Efficiency of at least 50%, for a particle size distribution (PSD) with a  $D_{50}$ : 63µm and density of 2650 kg/m³
- Customized solutions such as: oriented inlet, multiple inlets, and different pipe sizes available as required
- Sediment storage capacity could be extended as required, per the desired maintenance frequency

## SuDS POLLUTION MITIGATION INDEX (PMI)





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## **AGRICULTURE**

Lydney 01594 847500 Grantham 01476 562277

## **ARCHITECTURAL PRECAST**

London 020 3905 7640

## **BOX CULVERTS**

Weston Underwood 01335 361269

## **BUILDING PRODUCTS**

Cadeby 01455 290780

## **DOCK LEVELLER PITS**

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## **DRAINAGE**

Ellistown 01530 240000 (England/Wales) Magherafelt 028 7954 9026 (Scotland/NI)

## **FENCING**

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## **FILTER BED SYSTEMS**

Littleport 01353 861416

## **FLOORING**

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## **POWER & INFRASTRUCTURE**

Littleport 01353 861416

## **RAIL**

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## **SPECIALIST PRECAST**

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## **STRUCTURAL PRECAST**

Byley 01606 843500 Grantham 01476 562277

## **STORMTANK™ - TANKS & CHAMBERS**

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## **TUNNELS & SHAFTS**

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## **WALLING**

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