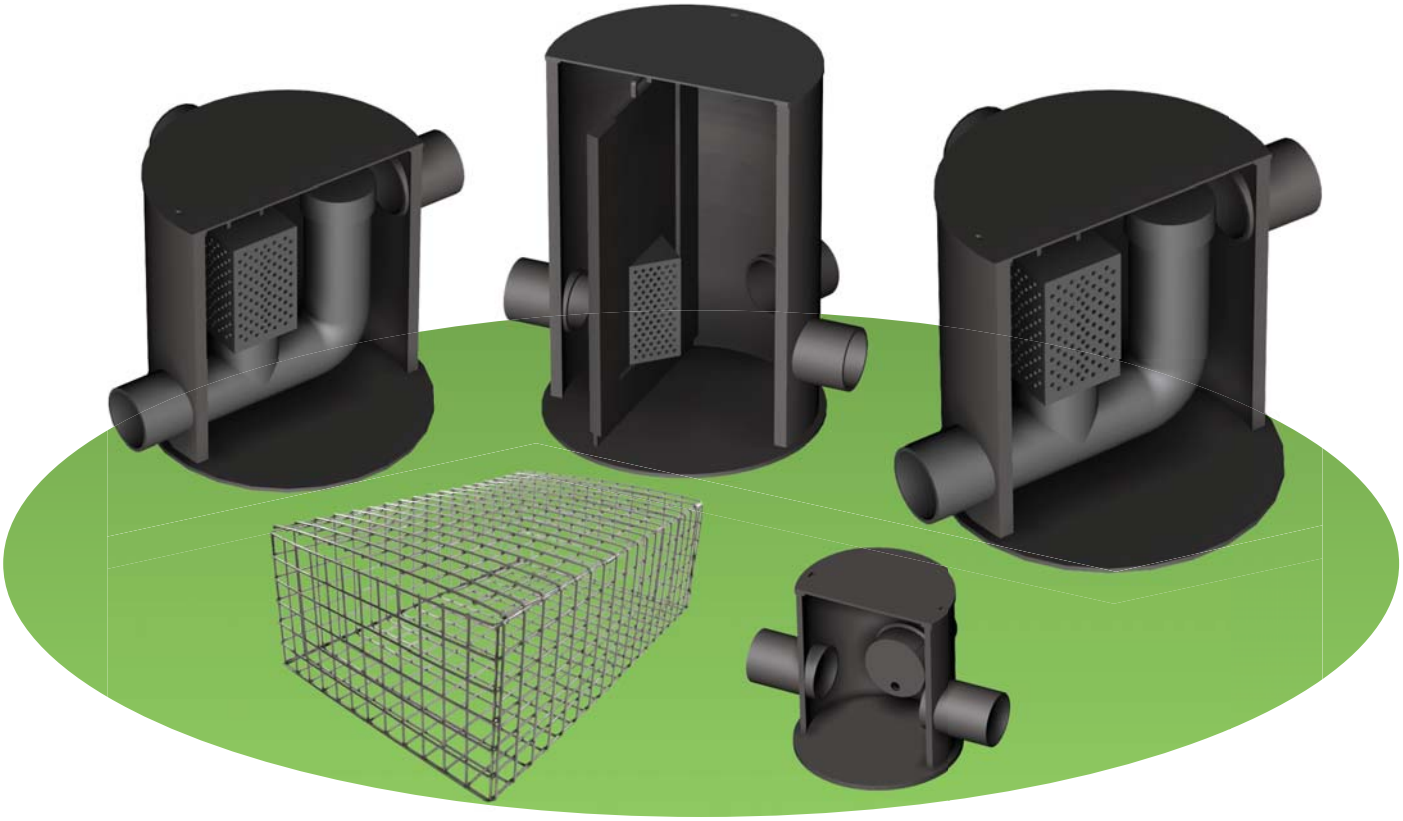
Controflow

flow controls dedicated to SuDS

Controflow® control chambers are specifically designed for shallow SuDS elements to manage rainwater runoff, including permeable pavements, swales and basins. They feature orifices, guarded where necessary, which are accessible for demonstrating straightforward compliance to local authorities as part of the SuDS design approval process. A universal stainless steel mesh SuDS Basket, for filling with stone, acts as an attractive pipe inlet or outlet within landscaped SuDS features.



- Developed by experienced SuDS designers with practicality in mind
- Tested in situ for over a decade
- Satisfies National Standards as well as the SuDS Manual 2015
- Simple installation
- Minimal maintenance over the long term
- Universal formats for simple specification or bespoke for complete flexibility
- Low-cost flow control devices for use throughout management trains
- Performance easily verified by local authorities
- Straightforward specification using established criteria
- Passive operation with consistent performance
- Made to order using recyclable materials
- Easy access for inspection, measurement or sampling

Controflow *exclusively from* SuDS store

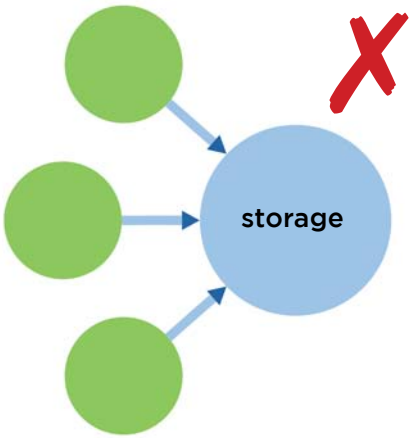
08/2017

Controflow

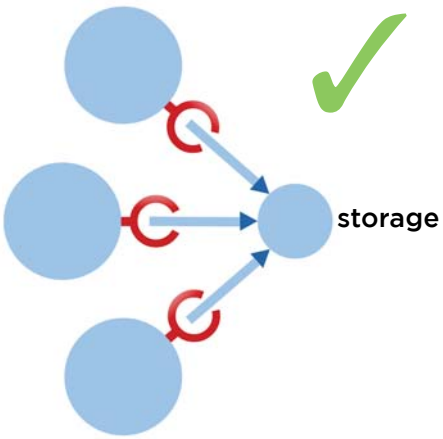
why we need flow controls

SuDS are now a Government requirement on many developments, approved and often adopted by local authorities. The key to successful SuDS is water storage strategically deployed around a site within SuDS elements – such as swales, basins ponds and, particularly, permeable paving – forming discrete sub-catchments with flow controls. Controflow chambers can also maximise storage in permeable paving on sloping sites, with terraced compartments separated by simple check dams. They can also detain water to optimise ground infiltration, so reducing discharge volumes.

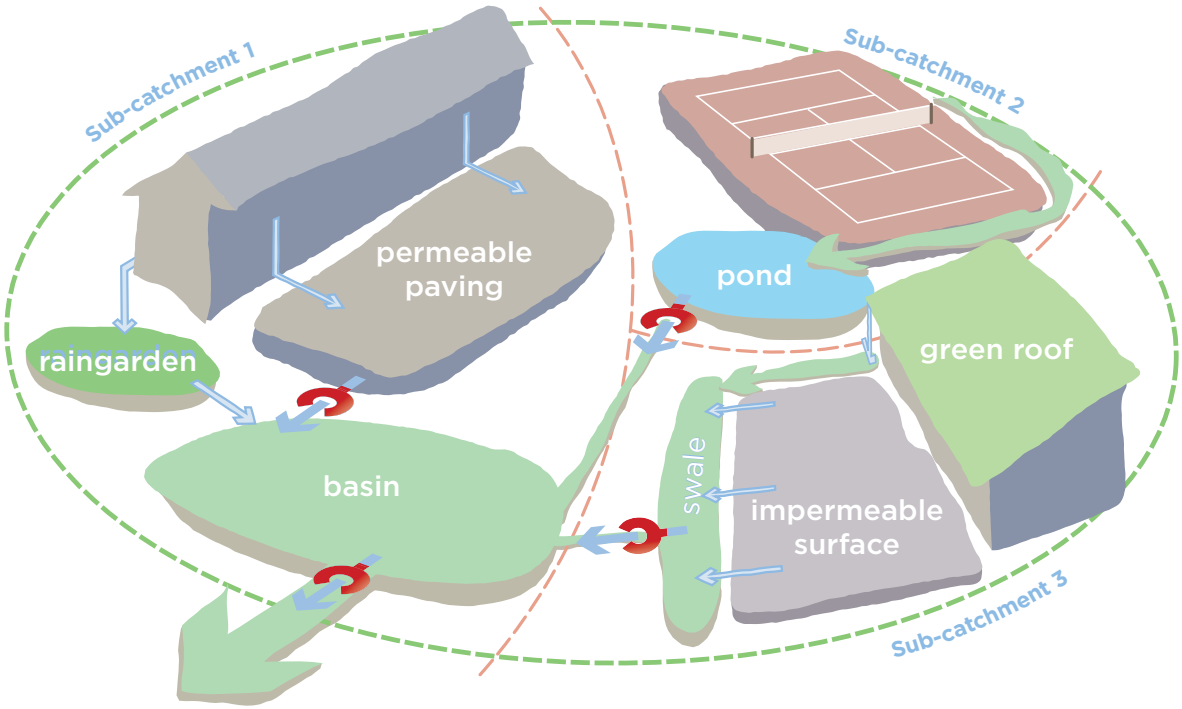
These techniques using Controflow chambers avoid the additional land-take and costs of large, heavily engineered control and storage structures at the perimeter of developments. It also optimises the multi-functionality of SuDS. With their low cost and shallow construction, Controflow® chambers control flows from each sub-catchment, as well as at site perimeters, whilst keeping water flow on or near the surface. All flow controls should be protected to prevent leaves and other debris from entering.



conventional drainage – single large storage volume



SuDS with flow controls – optimised storage throughout site



With their low cost and shallow construction, Controflow® chambers are ideally suited to control flows from each sub-catchment as well as from whole sites, while realising a key aim of SuDS to keep water management on or near the surface.

Controflow 300 Series Level Invert

SUDS01001

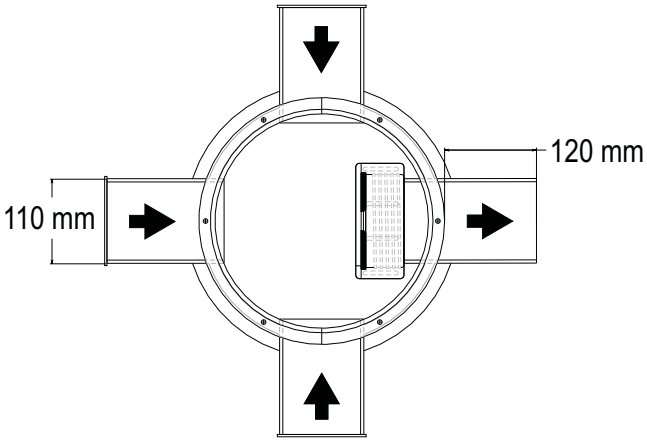
Applications *– permeable paving, filter drains and other shallow SuDS elements where water is pre-filtered.*

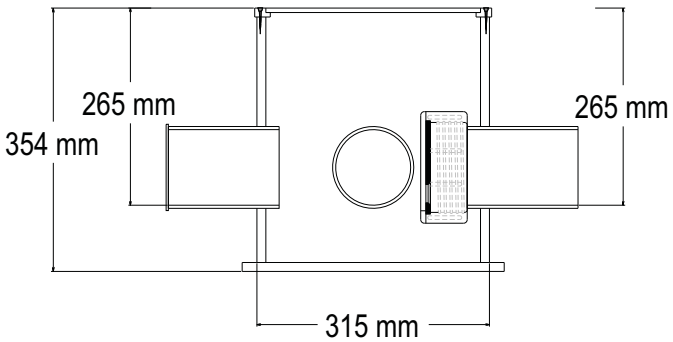
A standard, shallow flow control chamber with an un-guarded single orifice (to specified diameter), designed to manage outflows from permeable paving or other open graded sub-base construction. Its small size and low cost make it ideal for check dams between permeable paving compartments.

The removable cap locks in position with the orifice at invert level. Three 110mm diameter inlet pipe connection stubs offer layout flexibility. Supplied with a temporary protective site cover (permanent cover and frame not included). Suitable for a maximum overall depth of 600mm (finished cover to base).

Bespoke flow control chambers can be manufactured to suit specific requirements.

Please specify:
- **orifice diameter**





Controflow 500 Series Universal Level Invert

SUDS02005

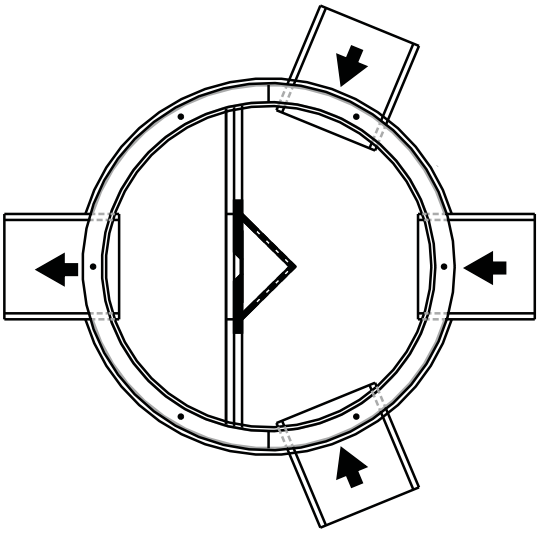
Applications *– all SuDS elements where water is not pre-filtered and at the end of the management train.*

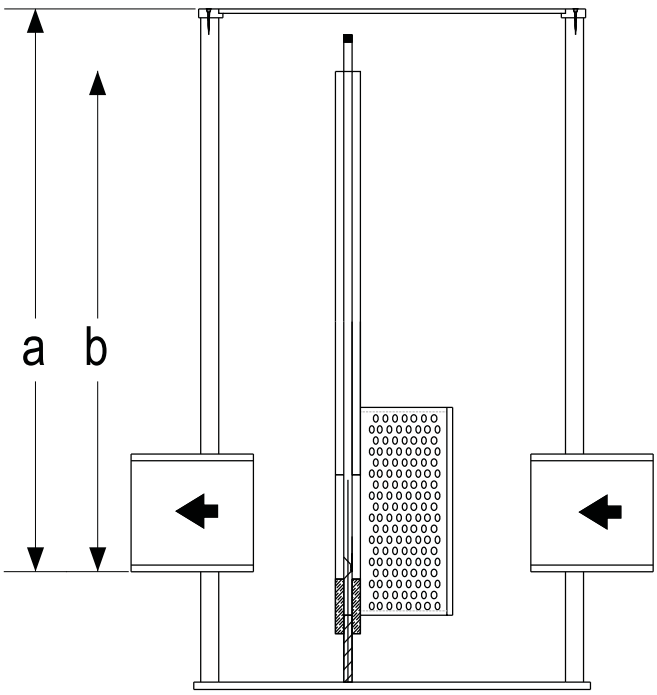
A flexible, universal flow control chamber suitable for any SuDS technique, with level inverts. The slide-out centre plate contains a circular orifice (to specified diameter), protected by an upstream guard, and acts as an overflow weir. Additional orifices can be added to order.

Three 160mm diameter inlet pipe connection stubs offer layout flexibility. Supplied with a temporary protective site cover (permanent cover and frame not included). Suitable for depths ranging from 537mm to 1.2m (finished cover to base). An optional foul air trap is available when connected to combined drains.

Please specify:

- orifice diameter
- type/depth of cover/frame to be used
- *any additional orifice positions & diameters*
- If foul air trap is required
- cover to inlet invert depth 'a'
- weir to inlet depth 'b'

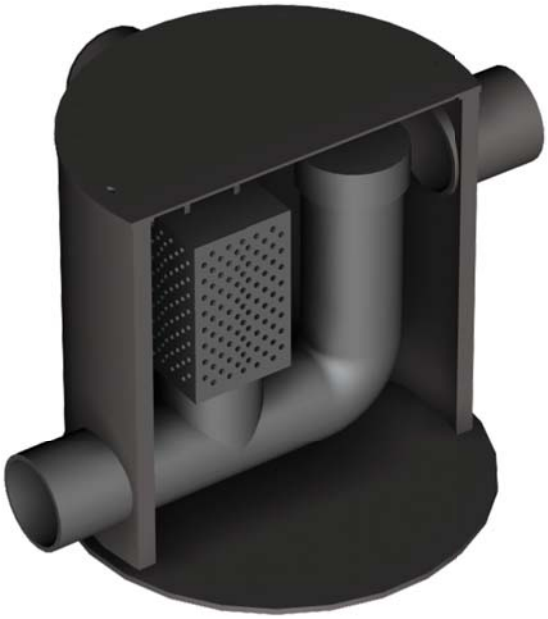




Controflow 500 Series 110 Ø Stubs Stepped Invert Roddable

SUDS02008

***Applications** – permeable paving.*

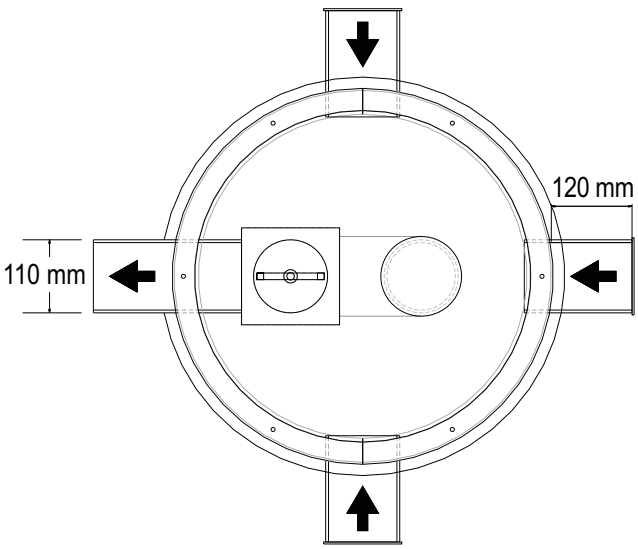


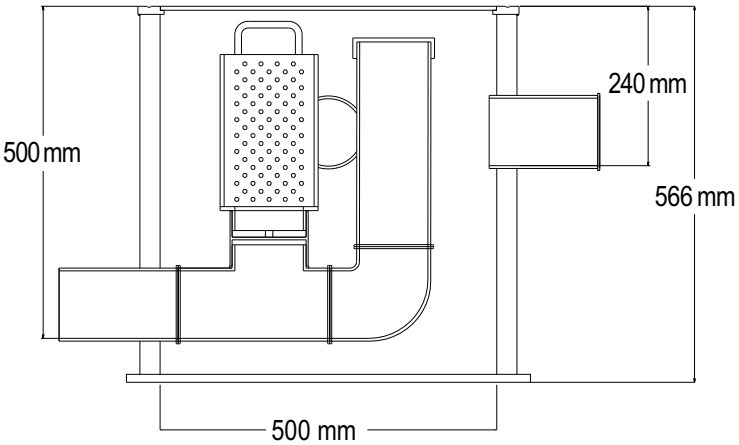
A standard flow control chamber with a single, guarded orifice (to specified diameter), designed to manage outflows from permeable paving or other open graded sub-base construction. Stepped inverts simplify the construction of transitions from shallow permeable paving to deeper constructions.

The protective guard and orifice cap are removable, and the rodding access upstand can act as an overflow with its cap removed. Three 110mm diameter inlet pipe connection stubs offer layout flexibility. Supplied with a temporary protective site cover (permanent cover and frame not included).

Bespoke flow control chambers can be manufactured to suit specific requirements.

Please specify:
- **orifice diameter**

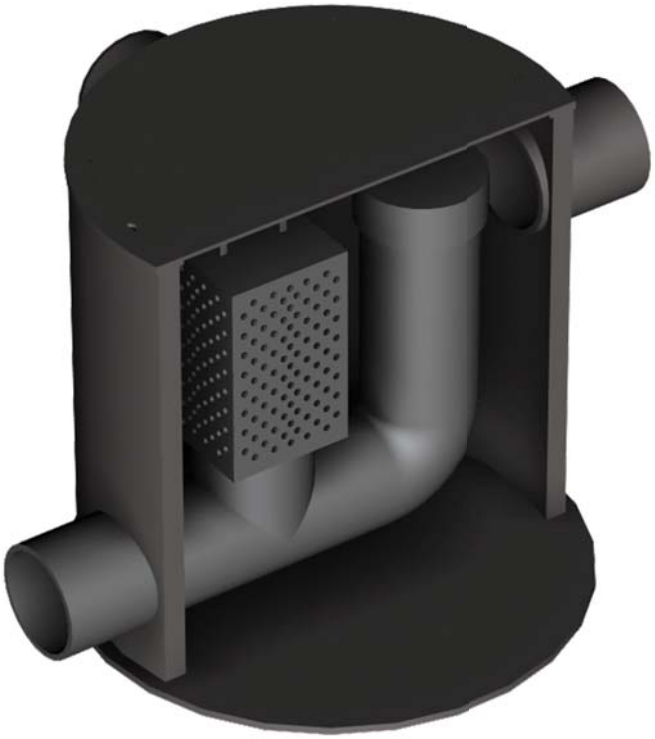




Controflow 600 Series 160 Ø Stubs Stepped Invert Roddable

SUDS03001

Applications *– permeable paving.*

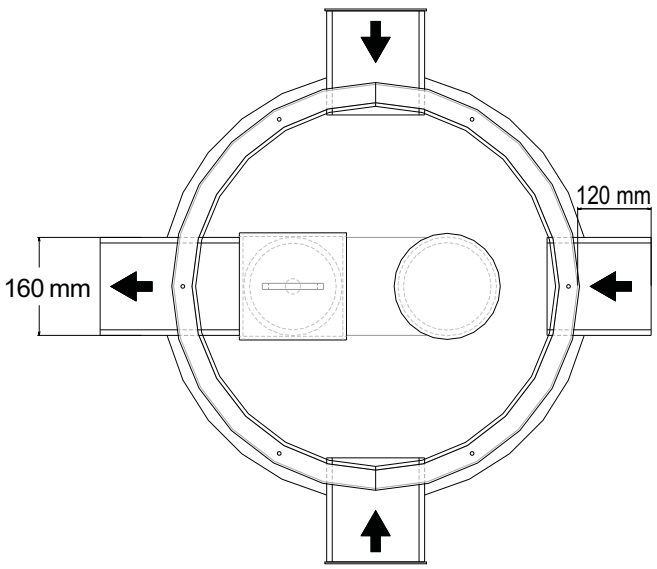


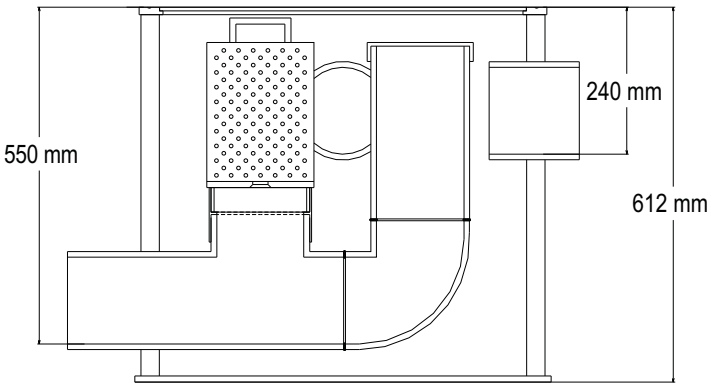
A larger diameter, standard flow control chamber with a single, guarded orifice (to specified diameter), designed to manage outflows from permeable paving or other open graded sub-base construction. Stepped inverts simplify the construction of transitions from shallow permeable paving to deeper constructions.

The protective guard and orifice cap are removable, and the rodding access upstand can act as an overflow with its cap removed. Three 160mm diameter inlet pipe connection stubs offer layout flexibility. Supplied with a temporary protective site cover (permanent cover and frame not included).

Bespoke flow control chambers can be manufactured to suit specific requirements.

Please specify:
- **orifice diameter**



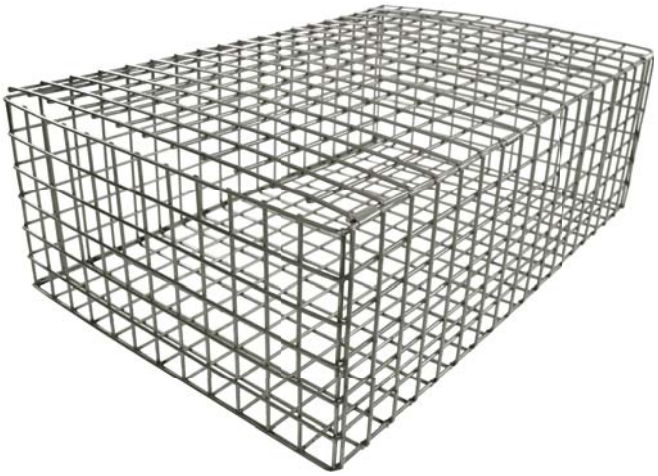


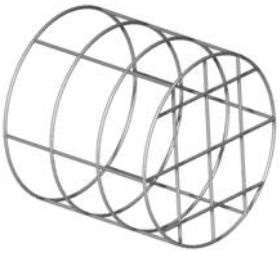
SuDS Basket in Stainless Steel Mesh

SUDS08001

A universal 750x600x450mm stainless steel mesh SuDS Basket designed to be filled with 80mm – 150mm stone. It acts as an attractive pipe inlet or outlet within landscaped SuDS features such as swales, ponds and basins. It diffuses flows, and conceals and protects the pipe. Each SuDS Basket is supplied flat with crimp clips (fitted at 200mm centres) for simple assembly and stainless steel mesh pipe guard (to specified pipe size)

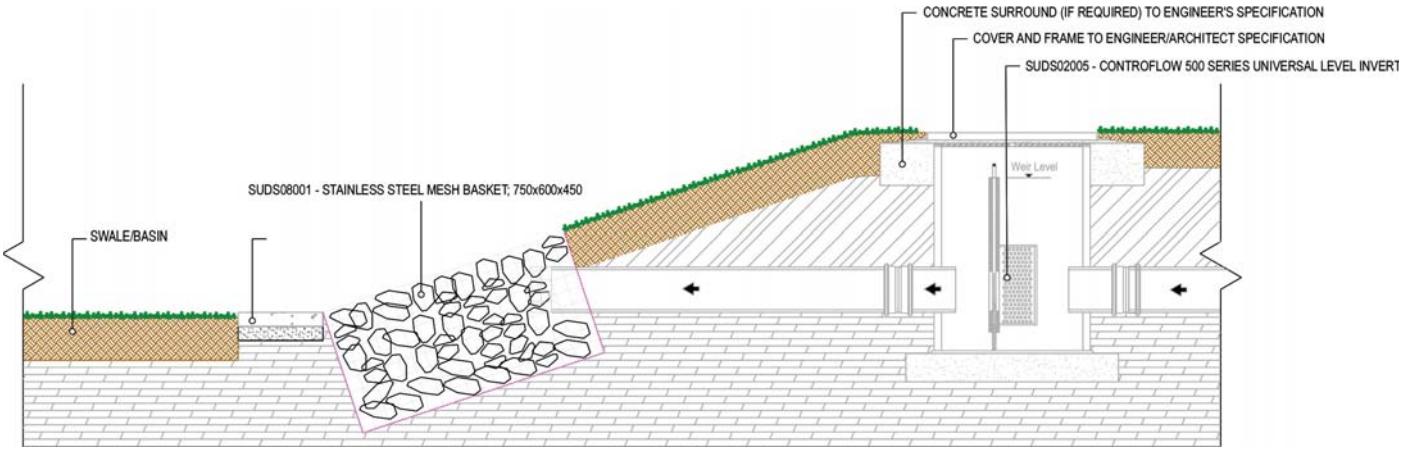
Bespoke SuDS Baskets can be manufactured to suit specific requirements.





Please specify:
- **pipe diameter**

Typical Application:

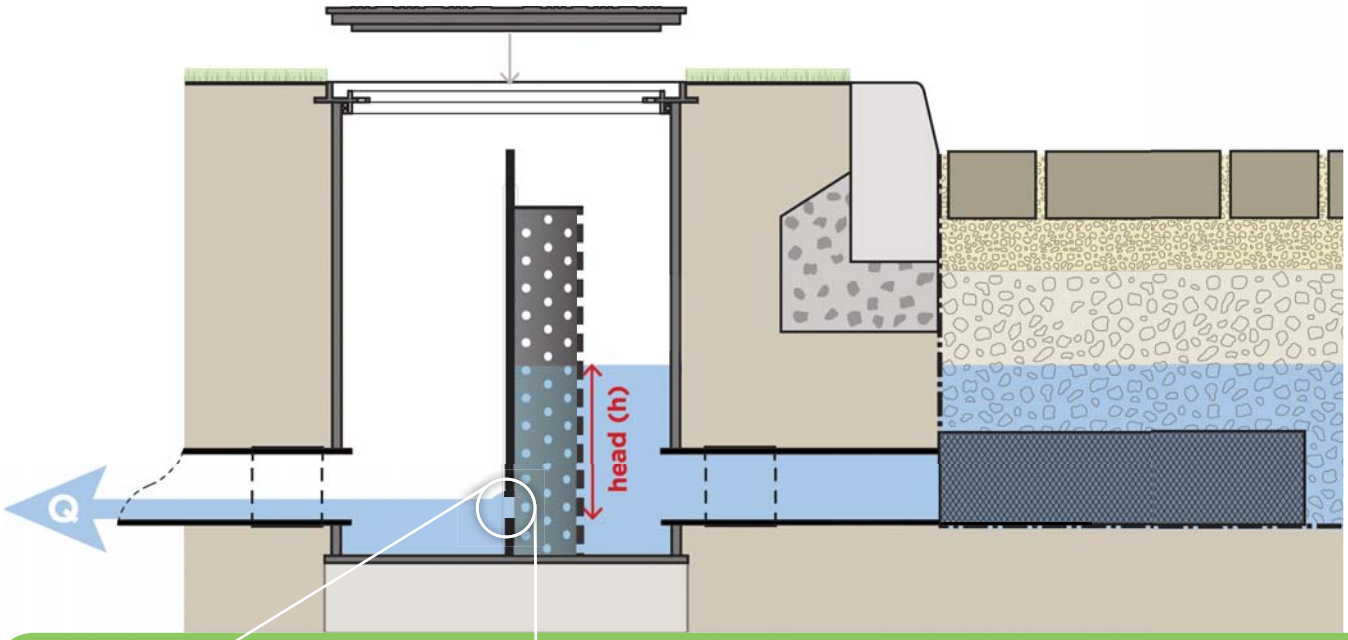


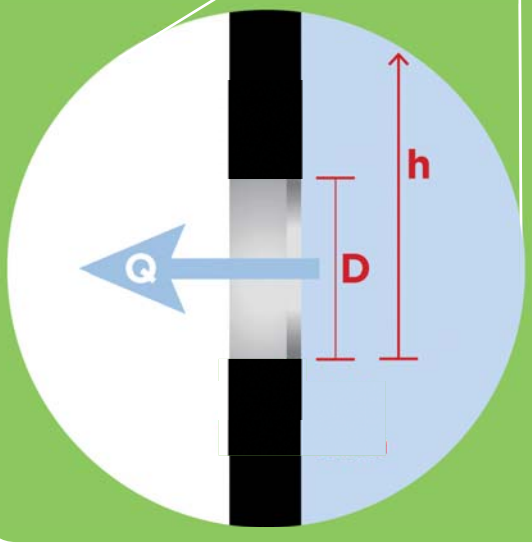
Controflow

Straightforward design and predictable performance

The Controflow® orifice design is based on well-established flow rate performance characteristics using the standard orifice equation shown below. The Controflow® orifice profile is recognised as delivering a standard 0.65 coefficient of discharge irrespective of orifice size.

The performance of Controflow® mimics the gradual response of natural drainage particularly during short duration or low intensity rainfall. Full flow characteristics operate once the storage depth provides the designed 'hydraulic head'.





$$Q = Cd(\tfrac{1}{4}\pi D^2)\sqrt{2gh}$$

where:

- **Q** = specified flow rate (orifice discharge rate - l/s)
- **h** = hydraulic head (m)
- **D** = resulting orifice diameter (mm)
- **Cd** = coefficient of discharge (the standard 0.65 applies to all Controflow® orifices)
- **g** = gravitational constant (9.80665m/s²)

A simple to use, interactive orifice calculator is available at
www.sudsstore.com/calculator

Controflow

exclusively from

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