

# **What We Don't Want, What to look out for & Use of Proprietary Products**

Neil McLean

# Some Examples of What Doesn't Work

# Basins;

Early examples

“Bomb-craters”? ☹  
Muddy floors





# Bad example - Livingstone Swale



Construction runoff into swale.  
Developer had to clear and re-instate



# Details , Details.





# Need to have a Firm Stance





# Upton, Northampton

...on a sunny day!



# Upton, Northampton

...in wetter weather

- Network of swales and green space, which look good ...





Network of swales and green space but  
uses gullies before swales forcing a  
greater depth of swale



# Proprietary Products

Extract from SEPA's Regulatory Method - 08;

## S7.2.1

*“Increasingly sophisticated proprietary systems are being developed for use to treat runoff from the completed phase of a development.*

*In recognition of this, SEPA has agreed that there may be specific situations where proprietary systems would constitute a level of SUDS, as explained in section 7.2.2 below.*

*It should be emphasised however that SEPA's general position is that conventional SUDS will be required for the majority of developments.”*



# What are Proprietary Products?

## Generic terms

- Permeable paving
- Hydrodynamic vortex separators
  - Vortex flow control
- Geocellular modules
  - Oil separators
    - Offlet kerbs
- Filtration systems
  - Contraptions
    - Devices

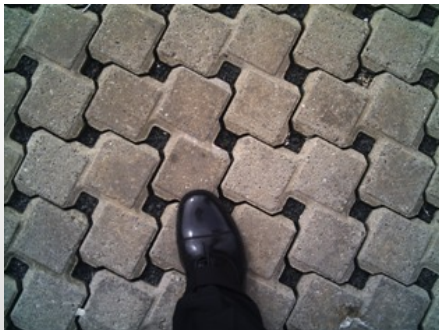
## Proprietary products

- Formpave
- Downstream defender
- Hydro-brake
- Stormcell
- Klargestester?
- Beanie block
- Upflow filter
- Contraptions
- Devices

# Permeable Block Paving

Various block paving manufacturers and related permeable block paving;

- Hanson Formpave – *Aqua flow*
- Marshalls - *Priora*
- Aggregate Industries - *Infilta*
- Tobermore - *Hydropave*

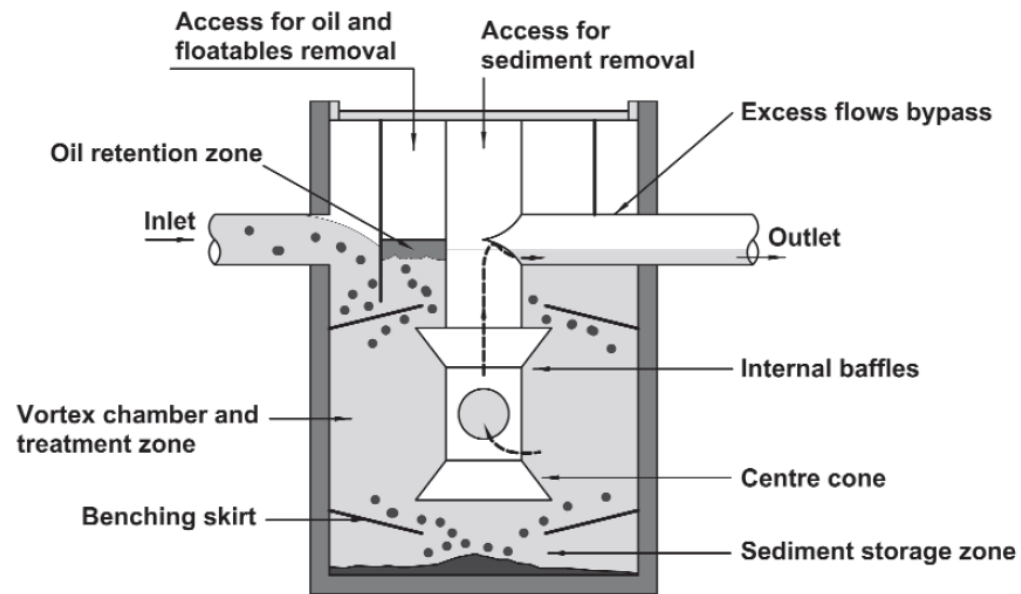




# Hydrodynamic/Vortex Separators

Considered as pre-treatment

- Hydraulic device – no moving parts
- Water enters;
  - Floatables are retained
  - Some sediment is captured – sink floor
- Cleaner water is discharged
- Gulley sucker to remove sediments
- “**Downstream Defender**”<sup>©</sup> is a trade name and should not be used as this may show preference



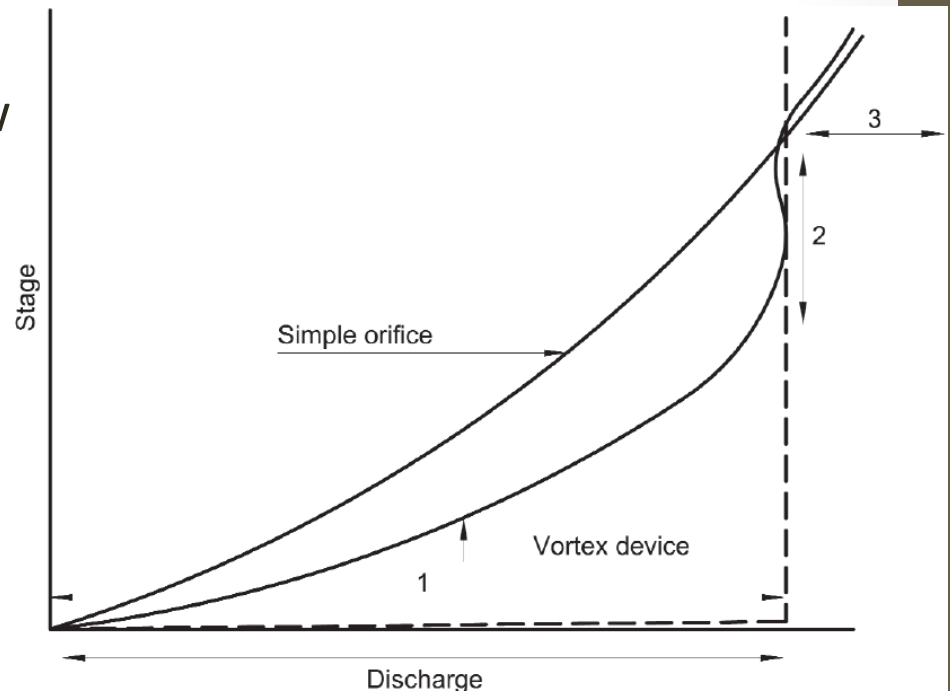
Extract from CIRIA C697 SUDS Manual

# Vortex Flow Control

**Hydraulic control only – not SUDS**

- A hydraulic throttle to control flow discharge
- No moving parts
- Much better than orifice plate (hole in the wall)
- Good control of reasonably fixed flow over a range of depths

“HydroBrake<sup>©</sup>”



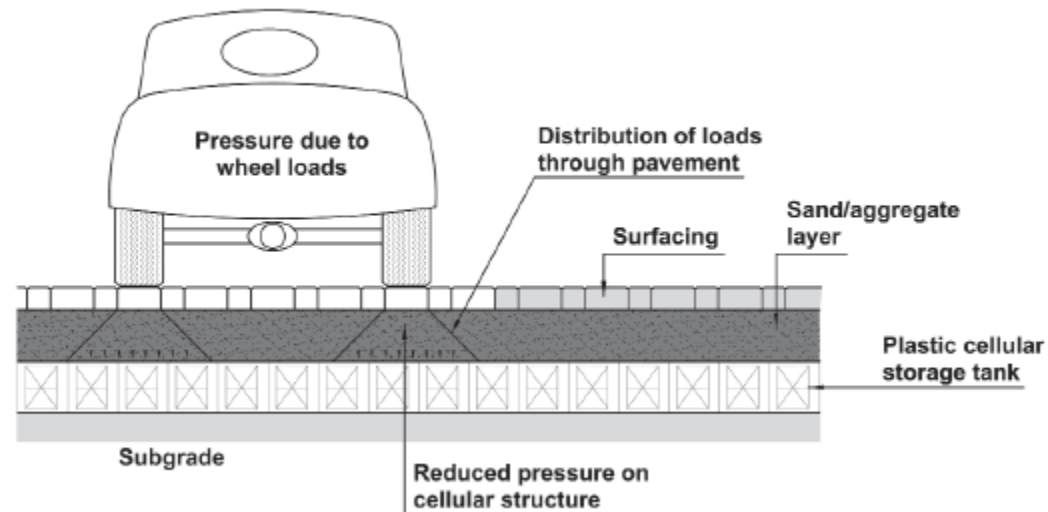
Extract from CIRIA C697 SUDS Manual



# Geocellular Modules

## Underground storage

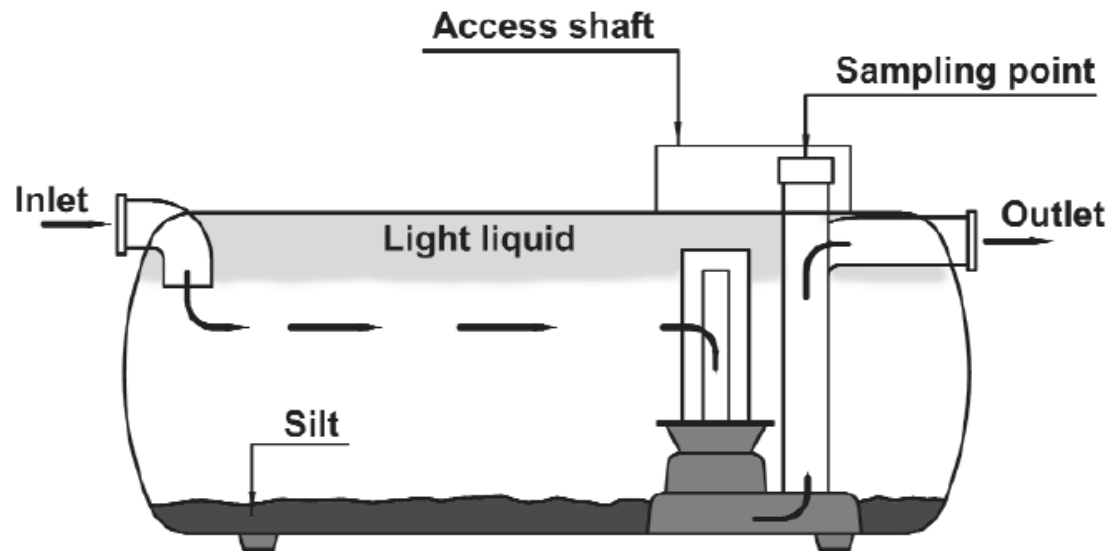
- Plastic crates placed underground
- High voids; 95 – 97% void
- Many manufacturers with varying strengths and load bearing capacity
- Past structural failures have caused caution
- No treatment, but excellent for flood storage where land is limited
- Stormcell®
- Hydrovoid®
- Skeletank®



# Oil Separators

## Pre-Treatment

- Often wrongly suggested as SUDS
- May be used as pre-treatment for high risk sites to protect downstream assets; ponds, basins, etc.
- Needs regular maintenance
- No flow attenuation
- No amenity/biodiversity



Extract from CIRIA C697 SUDS Manual



# Filtration Systems

- Many different types and configurations
- Some have a mixture of filtering media
  - Coconut husk
  - Volcanic ash – pumice
  - Hydrophobic
  - Oil binding characteristics
- Professional certification is a good indicator of “real” performance



# Offlet Kerbs

**Hydraulic function – not SUDS**

- A means of capturing road runoff and conveying within the kerb or occasionally through the kerb to a swale behind
- Offlet
- Inlet
- **Beanie Block©**
- **Hydrokerb©**





# Others; “Contraptions & Devices”

**CAUTION; Please be very careful when considering other devices and contraptions**

- Manufacturers have jumped on the SUDS bandwagon
- Many claims that are not always completely true
- Not often adequately tested
- Testing should be performed by an independent credible and recognised party;
  - Professional lab
  - Researcher
  - Academic
- Innovation should be encouraged, but not at risk to the environment
- Certification is expensive and smaller groups may not afford

# Beware of Gullies

- Especially if you have a young family....  
of ducklings





QUESTIONS?