Design Configurations
Biofilter Design

Design will depend primarily on

– System objectives
  • Pollution control
  • Stormwater harvesting, etc

– Site characteristics
  • Climate
  • Available space
  • Surrounding soil type
  • Opportunities & constraints
Biofilter Design

Key design components are:

• Filter media
• Plants
• Drainage
• Lining (non-lining)
• Submerged zone
Standard Design: Lined system

- Overflow
- INFLOW STORMWATER
- TREATED STORMWATER
- UNSATURATED ZONE
- Transition layer
- Drainage layer
- Drain
- 100mm Sub-surface Drainage Pipe on 5% grade

- 200-500 Detention
- 400-700 FILTER MEDIA
- 150 RIVER SAND
- 150 GRAVEL

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MONASH University
Standard Design: Unlined system

No liner: Exfiltration

400-700 FILTER MEDIA

200-500 Detention

UNSATURATED ZONE

Transition layer

Drainage layer

Drain

TREATED STORMWATER

INFLOW STORMWATER

150 RIVER SAND

150 GRAVEL

FAWB
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MONASH University
System with Submerged Zone 1

- **Overflow**
- **Inflow Stormwater**
- **Unsaturated Zone**
- **Saturated Zone**
- **Transition Layer**
- **Drainage Layer**
- **Drain**
- **100mm Sub-surface Drainage Pipe on 0% Grade**
- **200-500 Detention**
- **300-600 Filter Media**
- **200 Sand & Carbon Source**
- **100 River Sand**
- **150 Gravel**

**Treated Stormwater**

**Facility for Advancing Water Biofiltration**

**EDAW | AECOM**

**MONASH University**
System with Submerged Zone 2

Overflow

TREATED STORMWATER

INFLOW STORMWATER

Liner

100 Transition layer

100 Drainage layer

450 GRAVEL and CARBON SOURCE

SATSURATED ZONE

UNTREATED ZONE

200-500 Detention

300-600 FILTER MEDIA

100mm Sub-surface Drainage Pipe on 0% grade

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The Program

1. Media selection – Belinda Hatt
2. Sizing – Tim Fletcher
3. Plants – Tim Fletcher
4. Discussion - Tony

5. Design enhancements (SZ, etc) – Ana Deletic
6. Performance – Belinda Hatt

7. Key recommendations
Questions?