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MONASH University Engineering
Institute for Sustainable Water Resources

FAWB
Facility for Advancing Water Biofiltration

Advancing Raingarden Design

Construction

June 2008

Construction Process

1. Bulk Earthworks
2. Perforated pipe
3. Drainage layer
4. Sandy loam
5. Geofabric
6. Topsoil
7. Turf

When 75% building complete, turf, topsoil and geofabric removed and final planting undertaken

Must protect systems during building phases

Construction activities can impact on maintenance requirements

Protect system during construction and establishment of landscaping features

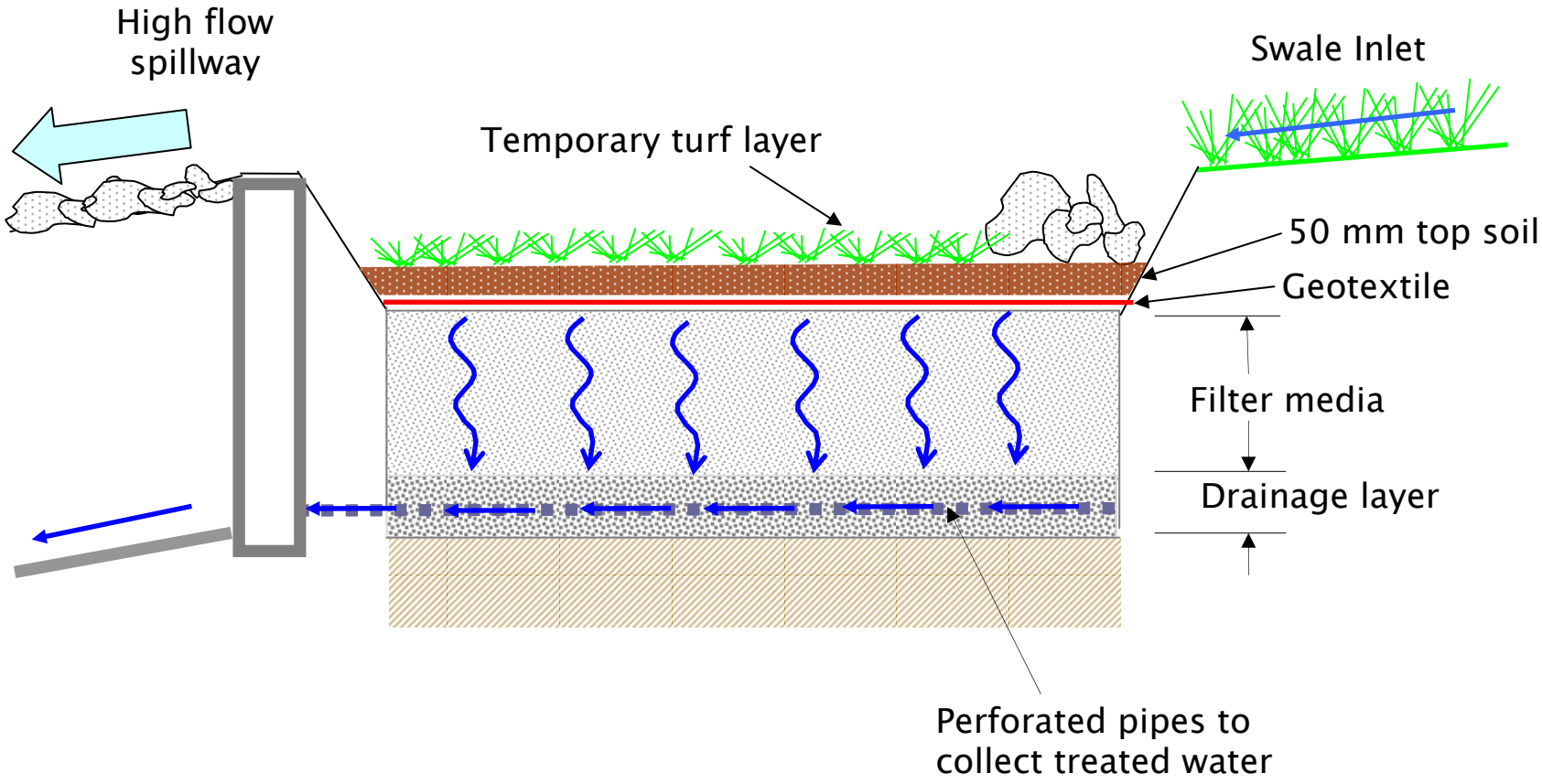
How to control sediment loads during construction/building?

-Temporary sediment control at entrances

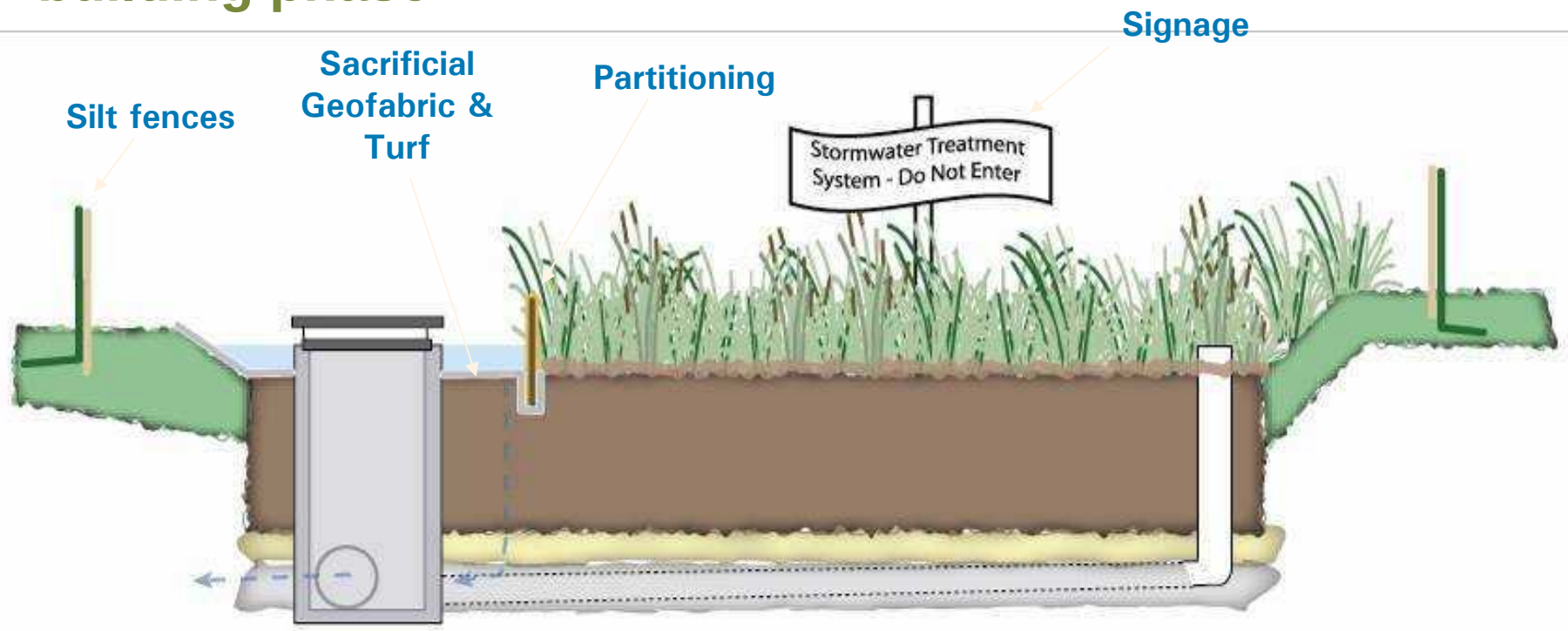
-Replace vegetation at completion of construction/building phase

Protection during construction

-Turf layer



Alternatively use partitioning and sediment control during building phase



- Good for developer
- Good for Council
- Good for residents

Sediment and Erosion Control


Stockland

Examples of what can go wrong when good designs are poorly constructed

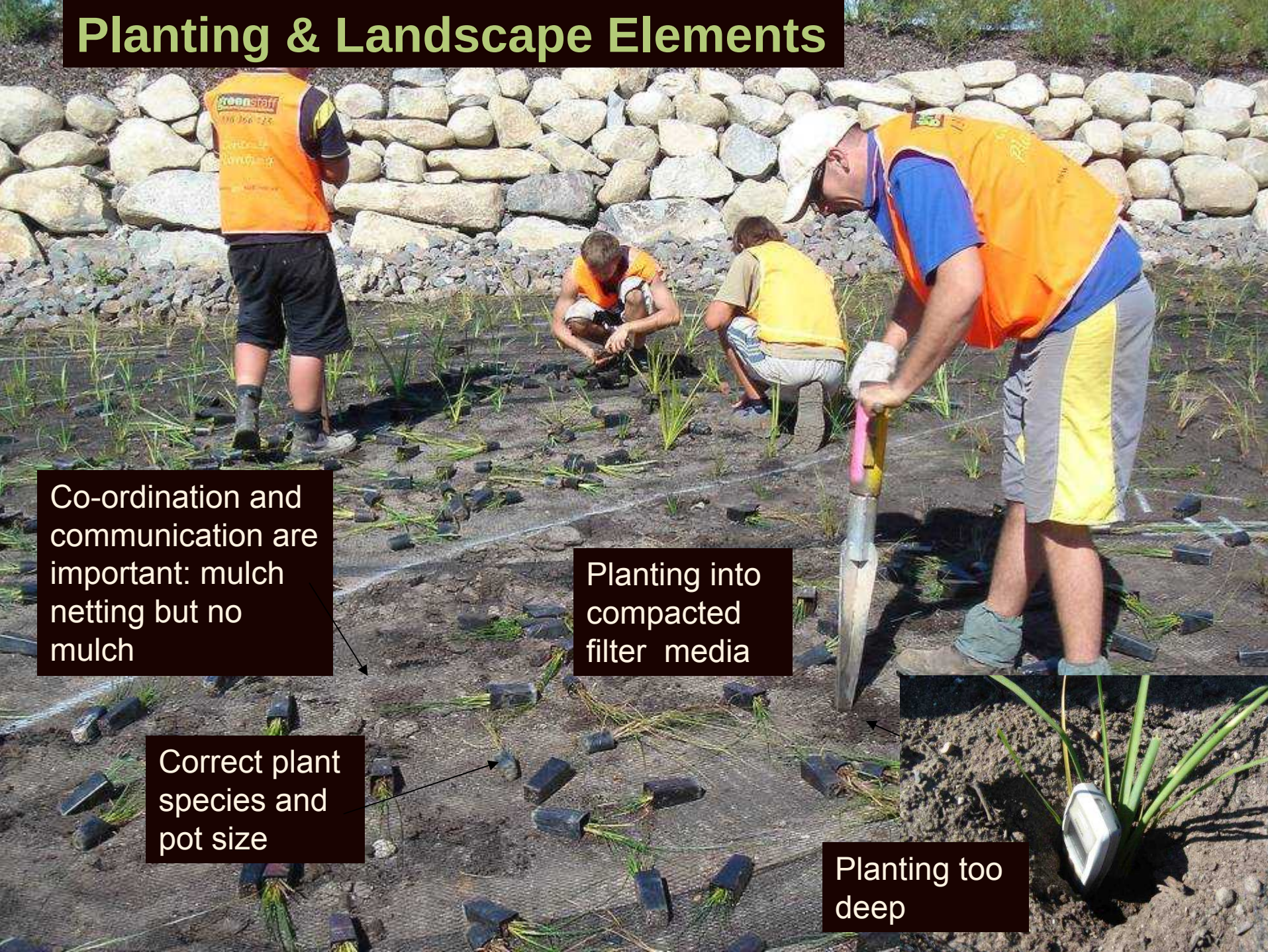
Scouring
Sediment deposition

Blockage by leaf litter


Incorrect grade & levels
Poor finish
Incorrect rock
Incorrect filter media


Lightly compact filter media to avoid over-compaction or future subsidence
NOKIA

Planting & Landscape Elements



Inspection before handover

Asset Handover Checklist		
Asset Location:		
Construction by:		
Defects and Liability Period		
Treatment	**Y**	**N**
Actual treatment performance equivalent to design?		
Maintentance	**Y**	**N**
Maintentance plans provided for each asset?		
Inspection and maintenance undertaken as per maintenance plan?		
Inspection and maintenance forms provided?		
Asset inspected for defects?		
Asset Information	**Y**	**N**
Design Assessment Checklist provided?		
As constructed plans provided?		
Copies of all required permits (both construction and operational) submitted?		
Proprietary information provided (if applicable)?		
Digital files (eg drawings, survey, models) provided?		
Asset listed on asset register or database?		

CONSTRUCTION TIPS

- Can be counter-intuitive to contractors
- Support contractors so they understand what is happening, spend time communicating design intent
- Recommend site visits by someone who understands functional intent and key points during construction phase
- Careful construction will result in good performance and minimise future maintenance

Stringybark Creek infiltration

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