Research Methods
FAWB Research

- **Project 1**: Technology
- **Project 2**: Policy and Risk
- **Project 3**: Adoption Tools
- **Project 4**: Demonstration and Testing
FAWB Research

Project 1: Technology

Project 2: Policy and Risk

KEY FINDINGS on Design

Project 4: Demonstration and Testing
**Project 1** – TECHNOLOGY

Lab based experiments aimed at refinement of the technology

- **Activity 1.01** - Vegetation Trials

- **Activity 1.02** – Optimisation of biofilter design: Laboratory biofilter column experiments

- **Activity 1.03** – Biofilter optimisation for stormwater harvesting
Activity 1.01: Vegetation Trials
Activity 1.02 (a) – Laboratory study of non-vegetated filters
Activity 1.02 (b) – Optimisation of standard biofilter design
Activity 1.02 (c) – The impact of a permanently submerged zone
Activity 1.02 (d) – The long term sustainability of soil media
Activity 1.02 (e) – The impact of temperature

• Joint work with Lulea University in Sweden


**Project 4 – DEMONSTRATION & TESTING**

The aim is to test and demonstrate the technology by supporting its implementation and monitoring

- **Activity 4.01** - Second Ponds Creek, *Sydney*
- **Activity 4.02** – Monash Univ. Carpark Biofilter, *Melbourne*
- **Activity 4.03** – Wakerley Bioretention System, *Brisbane*
- **Activity 4.04** – Testing existing systems *Melbourne, Brisbane & Sydney*
- **Activity 4.05** - Saturn Crescent stormwater garden, *Brisbane*
Activity 4.01: Second Ponds Creek, Sydney

- Systems built in sodic soils: would salt leach?
- Filter media problems: unstable soil structure
Activity 4.02 – Monash Biofilter, *Melbourne*

1. Catchment

2. Pre-treatment

3. Biofilter

4. Storage

5. Irrigation
Activity 4.03 – Wakerley Bioretention System, Brisbane
Activity 4.04: Testing existing systems

Melbourne
-Monash Car park, Clayton
-Cremorne St, Richmond
-Aleyne St, Chelsea
-Point Park, Docklands
-Hamilton St, W. Brunswick
-Avoca Cr, Pascoe Vale
-Parker St, Pascoe Vale
-CERES, West Brunswick
-Bourke St tree pit, Mel
-Hallam Bypass, Floret Pl
-Hallam Bypass, Wanke Rd

Sydney
-Wolseley Pd, Vic Park
-Leyland Gr, Vic Park
-Second Ponds Creek

Brisbane
-Streisand Dr
-Saturn Cr
-Donnelly Pl
-Hoyland St
Activity 4.05: Saturn Crescent stormwater garden, *Brisbane*

- The first system built using FAWB design specifications
- Several design simulated stormwater events have been monitored so far
Publications

On Filter Media

On Vegetation
Publications

Submerged Zone and Carbon Source

Hydraulic Performance
13. Coustumer S, Fletcher TD, Deletic A, Barraud S, Lewis J (under review(a)) Hydraulic performance of biofilter systems for stormwater management: lessons from a field study, J Hydrology
14. Coustumer S, Poelsma P, Fletcher TD, Deletic A, Barraud S, (under review(b)) Clogging and metal removal by stormwater biofilters; a large-scale design optimisation study, J Hydrology
Publications

**Field Studies**
16. Hatt BE, Fletcher TD, Deletic A (in press), Hydrologic and pollutant removal performance of biofiltration systems at the field scale, J of Hydrology

**Other Design Issues**