

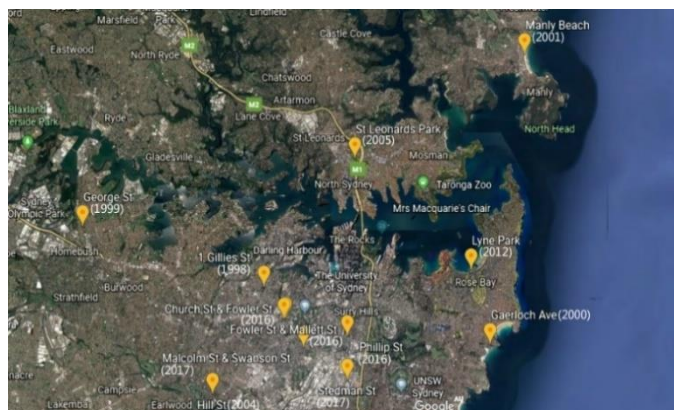
# Protecting Sydney Harbour Waters For over 20 years

## Advanced biofiltration technology implementation in Sydney

### BACKGROUND

The Centre for Organic Research & Education (CORE) initiated projects using Advanced Biofiltration Technology (ABT) to clean storm water that flows into Sydney Harbour and to recover water resources for beneficial reuse since year 1998. Projects spreading from Sydney inner west to eastern suburbs are established with CORE's Advanced Biofiltration Technology.

The projects were designed to improve the quality of stormwater contributing to waterways and coastal waters and provide an attractive natural feature. CORE's engineered Advanced Biofiltration Media was deployed to all the projects to meet clients' requirements on assets, pollutants removal and storm water reuse.



(Locations of projects around Sydney Harbour, NSW)

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### PROJECTS

#### Stormwater Treatment and Reuse (STAR) Systems Application, Manly, Sydney



Stormwater Treatment System at Manly Beach is an integrated system for stormwater capture, treatment and reuse, containing CORE's Advanced Biofiltration Media. The treatment systems combine biofiltration treatment for run-off pollutants and underground water storage modules, providing non-potable water supply for small- or large-scale urban, commercial or industrial developments. Manly's treatment system saves the local council AU\$ 50,000 p.a. on water cost for green land watering. The systems are based on water sensitive urban design and sustainability principles using minimal energy for treatment and maximizing the use of ecological components in manufacture.

### Street Rain Gardens Application

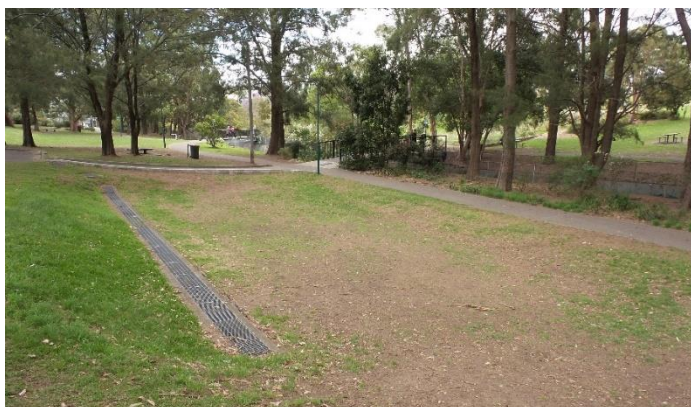


(Street Rain gardens in multiple locations in City of Sydney, NSW)

CORE is dedicated to the Sydney City Rain Garden retrofit and construction projects in multi locations. Advanced Biofiltration Media were applied to these small scale vegetated bioretention systems (Rain Gardens) to improve stormwater quality and support substantial plant growth. Some gardens were under monitoring for water quality which proves good removal of suspended solids, nutrients (e.g. nitrogen, phosphorous), metals (e.g. copper, lead, zinc) and pathogens from effluent. Sydney experienced extreme drought period for over 12 months from mid-2017 with a few weeks' high temperature (up to 40°C), Rain gardens with Advanced Biofiltration Media are shown to thrive with no watering activity.

### Bioretention basin Application

Leichhardt Council wanted to improve the quality of local waterways by demonstrating quality storm water management practices. CORE designed and supplied customized Advanced Biofiltration Media for the council's bioretention basin located at Whites Creek Valley Park at the corner of Smith and Gillies St, Annadale.



(Annandale Bioretention Basin, Annandale, NSW)

The project involved conveying stormwater collected from one of Leichhardt Council's Annandale drainage sub-catchments and channelling the contaminated stormwater into an infiltration basin located in an adjacent park. The integrated grey infrastructure of the bioretention basin removes gross litter, grass clippings, animal droppings, and the Advanced Biofiltration Media removes various soluble contaminants including heavy metals and hydrocarbons etc.

The infiltrated water is then collected in a layer of drainage cells made from recycled plastic and directed back into Whites Creek Channel. The system is fully gravitationally operated and requires no power supply and consequently is energy efficient. The environmental significance is that the channel discharges into Rozelle Bay that flows into Sydney Harbour.