

# Techno-ecological solutions for improving water sensitive urban design management.

## The project

Water sensitive urban design (WSUD) is being rapidly adopted as an approach to mitigate impacts of stormwater runoff in urbanised areas. Plant health and hydraulic performance are key components of these WSUD systems. Monitoring these frequently, accurately, and inexpensively could significantly improve management and maintenance by enhancing performance and reducing cost.

Inexpensive, highly customizable, and relatively easy to implement microcontrollers have been used to deploy sensors that measure *in situ* environmental conditions. However, there is little information on the accuracy of these sensors and whether they can provide effective cues to inform maintenance and management decisions in WSUD. The PhD project would entail developing microcontroller-based sensors and carrying out experiments in the Living Laboratory for Water Technologies and field sites to verify the sensors' capacities to provide real-time monitoring data that can effectively improve maintenance strategies.

## The opportunity

One scholarship covering tuition fees and providing a tax-free stipend (approximately \$28,000/year) for 3 years is potentially available for either a domestic or international student. There is potential for the successful applicant to earn up to \$3,000 (not tax-free) per annum through assisting in undergraduate teaching. Students are given financial support to attend an international conference during their PhD.

## Selection criteria

- MSc, BSc, or equivalent degree AND research experience of at least 6 months.
- Coursework related to hydrology, water quality, and ecology preferred.
- Excellent academic record ( e.g., >75 WAM or 3.2 GPA).
- Experience (preferred) and desire (required) to publish in internationally recognised journals.
- Statistical analysis, coding, and modelling experience highly desirable.

## Applications

Applicants should provide the following documents when they express their interest in writing to Dr Brandon Winfrey ([brandon.winfrey@monash.edu](mailto:brandon.winfrey@monash.edu)):

- Cover letter, no more than 2 pages, outlining your interest and experience in this research topic and why you are applying for this PhD program, as well as evidence of meeting the eligibility criteria for PhD candidature at Monash University (<https://www.monash.edu/graduate-research/future-students/apply>)
- Academic transcript(s)
- CV, including academic record, details of journal publications, employment history, and names of two academic referees

Applicants will be required to apply for a scholarship through Monash University.