PhD Opportunity for APA/IPRS/CSC (or equivalent) applicants

Estimation of Water Sensitive Urban Design Impact on Flood Mitigation

UNSW Water Research Centre, School of Civil and Environmental Engineering

An operating allowance and PhD top-up scholarship is available for a successful APA/IPRS/CSC applicant via a project titled “Estimation of Water Sensitive Urban Design Impact on flood mitigation”. Water Sensitive Urban Design (WSUD), also called Low Impact Development (LID) in USA, Sustainable Drainage Systems (SUDs) in UK and Sponge City (SC) in China, are well recognised for their effectiveness in reducing stormwater pollution; they contribute to reduce stormwater volumes and flows and reduce the cost/damage from flooding, however the benefit is still rather unclear due to the lack of assessment tools. WSUD system is designed for treating small events (e.g. up to 1 in 2-yr for stream health protection) and it contributed to the flood benefits through continuous and accumulated ways; whereas traditional 1D-2D flood models, which can successfully produce event-based flood simulation (e.g. 1 in 10-year), are still computationally time consuming; therefore, they are not applicable to assess the continuous and accumulated benefits delivered by WSUD. This research project will include: developing, testing and validating a rapid flood modelling tool; Integration of the tool with urban development and water infrastructure planning tool for assessing the flood mitigation benefits delivered by WSUD; understanding the impact of climate change on flooding and WUSD; and case study testing of the proposed modelling tool.

The successful student will be based at Water research centre, school of civil and environmental engineering, UNSW Sydney. The suitable candidate will have a background in water/environmental engineering. The candidate should have a demonstrated aptitude for programming and an understanding of urban catchment hydrology, urban stormwater management, and GIS software. It is anticipated that the student will have strong computing skills. The candidate should have excellent communication skills and will be expected to interact regularly with industry partners.. The student needs to be successful in securing their own primary scholarship via APA or IPRS schemes or CSC scholarships (or equivalent):

https://research.unsw.edu.au/postgraduate-research-scholarships.

Further information on the project and scholarship on offer may be obtained from Professor Ana Deletic (a.deletic@unsw.edu.au), Dr Kefeng Zhang (Kefeng.zhang@unsw.edu.au). Applications for the scholarships (including a cover letter, academic transcript and CV) should be submitted to Dr Kefeng Zhang, UNSW Water Research Centre, University of New South Wales, Sydney NSW 2052.