

# A Trans-disciplinary Action Research Project in Sustainable Sanitation in Sydney: Stakeholder Engagement in the Investigation Phase

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A group of researchers from the Institute of Sustainable Futures (ISF), Faculty of Engineering and Information Technology (FEIT) and the Faculty of Design Architecture and Building (DAB) at the University of Technology Sydney (UTS) have started a trans-disciplinary pilot project of urine diversion, phosphorous recovery for reuse in agricultural applications. The aim of this research is to highlight the depletion of phosphorous that could create global food security. While people are conscious of the idea of 'peak oil' and its impact on energy resources the phosphorous peak' phenomenon is not well understood by the general public. Urine is a new potential resource that could help in overcoming the phosphorous depletion but the reuse of urine requires a change in the way we think about waste and particularly how we think about sewage.

The UTS project is a proof of concept that urine diversion and phosphorous recovery could be an acceptable alternative to address the global phosphorus shortage. But the idea of reusing waste and the resulting processes requires trans-disciplinary spanning sustainability, technology, regulations, communications, business models and human behavior. Action Research was chosen as the overarching methodology for this research and the project is planned to be carried out in three action research phases:

- Phase 1: Investigation
- Phase 2: Design, Contract and Commission a pilot facility at UTS.
- Phase 3: Operate, Monitor and Closure (with lessons learnt)

In the true spirit of action research the group plans take action by installing new types of toilets in a University building to test out the concept and reflect from the experience. The research is truly participatory with several stakeholders including the three groups across UTS, partner investigators from University of Western Sydney, University of New South Wales, Linkoping University (Sweden), Caroma Dorf, Sydney Water, Nursery and Garden Industry of Australia and NSW Department of Health.

The investigation phase of this project is expected to be complete by end June 2010 and we expect to present details of this phase and in particular strategies planned to be used in stakeholder engagement as well as our reflections on the application of these strategies in the this phase. The stakeholder engagement is expected to track how the system is viewed by the users, maintenance staff, agricultural and horticultural stakeholders, etc through the project life cycle and consider what needs to change to have the system more widely accepted.

## REFERENCES

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