



University of  
South Australia



Barbara Hardy  
Institute

David Whaley

## Research Profile

### Research Area Specialisation

End-use water and energy consumption of new houses and major household appliances to establish baseline patterns to evaluate energy efficient appliances and houses.

### Contributing to a better and sustainable environment

Analysis of the measured data from houses within and outside of the Lochiel Park development demonstrates how effective modern technologies and energy-efficient appliances within house designs perform. Through David's research, the results will be used to build a tool for the State Government to assist the public with the energy-efficient and emission friendly selection of residential water heaters, whilst results from other projects will verify the effectiveness of energy efficient appliances and solar passive house designs.

Through David's continued analysis of monitored energy and water usage from Lochiel Park and other new housing developments, we will be able to demonstrate the performance of energy-efficient housing and appliances to assist in influencing Government policies and or update building codes in Australia.



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*Great Research  
into Sustainability*

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## People

- Our researchers are scientists, engineers and social scientists
- We work collaboratively on real-world issues
- Over 100 researchers and 130 research students

## Projects

- Multidisciplinary projects focused on sustainability
- We work in partnership with government, industry and academia
- Extensive testing and evaluation services and consultancy expertise
- Our work is underpinned by community participation and education

## Research Abstract

David is involved in the installation, commissioning and maintenance of monitoring equipment and data logging devices used to collect the end-use residential energy and water data on each of the 60+ dwellings within the Lochiel Park Green Village.

The monitoring systems record the electrical energy consumed in each house, along with the energy generated by the roof-mounted solar system and the subsequent amount imported and exported to and from the grid. David's work monitors the potable mains water and rain water consumed, along with that used for hot water, as well as measuring gas consumption and displays an approximate greenhouse gas emission figure and cost associated with utility services. The project has the ability to reduce electrical energy consumption by turning certain appliances off, during times of peak consumption.

## Research areas of interest

- Solar Energy
- Energy recovery
- New technologies

## Barbara Hardy Institute

Barbara Hardy Institute is a large multi-disciplinary institute with experts in many fields where we practise what we believe in, i.e. sustainable practices.

## Keywords to describe David's research

- Monitoring
- Energy-efficiency
- Innovation



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*"The results of this project will influence Government policies and / or update building codes in Australia."*