NP 2006: INTEGRATED DESIGN, TECHNOLOGY AND PRACTICES IN LOW CARBON PRECINCTS

Jessica Breadsell, Curtin University Sustainability Policy (CUSP) Institute RP3033

jessbreadsell

Problem

The design of low carbon precincts has not resulted in resources being used more efficiently. This research will examine the social and practice aspects of low carbon housing to see if there are ways the design or occupant practices can enable sustainable lifestyles.

Research Question

What are the implications of household design on user practices and resource flows for sustainable living?

Objectives:

Analyse how prominent frameworks around sustainable living explain household behaviours and practices that influence resource flows.

Undertake case studies in innovative precincts to study the real life examples of user practices.

Technology designed for sustainable resource use is often incorrectly used resulting in unintended and generally less sustainable outcomes

Figure 1: WGV development in Fremantle (Source: http://www.landcorp.com.au/Global/Project%20Images/Metropolitan/White%20Gum%20Valley/wgv-internal-estate-hero.jpg?mode=Crop&scale=Both&w=980&h=332&format=jpg)

Methodology

Desktop literature review on frameworks of resource management, transitions and practice theory.

Case Study: Sustainable Housing for Artists and Creatives (SHAC) at WGV

Mixed density low carbon precinct in Fremantle, WA with One Planet Living accreditation.

SHAC comprises of 12 houses and apartments that are used as living laboratories for researchers.

Participants will be studied both before and after moving in to low carbon housing.

- Qualitative data collected through sensors in the households.
- Interviews exploring practices relating to energy, water, waste, transport and food.
- Social Network Analysis mapping activity to analyses how the social sphere of residents affects their resource use.
- Cultural Probes via text requiring short answers or pictures describing recent resource use

Figure 2: WGV by Landcorp

(Source: https://www.landcorp.com.au/WGVAssets/img/wgv_logo.png)

Figure 3: SHAC at WGV

(Source: https://cofremantle.files.wordpress.com)

/2016/05/02-northern-laneway-activation-low-res.jpg?w=630&h=445)

Anticipated impacts

Testing innovative methods from theories in a WA setting.

Integrating theories of practice and behaviour into home settings through living laboratories to enable people to use resources more efficiently.

Informing the development of new precincts by providing case studies for how low carbon design, technologies and practices can be integrated into the development from the initial stages.

Research in progress: completion in November 2018