Christie Walk

Case Study by Your Development Administrator posted 28 Aug 2008

Built on only 2000m2 (half an acre) it demonstrates all aspects of urban sustainable in a highly compact space. The development was completed in December 2006.

- **Categorised under:**

- Feasability, Planning, Design, Construction,
- Greyfield Development,
- Site Ecology, Place Making and Social Sustainability, Estate Design, Materials and Recycling, Water Management, Energy Management,
- Small (<100 lots),
- Medium Density,
- Designer, Builder,
- Temperate,

Location

101 Sturt Street, Adelaide, SA, 5000, Australia

Introduction

The dwellings in the development include a linked 3 storey townhouses with full solar orientation, a 3 storey block of six apartments with east-west orientation and a full roof garden, three 2 storey strawbale cottages and a 3 storey strawbale townhouse. A 5 storey apartment building containing 13 apartments with community facilities (meeting room, library, kitchen, toilet and ?interpretive room?) that serves the whole Christie Walk site is located on t he Sturt Street frontage.

The project was designed for a group of clients represented by a development cooperative, Wirranendi Inc., and

created by the non-profit educational association, Urban Ecology Australia Inc. The purpose of the cooperative was to create community-based projects that maximise environmental performance and energy efficiency. The cooperative structure provided a means for people to build for themselves in urban environments where single house blocks are rarely available. The clients included first time home buyers, investment purchasers, experienced home owners seeking the advantages of an urban lifestyle and older people wanting to retire in an active, mixed community.

With reduced car park provision and no internal traffic, the site was developed to take advantage of its inner-urban location within easy walking distance of Adelaide?s Central Market and public transport services.

The project is on a T-shaped site the size of two quarter-acre blocks in inner-city Adelaide, South Australia. The site is small, awkwardly shaped and severely constrained, with buildings hard on or close to most of the boundaries. The constraints of the site made it impossible to provide all the buildings with ideal passive solar orientation.

Adelaide?s climate is ?Mediterranean? with warm to hot summers and cool winters. It is subject to ?cool changes? when temperatures can plummet from the high 30s to low 20s (degrees Celcius) in less than an hour. Although the City of Adelaide rarely experiences freezing temperatures it can feel very cold. Buildings need insulation to keep heat in during cold weather and keep heat out in hot weather.

The land was owned by the Wirranendi development cooperative during construction and individual properties were then sold on a community title. Each purchaser owns their own dwelling but also shares ownership and responsibility for the landscaped community areas that include a productive community garden and roof garden. On completion, the ground floor of the 5 storey apartment building will include a shared kitchen and laundry and small, general purpose hall for parties that won?t fit in small apartments.

House and apartment prices were intended to include all the community areas and facilities that would eventually be provided and have ranged from the low $200,000s to $425,000. The nonprofit structure of the development cooperative and its ?in-house? building company played a key role in keeping house prices in a range comparable to c onventional inner-city properties in Adelaide.

Sustainability Principles:

Christie Walk Firsts

Christie Walk is the first development of its kind in an Australian city. It can lay claim to a number of substantial firsts:

- First Australian example of a fully featured and integrated inner-city eco- housing development.
- First green development in the City of Adelaide.
- First genuine roof garden in South Australia.
- First apartment building in South Australia to receive development approval with integrated photovoltaic panels.
- First housing development in South Australia with more than 5kW of photovoltaic panels.

- First apartment building in South Australia with integrated translucent photovoltaic panels.
- First straw bale houses in an Australian capital city.
- First non-toxic houses in the City of Adelaide.
- First housing development in the City of Adelaide with an integral community produce garden.
- First housing development in the City of Adelaide with underground stormwater tanks.
- First housing development in South Australia to provide solar hot water to all dwellings.
- First housing development in the City of Adelaide to use second-class water for irrigation and toilet flushing.
- First development to demonstrate commitment to a walkable city by obtaining development approval with less than 50% car parking.
- First privately funded housing co-operative to undertake green development.
- First medium-scale inner-city development to be undertaken and managed by community organisations dependent on volunteerism.
- First housing development in South Australia to win an international environmental award. (The APFED Award for Good Practice, Silver Prize.)
- First South Australian finalist in the international BSHF Habitat Awards.

Source: Paul Downton. Ecopolis Now. 2006.7.12

Design background

The brief demanded energy efficiency and high overall ecological performance. User participation in the development process and an ethical investment funding base were also important.

It was intended to demonstrate and trial both the problems and possibilities of ecological,â€˜community-drivenâ€™ deve pment on urban sites.Â Concerns ranged from broader issues of community participation to the detail of specifying ma terials to create non-toxic, healthy homes.

The site was purchased cheaply and this helped to keep development costs down, but because the buildings are relatively innovative and possess exceptional levels of insulation, etc., they each cost a little more. An individualised approach to each dwelling design also added costs.

The structure of the first completed building, a straw bale cottage, was built by volunteer labour. This helped reduce â€˜start upâ€™ costs in the building program. Most of the construction has been via a conventional building cont ct with some augmentation by volunteer labour. The timeline for the development was stretched by a series of unforseen circumstances and provided a series of financial challenges for the cooperative.

Water treatment

Chlorine-free sewage treatment was planned. A Coast and Clean Seas grant enabled the provision of a sewage mining system (by Resource Recovery) but its running costs were such that the community corporation decided to retire its use. The Christie Walk community revisited the challenge of on-site treatment of black and greywater and negotiated an innovative onsite treatment system with the support of Adelaide City Council and SA Water, but the water utility withdrew its commitment to the system in late 2007.

Hotwater and fittings

All dwellings have solar hot water with electrical backup. The apartments have a shared system with banked solar panels and a gas-fired boiler backup. Low water use shower heads help control the water supply. Some proprietors have installed under-bench filters that provide drinking water at low flow rates.

Stormwater

Water shed by the roofs, balconies and other impervious surfaces is collected for use on site in two 20,000L underground tanks situated beneath the carports. The water is used for irrigation and toilet flushing, reducing total water importation to the site.

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Links

- Ecopolis Architects
- Urban Ecology Australia
- Your Home - Christie Walk Case Study

Link to Content

- http://yourdevelopment.org/casestudy/view/id/14