WALGA’s Solar Panel Case Study

Interview with the Fifth Estate in May 2016

***Solar Panel Case Study for the Fifth Estate***

[*The Fifth Estate*](http://www.thefifthestate.com.au/) *is an e-news platform that focuses on innovative and environmentally sustainable ideas and technologies. WALGA was approached by the Fifth Estate due to their interest in Green Star Buildings. The Fifth Estate discovered the ONE70 Green Star Building via the* [*CitySwitch*](http://cityswitch.net.au/) *program, which WALGA is a part of, and conducted the interview provided below.*

**Talk me through how WALGA came to the decision to install solar on its ONE70 office site. Why was it pursued (financial, environment, reputational, or all three) and how was the business case put to the decision makers?**

The Local Government House Trust (The Trust) was set up to provide accommodation for the Local Government Association of Western Australia (WALGA).

Continuing development of WALGA as the peak representative and service delivery body for Local Government in Western Australia, has seen the Association expand and diversify its scope of operations in recent times.

The previous accommodation was no longer suitable, with ageing infrastructure and outdated technology. A Business Case was put forward to The Trust by WALGA to construct a new commercial office building that would meet the long term business, operational and sustainability requirements of the Association.

Project costing and financial analysis undertaken by WALGA was independently vetted by property specialists. Emphasis was placed on developing an energy efficient building. A key component of this concept was solar power generation, through rooftop PV panels.

**Are you the owner of the building or a tenant? If you’re a tenant could you please explain how this was discussed with the building owner?**  
The Association is one of six organisations who are tenants at ONE70. As part of the Long Term Accommodation Strategy, the Local Government House Trust decided to fund the installation of the PV System

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**What is the size of the system? What percentage of energy use is being offset? What bill savings are being realised?**  
A 139KW system was installed on the roof of ONE70 and provides 30% of the peak demand for the entire building. From February 2014 to May 2016 the solar panels have generated over 540,000 kW of electricity and saved 380 tonnes of Co2. The solar panels have reduced electricity costs by $162,440 to date.

**What was the cost of the system and did you utilise a financing mechanism or buy the system outright? Why?**  
The decision was made to lease the equipment over a 90 month term, with quarterly rental payments. The total cost at the end of the lease agreement will be circa $1.25m. Being able to spread out the cost of the system meant that a loan did not have to be obtained, or have to divert funds from other capital projects.

**Please tell us about the design considerations. You mentioned that it was an unusual design.**

Next Power was awarded the contract to install the PV System. They undertook shading analysis during the design phase of the PV System. PV Syst software was used to show the shading affects by time of day across the year. Various configurations of solar panels were tested until the optimum design was achieved.

The PV System has 80 panels and 13 inverters, with two different types of panels (Suntech & Sunpower) to maximise the output capability of the system. Sunpower panels have a minimum peak power production of 95% for the first 5 years. Less than 0.4% annual degradation for the following 20 years. While the Suntech panels were used for the more steeply angled frames, as they are designed to handle more extreme weather conditions (e.g. wind, rain and hail).

Next Power won the ‘Design & Installation over 100KW’ award in 2014 from the Australian Solar Design & Installation Awards for the ONE70 project.

**Are there learnings from the project you could share that would help other businesses/councils in their own solar projects?**

Key learnings from the project:

* Take the time to consider why your organisation would have solar panels installed. Is it for financial, environment, reputation, or all three? Consider what location options are available and are they viable.
* Talk to peers about their experience of having solar panels installed. Which Solar Energy Consultancy did they use and would they recommend them?
* Look at all the financing options available and ensurethe appropriate one is selected for your organisation.
* Ensure your Business Case is vetted by an independent third party before being put to the decision makers.
* Your Business Case should include a maintenance plan and indicative costs for the life of the PV System, i.e. potential repairs and future upgrades.

While there is a higher capital cost involved to install solar panels, some of the benefits for the Association were:

* Higher capital value of building in market due to environmental credentials.
* 100% of the green energy used to provide 30% of electricity supply to ONE70, which generates income from tenants.

Reduction of carbon footprint of the organisation, which represents part of the commitment to sustainability and the ‘triple bottom line’ concept which WALGA, as the peak body for Local Government, recognises as imperative for socially, environmentally and economically responsible development.