



CAT PROJECTS

CASE STUDY 3

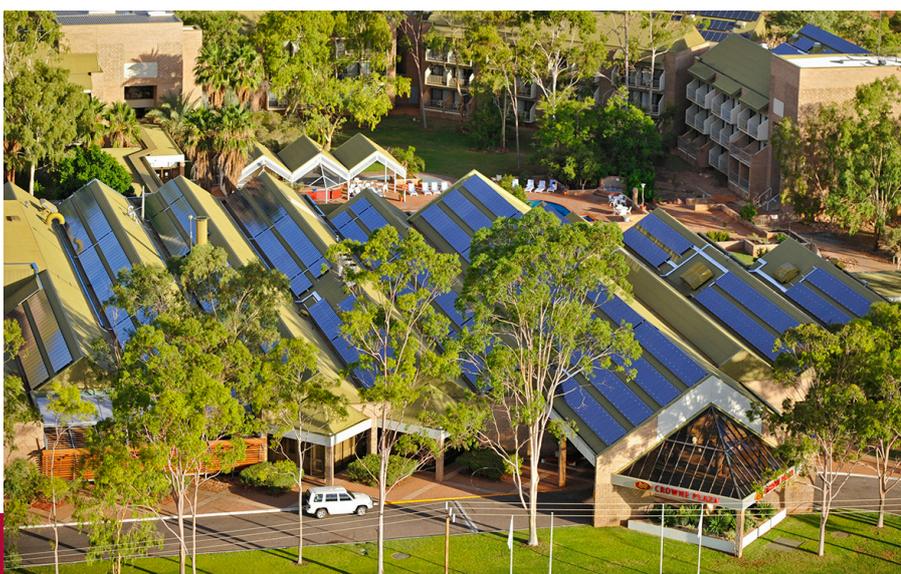
CROWNE PLAZA ALICE SPRINGS SOLAR POWER SYSTEM

CAT Projects was awarded the 2009 Northern Division Engineering Excellence Awards for the implementation of the large scale roof mounted solar power plant that supplies clean energy to Crowne Plaza Alice Springs (CPAS.) At the time of installation the CPAS solar system was Australia's largest grid connect system, and the project broke new ground by establishing the large scale system as an integrated retrofit that complemented the existing building structure.

CAT Projects developed high level specifications for a solar power system that would meet multiple client requirements: that the system's output would significantly offset hotel consumption, that the installation would complement the building's aesthetics, that the system be presented to hotel clients in a meaningful way and that performance monitoring be automated for remote assessment.

CAT Projects managed a national public tender process for this project, resulting in a quality outcome and significant cost savings for the client. The tender was drawn in a performance-based format, that provided certainty for the client, and allowed a meaningful comparison between proposals. The CPAS solar power system is a high profile component of a comprehensive gas, water and electricity efficiency program deployed across the hotel, which is in line with its aims to reduce consumption by 20, 30 and 40 percent respectively. The installation demonstrates the potential for large scale solar plants to integrate seamlessly into the form and function of existing buildings.

The project received funding from the Australian Government Department of Environment Water Heritage and the Arts, through the Solar Cities program as one of the Alice Solar City Iconic Projects.



- **Winner of the 2009 Engineering Excellence Award, Northern Division (CAT Projects)**
- **Winner of the 2009 ATRAA award for Innovation in Power System Design and Installation (Ogden Power, SunPower)**
- **Largest grid connect, and largest roof mounted solar system at time of installation**
- **Metering integrated across different buildings to provide a single automated monitoring and visualisation system**
- **Achieved to complement existing building form and function**
- **Panels: 1326 Sunpower SPW240 high efficiency monocrystalline**
- **Inverters: 52 SMA SMC 6000**
- **Output: 305.4kW peak**
- **Energy Production: 557MWh/year**

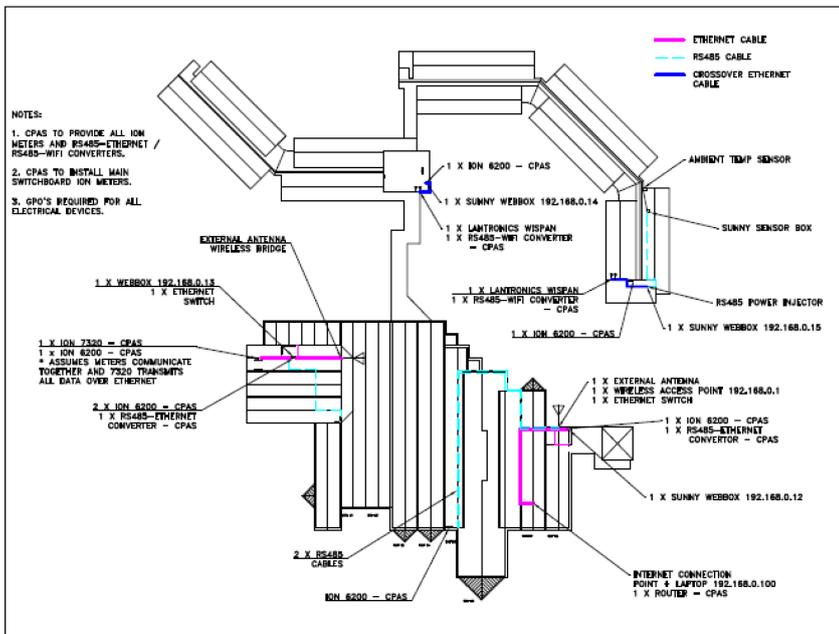


Figure 1: The distribution of the CPAS large-scale roof-mount installation across the hotel buildings, and marshalled at disperse plant rooms.

The Crowne Plaza Alice Springs solar system is a successful integration of a large scale solar system into the services infrastructure of an existing building, in a way that complements the high profile building's aesthetics.

The 305kW solar generator is installed across 15 roof areas on 3 different buildings at the hotel with Sunpower SPW240 high efficiency monocrystalline solar panels to maximise electricity production from the limited roof space. At multiple locations across the hotel 52 SMA grid connect inverters export generated power to the electricity supply.

The installation extended the capacity of the Australian solar industry at each stage of the project, from design through to logistics and implementation.

Despite the system's distributed configuration, it is supported by a single integrated data and communications system reporting to an online database. This database informs several other processes and applications around the hotel complex designed to optimize the client's outcomes in line with their project objectives. Achieving this required the incorporation of wireless, Ethernet, RS485 and field bus protocols in a first of its kind integration.

As project managers, CAT Projects oversaw the work of seven local and national contractors, to deliver the project on time and to budget, for an official launch in February 2009.



CAT Projects works closely with clients across Australia to provide an impressive range of management and engineering services:

- Project and program management
- Feasibility studies
- Whole of life assessment of infrastructure options
- Community Engagement and Development Services
- Community based planning, training and capacity building
- Development of educational and communication resources
- Supporting and enhancing livelihood opportunities

CAT Projects specialises in the areas of:

- Energy - particularly renewable energy and energy efficiency
- Water - supply and quality
- Telecommunications
- Public infrastructure - cultural centres, multiuse community facilities, housing etc.