

TREND CASE STUDY

The smart money is on Trend at SKYCITY Auckland

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As one of New Zealand's premier attractions, SKYCITY Auckland is a multi-venue, multi-purpose entertainment facility and home to the stunning SkyTower. When it came to updating its building controls infrastructure it turned to a Building Energy Management System (BEMS) from Trend Control Systems to maximise efficiency and create the very best comfort conditions.

For most visitors to Auckland, a visit to SKYCITY is top of the agenda. For 20 years it has dominated the skyline thanks to the 328m SkyTower, from which beautiful views, key landmarks, volcanoes and historical locations within the greater Auckland area can be seen. It is the tallest manmade structure in the country and glass fronted lifts take people up to one of the three spectacular viewing platforms, where they can SkyWalk round a 192m high pergola or, for the adrenaline junkies, take a leap off the SkyTower via the SkyJumploos that are part of the PSBP.

Place your bets

At the base of SkyTower is the SKYCITY entertainment complex, which features a world class casino with 1,600 gaming machines, a multitude of award winning bars and restaurants, a 700 seat theatre, a convention centre and two hotels. By 2019 it will also house a new \$402m convention centre catering for up to 3,500 guests.

With tens of thousands of visitors using the facilities at SKYCITY every day, maintaining excellent comfort conditions, while using energy in the most efficient ways possible, is of great importance to the owners and managers of the building. Although it was originally installed with a building controls infrastructure,

this had become unreliable and inefficient, so the time had come to replace it with a state-of-the-art solution.

Stuart Bryant, Facility Services Manager at SKYCITY Auckland, explains, 'The previous system was costing an increasingly large amount of time, effort and money to maintain. In addition it was closed protocol, which meant that we were tied to one vendor, which I wasn't particularly happy about. The time had come to invest in a new BEMS, so I contacted Control Air to see what we could do.'

Call and response

Control Air is one of Auckland's leading designers and installers of BEMS and a longstanding Trend Systems Integrator. The company has been involved with a number of significant projects throughout the city and beyond, and is considered one of the country's foremost BEMS experts.

'The existing BEMS was getting very old and no longer met the requirements of SKYCITY,' comments Blair Rollinson, Operations Manager at Control Air. 'This, however, gave us the opportunity to configure a solution that would use the latest state-of-the-art control devices from Trend and utilise the advantages of an open protocol solution.'



This would achieve outcomes that were positive to the business commercially, functionally and environmentally.'

Control Air began by carrying out an energy audit to review how the building was being used and identify opportunities where energy savings could be made.

It included recommendations to facilitate further quantified improvements, addressed the impact of the recommendations in relation to current environmental data and legislation, and was presented as a full business case with expected return on investment (ROI).

Seeing is believing

Central to Control Air's strategy was Trend IQ®VISION. The successor to the pioneering 963 Supervisor, IQ®VISION integrates Trend controllers, third party smart devices and internet protocols into a centralised software platform that is designed to manage buildings at an enterprise level, giving building owners and managers the ability to identify issues and optimise their systems.

Providing graphical information to standard internet browsers, it boasts a diverse range of useful functions such as centralised data logging, archiving, alarming, trending, master scheduling, system wide database management, and integration with enterprise software applications – all of which can be used for highlighting and investigating energy use within SKYCITY. Blair Rollinson says, 'There are five new user workstations which connect to the IQ®VISION server via a client connection for both the management and maintenance staff to use. They have access to the system, with remote access to the site, via a virtual private network (VPN) connection.'

The BEMS operates over a newly installed structured cabling system that comprises Category 6 unshielded twisted pair (UTP) copper cable. Connected to it is BACnet protocol master-slave/token passing (MS/TP) communications cabling, which, in turn, is linked to

mechanical services control panels (MSCP). Two new servers were also installed along with a network attached storage (NAS) back-up system with removable USB drives for offsite storage.

Component parts

In order to minimise disruption, the project had to be completed in a fully operational site with no downtime or unoccupied periods, and to assist with this all panels were pre-configured.

A wide range of Trend devices were used within the building including the IQ®4E, which offers unrivalled levels of functionality and is available in 16, 32, 64, 96, 128, 160 and 192 point variants. It has outstanding I/O bus capabilities, with an available length of up to 300m and the potential for 30 I/O modules to be configured. It was also necessary to integrate some existing remaining BACnet controllers into the BEMS, something that was made easier thanks to Trend's open protocol.

Control Air also specified IQ®3xcite controllers across the entire complex, which incorporate internet servers that can deliver user-specific web pages to a PC or mobile device, as well as IQ®4NC node controllers that enable Trend products to seamlessly talk to each other across multiple communications networks. These were complemented by IQ®eco devices with higher capacity, greater flexibility and more inputs and outputs than other similar sized terminal unit controllers.

Winning hand

For SKYCITY Auckland's Stuart Bryant, the original brief has not only been met, but exceeded, and he concludes, 'Control Air was extremely methodical in its approach to this project, systematically working

through the challenge of changing out controllers via a 24/7 operation. Any issues encountered along the way were addressed in a timely and professional manner and they made the process as smooth as possible. With the BEMS itself, the IQ®VISION graphics are of a high standard, making the front end easy to navigate. The new system is keeping everyone happy and comfortable – we have received unanimously positive feedback and look forward to making further energy saving and operational efficiencies in the future.'



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