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From coast to boast



Inside the building, sensors and a programming system help minimise the use of lighting.

building, it's fine to have a full-scale building management system (BMS) in place. However, a 10-storey building doesn't warrant such a large system. You need something that is smaller and easier to manage, but still allows the tenants to have input and control," Peter says.

"We identified that KNX was unquestionably the right path to go down for this project because of the flexibility of the system and the extensive choice of products it gave us access to.

"KNX allows you to have thermostats and light switches dotted around a room, AV control in another room, and then a motion sensor to put everything to sleep when it's not in use. Not only that, but all the products can be from different manufacturers and everything can run via a single cable. It's amazing. There are almost endless possibilities – it just comes down to the budget and practicalities of the project."

Construction was already under way at the Surf Coast Shire office before mySmartCTI came on board; however, the holistic integration was integral in ensuring the building gained a high Green Star rating.

"They had already put a plan for a 'green' building in place, but they realised they needed a properly converged solution for the premises to function efficiently.

"With buildings like this, it's easy to just install an efficient air conditioning system, solar panels and some water meters, but when they're all separate entities, that's as good as useless. Everything needs to be tied together.

"We used KNX because many other systems are tied to a proprietary manufacturer or are primarily aimed towards lighting control. We needed a protocol that was more universal. That's why we stepped in with KNX."

AN AUSTRALIAN SYSTEM INTEGRATOR HAS USED KNX TECHNOLOGY TO HELP TURN A GOVERNMENT OFFICE INTO A HIGHLY EFFICIENT, NECA AWARD-WINNING BUILDING. **CALLUM FITZPATRICK** REPORTS.

Located in the quaint coastal town of Torquay, along Victoria's iconic Great Ocean Road, the Surf Coast Shire Council office presents a hallmark in environmentally sustainable design.

Winner of both the KNX International Award for Commercial Projects and the Victorian NECA Award for Excellence in the 'Energy Efficiency and Environment' category, the premises is also the only civic property in regional Victoria to achieve the Green Building Council's

five-star Green Star rating.

The project had a number of eco components which helped it attain the accolade – including energy efficient lighting control and sports field floodlighting, pressurised underfloor air conditioning, a solar PV system, wind turbines and an extensive energy monitoring and display solution.

System integrator mySmartCTI worked closely with ADJ Electrical Contractors to cleverly utilise KNX technology to integrate all the technologies together.

mySmartCTI managing director Peter Garrett, who is also on the KNX National Group Board of Directors, says the company adopted KNX technology around three years ago, after seeking a solution for mid-sized commercial projects.

"When you're dealing with a 30-storey

Peter says that with mid-sized projects, communication between the various trades is paramount.

"We design everything and work out how all the different systems will be controlled, how we can interface with them and which ones can sit next to each other. Then we instruct contractors to install certain devices and we supply them with all the relevant products.

"It's also very important to sit down with all the different trades, brief them properly and provide them with the relevant drawings. Then our team link all the different technologies together."

LIGHTING

One of the first things the mySmartCTI team had to identify was where the biggest energy consumers were.

The floodlighting located on the nearby sports fields naturally drew a significant amount of energy, so manual switching of each individual luminaire was provided via a wall-mounted touch screen. This allowed each of the floodlighting poles to be switched separately and selectively.

Inside the building, sensors and a programming system help minimise the use of lighting. Motion sensors turn off lights in vacant spaces, and light level sensors dim artificial light where a natural source is sufficient.

ENERGY SAVING CLIMATE CONTROL

The building cleverly utilises an internal atrium to maximise natural light and ensure efficient climate control and air circulation before the need for any air conditioning.

Vents and a fan at the top of the atrium help naturally expel hot air, while louvre on the northern side help reduce incoming heat.

Additionally, a high level of insulation, air-tightness and double-glazing lowers the running costs of any climate control technologies and significantly lowers greenhouse emissions.

To ensure efficient heating and cooling, a thermal plant with a gas boiler and air-chilled cooler was installed, while under-floor vents supply heated or cooled air; controlling the temperature and providing ventilation with minimal energy costs.



Located in Torquay, the Surf Coast Shire Council office presents a hallmark in environmentally sustainable design.

CONTROL

A mySmartCTI KNX automatic lighting control (ALC) system and equipment control system were installed to control and monitor functions around the Civic building.

"This display panel allows them to control water and gas meters and the air conditioning systems, and they can see where their energy is being used and which are the highest consumers. They can also control the lighting everywhere in the building, as well as the sun shades," Peter says.

Additionally, a 42" widescreen LCD digital noticeboard was installed in the ground floor foyer to provide graphical display of real-time building performance data and statistics.

To gather the information, a high level output module was included in the solar system's inverter and in the wind turbine system to enable data to be downloaded by the mySmartCTI KNX system.

"Displaying the information in the foyer allows the client to educate visitors about efficiency and it helps illustrate that they are on top of their social responsibilities.

"It also displays information about the current ambient conditions. A station on the roof is programmed to collect data about wind speed, wind direction, temperature and brightness."

Peter says that the display helps keep the staff conscious of the environment, and raises awareness about energy use.

"This particular project was very

much about visibility," he says.

"We needed to make sure people could easily absorb information from different energy sources, and they could all be published in a neat way."

Peter adds that the team was able to get so much information published on-screen by planning early.

"When you are aiming for a high level of convergence, you need to make sure you get in early and get all the trades talking to each other," he says.

"The later you arrive onsite, the harder it is to get all the separate divisions communicating properly."

Peter says that the biggest challenge for mySmartCTI was people management.

"It's common for big commercial office blocks to have some level of convergence, but it's much harder on a smaller project. You constantly have to liaise with all the trades and make sure everything has been calibrated correctly – especially all the gas and water meters," he says.

"Then when you publish all the information on a screen for everyone to see, small errors suddenly become very large problems.

"Almost every other day you have to meet with another team to make sure they're on track and they have everything they need. It's a lot to manage, but we always get there in the end." **CH**

mySmartCTI
www.mysmartcti.com.au