DUBAI-BASED PACIFIC CONTROL SYSTEMS MAXIMISES EFFICIENCY WITH MINIMUM USAGE OF POWER. **PATRICK MICHAEL** FINDS OUT HOW THE SMART MECHANISM WORKS AND HOW THE COMPANY IS BUSY PLANNING AN INTERNATIONAL ROADMAP

Critical control

REMOTE CONTROL: State-of-the-art video wall at the Global Command Centre at Pacific Controls, Dubai. KT Photos/ Juidin Bernarrd

In a quiet corner of Dubai stands a cylindrical-shaped, concrete and glass building, each panel of it underscoring efficiency and hi-tech capabilities. This unusual building faces the Waterfront, a development that will ostensibly be twice the size of Hong Kong when completed. And yet, it has a special character that makes it stand out from the rest of the constructions, like an oak in a concrete forest.

Inside, there is nothing but testimony to technology that starts at the door and percolates right to the top.

Welcome to Pacific Control Systems (PCS), Dubai.

As you enter the blue glass portals, an LCD panel in the reception flashes a welcome and you know this is technology at its sharpest. You are whisked away to a large conference room and introduced to Dilip Rahulan — chairman, CEO and the 'brain' behind the building's exceptionally functional parameters.

So what makes this technology extraordinary?

"Maximisation of efficiency with minimum usage of power: the trick lies in having created a control mechanism that ensures zero bleeding, wastage or loss," says Rahulan. The energy to maintain this high degree of efficiency comes from the solar panels adjacent to it; 25 per cent of the cooling load and 100 per cent of the lighting load during the day are fuelled by solar thermal and solar photovoltaic panels. Inside the building, are two state-of-the art Command Control Centres designed to monitor all buildings in Dubai for fire and elevator alarms that are always on duty. The centres help operators detect fire alarms, lift alarms, emergency alarms, medical alarms and maintain the heartbeat of buildings in real time.

In the event of a fire or an emergency breakdown, a critical alarm is sent to the Global Command Centre automatically. A display system instantly displays the building location, produces a capsule of data identifying the problem, charts details of an evacuation plan, and marks the different access and exit routes for the fire-fighters and those inside the crisis circle.

Its operators are specially trained to spot changing parameters and identify alarms so that they can redeploy fire department personnel, maintenance or intervention teams and reduce the damage factor; with its GPS tracking system relaying the shortest route to a blaze, containment is assured.

Over 60,000 buildings will be covered in five years' time. However, PCS has taken it up as a challenge to complete the project in three years and, so far, 8,500 buildings have been connected. From Pacific Control's relatively silent interiors, a workforce manages energy services, facilities management alarms and data of more than 1,000 buildings in Dubai — even as far away as the US, the UK, India, Japan and China through a global network. This is the Global Command Control Centre for energy services that has created a new dimension of managing energy and services in buildings — from a building-centric perspective to a city-centric perspective.

The system uses state-of-the-science technology to conserve energy by addressing and optimising various devices and equipments in real time. The HVAC (Heating Ventilation and Air Conditioning) Systems are controlled to ensure substantial energy savings of as much as 25 per cent. Smart energy meters are installed in all buildings to ensure measurement and verification of carbon footprints.

ENERGISED: Solar panels provide energy for all operators within the Pacific Control Building.

In times of economic turbulence, companies around the world are cutting costs and controlling expenses. The competitive landscape has changed and for many, it is a battle for survival. "Only those who turn to innovative technology will win the battle against high costs, overheads and limited energy resources. They are those who opt for the cutting edge of new technologies and understand the need to harness them for creating an environment that is less exploitative," says Rahulan.

He is passionate about the reasons for this decision. "We began operations as a reseller of Honeywell. In due course, we launched our own devices and solutions to the market. The products were made available at about half the market cost, they were more technologically competent and easy to install and use," he says.

During the last decade or so, there has been a major shift in the automation industry business. Information technology converged with traditional automation technology. Almost all automation is now possible with the use of Internet protocol (IP).

PCS was the first to jump on to this bandwagon in the automation space, and now has a clear lead over the competition. "We offer technology that integrates multiple systems," Rahulan points out. "Pacific Control has pioneered the concept of Knowledge Process Outsourcing (KPO) in the energy services and facilities management industries and has established the world's first Global Command Centre. The KPO concept is catching on and many nations are waking up to the idea of exercising new and high-efficiency options to maintain and fuel their needs."

Recently, PCS signed a deal with a multinational organisation in the US to monitor its assets. The pilot project is scheduled to start shortly. The customer has a vision to connect 3,000 buildings across the US. The deal is expected to provide massive savings for the US client, especially through the tabs that will be kept on energy usage in their set of buildings. As US laws do not permit the transfer of Intellectual Property and data across its borders, PCS is in the process of setting up a global command control centre in the US.

The Dubai company is also in talks with a Japanese utility company to hammer out a similar deal. It has set up and activated data centres in Dubai, New York, London, Singapore, New Delhi and Sydney to enable it to monitor and manage its clients' assets spread across the world. In Dubai itself, it has worked on implementing and installing green home systems with energy meters that determine carbon footprints and help in reducing costs of nearly 2,000 houses in Arabian Ranches.

With all these projects in hand and long-term savings on energy costs being an accountant's dream scenario, it is no surprise that PCS has been hiring staff when others are retrenching.

The UAE has the highest energy consumption in the world in per capita terms. Globally, 40 per cent of energy is consumed by buildings. In Dubai, about 70 per cent is consumed by buildings.

"Through deploying of PCS hardware and software in buildings and monitoring and optimising the operations of electro-mechanical systems, they have been able to achieve more than 25 per cent energy savings in pilot projects across the country including buildings belonging to DEWA, " points out Rahulan.

Automation is the future, he feels. PCS has provided solutions for mission critical operations like the building integration system for the Dubai International Airport Terminal 3 where all major sub-systems are seamlessly integrated on a single IP platform creating a unique operational platform delivering unified services and data for enterprise resource planning in real time. This has resulted in seamless operations at the airport, creating not only energy savings, but also operational efficiency. The leading global total automation solutions provider recently implemented a converged campus integration solution for King Abdullah University of Science and Technology in Saudi Arabia. The challenging assignment is now a major showcase for PCS's capabilities and delivery mechanisms.

And why not — when you have tomorrow at the touch of a button and a thinner bill at the end?

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What's your carbon footprint?

Pacific Controls' Dilip Rahulan explains why we should be aware of our individual and collective carbon footprint

Patrick Michael

Why is the measurement of a person's carbon footprint important?

The carbon footprint is a powerful tool to understand the impact of personal behaviour on global warming.

Most people are shocked when they see the amount of carbon dioxide their activities create. If you personally want to contribute towards stopping global warming, the calculation and constant monitoring of your personal carbon footprint is essential.

The introduction and ratification of the Kyoto Protocol by a number of countries has made countries look at the issue of environmental sustainability in a new light.

The Kyoto Protocol has opened the route for initiating sustainable development with an added dimension of commerce, thereby making environmental conservation also a successful commercial model.

Is measuring of one's carbon footprint a new exercise?

The traditional approach of accounting includes use of worksheets where data is collected manually. The data is then compiled and calculated to give you the amount of emissions as a whole. The process becomes tedious and there is a high probability of error due to human interface.

How is Pacific Controls' system different from others?

With the smart metering technology of Pacific Controls, home and building owners can monitor how much energy individual devices use. A typical household has 27 devices that are continuously on, according to the Electric Power Research Institute.

This means that even though you're adjusting your thermostat to save energy, and getting rid of all of your incandescent light bulbs, watching that new LCD television might wipe out all your efforts.

Nearly 35 per cent of the average building utility bill could be influenced by Pacific Controls' smart system. Home and building owners can use the interactive energy management tools to create energy management profiles that are triggered by certain established consumption rates.

As energy consumption exceeds a specific point, the system can automatically begin turning off low priority lighting, heating and cooling zones.

The application also provides monitoring of the cost of electricity usage as per established tariffs based on slabs or any other rate patterns such as peak rates and off-peak rates. Using appliances like washers, dryers, air-conditioners and dishwashers during these off-peak hours can lead to substantial savings in electricity bills.

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GO GREEN: Dilip Rahulan looks at the environment in a new light.