

# To build smart cities, we need smart buildings

 By [Neil Cameron](#)

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As the global urbanisation trend picks up, smart cities are emerging. With efficiency as a key driver, these cities make use of Information Technology intelligently and dynamically to harness the natural, infrastructure and technology resources needed to operate optimally and sustainably.

In South Africa, smart cities are likely to be a reality within three to five years - to build them and to leverage the benefits they offer, we need smart buildings.

The concept of smart buildings is not new, but awareness and adoption of the technologies and approaches needed to create smart buildings is lagging. Now is a good time for organisations to shift their thinking and position themselves to reap longer term rewards; the benefits of smart buildings are proven and those benefits increase exponentially in a smart city.

Smart buildings can communicate with all the equipment inside them, automating and regulating the environment (air temperature, humidity) to ensure the wellbeing and productivity of occupants, and making smart security and energy conservation decisions through integration of multiple systems, from lighting to security (access control, CCTV and intrusion and perimeter security systems), emergency response systems and utility metering.

## IT and big data

Smart cities make use of IT and big data - data from devices, sensors and meters, equipment, transport systems, smart energy grids, social platforms, government and industry databases - to regulate and conserve the use of scarce resources, optimise the operation of critical systems, generally improve the lives of inhabitants, and drive their greater sustainability agendas. 'On grid' buildings, organisations and individuals that support its objectives (e.g. energy conservation at peak periods, pollution control, greening of the city, etc.) are likely to be rewarded through rebates and preferential pricing.

However, to get on the smart city grid, companies have to think bigger. They must connect more equipment into the system, they must know where their people are within their facilities, and they must connect to and synchronise their operations with the strategies of the smart city.

To do this, they must do more than use their building management systems to control simple systems, such as heating, ventilation and air-conditioning (HVAC) solutions. By also linking up key building systems (lighting, energy metering, security, access control, etc.), organisations can simultaneously manage, monitor and control these systems to meet their own energy conservation and other objectives. By then locking in to smart city systems, they can respond to city imperatives (e.g. a seasonal demand to limit energy consumption), dynamically adapting energy usage by, for example,

turning off non-critical equipment or switching off lights and heat in unoccupied areas of the building. This dynamic synchronisation with smart city imperatives is something that can, with use of smart algorithms, be automated.

In this scenario, everyone wins. The building becomes smarter and costs and performance of systems are optimised. When the building becomes a functional component of the city, empowering smart city strategies, the sustainability of the city is improved and the lives of citizens are improved.

How can you start? Assess the building systems you have in place, understand the opportunity that smart building and smart city environments present, and set realistic goals. The solutions are not difficult to implement, the returns are proven and the long-term benefits are attractive.

## ABOUT NEIL CAMERON

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