

BUILDING MANAGEMENT SYSTEM



Centralised digital control system for **lighting, heating** and **cooling**

Avoid wasted **energy** by **monitoring** occupancy levels and supplying **appropriate** temperatures as **required**

Monitor information and log all **faults** and **issues**

WHAT IS BMS?

A Building Management System (BMS) is a set of digital controls that automate centralised services, like heating, cooling and lighting in a building. These controls are connected to a networked computer, so that this service equipment can be controlled from a computer via the internet.



TECH SPECS

A BMS is a centralised digital control system linked to a set of digital sensors that measure aspects like temperature, pressure and flow of building mechanical systems. For instance, thermostats that measure a room's temperature will send information to a control panel of electronic switches, timers and variable speed controls. The control panel will then in turn send program information to plant equipment components like fans, dampers, chillers and boilers, causing them to respond to changes in temperature or other programmed set points. This will make sure that rooms maintain the parameters set by the BMS for a balance

of comfort and economy, and stay at a comfortable temperature all year round.

The benefits of a BMS is that all the sensors, control panels and plant equipment are connected to a networked computer system, allowing the heating, cooling and lighting of a building to be observed and controlled remotely.

The computer interface with a BMS will typically include a set of programmable temperature or lighting set points, so that a building's



thermostat settings are automated to respond to seasonal changes like the number of daylight hours or changes in weather outside. Good BMS systems allow you to create detailed programs that ensure a building stays well lit and a comfortable temperature all year round, with the most efficient use of energy.

THINGS TO BE AWARE OF

- Some BMS systems are limited in the number of data channels they can control. This means that a building manager may not be able to have enough zones across a building to

respond to different occupancy rates, or that the control of plant equipment (like chillers and boilers) may be limited to a basic 'on' and 'off' signals and not be able to optimally control equipment.

- Make sure you plan and scope out a BMS carefully so that it is large enough to control your equipment to the level of detail that you require.
- Build contingency into a new BMS so it has the capability to include future expansion as more efficient equipment becomes available (e.g. adding economy dampers & variable speed drives to older mechanical systems later).
- Access to electrical circuits in existing buildings, and their physical location may make connection to a BMS control panel complex or difficult.

BENEFITS

The benefits of BMS systems are numerous, but generally include:

- A more comfortable and healthy indoor environment quality
- Energy efficiency savings by avoiding

wastage from inappropriate temperature settings or operation during non occupancy hours

- Greenhouse gas savings, associated with reduced energy use
- Easy management and control of central services from a remote location
- Ability to monitor and log all information, including any faults and issues that may occur with faulty equipment

IN ACTION AT BRUNSWICK TOWN HALL AND LIBRARY

Replacing an old analogue system, the new system installed at the Brunswick Town Hall and Library, allows engineers to tune the building to its precise requirements and reduce wasted energy in heating and cooling. It is capable of monitoring building occupancy in different areas and making sure only occupied areas are heated and cooled as needed.

The new BMS is expected to save over \$15,000 in energy costs each year and 120 tonnes of greenhouse gas emissions (CO₂e), just by having better control over delivery of heating and cooling.

IN ACTION AT MORELAND CITY COUNCIL



Fine tuning a BMS for maximum efficiency (this can also be done remotely with a web browser)



Australian Government



Moreland City Council

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