



FACT SHEET

Building Management Systems

What is a Building Management System?

A building management system (BMS) helps to control and monitor building equipment for ventilation and lighting, as well as systems for power, fire and security.

Effective management can reduce energy consumption, improve environmental management, and maximise cost and operational efficiencies.

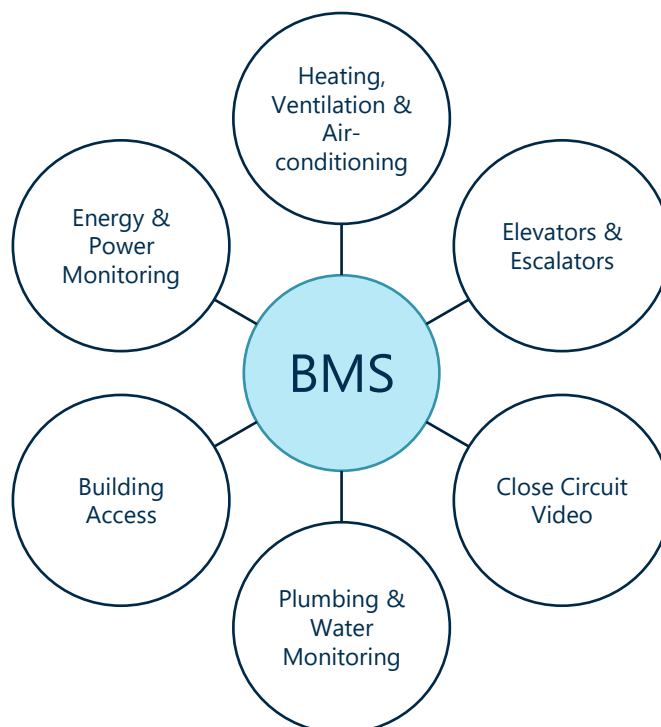
This factsheet includes:

- What to consider before implementing a BMS
- Functions of a BMS
- Control systems VS BMS
- Getting the most out of your BMS
- Using a BMS for heating, ventilation and air-conditioning (HVAC) and lighting systems

FUNCTIONS OF A BMS

The four basic functions of BMS are **controlling, monitoring, optimising** and **reporting** on facilities and mechanical and electrical equipment for consistent comfort, safety and efficiency. Control systems typically manage individual building services such as heating and hot water, ventilation, cooling and air conditioning, and lighting and shading systems.

The most commonly integrated component is a heating, ventilation and air-conditioning (HVAC) system. Other services that can be integrated include elevators and escalators, close circuit video (CCTV), plumbing and water monitoring, building access (swipe cards, access keys etc.) and energy and power monitoring.



BENEFITS OF A BMS

If used effectively, the following benefits can be achieved through an integrated BMS:

- Saving costs on energy consumption.
- Extending the life span of fittings, equipment and appliances.
- Reducing environmental impact and conserving resources.
- Enhancing your reputation and image.

CONTROL SYSTEMS VS BMS

In larger buildings or properties with interacting services, control systems are often linked together through one overarching system, which is a BMS. All control systems are linked to one comprehensive user interface to facilitate monitoring and control through one access point.

Assessing which building controls should be integrated into the BMS may initially be a question of cost. Not all systems have to be integrated at once and systems can be added or excluded over time.

Implementing a BMS does not require all existing systems to be replaced, however it must be correctly specified, installed and tuned to deliver its full potential of optimising energy consumption.

GETTING THE MOST OUT OF YOUR BMS

The most common issues with a BMS arise due to a lack of attention and importance assigned to the system. It is crucial that optimal operation procedures are in place and staff are familiar with operating the system on a daily basis to ensure efficiency. Some key actions to assist with optimising BMS usage include:

- ✓ Sufficient staff training and knowledge transfer for operators.
- ✓ Adjust default settings for optimal operation.
- ✓ Keep trend-logs and documentation for key parameters to identify mal-performance.
- ✓ Assess the system regularly to ensure functionality and performance of controls.
- ✓ Ensure existing control components are compatible.

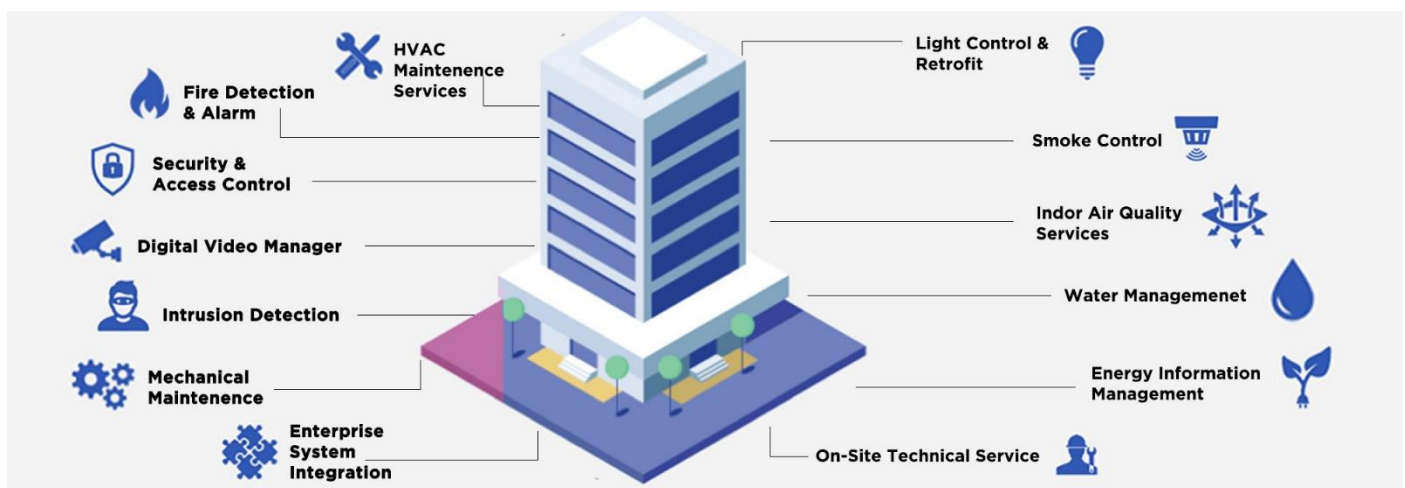


Diagram – Truvic Online

BMS FOR HVAC AND LIGHTING SYSTEMS



Optimise operation times

- Heating and cooling of areas requires time to pre-heat or pre-cool before comfortable conditions are reached.
- Instead of setting fixed times for pre-cooling or heating, BMS can base the starting times on external weather temperatures or at night.



Avoid leakage and solar radiation

- BMS can program the HVAC to switch off and avoid leakage of cool or hot air, if windows or doors are open.
- Automated closing of blinds on the sunlit side of a building can also have a significant impact on consumption.



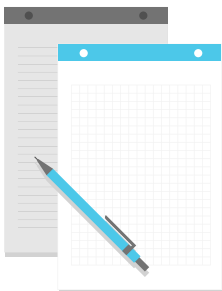
Lighting and control systems

- By integrating existing lighting control systems into BMS and implementing energy efficient bulbs, your systems can be programmed and monitored centrally to optimise energy efficiency.

WHAT TO CONSIDER BEFORE IMPLEMENTING A BMS

Not all buildings need the same type of BMS, as such prior to installing a BMS it is important to understand your energy usage and how energy could be reduced. It is also important to check whether the installation is viable matching your challenges with an appropriate solution. It is also important to determine economic and environmental targets that could be achieved prior to installation.

One of the key benefits of a BMS is being able to monitor consumption and costs, however not all buildings require the same type and complexity of control. Businesses should consider the following:



- Do you have sufficient budget (sometimes costing hundreds of thousands of dollars for implementation), time and expertise to acquire, run and maintain a BMS?
- How much could be saved by implementing a BMS and what would be the return on investment?
- Are there any control systems in place that require linkage to the BMS?
- If you prefer other control systems to the BMS, how can you maximise the systems' capabilities?
- If you already have a BMS in place – how old is your system? If it is older than 10 years it may require an update.

CASE STUDY



GOLD COAST CONVENTION AND EXHIBITION CENTRE

The Gold Coast Convention and Exhibition Centre (GCCEC) is a world leading sustainable meetings and events venue championing social and environmental stewardship. GCCEC uses a BMS to regulate and reduce energy consumption throughout the building based on daily or hourly requirements. Multiple control systems are linked and monitored to control building services that are managed by software.



GCCEC uses a BMS to help reduce energy consumption by up to 50% during off-peak periods.



Lighting and air conditioning are controlled in hallways, meeting rooms and exhibition halls with a touch of a button.



SMS and email alerts have been enabled to inform key personnel when inefficiencies or breakdowns occur.