



# BUILDING MANAGEMENT SYSTEM (BMS)

By

Dr. Abdulmohsen Al-Hammad



## Building Management System (BMS)

### Definition

Building Management System (BMS) is a high technology system installed on buildings that controls and monitors the building's mechanical and electrical equipment such as

air handling and cooling plant systems,  
lighting,  
power systems,  
fire systems, and  
security systems.

BMS consists on software and hardware.

Software program, usually configured in a hierarchical manner, can be:

a-proprietary using such protocols as C-bus, Profibus, etc.  
b-that integrate using Internet protocols and open standards like SOAP, & XML, BacNet, Lon, Modbus,



## Building Management System (BMS) THE GENERAL CONCEPT

Why do we need a Building Management System?

All Buildings have some form of mechanical and electrical services in order to provide the facilities necessary for maintaining a comfortable working environment. These services have to be controlled by some means to ensure, for example, that

there is adequate hot water for sinks,

the water tank is full

the cooling with ventilation and possibly heating is provided to ensure comfort conditions wherever, irrespective of the number of occupants or individual preferences.

the security is well controlled and monitored, etc.

Basic controls take the form of manual switching, time clocks or temperature switches that provide the on and off signals for enabling pumps, fans or valves etc.



## Building Management System (BMS) THE GENERAL CONCEPT

The purpose of a Building Management System (BMS)

is to automate and take control of these operations in the most efficient way possible for the occupiers/business, within the constraints of the installed plant.



### Building Management System (BMS) THE GENERAL CONCEPT

What is a Building Management System and how does it work?

The BMS is a “stand alone” computer system that can calculate the pre-set requirements of the building and control the connected plant to meet those needs.

Its inputs, such as temperature sensors and

outputs, such as on/off signals are connected into outstations around the building.

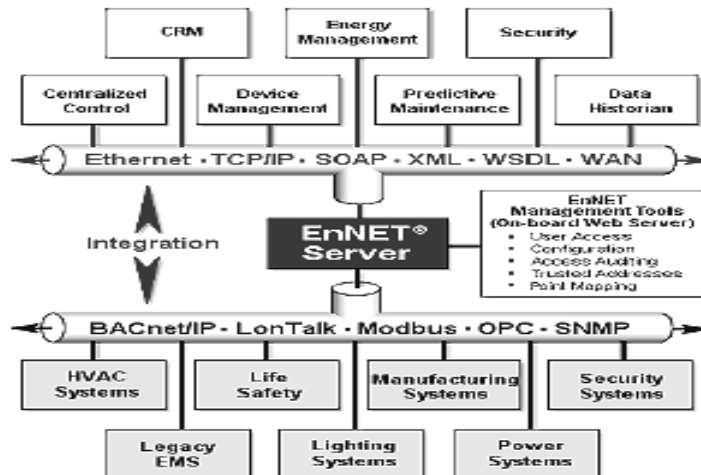
Programmes within these outstations use this information to decide the necessary level of applied control.

The outstations are linked together and information can be passed from one to another.

In addition a modem is also connected to the system to allow remote access.

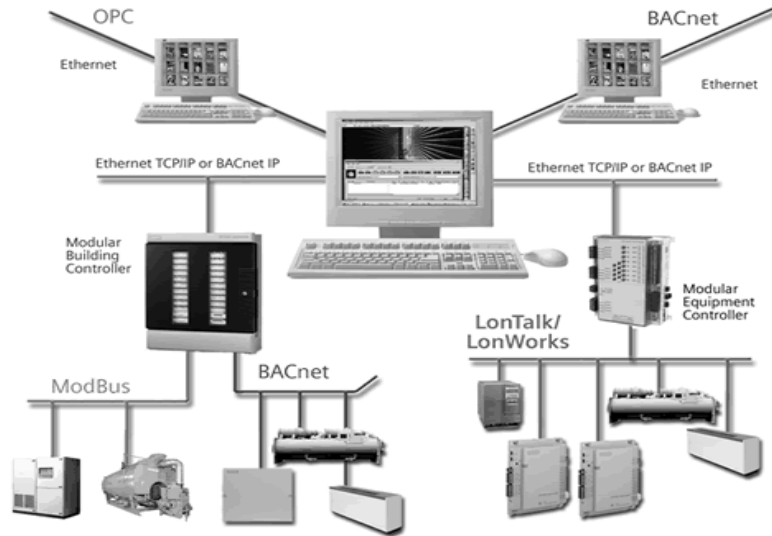


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What is a Building Management System and how does it work? ( Continue)

The level of control via the BMS is dependent upon the information received from its sensors and the way in which its programmes tell it to respond to that information. As well as offering a precise degree of control to its environment,

it can be made to alarm on conditions that can't meet specification or warn of individual items of plant failure.

Occupancy times for different areas are programmed into the Building Management System

such that the plant is brought on and off to meet the occupier requirements.

These times are often under optimum start control. This means that the cooling plant is enabled, at a varying predetermined time, to ensure that the cooled space is at the set desired temperature for the start of the day.



### Building Management System (BMS) THE GENERAL CONCEPT

What is a Building Management System and how does it work? ( Continue)

The Building Management System therefore, based on the outside air temperature the space temperature and the building structure, determines the plant start time.

Application live

The University's BMS Bureau

<http://www.fmd.reading.ac.uk/maintenance/bms.asp>

The Building Services bureau at 1-9 Old Park Hill offers the benefit of all sites being observed in the same location so that comparisons can be drawn. It is also more economic than manned attendance at each site.



*Thank You*