

## **Is HVAC Control by Building Automation system Important?**

HVAC system or generally called “**Heating, Ventilating and Air Conditioning**” is the main factor of buildings, factory, office, and hotel and department store. The worse the control of HVAC system, the more the expenses of maintenances.

In the past, the management of HVAC requires more human resources in order to maintain or even Log Sheet recording. The most efficiency of Log Sheet recording need to deliberately record all information such as chiller data, Inside-Outside Building temperature, Water Temperature, control inside and outside buildings. The reasons why we need to keep record deliberately in minutely, hourly, monthly or yearly are to analyze to improve the efficiency. In HVAC System Log Sheet, Data History is necessary to analyze and solve the problem.

You can see that the management of Log Sheet is required human to record information deliberately; otherwise, the information will be inaccuracy and too late to solve the problem promptly.

The idea to resolve the difficulty of HVAC system is to manage things centrally or called “Centralize Management”. This concept use the idea that central unit can control devices automatically, approach every system information and prompt to view equipment performance. We called this management “Building Automation System” or Intelligent Buildings.

## **How Building Automation System work?**

- BAS (Building Automation System) uses the concept which every equipment/every part will be controlled and managed automatically that implement the information to analyze. For example, the On-Off Schedule for equipment or machine accurately is used to reduce human error such as they forgot to switch on and off. This also include in lighting, elevator system. But in this article, we refer to BAS system which relevant to HVAC system.

## **When we decide to combine Automation system and HVAC system, the owners have to plan the followings:-**

- They have to inspect HVAC system what we have, how many which are usable, how many which are damaged such as Chiller, AHU, Cooling Tower, Motor and etc.
- They have to learn and contact the equipment suppliers in HVAC system to check if each equipment can connect with peripheral console to interface or not. (In case, the equipment could not interface to retrieve information. The owners have to replace with the new model

or find controller equipment such as Input-Output module to interface.)

- Assign staff to in-charge system especially.
- Budget depending on structure, complication and the size of system.(ex. hardware protocol converters RS232, RS485 communication) Microcontrollers Module, Inverter, Computer.

### **Why HVAC Building Automation system are Needed**

The most highly desired services and amenities were

- Comfortable temperatures
- Easy Management and Centralize Management
- Good indoor air quality
- Control Humidity
- High-quality building maintenance
- Responsive building management
- Building management's ability to meet tenant needs
- Effective noise control
- Reduce Human Error

BOMA also asked which of a set of thirteen intelligent building features were considered most important.

The results were

HVAC systems that provide comfortable temperatures

- Ability for tenants to control comfort
- Built-in wiring for the Internet or LAN
- High-speed LAN/WAN connectivity
- Conduits for power, data, and voice cabling
- Controlled access security system with monitoring
- Redundant power source

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