



With energy costs continually increasing and a growing awareness of the “Green” movement worldwide it’s no surprise that there is a growing industry centred on Building Automation Systems (BAS). Ultimately BAS is moving towards the creation of “smart buildings”, facilities that can manage themselves with respect to heating and lighting controls in an effort to use energy resources wisely. The control and use of energy for heating and lighting purposes can be controlled in a simple “on/off” way or it may be controlled in a graduated way that takes into account changing heat and light conditions throughout the day.

Building Automation Systems uses a number of different technologies in order to control when **heat** and **light** is used in an office, boardroom, warehouse or other setting that may require heat and light for only a portion of the day.

In many facilities such as large warehouses or office complexes as much as **70% of energy costs are related to lighting**. These costs can be significantly reduced by designing a system that turns lights on only when a space is occupied. This is done by integrating occupancy sensors with the lighting system. Occupancy sensors fall into two categories, those that sense movement and those that detect an infra-red heat signature. Ideally a combination of the two types is deployed to maximize energy savings. Appropriate design consideration should be given to the number and location of these sensor devices. Sensors can be used in combination with a light detection device and variable power switch which would determine how much light is available from an outside source such as a window or skylight. During peak daylight hours lighting power in the building would be reduced. In late afternoon and towards nightfall the power would be gradually increased, allowing a gradually increasing level of light. The result of this would be a graduated level of man-made lighting to “top up” the amount of ambient light to a pre-set level of light in a given room.

Adding another level of energy efficiency would be use ultra-efficient LED lighting that runs on low voltage cabling. Combining all available energy saving initiatives for lighting can **save approximately 70-80% of a facility’s power consumption** relating to lighting.

Heating controls operate in much the same way as lighting controls and can be equally impactful on reducing energy costs. A series of occupancy sensors will govern whether or not heat is applied to a room. These controls can also be set for pre-determined times to achieve pre-set temperatures. For example heat and light could be applied to a boardroom booked by an individual tied to that person’s access control card. BAS connected to an Outlook calendar, access control, heating and lighting systems could adjust heat and light in advance of a scheduled meeting set for a particular boardroom upon noting that the person responsible for booking that boardroom had just entered the building. All sensors can also be IP enabled meaning that building heating, lighting and other mechanical controls can be controlled from a remote location through a smart phone or other internet connected device.



Not unlike “just in time delivery” of parts for an automotive manufacturing line, heating and lighting are applied only as needed, making for a very energy efficient building. These types of controls are now considered a must for certain levels of LEED certification in building construction.

For more information on building automation systems and how Fancom can help with your company’s energy saving initiatives, please call us at **905-990-4845** or send an email to **info@fancomni.com** indicating “BAS” in the subject line.