

9 initiative



Initiative 9: Controls

Educate users to the benefits of simple control strategies.

Encourage use of automation systems where possible.

Integrate remote control and machine-to-machine technology.

Educate users to the benefits of simple control strategies.

Building controls can make or break the energy efficiency of a commercial building. Part L 2006 of the Building Regulations recognises this fact, emphasising the crucial role that building control systems have to play in ensuring that all building services equipment operates at optimum efficiency levels.

Building controls should be at the heart of a modern commercial building, ensuring smooth operation and long-term energy efficiency. Given the growing responsibility of building operators to monitor and document building operation, a controls system can make this task very much easier.

Mitsubishi Electric LES recognises that different buildings will include different levels of control – from simple room-based wall mounted operating units, to complex building management systems which control a whole building and a range of building services equipment.

Often the simplest of controls can create a big impact on energy consumption. All Mitsubishi Electric LES equipment is delivered with its own simple hand-held controller, to help occupants use its equipment in the most efficient and effective way. Mitsubishi Electric LES recommends the following simple steps to help reduce a building's energy use:

1. Ensure that the default for air conditioning is OFF. Room controls should be set to OFF automatically, so that anyone entering the room has to make a conscious effort to turn the cooling to ON.
2. Check that no heat producing equipment (such as a photocopier) has been placed under a room sensor. This can trigger a reaction from the sensor and initiate cooling when it's not needed.
3. Make sure that your system is off at night. It is surprising how many buildings' air conditioning systems operate for more than the required 8 hours a day. Air conditioning that is left on overnight can TRIPLE the energy consumption and CO₂ emissions.
4. Restrict the available set-point range. Occupants sometimes believe that by turning the temperature down to 17°C, they can make a room cool faster. This isn't the case, but it will use a lot more energy as the temperature drops below the set point. Restrict the set points to a sensible limit – for example a minimum of 21°C, maximum of 24°C.

Encourage use of automation systems where possible.

For more complex building energy management systems, there are more control options available. As well as being able to use the simple strategies, it should also be possible to link HVAC components together, for example to ensure that heating and cooling aren't happening at the same time in the same part of the building.

A building energy management system can also be used to form the backbone of a maintenance and inspection programme. It can provide information on the running time and condition monitoring of the building plant, which can be incorporated into a scheduled maintenance programme suited to the individual building. For example, an automated building energy management system can measure a pressure drop across the air filters and indicate when they need to be cleaned or replaced.

Integrate remote monitoring and machine-to-machine technology.

The most advanced form of building control creates what is known as an intelligent building. This suggests high levels of control, with all aspects of the building services and other elements of the building (such as security or lifts) working in harmony to create the perfect indoor environment.

Also, where possible, Mitsubishi Electric LES recommends the use of remote monitoring systems. This equipment uses SMS or web browsers to communicate to a central server which can be accessed over the internet. The system can send messages to the facilities team using text messaging on mobile phones. The facilities management team can respond quickly to faults in the system or alarms on temperature changes.

Through internet-based monitoring, it is possible to view all data in real-time, look back at historic data and change the systems parameters, providing ultimate control either on or off site.