

Energy Savings Sheet: Air Conditioning

2EA have produced this sheet to identify areas of potential energy savings. It consists of notes and checkpoints that can be used by managers to help reduce overall energy consumption.

Notes

- Avoid excess cooling – air conditioning is rarely needed below 24-26°C
- Reduce internal and solar heat gains to avoid overheating
- Use free cooling from night ventilation, exposing building fabric, etc.
- Check control systems and operational hours' match occupancy
- Ensure chilled pipes and ducts are well insulated and undamaged
- Ensure filters are cleaned regularly and equipment is regularly serviced

Checkpoints

What type of refrigeration are you using?

- ✓ Broadly there are three types of system:
 1. Centralised air systems, where all cooling is in a central plant room with conditioned air ducted to point of use.
 2. Partially centralised, where centrally cooled air is further cooled by chilled water in a cooling coil at point of use.
 3. Local split unit types with external condenser for comfort cooling of hotspots.

Is your equipment an unnecessary source of heat?

- ✓ Minimise internal heat gains by reducing tungsten lighting use and employing energy saving features on office equipment such as computers and photocopiers.

How good is air circulation?

- ✓ Improved air movement and ventilation can significantly lower temperatures and improve occupant comfort.
- ✓ Consider switching off air conditioning, and using ceiling fans – opening windows to circulate air and reduce temperatures.

Who or what is controlling heating and cooling?

- ✓ Many systems are poorly co-ordinated to the extent that simultaneous heating and cooling is possible. Widen the dead-band between heating off, say at 20°C, and cooling on, say at 25°C.
- ✓ It may be possible to use free cooling by circulating outside air without running the refrigeration.
- ✓ Some systems have an unnecessarily tight control of humidity that significantly increases consumption by chilling to remove humidity then re-heating the air.

How much do solar gains affect heating?

- ✓ Some solar gains have a considerable impact and can lead to discomfort. Control excessive solar gains using blinds in sunny weather.
- ✓ Consider shading or upgrading insulation to walls subject to solar gains.



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