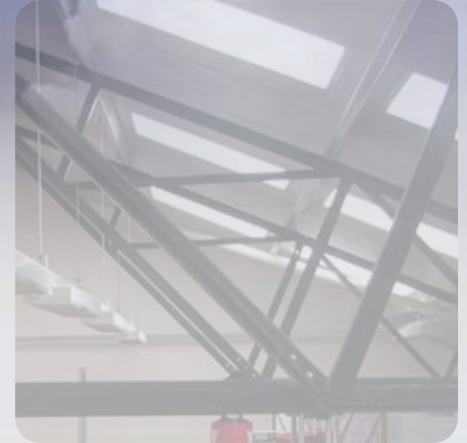


Heating & Cooling Case Study



The Problem

The engineering workshop at a major food processing company in Bury St Edmunds had a requirement for heating in the winter, ventilation in the spring and autumn, and cooling in the summer. Separate systems were considered, but were expensive and difficult to control coherently, so a combined system was needed

The Solution

A combined heating and cooling system was installed based on a single evaporative cooler, with the fan relocated into the ductwork after a recirculation loop.

The roof mounted 'wet box' which results provides either ambient air when it's cool enough to achieve free cooling, or evaporatively cooled air on hotter days.

The recirculation loop operates in winter and, using a steam coil, provides a source for heating.

The five fan speeds available mean that the airflow can be adjusted to suit the conditions, either automatically or manually, and a steam valve controls the heat output.

Change over from winter to summer modes is manual, but could easily be achieved using either a thermostat or a time clock. In the winter mode, the fan speed is held at the minimum, while air distribution is guaranteed by the adjustable outlet louvres.

The Results

Comfortable temperatures are now maintained all year round, while using minimum energy because of the efficiency of evaporative cooling in the summer, the free cooling available in Spring and Autumn, and the use of surplus steam for heating in Winter. The controls are very simple, yet make sure that heating and cooling never fight each other.

Interesting Facts

In this case, steam was readily available from the clients manufacturing process, but the heat source could just as easily have been water, gas or electricity.