

## FLUID CHILLERS

### The operation of high capacity fluid chillers

Andrews Sykes offer 3 principle methods of using fluid chillers. These are as follows:

#### Air conditioning application

This is where a fluid chiller (or chillers) are connected to air handling units (AHU) or fan coils via flexible pipework. The chiller provides chilled water to each of the fan coils or AHU, which is then pumped through a coil over which the room air is passed. As the air passes over the cold coil the air temperature will drop, the drop in temperature will depend on several factors such as air flow, air temperature and humidity. Each time the air is passed over the cold coil a similar drop in temperature will take place, this will enable the room temperature to be controlled within specified criteria. As the warm air passes over the cold coil the chilled water temperature rises and therefore returns to the chiller as warm water, the water is then chilled again and returned to the air handlers or fan coils and so the circuit is closed.

Some fan coils have thermostatically operated valves which open and close in relation to the room temperature, bringing in chilled water when required and remaining closed when the desired temperature is achieved. The chiller operates as required depending on the water temperature, although the circulating pump operates at all times.

The normal installation has the fan coils units installed within the room that requires cooling, or AHU installed outside of the room with the air ducted into the room and returned via heavy duty flexible ducting. However in some circumstances it is possible to fit flexible ducting to the fan coils and in others it is possible to install the AHU within the room that is to be cooled.

With heat pump versions of the fluid chillers it is possible to generate hot water and thereby use the fan coils and AHUs as heaters rather than air conditioners. In applications that may require heating at night and cooling by day it is possible to fully automate this process.

