



# PRESTIGIOUS LABORATORIES FOR A PRESTIGIOUS INSTITUTION



When Cambridge University required two new temperature controlled laboratories for the Department of Chemical Engineering, HiTech Controlled Environments Ltd proved to be the only Company capable of meeting the rigorous specification out of those asked to tender. The requirements were for two rooms capable of maintaining  $\pm 1^\circ\text{K}$  at any setpoint between  $4^\circ\text{C}$  and  $30^\circ\text{C}$ ; the use of electric heaters was not permitted and the system had to be as compact as possible because of the limited availability of space for capital plant.

The biggest problem was one of control since standard air conditioning controls and equipment do not operate below  $18^\circ\text{C}$  and refrigeration controls and equipment do not operate above  $10^\circ\text{C}$ . Working closely with the equipment manufacturers, HiTech's engineers reconfigured standard cooling equipment to operate with a reverse cycle heat pump and to achieve supply air temperatures up to  $45^\circ\text{C}$ . The controls also had to be modified to encompass the full range of required temperature setpoint and a central logic control circuit was incorporated into each control panel. The controls include all the required interlocks between the plant items with frost and fabric protection as well as alarm handling and data recording. The plant only runs when there is a demand for heating or cooling so running costs are kept to a minimum. The heat pumps were selected to operate using refrigerant R407c which is in line with the University's environmental policy. The cooler units and control panels are of stainless steel construction to avoid corrosion and all refrigeration pipework and electrical cables are enclosed in appropriate trunking or conduit to meet with GLP guidelines.

HiTech Controlled Environments can provide the complete project from design to commissioning including the room fabric, floor covering, environmental control systems, lighting and small power, personnel alarms, hot and cold water services and some specialized systems such as de-ionized water. Rooms can be designed to meet GMP, GLP and ICH conditions or any specific conditions required by the client.

You can contact HiTech FREE on 0800 074 9291.

