

## Flat Pack Cooling

Since tower blocks began appearing across city skylines, chillers have been sited in basement or sub basement plant rooms. To manage the logistics of this, chillers were considered at the planning stages and sited early in the construction process. This common practice was initially to ease logistics and enable convenient plant room cooling.

With many tower blocks in cities across the country now established for 30 years or more, the chillers on these sites are nearing the end of their life cycle. This inevitably leads to more costly repairs and reduced performance.

### F-Gas Regulations

Furthermore, a large number of cooling systems will be operating on **HCFC R22**. The EC Ozone Regulation 2073/2000, commonly referred to as the **F-Gas Regulations**, has not only raised awareness of our obligations in removing HCFCs from use, it has focused attention on energy efficiency. Current advice from F-Gas support, a Government funded compliance team offers an 11 point plan including recommendation for a “phase out plan”.



Example layout of a city tower block

*The obvious solution for such cooling systems would be to re-invest in energy efficient chillers.*

R22 is a very flexible and efficient refrigerant, however when faced with changing refrigerants, new design criteria and new technologies can be an advantage. Typical building designs will be based on maximum ambient conditions which account for less than 1% of the year. Even though older designs may have used lower maximum ambients, partial loads should be considered. **Centrifugal Compressors** incorporating magnetic levitation shafts and inverter speed control can demonstrate part load EERs (Energy Efficiency Ratios) of 9.5, compared to 2.2 for older systems. Multiple scroll compressors, when employed correctly, can also show significant part load savings at a lower capital outlay. By utilising multiple scrolls, when capacity decreases, a compressor can be switched off, the operational compressor(s) will then have the advantage of a larger condensing area and hence lower power input.

### Carbon Reductions

As with the F-Gas Regulations, The Government's **Carbon Reduction Commitment (CRC)** will gain momentum with accountants seeking Carbon reductions from engineers and designers. Recent announcements in the Government's spending review, an indication of today's austere economic climate, indicate that any Carbon Reduction benefit will not be handed back as a benefit. The main advantage will be the reduction in energy bills, frequently up to **45%**. A compelling reason to act now!

The potential barrier to such a replacement programme is access. Access to sub basement plant rooms is often restricted to a staircase and service lift and although a redundant chiller can be dismantled and removed for disposal relatively easily, getting a new unit to the original location can be a much greater challenge.

### ICS have a solution.

ICS in conjunction with their manufacturing company, **Tricool Thermal**, have been solving such logistical issues for over **30 years** and as more companies

experience the same problem ICS has launched their range of **flat-pack chillers**.

## Flexible Manufacturing

Standard and bespoke units can be manufactured, tested and then systematically broken down for transport at ICS' 50,000sq ft UK manufacturing facility in Southampton. The components are palletised and once delivered, units are taken in pieces to the required site to be re-built, re-tested and installed in the required location.

Furthermore with **Tricool Thermal's** manufacturing capabilities, units can be built specifically for site incorporating footprint restrictions, unit capacity, noise constraints, or a combination of these.

Commenting on the launch **Dave Palmer, ICS Manufacturing Director**, says "Our range of flat pack chillers is a positive step in resolving the logistical problems posed by many office blocks in city centres, our range can accommodate the strictest of size constraints and furthermore units can be purpose built for the customer.

Since acquiring Tricool Thermal in 2007, ICS has been able to demonstrate flexibility in responding to customer's individual site requirements making us a reliable and cost effective choice".

Tricool Thermal manufacture their Flat-Pack range from their UK, Southampton based manufacturing facility to **ISO 9001 standards**. For more information or to book a free, no obligation site survey call free on **0800 169 3861**.

