

Case Study





Alfa Laval, Theta House, Camberley, Surrey.

The air conditioning system at Alfa Laval's offices, meeting rooms and canteen at their Camberley premises were due for reappraisal and maintenance, so they called in Independent Heating & Cooling to advise on the best course of action. The main problem was that the existing units were approximately 20 years old and could no longer have the gases recharged with the same spec materials since new regulations regarding CFC Fluorocarbons have now come into play.

Basically, the old gases are not recognised as eco-friendly and thus prohibited, and replacing with new gases is not as straightforward as it might seem. Until recently, in a situation like this, new pipework would be required to fit up to the new air conditioning units.



Modern gases are more efficient than their older counterparts, but they cannot be used with ageing, existing units, so their replacement is unavoidable. However, Mitsubishi Electric technology has developed a technique of 'scrubbing' the existing pipework to prepare it for accepting the new gases – thus saving on expensive copper piping and, perhaps more importantly, avoiding the cost, disruption and mess of totally re-piping the entire system within the building.

In all, IHC replaced 145 indoor units and associated outdoor units using replacement technology where possible, carrying out the works with the minimum disruption.

Technical Specification

Existing – Ground Floor

This area consisted of 6 No. split type air-conditioning units – 1x12.5kW, 2x7.1kW and 3x10kW. In all instances the fan coils were ducted units. The four units installed in the meeting rooms and canteen (1x12.5kW, 2x7.1kW and 1x10kW) exhaust their air out from grilles into the spaces. The remaining two units (2x10kW) installed in reception exhausting their air from large vertically positioned grilles in the bulkhead in reception.

Existing – First and Second Floors

These areas are cooled and heated by 5xPURY-250YM heat recovery VRF outdoor units that serve a total of 35 ducted indoor units that vary in size from 2.5kW, 3.2kW, 4kW 6.3kW and 12.5kW.

The existing systems were some 20 years old Mitsubishi Electric R2 heat recovery systems.



New – Ground Floor

All existing indoor and outdoor units were removed and 5 No. were replaced (excluding 1 No. 7.1kW replacement unit, as this area has become a store area). All existing interconnecting pipework and cabling was re-used. As the cooling in the canteen was inadequate, an additional 10kW ducted unit was installed, using grilles and ductwork taken from the store area, with the new outdoor unit positioned where the previous 7.1kW unit had been.

New – First and Second Floors

Starting with the second floor, the remote controllers, fan coils and branch control boxes were removed and the new remote controllers, fan coils and branch control boxes were replaced on a like-for-like size basis. The only modifications made, were to the ends of the existing pipework as slight alterations were required for final connections to the branch control boxes and indoor units.

Once the works to the indoor areas of the second floor systems were completed the old outdoor units were removed from their gantry and lowered to ground floor level making way for the new outdoor units to be lifted into position.

Once these systems were commissioned and working (commissioned by Mitsubishi Electric) the above works were repeated on the first floor.



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