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calorex® case study

HEAT RECOVERY

Silence is Golden For Doncaster Hotel

Guests are sleeping soundly at night at a Doncaster country house hotel thanks to the silent operation of a British designed and manufactured, Calorex air to water heat pump.

Not only is the energy-efficient Calorex 250SC keeping temperatures crucially low in the vegetable store at the Mount Pleasant Hotel but is also helping to provide constant hot water for the 38 bedroom venue that also runs a popular 75 cover restaurant and 120 cover function room.

Most crucially, guests and diners are undisturbed because of the quiet operation of the heat recovery unit that is sited on an internal wall rather than externally, with unsightly and noisy condensing units invariably prompting complaints from guests and rendering some rooms unusable, particularly in summer periods.

"Following an extensive development of the venue we had a problem with the vegetable store that was running well above normal ambient temperatures," explains Richard McIlroy, managing director of the Mount Pleasant Hotel.

"A very big concern with anything that we do is to ensure we do not adversely affect accommodation and guest comfort.

With a Calorex AW450 already controlling temperature in the hotel's beer cellar for the past seven years, local heating and ventilation engineers, Cooplands had no

hesitation in specifying the Calorex 250 SC unit.

The main selling point was the unit's quiet operation but the hotel has been delighted with the added value provided by a unit that offers pay back, against conventional cooling,
sometimes under one year where domestic hot water usage exceeds 500 litres per day.

"Although noise management was our first priority we have seen the added value of the unit which pre-heats water going into the main water boiler."

Ideal for hotel and catering applications, the units cool down to 7 deg C (-5 deg C with defrost) with hot water output temperature up to 55 deg C (70 deg C optional).

The AW250/450 heat recovery models can operate in ambient temperatures up to 35 deg C on standard models and up to 52 deg C on special production.

Win, Win Situation

PROVIDING FREE hot water and improving working conditions, heat pumps by Calorex are providing a win, win situation for restaurants, hotels, hospitals and nursing homes keen to combat spiralling fuel bills.

The Calorex AW range of specialist machines cool down steamy locations such as kitchens and boiler rooms by removing moisture from the atmosphere but - instead of just dumping that untapped heat - usually, straight outside - they cleverly recycle the energy they remove to heat the water supply.

Calorex manufacture heat pumps for the catering and hospitality sectors – specialist machines that cool down steamy locations, such as kitchens, by cooling hot air and removing moisture from the atmosphere.

As a further bonus, heat pumps will not only cool air but also remove moisture from humid atmospheres in far greater quantities than traditional air conditioning.

Payback Within Four Years for Bangkok Hotel

Investment in a new air to water heat pump, heat recovery system will be paid back within four years for operators of the 428-bedroomed luxury Radisson Hotel, in Bangkok.

BTP Thailand, a specialist mechanical and engineering company, has successfully completed the installation of seven AW1534BH units supplied by Calorex.

Previously, the hotel had used an oil-fired boiler system. Now they run on 100% heat pump technology with the boiler only required for back up. The new, energy-efficient system generates free cooling, via a ductwork system, for areas that had previous suffered with extreme heat problems such as

the laundry room, lift control room and the lobby.

Make The Switch To Free Hot Water

Energy-efficient operators making the switch include the owners of a 200 year old refurbished country home near Basingstoke who, facing typical annual heating costs of £24k that were set to soar even higher in a climate of escalating fuel bills, turned to Calorex for help.

Thanks to the addition of two AW Calorex heat recovery units, previously wasted hot air, drawn from the boiler room, is being captured and recycled to supply free hot water for the busy conference and banqueting venue and the neighboring nursing home on the 315 acre estate in the North Hampshire downs.

Not only have fuel bills been cut by between 15 and 30% -- payback is expected within two years.

Oakley Hall is a grade II listed country house originally built in 1765 and recently refurbished. It is a popular venue for weddings and business conferences and also provides a quality care for 41 elderly residents at the nearby nursing home.

"The machines have been working away quietly in the background for a year now and it is easy to forget the machines are there," comments Mark Vickery, director.

"They provide ample hot water for both sides of the business and we are looking at a reduction in fuel bills of 15% on pre-price hike fuel costs and 30% on latest fuel costs."

The AW 250/450 SC is one of a range from Calorex that consists of two wall-mounted models, combining air-cooling and water heating in a single cabinet, complete with:

- Nominal cooling capacities of 2.5kW and 69kw
- Environmentally friendly R407C or R134A refrigerant
- Cooling down to 7°C
- Hot water to 65°C
- Hot gas defrost option, for operation down to -5°C
- Cu/Ni heat exchangers for use with potable water
- No refrigeration expertise required for installation
- Simple installation
- Operate from singe phase power supply

For a free site survey and information about the whole Calorex range contact the sales team.

Recipe For Success For Thai Restaurant

Refrigeration equipment was pushing temperatures in the cellar of the Wild Orchid Thai Restaurant, Rochdale, up to sub-tropical levels - much to the discomfort of restaurant staff using the area for washing and ironing table clothes and napkins.

The temperature in this area could exceed 30°C at times, causing problems for both the staff and equipment. Thanks to the Calorex unit we can keep the area at a constant temperature of around 20°C, improving the efficiency of the staff and the refrigeration equipment.

A Calorex 250SC not only cooled down its cellar dramatically – the restaurant has as much free water as it can use.

The Calorex 250SC is an energy-efficient unit which combines cooling and domestic hot water production in one compact, wall-mounted unit.

Free Hot Water For Prestigious Singapore Hotel

Investment in a new air to water heat pump, heat recovery system will save 1.3 million kWh of energy every year for the operators of the four-star Holiday Inn Park View hotel in Singapore.

Five Calorex air-to-water heat pumps have been installed to provide the entire hot water requirements of the hotel.

The project was independently performance tested by United Premas Limited a leading consultancy in Singapore.

Previously the hotel used steam boilers and calorifiers to provide the hot water requirements of the 314 guestrooms and 29 suites as well as the service areas such as the busy kitchens.

Since efficiency of the boilers is typically 80 to 85%, 1 unit of input energy can only provide 0.8 to 0.85 units of useful heat energy for producing hot water. In comparison, heat pumps which can produce hot water using the vapour compression refrigeration cycle have a much higher efficiency.

Heat pumps have a COP (coefficient of performance) of about 5.0 for hot water heating which means, every one unit of energy input can produce 5 units of heat output. In addition, cold air produced by the heat pump (as a 'waste product') can be used for space cooling to further improve the energy efficiency of the system.

The AW7034BH is one of a range of floor standing heat pumps that extract energy from an air source and upgrade this energy to a useable form of heat which is rejected to a water system. Unlike other water heating systems, a Calorex heat pump is capable of delivering up to five times more energy than it consumes.

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