



**RENEWABLE  
SOLUTION PROVIDED**

**A cost-conscious,  
sustainable  
solution helping to  
future-proof the  
building**

## Agricultural Showroom Fits Ecodan CAHV Renewable Heating Solution

When P. Tuckwell Ltd was looking for a cost-effective heating solution for its new showroom in Colchester, Essex, it wanted something that had minimal impact on the environment, but offered maximum operating efficiency.

The John Deere dealership sells agricultural and horticultural machinery and offers its customers a first class product and service. So when it came to heating its own buildings, the company wanted nothing less.



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**ecodan**<sup>®</sup>  
Renewable Heating Technology



Left to right: James Tuckwell and Peter Tuckwell, Joint Managing Directors of P Tuckwell Ltd

The family owned business, established in 1954 by Len Tuckwell, owns a fleet of 400 sprayers and trades in agricultural machinery, fertiliser and agro-chemicals. In 1965 the company was approached by John Deere, the agricultural equipment specialist, and invited to become one of only four dealerships in the UK.

Today Tuckwell's is jointly managed by Len's son and grandson, Peter and James Tuckwell. The company's acquisition of J E Buckle Ltd in June 2012 means that it now operates in Bedfordshire, Essex, Hertfordshire and Suffolk.

"Our existing buildings use oil-fired heating, but we didn't want a system for our new showroom that also ran on fossil fuel," said James Tuckwell, Joint Managing Director of P Tuckwell Ltd. "We're aware that these resources are finite and will, no doubt, increase in price as supplies dwindle. Deliveries can also prove difficult in severe weather conditions which of course, is just when we would need it most.

"We looked briefly at the possibility of mains gas, but this option required the installation of a mains pipe which would have proved rather costly, so we needed to find another solution."

Tuckwell's were in need of some sound advice, so the company called in Neil Edmunds, Managing Director of renewable energy specialists, Climate and Power Ltd, to take a look at their site.



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Product Reference: PUHZ-W50VHA-(BS)  
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The Ecodan CAHV provides underfloor heating to the 700 sq ft showroom and runs 12 radiators in the offices upstairs.

“We have a great deal of expertise in this area and following a visit to Tuckwell’s showroom we designed a cost-effective and energy efficient solution to answer all of the building’s heating and hot water requirements” said Mr Edmunds. “Whilst designing the new system we were very mindful of budget as finances are a big concern for everyone right now, so the solution was specified to offer Tuckwell’s the maximum benefit for minimum outlay.”

“Whilst our team were on site we kept disruption to the business to a minimum, which allowed the company to continue their day-to-day activities. So whilst we provided them with a thoroughly professional job, they were able to continue to deliver a great service to their customers.”

Climate and Power’s solution was two, 43kW, Ecodan CAHV Air Source Heat Pumps (ASHP) from market leader, Mitsubishi Electric. This pioneering technology provides commercial properties with an efficient, renewable alternative to traditional systems.

The heat pump units harvest renewable heat from the outside air, upgrade it to a useful temperature, then transfers it via a plate heat exchanger to heat the water used to supply radiators and underfloor heating.

Ecodan CAHV heat pumps can operate as a single unit or as part of a multiple unit system. When installed in multiples, units are able to cascade on and off to optimise performance and deliver peak efficiency.



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For every 1kW of electricity used to power an ASHP, an average of 3.2kW's of heat can be delivered.

In order to meet even the most dynamic load requirements, the monobloc systems are designed to allow output capacity to increase in 0.5kW increments, from 18kW all the way up to 688kW, producing a level of modulation that is unprecedented within the heating industry.

Two separate refrigerant circuits operate within each unit guaranteeing a 50% back up at all times, whilst offering the benefit of low on-site refrigerant volume. The hermetically sealed system requires very little maintenance, helping to keep costs to a minimum.

“Mitsubishi Electric’s heat pumps offer customers improved efficiency and sustainability,” said Mr Edmunds. “In fact, for every 1kW of electricity used to power an ASHP, up to 3.2kW’s of heat can be delivered to the building and 69% of this is renewable energy.”

The system at Tuckwells is capable of delivering 86kW at -3°C, with minimal drop off down to -20°C including defrost, and provides the building with a sustainable energy source to service the underfloor heating for its 700 sq ft showroom. It also services 12 radiators installed in the company’s office upstairs.

“The new system is working really well for us, and provides a nice even temperature throughout the offices and showroom,” said Mr Tuckwell. “Efficient use of energy in order to keep overheads down is a priority for any well-run company.”



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“Following this installation we have already seen a reduction in our energy consumption and our quarterly bills. The Ecodan units give us exactly what we need, a cost-conscious, sustainable energy solution that has also introduced an element of future-proofing to the building.”

Mitsubishi Electric’s Ecodan air source heat pump boilers are covered by the Enhanced Capital Allowance (ECA) Scheme, which is part of the Government’s programme to manage climate change. The Scheme enables companies to claim a 100% first year capital allowance on any investments in approved energy saving equipment, against the taxable profits of the period of investment.

The heat pump boilers have also been certified by the Microgeneration Certification Scheme (MCS) which ensures the product has passed rigorous and testing criteria. MCS denotes quality and reliability and the certification assessment covers both the manufacturing process and materials used.

For further information on Climate and Power Ltd visit [www.climateandpower.co.uk](http://www.climateandpower.co.uk) or call Neil Edmunds on 07837 544 979.

For further information on Mitsubishi Electric Ecodan heat pump boilers visit [www.heating.mitsubishielectric.co.uk](http://www.heating.mitsubishielectric.co.uk)

## Installation Summary

**Application type:**  
Agricultural Showroom

**Product:**  
2 x Ecodan CAHV heat pump boilers

**Capacity:**  
86 kW at -3°C ambient

**Heat delivery method:**  
Radiators and underfloor heating



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