



Ecodan goes undercover

The lemurs at Bristol Zoo are enjoying the warmth and comfort of their new island enclosure thanks to an Ecodan installation with a twist from Mitsubishi Electric.

The Madagascan natives required a new, fully heated enclosure in which to eat and sleep. But equally important was the need to ensure that the technology which was providing the optimum environment for the habitat was invisible to both the lemurs and the visiting public.



Air Conditioning | Heating
Ventilation | Controls



ecodan[®]
Renewable Heating Technology

Heating

Case Study

Bristol Zoo Lemur enclosure

Making a
World of
Difference



Integration of heat pump technology has allowed Bristol Zoo to meet the precise requirements of the lemurs in a way that is controllable and efficient.

The solution for installing contractor Gregor Heating proved to be an Ecodan PUAZ-W50VHA2 heat pump. The smallest capacity unit in the Ecodan range, this 5kW unit is perfect for this type of application as it operates with outside temperatures as low as -20°C .

Richard Blackmore of Gregor Heating says: "One of the main challenges for this installation was the need to blend the Ecodan unit in with the natural vegetation on the island. This was achieved with the help of Bristol based Hydrowrap who hydro dipped the case of the Ecodan in order to disguise the unit with a foliage print."

Another key challenge was heat distribution within the 17m^2 building. Richard says: "The building is fully insulated, which makes it perfect for the installation of heat pump technology. However, unlike a domestic installation, the animals must be kept at a constant heat of 22°C and the system must have the capacity to increase this to 26°C in the event that the animals are sick.

"The base of the enclosure is three quarters of a metre deeper than the finished floor which you can see and it has been packed out with wood chip to serve as the 'real' floor for the animals. Our brief was therefore to come up with a solution that would heat the building to the required temperature and that would also be able to penetrate 750ml of insulation."

In order to deliver the heat in a manner which could not be tampered with by the occupants, Gregor Heating installed a perimeter heating system. This skirting board style solution incorporates large skirting board panels with pipes which are mounted around the inside perimeter of the room just above the level of the woodchip.

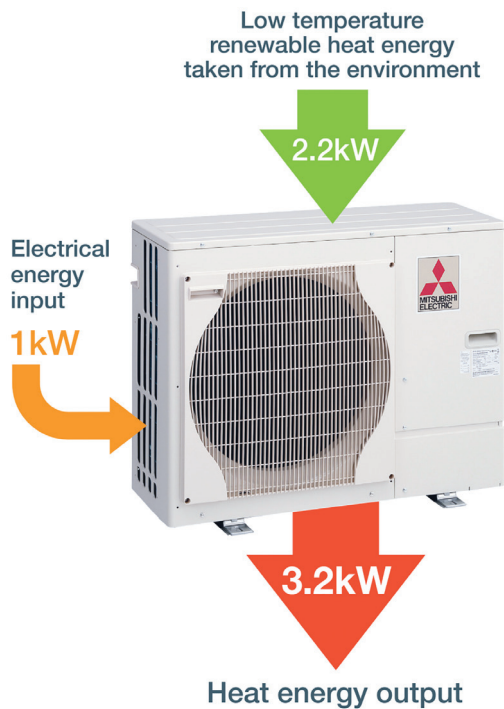


Air Conditioning | Heating
Ventilation | Controls



ecodan[®]
Renewable Heating Technology

Heating



Heat pumps use electrical energy and take low-grade heat energy from the outdoor air to heat refrigerant which in turns heats water for space heating.*

Installation Summary

Ecodan PUAZ-W50VHA2 heat pump
5kW capacity

Hydro dipped exterior for camouflage

Perimeter heating system

Room thermostat (Keeper's area)

Case Study

Bristol Zoo Lemur enclosure

Making a
World of
Difference

An additional shelf and anti-finger rails were installed above the skirt heating to allow the heat to be distributed without the risk of damage by the animals. A room thermostat was also installed in the Keeper's area which incorporates a feature to boost the temperature for 24 hours should the need arise.

The integration of heat pump technology has allowed Bristol Zoo to meet the precise requirements of the lemurs in a manner which is both controllable and energy efficient.

How a heat pump works

Ecodan heat pumps require only a small amount of electricity to harvest, upgrade and move heat from one location to another. They are highly energy efficient because they use inverter technology.

The heat pumps use a vapour compression cycle which has the ability to take low temperature, renewable heat from the environment and raise it to usable temperatures capable of handling the space and water heating loads required in buildings.

*As independently tested by BSRIA based upon BSEN14511 Part 3 standard rating conditions. Due to the method of operation, the performance of heat pumps will vary based upon the temperature of the heat source and the requirements of the heat delivered. The BSEN14511 testing relates to the heat pump performance only and not the entire heating system.



Telephone: 01707 282880

email: heating@meuk.mee.com

web: heating.mitsubishielectric.co.uk

UNITED KINGDOM Mitsubishi Electric Europe Living Environmental Systems Division
Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, England General Enquiries Telephone: 01707 282880
IRELAND Mitsubishi Electric Europe Westgate Business Park, Ballymount, Dublin 24 Ireland
Telephone: Dublin (01) 419 8800 Fax: Dublin (01) 419 8890 International code: (003531)

Country of origin: United Kingdom - Japan - Malaysia. ©Mitsubishi Electric Europe 2016. Mitsubishi and Mitsubishi Electric are trademarks of Mitsubishi Electric Europe B.V. The company reserves the right to make any variation in technical specification to the equipment described, or to withdraw or replace products without prior notification or public announcement. Mitsubishi Electric is constantly developing and improving products. All descriptions, illustration, drawings and specifications in this publication present only general particulars and shall not form part of any contract. All goods are supplied subject to the Company's General Conditions of Sale, a copy of which is available on request. Third-party product and brand names may be trademarks or registered trademarks of their respective owners.



Certificate Number: MCS HP0002
Product Type: Heat Pumps
Product Reference:
PUAZ-W50VHA2



Follow us @meuk_les
Follow us @green_gateway

Mitsubishi Electric
Living Environmental Systems UK

mitsubishielectric2