



Picture courtesy of Royal Zoological Society of Scotland

Renewable heating for Edinburgh Zoo rhino pool

Two young males in Scotland are now enjoying renewable heating for their swimming pool with the installation of four Ecodan air source heat pumps to heat their indoor pool.

These are males with a difference though, as Samir and Bertus are one-horned Indian rhinos at Edinburgh Zoo, which has been examining ways of keeping its animals comfortable whilst reducing both fuel bills and overall carbon emissions.

The Ecodan cascade system will also qualify for the non-domestic RHI which could see the Zoo receiving around £4,000 per year for the next 20 years.



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Picture courtesy of Royal Zoological Society of Scotland

ABOVE: Samir and Bertus are firm friends even though male rhinos are usually solitary. They can often be spotted playing with various forms of rhino enrichment, including large balls, tractor tyres and logs.

The species was on the brink of extinction during the early 1900s, with only approximately 200 individuals remaining. Through conservation efforts the population has since risen to approximately 2,575, which is still dangerously low.

Ecodan cascade system

Four 8.5kW Ecodan heat pumps now provide renewable heating to the indoor rhino pool, with the units working in a cascade system to offer reliable heating all year round.

Mitsubishi Electric is also assisting on the inclusion of SD card monitoring which will allow full energy monitoring on site to help qualify for RHI.

Case Study

Edinburgh Zoo, Rhino pool

Making a
World of
Difference

Four 8.5kW Ecodan heat pumps now provide renewable heating to the indoor rhino pool, replacing the older, less-efficient gas boiler that was coming to the end of its life. The Ecodan units operate in a cascade system to offer reliable heating all year round, regardless of the outdoor temperature. The Ecodan units work with a 'tube and tube' heat exchanger specially designed to work with and maintain the lower temperatures that enable the heat pumps to be so efficient.

The installation of the Ecodan system will help reduce both running costs and emissions by around 30 per cent.

The pool is approximately 4m x 4m, and around half a metre deep and the complete system was installed by Lothian Gas who are working closely with Mitsubishi Electric's factory in nearby Livingston, where the units are manufactured. Lothian Gas is Edinburgh's leading Gas, Heating and Maintenance Engineers and the company calculated the heat load for the pool at 30kW so has installed a 40kW capacity system.

The company has also installed a Grundfos pump between the Ecodan and the tube in tube system to circulate water around the network and ensure that the heat exchanger doesn't diminish the response time of the heat pump system. The Ecodan units offer full robust back-up and rotate to maximise efficiency.

The entire project is part of Edinburgh Zoo's renewable and carbon reduction strategy, with the results being monitored to help the organisation decide on the best way to use renewable heating across the complex.



Telephone: 01707 278666
email: heating@meuk.mee.com
web: www.livingenvironmentalsystems.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)

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