Heating

Case Study

Hebburn Eco Centre
Tyneside

Making a World of Difference

Air source replaces ground source at sustainable Eco Centre

When the pioneering Hebburn Eco Centre needed to replace its 20-year-old ground source heating system the building's owners turned to a cascade air source system from Mitsubishi Electric.

Designed and built by Groundwork South Tyneside and Newcastle (STAN) and opened in 1996, the Eco Centre was a pioneering venture to demonstrate renewable technologies and sustainable design.

Today the Eco Centre remains one of Europe's most sustainable buildings.

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ABOVE: Groundwork's Andrew Watts (left) and Jason Oakes of Oakes Energy standing next to the four Ecodan air source heat pumps.

BELOW: The four Ecodan units work in a cascade system which offers maximum performance and shares the workload equally between the units to prolong their working life.

The building is the Groundwork Trust's regional headquarters, which has a mission to support local communities and therefore also lets out 16 office spaces, as well as daily hire of its Board and Conference rooms.

The office complex was originally built with a very green ethos in mind, with all materials recycled from sustainable sources, including re-used bricks from a demolished factory, an aluminium roof re-smelted from old drink cans, wood from farmed forests and woollen carpets.

It also has high levels of insulation to reduce the amount of energy needed to heat the building and keep the occupants warm.

Electricity is generated by an on-site wind turbine and photovoltaic display, helping to ensure that the award-winning project has become an exemplar of sustainability.

"The ground source system had worked well but it was getting on a bit, so Groundwork took the decision to replace it with an air source system", explains Jason Oakes, Business Development Director of Oakes Energy, who installed the four Ecodan units.

"What they needed though, was a new system that could work with the existing infrastructure and one that could cope with a variable demand for heating throughout the year".

Oakes Energy worked with Minden Wood Consultants to find an ideal solution, which turned out to be four Ecodan 14kW air source heat pumps working together in a cascade system.

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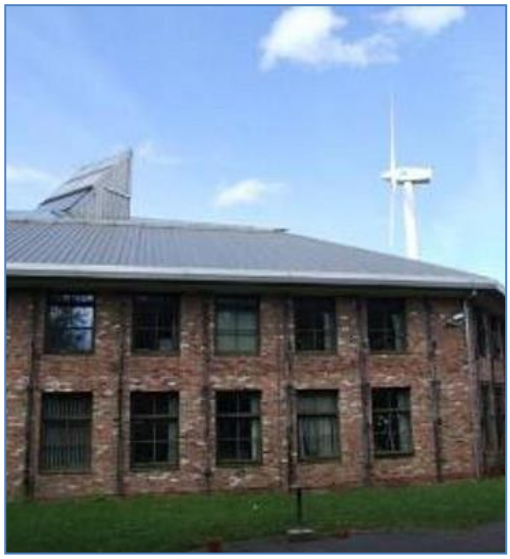

ABOVE: Groundwork has been working for over 30 years supporting communities across the UK and the Eco Centre has always represented the embodiment of the Trusts ideal, being environmentally friendly to its core.

BELOW: The air source heat pumps extract renewable energy from the outdoor air and upgrade it to provide all the heating and hot water the Eco Centre needs. The renewable heat is piped to cylinders inside the building.

"We looked at all the available options and the Mitsubishi Electric solution combined the best performance available with the complete flexibility needed for the buildings multi-occupant use," said Consultant Nick Harley of Minden Wood Consultants.

The purpose-built, two-storey building provides tenancies for local start-up businesses, along with support for local jobs, job creation and social enterprise. The building offers 16 offices to let, ranging in size from 30sq m to 104sq m.

The Eco Centre conference room is renowned as an excellent training venue and is used by both external companies and the various Groundwork STAN teams.

The building's beautifully airy Atrium, complete with internal water feature, also provides a calm environment for impromptu meetings and networking, as well as being a relaxing place to have lunch.

All offices have wall mounted trunking including power points and can be adapted for data points. The building has communal kitchens on both the ground and first floor.

Andrew Watts, Executive Director of Groundwork South Tyneside and Newcastle, said: "Groundwork is built on a foundation of creating sustainable, vibrant and 'green' communities through programmes that educate and inspire.

"Our Eco Centre has always represented the embodiment of these ideal, being environmentally friendly to its core and a place where people who hold these strong working beliefs come together.

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ABOVE: The complex was originally built with a very green ethos in mind, with all materials recycled from sustainable sources, including re-used bricks from a demolished factory, an aluminium roof re-smelted from old drink cans, wood from farmed forests and woollen carpets.

"It was a landmark building when constructed and it remains so today, but to ensure it continues to leave the most positive environmental footprint possible has meant a change to the heating system and a more modern upgrade.

"The added benefit of using the Ecodan system is that it offers greater control for individual offices and also qualifies for the non-domestic Renewable Heat Incentive, so this can help supplement the running costs for the next 20 years".

The Trust has been working for over 30 years supporting the communities across the UK and with the installation of the new Ecodan system, Groundwork STAN and its Eco Centre is ready for the challenges yet to come.

OAKES ENERGY SERVICES LIMITED

www.oakesenergy.co.uk

Installation Summary

Installation date: February 2015

Location: Hebburn, Tyneside

Equipment: Four x 14Kw Ecodan units operating in a cascade system to deliver heating and hot water to the centre

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APPROVED PRODUCT
MCS
Certificate Number: MCS HP0002
Product Type: Heat Pumps
Product Reference:
PUHZ-W85VHA-(BS), PUHZ-W85VHA2-(BS)
PUHZ-W112VHA-(BS), PUHZ-HW140VHA2/YHA2-(BS)
PUHZ-SW40VHA, PUHZ-SW75VHA, PUHZ-SW120VHA,
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