

First home in Scotland to be heated with ice!

Sustainable building by Stommel Haus features innovative Viessmann heating technology

Aberdeenshire, Scotland – Premium manufacturer of offsite manufactured eco homes, Stommel Haus, has equipped a private dwelling in Aberdeenshire with groundbreaking “Heating with Ice” technology by Viessmann.

The innovative ice store system is installed in a highly energy efficient eco timber house from Stommel Haus, a combination that makes the home the first of its kind in Scotland. This heat pump technology recovers heat from renewable sources only, such as the sun, air and ground, to heat, cool and provide hot water for the building.

While drawing energy from ice to heat or cool a house is a new concept, over the past four years, Stommel Haus has installed many such systems in its eco houses in Germany. The ice storage system, which consists of an underground water tank, in combination with solar air absorbers, supplies energy to the heat pump that in turn generates hot water for taps and baths as well under-floor heating on all floors of the house. The system also cools the home in summer months.

The heat pump extracts energy from the water stored in the ice storage tank. The energy used to provide the heat slowly turns the water in the underground tank to ice. Freezing is an exothermic process so as liquid water changes to solid ice, crystallisation energy, known as latent heat, is released. This latent heat is retained in the ice store system and releases additional usable heat - therefore the term “ice store”..

A heat source management system integrated in the heat pump draws energy from either the ice store or solar air absorbers on the roof. The ice store also draws energy from the surrounding ground to regenerate heat.

In summer, the ice store can be used to provide natural cooling. At the end of the heating season, the water in the store is turned to ice. The ambient summer heat around the store, the solar thermal energy, and the heat that is drawn from the system via an extraction heat exchanger, melt the ice in the ice store and cool the heating circuit of the house.

Barbara Fischer-Clark, UK agent for Stommel Haus says, “We are proud to have built the very first Stommel Haus home in Scotland and fitted it with the latest in heat pump technology called “Heating with Ice” from Viessmann. Stommel Haus is one

of the leading suppliers of energy efficient eco homes and embraces new technology to support sustainable and energy efficient building. Our Scottish clients will enjoy a warm house regardless of the weather and a comfortable ambient temperature in their 216 m² house, with minimal running cost. In addition to the heat pump function, utilising energy from the sun, ground and ice, photovoltaic panels on the south-facing roof will generate more electricity than required by the house.”

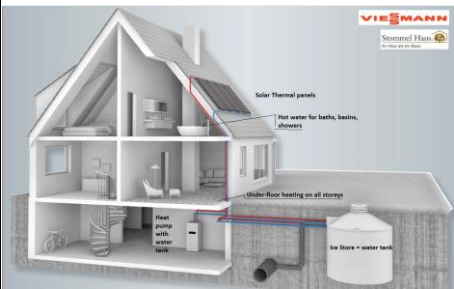

Christian Engelke, technical director at Viessmann says, “The standard ice storage tank measures ten cubic metres, which corresponds to the energy content of approximately 120 litres of heating oil. The key difference is that, while the oil is eventually consumed, the water content of the ice store represents an almost limitless heat source that is continuously regenerated with energy from the sun and air.”

Benefits of the Heating with Ice technology

- No fossil fuel consumption required – combined utilisation of ambient air, the sun and ground as heat source
- No drilling – no environmental risk, no permits required

- Low operating costs thanks to the high COP (Coefficient Of Performance) of the heat pumps, up to 5.0 (B0/W35) to EN 14511
- Particularly high efficiency thanks to intelligent heat source management and heat pump with RCD (Refrigerant Cycle Diagnostic) system with electronic expansion valve (EEV)
- Easy-to-use control unit integrated in the heat pump

Images

	<p>The ice store system</p>
	<p>The innovative ice store system is installed in a highly energy efficient eco timber house from Stommel Haus, a combination that makes the home the first of its kind in Scotland.</p>

About Viessmann Ltd.

Viessmann Limited is part of the Viessmann Group of Companies which is one of the leading international manufacturers of heating, industrial and refrigeration systems. Founded in 1917, the family business is overseen by CEO and President of the Supervisory Board, Prof. Martin Viessmann. The Group has annual turnover of EUR 2.2 billion and employs a staff of approximately 11,600. Viessmann's comprehensive product range encompasses all fuel types and applications, allowing it to deliver high quality, efficient and fully integrated solutions. With an output range of 1.5 to 120,000 kW, Viessmann offers oil and gas-fired boilers, solar thermal and photovoltaics, combined heat and power modules (CHP), ground, air and water sourced heat pumps and biomass boilers.

www.viessmann.co.uk

About Stommel Haus

Stommel Haus GmbH is a German Premium manufacturer of bespoke, energy efficient, houses. With more than 45 years of experience, the family business proves every day that using high precision manufacturing methods together with experienced craftsmanship, the use of high quality and sustainable materials as well as the attention to detail lead to providing a modern, ecological and high quality product which is tailor-made for each and every client.

Nestled in the small town of Neunkirchen-Seelscheid near Cologne, Stommel Haus develops and produces their certified and precision built eco houses off-site in the sheltered environment of the factory. The houses are transported on site where they are erected by qualified teams and made wind and water tight typically within 5 to 7 days. Under-floor heating, state-of-the-art heat pump technology and the high quality interiors are then fitted by German craftsmen with only top class products.

www.stommel-haus.co.uk

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VIESSMANN

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