



Reinhard Weiss, engineer, drexel und weiss energy-efficient house technology systems: House technology in the Austria House

The energy concept for the Austria House was developed by passive house pioneers Drexel und Weiss. This solution for the passive house in Whistler meets the demands of the Olympic Games and the system perfectly fulfils requirements for future use after the Olympics have finished. The compact aerosmart x² solution developed by Drexel und Weiss guarantees highly efficient and economical use of energy, whilst also allowing for individual requirements. The passive house technology developed by drexel und weiss at the end of the 1990s is based on the principle of minimising loss and is up to 80% more efficient than modular house technology systems.

Highest thermal power

The aerosmart x² is a compact unit for ventilation, heat recovery, heating, hot water generation and even for cooling in summer. The energy potential of the soil is exploited using an underground brine circuit. "In the finished Austria House, this enables a maximum thermal power of 3,800 W," explains Drexel und Weiss Managing Director and Austria House initiator, Reinhard Weiss.

The brine circuit can also be used for pre-heating or cooling the outside air. In summer, the heat from the air inside the house is dispersed to the soil using the underfloor heating via the brine circuit where it then helps regenerate the soil. Reinhard Weiss: "In the transitional seasons, the mild temperature of the outside air is often able to increase the heat capacity of the brine from the soil, which further increases the efficiency of the mini heat pump."

Big savings on cooling too

The brine circuit technology can also be used in summer to provide passive cooling for Austria House, which is very important because of the high summer temperatures in Whistler. "In this area, the temperature of the soil is between 10 and 15 degrees Celsius. That is warm in winter but cool in summer compared to the outside air," Reinhard Weiss explains. The aerosmart x² helps use the installed underfloor heating system to provide cooling in summer. "This means that Austria House makes a primary energy saving of around 4,000 kWh per year compared to conventional air conditioning systems used in the summer," Weiss emphasises.

Numerous advantages for the future operator

In the aerosmart x², one single controller is responsible for the interaction of the entire system. In a normal family home, the Bbath heating and, if desired, the thermal solar energy system can also be controlled in this way. The user can choose from three different storage options. 300, 520 or 820-litre hygiene tanks are available. A 300-litre storage tank, warmed by the heat pump, is

used in Austria House. Furthermore, the purification of the outside air requires only one fine particle air filter per year. The house technology system is slimline and uncomplicated, which guarantees that despite the huge distance between Drexel und Weiss in Wolfurt and Austria House in Whistler, there will be no unpleasant surprises for the future operators of the house.

Summary: As a passive house with its specially developed passive house technology, Austria House will send a message to the world, showing how the problem of heating our homes can be solved. This solution is based on the philosophy of minimising loss, as demonstrated by the passive house itself.

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