Now in colour: Christian Vachon, President of Enerconcept Technologies, Canada, presented new designs for the air collector Lubi which was introduced last year. Photo: Stephanie Banse

Air collectors: plastics on the rise

Trade fair visitors could find an air collector made of plastic at the booth of the German company Söhner Kunststofftechnik GmbH. The company markets it together with the Freiburg engineering office Dr. Axel Müller HTCO, who flow-optimised its form using computer simulations, under the brand name Polysolair. It measures 1.62 m by 1.00 m by 0.08 m, weighs 8.5 kg and can be operated without requiring an electricity connection. An integrated photovoltaic module delivers the required energy for the fan. The air collector modules can be connected to form larger systems. This allows the Polysolair to support heating and ventilation in buildings ranging from single-family homes up to warehouses.

A year after its introduction, the air collector from the Canadian manufacturer Enerconcept Technologies Inc. from Magog is now well established. "Currently, we are working on several new application areas for the Lubi principle, including the areas of drying and greenhouses," says Christian Vachon, President of Enerconcept, at the Intersolar. "We have also increasingly targeted the German market." The Lubi principle is simple and very efficient. The transparent, perforated polycarbonate plate is available in various sizes and can be mounted on any façade with standard mounting equipment. The sun heats the air between the collector and the wall, which is then pumped into the building by a fan. To offer architects and planners even greater freedom in design, the Lubi is now available in different colours.

The efficiency of the Lubi principle has been recently reconfirmed by the Canadian Standards Association (CSA) who proceeded to increase the so-called performance factor of the collector from 1.18 to 1.20. Introduced in 2008, the CSA-ranking compares the performance of air collectors from different manufacturers and was initially led by the Solarwall collector from the Canadian market leader Conserval with a value of 1.00.

The Danish air collector manufacturer SolarVenti A/S from Thorsø added a new 3 m² collector to the production portfolio called SV30AWX which provides not only warm ambient air but is also suitable for water heating. "In holiday homes, it may be useful to ventilate in times of vacancy and use the system for water heating during occupancy," says Christensen, CEO of Solarventi. Alternately, two collectors can be combined to provide simultaneous space heating and hot water. By default, the system comes with an 80 litre tank and operates on the principle of gravity, which means there are no pumps required. Depending on the weather, the water heats up to 30 – 60 °C.

Another innovation was presented by Solarventi: a solar-powered reference hygrostat. The regulator can simultaneously register moisture at four locations within a building and decides when the heated outdoor air is suitable for drying. "This way, it prevents air with too much moisture from being moved into a cold cellar and condensing on the walls during the transitional periods," says Christensen.

The Israeli manufacturer Palram Applications Ltd. from Misgav also had a new air collector on board. The 0.86 m² collector has a polycarbonate cover and can be mounted on the roof or on the building façade. A solar panel powers the fan and allows for utilisation in areas without a public power supply. The maximum volume flow is 115 m^3/h; the maximum temperature difference between collector and environment is 30 °C.