

Betting on Climate at Construmat 2015: the Ice Cube Challenge

At the Construmat fair, PAPIK Group turned a technical principle into a public demonstration: how much ice survives four days inside a well-insulated envelope.

The best way to explain thermal insulation is not always a calculation. At the Construmat edition, PAPIK Group took part at the stand of the Passivhaus Building Platform (PEP), in collaboration with Energiehaus, with a challenge designed so that visitors could see, and measure, how a high-performance envelope behaves.

The ice cube challenge

On Tuesday the 19th, two ice blocks measuring 25x25x25 centimetres were set out. One was left in full view of visitors, exposed to the conditions of the fair. The other was protected by a small structure built by PAPIK Group, made up of 5 centimetres of wood insulation and 15 centimetres of cellulose. On Friday the 22nd, four days later, the structure would be opened to measure how much ice mass had survived.

Taking part was simple. Visitors placed their bets on the outcome by filling in the slips available at the stand: whether any ice would remain, whether it would be more or less than half. Whoever came closest to the real measurement would win an online introductory Passivhaus course.

What the small passive house shows

The experiment scaled down what a home built to the Passivhaus standard does. These buildings contribute significantly to a high level of thermal comfort, in both summer and winter, and reduce the energy consumption of cooling and heating. Rigorous solar control in summer and effective night ventilation as a source of cold complete a behaviour that, unlike the exposed block, keeps the indoor temperature stable against outdoor conditions.

The standard applies to both new build and retrofit, and it underpins the Eskimohaus system that PAPIK Group builds with. The ice cube challenge was an initiative of the Passivhaus Building Platform, Energiehaus Architectes and PAPIK Group, with the collaboration of Ecospai, Apliter and edificapro.

An ice block sealed for four days says, without formulas, what a well-insulated home does every day of the year: it separates the interior from the swings of the outdoor climate.

