Demand-controlled ventilation is perfect for passive houses

Nilan A/S, who develops and produces energy-saving ventilation systems, has significantly advanced their product development by taking part in KOMFORT HUSENE (the comfort houses).

The company, whose headquarters are in Hedensted, has supplied six out of ten systems for KOMFORT HUSENE, all of which control ventilation by demand.

“In a passive house, it is incredibly important to obtain the greatest efficiency of the plant, as it is the only source of space heating and domestic hot water,” says department head Lars Bek, Nilan A/S.

“For KOMFORT HUSENE, we developed the systems to be more intelligent, to provide true demand-controlled ventilation. In other words, the systems increase or reduce ventilation when moisture and CO_2 in the buildings change,” says Lars Bek.

In this way, the plant uses only the electricity that is strictly necessary.

Heat from soil to floor

Capacity has also been worked on, as Nilan's existing equipment did not provide enough.

“As KOMFORT HUSENE are relatively large and therefore need more energy, we had to develop larger and better equipment. This equipment can supply more air than to date, and a 2 kilowatt micro soil heat pump has been incorporated, which uses an 80 metre long buried pipe to transfer the soil's heat to underfloor heating in the buildings. We also draw the air to the plant through a 40 metre buried pipe, so that it reaches a certain temperature before it enters the building.”

The soil heat pump, domestic water pump and ventilation system are integrated into a single plant, which we have managed to compress to be only 90 cm wide.

“We think this is the equipment of the future, and we actually have the next plants on order,” says Lars Bek.

This product development can also be significant for buildings built according to the requirements of Low Energy Class 1, in which it can also supply all heating.

“There is a big market here, we believe, as many local authorities have started reserving development plots for these buildings,” says Lars Bek.

Nilan's equipment in Skibet will be covered by the three-year research project to be led by Aalborg University when KOMFORT HUSENE are ready in autumn. This will involve both technical measurements and studies of the residents' perceptions of quality of life and well-being in a passive house.

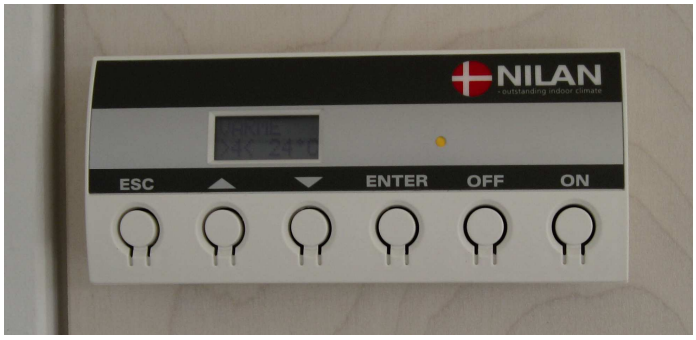
The new equipment from Nilan can also strengthen the company's exports. The HTA testing institution in Switzerland has recently tested it, with particularly good results, and as Nilan is already in the market there, the test results could lead to even more orders.

“We have spent a lot of money on development, but it has been well spent, as we now have the equipment of the future,” says Lars Bek.

He adds that a manufacturer of ventilation equipment must also be aware of cultural differences in the international market.

“When the Swiss think it is not warm enough in the house, they put on a pair of rush slippers. When Danes are cold, they turn up the heating, so here we can't manage with a room temperature of 20 degrees…”

Caption
The ventilation equipment which Nilan has developed in connection with KOMFORT HUSENE is compact and so can easily be fitted in anywhere.



Caption
The operating panel for the ventilation system is wireless and therefore easy to fit in with the rest of the fittings.