



Køge Housing Association

Facts

Køge Housing Association is a non-profit housing organisation whose main purpose is to let and manage non-profit housing. Today, the association consists of 11 independent residential complexes with a total of 1,700 homes in the Hastrup Vest area between the towns of Køge and Herfølge.

CASE STORY

COMFORT 1200 BY NILAN

The first non-profit housing and passive house certified flats in Scandinavia are managed by Køge Housing Association. The 126 flats were completed in 2012 and are spread on nine tower blocks. Nilan was selected by E. Pihl & Søn to supply the central ventilation and heat recovery systems, due to our extensive experience with construction of passive house buildings.

The challenge

On the construction of 126 flats in Ravnsborg in 2010-2012, Køge Municipality had the ambition for the new complex to be ecofriendly, by setting special sustainability requirements. The starting point for Køge Housing Association and the contractor E. Pihl & Søn was to build energy-neutral homes, with a high level of insulation and recovery of ventilation air. This would reduce energy consumption to a minimum, while also ensuring the healthiest possible indoor climate. The requirements of a highly-insulated building envelope and low energy consumption, with a good indoor climate, presented significant challenges for the ventilation solution chosen for the project.

The solution

In cooperation with E. Pihl & Søn, Nilan devised a solution whereby each of the nine tower blocks has two centralised ventilation systems installed in the basement, from where fresh air is channelled into each flat. The centralised ventilation systems are from the Comfort 1200 series, which has an air exchange rate of 1,200 m³/h and is developed especially for flats and commercial buildings. The systems extract the hot, humid air from the flats,

recovering the energy via a highly-effective counterflow heat exchanger. The energy is used to heat the fresh, filtered supply air that is channelled into the flats. Air-water heat pumps are installed on the roofs of the buildings. These pumps are used to supply decentralised heating elements in rooms, and to heat domestic water.

Benefit

"Nilan's ventilation system has one of the highest recovery rates in the market, and was one of the reasons that the buildings achieved passive house certification. With this solution, residents now have a monthly energy bill of just 20 € for heating and hot water consumption, compared to a typical cost of 100 € for a traditional home that does not hold passive house certification. The buildings' annual energy consumption is 17 kWh per m². This is well below the building regulations' energy requirements for new construction, where the permitted annual energy consumption for heating, ventilation and hot water in a detached 150 m² home may not exceed 84.6 kWh per m²," says Jacob Bauer Nielsen, construction site manager at E. Pihl & Søn.

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