

V7 THINK DIFFERENT, BUILD DIFFERENT

ECO-BUILDINGS IN PORTVAKTEN

Portvakten North



Portvakten South



Credit: Henrik Johansson

SYNOPSIS

In Portvakten North and South in Växjö, the municipal housing company Hyresbostäder i Växjö AB built 133 apartments, of which 64 are located in passive houses.

BACKGROUND

The energy used in households for heating, electricity and hot water stands for roughly one third of all the energy consumption in Växjö. The energy focus has been mostly directed to new constructions, but the big potential to reduce energy consumption is within the existing building stock. The important experiences learnt from the construction of the new eco-buildings can be applied when refurbishing the existing building stock.

OBJECTIVES

- Build dwellings with an energy consumption 35% lower than applicable national indices (at the time for project application):
 - Heating: 95 kWh/m²
 - Electricity: 20 kWh/m²

PROJECT DESCRIPTION

The project includes the construction of 133 apartments in 5 buildings.

The 3 buildings referred to as Portvakten North were built in 2005 and 2006. High insulation with good airtightness and heat recovery enables low energy consumption in these buildings. Displays showing the energy use were installed in each apartment so that tenants could maintain this level of consumption.

In 2009, the 2 houses referred to as Portvakten South, were inaugurated. These eight storey high passive houses with a solid timber frame are air-sealed and connected to district heating for peak load and hot water. The houses are also equipped with heat recovery on the sewage water.

RESULTS

The energy statistics available in autumn 2010 showed that the annual use of district heating in Portvakten North (average for the three buildings) was 65 kWh/m² and the use of electricity was 11 kWh/m². Even if Portvakten North and Portvakten South had the same target specifications in the SESAC project, it was obvious that the actual outcome would be much better in Portvakten South. The annual expected results are 40 kWh/m² for heating and hot water, and 10 kWh/m² for electricity.

NEXT STEPS

Portvakten North was the first site to be built within the SESAC project, meaning that many of the technologies used in these houses were improved when constructing the other buildings in Växjö. The passive houses in Portvakten South have shown that it is possible to think differently in the building process, a fact that will probably impact on Växjö's city planning.

FURTHER INFORMATION

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