

# V4 VÄXJÖ'S FIRST SMALL-SCALE URBAN WINDMILL KEEPS COMPANY TO ECO-BUILDINGS IN BLÅSBÄLGEN

## SYNOPSIS

The municipal housing company Växjöhem has built an eight storey high low-energy building containing 46 apartments. Växjö's first small-scale urban windmill has been installed on top of it.

## BACKGROUND

The energy used in households for heating, electricity and hot water stands for roughly one third of all the energy consumption in Växjö. 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.



Credit: Henrik Johansson

## OBJECTIVES

- Build dwellings with an energy consumption that is 45% lower than applicable national indices (in 2004):
  - Heating: 70 kWh/m<sup>2</sup>
  - Electricity: 20 kWh/m<sup>2</sup>
- Demonstrate how a small-scale urban windmill works.

## PROJECT DESCRIPTION

Växjöhem has erected this eight storey high low energy house that is similar to a passive house, even if it has a traditional heating system. The low energy consumption in the building was achieved thanks to an integrated building process, addressing energy and cost efficiency during the entire operation of the project – using the knowledge and experience obtained from the construction of the other eco-building projects in Växjö. The house has high insulation standard with good air

*The windmill is being lifted on top of the roof.*



Credit: Carina Herbertsson

tightness and heat recovery.

In order to help the tenants keeping a low energy routine, displays showing the energy use are installed in each apartment. On top of the house, Växjöhem has installed a 5 kW urban windmill with a vertical axle. It is the second of its kind in Sweden.

## RESULTS

The house was built in 2010 and it is estimated that the energy targets will be reached. The windmill is expected to produce 15,000 kWh annually. Blåsbälgen is a very good example showing that even better energy standards can be reached without increasing the costs dramatically.

## NEXT STEPS

Växjöhem will follow and monitor the energy use in Blåsbälgen very carefully, in order to learn out of it and apply the results and new knowledge in upcoming projects. If the experiences of the urban windmill are positive, then more urban windmills will be installed in the future.

## FURTHER INFORMATION

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