

V2 THE ENERGY EFFICIENT ARABY SCHOOL

LESSONS LEARNT ON CO₂ SAVINGS

SYNOPSIS

The municipal real estate company VöFAB refurbished the Araby school to make it more energy efficient. It installed also a PV plant on the roof, helping the school to produce part of its own electricity needs.

BACKGROUND

The energy used in buildings (except 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.

A long tradition of using renewable energy sources, mainly wood, exists in Växjö. However, it is necessary to also have diversity in the renewable energy sources, meaning that energy sources such as solar and wind must be introduced to a higher extent.

OBJECTIVES

- Reach an energy consumption being 21% lower than the national average:
 - Heating: 122 kWh/m²
 - Electricity: 28 kWh/m²
- Demonstrate on-site generation of electricity from PV panels.
- Show that solar energy also has a potential in northern latitudes.

PROJECT DESCRIPTION

VöFAB has refurbished four out of five buildings of the Araby school that was built in 1963. The roof and walls have been insulated and the windows have been changed to reduce energy losses.

New systems for ventilation, lighting and heat recovery have been installed. The students in the school's science programme have the possibility to study energy and technical installations in a more practical way.

PV panels have been installed on the roof of the school. The PV system has a capacity of 15 kW and represents a total area of 120 m². In order to make the installation and its effects more visible, a display has been installed inside to show the current production, as well as the total production and CO₂ savings.



Credit: Kari Ahlqvist

RESULTS

The PV plant installation was completed in August 2010. The refurbishment is completed in 2011 and the energy targets are expected to be reached.

NEXT STEPS

A further goal is to reduce the energy use even more, so that today's energy requirements for new locations, 130 kWh/m², can be met.

FURTHER INFORMATION

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