

A Swedish quality control system helping to reduce energy consumption in European social housing

Throughout Europe, there are millions of residential buildings that were built before the oil crises of the 1970s, and which are in urgent need of renovation. The three-year SQUARE project (a System for QQuality Assurance when Retrofitting Existing buildings to energy-efficient buildings), a IEE project financed by EU, which will be operated under the management of SP Technical Research Institute of Sweden, is intended to reduce buildings' energy consumption and improve their indoor environment in those buildings.

– **The idea is that the Swedish P-marking system can provide a model from which European property-owners can develop their own systems, says Project Manager Kristina Mjörnell from SP.**

The aim of the EU's SQUARE project is to develop a quality management system that ensures efficient use of energy and an improved indoor environment in renovated and converted social housing stock in European countries. The potentials for saving energy - and thus also reducing climate-threatening carbon dioxide emissions - are enormous. It has been calculated that about 40 % of total energy consumption is for space heating and ventilation of residential buildings.

An approval marking scheme for quality control

Working with construction and property companies, SP's energy experts have developed a P-marking system for quality assurance of indoor environment conditions and energy use. Over the last few years, the system has been applied in assuring the indoor environment and energy use conditions in many Swedish schools, child day-care centres and apartment buildings. Quality assurance under the scheme means that the property-owner has control over the property's energy consumption, ventilation and indoor climate conditions. P-marking is now taking the step out into Europe, to become an important element of the SQUARE project.

– The P-marking system will be customised to the local conditions in different countries, and will be tested in a number of pilot projects. In Sweden, we're working with the Brogården residential development in Alingsås, says Kristina Mjörnell.

Major need of renovation

Residential buildings that were built under Sweden's Million New Homes drive of the 1960s are major users of energy, and are also now in need of renovation. If the opportunity provided by renovation and conversion of these properties is taken to carry out the right work and improvements, total energy consumption will be reduced and indoor environmental conditions improved.

– However, it's a considerable help that many apartments have the same plan, as this makes it simpler and cheaper to carry out large-scale improvements.

Improved indoor environment

The SQUARE project is intended also to improve indoor environmental conditions. This will have an important effect on public health, as today's Europeans spend most of their time indoors.

– It's been calculated that about 40 % of the population suffers from health problems or poor indoor comfort conditions that are due to the indoor environment.

The SQUARE project

The project's name is derived from A System for **Quality Assurance** when **Retrofitting Existing Buildings to Energy-efficient Buildings**. Half of the funding is provided by the EU, and the project brings together eight partners: from Sweden, SP and Alingsåshem; and from other countries TKK (Finland), AEE INTEC (Austria), Trecodome (Holland), EAP (Bulgaria), and TTA and POMAA in Spain.

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