

BUILDSMART'S purpose was to demonstrate and mainstream cost-effective technologies and methods in the design of buildings with very low energy consumption, in different European climates. The project also had a strong focus on energy-related behavioral issues, recognizing the role end-users play on energy use in buildings.



BUILDSMART

■ Energy efficient solutions ready for market ■

www.buildsmart-energy.eu

RESIDENTIAL CASE-BUILDINGS



ROTH FASTIGHETER

Malmö, Sweden

The small real-estate company Roth Fastigheter has developed a residential building constructed with heavy frames and an air-tight envelope. It is connected to the district heating network, which is distributed via floor heating, but it has little need for added heating thanks to the passive design and integrated system for heating and ventilation. The roofs contain green parts and solar thermal heating. Residents can monitor their energy use in real-time via a monitor in their apartments.



SKANSKA TENOREN AND SOPRANEN

Malmö, Sweden

Skanska has developed two residential buildings called Sopranen and Tenoren, constructed with well-insulated thermal envelopes with high air tightness. Tenoren has pre-fabricated sandwich concrete elements insulated with PIR, and Sopranen has standard concrete walls insulated with mineral wool. The concrete roofs are well insulated and partly covered with sedum. The main heating source for the apartments is the ventilation system, with a heat recovery potential of 80 %.



BASQUE GOVERNMENT

Portugalete, Spain

The Basque Government has developed a residential building meant for social housing, specifically oriented to low-income residents. The building is formed by three blocks, each with a different façade construction. One is a standard wall with Ytong blocks. The trombe and solar walls are active facades, harvesting solar energy to feed into the building's energy system. Other components of that system are a CHP unit, an air-to-water heat pump, a condensing boiler, storage tanks and photovoltaics.



NON-RESIDENTIAL CASE-BUILDINGS



SKANSKA MALMÖ LIVE HOTEL
Malmö, Sweden

Skanska has developed a hotel in the Malmö Live complex, which is now owned and run by a hotel chain with high environmental concern. The building is well-insulated and has high air-tightness, despite the high proportion of windows. This is achieved by an insulation material consisting of PIR and graphite EPS, 3-glazed windows with a U-value of 0.8, and sedum roof among other things. It also has a geo-thermal plant combined with heat pumps, catering for the entire need of both heating and cooling. Photovoltaics cover parts of the electricity demand.



Photo Johan Wessman



SKANSKA KLIPPORNA
Malmö, Sweden

Skanska has developed the office complex Klipporna, with a well-insulated and air-tight thermal envelope: Walls and floors insulated with cellular plastic; 3-glazed windows; roofs with a thick layer of mineral wool insulation and a top layer of sedum. Klipporna is cooled by Skanska's award-winning DeepGreenCooling, which requires almost no electricity for circulation. The self-regulating ventilation system uses a lower pressure drop than traditionally, and thus less energy. This energy-efficient system is completed with a heat recovery above 72 %.



MONITORING

IVL have set up a monitoring programme for the buildings' energy performance, so that the partners can evaluate building performance compared to simulations. Air quality, temperature, air flow and other relevant parameters are monitored and measured.

Reports and results are available on the Buildsmart homepage. Monitoring data will be analysed by SCIS (smartcities-infosystem.eu) after the end of the project.

TRAINING SESSIONS ON ENERGY AWARENESS

Training is an important aspect of implementing and using very low energy technologies in a building. The Buildsmart project has therefore explored the potential of achieving energy savings by effecting behavioural change, and developed training programmes for industry professionals as well as households, i.e. the energy end-users. A very successful energy awareness campaign called "Think Energy" was piloted in Dublin City Council by the Dublin Energy Agency Codema. This involved the setting up of a team of Energy Ambassadors, the organisation of a number of energy saving activities for staff, and the creation of an interactive online space for communication. Training material ranged from webinars, guides and useful website links to videos that help create awareness of technologies and energy usage within a building.

Everything is available on the Buildsmart homepage:
www.buildsmart-energy.eu.

Organization and funding

The project was EU-funded through the European Union's Seventh Framework Programme. Nine partners in three countries made up the consortium with the city of Malmö as the coordinator of the consortium.

This folder is a short summary of the project and its case buildings. Please visit our homepage for more extensive information, reports, results on energy solutions and their effectiveness and contact information to the partners of the consortium.

Consortium/Partners



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