2009 HIGHLIGHTS

SHC Task 37
Advanced Housing Renovation with Solar & Conservation

THE ISSUE

Buildings are responsible for up to 35% of the total energy consumption in many of the IEA countries. And, housing accounts for the greatest part of this energy use. Renovating existing housing offers an enormous energy saving potential, and it is the only strategy that can achieve a substantial reduction in energy use in the housing sector in the short-term.

OUR WORK

The objective of *SHC Task 37: Advanced Housing Renovation with Solar and Conservation* is to develop a solid knowledge base on how to renovate housings to a very high energy standard and to develop strategies that support the market penetration of such renovations. SHC Task 37 focuses on both technical R&D and market implementation.

PARTICIPATING COUNTRIES

Austria
Belgium
Canada
Denmark
Finland
Germany
Italy
Netherlands
New Zealand
Norway
Sweden
Switzerland

The Task has begun to analyze the building stock in order to identify building segments with the greatest replication and energy savings potential. Examples of building segments are year of construction, type of building, type of envelope and components. Within these segments, important topics for discussions are ownership and decision structures, characteristics of residents, and retrofit market players.

In parallel, exemplary renovation projects achieving substantial primary energy savings while creating superior living quality are being analyzed. Important aspects are the energy performance and the owner's motivations behind the renovation. Insights from this international collaboration will be shared nationally with end users in a deliberate strategy to increase the market penetration of advanced housing renovations.

SHC Task 37 is a four-year collaborative project that will be completed in December 2009.

KEY RESULTS OF 2009

International conference on "Energy Futures Available Today: Integrating Residential Energy Savings and Solar Initiatives", Waterloo, Canada, May 2009 The conference objective was to identify what can be done in building renovation, and included SHC Task 37 presentations.

International symposium "Energy transition at housing renovation: a successful approach" and study tour to Roosendaal in the Netherlands; October 2009 Organized in the framework of SHC Task 37 and the Green Solar Cities project within the EU Concerto program, the focus was renovating to the passive-house standard.

An international conference "Substantial energy saving in existing housing NOW", the Antwerp Belgium, October 2009 Organized by PassiefhuisPlatform, final results of SHC Task 37 and ECBCS Annex 50 were presented. All presentations are available on the Task website, http://www.mozilla.com/en-US/products/download.html?product=firefox-3.6&os=osx&lang=en-US

Demonstration Projects

Fifty-one exemplary housing renovation project brochures will be available in mid-2010, http://iea-shc.org/publications/task.aspx?Task=37. These projects include:

- Apartment buildings
- Penthouses (addition of apartment on existing floor)
- Historic housing
- Row houses
- Single family detached houses

Project results are impressive — the primary energy consumption for space heating and domestic hot water has been reduced by up to 90%. This is all the more impressive because it accounts for primary energy, which reflects the source energy needed to produce the heat. Many of these projects include a solar heating system for domestic hot water and/or space heating.

For example, prior to renovation this single family bungalow built in the 1980s near Linz, Austria had a space heating demand of 198 kWh/m². After the 2006 renovation and addition of a storey, the building achieves a 30 kWh/m² space heating demand. To make the home completely energy self-sufficient, the owners plan to change from oil heating to an air/air heat pump and to add a windmill and PV system to generate electricity. The completed renovation has resulted in a reduction in the primary energy for space and water heating from 317 kWh/m² to 67 kWh/m²

Task Dates	**2006-2009**
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