

# Sustainable renovation of multi storey housing from the post-war period (REBO)

REBO is a research program (2008–2012) carried out by SINTEF Building and Infrastructure in cooperation with NTNU Social Sciences, financed by the Norwegian State Housing Bank. The program is based on an interdisciplinary approach and focuses on cost-effective renovation of the housing qualities environmental friendly energy use and universal design.

Multi storey housing from the post-war period constitutes a large volume of the housing stock in Norwegian cities and communities. This part of the housing stock has considerable challenges as regards upgrading housing quality. A great proportion of the social housing available for vulnerable groups in the housing market is a part of this housing stock. The program therefore also focuses on the challenges of municipal management- and decision-making processes connected with these buildings and resident groups.

## Aims

The aim of the program is to contribute to new knowledge and a change of practice, for the purpose of an ambitious upgrading of existing housing stock in the fields universal design, reduced energy use, and increased use of environmental friendly energy sources. Residents needs, and support management- and decision-making processes in upgrading projects will be made visible through the program.

## Methods for knowledge collection and development

The program is organized in work packages for research and communication of results in the following main categories:

- Municipal management- and decision-making processes
- Energy
- Universal design

In addition, there is a work package for multidisciplinary analysis, for the discussion of subjects across these categories.

The empirical data will be collected from case studies of multi storey housing from the post war period which has undergone or is planning rehabilitation. The case studies vary with regard

to residents group, typology, rehabilitation scope, and rehabilitation solutions.

An advisory board of representatives from selected municipalities, housing cooperations, the building industry, universities, and Ministry of local government and regional development, functions as advisors for the research program, provides for satisfactory user anchorage, and is central in the selection of case studies and implementation through pilot projects. The advisory board assists the research program through a series of workshops that function as arenas for exchange of experience and dispersion of competence.

The knowledge appearing in the research program will be implemented and communicated through demonstration buildings or model projects. The demonstration buildings will be rehabilitation projects of multi storey housing where new knowledge will be tested and developed.

## Communication of results

In addition to communication through demonstration buildings, the program has its own web site:

[www.sintef.no/projectweb/boligoppgradering](http://www.sintef.no/projectweb/boligoppgradering)

The results will be presented continuously through reports, presentations, and articles.

The research program is connected to the research centre for environmental friendly energy, *The Research Centre on Zero Emission Buildings – ZEB*.

## Contact

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