

Acceptance of energy saving activities as a means of sustainable housing stock rehabilitation

Executive summary¹

Research design

The housing companies' aim of energetic rehabilitation of their housing stock is to offer comfortable and up to date flats, guaranteeing a sustainable leasing and moreover to meet climate protection goals.

All this requires the tenants' acceptance in particular in those cases where the inhabited flat is under rehabilitation.

Taking this into consideration the research project targeted the following goals:

- Inhabitants' attitudes towards energy saving rehabilitation related to their flats.
- Acceptance of the inconveniences caused by the rehabilitation, degree of inconveniences and individual strategies to live with the inconveniences.
- Satisfaction concerning the living conditions after energetic rehabilitation and degree of functionalism and applicability of the house devices (especially: ventilation system)
- Influence on the notion of sustainability and environmental protection induced by living in energy saving dwellings
- Effects on local attachment and local identity

Execution of the research project

The research project was based on the DENA – German Energy Agency – pilot project 2003: “Low energy housing stock”. In the course of the project energetic rehabilitation of old housing stock was subsidized reducing the energy consumption to a level of 40 – 60 kWh/m² p.a. of energy consumption, so called “KfW 40 rep KfW 60-houses”.

In order to implement the a.m. research a longitudinal design with three interview interventions was chosen. The research sample had to meet specific criteria: interviews *before* rehabilitation was started, interviews after rehabilitation and interviewed tenants who stay at the flat during rehabilitation.

As only a small sample met the requirements an additional retro-interviewing was done: tenants were interviewed after rehabilitation was finished.

Following the longitudinal design data of 31 households were evaluated equalling 47 % interview participation (Pilot projects in Ansbach, Bremen and Hofheim/Taunus).

Within the retro-interviewing 81 households were evaluated (Pilot projects in Freiburg, Leipzig and Schwerin). Due to the exclusively written interview participation equalled 31 %.

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Conclusions

The overall tenants' attitude towards energetic rehabilitation was positive. The positive notion at all stages of the interviews closely related to the high expectations of the rehab-results. The pronounced individual expectations related to reduction of heating costs and raise of living comfort. The final assessment of the rehab-results exceeded all expectations, i. e. the interviewed inhabitants were mostly content. Tenants' identification with the energy saving goals was high. Reduction of heating costs and energy saving reached the highest approval.

Rehabilitation caused inconveniences such as dirt, noise, limited usability of the flat and untidiness had been regarded as very high. Every day life and privacy were highly disturbed to the permanent presence of the craftsmen in the flats.

A comprehensive and all rehab-phases including information strategy of the housing company is of high importance. Well informed inhabitants show a significantly higher approval of rehabilitation and support of the housing company than poorly informed inhabitants. There is a high demand for communication. If this is not satisfied by competent staff well able to explain delays and mishaps inhabitants' discontent increases.

Contentment with the flat before and after rehabilitation is very high. When dealing with low energy houses special emphasis lays on the house devices being different to ordinary dwellings foremost the ventilation system (rendering obsolete windows opening to avoid heat losses). Most of the interviewed tenants appreciated indoor climate and indoor air quality and freshness however tended to achieve "the fresh air-feeling" via window opening. This shows the system and the comfort of the ventilation system has not yet been understood.

Appreciation needs time to develop: Flade et al. (2003 a, b) investigation of low energy and passive houses showed as well that only after a longer period ventilation systems are hold as improvement of comfort and ventilation behaviour changes. Further it has to be noted that 9 – 31 % of the interviewed are unable to handle their ventilation system.

Rent increases, also regarded as justified were not appreciated. For most of the interviewed inhabitants the increased comfort of living in particular was the justification of the markedly increased rents.

Energy saving is of high priority for the interviewed inhabitants, however is regarded as uneasy to achieve. The main obstacle is the individual laziness.

Nevertheless the increased interest in energy saving included by the process of energy rehabilitation is an achievement in the process of energy saving behaviour. The longitudinal survey made evident that proper knowledge of energy saving supports concrete actions and casting interest.

The interviewed inhabitants' attachment to their respective housing estate was very high. The built and social living environment, i. e. area and neighbourhood, are even more important than the flat itself. The longer the inhabitants lived in their flat the deeper was the attachment to the area.

The shared experience of the rehabilitation deepened neighbourhood contacts and influenced contentedness and motivation to stay.