Abstract
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Housing Quality Barometer

Survey and rating-system for sustainable housing quality

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Abstract

The research project “Survey and rating-system Housing Quality Barometer [WWB]“ evaluates sustainable housing quality of the building stock in the urban context focusing on the area of the rental market.

The interdisciplinary research project was conducted over a period of 18 month between January 2008 and June 2009 by the Energy Efficient Building Design Unit at the Department of Architecture of the Technische Universität Darmstadt (TU Darmstadt) in cooperation with the Department of Computer Science of the TU Darmstadt and the Real Estate Company Pirelli RE Germany. Furthermore, it was supported by the Federal Office for Building and Regional Planning [BBR] within the construction and housing assistance program.

In the light of changing requirements on housing by demographic and social changes, the quality of a dwelling, respectively the quality of a residential building or its residential value is of increasing importance. The existing rating methods assess the quality of living in the residential building sector under a selective range of subjective criteria such as size of living area, number of rooms or selected standard and cost characteristics. Comprehensive quality of housing is thus not sufficiently identified and defined. Many other important aspects such as attractiveness of the location, social contact opportunities, resource requirements, comfort, spatial qualities or individual design possibilities of the residents are not or only insufficiently taken into account. At the same time, there are a variety of descriptive and evaluative techniques in the field of sustainable construction, which are limited methodologically mainly on measurable and quality aspects. However, those are used mostly for commercial buildings.

The goal of this project was to develop a prototype for a holistic and comprehensive rating system of the housing stock in Germany. Other sub-objectives were:

- Increasing the knowledge of the issues and criteria of sustainable housing quality of all stakeholders (planners, real estate companies, residents)
- Improving the knowledge of the real estate companies on the quality of their building stock
- Opportunity to analize the potential and weaknesses in order to improve strategic portfolio development
- Possibility to develop a search tool for planners, real estate companies and residents of suitable properties

The methodology started with the analysis of existing certification systems and the study of various sources in order to establish criteria and objectives of sustainable housing quality, which subsequently have been sorted, structured, associated with the objectives and added to prevailing conditions (Chapters 2, 3 and 4).

Using the systemic approach, the completeness of the collected criteria and existing interactions could be determined and hence the approach of the

weightings of the criteria in the assessment tool was defined. At the same time various existing rating and weighting methods were examined and tested for their suitability for the WWB (Chapter 6). Out of it resulted the following requirements on the scoring system (chapter 5):

- Possibility of collecting and processing quantitative and qualitative data
- Identification and representation of interactions and dependencies of determined criteria
- Taking into account the specified weights and securing the adaptability to specific user needs and requirements
- Multidimensional and differentiated graphical and textual output of the evaluation results

The WWB rates residential houses with the help of a qualitative scale from 1 (lower limit) to 5 (optimum in the building stock) on the basis of 43 criteria spread over 11 subject areas. At the same time each of the evaluated aspects is assigned to one of the 4 operating ranges: apartment, house/surrounding, location and design and construction process. This allows in addition to the thematic analysis and presentation of the quality of housing, a spatial differentiation in terms of private, community and public areas of the housing environment (chapter 7). The Evaluation of the objects and weighting of criteria are clearly separated. This

- allows to be more responsive to the several interests and influences of various actors.
- reduces the burden of the assessment process and thus increases the acceptability of the system by the operator.
- ensures the transparency and accountability of the results.

The results of the research project evaluated in the context of nearly 1'000 flats from the inventory of the project partner Pirelli RE (Kap.9) and some examples of recent residential projects can be tracked on the Internet at www.wohnwertbarometer.de (German). By the use of an integrated search function, there are two different search paths possible:

- A search for appropriate objects in a particular place for specific personal needs.
- A location-independent search and comparison in specific sub-sectors for best-practice-projects.

The annex of the report consists of the evaluation manual (in a PDF file) containing the detailed representation of the structure, methodology, examples of rating and assessment of the WWB. In addition the deployable guest tables can be used for recording and entering data into the developed database structure (Chapter 8).