Life span assessment of dwellings

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BOOK OF ABSTRACTS

Life span assessment of dwellings

4. Energy Efficiency and Environmental Sustainability of Housing

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What is the average life span of dwellings?

Though of decisive importance for the provision, maintenance and management of housing stocks, and despite a choice of research papers about the subject, the last word about this question is far from said.

At first a distinction should be made between the technical life span and the functional service life. The technical life span is decisive for the physical existence of a dwelling, the service life for the length of time that a dwelling fulfils the functional needs of households.

This distinction is not always clear in the available research sources which show a wide range of approaches, varying from ex-ante assessment of the physical condition and estimation of the residual technical lifespan, financial analyses of the profitable service life and/or depreciation period through ex-post mortality analyses in analogy to human mortality. Most ex-ante approaches start from a limited scope; an all-encompassing interdisciplinary approach is missing. On the other hand ex-post analyses suffer from the fact that – in contrary of human populations – buildings are man-made, -managed and -demolished; the vast majority of housing stocks is very young and consistent longitudinal series are missing. As a result, none of these approaches leads up to now to useful results, let alone reliable predictions.

As the technical life span of a dwelling as a whole strongly depends on its numerous different components, knowledge of technical life spans of dwellings and building component is also of decisive importance for ex-ante environmental life cycle assessments and life cycle cost calculations.

Based on an overview of the available sources, the paper discusses the pros and cons of the existing knowledge, possible improvements and alternatives.