SUGGESTIONS OF THE KLOKNER INSTITUTE, CTU IN PRAGUE FOR EACH PROJECT

Importance of the industrial heritage structures

A number of factories, warehouses, power-plants and other industrial construction works, built since the beginning of the Industrial Revolution, has been registered as industrial cultural heritage worldwide. Such structures are mostly of significant architectural, historic, technological or social value.

The industrial heritage structures often form part of the urban landscape and provide the cityscape with visual historical landmarks. Protection of the industrial heritage structures helps preserve cultural values, avoids wasting energy and facilitates economic regeneration of regions in decline.

Present insufficient attention to systematic recognizing, declaring and protecting the industrial heritage may, however, lead to their extinction. Desired protection of the industrial heritage structures requires a public recognition of the industrial heritage to be equally important as other cultural heritage. Introduction of educational programs and relevant legislation is needed.

Probabilistic assessment of heritage structures

Reliability assessments of heritage structures have to account for significant uncertainties related to actual structural conditions that can hardly be described by simplified deterministic procedures used for structural design. Such assessments may lead to expensive repairs and losses of the cultural and heritage value. The use of probabilistic methods in the assessment is thus proposed to facilitate:

- Better description of uncertainties related to material characteristics, actions, degradation aspects and modelling,
- Inclusion of results of inspections and tests and the satisfactory past performance in the assessment.

The probabilistic assessment of heritage structures should be based on:

- Models for basic variables determined taking into account the actual situation and state of the structure,
- Target reliability levels that are primarily dependent on costs of safety measures and consequences of failure including loss of the cultural heritage value. The target levels may be specified on the basis of the total working-life cost optimisation.

The probabilistic updating, accounting for the satisfactory past performance, may substantially improve the estimates of the reliability level for heritage structures.

The project is supported by a grant from Iceland, Liechtenstein and Norway through the EEA Financial Mechanism, the Norwegian Financial Mechanism and the Czech state budget.