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Environmental Impact Indicators for Buildings

Laura Dumitrescu[1]

[1]*Department of Civil and Industrial Engineering, Faculty of Civil Engineering, "Gh. Asachi" Technical University of Iasi, Romania*

- Date of submission: (20.05.2005)
- PhD. Supervisor: ADRIAN RADU, Faculty of Civil Engineering "Gh. Asachi" Technical University of Iasi, Romania
- President, NICOLAE TARANU, Dean, Faculty of Civil Engineering "Gh. Asachi" Technical University of Iasi, Romania
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Summary

By consuming energy, materials, and land, construction and housing is responsible for a considerable proportion of the environmental impact. The present trend in research in sustainable construction focuses on achieving better environmental performance of buildings.

The main goal is to reduce the negative impact that the building has on the environment, and to decrease the amount of energy consumed in order to decrease the capital and environmental costs. Therefore, it is important to define basic parameters and to create a group of useful indicators to define the sustainable degree of a construction.

This thesis provides a methodology for assessing environmental performance of buildings based on sustainability indicators, structured in five performance issues: resource consumption (energy, land, water, materials), environmental loadings, indoor environmental quality, quality of service and economics.

ISSN 1582-3024

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For the energy performance evaluation, computer programs were used and a simplified method for the calculation of the extra heat loses due to the thermal bridges effect was proposed.

Keywords: sustainable development, buildings, environmental impact, indicators.

ISSN 1582-3024