



Building Sustainability Assessment

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Message from the Guest Editors

Due to an increasing awareness of the effects of buildings' life cycle on climate change and the growing international movement towards efficient/sustainable buildings, the current paradigm of building is changing rapidly. As a consequence, the control of the environmental impacts of the building sector has become a major issue.

Building sustainability involves various relations between built, natural, and social systems. The following principles are the most common in the different approaches to promote sustainable building: optimization of site potential; preservation of regional and cultural identity; minimization of energy consumption; protection and conservation of water resources; use of environmentally friendly materials and products; healthy and convenient indoor climate, and optimized operational and maintenance practices. A building can only be regarded as sustainable when all the different dimensions of sustainability are balanced.

Although there have already been important research developments, there is still a wide number of aspects that are challenging both academics and practitioners for the development of a new generation of building sustainability assessment methods. The adoption of environmental LCA in buildings and other construction works is a complex and tedious task. It is necessary to develop sound methods for assessment that provide sufficient accuracy at reasonable time and cost. The development of life-cycle impact assessment (LCIA) databases for the most common building elements and building integrated technologies and the use of Building Information Modeling (BIM)-based LCA in building design are two paths to explore.

Based on the presented context, this Special Issue will be devoted to emergent research and development in the field of methods for assessing the sustainability or environmental performance of buildings. Manuscripts can be related to the following fields:

- building sustainability assessment
- environmental indicators
- societal indicators
- economic indicators
- sustainable urban development
- policies on building sustainability
- life-cycle analysis
- BIM-based life-cycle analysis
- circular building economy

