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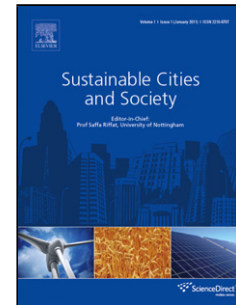
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Policy trends for the sustainability assessment of construction materials: A review

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Research Highlights

- Review work of European policies for sustainability of construction materials.
- Responsiveness of the EU in enacting policies that ensure the environmental sustainability of building sector discussed
- Holistic life cycle considerations identify opportunities for energy and cost savings, utilizing natural resources and achieving waste minimization
- Sustainability will be achieved through increased use of alternative, recycled, natural and unconventional construction materials
- Globalization and government intervention, are critical for fulfilling the sustainability vision of EU

Abstract

The burden of the European construction and building sector on the natural environment is apparent from the data, which reveal the energy, materials, and water consumption, and the waste generation associated with the building sector. Yet, significant efforts in improving the environmental awareness and sustainability of the construction sector are arising through the introduction of the numerous regulations, directives, and initiatives. This review work provides an overview of the most relevant existing European policies and legislation for the built environment, and the construction materials in particular. The implementation of a comparative assessment against the key elements of the international legislation and efforts enables the definition of the responsiveness of the EU in enacting policies that ensure the environmental sustainability of the sector, as well as identifies prospects for further improvement. Working towards the increase of the sustainability of the construction sector in a framework of holistic life cycle considerations is promoted in the current legislation, where identifying opportunities for energy and cost savings, utilizing natural resources efficiently and achieving waste minimization is endorsed. This work can be exploited from both policy- makers and the scientific community as guidance for transforming in a truly green sustainable construction market. The conclusions of this work indicate that the sustainability of the built environment will come through the increased use of alternative, recycled, natural and unconventional construction materials and thermal insulation materials, the exploitation of prefabricated building elements, the integration of LCA with BIM, the employment of multi- objective optimization methodologies, and the development of

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