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Nanotechnologies and Sustainability in the fields of Architecture and Preservation of Cultural Heritage

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Nanotechnologies allow today many applications for building construction and cultural heritage preservation, through the availability on the market of smart materials, revolutionizing the traditional methods and techniques. These appear as groundbreaking and promising tools, being able to improve the performance of traditional building materials, like concrete, steel and glass. In particular, the several applications of nanotechnologies in the field of conservation of cultural heritage are transforming old procedures for intervention, overcoming the major faults characterizing some of the traditional products currently used, allowing a more reliable and sustainable preservation of artifacts by the use of non-toxic and environmentally friendly treatments.

This contribution presents the state of the art of the major nanostructured products for building construction and cultural heritage preservation sectors, illustrating the main characteristics that make these products more sustainable. The increased performances, as improved strength and durability of materials are magnified also considering the reduction of the environmental footprint of the built environment throughout the efficient use of resources. Finally, this contribution underlines that, even if these nanomaterials are contributing to a significant change in our life, we must ensure that the potential risks are identified and controlled, through developing new appropriate standards and codes for their application.

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