



Advances on building pathology and rehabilitation

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Building pathology is the scientific study of the nature of building failure and its causes, processes, development, and consequences. To provide an economic and effective remedy to building defects it is essential to identify properly the cause to address the problem. Rehabilitation is a strategic area that deals not only with historical buildings but also with other buildings that have been in use for some time and need to be adapted to the demands of the times.

The construction industry is responsible for creating, adapting, and improving the living environment of mankind. On the other hand, construction and buildings have significant environmental impacts as they consume over 40% of total primary energy. The built environment is in the heart of global strategies and actions for a more sustainable future. To provide resilient solutions, simple optimization of individual technologies will not suffice. Rather, thinking in the whole system reveals and exploits connections between parts. Each system interacts with others at different scales, i.e., materials, components, buildings, cities; and domains such as, ecology, economy, and social. Therefore, the sustainability of the built environment, construction industry and related activities is an urgent issue for all stakeholders to promote sustainable development. The coming years will be a challenge for practitioners and researchers who have

in mind the sustainability of the built environment and the construction industry.

This Topical Collection provides a collection of recent research works to contribute to the systematization and dissemination of knowledge related to strategies, diagnostic and design methodologies, appropriate application of existing regulations for rehabilitation, energy efficiency, adaptive rehabilitation, rehabilitation technologies and case study. It includes a range of new developments in rehabilitation and energy efficiency building pathologies (structural and hygrothermal), building pathology versus durability, durability approach for historical and old buildings, methodologies for predicting service life, building performance simulation, new approaches to green concrete applied to rehabilitation, new façade solutions, and more.

This collection was curated by the Editor in Chief Esequiel Mesquita and João Quesado Delgado from articles that also appear in the journal's issues.

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