SS-03

INSPECTION, DIAGNOSIS, MAINTENANCE AND REHABILITATION OF BUILDINGS FOR THE FUTURE

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Abstract

The objective of this special session is to identify and address key aspects related with the inspection, diagnosis, maintenance and rehabilitation of housing buildings for the future, with special concerns with climate change effects. The buildings that began as a shelter and later as a means of ostentation for some, evolved in the Middle Age with the need to ensure conditions of health for all. Subsequently, minimum habitability areas and conditions were demanded and rules were established to guarantee structural safety. More recently, regulatory requirements such as thermal and acoustic comfort, fire safety, accessibility, energy efficiency and sustainability have emerged. There are new concerns today, which research seeks to anticipate: the relationship between housing and health, the definition of methodologies for occupational risk assessment and indoor air quality assurance, among other areas requiring a transdisciplinary approach. As in medicine, it is important to study the "anatomy of buildings", to develop complementary inspection and diagnostic techniques, especially non-intrusive techniques, and to establish "therapies" that allow conservation and rehabilitation actions to ensure the future use of buildings not only with safety and comfort but also with occupant health concerns.

Justification

Papers approaching these subjects with a solid scientific and technical background and enabling advancement of the area are important additions to the body of knowledge in the field of civil engineering and architecture. The rehabilitation project is nowadays more complex since it is part of a pre-existence that needs to be known and understood and involves the constitution of multidisciplinary teams with different knowledge to guarantee their success. The use of new materials may be prescribed or new constructive solutions applied, but technical knowledge is required and its operation, durability, compatibility and suitability for our geographical context must be proven. In a new teaching and research paradigm, it is important to include the study and knowledge of the construction techniques applied at different times and in different historical, social and political contexts but also the knowledge of the actual and future interaction of building with the health of occupants, especially in terms of climate change.