

Preface

In the distant past, construction solutions were validated empirically through several years of experience, whereas with the onset of further industrialization of the construction process, it was recognized within the construction community that a performance-based selection of materials, components, and systems was required if innovation was to be fostered and progress in the construction domain achieved. However, it was equally apparent to those promoting such novel approaches that the selection on the basis of understanding of performance requirements could only be met if the results of research and development were made available and indeed exploitable by practitioners.

The main purpose of this book, *Recent Developments in Building Diagnosis Techniques*, is to provide a collection of recent research works on building diagnosis techniques to contribute to the systematization and dissemination of knowledge related to construction pathology, hygrothermal behaviour of buildings, durability, and diagnostic techniques and, simultaneously, to show the most recent advances in this domain. It includes a set of new developments in the field of building physics, risk assessment of urban fire, building anomalies in materials and components, new techniques for better energy efficiency analysis, and diagnosis techniques, such as infrared thermography. Building thermography is explained with a lot of thermal images as examples for physical consequences of formulae, and case studies of several kinds of inspections are developed, from moisture and mould, to building energy efficiency and construction defects, etc.

The book is divided into several chapters that intend to be a resume of the current state of knowledge for the benefit of professional colleagues, scientists, students, practitioners, lecturers, and other interested parties to network. At the same time, these topics will be the encounter of a variety of scientific and engineering disciplines, such as civil, materials, and mechanical engineering.

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