

Preface

The parts published in this book are taken from the III International Congress on Sustainable Construction and Eco-Efficient Solutions, held in Seville, Spain, in March 2017, this being the fifth edition at a national level. The chapters that are collected in this book are the best ones that have been selected from the 150 chapters presented at this event, by a double-blind peer-review performed by an International Scientific and Technical Committee.

The congress has been established as a forum bringing together academics, researchers, and professionals mainly from the construction sector, where available multidisciplinary environmental information is shared, participating from different areas of the construction process.

Its aim is the search for new alternatives to conventional construction solutions that minimize the environmental impact of the construction activity, improve energy efficiency of buildings, build or refurbish, being thus considered individually or at neighbourhood scale, always from a rentable and optimal cost in time. Therefore, the theme of this edition aims to extend the fields of action involved in the development of an ecological and sustainable society from all areas of knowledge, which is “Sustainable Development and Renovation in Architecture, Engineering and Urbanism” in response to the objectives, not only raised in the Horizon 2020 but from all the people who seek a more sustainable world.

Through three days, professionals, scientists, researchers, and public administration representatives worked together in thematic and parallel blocks, in round tables and debating sessions, in order to reflect on the decision-making that helps to improve the technique innovation in both the public and private building sectors. The content of the communications presented at the Congress is divided into thematic blocks, which continues with “re-” as the motto of previous editions and introduces new ones and of which this book is structured: Sustainable Renovation of Buildings and Neighbourhoods; Minimizing the consumption of material resources; Sustainable planning and urban development; Energy efficiency; Sustainable engineering; Eco-economy; Architecture and society; Sustainable building.

At the same time, students worked intensively in the workshops to achieve innovative building solutions, as alternatives to conventional solutions, which are capable of minimizing the environmental impact generated by construction, thereby improving the energy efficiency of the pre-existent buildings, with an optimal economic cost, and affordability in the long term.

These objectives have brought together more than 100 international researchers from eight different countries, which demonstrate the international scope of this call. Argentina, Chile, Ecuador, Mexico, Portugal, and Spain are the most representative countries. And also around 200 students have participated from the branches of Architecture, Engineering, Urbanism, and Environmental Sciences, among others.

There are involved institutions from Argentina (National University of La Plata, Consejo Nacional de Investigaciones Científicas y Técnicas, Experimental Production Center, University of Buenos Aires: Faculty of Architecture, Design and Urbanism and National University of San Juan); Chile (Bío Bío University); Japan (University of Shiga Prefecture); Ecuador (University of Cuenca and Private Technical University of Loja (UTPL)); Italia (Sapienza Università di Roma); Mexico (Autonomous University of Tamaulipas, Autonomous University of Coahuila and Autonomous National University of Mexico (UNAM)), Bolivia (Autonomous University Juan Misael Saracho), and Portugal (National Laboratory of Civil Engineering).

At national level, there is representation from the Polytechnic University of Cartagena, Jaume I University (Castellón de la Plana), University of Malaga, Polytechnic University of Catalonia, Polytechnic University of Madrid, La Salle Engineering and Architecture School of Ramon Llull University, University of Seville, University of Cordoba, University of Huelva, Polytechnic University of Valencia and University of Zaragoza.

The Congress also counts the participation of Spanish organizations such as “Centro Tecnológico de la Construcción de la Región de Murcia”, Institute of Architecture and Building Science (IUACC), “Instituto Valenciano de la Edificación (IVE)”, “Unidad de Investigación en Cuidados de Salud (Investén-isciii)”, and the Eduardo Torroja Institute for Construction Science (CSIC).

The parts of this book provide a summary of the main debates and chapters that have taken place in this event and the results discussed in the sessions performed.

I would like to thank all the conference participants and especially the staff of the organization of the Congress for their valuable contributions and private and public companies and organizations that have contributed in the performance of the event.

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