

PREFACE

Tradition of CENTRAL EUROPEAN CONGRESS ON CONCRETE ENGINEERING started in 2005. This is a series of yearly congresses to provide a forum for engineers of our neighboring countries to meet and exchange experiences regularly. Engineers from all fields of concrete engineering are addressed: working in design, execution, prefabrication, material production, research or quality control.

In our Congresses new achievements are presented to a specific field of concrete engineering. The 1st Congress in Graz (Austria) 2005 was devoted to *Fibre Reinforced Concrete in Practice*. The 2nd Congress in Hradec Králové (Czech Republic) 2006 had the main topic *Concrete Structures for Traffic Network*. The 3rd Congress in Visegrád (Hungary) 2007 focused on *Innovative Materials and Technologies for Concrete Structures*. The 4th CCC Congress in Opatija (Croatia) in 2008 concentrated on *Concrete Engineering in Urban Development*. The 5th Congress in Baden (Austria) was devoted to *Innovative Concrete Technology in Practice*. The 6th Congress in Mariánské Lázně (Czech Republic) in 2010 had the main topic *Concrete Structures for Challenging Time*. The 7th Congress in Balatonfüred (Hungary) was devoted to *Innovative Materials and Technologies for Concrete Structures*. The 8th Congress in Plitvice Lakes (Croatia) in 2012 had the main topic *Durability of Concrete Structures*.

Poland joined the group in 2012 as a member country forming the current organization of the Central European Congress on Concrete Engineering. The 9th Central European Congress on Concrete Engineering CCC 2013 takes place in Wrocław, Poland, with the general topic *Concrete Structures in Urban Areas*.

Therefore, we selected the following 7 topics:

Topic 1: Design Strategies

Topic 2: New Structures

Topic 3: Maintenance and Rehabilitation

Topic 4: Condition Assessment

Topic 5: Laboratory and Field Tests of Elements and Structures

Topic 6: Material Characteristics

Topic 7: Fibre Reinforced Concrete

CCC 2013 is organized in a unique place not only on the map of Poland, but also in Europe, called Centennial Hall. This extraordinary structure was designed by Max Berg, an outstanding city architect, and is still recognized as one of the top masterpieces of the 20th century architecture. It represents impressive and modern application of reinforced concrete in structure of a dome. The Hall's inscription on UNESCO World Heritage List in 2006 emphasized the rank of this facility. In 2013 one hundred years of Centennial Hall history is being celebrated. Therefore selection of Centennial Hall for the venue of CCC 2013 was inevitable and the most obvious.

In the last 20 years in Poland an intensive development of urban and transportation infrastructure takes place. It has been related to, *inter alia*, the organization of the 2012 UEFA European Football Championship. Many interesting, from both the architectural and the structural points of view, buildings have been erected. Some of them are presented in this book.

The aim of the Congress is to present different areas of science and technology relating to applications of concrete in urban engineering in various countries of Central Europe. The organizers intention is that the Congress shall be a forum for exchanging opinions regarding technical and scientific issues of various societies. Here, on behalf of the Organizing Committee and the Scientific Committee we would like to thank the Authors of papers and the Reviewers for their contribution and the Sponsors for their institutional and financial support. To all of the Participants: we wish you to reap the greatest benefits from the Congress and have a very nice stay in Wrocław!

Chairman of the Organizing Committee

Jan Biliszczyk

Chairman of the Scientific Committee

Andrzej Ajdukiewicz