Beyond the Limits of Man

Editors
Jan B. Obrębski and Romuald Tarczewski
Description of the cover design

The cover shows the Iglica ("Wroclaw Spire") - steel structure constructed in 1948 in front of Wroclaw Dome, on the occasion of the Regained Territories Exhibition. The structure was originally 106 m high and was topped by eight revolving mirrors, creating an "umbrella of light" at night. Later, during the renovation in 1964, the top ten metres have been removed and it is now 96 meters tall. A forty four-ton tower was designed by Professor Stanislaw Hempel, and erected by the company "Mostostal". Wroclaw Spire, besides the Wroclaw Dome (Centennial Hall) and Wroclaw City Hall is now one of the most distinctive architectural objects in the city. It is widely considered to be one of the symbols of Wroclaw. Its ribbed design in a more or less stylized form appears in numerous logos of Wroclaw organizations, and the name Iglica appears also frequently in names of Wroclaw companies.

Cover design
Klara OGIELSKA

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Foreword from the President of the IASS

The International Association for Shell and Spatial Structures is delighted to have its Annual Symposium 2013 in Wroclaw, Poland, with the theme “Beyond the Limits of Man”. This is the second time that our Symposium is held in Poland: in 2002, we had the chance to meet in Warsaw. That is where the rules for the Hangai Prize were adopted.

There is no need to remind you of the fact that many Poles were, and are today, very active in the field of shell and spatial structures, among them Zygmunt Stanislaw Makowski, Stefan J. Medwadowski, Stéphane Du Chateau, Massimo Majowiecki, and others. A special session in honour of these pioneers has been organized.

This Symposium marks the one-hundredth anniversary of the Wroclaw Dome (also known as the Centennial Hall) – the first dome that after two thousand years surpassed the span of the ancient Pantheon in Rome. Fortunately, all delegates will be able to visit this impressive Dome, one of the first reinforced concrete ribbed shells, assessing the skills of the engineers who designed and built it. And this provides a link with Pier Luigi Nervi: organizers of this IASS symposium have devoted a great amount of work in order to offer an exhibition devoted to this famous Italian engineer. The idea was proposed by Professor Mario Alberto Chiorino some years ago. Professors Gorun Arun, chair of the working group “Historical Spatial Structures”, and John Abel, Past President of the IASS, worked hard together with Professor Romuald Tarczewski towards this goal. Simultaneously, a special double issue of the Journal of the IASS has been published for this event.

The proceedings of the symposium are primarily a reflection of the technical activities of the IASS and many sessions have been organized by the active Working Groups of the Association. The plenary and keynote presentations include those by the newest Honorary Member, Jan OBRĘBSKI, and the two newest Torroja Medalists, John ABEL and Frei OTTO. Four other distinguished colleagues will present their lectures during plenary sessions.

Finally, on behalf of the IASS and of all the Symposium participants, I wish to thank the organizing team and the sponsoring institutions, agencies and companies for their invaluable contributions to IASS 2013. I know that many individuals have dedicated their time and effort towards creating a successful professional and social gathering. The Association is truly grateful for your arrangements and hospitality. In particular, I would like to thank the symposium’s Organizing Committee as represented by its Chair, Professor Romuald Tarczewski, and the symposium Scientific Committee as represented by its Chair, Professor Jan Obrębski.

René MOTRO
President
International Association for Shell and Spatial Structures
Foreword from the IASS 2013 Chairman

Welcome to IASS Symposium 2013 in Wroclaw!

It is a great honour for us to host the annual Symposium of the International Association for Shell and Spatial Structures. The Wroclaw Symposium takes place exactly one hundred years after the completion of the Wroclaw Dome, also known as the Centennial Hall, a pioneering building that set new horizons in construction. Hence the title of the Symposium, "Beyond the Limits of Man". However, it will primarily be a contemporary event, bringing together the world elite of engineers, architects, researchers, contractors and suppliers. It will be a review of recent advances in the design and construction of buildings, new methods of analysis and current trends in technology development.

Almost 380 manuscripts have been submitted for presentation at the Symposium. All of them have been reviewed and – after a rigorous selection – about 300 accepted by the Scientific Committee. Two-thirds of these papers were submitted for sessions organized by the IASS Working Groups. This is a distinguishing feature of this Symposium. This proves both the involvement of IASS members in the work of these groups, and the attractiveness of their activities for the engineering community. Special sessions have been organized to celebrate the outstanding engineers, pioneers of spatial structures: Pier Luigi Nervi and a group of Polish engineers. In addition to the invited plenary speakers, IASS Honorary Members and Torroja Medal awardees will deliver plenary lectures. A special session is dedicated to Hangai Prize winners.

The Symposium will take place at the Wroclaw University of Technology – one of the leading Polish technical universities. In two years it will be celebrating its seventieth anniversary, cultivating at the same time the traditions of Politechnika Lwowska (the Technical University of Lvów – now Lviv) established one hundred years before, from which it derives. Its campus will host the plenary and technical sessions of the Symposium. An exhibition of Professor Wacław Zalewski's works will be held there, too. Events accompanying the symposium will also take place at other venues in the city.

The highlight of first day of the Symposium will be a visit to the Centennial Hall, combined with its exploration. The exposition dedicated to the work of P.L. Nervi will be opened in the Museum of Architecture after the special session. Its vernissage will be held on the evening of the second day of the Symposium. The third day of the Symposium is entirely devoted to the Technical Tour, during which interesting buildings currently under construction or recently completed in Wroclaw will be presented, as well as the old historic part of the city. Symposium participants will be given specially prepared editions of books and CDs devoted to Stephan Du Chateau and Maciej Nowicki. A special study on the design and construction of the Wroclaw Dome will also be available.

I am grateful to all the speakers for preparing and submitting their manuscripts, and for coming here to present them. I would also like to take this opportunity to express my sincere thanks to the organizers of the Working Groups sessions and special sessions, and to members of the Scientific Committee under the chairmanship of Professor Jan B. Obrzębski, for their dedicated work and for devoting their time and efforts. I am especially grateful to Prof. René Motro (President of the IASS), Prof. John F. Abel (Past President of the IASS), Prof. Carlos Lazaro (Chair of the IASS Technical Activities Committee) and Prof. Brian Smith (IASS Liaison Officer) for their continuous support, invaluable suggestions and kind help.

Gratitude should be expressed also to the authorities of the Wroclaw University of Technology, and in particular to members of the Honorary Organizing Committee, for their assistance and organizational support.

Finally, I would like to express my sincere thanks to all the sponsors of the IASS 2013 Symposium.

Romuald TARCZEWSKI
Chairman of the IASS 2013 Symposium
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