

THE JUBILEE CONFERENCE ON „STRUCTURAL FAILURES 2011”

The 25th jubilee Conference “Structural Failures” took place on May, 24 – 27, 2011 in Międzyzdroje. The history of 25 conferences on structural failures and catastrophes organized by the Szczecin academic community began in 1974 and includes two stages. The first one falls on the years 1974 – 1993 when 14 symposiums on reasons and prevention of structural failures were organized following the initiative of, and under the leadership of dr Hieronim Priebe.

The second stage in the years from 1994 till now included 11 scientific technological conferences titled “Structural failures” organized by the Szczecin University of Technology and the Polish Chamber of Construction Engineers (PZITB) under the patronage of the Civil Engineering Committee of the Polish Academy of Sciences. The organizational committee was primarily lead by late prof. Andrzej Bania, and by prof. Kazimierz Kiernożycki after his death, and now by dr. Maria Kaszyńska. Prof. Zbigniew Mielczarek was primarily a chairman of the Scientific Committee, then prof. Roman Ciesielski, and now prof. Kaziemierz Flaga, both from Kraków University of Technology. Through these years, in 25 conferences, 8918 persons took part, 14210 pages of conference documents were published, and over 60 companies sponsored the conferences.

In this year Conference 609 persons participated, 75 professors, and over 30 guests from abroad among them. The ceremonial opening of the Conference took place in the hall of the International House of Culture in Międzyzdroje on 24th of May, 2011. On behalf of the organizers the following persons took floor: prof. Wojciech Radomski - chairman of the Civil Engineering Committee of the Polish Academy of Sciences, prof. Andrzej Łapko – chairman of the Scientific Committee of PZITB, Wiktor Piwkowski – chairman of the General Management of PZITB, prof. Zbigniew Kledyński – deputy chairman of the Polish Chamber of Construction Engineers, prof. Kazimierz Flaga – chairman of the Scientific Committee of the Conference, Marek Kaproń – director of the Institute of Building Technology, and prof. Ryszard Kaleńczuk – vice-chancellor of the ZUT of the West Pomeranian University of Technology. Next, the representatives of the patrons of the conference took floor: Janusz Żbik – vice-minister of infrastructure, minister Robert Dziwiński – the general supervisor of Building Inspection, and Olgierd Geblewicz – President of the West Pomeranian Region. At the end of the opening session, a Chopin’s music recital was given by Sławomir Wilk, one of the best pianists in Szczecin.

After the break, during the first plenary session, 4 reports were presented. Dr Henry Petroski, professor at the Duke University, author of numerous scientific-technical books on structural failures, a member of the American Academy of Engineering and the Academy of Arts and Science, recognized as the best expert “on failures”, delivered a lecture on historical perspectives of structural failures. Prof. Wojciech Radomski pondered on how catastrophes and failures of bridges influenced the development of building knowledge. The next report was presented by dr John M. Kulicki, a member of the American Academy of Engineering, president of the firm Modjeski&Masters, founded by Rudolf Modrzejewski, a designer of many great American bridges, son of the acclaimed Polish actress Helena Modrzejewska. Dr Kulicki who – as the most outstanding expert – was entrusted with the task of preparation of the new form for bridge design in the USA; he presented a report on the influence of experience following failures and errors on development of standards and design of bridges in the US. As the last one in that session, prof. Masahiro Sakano from Osaka presented pictures of road and railway bridges destroyed during the earthquake and tsunami in Japan in March this year.

The next two problem sessions concerned the consequences of floods in Poland and the preventive measures taken up. 7 reports were presented during those sessions. Prof. Elżbieta Nachlik discussed the state and modernization of the flood preventive system in the basin of the upper Vistula river in the context of failure frequency of the system structures, and prof. Janusz Zaleski spoke on the same subjects referred to the Odra river basin. Two reports were presented by the representatives of the General Building Inspection. Director Anna Macińska discussed the activities of the General Building Inspection after the flood in 2010, and Iwona Świdorska and Piotr Lebiecki presented the conditions of safety of water damming up structures at the end of 2009. Prof. Zbigniew Kledyński presented a report on flood control and condition of related infrastructure in Poland, and prof. Lech Wysokiński discussed the methods of forecasting and protecting landslides, and dr Tomasz Rudnicki, deputy director of the General Management of Roads and Highways Construction, analysed the impact of floods on the execution of road construction.

Michał Wrzosek, president of the PERI Company, the main sponsor of the first day of the conference, presented a report on “Scaffoldings – safe tools or deadly hazard – regulations and practice” at the end of the problem session.

The second day began with the plenary session during which 5 reports were presented. The session started with two reports of our guests from Portugal and Holland. Prof. Antonio Diana da Fonseca presented a report on subway construction tunnel failure in Porto, and prof. Joost Walgraven, hosted again at the conference, discussed the experience taken up from underground infrastructure failures. Prof. Andrzej Cholewicki presented a report on behaviour of prefabricated framework in extraordinary situations. Prof. Lech Czarnecki, a newly elected vice-president of the National Centre of Research and Development, acquainted the listeners with challenges stemming from new scientific policy the building research community is to face.

The reports having been sent over by participants of the conference and qualified by the Scientific Committee were divided into 11 thematic sessions: reinforced concrete structures (2 sessions), steel structures (2 sessions), bridge structures, material aspects of failures, damages and repairs (2 sessions), geo-technology and diagnostics in assessment of constructional safety, and general construction (2 sessions).

The plenary reports in separate thematic sessions were delivered by outstanding professors invited by the Organizational Committee. Prof. Andrzej Ajdukiewicz presented his report on principles of concrete structures design with regard of their durability and environmental influence based on international recommendations and standards. Prof. Jacek Śliwiński presented a report, worked out together with professors Lech Czarnecki and Paweł Łukowski, on material conditionings of concrete structures failures and repairs, particularly stressing the altered attitude towards constructional repairs presented in new norm PN-EN 1504. Prof. Michał Topolnicki presented methods and examples of application of seizing and lifting of constructional objects in failure situations with a help of controlled geological injections. Prof. Janusz Kawecki presented a report on structural failures and disasters caused by dynamic activities, and prof. Stanisław Wierzbicki discussed a role of an expert in case of structural failure. Prof. Marian Kwietniewski presented a report on failure frequency of water and sewage systems infrastructure in Poland in the light of exploitation research. This subject was introduced in the conference for the first time.

The SIKA Company was the main sponsor of the second day of the conference. Its representative Witold Jawański presented his report on repairs of cooling towers, and the Megachemie Company was the sponsor of the third day; its representative Jarosław Mazur presented his report on development of materials and building chemistry in his company. During the afternoon presentations, sponsored reports were presented by representatives of companies MAPEI, INORA, KELLER, SCHOMBURG and BASF. In the exhibition hall, 26 companies arranged their stands and very interesting expositions.

Two volumes of conference materials were published, a CD with all reports from the Conference "Structural Failures" in 2011, and the references of all 25 conferences, as well as a commemorative album with photos and verses written on the occasion of conferences through years. A patronage of 13 national periodicals was granted to the conference. During the conference, an away sitting of the Civil Engineering Committee of the Polish Academy of Sciences took place under the leadership of its chairman prof. Wojciech Radomski, and an away meeting of the General Board of the PZITB under the leadership of Wiktor Piwkowski. I am grateful to both gentlemen for accepting our invitation and adding distinction to the jubilee conference. Apart from scientific and technological program, numerous cultural and entertainment events happened during the conference.

"Failures" is a watchword of the conference, but its real theme is first of all prevention, diagnostics, repairs, and reconstruction. The conference plays a major educational role by "learning from other's mistakes" on one hand, and through getting acquainted with the most interesting solutions, technologies, and methods of post-failure repairs,

on the other. Despite 37 years of its tradition, these problems remain actual and the conferences enjoy the interest of the participants.

At the end of this report I wish to cordially thank all of the participants, for preparing their reports and presentations, interesting problematic discussions, and financial support of our activities, and for an enormous sympathy the organizers are always lavished on.

Maria Kaszyńska