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Kenneth L. Carper

Editor

ASCE's Fifth Congress on Forensic Engineering, Washington D.C., November 11-14, 2009

The following report on the successful Fifth Forensic Engineering Congress is provided by Michael Drerup, the Congress Chair:

On November 11-14, 2009, more than 200 engineers from around the world gathered in Washington, D.C., for the Fifth Congress on Forensic Engineering, sponsored by ASCE's Technical Council on Forensic Engineering (TCFE). Eighty-two peer-reviewed papers were presented and organized into a bound proceedings: *Forensic Engineering 2009: Pathology of the Built Environment*, which is available for purchase through ASCE.

The papers represent a great diversity of topics, including temporary structures, construction phase failures, building envelope performance, bridges, nondestructive evaluation, subsurface conditions, and many other important topics. Special sessions devoted to wind engineering were also included. TCFE offers its appreciation to ASCE's Technical Council on Wind Engineering, whose collaboration and technical contributions throughout the planning process greatly enriched the Congress.

In addition to paper presentations, two panel discussions and a half-day educator's symposium were incorporated into the program. One panel discussion focused on ethics and the expert witness; the other explored building performance in the context of LEED and other green building initiatives. During the educators symposium, faculty from the United States and overseas discussed how they have used failure case studies and focused on other aspects of investigative engineering in the classroom. The session drew on classroom experiences and lessons learned from a series of educators' workshops presented by TCFE's Education Committee in the United States and the United Kingdom over the past several years.

Approximately 80 attendees arrived early to participate in two pre-congress workshops: "Façade Forensics" and "Forensic Engineering Practices." These workshops emphasized interaction and exchange of information among participants. The façade workshop featured presentations on the history and development of façade systems, types of façades, mechanisms of deterioration and failure, diagnostic tools and techniques, and municipal façade ordinances. This workshop was developed and presented by TCFE's Committee on the Dissemination of Failure Information. The practices workshop, developed and presented by TCFE's Committee on Forensic Practices, was based on ASCE's 2003 *Guidelines for Forensic Engineering Practice*, and the 1987 *Guidelines for Failure Investigation*, both prepared by TCFE members. Speakers focused on the practice of investigative engineering with an emphasis on ethical standards, and how to conduct a defensible investigation.

On Thursday, November 12, Congress Chair Michael J. Drerup welcomed attendees and the congress officially opened with two plenary speakers: Joshua B. Kardon, Ph.D., S.E.; and J. Arn Womble, Ph.D., P.E. Dr. Kardon presented "Engineering Ethics and Structural Calculations," and Dr. Womble discussed the

history of modern wind science and engineering, debunking common myths associated with wind damage to constructed facilities.

The cornerstone of the congress was a public keynote address by Dr. Henry Petroski at the National Building Museum. Conference attendees enjoyed an elegant prelecture reception before gathering in the monumental Great Hall of the museum for Dr. Petroski's superb lecture entitled "Success and Failure in Engineering Design," which explored engineering design through the history of suspension bridges. As well as being the headline event of the congress, Dr. Petroski's speech also formed part of the museum's excellent ongoing public lecture series.

An additional highlight was the Congress Awards Lunch on Friday, November 13. Mr. David Peraza, Executive Committee Chair of TCFE, presented TCFE's Forensic Engineering Award to three individuals: Dr. Henry Petroski, Mr. Howard Greenspan, and Mr. Lewis Zickel. Dr. Petroski received his award following his address at the National Building Museum the prior evening. Mr. Zickel passed away in 2007, and the award will be presented to his wife. Mr. Greenspan received the award during the lunch, and offered his reflections on the first 25 years of the Technical Council on Forensic Engineering. For each of these individuals, the award recognizes a long and distinguished record of professional achievement and service in the study and prevention of engineering failures.

Also at the awards lunch, Professor Ken Carper, editor of the *Journal of Performance of Constructed Facilities*, presented outstanding paper awards for the past three years. Professor M. Kevin Parfitt recognized Rachel Chicchi as the winner of the Outstanding Student Paper Award, for a competition that was held in conjunction with the congress. Dr. Len Morse-Fortier, immediate past chair of TCFE, accepted an award for his service on the council's executive committee. The awards lunch program concluded with an Order of the Engineer ring ceremony, with approximately 12 candidates participating.

The congress included TCFE's regular semiannual meetings, which were open to all. Many congress attendees participated in the meetings of TCFE's executive committee and each of five technical committees:

- Education Committee;
- Committee on the Dissemination of Failure Information;
- Committee on Forensic Practices;
- Committee on Practices to Reduce Failures; and
- Committee on Forensic Investigations.

The onsite ASCE bookstore did brisk business, and hosted two book signings. Authors Dr. Norbert Delatte and Mr. Peter Maranian were available to sign copies of their recently released ASCE publications, *Beyond Failure* (Delatte), and *Reducing Brittle and Fatigue Failures in Steel Structures* (Marianian).

Throughout the conference, attendees had the opportunity to visit with exhibitors and corporate sponsors, including Exponent; Wiss, Janney, Elstner Associates, Inc.; Nelson Architectural Engineers; Simpson Gumpertz and Heger; Olson Engineering; SENSR; and Structural Group.

ASCE's Technical Council on Forensic Engineering offers heartfelt thanks to all those who contributed to the success of the Fifth Congress on Forensic Engineering.

Forensic Engineering in Italy

It was my pleasure to accept an invitation to the First Italian Congress on Forensic Engineering and Fourth Italian Congress on Collapses, Reliability, and Retrofit of Structures (*IF CRASC '09*), held at the University of Naples Federico II, Naples, Italy, December 2–4, 2009. This was my first visit to southern Italy. I was impressed with the natural beauty of the region and the warm hospitality of our engineering colleagues. Many insightful papers of great practical value were presented at the conference. A large proportion of the papers focused understandably on lessons from the L'Aquila earthquake that occurred in central Italy in April 2009. The earthquake was responsible for many deaths and injuries, as well as the collapse of numerous historic buildings. Papers presented at the conference examined a number of case histories of seismic performance in detail. The combination of state-of-the-art analytical techniques with pragmatic applications for improving the performance of existing historic masonry buildings was a unique aspect of the conference. Several authors will be submitting manuscripts on their work for consideration for future publication in this journal.

At the conference, the establishment of a new Italian Association of Forensic Engineering (AIF) (*Associazione Italiana di Ingegneria Forense*) was announced. The AIF has a similar scope and purpose as the ASCE Technical Council on Forensic Engineering (ASCE/TCFE). It is a nonprofit professional organization with these stated objectives:

1. To gather engineers that work in the field of legal dispute and in the area of technical-legal consultancy;
2. To promote, encourage, and spread in Italy the culture of forensic engineering, also by means of exchange of knowledge and experiences between professionals working in different fields of engineering;
3. To spread knowledge in the specific field through the periodic publication of an official journal named *Rivista Italiana di Ingegneria Forense*, as well as publication of special issues and documents;
4. To identify research topics from engineering practice and to promote their study;
5. To support education attuned with university masters courses

on forensic engineering and to organize brief courses, seminars, and conferences;

6. To establish and maintain contacts, at both national and international levels, between organizations operating in the same field and pursuing the same goals;
7. To promote contacts and initiatives with Judicial Authority and professional orders of engineers, architects, and lawyers, to get a major synergy aimed to upgrade technical consultancy in the field of legal dispute and in the technical-legal area;
8. To promote contacts with insurance societies and civil protection departments, to support the respective institutional activities;
9. To publish guidelines on judicial technical consultancy; and
10. To cooperate with the competent authorities in emanating codes and standards aimed to provide rules on forensic engineering activities.

President of the new AIF is Professor Nicola Augenti, who is a member of the faculty of the Department of Structural Engineering at the University of Naples Federico II. Professor Augenti was also the organizer of the *IF CRASC '09* conference in Naples.

The ASCE Technical Council on Forensic Engineering welcomes the formation of the AIF and looks forward to future collaboration with our valued colleagues in Italy.

Planned Special Topic Issues

Several special topic issues are in various stages of review. Special topic issues, where papers on a specific topic are published together in a coordinated issue, require considerable extra effort on the part of editorial and publication staff. However, they are received very well by our readers, so we will continue to produce them.

Two special topic issues are nearing conclusion. One issue will focus on mitigating damage to heritage structures caused by natural hazards (Milos Drdácáký, guest editor). The other is devoted to problems related to expansive soils (Oswald Rendon-Herrero, guest editor). Watch for these two special topic issues to be published this year.