

ISEC-02

Second International Structural Engineering and Construction Conference

Faculty of Engineering,
University of Rome "La Sapienza"
Rome, Italy, September 23-26, 2003
Conference homepage:
www.isec-02rome.com



PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS

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International Structural Engineering and Construction (ISEC) Conference

The mission of ISEC Conferences is to enhance communication and understanding between structural, system, and construction engineers and architects for successful design and construction of national and international projects. In this regard, interdisciplinary integration and international cooperation are encouraged. Life cycle systems thinking in civil and building engineering signifying feasibility, establishing specifications, designing, bidding, and construction are sought to be integrated. It is the purpose of ISEC to provide an international forum for the discussion of topics important to developing new knowledge in construction and structural engineering.

After the successful completion of ISEC-01 in Honolulu, Hawaii USA, January 2001, ISEC-02 will be held in Rome, ITALY, in September 23-26, 2003, as described in this flyer.

In view of the future-oriented ISEC-01 conference theme, "Creation of Systems for Future Technologies", and in view of the pivotal role of structural and construction processes in the development and progress of global society, ISEC sets itself the objective of utilizing all avenues and means available to achieve greater efficiency and effectiveness in all sectors and facets of structural engineering and construction. Areas which require particular attention for development and research have been identified as:

- The integration of structural design and construction processes and methods;
- Information technology, and information flow and transfer to facilitate the above integration;
- Education and training in promoting design and construction integration;
- Promoting an atmosphere conducive to creativity and innovation for future technologies;
- Constructability;
- Renewal engineering;
- Closer relationships between academia on the one hand and clients, design professionals and industry on the other.

Theme of the ISEC-02 Conference:

System-based vision for strategic and creative design.

The current practice and research in structural and construction engineering is characterized by increasing levels of complexity and interaction. This is due to several reasons.

First, the transition to a global, high technology environment demands sound safety requirements in all aspects of human life and activities. With respect to what concerns buildings, structures and infrastructures, a century of continuous progress in knowledge, materials and technology should have reduced occurrences of damage, failure, and misconception by large magnitudes. In spite of this expectation, small and large structural and construction

deficiencies are still common episodes. This is, probably, due to the more ambitious objectives our society intends to pursue. But, without doubt, there are still problems and mismatches along the engineering path from concept development to practical realization.

Secondly, there is special attention being paid in the world today to the interaction, full of uncertainties and constraints, of the structure with the environment. In this sense, competitiveness and sustainability require a systems approach in which research activities support the development of coherent, interconnected and ecologically-efficient civil engineering structural systems, responding to both market and social needs.

Finally, there is the necessity to answer to socioeconomic needs, by stimulating holistic approaches and heuristic techniques, by strengthening the innovative capacity, and by fostering the creation of businesses and services built on emerging technologies and market opportunities. Research will turn into environmentally and consumer friendly processes, products, and services and will contribute to improve the quality of life and working conditions.

With this point of view, the main objective of the Conference will be to define knowledge and technologies needed to design and develop project processes and produce high-quality, competitive, environment- and consumer-friendly structures and constructed facilities. This goal is clearly connected with the development and reuse of quality materials, excellence in construction management, and reliable measurement and testing methods.

General Themes

- Construction project management for buildings, structures, and civil engineering infrastructures; construction contracting and contract law; claims and dispute resolution.
- International construction and project finance.
- Integration of structural design and construction processes and methods.
- Information technology, information flow and transfer, and innovation.
- Theoretical formulation and detailed development of structural analysis and design process.
- Identification, optimization, control and quality of structural systems and design process.
- Manufacturing applications to construction.
- Results and trends in building and structural industrialization and prefabrication.
- Existing structures and resources assessment, management, rehabilitation and reconversion.
- Education and training, ethics.
- Construction methods and analysis of construction operations.

Specific Topics

Introducing the needs

- Society necessity and requirements survey
- Design feasibility and constructability
- Engineering economy and cost analysis
- Planning construction and project management
- System analysis and synthesis

Shaping structures

- Creative design
- Optimal design
- Structural morphology and form finding architecture
- Performance based design
- Structural optimization and evolution procedures

Evaluating risks and opportunities

- Hazard and risk management
- Reliability analysis and structural safety
- Handling design uncertainties and stochastic variability
- Performance capacity of existing construction

Structures and Infrastructures

- Structural analysis
- Nonlinear behavior of structures
- Uncertainties in structural behavior
- Reinforced concrete structures
- Steel structures
- Bridges and special structures
- Precast structures
- Earthquake engineering
- Geotechnical engineering
- Structural problems and safety devices of road- and railways
- Tunnel and underground structures
- Structural damage assessment

Construction Management

- Cost control
- Productivity improvement
- Process simulation
- 4-D CADD
- Construction robotics and construction automation
- Organizational behavior

Advanced approaches in structural and construction engineering

- Artificial intelligence oriented methods
- Knowledge management
- Quality and excellence
- Concurrent engineering
- Smart and adaptive structures
- Structural control by strategic design and proper devices
- Industrialization of construction

Sustainable civil engineering and architecture

- Environmental analysis and structural interaction
- Constructions related recycling processes
- Lifecycle assessment
- Lifeline and infrastructures networks

Abstracts

Abstracts, one or two pages long, outlining the major content and conclusions, should be submitted by authors by e-mail to the conference chair.

Official Language

The official conference language is English.

Conference Proceedings and Special Post-Conference Publication

A set of proceedings will be published and will be given to all fully registered participants. Only fully registered authors will have their final papers included in the published proceedings. Extended versions of selected papers from the proceedings will be further reviewed and published in an international journal after the conference.

Key Dates

Abstract submission	June 30, 2002
Abstract acceptance	September 30, 2002
Paper submission	December 31, 2002
Paper acceptance	April 30, 2003

Fees

	Before April 30, 2003	After
Full	520 € (Euro)	560 € (Euro)
Accompanying person	260 € (Euro)	280 € (Euro)
Student	260 € (Euro)	280 € (Euro)
Targeted countries	390 € (Euro)	420 € (Euro)

Information and Correspondence

People interested in the Conference, who would like to submit an abstract or propose the organization of a session are kindly requested to contact, as soon as possible:

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