

ICSA 2016

27-29 July Guimarães PORTUGAL

3rd International Conference on **Structures and Architecture**

A Must-Attend Conference

The leading and largest global conference
bridging the gap between Structures and
Architecture

www.icsa2016.com

Conference Chair:
Prof. Paulo Cruz



University of Minho
School of Architecture

Image of the cover

New National Coach Museum

Photo: © Arménio Teixeira

Location: Lisbon, Portugal

Located in the Ajuda / Belém waterfront, in Lisbon, the New National Coach Museum is part of an initiative to promote cultural tourism in this area of the city, with a great historical value tied to its role in the age of the discoveries. For the first time, it will be possible to display a significant portion of the Portuguese coach collection (the largest in the world). The National Coach Museum has a collection that is considered unique because of the artistic variety of the magnificent ceremonial vehicles from the 17th, 18th and 19th centuries that allows the visitors to understand the technical and artistic evolution of the means of transport used by the European courts until the appearance of the automobile.

The building was designed by the Pritzker Prize-winning Brazilian architect Paulo Mendes da Rocha, in association with architect Bak Gordon and engineer Rui Furtado's Afaconsult group. Structurally speaking, the exhibitions pavilion concentrates its loads on fourteen pillars, on which four braced metallic trusses rest. The adjacent building is composed of a concrete framework which contains three independent prisms, covered by a metallic grid that lets natural light make its way into the building.

Paulo Mendes da Rocha (born October 25, 1928 in Vitória) is a Brazilian architect, honoured with the Mies van der Rohe Prize (2000) and the Pritzker Prize (2006). Paulo attended the Universidade Presbiteriana Mackenzie College of Architecture, graduating in 1954.

Working almost exclusively in Brazil, Mendes da Rocha has been producing buildings since 1957, many of them built in concrete, a method some call "Brazilian Brutalism", arguably allowing buildings to be constructed cheaply and quickly. He has contributed many notable cultural buildings to São Paulo and is widely credited as enhancing and revitalizing the city.

He was Professor at the Architecture College of University of São Paulo, known as FAU-USP, until 1998. In announcing the jury's choice, Thomas J. Pritzker, president of The Hyatt Foundation, said, "Mendes da Rocha has shown a deep understanding of space and scale through the great variety of buildings he has designed, from private residences, housing complexes, a church, museums and sports stadia to urban plans for public space. While few of his buildings were realized outside of Brazil, the lessons to be learned from his work, both as a practicing architect and a teacher, are universal."

The 2006 Pritzker Architecture Prize Jury Citation refers: "...His signature concrete materials and intelligent, yet remarkably straight forward construction methods create powerful and expressive, internationally- recognized buildings. There is no doubt that the raw materials he uses in achieving monumental results have had influences the world over. He has also proven his mastery of restoration and renovation, reaffirming his understanding and respect for his country's legacy and his own belief in the relevancy of the architecture of our time. Mendes da Rocha looks at history as it relates to the future. He has dedicated himself to a search for a synthesis of design and form that is as beautiful as it is technically perfect. In his own words, his definition of architecture is "...the transformation of nature, a total fusion of science, art and technology in a sublime statement of human dignity and intelligence through the settlements we build for ourselves..."

For additional information: <http://www.pritzkerprize.com/laureates/2006>

A Must-Attend Conference

The International Conference on Structures and Architecture is the world's leading and largest global conference bridging the gap between Structures and Architecture.

The contributions on creative and scientific aspects in the conception and construction of structures, on advanced technologies and on complex architectural and structural applications represent a fine blend of scientific, technical and practical novelties in both fields.

Introduction

The Third International Conference on Structures & Architecture – ICSA2016 – provides a unique forum to disseminate the knowledge of the most advanced technologies, promoting the comprehension of complex architectural and structural applications and exploring the historical and ontological aspects of the relationship between architecture and structural engineering.

Although Architecture and Structural Engineering have both their own historical development, their interaction has led to many fascinating and delightful structures. To bring this interaction to a next level there is a need to stimulate the inventive and creative design of architectural structures to persuade architects and structural engineers to further collaborate in this process, exploiting together new concepts, applications and challenges.

The conference is intended for an audience of researchers and practitioners world-wide with a background in architecture and in structural engineering. It includes architects, structural and construction engineers, builders and building consultants, construction industry persons, academics, researchers, students, product manufacturers, material suppliers, project managers and contract administrators, asset managers, government authorities of infrastructure development and others.

Following the success of the first and second edition of the International Conference on Structures and Architecture (ICSA), the third edition of this conference will be held again in Guimarães, Portugal.

The contributions on creative and scientific aspects in the conception and construction of structures, on advanced technologies and on complex architectural

and structural applications represented a fine blend of scientific, technical and practical novelties in both fields.

The numbers behind the previous editions of ICSA are impressive:

ICSA2013: 4 keynote lectures; 3 mini-symposia; 5 special sessions; more than 270 presentations; 52 technical sessions; and over 350 participants from more than 45 countries.

For further information please visit: www.icsa2013.arquitectura.uminho.pt

ICSA2010: 8 keynote lectures; 3 mini-symposia; 1 special seminar on Mega structures; more than 250 presentations; 46 technical sessions; 1 technical exhibition and over 300 participants from more than 40 countries.

For further information please visit: www.icsa2010.arquitectura.uminho.pt

Aim of the Conference

There is a need to stimulate the inventive and creative design of architectural structures and to persuade architects and structural engineers to collaborate in this process, exploiting together new concepts, applications and challenges. The aim of ICSA2016 is to present research and developments on the merging of architecture and structural engineering. The conference will facilitate the meeting of international participants interested in the recent advances in the art, practice and theory of designing and building infrastructures in which the structural and architectonic values are consciously combined and the contribution of each other is mutually enhanced.

Delegates

The conference is intended for an audience of researchers and practitioners world-wide with a background in architecture and in structural engineering. It includes architects, structural and construction engineers, builders and building consultants, construction industry persons, academics, researchers, students, product manufacturers, material suppliers, project managers and contract administrators, asset managers, government authorities of infrastructure development and others.

Language

The official language of the Conference is English.

Conference themes

Building envelopes / Facades
Comprehension of complex forms
Computer and experimental methods
Concept architectural buildings / Futuristic structures
Concrete and masonry structures
Educating architects and structural engineers
Emerging technologies
Glass structures
Innovative architectural and structural design
Lightweight and membrane structures
Special structures Steel and composite structures
Structural design challenges
Tall buildings
The borderline between architecture and structural engineering
The history of the relationship between architects and structural engineers
The tectonic of architectural solutions
The use of new materials
Timber structures

Call for Abstracts

Prospective authors are invited to submit one page abstract, of no more than 500 words, before 15 February 2015. The abstracts should be submitted to the restricted area of ICSA2016 webpage in electronic form. The abstracts will be subjected to a review process by at least two members of the conference scientific

committee. The preliminary acceptance of abstracts will be notified to the corresponding authors by 15 May 2015. The proceedings will be published by Balkema (Taylor & Francis Group), including a book of extended two-page abstracts and a CD-ROM containing the full eight-page papers. These documents must be submitted due to 15 November, 2015 and will be reviewed by the organizing committee. Acceptance will be notified before 15 February

2016. Author instructions to prepare the extended abstracts and the full papers and the copyright transfer form can be found in: <http://www.balkema.nl>

Deadlines

Abstract submission: February 15, 2015
Abstract acceptance: May 15, 2015
Paper submission: November 15, 2015
Paper acceptance: February 15, 2016

Venue

The Conference will be held at the Convention Centre of the Campus of Azurém of the University of Minho in Guimarães, Portugal. The city of Guimarães is like no other city in Portugal. Its past is so intimately intertwined with the History of Portugal that it is commonly and proudly referred to as the Cradle of the Nation. The Historic Centre of Guimarães has remained basically unchanged since the 15th century and was declared a World Heritage Site in 2001 by UNESCO, due to its Middle Age historical monuments. Guimarães was European Capital of Culture in 2012.

How to Access Guimarães

Guimarães is located in north-western Portugal, approximately 350 km north of the capital, Lisbon, and about 50 km from the second largest city, Porto (also known as Oporto). The nearest airport is Francisco Sá Carneiro International Airport, located in the suburbs of Porto, about 50km from Guimarães. The airport is connected with the Porto railway central station - Campanhã - by metro line E - violet line (www.metroporto.pt). The travel takes 25 minutes, with trains departing every 20 minutes. Tickets can be purchased at the automatic ticket

machines located in the Metro station or in the Airport information desk. Tickets must be validated before travel by scanning them in front of the yellow machines located in stations. Airport Station is located just in front of the arrivals zone of the International Francisco Sá Carneiro Airport, in parallel with the two existing road ways. Nevertheless, the person's circulation between both facilities is guaranteed by a proper underground passage. When arriving at the Airport Station, people only needs to go down a floor and, in little less than 50 meters walking, they are inside of the Airport. Equally, the access to the Station from the interior of the Airport is extremely simple and practical, being fully signalled. Guimarães is part of the modern network of trains that link the main cities in Portugal (www.cp.pt). All-stop service between Guimarães and Porto takes approximately 60 minutes and costs around 2 euros. Using the highway the airport can be reached in approximately 35 minutes.

As an alternative to the train travel you have a shuttle (called Get Bus) from Porto Airport directly to Guimarães. Points of departure and arrival are clearly marked. No stops or drop and collect passengers are allowed in addition to the stipulated points.

Accommodation

The organizers have arranged block reservations with several hotels offering special prices for the participants of this event. More detailed information is presented in the web site (www.icsa2016.com).

Conference Fees

It is expected that for every accepted paper at least one author is attending ICSA2016. The registration fee will be collected in euros only.

	Before Feb. 29, 2016	After Feb. 29, 2016
Authors and participants*	500	600
Students**	250	300
Accompanying persons***	250	300

* Fee includes technical documentation, reception, lunches, coffee-breaks and conference gala dinner.

** Institutional certification required. Student fee does not include lunches or participation in the conference gala dinner.

*** Including reception, social program tours & gala dinner.

Registration

The registration form will be available on the website (www.icsa2016.com). VIAGENS ABREU SA - ICSA 2016 Abreu PCO - Oporto Office Av. dos Aliados, 207, 4000-067 Porto - Portugal tel.: +351 22 204 3570 Fax: +351 22 204 3693 E-mail: congresses.porto@viagensabreu.pt

Conference Chair

Professor Paulo J. S. Cruz
 University of Minho
 School of Architecture
 Guimarães, Portugal

International Scientific Committee (as of 9 April, 2014)

Anderson, Mark S., University of California, Berkeley, United States of America
 Arriaga, Francisco, Universidad Politecnica de Madrid, Spain
 Asefi, Maziar Ryerson&Tabriz IA University Canada
 Beim, Anne, The Royal Danish Academy of Fine Arts, School of Architecture, Denmark
 Belis, Jan, Ghent University, Belgium
 Bijedic, Dzenana, Faculty of Architecture, University of Sarajevo, Bosnia & Herzegovina
 Boake, Terri, University of Waterloo, Canada
 Bundgaard, Charlotte, Aarhus School of Architecture, Denmark
 Cabrero, B., J. Manuel, University of Navarra, Spain
 Chan, Siu Lai, Hong Kong Polytechnic University, Hong Kong

Chilton, John, University of Nottingham, United Kingdom
Corrao, Rossella, Department of Architecture, University of Palermo, Italy
Cruz, Paulo, University of Minho, Portugal
Davison, Buick, DCSE University of Sheffield, United Kingdom
Eliasova, Martina, CTU Prague, Czech Republic
Estévez, Javier, ETS Arquitectura. Universidad de A Coruña, Spain
Fernandez-Cabo, Miguel, ETS Architecture, Technical University Madrid, Spain
Fagundo, Fernando, FEF Group, Puerto Rico
Falk, Andreas, KTH Sweden
Feio, Artur, University Lusíada, Portugal
Filz, Günther, University of Innsbruck, Austria
Frattari, Luca, Altair Engineering, United States of America
Gardner, Leroy, Imperial College London, UK
George, Abraham, Indian Institute of Technology Kharagpur, India
Georgescu, Mircea, The Polytechnic University, Romania
Giles, Harry, University of Michigan, United States of America
Goggins, Jamie, National University of Ireland, Ireland
Griffin, Corey, Portland State University, United States of America
Han, Lin-Hai, Tsinghua University, China
Hvejsel, Marie Frier, Aalborg University, Denmark
Kirkegaard, Poul Henning, Aalborg University, Denmark
Lebet, Jean Paul, EPFL - ICOM Construction Métallique, Switzerland
Liapi, Katherine, University of Patras, Greece
Lochner, Irmgard, Biberach University of Applied Sciences, Germany
Louter, Christian, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Macdonald, Angus, University of Edinburgh, UK
Marina, Ognen, Faculty of Architecture, University SS. Cyril and Methodius in Skopje, Macedonia
Mendonça, Paulo, University of Minho, Portugal
Mezzi, Marco, University of Perugia, Italy
Molins, Climent, Universidad Politecnica Catalunya, Spain
Morales Sanchez, Jose Manoel, Faculty of Architecture and Urbanism, Brasília, Brazil

Murtinho, Vitor, University of Coimbra, Portugal
Netusil, Michal, CTU Prague, Czech Republic
Neugebauer, Jurgen, University of Applied Sciences, Austria
Nussbaumer, Alain, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Oakley, Deborah, University of Nevada, Las Vegas, United States of America
Parigi, Dario, Aalborg University, Denmark
Phocas, Marios, Department of Architecture, University of Cyprus, Cyprus
Piazza, Maurizio, University of Trento, Italy
Rinke, Mario, ETH Zürich, Switzerland
Riso, Vincenzo, University of Minho, Portugal
Rob, Nijse, Delft University of Technology, Netherlands
Rodrigues, Ana Luísa, University of Minho, Portugal
Rodriguez-Camilloni, Humberto, Virginia Tech, United States of America
Saliklis, Edmond, California Polytechnic State University, United States of America
Sandaker, Bjørn, The Oslo School of Architecture and Design, Norway
Schneider, Jens, TU Darmstadt, Germany
Schober, Kay-Uwe, Mainz University of Applied Sciences, Germany
Schwaen, Regin, North Dakota State University, United States of America
Siebert, Geralt, University of München, Germany
Siem, Jan, Norwegian University of Science and Technology, Norway
Smith, Ian, University of New Brunswick, Canada
Songel, Juan María, Universidad Politecnica de València, Spain
Stahl, Jochen, Fast + Epp GmbH, Germany
Sundaram, Rajagopla, Sundaram Architects, India
Tamura, Yukio, Tokyo Polytechnic University, Japan
Tarczewski, Romuald, Wroclaw University of Technology, Poland
Thomas, Vilquin, Université Libre de Bruxelles, Belgium
Trovalusci, Patrizia, Sapienza University of Rome, Italy
Valcárcel, Juan P., University of Coruña, Spain
Varum, Humberto, University of Aveiro, Portugal

Keynote Lectures (as of 9 April, 2014)

The conference will feature a number of stimulating keynote lectures by prominent experts.

Terri Boake School of Architecture - University of Waterloo, Cambridge, Ontario, Canada

Enzo Siviero Università IUAV, Venice, Italy

James O'Callaghan Eckersley O'Callaghan, London, UK

Niccolò Baldassini RFR Group | Paris, Paris, France

Rui Furtado afaconsult, Vila Nova de Gaia, Portugal

Special Sessions and Mini-Symposia

The conference encourages the submission of Special Session and Mini-Symposia proposals. Each proposal should have a focused topic related to “structures and architecture” (further information can be found at www.icsa2016.com).

Associated Events

The conference accepts proposals for associated events, including awards, exhibitions, poster sessions, short courses, workshops, debates, mini-symposia and panel discussions. The proposed activities should be directly relevant to practitioners, researchers and educators in the area of “structures and architecture”. The conference organizers will review the various proposal submissions and contact proposers about the status of their contributions before 30 June 2015.

Technical Exhibition

In parallel to the Scientific Program, ICSA2016 conference is organizing a Technical Exhibition to allow companies and organizations to demonstrate new techniques or newly developed projects relevant to the conference theme. This exhibition will be a good opportunity to share the latest research and the most cutting-edge technologies. More detailed information is presented in the web site (www.icsa2016.com).

Social Program

The social program includes the welcome reception and gala dinner for the participants (registration as ‘Student’ does not include the gala dinner). The registration as accompanying persons also includes the participation in several tours. Registration in one or more tours can also be made by persons not registered as accompanying persons.

Sponsors

We encourage and welcome the sponsorship of your company for the ICSA2016 Conference. Increase your exposure by becoming a sponsor. All sponsors will be listed in the Conference program. In addition, the benefits of each specific sponsorship category are outlined in the web site.

Main institutional sponsors (as of 18 December, 2014):



International Association for
Bridge Maintenance and Safety



International Association for
Bridge and Structural
Engineering



International union of
laboratories and experts in
construction materials, systems
and structures



Ordem dos Arquitectos Secção Regional Norte



Ordem dos Engenheiros

International Institutions (as of 18 December, 2014):



American Society of
Civil Engineers



European Federation for
Precast Concrete



Building Technology Educators'
Society



European Federation of
Structural Glass
Laboratories



International Society for the
Philosophy of Architecture



The
StructuralEngineer.infoWe
bsite

Additional information

Additional information about ICSA2016 can be found at www.icsa2016.com. If you have any questions or concerns regarding ICSA2016, please feel free to contact us at:

ICSA2016 Secretariat
School of Architecture
University of Minho
4800-058 Guimarães
Portugal

Tel: + 351 253 510 505 | +351 253 510 536

Fax: + 351 253 510 509

E-mail: secretariat@icsa2016.com

National Institutions (as of 18 December, 2014):



Associação Portuguesa para a
Segurança e Conservação de
Pontes



Associação Portuguesa de
Construção Metálica e
Mista



Laboratório de Construção e
Tecnologia