

Sobre a NEXUS

About Nexus

A série de conferências bi- anuais NEXUS dedica-se à exploração das relações entre a Arquitectura e a Matemática. O evento destina-se a investigadores, cientistas, professores e estudantes de ambas as áreas. Esta é já a 8ª das séries de conferências NEXUS, que têm ocorrido em diversos locais.

NEXUS biennial meetings are dedicated to the relations between Architecture and Mathematics. NEXUS conferences are intended for architects, mathematicians, historians, scientists, researchers, teachers, students and others interested in the "nexus" of both disciplines. This is the eighth in a biennial series of meetings that have taken place in several locations.

Conferências anteriores:

Previous meetings:

Fucechio, Florence (Italy) 1996
Mantua (Italy) 1198
Ferrara (Italy) 2000
Óbidos (Portugal) 2002
Mexico City (México) 2004
Genoa (Italy) 2006
San Diego (U.S.A.) 2008



Logo by Gonçalo Azevedo

Comité Organizador: Organizing Committee:

Kim Williams

Founder of the NEXUS conferences
and Editor-in-Chief of the
Nexus Network Journal *

João Pedro Xavier
FAUP

João Nuno Tavares
CMUP/ FCUP

* The Nexus Network Journal is published by Kim Williams
and Birkhäuser Publishers, Basel, Switzerland
www.springer.com/birkhauser/mathematics/journal/4

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12 a 16 de Junho 2010
12 - 16th June 2010



Auditório
Fernando Távora

Faculdade de
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Porto
Portugal

RELATIONSHIPS BETWEEN
ARCHITECTURE & MATHEMATICS
VIIITH INTERNATIONAL CONFERENCE

Para mais informação útil (incluindo formulário de registo):
www.fc.up.pt/cmup/nexus2010

For further usefull information (including online registration form):
www.nexusjournal.com/2010



Programa Operacional
Ciência, Inovação
2010



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CMUP
Centro de Matemática
Universidade do Porto



FACULDADE DE CIÊNCIAS
UNIVERSIDADE DO PORTO



Faculdade de Arquitectura
Universidade do Porto

Oradores

Keynote Speakers:

Chris Williams
Eduardo Souto Moura
Lino Cabezas

Moderadores das Sessões

Session Moderators:

Celestino Soddu
Gonçalo Furtado
José Calvo-López
Kim Williams
Lionel March
Sylvie Duvernoy

O modelo da conferência constará de sessões, matinais e vespertinas, com intervenções individuais coordenadas pelos organizadores de painéis temáticos ou mesas redondas. Para o final da tarde estão programadas as intervenções dos Keynote Speakers, abertas ao público em geral.

The conference consists in morning and afternoon sessions coordinated by moderators, with presentations followed by brief periods of questions and answers and a final discussion at the end of the session. Each of the three days concludes with a presentation by a Keynote Speaker. These talks are open to the general public.

Programa / Program

SATURDAY, 12TH JUNE

14.30 h Open Source Seminar at the Casa da Música. Event organised by Circo de Ideias, with the participation of Cecil Balmond and others. Organizer Gonçalo Antunes Azevedo.

SUNDAY, 13TH JUNE

08.30 h Registration

09.00 h Conference Inauguration and Introductions

09.30 h Session I: From Mediaeval Stonecutting to Projective Geometry

José Calvo-López (moderator)

09.40 h Prodrômes of descriptive geometry in the *Traité de stéréotomie* by Amédée Francois Frézier **Marta Salvatore**

10.05 h La Gournerie versus Monge **Enrique Rabasa**

10.30 h The vault of the Hotel de Ville of Arles **Giuseppe Fallacara, Luc Tamboréro**

10.55 h Graphical tools for an epistemological shift. Contribution of protoaxonomerical drawing to the development of stonecutting treatises **Miguel Alonso, Elena Pliego, Alberto Sanjurjo**

11.20 h Developable surfaces, their history and application **Snezana Lawrence**

12.00 h Discussion

12.30 h Lunch Break

14.00 h NEXUS Association Assembly

15.00 h Session II: Round table Generative Architecture Codeness

Celestino Soddu (moderator). Participants: **Marie-Pascale Corcuff, Philip van Loocke, Enrica Colabella, Gabriel Maldonado**

17.30 h Coffee Break

18.00 h Keynote Speaker **Chris Williams**

MONDAY, 14TH JUNE

10.00 h Session III: Architecture, Systems Research and Computational Sciences
Gonçalo Furtado (moderator)

10.10 h Information, Architecture, Complexity **Pau Solá-Morales**

10.40 h After the Paradigm of Contemporary Physics in Architecture Spatial Possibilities and Variations **Lora Dikova**

11.20 h The International Architectures of the SSA and Informational Designer Knud Lonberg-Holm **Suzanne Strum**

11.40 h Fractal Architecture **Maykon Sedrez, Alice Pereira**

12.10 h Discussion

12.30 h Lunch Break

15.00 h Session IV: Architecture and Mathematics **Kim Williams** (moderator)

15.10 h Euclid and Archimedes as sources of proportional geometry in the work of Leonardo da Vinci **Matthew Landrus**

15.40 h From Quantitative to Qualitative 16th/17th Century Architecture A New Musical Perspective **Vasco Zara**

16.10 h Renaissance in Goa Proportion systems in two churches of the 16th century **António Nunes Pereira**

16.40 h The Octagon on the Houses of Orson Fowler **Eliseu Gonçalves**

17.10 h Poster Session

17.40 h Coffee Break

18.00 h Keynote Speaker **Lino Cabezas**

TUESDAY, 15TH JUNE

10.00 h Session V: Architecture and Mathematics

Sylvie Duvernoy (moderator)

10.10 h Measuring Lisbon Patterns "Baixa" from 1650 to 2010 **Teresa Marat-Mendes, Mafalda Teixeira de Sampaio, David Rodrigues**

10.40 h Dynamics of urban centre and concepts of symmetry "Centroid" and "Weighted mean" **Jong-Jin Park**

11.10 h Alexander Klein and the Existenzminimum. A 'scientific' approach to the design techniques **Marco Giorgio Bevilacqua**

11.40 h Inácio Vieira, Optics and Perspective. Instruments towards a sensitive space **João Paulo Cabeleira**

12.10 h Discussion

12.30 h Lunch Break

14.00 h Session VI: Shape and Shape Grammars

Lionel March (moderator)

14.10 h Transformation Grammar for Housing Rehabilitation **Sara Eloy, José Pinto Duarte**

14.40 h Creating specific grammars from generic grammars towards flexible urban design **José Nuno Beirão, José Pinto Duarte, Rudi Stouffs**

15.10 h Visual schemas pragmatics of design learning in foundations studios **Mine Özkar**

15.40 h What Rule(s) Should I Use? **George Stiny**

16.15 h Poster Session

17.00 h Discussion

17.40 h Coffee Break

18.00 h Keynote Speaker **Eduardo Souto Moura**

20.00 h Conference Dinner (Closing)

WEDNESDAY, 16TH JUNE

08.30 h Post-conference tour to Braga Municipal Stadium and S. Frutuoso de Montélios.