Sustainability of Constructions
Integrated Approach to Life-time Structural Engineering

COST Action C25

Proceedings of the First Workshop
Lisbon 13. 14. 15. September 2007

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Editors:
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Z. Plewako, R. Landolfo, V. Ungureanu, L.S. Silva

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Foreword

The Workshop "Sustainability of Constructions" is the outcome of the first year of activity of COST Action C25 "Sustainability of Constructions - Integrated Approach to Life-time Structural Engineering".

The COST Action C25 was approved on 29-30 March 2006, during the 164th Meeting of the Committee of Senior Officials for Scientific and Technical Research (COST), and the Kick-off Meeting was held on the 3rd of October 2006 in Brussels. Since its approval, 26 countries (Austria, Belgium, Croatia, Czech Republic, Cyprus, Denmark, Finland, fyr Macedonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Sweden, Turkey and United Kingdom) and one EC Joint Research Centre joined this project, becoming the Action C25 one of the more participated Actions in the Domain of Transport and Urban Development (TUD).

The main objective of the Action is to promote science-based developments in sustainable construction in Europe through the collection and collaborative analysis of scientific results concerning life-time structural engineering and especially integration of environmental assessment methods and tools of structural engineering.

The Action involves a wide range of experts from a variety of disciplines related to the construction sector. The participating countries nominated almost one hundred Management Committee (MC) delegates and Working Group (WG) members, which represent different fields of expertise, different cultures, different approaches and different visions of the society and the world. In accordance with the Memorandum of Understanding three Working Groups were created and cover the three main areas of the Action:

In accordance with the Memorandum of Understanding the coordination of C25 activity is being carried out by the MC and three WGs that cover the three main areas of the Action. The coordinators of MC and of WGs are also the organizers of this 1st Workshop on "Sustainability of Constructions":

Management Committee
Chair – Luís Bragança (University of Minho, Portugal)
Vice-chair – Heli Koukkari (VTT Technical Research Centre of Finland, Finland)

WG1 – Criteria for Sustainable Constructions
Chair – Rijk Blok (University of Technology Eindhoven, Netherlands)
Vice-Chair – Helena Gervásio (GIPAC, Lda., Portugal)

WG2 – Eco-efficiency
Chair – Milan Veljkovic (Luleå University of Technology, Sweden)
Vice-Chair – Zbigniew Plewako (Rzeszów University of Technology, Poland)

WG3 – Life-time structural engineering
Chair – Raffaele Landolfo (University of Naples "Federico II", Italy)
Vice-Chair – Viorel Ungureanu (Politehnica University of Timisoara, Romania)

Website and Databases
Chair – Luís Simões da Silva (University of Coimbra, Portugal)

The Workshop main topics cover a wide range of up-to-date issues and the contributions received from the delegates reflect critical research and the best available practices in the Sustainable Construction field. The issues presented include:

Criteria for Sustainable Constructions
– Global methodologies
– Assessment methods
– Global models
– Databases

Eco-efficiency
– Eco-efficient use of natural resources in construction
– Eco-efficient materials
– Eco-efficient products
– Eco-efficient processes

Life-time structural engineering
– Design for durability
– Life-cycle performance
– Maintenance and deconstruction

The Organizing Committee wants to warmly thank all the authors who have contributed with papers for publication in the proceedings. Their efforts reflect their commitment and dedication to Science and Sustainable Construction.

A special gratitude is also addressed to Dr. Thierry Goger and Ms. Carmencita Malimban from COST Office and ESF (European Science Foundation) for their help in administrative matters and COST financial support.

The organisers hope that this initiative will promote further the sustainability of construction industry and the built environment, consequently, contributing to further sustainable development of the participating countries.

The Organizing Committee and Proceedings Editors

Luís Bragança (University of Minho, Portugal)
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What is COST

COST - the acronym for European **CO**operation in the field of **S**cientific and **T**echnical Research - is the oldest and widest European intergovernmental network for cooperation in research. Established by the Ministerial Conference in November 1971, COST is presently used by the scientific communities of 35 European countries to cooperate in common research projects supported by national funds.

The funds provided by COST - less than 1% of the total value of the projects - support the COST cooperation networks, COST Actions, through which, with only around € 20 million per year, more than 30.000 European scientists are involved in research having a total value which exceeds € 2 billion per year. This is the financial worth of the European added value which COST achieves.

A bottom up approach (the initiative of launching a COST Action comes from the European scientists themselves), a la carte participation (only countries interested in the Action participate), equality of access (participation is open also to the scientific communities of countries not belonging to the European Union) and flexible structure (easy implementation and light management of the research initiatives) are the main characteristics of COST.

As precursor of advanced multidisciplinary research COST has a very important role for the realisation of the European Research Area (ERA) anticipating and complementing the activities of the Framework Programmes, constituting a ridge towards the scientific communities of emerging countries, increasing the mobility of researchers across Europe and fostering the establishment of Networks of Excellence in many key scientific domains such as: Biomedicine and Molecular Biosciences; Food and Agriculture; Forests, their Products and Services; Materials, Physics and Nanosciences; Chemistry and Molecular Sciences and Technologies; Earth System Science and Environmental Management; Information and Communication Technologies; Transport and Urban Development; Individuals, Society, Culture and Health. It covers basic and more applied research and also addresses issues of pre-normative nature or of societal importance.

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