

CALL FOR PAPERS



International ECCE Conference

EUROINFRA 2009

**Current State and Challenges for Sustainable Development
of Infrastructure**

**SYMPOSIUM 1
State Analysis
and Condition
Management of
Buildings and Civil
Infrastructure**

**SYMPOSIUM 2
Low-Energy Building
Concepts
(new buildings and
renovations)**

**October 14-15, 2009
Helsinki, Finland**

Local Organizer:

International Organizer:

Co-Sponsor:

RIL Finnish Association of Civil Engineers

ECCE European Council of Civil Engineers

IALCCE International Association for Life-Cycle Civil Engineering

CIB International Council for Research and Innovations
in Building and Construction

SCOPE AND BACKGROUND

In the current era of globalisation, active discussions between different countries and different parts of the world are needed; this is true also, and perhaps especially, in technology. We also need interaction between research and practice in the exploitation of new knowledge.

Sustainable energy policy and the mitigation of the climatic change are key issues for society. These areas also bind together the two Symposia of this Conference: “State Analysis and Condition Management of Buildings and Civil Infrastructure” and “Low-Energy Building Concepts”.

CONFERENCE VENUE

Helsinki, Finland

Helsinki, Finnish capital since 1809, thrives amid a number of clear contrasts. Here, on its wide and elegant streets, Nordic cool combines with a distinct taste of the exotic east. Old meets new. Land meets sea. Urban development and unspoilt countryside co-exist like nowhere else.



Local Organizing Committee

Mrs. **Helena Soimakallio**,
Finnish Association of Civil Engineers RIL, Chair

Mr. **Teemu Vehmaskoski**,
Finnish Association of Civil Engineers RIL

Mrs. **Anu Karvonen**,
Finnish Association of Civil Engineers RIL

Professor, Dr. Tech. **Asko Sarja**, Finland,
Mr. **Ville Raasakka**,

Finnish Association of Civil Engineers RIL, Conference Secretary



Scientific Committees

Professor, Dr. Tech. Asko Sarja, Finland, Chairman

SYMPOSIUM 1:

State Analysis and Condition Management of Buildings and Civil Infrastructure

Prof. Dan M. Frangopol,
Lehigh University, USA
Prof. Fabio Biondini,
Politecnico di Milano, Italy
Prof. Ahmet Emin Aktan,
Drexel University, USA
Prof. Christer Sjöström,
Centre for Built Environment, Sweden
Prof. Ayaho Miyamoto,
Yamaguchi University Japan
Prof. Dr. Makoto Kagaya,
Akita University, Japan
Prof. Naoyuki Koshiishi,
Waseda University, Japan
Prof. Dr.-Ing. Jörg Kropp,
Hochschule Bremen, Germany
Prof. Dr.-Ing. Dipl.Wi.-Ing. Kunibert,
Lennerts University of Karlsruhe,
Germany
Dr. Jean-Luc Chevalier,
Centre Scientifique et Technique
du Bâtiment CSTB, France
Dr. John Cairns,
Heriot-Watt University, United Kingdom
Dr. Vaclav Fencel,
Transport ResearchCentre,
Czech Republic
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Dr.-Ing. Peter Haardt,
Bundesanstalt fuer Strassenwesen,
Germany
Dr. Risto Kiviluoma,
WSP Group, Finland
Dr. Taina Koskela
Norgani, Finland
Mrs. Marja- Kaarina Söderqvist,
The Finnish National Road Administra-
tion, Finland
Mr. Erkki Vesikari
Technical Research Centre of Finland,
VTT

SYMPOSIUM 2:

Low Energy Building Concepts (new buildings and renovations)

Univ. Prof. Dr.-Ing. Gerd Hauser, Technis-
che Universität München, Germany
Prof. Per Heiselberg,
Aalborg University, Denmark
Dr. C.K. Chau,
The Hong Kong Polytechnic, China P. R.
Univ. Prof. Harald Budelmann,
Braunschweig University of Technology,
Germany
Prof. J Owen Lewis,
University College Dublin, Ireland
Prof., Dr. Eng. Shuichi Matsumura,
The University of Tokyo, Japan
Prof., Dr. Seiji Sawada,
Meiji University, Japan
Dr. Darren Robinson,
Swiss Federal Institute of Technology
(EPFL), Switzerland
Prof. Karel Kabele,
Czech Technical University,
Czech Republic
Architect Adrian Joyce,
Architects' Council of Europe
Mr. Soren Pedersen,
Passivhus Denmark
Dr. Seppo Junnila,
SITRA, Finland
Mr. Vesa Peltonen,
Vahanen Oy, Finland
Dr. Timo Kalema,
Tampere University of Technology TUT,
Finland
Dr. Arto Saari,
Helsinki University of Technology TKK,
Finland
Dr. Jarek Kurnitski,
Helsinki University of Technology TKK,
Finland
Mr. Jyri Nieminen,
Technical Research Centre of Finland
VTT, Finland

The Conference will consist of two parallel Symposia:

SYMPOSIUM 1:

State Analysis and Condition Management of Buildings and Civil Infrastructure

Infrastructures (including buildings) make up about 80 % of the national wealth in European societies. In the European Union the operation (excluding traffic), maintenance, repair, modernisation and renewal of infrastructure consumes 42 % of all energy, and produces about 40 % of all environmental emissions and wastes. The impact of traffic on climatic change is country wise between 20 and 25 %.

The civil infrastructure plays an important role in the productivity of societies and organisations, and in the safety and health of people. The number of deteriorating civil infrastructures and buildings is constantly growing, which makes a great impact on resources, the environment, and human safety and health. Infrastructures, especially production and transport structures, will be of major importance to the regional policies and cohesion of the current and enlarged European Union of the future, when many civil infrastructures of doubtful quality will be assimilated into the Union's transport system. Also a huge number of buildings in Eastern Europe will urgently need effective maintenance and repair, which will have to be planned over a long time span.

In the global economy there is a worldwide need for increased transport of goods and people, which causes added loading and demands for the civil infrastructure.

SYMPOSIUM 2:

Low-Energy Building Concepts (new buildings and renovations)

"Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings" contains the following statement: "The residential and tertiary sector, the major part of which is buildings, accounts for more than 40 % of final energy consumption in the Community and is expanding, a trend which is bound to increase its energy consumption and hence also its carbon dioxide emissions."

In this area a great deal of R&D as well as experimental building and practical construction has been done in several European countries and worldwide.

The potential for increased energy efficiency is highest and most economic in the case of new buildings, and this also has a very long-term effect into the future. Beside this, the improvement of energy efficiency in the existing building stock is of the utmost important in order to reach the objectives of energy saving and the reduction of greenhouse gases.

The use of alternative and renewal energy is getting new perspectives in the case of low-energy, minimum-energy and passive buildings.

The challenge for building engineers now is to create and implement low-energy concepts for new buildings, and energy-efficient renovation concepts. These concepts must also have a high lifetime quality in relation to usability, economy, ecology and cultural aspects. Communication on these issues is valuable both between research and practice, and between countries.

OBJECTIVES OF THE CONFERENCE

The objective of this Conference is to assemble people from practice, administration and research in order to report on and discuss key challenges for the sustainable development of infrastructure (buildings and civil infrastructures) in our societies.

Combining these two Symposia in one conference will enable us to achieve interaction between these two central issues: Condition Management and Energy Efficiency. The plenary sessions will provide us with generic background information on the targets for sustainability in our societies and on the challenges for building and civil engineering in this major issue.

Objectives of the Symposia

SYMPOSIUM 1: “State Analysis and Condition Management of Buildings and Civil Infrastructure” aims to provide an information and discussion forum for the development of lifetime management of buildings and civil infrastructures, which will promote progress towards sustainable, coherent and optimal asset management and operation of these structures.

We want to collect reports on the national analysis and assessment of the current state of infrastructure (buildings and civil infrastructures), which can serve as basic information for the formulation of political and technical strategies on the optimal management of infrastructure for a sustainable future. In addition, advanced technologies and methods for renovation, rehabilitation and renewal of the infrastructure will be reported. In this and in the design of new infrastructures, systematic service-life prediction and service-life design must also be applied

SYMPOSIUM 2: “Low-Energy Building Concepts” aims to bridge the huge gap between the energy efficiency requirements of current norms and standards, and the techno-economic optimum for energy efficiency of new buildings. Energy renovations of existing buildings are especially important and challenging. The use of alternative and renewal energy is getting new perspectives in the case of low-energy, minimum-energy and passive buildings.

The existing technology is scattered among in different countries and actors. Strong efforts are needed to inform investors, owners, administrators and civil engineers about the current availability of building concepts, structural and building service systems, and the modules and components of these concepts.

The symposium aims to serve as a forum for collecting current knowledge, and for distributing this knowledge and technology into the everyday practice of civil engineers.

THEMES of the Symposia

SYMPOSIUM 1: State Analysis and Condition Management of Buildings and Civil Infrastructure

1. Analysis of national state, and of the need for rehabilitation and renewal of infrastructure in Europe and worldwide
2. Strategic goals of asset management for repair and rehabilitation of the building stock and infrastructures
3. Condition assessment methodologies and methods
4. Predictive and optimizing lifetime asset management: process, methodology and methods
5. Monitoring the behaviour and performance of infrastructures: methodologies, methods, equipment and IT systems
6. Service-life prediction and service-life design of structures

SYMPOSIUM 2: Low-Energy Building Concepts

1. Current and future energy efficiency regulations for new and existing buildings in the EU and in national applications
2. Guidelines, methodologies and methods for architectural and technical design of new low-energy buildings and for energy renovations
3. Low-energy building and renovation concepts
4. Novel structural and building service systems, modules and components for low-energy buildings
5. Analysis and control of thermal and physical quality and performance of low-energy buildings (new buildings and energy renovations)
6. Life-cycle economy of new low-energy buildings and of energy renovations
7. New technologies and products for the renewal of energy production systems (heat pumps, solar heat, solar cells, wind power plants, etc.)

Timetable

The timetable prior to the symposium is as follows:

- | | |
|---|--------------------------|
| • Submission of abstract | 31st January 2009 |
| • Notification of acceptance of abstract | 28th February 2009 |
| • Submission of first draft of full paper | 15th April 2009 |
| • Refereeing decision | 31st May 2009 |
| • Submission of final full paper | 15th August 2009 |
| • Symposium | 14th – 15th October 2009 |

Submission of abstracts and keywords

Abstracts, between 100 and 200 words, up to 5 keywords, and the number and title of the Symposium Theme from the theme list above, shall be submitted by the 31st January 2009 deadline, either:

- as a Word document by e-mail to: ville.raasakka@ril.fi, or
- on CD-ROM or DVD disc as a Word document to postal address: Ville Raasakka, RIL, Töölönkatu 4, 00100 Helsinki, Finland.

Full Papers

Full papers shall be delivered to the symposium organizer after the acceptance of the abstract. A separate guide for authors will be provided later.

Publications

Abstracts of full papers, both for oral presentation and for posters, will be published in a paper copy entitled "Symposium Abstracts." All full papers will be published on CD-ROM and DVD discs. Both of these will be distributed to participants at the registration desk at the start of the symposium.

PROGRAMME

A get-together will be organized for the evening of Tuesday, 13th October 2009.

Wednesday, 14 th October		Thursday, 15 th October		Friday, 16th - Saturday 17th, October
Opening Plenary Session, Keynotes		Plenary Sessions, Keynotes		50th ECCE Meeting
Condition of Infra-structure	Low-Energy Building Concepts	Condition of Infra-structure	Low-Energy Building Concepts	
Lunch		Lunch		
Condition of Infra-structure	Energy-efficient buildings	Condition of Infra-structure	Energy-efficient buildings	
Technical Visits		Closing Plenary Session		
City Reception Symposium Dinner				

A programme for accompanying persons will be included in the final invitation.

FINAL INVITATION

The final invitation, including the sessions, draft minute programme of reports, social programme and programme for accompanying persons, will be published in May 2009

Enquiries and mailing

Please address enquires to Conference Secretariat:

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50th ECCE Meeting

ECCE Annual Meetings will be organized after the Conference on Friday 16th and Saturday 17th October in Helsinki. The participants in the ECCE Annual Meetings have the option of participating in the Conference prior to these meetings.



The European Council of Civil Engineers ECCE

The European Council of Civil Engineers (ECCE) was created in 1985 out of the common concern of the professional bodies for Civil Engineers in Europe. At the European Union level, ECCE aims to promote the highest technical and ethical standards, to provide a source of impartial advice, and promote co-operation with other pan-European organisations in the construction industry. ECCE also advises and influences individual governments and professional institutions and formulates standards for a European Code of Conduct of the Civil Engineering Profession and disciplinary procedures applicable throughout the Union.

Member States of ECCE:

Croatia, Czech Republic, Cyprus, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Russia, Slovak Republic, Slovenia, Spain, Turkey, United Kingdom

<http://www.ecceengineers.eu/>



CIB International Council for Research and Innovations in Building and Construction

CIB was established in 1953 as an association whose objectives were to stimulate and facilitate international cooperation and information exchange between governmental research institutes in the building and construction sector. CIB has since developed into a world wide network of over 5000 experts from about 500 member organisations active in the research community, in industry or in education and is at present the world's foremost platform for international cooperation and information exchange in the area of building and construction research and innovation.

www.cibworld.nl



IALCCE

The activities of the IALCCE Association cover all aspects of life-cycle assessment, design, maintenance, rehabilitation and monitoring of civil engineering systems.

<http://www.ialcce.org/>



RIL Finnish Association of Civil Engineers

RIL, founded in 1934, is an organisation for civil engineers with Master of Science degree and university students of civil engineering. RIL supports the development of building, urban planning and environmental technology and acts to preserve solid and durable building and maintenance traditions.

RIL also supervises the benefits of its members and promotes their professional skill and welfare. RIL unites the most highly educated professionals in civil engineering to form a versatile network.

<http://www.ril.fi/euroinfra2009>

Conference Secretariat

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