



CIB NEWS ARTICLE

International Council for Research and Innovation
in Building and Construction

Providing a global network for international exchange and cooperation in research and innovation in building and construction, in support of an improved building process and of improved performance of the built environment.

August 2009

Around the Task Groups and Working Commissions

W115 - Construction Materials Stewardship

Report of 1st International Conference "Construction Materials Stewardship 2009"



by

Elma Durmisevic

Background and Scope

The first International conference on Construction Materials Stewardship (CMS2009) took place at the University Twente in Enschede from 12-15 June 2009. The emphasis of the conference was on innovative design and construction methods that incorporate effective use of materials into the whole life cycle of buildings and building materials. This subject integrated issues from spatial adaptability and flexibility of buildings and building systems to concepts as design for disassembly, design for reuse, recycling and energy saving (embodied energy). Delegates from about 16 countries contributed to a number of sessions and debates with state of the art papers regarding the waste management in construction, material reuse and flexible buildings and systems. CMS2009 Conference proceedings provide a comprehensive overview of research results on Life Cycle Design of Buildings, Systems and Materials.

CMS2009 had three major unique features:

- Active involvement of the construction industry (Innovation Platform Twente) during the kick off industry session as well as during the debate and reflection session
- Students presentations in a interactive virtual reality lab at the University Twente
- Art and science exhibition.

Bridging the Gap between the Academia and the Construction Industry

One of the conference objectives was to open a dialog between the academia and construction industry on the issues related to effective use of materials in construction. This was made possible through an active involvement of the Innovation Platform Twente (Building Construction/Pioneering) in the organisation and in the work of the conference. The conference started with an industry plannery session. During this session the chair of the building cluster – Pioneering Mr. Hans Klosterman of the University of Twente, reminded the participants about the potential that innovation in sustainable construction in the Netherlands has and presented the ambition of the building cluster that was set in Twente. An ambition being to set an example of what industrial sustainable and flexible buildings are by developing real projects in cooperation with Universities, housing corporations, developers and manufacturing industry. During the second part of the industry session a number of construction companies such as Hodes, de Groot Vroomshop, Plecht Vos and van Dijk Groep (members of the IDF (Industrieel Duurzaam Flexible Bouw) group presented their cases in relation to the concept of Industrial Sustainable and Flexible buildings and the companies vision concerning sustainable construction. Each company presented a system that

has been developed or is being developed based on the basic principles of life cycle design by defining adoptability, disassembly, reuse and reconfiguration into a key systems characteristics.

Reflection

The Industry session formed an introduction to the academic sessions that took place during next two days. After the scientific sessions there was a time for reflection and debate between the industry representatives and the scientific community. The debate ended with general understanding from both sides of what their agenda for the future research and development may look like. Everyone had a feeling that the discussion could have continued the whole day and agreed that this kind of interactive events should be organised more often.

Keynote Addresses



2012 architecten: a coffee shop made of washing machines

The first Keynote address was given by Dutch architect Jan Jongert of architects office "2012 architecten". The office has been specialised in reuse of waste materials since 1997. Building several examples of their way of working in small mono-material art they developed methods to use all kind of materials in architectural projects too. One of the most used objects designed by 2012 architects is a coffee shop made of parts of washing machines and air-plane chairs. During the field trip participants of the conference were able to see one of their villas under construction that was made of 100% waste material.

The second Keynote was given by the director of housing cooperation "De Woonplaats" Mr.Fons Catau, that is investing a great deal in the development of new housing concepts that are multifunctional, adoptable and energy efficient. They aim at carbon neutral housing construction and stimulate industries to develop new flexible construction methods that will improve transformation capacity of housing.

Green Workshop – Student's Presentations

The conference was a podium for the presentation of students work as a part of a new Master Program at University Twente that deals with Industrial design of green and transformable buildings, systems and components. As a part of this master, students work on the development of new concepts in close cooperation with the construction industry. A part of the study is the International Design Studio where students from three universities cooperate on design of flexible pavilions that are made of reusable, replaceable components and recyclable materials.

Parallel to CMS2009 this International Design Studio was taking place and during CMS2009 a student exhibition and presentation was organised. Students from Enschede, Istanbul and Sarajevo presented design solutions for flexible systems that have been developed for the municipality of Istanbul. The system will be use by the municipality of Istanbul during the summer months in 2010 on the location of the former Roman Hypoderm in Istanbul in front of the Blue Mosque.

Design solutions and system configurations have been presented by students in a virtual reality lab of the faculty with 1:1 images and breath taking virtual animations.



Interactive student's presentation at the virtual reality lab at University Twente

Art and Science



sculpture by: Alwie Oude Aarninkof

Besides the interactive sessions with the industry and students, this conference tried to bring art and science closer together as well. An exhibition of Kinetic Art was opened as a part of conference event. The artist Alwie Oude Aarninkof makes dynamic sculptures with many parts. The artist used sun and wind in order to make movements possible. A number of scale models have drawn the attention of visitors showing the elegant interplay between the natural elements and art of making structures.

Field Trip



wasted materials ready for reuse

Besides a visit to a construction site where everyone was confronted with a true example of material reuse in housing construction, a visit to a local recycling / crushing plant was organised as well. It is a show-case

of recycling of stone material, separation of steel and concrete from a floor slabs, recycling of asphalt etc.

Scientific Program

The scientific program consisted of two parallel sessions that were organised around the following topics: design for transformation and reuse of buildings, systems and materials; design of systems to avoid construction material waste; adaptable architecture; deconstruction; sustainable management of buildings, design with reused materials and components; Intelligent and eco materials.

Acknowledgement

This conference was made possible thanks to the enthusiasm of a number of organisations, students and individuals who have recognised the importance of discussions on Life Cycle Design in Construction. Such discussions should bring the concept of sustainable construction closer to the next phase of its applications.

CMS2009 was organised by staff from the University Twente, Faculty of Engineering Sciences with support of Innovation Platform Twente and CIB.

Partners of the CMS2009 were: Innovation Platform Twente (IPT), Pioneering, IDF working group from IPT Building Cluster, CIB.

Organising Committee

Apart from organising committee that consisted of Elma Durmisevic, Robin de Graaf, Mark Roelofsen, Stefan Binnemars, Yolanda Bosch great contribution to the organisation have given Prof. Joop Halman, Prof. Wim Poelman, representatives from Innovation Platform Hans Klosterman, Bas van de Veen, members of IDF working group from IPT Building Cluster Ronald Scholten, Berry de Jong, Wim Sturis, Maarten Douwe Bredero, students from the new master Industrial design for buildings Mees Beeker, Rick van der Heemst, Niels Korteling.

Spatial thanks to student assistants Stefan Binnemars, Tjark van de Merwe for their immense contribution to the success of the conference.

Steering Committee

The following members of the Steering Committee were extraordinary helpful in fine-tuning of the conference program

Prof. Dr. Rikus Eising, Dean of the Faculty of Engineering Technology, (University of Twente, the Netherlands)

Prof. Dr. Fred van Houten (University of Twente, the Netherlands), Prof. Dr. Abdol Chini, (University of Florida, USA), Prof. Dr. Joop Halman, University of Twente, the Netherlands, Dr. Wim Bakens, Secretary

General of CIB, Prof. Dr. John Story, (Victoria University of Wellington, New Zealand), Prof. Dr. Frank Schultmann, (University of Siegen, Germany).

Scientific Board

Scientific Board members took responsibility with us for the reviewing process of scientific papers: Elma Durmisevic, André Dorée, Joop Halman, Jos Brouwers, Abdol Chini, Frank Schultmann, John Story.

Technical Committee

Special gratitude to the CMS2009 technical Committee which was engaged in blind review process and whose comments and suggestions made it possible to publish a book of proceedings with high quality scientific papers on Life Cycle Design of Buildings, Systems and Materials: Jos Brouwers, Abdol Chini, John Story, Frank Schultmann, Joop Halman, Elma Durmisevic, Gilli Hobbs, Catarina Thormark, Charles Kibert, Shiro Nakajima, Chyime Anumba, Hendrik Hendrickx, Patric de Wilde, Andre Dorée, Fred van Houten, Laura Itard, Robin de Graaf, A. Miller, Holger Wallbaum.

Conference Proceedings

The conference proceedings were made available a week before the conference. These can be downloaded from the CIB website [here](#) or from the CMS2009 website (www.cms2009.net) CMS2009 proceedings: CIB Report 323



A separate News article about the conference proceedings is published in another section of this newsletter (see [here](#)).

The book of abstracts was made available on the CIB website one week before the conference and in a printed form.

A CIB publication with the Industry Papers as presented at the conference will be available after Autumn 2009.

During the conference CIB W115 had a special Commission Meeting. A separate News article has been produced about this (see [here](#)).

Additional Information

For additional information about the conference and information about the proceedings please contact the conference chair Dr. Elma Durmisevic e.durmisevic@utwente.nl
Tel: +31 53 4894772
Fax: +31 53 4893631



For a additional information about the CIB W115 please contact the Coordinators: Abdol R Chini chini@ufl.edu, John B Storey john.storey@vuw.ac.nz and Frank Schultmann frank.schultmann@unisiegen.de



CMS2009 Partners:

