MPA STUTTGART
Otto-Graf-Institut
Institut für
Werkstoffe im Bauwesen
IWB
Universität Stuttgart

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Technical Program

The Scientific Committee will review the submitted abstracts; dependent hereon the authors are invited to submit full papers.
The technical program includes keynote presentations and concurrent sessions over two and a half days. The publication remitted to the participants at the beginning of the Conference will include a book published by Springer including the full papers. Further a booklet containing the abstracts will be distributed together with the detailed program.
The Technical Program will be made public at the websites of MPA University Stuttgart and of RILEM

- www.mpa.uni-stuttgart.de
- www.rilem.net

Social Program

The social program includes a reception in the Town Hall of Stuttgart on Thursday evening 8th of October and a conference banquet at a distinguished location in the surroundings of Stuttgart.
Further the social program includes a well guided companion program to landmarks of Wurttemberg including lunch.

Conference Venue

The Conference will be held at the location of Stuttgart University, campus Vaihingen.

Conference topics are:

- innovative wood materials
- glued and mechanical joints
- glued-in rods
- innovative fasteners, i.a. self-tapping screws
- cross-laminated timber
- glued laminated timber
- timber based facades
- modified wood, i. a. acetylated and thermally treated wood
- durability issues, surface treatment
- timber-concrete compounds
- bamboo-based materials

Important dates for prospective authors

- 15.12.2012 deadline of abstracts
- 11.01.2012 notifications of paper acceptance
- 01.05.2013 deadline for papers

Important dates of registration:

- 01.05.2013 early bird registration (reduced fee)
- 01.08.2013 latest registration

Electronic registration via e-mail and website only:

rilem.conf2013.timberconstructions@mpa.uni-stuttgart.de

Fees: 580 Euro (early bird), 640 Euro after 01.05.2013

Preliminary Announcement and

CALL FOR PAPER

RILEM Conference

Materials and Joints in Timber Structures – recent Advancement of Technology

October 08 – 10, 2013

University of Stuttgart,
Materials Testing Institute (MPA)
Otto-Graf-Institute
and
Institute of Construction Materials

Objectives and Scope

The use of timber in structures represents one of the most promising approaches to meet the urgent needs for sustainability, environmental friendliness and CO_2 emission reduction in building technology. Within the frame of the world's fast growing population the achievement of the mentioned aims is increasingly understood as one of the prime keys to ensure future live on earth.

Timber construction has experienced considerable progress in recent years. Advancement has to be acknowledged at both equally important interacting construction components being materials and joints.

Regarding materials it is undeniable cross-laminated timber which has widened the options of timber constructions most. The re-invention of plywood, now based on sawn boards instead of peeled veneers was the basis for the multi-storey buildings up to 9 storeys with realistic perspectives up to 30 storeys. The recent productions of glulam and LVL made of high strength hardwoods, such as a beech, oak, chestnut and several tropical hardwoods have enlarged architectural options and meet the demands of forestry towards sustainable and soil/climate apt tree cultivation.

A further renewable wood-like material, namely bamboo, is considerably extending the possibilities and efficiency of wooden materials. Processed and densified bamboo strands enable the production of plates and beams with strength properties similar and higher as steel. Low density wood fiber boards, representing a highly ecological insulation material are now simultaneously used for structural bracing purposes, too.

Regarding mechanical joints, self-tapping screws produced up to lengths of 1.5 m have changed jointing and reinforcement technology substantially. The use of the screws as primarily tension or compression transferring devices at an angle to fiber direction represents a new highly efficient jointing and reinforcement technology. Contrary to dowel type fasteners which act by embedment and hereby inherently induce splitting of the wood, self-tapping screws overcome the problem of tension perpendicular to grain, hereby increasing load capacity of the joint and changing the failure mode from brittle to ductile. Further, self-tapping screws used in combination with specially formed, i.a. dovetailed metal plates enable architecturally esteemed, completely hidden end-grain connections.

In case of glued joints, now approved and reliable adhesive systems have entered into timber construction technology and enable new jointing solutions, i.a. for wide-span grid-like spherical domes. Glued-in perforated steel plates lead to stiff and strong timber-concrete compound structures. Recently a new glued jointing technology for glulam beams which enables the transfer of forces without any reduction of the full cross-sectional capacity has been developed.

The objectives of the Conference are to bring together world leading experts in the mentioned fields of wooden materials, joints and timberconstruction to present the latest state of technology and to identify future research needs to conserve the pace of progress.

S. Aicher H.W. Reinhardt H. Garrecht

Outline Programm

08. October 2013 (Tuesday)

09.45 **Opening**
Reinhardt / Garrecht / Aicher

10.00 **Welcome Address**
Minister of Agriculture,
State of Baden Württemberg

10.15 **Keynote 1:**

Extended horizons for timber construction – new materials and joints

11.00 **Parallel session 1 and 2**
- Materials 1 (4 lectures)
- Joints 1 (4 lectures)

12.40 **Lunch**

14.00 **Parallel session 3 and 4**
- Construction 1 (4 lectures)
- Fire 1 (4 lectures)

15.40 **coffee**

16.10 **Parallel session 5 and 6**
- Materials 2 (3 lectures)
- Joints 2 (3 lectures)

19.00 **Mayor's Reception**

Outline Programm

09. October 2013 (Wednesday)

09.00 **Keynote 2:**

Self-tapping screws, hidden faster technology

09.45 **Parallel session 7 and 8**
- Materials 3 (3 lectures)
- Joints 3 (3 lectures)

11.00 **coffee**

11.30 **Parallel session 9 and 10**
- Construction 2 (3 lectures)
- Seismic 1 (3 lectures)

12.45 **Lunch**

14.00 **Keynote 3:**

The future of Multi-Story timber buildings
H. Kaufmann

14.45 **Parallel session 11 and 12**
- Materials 4 (3 lectures)
- Joints 4 (3 lectures)

16.00 **coffee**

16.30 **Parallel session 13 and 14**
- Durability/facades 1 (3 lectures)
- Seismic 2 (3 lectures)

19.00 **Bus departure for dinner**

19.30 **Dinner**

10. October 2013 (Thursday)

09.00 **Keynote 4:**

The ecological and forestry dimensions of wood construction

09.45 **Parallel session 15 and 16**
- Constructions 3 (3 lectures)
- Joints 5 (3 lectures)

11.00 **coffee**

11.30 **Parallel session 17 and 18**
- Seismic 3 (3 lectures)
- Materials 5 (3 lectures)

12.45 **Farewell address**

13.00 **Lunch**