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IALCCE 2012

Third International Symposium on Life-Cycle Civil Engineering

3 - 6 October 2012
Hofburg Palace, Vienna, Austria

IALCCE

The Symposium is organized on behalf of International Association for Life-Cycle Civil Engineering (IALCCE) under the auspices of the University of Natural Resources and Life Sciences. IALCCE (www.ialcce.org) is a young Association founded in October 2006. Its activities encompass all aspects of life-cycle assessment, design, maintenance, rehabilitation, and monitoring of civil engineering systems.
The International Symposium on Life-Cycle Civil Engineering is a biennial event. In 2012, Austria will host the Symposium for the first time. The IALCCE 2012 Symposium provides an opportunity for academics, engineers, architects, and builders from Austria, Europe, and around the world to keep themselves up to date with latest developments in the field of life-cycle civil engineering.

Mini - Symposium MS 3-6:

Maintenance and Rehabilitation of Aged Bridges

Mark Alexander Ahrens, Ruhr-University Bochum, Germany
Peter Mark, Ruhr-University Bochum, Germany

During the last decades the amount bridges suffering from various damage mechanisms like concrete and reinforcement corrosion, fatigue, abrasion, and many others in time, has significantly increased. After years of service, sometimes even longer than ever scheduled, those bridge structures show a critical state of preservation today. In such cases civil engineers are challenged to decide whether these weakened bridges can withstand an ongoing unrestricted usage, should be strengthened or must be deconstructed and finally replaced by new ones. Obviously and well-founded by economic reasons, strengthening and revitalization are preferred to deconstruction and rebuilt by responsible owners or agencies. Besides, remarkable improvements of standards concerning design methods, theoretical models, as well as relevant design loads has been achieved by the civil engineering community. The same holds true for theoretically sound damage descriptions and realistic progression models as well as sophisticated calculation methods. However, aged structures have generally been built according to codes valid to the time of construction. Compared to current codes such structures possess deficiencies, e.g. concerning minimum reinforcement or fatigue resistance, that have to be handled in course of recalculation. Further, information concerning e.g. material strength, its spatial scatter, or damage states has to be gathered in situ or in additional laboratory experiments to serve as authentic input data in related computer simulations. The symposium "Maintenance and rehabilitation of aged bridges" covers current efforts made in damage assessment, maintenance, strengthening, and revitalization of aged bridges in theoretical as well as structural manner. Especially, the following topics are addressed:

- Modern techniques of structural assessment and bridge stock management
- Recalculation of aged bridges to nowadays standards
- Practical applications of bridge strengthening and revitalization
- Residual life-time assessment considering time-variant damage mechanisms
- Specific strengthening techniques for aged concrete bridges

IALCCE 2012 Secretariat: University of Natural Resources and Life Sciences, Institute for Structural Engineering, Peter-Jordan-Strasse 82, 1190 Vienna, Austria; E-Mail: ialcce2012@boku.ac.at; Telephone: +43 1 476 54-5284; Fax: +43 1 476 54-5299;