



**COST TU 0904 – SCIENTIFIC REPORT**

Subject : Short Term Scientific Mission

Name : Numerical modelling of timber-concrete composite floor

Reference : COST-STSM-TU0904-10588

Duration : 3 Jun 2012 – 13 Jun 2012

Visitor : Ms Eva Dvorakova, Czech Technical University in Prague, Faculty of Civil Engineering, Prague(CZ) , eva.dvorakova@fsv.cvut.cz

Host : Prof. Dr. Andrea Frangi, Swiss Federal Institute of Technology Zurich, Zurich(CH), frangi@ibk.baug.ethz.ch

During the stay of visitor, following aims were reached:

- 1.) Cooperation and principal interaction with host institution researchers Prof. Dr. Andrea Frangi and Dipl.-Ing. Michael Klippel.
- 2.) Visit of the significant timber structures under construction around Zurich.
- 3.) Visit of the Institute of Structural Engineering laboratory and help with the preparation of the timber-concrete composite beam test.
- 4.) Participation on the conference Structures in Fire 2012.
- 5.) Working on evaluating of push-out tests within the experimental programme of CTU Prague. The objective of these tests was identification and verification of parameters of contact elements that represent the connection so that they can be used in complex numerical models of whole systems. The results will be used for non-linear analysis of timber-fibre concrete specimens.
- 6.) Contents of the paper called „LOAD-DISPLACEMENT BEHAVIOUR OF PUSH-OUT SPECIMENS“ was prepared. This paper will combine the results of the experimental programme of CTU Prague and numerical modelling. This paper is expected to be printed during the year 2012 in some of the journals.
- 7.) Numerical modelling of the push-out test to determine of a suitable numerical model, which will be applied in numerical analyses of the beam and complex models of combined structural systems.
- 8.) Working on improving the methods of numerical modelling of timber – concrete composite floors in fire. Numerical model of the beam (as one of the main parts of visitor’s Ph.D. thesis) was developed and improved.

Prague 20. 6. 2012

Ing. Eva Dvořáková

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