

Workshop Secretariat

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Lake Maggiore: Borromean Islands, Santa Caterina Monastery



ELSA Laboratory, Ispra site of the Joint Research Centre

International Workshop On

Seismic performance of precast structures

A collaborative work of STEEL* and ELSA*

A SAFECAST* workshop



October 5-7, 2009
Joint Research Centre, Ispra (VA), Italy



STEEL: Structural and Earthquake Eng. Lab. İstanbul, Turkey
ELSA: European Lab. for Structural Assessment, Ispra, Italy
SAFECAST: EC Grant agreement SAFECAST 218417

Background

A project named "Performance of innovative mechanical connections in precast building structures under seismic conditions (SAFECAST)" has been recently funded by the European Commission.

The precast concrete sector has experienced reasonable growth in recent years, and this is expected to continue with long term underlying growth of around 4% forecast from 2007 to 2010. Key factors influencing market prospects include the quality and safety of constructions, the influence of modern methods of construction, the impact of environmental legislation and energy-efficient products. To guarantee predefined levels of performance under different loading situations (among which earthquake excitation plays a fundamental role) is the fundamental prerequisite for precast structures to be fully competitive from the point of view of safety and reliability of behaviour and performance.

The variety of inherent issues related to the seismic behaviour of precast structures has made it difficult so far to conceive design approaches of general validity. At present, design approaches codified in European normative documents, such as Eurocode8, are mainly transposed from those conceived for cast-in-situ structures, based on the concepts of capacity design. Still, the inherent features of precast structural systems, e.g. non-monolithic connections, call for a thorough validation of the basic assumptions of said approaches. A key aspects is the behaviour of joints, that should have larger capacity than elements, or having a dissipative behaviour, should possess the necessary ductility resources.

Ispra and Lake Maggiore

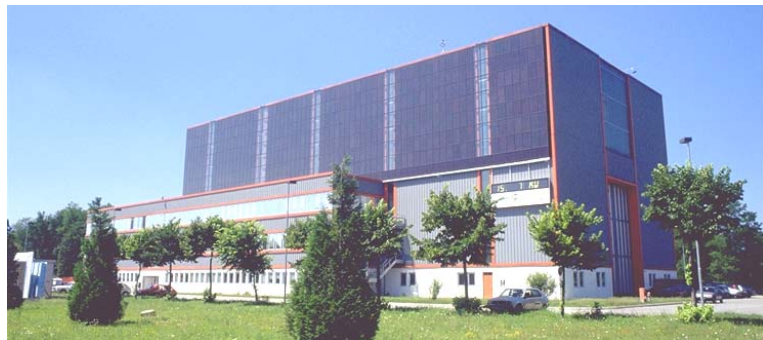
Ispra is a small town on the eastern shore of Lake Maggiore, in the province of Varese. Some of the main Institutes of the Joint Research Centre of the European Commission are located there.

Lake Maggiore is Italy's second biggest lake. Acting as a watery boundary between two regions, Lombardy and Piedmont, Lake Maggiore can also claim to be in two countries at once: its northern tip sits in Switzerland.

Among the different amenities of the area, a key attraction is the archipelago formed by the three Borromean Islands, that is property of the noble Borromeo family. On Isola Bella and Isola Madre rise two palaces full of works of art of inestimable value and spectacular Italian-style gardens with countless species of plants and flowers. On the Isola dei Pescatori (Fishermen Island) one can wander through a maze of picturesque lanes with typical houses, regular meeting points for artists and writers.

The Venue

JRC, ISPRA



Workshop Program

First day, Monday October 5

9:00-9:15 Welcome to ELSA, M. Geradin
9:15-9:30 Welcome to IPSC, S. Lechner

Technical session 1, SAFECAST

9:30-10:15 Past activities on precast structures, G. Toniolo
10:15-11:00 Introduction to SAFECAST, A. Colombo

11:00-11:30 Coffee break

Technical session 2, national perspectives

11:30-12:00 Slovenia
12:00-12:30 Greece
12:30-13:00 Turkey

13:00-14:30 Lunch

Technical session 2, national perspectives, cont.d

14:30-15:00 Spain
15:00-15:30 Portugal

15:30-16:00 coffee break

Technical session 3, the L'Aquilano earthquake

16:00-17:00 L'Aquila earthquake (M. Dolce)
17:00-17:30 findings from Turkish earthquakes (F. Karadogan)
17:30-18:00 Evidences from L'Aquila earthquake (P. Riva)

20:30-22:30 Dinner at Belvedere restaurant

Second day, Tuesday October 6

Technical session 4, European perspective, chairman Paolo Negro

8:30-9:00 Pre- and Co-Normative Research Needs for Eurocode 8, E. Carvalho
9.00-9.30 The Precast Industry in Europe: standardization aspects, A. Rimoldi
9.30-10.00 The advantages of Precast Construction, P. Fuertes

10:00-10:30 Coffee break

Technical session 5, International perspective, chairman Faruk Karadogan

10:30-11:00 State-of-the-art in precast construction in China, X. Lu
11.00-11.30 State-of-the-art in precast construction in New Zealand, S. Pampanin
11:30-12.00 State-of-the-art in precast construction in USA, S.K. Ghosh

Round table discussion

12.00-13.30 Round table discussion

13.30 – 14.30 Lunch

14.30-24.00 Tour of Borromean Islands + dinner

Third day, Wednesday October 7

PCC Meeting

8:30 – 10:30 Presentations and discussion of the early results of experimental and theoretical works

10:30-11:00 Coffee break

11:00-13:00 Presentations and discussion of the early results of experimental and theoretical works

13:00-13:30 To do list for the next 6 months and concluding remarks

13.30 – 14.30 Lunch

Advisory Board

Antonella Colombo, ASSOBETON
Faruk Karadogan, STEEL
Paolo Negro, ELSA
Giandomenico Toniolo, Politecnico di Milano

Organizing Committee

Antonella Colombo, ASSOBETON
Faruk Karadogan, STEEL
Paolo Negro, ELSA
Desislava Strezova, ELSA
Mara Olgjati, ELSA
Caterina Dattilo, ELSA