

Workshop – 1 July 2008

Footbridge vibration design: worldwide experience

Scope

Studies on dynamic behaviour of footbridges under pedestrian loads carried in the last years in many countries in Europe, Asia or America have matured and guidelines have started to be published. Since the last Footbridge 2005 conference in Venice footbridge designers seem to have a clear idea on how to tackle dynamic live loads. This workshop, coming as prelude to the “Footbridge 2008” conference will establish a state of the art of footbridge design strategies regarding dynamic excitation by pedestrians, with emphasis on practical applications.

The workshop aims to:

- give an overall view of the recommendations and guidelines recently published in different countries from Europe, Asia and America,
- establish a state of the art on load models and design criteria,
- present case studies in dynamic design : theoretical analysis and experimental site measurements,
- analyse the first applications of the new recommendations and feedback from designers and owners

The proposed themes of the lectures on Footbridge Vibration Dynamic design are:

- new codes, recommendations and guidelines for pedestrian dynamic loads
- recent case studies having contributed to establish or test the new recommendations
- special load scenarios
- interaction between crowd behaviour and deck movements
- the treatment of vibration scenarios
- control systems
- vibration absorbers

Each half day session comprises invited presentations. The morning session is devoted to codes and recommendations with case studies. The afternoon session is devoted to control systems and vibration absorbers with further case studies. An ample time will be allowed for questions and debate.

A general panel discussion will conclude the workshop.

The synopsis and conclusions of the two sessions will be presented during the session on dynamics at the Footbridge 2008 general conference.

Registration and proceedings

Participants can register for the workshop alone or the workshop together with the three day conference directly on the FOOTBRIDGE 2008 registration on the website (www.footbridge2008.com).

The workshop presentations will be included in a CD which will be distributed to participants.

Workshop venue

Fundação de SERRALVES, Library of the Museum of Contemporary Art

Schedule

10 h 00	Welcome	Elsa Caetano, Valérie Dusséqué
WS1 Recommendations, guidelines, codes, design tools		
10h15	European design guide for footbridge vibration	Christoph Heinemeyer, RWTH Aachen, Germany
10h35	Calibration of the UK National Annex	David Mackenzie, Flint & Neill Partnership, UK
10h55	The influence of dynamics in footbridge design: North American practice	Theodor Zoli, HNTB, USA
11h15	Coffee Break	
11h35	Application of French guidelines in design	Pascal Charles, SETRA, France
12h05	Footbridges, numerical approach	Krzysztof Zoltowski, Gdansk University, Poland
12h25	The role of dynamic testing in the design, construction and long-term monitoring of lively footbridges	Alvaro Cunha, FEUP, Portugal
12h45	Design for dynamic effects in long span footbridges	Angus Low, ARUP, UK
13h05	Lunch	
14h30	Interactive sessions	
WS2 Practical experience – case studies		
15h00	The Simone de Beauvoir Footbridge in Paris. Experimental verification of the dynamic behaviour under pedestrian loads and discussion of corrective modifications	Xavier Cespedes, SETEC TPI, France
15h20	Crowd dynamic loading on footbridges	James Brownjohn, Univ. Sheffield, UK
15h40	Application of tuned mass dampers for bridge decks	Christian Meinhardt, GERB, Germany
16h00	Coffee Break	
16h30	Experience and practical considerations in the design of viscous dampers	Philippe Dufloy, Taylor Devices, USA
16h50	Experience and practical considerations in implementation of control devices	Christiane Butz, Johann Distl, Maurer & Söhne, Germany
17h10	Interactive sessions	
17h50	Closing- Elsa Caetano, Valérie Dusséqué	
18h00	Cocktail	