

**Call for Papers**

**IABSE Workshop**

**Safety, Robustness and  
Condition Assessments  
of Structures**

**11-12 February 2015  
Helsinki, Finland**

# Organizers

**Finnish Group of IABSE**

**Finnish Association of Civil Engineers RIL**

## ORGANIZING COMMITTEE

**Ms. Helena Soimakallio (chair)**

Finnish Association of Civil Engineers RIL

**Ms. Anu Karvonen**

Finnish Association of Civil Engineers RIL

**Dr. Risto Kiviluoma**

Chair of the Finnish Group of IABSE

**Mr. Atte Mikkonen**

Secretary of the Finnish Group of IABSE

**Mr. Ville Raasakka (secretary)**

Finnish Association of Civil Engineers RIL

**Ms. Kirsti Tikkanen**

Finnish Association of Civil Engineers RIL

## INTERNATIONAL SCIENTIFIC COMMITTEE

**Prof., Dr. Risto Kiviluoma (chair)**

Aalto University, Finland

**Prof., Dr. Eugen Brühwiler**

Swiss Federal Institute of Technology (EPFL) Lausanne, Switzerland

**Prof., Dr. Joan Ramon Casas**

Technical University of Catalonia, Spain

**Prof., Dr. Airong Chen**

Tongji University, China

**Dr. Christian Cremona**

Sétra, France

**Prof., Dr. Michael H. Faber**

Technical University of Denmark - DTU, Denmark

**Prof., Dr. Christian Große,**

Technische Universität München, Germany

**Emeritus Prof., Dr. David A. Nethercot**

Imperial College London

**Mr. Predrag Popovich**

Wiss, Janney, Elstener Associates, Inc., USA

**Prof. Thomas Vogel**

ETH Zurich, Switzerland

## Introduction and welcome

IABSE Workshop “Safety, Robustness and Condition Assessments of Structures” focuses to the recent developments of making structures safer for unexpected, unforeseen, accidental and extreme events.

Although the principles and definitions of robustness have recently become more recognized, and concerns of progressive collapse are heightened, design approaches have remained descriptive and largely unaltered since the 1970's. These need to be developed further to give engineers and structure owners tools to put the principles in practice - in the extend most suitable for the particular project.

Due to rapidly improving technologies, recent emerging issue is the lack of assessment codes for existing structures in most countries. Old structures are today widely assessed by applying design codes prepared for the new structures, e.g., using their load and resistance partial safety factors. This is despite that modern technologies allow precise measurements of the key structural assessment parameters; to reduce uncertainties, which are appropriate to assume for new structures. This links the condition assessment and structural monitoring into this context. Generally speaking - data is available from the structures, and more could be produced by measurements. How it could be used in assessments with proper code base, which all parties can commonly accept. And if it is used, the logical question is then what are the minimum requirements for it and how to deal with uncertainties of data itself?

The above remarks invoke from the discussions of the IABSE workshop “Safety, Failures and Robustness of Large Structures” Helsinki 2013 and the Nordic IABSE Summit Helsinki-Tallinn 2014. Organized by the same team and for the same format the present workshop is continuation of these discussions. At the days of the 2013 workshop, a roof collapse occurred in Finland with one fatality. This got wide news coverage implying also political pressure to study actions to improve safety. One of those was an obligatory periodic inspection certification of long-span structures. Soon, another collapse happened: in this case a mid-aged concrete water reservoir, whose pre-stress steel got stress-corrosion fracture. The structure could be well characterised as non-robust; and the visual inspection, conducted only weeks before, hadn't any change to identify the risk. Individual experts claimed later on that this vulnerability of the used steel quality was known. Notably risks are involved in how information flows between people and organisations. Can safety-critical information any longer be detected from the vast information flow? A survey revealed dozens of alike susceptible structures in Finland. These are recent examples from Finland, and many could be probably found in other countries. Design for robustness of new structures and improvement of condition assessment routines of existing structures, together with assessment code development, are important branches for enhancing safety. The latter mentioned is also important to avoid unnecessary replacement of old structures, or at least, to give owner opt for replacement and retaining.

We are particularly happy to invite the old and new participants to the workshop in Helsinki!



Prof., Dr. Risto Kiviluoma  
Chair of the Finnish Group of IABSE



Ms. Helena Soimakallio  
Managing Director, Finnish Association of Civil Engineers

## Purpose of the workshop

The workshop theme is “**Safety, Robustness and Condition Assessment Structures**”. Workshop focuses on structures that can cause notable safety concerns like buildings, bridges, viaducts, power plants, dams, harbour structures, stadiums, sport halls, public areas, malls and large urban developments, i.e., structures whose failure may cause the most significant consequences in the terms of fatalities, injuries and economic losses; and to whom condition assessment is routinely used. Aside with traditional safety-concept in structural engineering, e.g. loads and resistance, the robustness issues for unforeseen and unexpected actions are addressed. Most relevant topics for the workshop include

- assessment codes and guidelines for existing structures
- validation of probabilistic design methods
- newest developments in non-destructive testing and structural monitoring
- risk handling for hazards and extreme events
- fire
- progressive collapse, redundancy and alternate load paths
- man-made hazards.

The purpose of the workshop is to provide a meeting point and discussion forum to any professional interested in the theme. The theme is the continuation of the IABSE Workshop “Safety, Failures and Robustness of Large Structures” Helsinki 2013; and its targets were formulated at the discussions of the Nordic IABSE Summit Helsinki-Tallinn 2014.

Keynote speakers are invited as multidisciplinary bases and aim to present the best skills and experience on their field. This gives the participants a possibility to learn new ideas and best practices. The workshop includes five open call-for-papers sessions, in which experts will publish their scientific contribution to the theme. The abstracts and papers have been reviewed by the International Scientific Committee of the Workshop. Accepted papers will be published in the proceedings.

The workshop includes general closing discussions where the state-of-the art can be reviewed. If urged, the organizers on the behalf of workshop participants, can gather statements or recommendations towards IABSE or openly to national structural engineering associations. These may include recommendation for arranging future events or other modes of collaboration on specific topics.

## Scientific program

Scientific program consists on invited key-note lectures and an open call-for paper sessions. At the end of the both workshop days, panel discussions are arranged and time is reserved for common discussions.

## Call for papers

Abstract submission is done via internet only [www.ril.fi/iabse2015](http://www.ril.fi/iabse2015)  
Abstract submission deadline is September 30, 2014.

All the accepted papers will go through a two stage blind review process. Abstracts/papers will be reviewed by the International Scientific Committee.

### **Important dates:**

Abstract submission deadline: September 30, 2014

Notification of abstracts: October 15, 2014

Full paper submission deadline: November 28, 2014

Notification of full papers: December 17, 2014

Registration deadline for authors: January 9, 2015

## Publication

Accepted papers will be published in the printed workshop report and in digital format. The report will be available at the beginning of the workshop. The proceedings will be available later on for separate purchase through IABSE.

# Program

	<b>TUESDAY</b> <b>February 10, 2015</b>	<b>WEDNESDAY</b> <b>February 11, 2015</b>	<b>THURSDAY</b> <b>February 12, 2015</b>		
9.00		<b>OPENING SESSION</b> <b>Auditorium</b>	<b>PLENARY SESSION 2</b> <b>Auditorium</b>		
9.15		Keynote presentation 1	Keynote presentation 6		
9.45		Keynote presentation 2	Keynote presentation 7		
10.15		<i>Coffee at 10.15-10.30</i>			
		<b>PLENARY SESSION 1</b> <b>Auditorium</b>	<b>SESSION 3</b> <b>Room 2</b>	<b>SESSION 4</b> <b>Room 3</b>	<b>SESSION 5</b> <b>Auditorium</b>
10.30		Keynote presentation 3	Presentation 12	Presentation 18	Presentation 24
10.45			Presentation 13	Presentation 19	Presentation 25
11.00		Keynote presentation 4	Presentation 14	Presentation 20	Presentation 26
11.15			Presentation 15	Presentation 21	Presentation 27
11.30		Keynote presentation 5	Presentation 16	Presentation 22	Presentation 28
11.45			Presentation 17	Presentation 23	Presentation 29
12.00		<i>Lunch at 12.00-13.00</i>			
		<b>SESSION 1</b> <b>Auditorium</b>	<b>PLENARY SESSION 3</b> <b>Auditorium</b>		
13.00		Presentation 1	Keynote presentation 8		
13.15	Presentation 2				
13.30	Presentation 3	Keynote presentation 9			
13.45	Presentation 4				
14.00	Check-in to the hotel starting at 14.00	Presentation 5	<i>Coffee at 14.00-14.15</i>		
			<b>CLOSING SESSION</b> <b>Auditorium</b>		
14.15		<i>Coffee 14.15-14.30</i>	Panel discussion at 14.15-14.45		
		<b>SESSION 2</b> <b>Auditorium</b>			
14.30		Presentation 6	<b>Bus transportation to the airport and Helsinki City centre</b> <b>at 15.00</b>		
14.45		Presentation 7			
15.00		Presentation 8			
15.15		Presentation 9			
15.30		Presentation 10			
15.45		Presentation 11			
16.00		<i>Coffee at 16.00-16.15</i>			
16.15-16.45	<b>DAY 1: CLOSING SESSION</b> <b>Auditorium</b>				
		Panel discussion at 16.15-16.45			
18.00	<b>Get-together at Gustavelund</b> <b>at 18.00-20.00</b>	Guided walk to the dinner venue (about 10-15 min)			
18.30					
19.00		<b>Dinner at Restaurant Krapihovi</b> <b>at 19.00-22.00</b>			

## Social program

Social program of the workshop includes a get-together reception at the venue (on Tuesday evening) and the workshop dinner (on Wednesday evening). The dinner takes place at restaurant Krapihovi, which will be reached by guided walk of about 10-15 min or by taxi.

## Participants

The workshop is intended to engineers, architects, researchers, actuarial mathematicians and officials working with structures. The workshop is also an excellent possibility for young engineers and postgraduate students to get familiar with the theme and the IABSE organisation.

## Registration and fees

Registration can be made via the website [www.ril.fi/iabse2015](http://www.ril.fi/iabse2015).

The registration fee will include participation to the workshop days (incl. lunch and coffee), get-together reception, dinner and the workshop proceedings. There will be three different fee categories:

- regular fee 780 eur
- IABSE and RIL member fee 680 eur
- young-engineer fee (born 1985 or later) 510 eur

The above fees include VAT 24%.

For any questions please contact the workshop secretariat: [ville.raasakka@ril.fi](mailto:ville.raasakka@ril.fi) or +358 50 366 8687.

## Venue, accommodation and transportation

Workshop venue is **Gustavelund** (address: Kirkkotie 36, Tuusula), which is located 35 km from Helsinki city centre and close to the Helsinki-Vantaa airport.

The venue has own accommodation facilities with total 84 rooms reserved to the workshop participants. Accommodation needs to be booked separately. In Gustavelund, specially negotiated room rates to workshop participants are:

Single room (standard)	79 eur / night
Double room (standard)	99 eur / night

Room reservations directly from the hotel:

**Tel. + 358 9 273 751**  
**E-mail: [reception@gustavelund.fi](mailto:reception@gustavelund.fi)**  
**Booking code: IABSE**



Booking code is valid until January 12<sup>th</sup> unless sold out before.

Recommended transport from the airport is taxi, which takes about 15 min. Driving instructions and information of the public transport can be found at **[www.gustavelund.fi](http://www.gustavelund.fi)**.

After the workshop, bus transportation will be arranged to the airport and to the Helsinki city centre. The bus is scheduled to leave on Thursday at 15.00. The estimated arrival to the airport is at 15.45 and Helsinki City centre at 16.30.

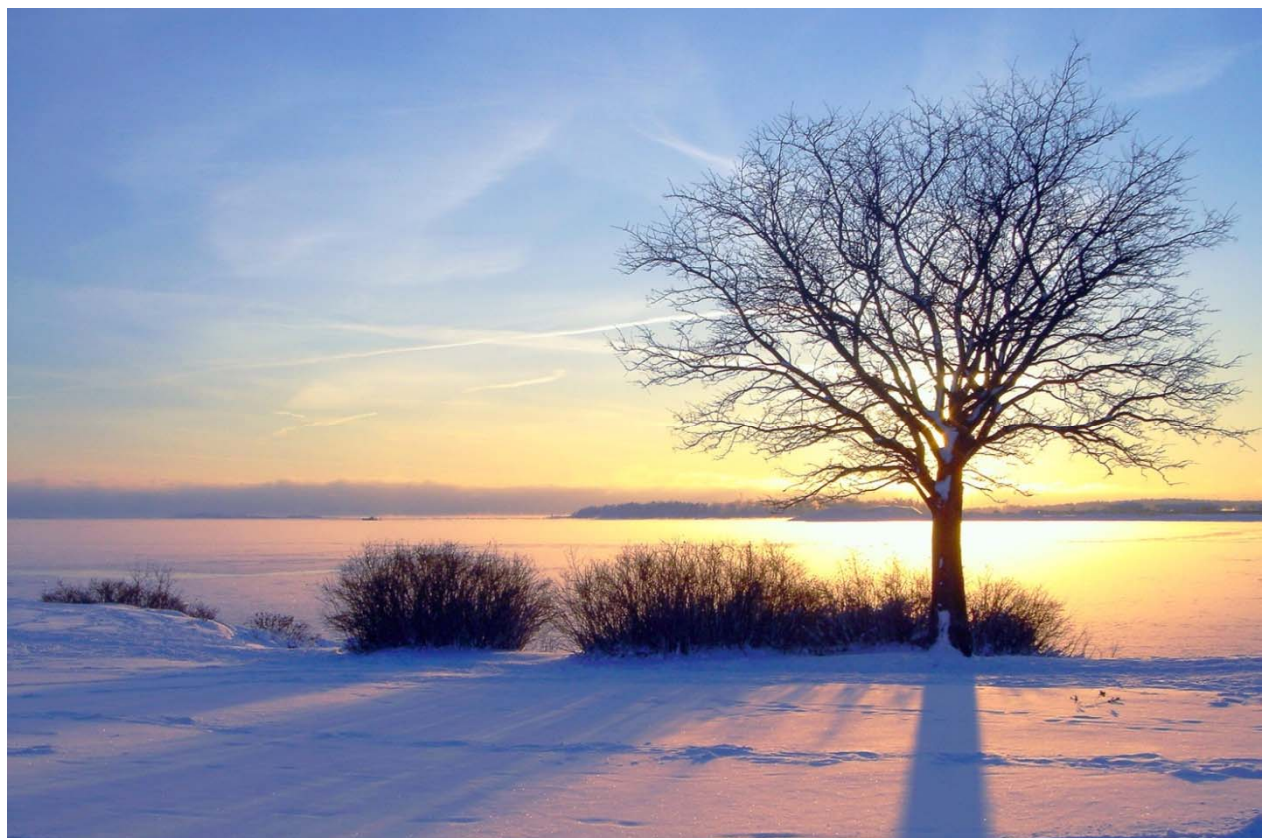
## Important dates

January 9, 2015	Deadline for early-bird registration fees and author registration
February 8, 2015	On-line registration ends
February 10, 2015	Get-together at the venue
February 11-12, 2015	the Workshop





*View to the Helsinki Market Square and Cathedral.*



*Finland has about 188'000 lakes: example of the landscape on a short, cold and sunny winter day.*

## General information

### Language

The official language of the workshop is English. Oral presentation and discussion will be in English only.

### Winter weather in Helsinki region

The month of February is considered winter also in the Southern Finland. If you plan to do outdoor activities, remember to bring a warm jacket, walking shoes, gloves and hat with you. Walking paths might be icy and slippery.

## Helsinki, Finland

The capital, Helsinki, and the neighbouring towns, Espoo and Vantaa, form the fast growing Helsinki metropolitan region, which is now home to almost a million Finns. Helsinki was founded by King Gustav Vasa of Sweden in 1550 and became the capital city of the independent Finland in 1917. Surrounded by the sea and its own exotic archipelago, Helsinki offers visitors an endless number of possibilities.

The workshop is held in Tuusula, about 30 km from Helsinki city centre and 15 min from Helsinki-Vantaa airport. Tuusula is a small town with the population of 36.000. Tuusula has a strong cultural heritage. The first Finnish museum road - Tuusula Rantatie – is located close to the workshop venue. This road hosts the homes of many Finnish artists, such as Pekka Halonen, Juhani Aho, Venny Soldan-Brofeldt, Aleksis Kivi, Eino Leino, Eero Järnefelt and Jean Sibelius.

Finland (Finnish name Suomi) is a republic which became a member of the European Union in 1995. Its population is 5.3 million. Finland is an advanced industrial economy: Metal, engineering and electronics industries account for about 60 % of export revenues and the forest products industry for about 20 %. Finland is situated in northern Europe between the 60th and 70th parallels of latitude. A quarter of its total area lies north of the Arctic Circle. Forest covers about 75 % of Finland, while bodies of water - mainly lakes - cover almost 10 %.

## Local organizers

**The Finnish Group of IABSE** is more than sixty years old and one of the oldest national groups inside the IABSE organization. The Finnish Group together with RIL have organized several IABSE events, including:

- 2014 Nordic IABSE Summit "Engineering and Beyond", Helsinki-Tallinn
- 2013 Helsinki Workshop "Safety Failures and Robustness of Large Structures"
- 2008 Helsinki Conference "Information and Communication Technology (ICT) for Buildings, Bridges and Construction Practice"
- 2001 Lahti Conference "Innovative Wooden Structures and Bridges"
- 1988 Helsinki Congress "Challenges to Structural Engineering"

**Finnish Association of Civil Engineers (RIL)** is an organization for civil engineers with Master of Science degrees and university students of civil engineering. RIL supports the development of building, urban planning and environmental technology and acts to preserve solid and durable building and maintenance traditions. RIL also supervises the benefits of its members and promotes their professional skills and welfare. Read more from: [www.ril.fi](http://www.ril.fi).

## About IABSE

The International Association for Bridge and Structural Engineering (IABSE) was founded in 1929. The mission of IABSE is to promote the exchange of knowledge and to advance the practice of structural engineering worldwide in the service of the profession and society. To accomplish its mission, IABSE organizes conferences and publishes the quarterly journal Structural Engineering International (SEI), as well as reports and other monographs. IABSE also presents annual awards for outstanding achievements in research and practice that advance the profession of structural engineering.

More information about IABSE:

IABSE Secretariat  
ETH Hönggerberg  
CH-8093 Zurich, SWITZERLAND  
Tel. +41-44-633 2647  
Fax. +41-44-633 1241  
E-mail: [secretariat@iabse.org](mailto:secretariat@iabse.org)  
Internet: <http://www.iabse.org>

## Further information

Finnish Association of Civil Engineers RIL  
Mr. Ville Raasakka  
Töölönkatu 4  
00100 Helsinki, FINLAND  
Tel. +358 50 366 8687  
Fax. +358 207 120 619  
E-mail: [ville.raasakka@ril.fi](mailto:ville.raasakka@ril.fi)