

Venue

Luftkastellet vid bron, Utsiktsvägen 10, Limhamn, Malmö, +46 40 15 98 88 luftkastellet.se.



Registration

The registration for the event may be done on ETSI website and will close on 10th May 2012. The fees are charged during the registration.

Participation Fees

The Seminar and Workshop 14-15 May 2012.
Fee 152 € (incl. coffees, 2 lunches and dinner)

Day 1: Seminar on Mon 14 May 2012.

Fee 36 € (incl. coffees and lunch; dinner + 80 €)

Day 2: Seminar and Workshop on Tue 15 May 2012.

Fee 36 € (incl. coffees and lunch)

Reduction for University students 50 %.

Travelling

The participants are responsible for their own travel and accommodation costs. Travelling from abroad to Malmö is best to do via Copenhagen. From the airport (Kastrup) to the Venue by a taxi takes about 40 min. **Luftkastellet** is situated just on the Swedish side of the Öresundsbro and 6 km from the center of Malmö.

Accommodation

Recommended hotels are at the center of Malmö:

*Rica Hotel *****

Stortorget 15, Malmö

*Park Inn by Radisson*****

Sjömansgatan 2, Malmö

Hotel offers and discounts may be found by using online reservation:

www.malmo.com/tourism/hotels/bookonline.asp



Main Organizers



Danish Road Directorate



Finnish Transport Agency



Statens vegvesen

Norwegian Public Roads Administration



Swedish Transport Administration



Royal Institute of Technology



The Norwegian University of Science and Technology



COWI Denmark



Aalto University (as coordinator)

Contact

ETSI Project Stage 3,
PO Box 12100,
FI - 00076 Aalto
+358 (0)9 470 23701

Registration

ETSI web site :
<http://www.etsi.aalto.fi>

Stage 3



Bridge Life Cycle Optimisation

Final Seminar and Workshop 14-15 May 2012

Malmö, Luftkastellet vid Bron



Co-operation of Nordic countries
Denmark, Finland, Norway and Sweden

Coordinated by

Aalto University

Department of Civil and Structural Engineering



Scope

As the main result of ETSI three individual Life Cycle tools are introduced:

- Life Cycle Cost (LCC),
- Life Cycle Assessment (LCA) and
- Life Cycle Aesthetics (LCE).

LCC-costs of a bridge during its life time consist not only of the construction, operation and maintenance costs but also the costs of the owners, users and society including the cost of the final disposal. These parameters are included in an excel-based LCC-tool.

Construction, maintenance and demolition of bridges require material and energy inputs, which in turn lead to environmental impacts. BridgeLCA software tool calculates the most important environmental impacts during the life cycle of a bridge. With this excel-based LCA-tool it is possible to analyze the importance of various environmental impact categories.

During an earlier phase of the ETSI project, a method for evaluating aesthetic and cultural values for bridge design was introduced. This method was refined and an excel-based program has been developed.

Seminar Presentations

The results obtained are presented by the project leaders, researchers and experts. The future implementation will be presented by the national road authorities in Nordic countries. The report and programs will be distributed to the registered participants.

The attendees are welcome to join the discussions at the end of sessions as well as to join to the workshop arranged in the afternoon of the second seminar day.

Who Should Attend

Seminar provides updated tools for bridge life cycle issues, which must be taken into account in future bridge design and procurements.

Seminar is recommended for bridge designers, contractors, investors, authorities and suppliers.



Monday, May 14 (Day 1)

9.30 Registration and coffee

Session 1. ETSI Project (10-12)

10.00 Welcome, *Matti Piispanen*, FTA

10.10 *"Importance of sustainability within transportation sector"*, *Stig P. Christensen*, director, R&D, COWI Denmark

10.40 *"CEN standardization on sustainability of construction works"*, *Pekka Vuorinen*, director, environment and energy, RTT Finland

11.10 ETSI Project, *Lauri Salokangas*, Aalto Univ.

Introduction of new ETSI tools

Life Cycle Cost, *Håkan Sundquist*, KTH

Life Cycle Assessment, *Helge Brattebø*, NTNU

Life Cycle Aesthetics, *Aarne Jutila*, Extraplan

12.00 Lunch

Session 2. Implementation (13-15.30)

13.00 *"New ways to include life cycle issues into design, decision making and procurement"*, *Matti Piispanen*, FTA

13.20 Implementation of ETSI tools.
National road authorities
- Denmark, *Iben Maag*, RD
- Sweden,

14.10 Break

14.25 Implementation of ETSI tools (cont.)
- Norway,
- Finland,

15.15 Discussion: *The Future of ETSI*

Session 3. Insight into ETSI tools (16-18)

16.00 Presentations given by program developers, experts and test users
- Life Cycle Cost tool
- Life Cycle Assessment tool
- Life Cycle Aesthetics tool

17.45 Discussion: *Reliability of the results*

Seminar dinner (19.30-22.30)

Tuesday, May 15 (Day 2)

8.30 Registration and coffee

Session 4. Applications and examples (9-12)

9.00 Experiences of the users – applications of ETSI tools in real bridge projects

Use of LCC- and LCA-tools in practical bridge projects, *Birit Buhr Jensen*, COWI

Use of LCA-tool in optimisation of environmental impact, *Linda Høiby*, *Kirsten Eriksen*

10.15 Break

10.30 Examples of the use of ETSI tools in practice
Example calculations using LCC- and LCA - tools in different bridge projects

Evaluation of bridge aesthetics with the aid of LCE-tool

12.00 Lunch

Session 5. Bridge Life Cycle research (13-15)

13.00 Presentations given by researchers, experts and designers about specific topics
- Service life of different bridge parts
- The real life of bridges in Nordic countries
- Intervals of remedial actions of bridges
- LCC analysis for bridge deck surfaces
- LCC analysis for railway bridges

Closing discussion (15-15.30)

Workshop (conf. room, 13-15)

During the afternoon of the second seminar day the Tools as LCC and LCA programs may be practiced under the guidance of the program developers.

The participants are urged to bring their own laptops for the workshop. Excel is necessary for using the Life Cycle tools, which are delivered to participants.

