

NMGEC7 - NGM Workshop



## Why a new version of EN 1997? Why the Nordic countries should influence?

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5/25/2016

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## Aim of the workshop today

### Eurocodes

- Our common tool for design of buildings and civil engineering works.



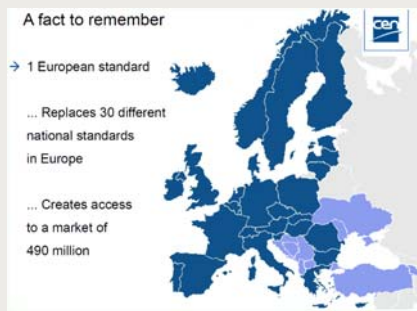
### Discussion

- How to develop Eurocode further
  - Based on experience of current version
  - Based on ideas of what might be included in next version

But first some background

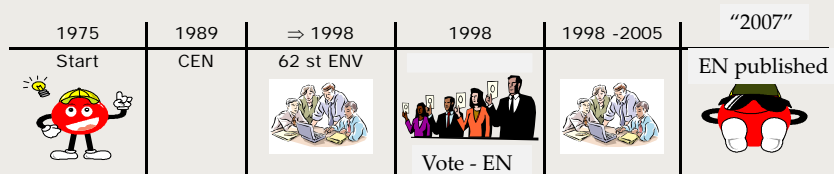
## The aim of Eurocode

- Should be used to
  - **prove compliance** for buildings and civil engineering works with the essential requirements related to safety, mechanical resistance and stability. Council Directive 89/106/EEC
  - Basis for **specifying contracts** for construction work
  - Framework for drawing up **harmonized technical specifications** of products



Our common rules for structural design

## History From idea to first version.....



Implementation period until 2011  
– all conflicting standards should be withdrawn





## Eurocode a success... according to many

- The 58 structural Eurocodes parts that have been published, cover a broad spectrum within the engineering field.
- “The most technically advanced and comprehensive suite of standard in our field in the World”
- “Influence the work of about 500 000 professional engineers across Europe”

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## ENV 1997 one key to build the bridge across Öresund

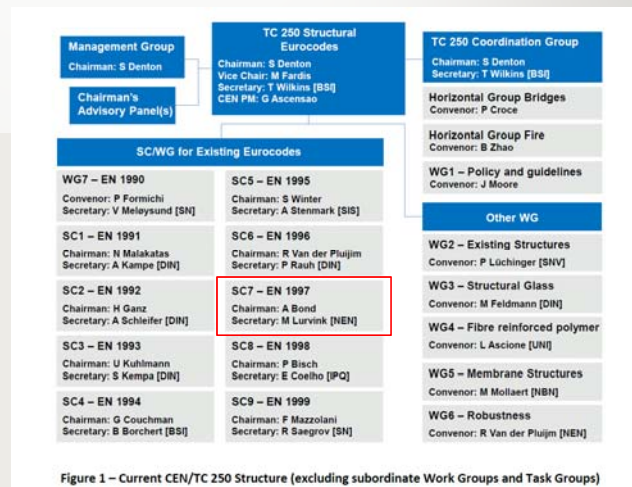
- ENV 1997 were used for the design of Öresundsbron.
- A regulation that both Denmark and Sweden could accept.



## Why a new version of Eurocode?

It is a huge organization that is needed?

What are the benefits, that make this work worthwhile?



## Next Eurocode – The work program focus on:



- Ensuring that the standards remain fully **up to date** through embracing **new** methods, new materials and new regulatory and market requirements.
- **Further harmonization**
- Improve the **ease of use** of the suite of standards for practical users.

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## Next Eurocode - Target group



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- **Practitioners – competent engineers**
  - Defined as: Competent civil, structural and geotechnical engineers, typically qualified professionals able to work independently in relevant fields
  - Intent: To produce standards that are suitable and clear for all common design cases without demanding disproportionate levels of effort to apply them
- **Practitioners - Graduates**
  - Intent: To produce Eurocodes that can be used by Graduates where necessary supplemented by suitable guidance document and textbooks and under the supervision of an experienced practitioner where appropriate.
- **Expert specialists**
  - Aim to not restrict innovation by providing freedom to experts to apply their specialist knowledge and expertise.

**How to verify that you are a competent engineer?**  
 -> Common European Ground Engineering registration?

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## Next Eurocode - Ease-of-use

DILBERT by Scott Adams



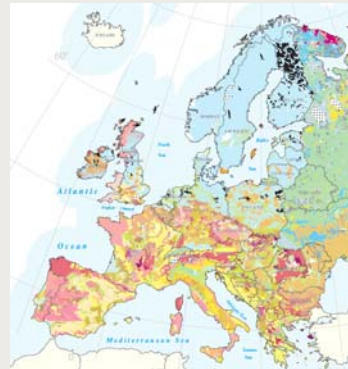
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- i. improving the clarity;
  - ii. simplifying routes through the Eurocodes;
  - iii. limiting, where possible, the inclusion of alternative application rules;
  - iv. avoiding or removing rules of little practical use in design
- That means for example:
    - Improving **consistency** within and between the Eurocodes
    - Including **state-of the-art material** the use of which is based on commonly accepted results of research and has been validated through sufficient practical experience

## Next Eurocode - Further harmonization

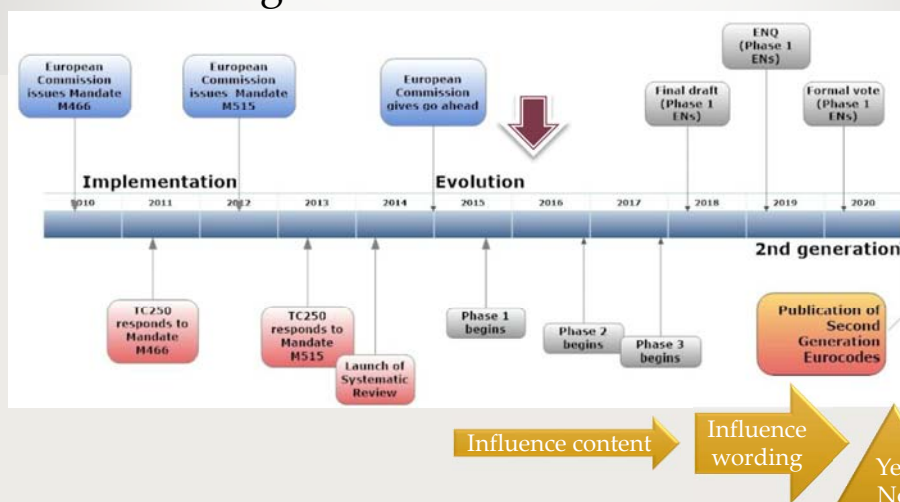
- = less national choices?  
All do the same?

- Or = choices in the code related to ground condition, construction complexity, knowledge.....



NDP mainly if influencing safety

## From drafting to confirmed standard





## Why Nordic involvement?

### "Political"



- "Eliminate technical obstacles to trade"
  - Eurocode one way to open the European market for Nordic companies
- "European companies will come to the Nordic countries"
  - Ensure faire trade
  - The same "game"

## Why Nordic involvement?

### "Engineering"

Some of the statements, might be OK, others not.

That's why we should get involved

**WHAT IF** the next EN 1997 would say:

- Statistical approaches are mandatory for evaluation of characteristic values
- A minimum of 20 investigation point shall be made at each site
- EN give requirements on allowable movement for different types of structures
- Bishop shall be used for calculation of slope stability
- Partial factors should be used for numerical methods



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## Why Nordic involvement? “Specific Nordic issues”

- Nordic geology including hard rock, soft soil and moraine
- Cold climate



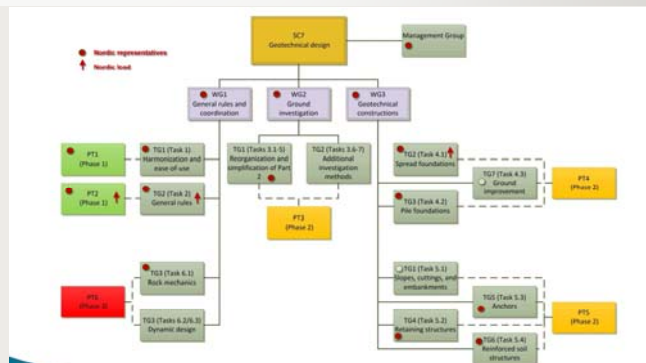
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## Why work as one team?

- To many groups/meetings impossible for each country to cover all of them
- Different competences
- At least one person in each group that get support





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Possible to work as one team?

We are so different!

Maybe that is our strength!

According a "reliable" source: Internet

Denmark

Norway

Finland

Sweden

Iceland

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One opinion – five voices

- Strive for a common view
- Respect each others expertise and right to have a different opinion
- Support each other, even if the specific questions is not mine.



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Welcome to join the team!



Contact the steering group:  
Lovisa, Ole, Haraldur,  
Astri and Panu

Feed-back from today is appreciated

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## Program

9:00 – 9:10	Welcome to the workshop
9:10 – 9:30	Why a new version of EN 1997? Why the Nordic countries should influence? <i>G. Franzén</i>
9:30 – 10:20	Retaining structures – common Nordic view. Presentation/discussion of example <i>O. Möller, T. Lännsivara, F. Oset, A. Kullingsjö</i>
10:20 – 10:40	Coffee
10:40 – 11:30	Pile design – common Nordic view. Presentation/discussion of example. <i>O. Möller, G. Axelsson</i>
11:30 – 12:20	Derived to characteristic to design value. Should we adjust the approach? <i>G. Franzén, L. Korkiala Tantt</i>
12:20 – 13:20	Lunch
13:20 – 14:10	Design combination – philosophy. <i>O. Möller</i> What could we expect in next version of EN 1997 – Overview <i>G. Franzén</i>
14:10 – 14:30	Coffee
14:30 – 15:20	Numerical methods – possible to have one approach? <i>A. Kullingsjö, K. Koivisto</i>
15:20 – 15:30	Summary <i>A. Eggen</i>
15:30	End of workshop

