1st CEN/TC 250/SC 7/WG1 Meeting
Evolution of Eurocode 7

Andrew Bond (Chairman)
Adriaan van Seters (Vice Chairman)
Mark Lurvink (Secretary)

Outline of Opening Plenary Session

1. Introductions
2. Towards a second generation of EN Eurocodes
3. Selection of Project Teams
4. Re-structuring Eurocode 7
5. Conversion of Evolution Groups to Working Groups
6. Programme for the 'Experts Meeting'
7. Closing Plenary Session

Introductions

1st Meeting of CEN/TC 250/SC 7/WG1
Evolution of Eurocode 7

Thanks to...

Hosts

Roman Schremser, Austrian Standards Institute

Dr Manfred Fross

Sponsor:

Austrian Federation of Foundation Contractors

Pre-meeting organization

Daniëlle Schoonheim-Addink (NEN)

Welcome to you all!

CEN TC250/SC7 Who's who in Vienna (updated 15 October 2013)

BOND, Andrew (Chair/EG0/EG8/GBR)	Van SETERS, Adriaan (Vice-Chair/NDL)	LURVINK, Mark (Secretary/NDL)	SCHUPPENER, Bernd (EG2/Past Chair/DEU)
ORR, Trevor (EG3/IRL)	LEES, Andrew (EG4/CYP)	VANICEK, Martin (EG5/CZE)	SCARPELLI, Giuseppe (EG6/ITA)
MOORMANN, Christian (EG7/DEU)	BOND, Andrew (EG8/GBR)	VOGT, Norbert (EG8/DEU)	VRETTOS, Christos (EG10/DEU)
MORITZ, Lovisa (EG11/SWE)	There is no EG12	HARRISON, John (EG13/GBR)	CROCE, Paolo (EG14/ITA)

SCHWEIGER, Helmut (AUT)	WALTER, Herbert (AUT)	VOS, Monica de (BEL)	PAPADOPOULOS, Panicos (CYP)
VANICEK, Ivan (CZE)	MØLLER, Ole (DNK)	LANSIVAARA, Tim (FIN)	TOLLA, Panu (FIN)
BAGUELIN, Francois (FRA)	BURLON, Sébastien (FRA)	FREITAG, Nicolas (FRA)	HABERT, Julien (FRA)
MAGNAN, Jean-Pierre (FRA)	PLOMTEUX, Cyril (FRA)	SALIBA, Jerome (FRA)	SIMON, Bruno (FRA)
VOLCKE, Jean-Paul (FRA)	BECKHAUS, Karsten	HERTEN, Markus (DEU)	ODENWALD, Bernhard

	(DEU)		(DEU)
WITTKE, Martin (DEU)	FLORA, Allessandro (ITA)	GOBBI, Sergio (ITA)	RUSSO, Giacomo (ITA)
EGGEN, Astri (NOR)	SIMONSEN, Arne Schram (NOR)	SAHAJDA, Krzysztof (POL)	SALONI, Jakub (POL)
BOTI, Ioan (ROM)	MANOLIU, Iacint (ROM)	FRANKOVSKA, Jana (SVK)	ESTAIRE, Jose (ESP)
PERUCHO, Aurea (ESP)	MÖLLER, Henrik (SWE)	SCHNEIDER, Hans (CH)	BALDWIN, Matthew (GBR)
DANULEWICZ, Chris	ESSLER, Robert (GBR)	JENNER, Chris (GBR)	KATSIGIANNIS, Georgios

(GBR)			(GBR)
POWELL, John (GBR)	RAISON , Chris (GBR)	SIMPSON, Brian (GBR)	SMITH, Rod (GBR)

Dinner on Thursday evening

Who? Austrian Federation of Foundation Contractors & Austrian Standards

What? Invite us all to dinner

Where? Heuriger "Mayer am Pfarrplatz" on

When? October 17, 2013, starting at 19:00

Weingut Mayer am Pfarrplatz, has a centuries-old tradition, crafting the finest Viennese wines in Heiligenstadt since 1683. In 1817, Ludwig van Beethoven resided in the house at Pfarrplatz (parish square), which is protected as a historic monument. During his time in Heiligenstadt, he worked on the Eroica and began his greatest oeuvre, the Ninth Symphony.

No registration – no dinner!

How to get there…

You reach us leaving the centre via Heiligenstädter Straße and then left into Grinzinger Straße. From there right into Nestelbachgasse and directly to the Pfarrplatz.

Public transport (U4) takes you to terminal Heiligenstadt. From there take the bus 38 A to the stop "Fernmeldeamt - Pfarrplatz" and walk approximately 30 m to Nestelbachgasse which leads directly into Pfarrplatz; or take tram D to the stop Grinzinger Straße and change to bus 38 A.

Towards a second generation of EN Eurocodes

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Response to Mandate M/515

- May 2010: European Commission (EC) Mandate M/466 invited CEN to 'initiate the process of further evolution of the Eurocode system, incorporating both new and revised Eurocodes'
- Jun '11: CEN's reply, prepared by TC 250, was issued to EC
- Dec '12: EC Mandate M/515 invited CEN to develop a detailed work programme based on its reply to M/466
- Qtr1 2013: TC250 prepared a work programme comprising 77 discrete tasks, following consultation with Member States (the 'Response' – since favourably received by EC)

TC 250 Structural Eurocodes

Chairman: S Denton
Secretary: T Wilkins [BSI]
CEN PM: Gonçalo Ascensao

Management Group

Chairman: S Denton

Chairman's advisory panel(s)

TC 250 Coordination Group

Chairman: S Denton
Secretary: T Wilkins [BSI]

Horizontal Group Bridges
Convenor: S Denton*

Horizontal Group Fire
Convenor: B Zhao

WG1 – Policy and guidelines
Convenor: J Moore

SC/WG for Existing Eurocodes

WG7 – EN 1990
Convenor: P Formichi
Secretary: *to be confirmed

SC1 – EN 1991
Chairman: N Malakatas
Secretary: A Schleifer [DIN]

SC2 – EN 1992
Chairman: G Mancini
Secretary: A Schleifer [DIN]

SC3 – EN 1993
Chairman: U Kuhlmann
Secretary: B Borchert [BSI]

SC4 – EN 1994
Chairman: G Couchman
Secretary: B Borchert [BSI]

SC5 – EN 1995
Chairman: A Jorissen
Secretary: J Brundin [SIS]

SC6 – EN 1996
Chairman: R Van der Pluijim
Secretary: Peter Rauh [DIN]

SC7 – EN 1997
Chairman: A Bond
Secretary: M Lurvink [NEN]

SC8 – EN 1998
Chairman: E Carvalho
Secretary: E Coelho [IPQ]

SC9 – EN 1999
Chairman: F Mazzolani
Secretary: R Saegrov [SN]

Other WG

WG2 – Existing Structures
Convenor: P Lüchinger [SNV]

WG3 – Structural Glass
Convenor: M Feldmann [DIN]

WG4 – Fibre reinforced polymer
Convenor: L Ascione [UNI]

WG5 – Membrane Structures
Convenor: M Mollaert [NBN]

WG6 – Robustness
Convenor: R Van der Pluijm [NEN]

"Proposed work programme will bring significant benefits to the industry"*

User confidence in Eurocodes retained as they **remain state-of-the art** documents

Improved efficiency of design processes and reduced barriers to entry through enhanced user friendliness

Improved harmonization across member states, through e.g. reduction in NDPs and different design methods

Use of new methods and new materials, enhanced coverage of robustness

Relevant **sustainability** consideration incorporated within design requirements

Climate change consideration embraced within Eurocodes

Incorporation of initial requirements for assessment and retrofit of existing structures

*Taken from the Response to Mandate M/515

The big picture

Outline of technical programme of work

EN	Subject	Tasks (P1)		Subject	Tasks (P1)
1990	Basis	2 (1)		Bridges	2 (1)
1991	Actions	11 (3)		Fire	1 (1)
1992	Concrete	2 (1)		Existing structures	3 (1)
1993	Steel	13 (2)		Glass	3 (2)
1994	Composite	7 (4)		FRP	2 (1)
1995	Timber	6 (2)		Membrane structures	2 (1)
1996	Masonry	4 (1)		Robustness	2 (1)
1997	Geotechnics	6 (2)			
1998	Seismic	6 (2)			
1999	Aluminium	5 (2)			
	Sub-total	62 (20)		*Sub-total*	15 (8)
				Total	77 (28)

SC7's six tasks in Response to M/515

1. **Harmonization and ease-of-use**

   (Phase 1) Reorganized framework for Eurocode 7, to be used as starting documents for Tasks 2-5 below

2. **General rules**

   (Phase 1) Revised Eurocode 7 Part 1

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3. Ground investigation

   (Phase 2) Revised Eurocode 7 Part 2 plus new/revised paragraphs input to Task 2

4. Foundation, slopes, and ground improvement

   (Phase 2) Sections 2-5 and new Annexes in (new) Eurocode 7 Part 3

5. Retaining structures, anchors, and reinforced ground

   (Phase 2) Sections 6-8 and new Annexes in (new) Eurocode 7 Part 3

6. Rock mechanics and dynamic design

   (Phase 3) New/revised paragraphs into Tasks 2-5

Phasing of programme of work

Outline programme for Tasks

Expect to have PTs in place by Aug 2014

Milestone at end of each year starting 2015

Broad outline of programme for most Phase 1 Tasks is:

- 1st draft by end of 2015
- 2nd draft by end of 2016
- Final draft by end of 2017
- Enquiry by end 2018*
- Formal vote by end 2019

For SC7's Task 1:

- 1st draft by end of 2015
- Final draft by end of 2016
- Draft becomes input to subsequent tasks

*for SC7's Task 2, draft becomes input to subsequent tasks

Estimated budget

European Commission has a limited budget for each year

Therefore workload must be spread

Scope of work for later items cannot be defined until earlier items completed

CEN cannot allocate a large budget (e.g. €10M) in any one year

Estimated budget for each phase of work:

- Phase 1: 2014-2019 for €4-5M (40-50%) between 28 tasks
- Phase 2: 2015-2019 for €2M (20%)
- Phase 3: 2016-2019 for €2M (20%)
- Phase 4: 2017-2019 for €1.5M (15%)

Approximate budget for each PT

"… from the preliminary figures, the SC7 projects will receive around 10% of total funding, approximately equal to SC3 and more than SC2 or WG7. The only group pencilled in for (slightly) more is SC1, but they have several major tasks in the first phase"

Steve Denton, Chairman TC 250

If Phase 1 budget is €4M

… and SC7 gets 10% (= €400k)

… split between two tasks (= €200k)

… with approx. 40% taken in administration (= €80k)

… leaves €120k to share between the members of the PTs (PT Leader, plus up to 5 more PT members)

SC7's six Evolution Tasks

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Task 1 – Harmonization and ease-of-use

1. Reduction in number of National Choices (NDPs)
2. Enhanced ease of use
3. Simplification of Design Approaches
4. Reorganization of Eurocode 7 into 3 Parts
5. Improvements to list of references and literature

Task 2 – General rules

1. Reduction in number of National Choices (NDPs)
2. Enhanced ease of use
3. Reliability discrimination
4. Ground water pressures
5. Numerical models
6. Alignment with EN 1990
7. Practical design examples

Task 3 – Ground investigation

1. Reduction in number of National Choices (NDPs)
2. Enhanced ease of use
3. Selection of characteristic soil and rock parameters from test data
4. Suggested values of characteristic soil and rock parameters
5. Alignment with ISO/TC 182/SC 1, CEN/TC 341, and CEN/TC 288 investigation and execution standards
6. Site investigation techniques for seismic and dynamic design
7. Additional site investigation techniques for rock
8. Practical examples

Task 4 – Foundations, slopes, and ground improvement

1. Spread foundations
2. Pile foundations
3. Cuttings and embankments
4. Ground improvement
5. Harmonization of NDPs for pile design
6. Alignment with ENs 1992-6 (structural design of foundations)
7. Practical design examples

Task 5 – Retaining structures, anchors, and reinforced ground

1. Retaining structures
2. Anchors
3. Reinforced soil structures
4. Alignment with ENs 1992-6 (structural design of foundations)
5. Practical design examples

Task 6 – Rock mechanics and dynamic design

1. Rock mechanics
2. Foundations subject to dynamic loading
3. Alignment with EN 1998-5 (seismic design of foundations)
4. Practical design examples

SC7.T1.4: Reorganization of Eurocode 7 into 3 Parts

Reorganize Eurocode 7 (existing Parts 1 and 2) into three Parts: Part 1 – General Rules (and restructure); Part 2 – Ground investigation (structure largely unchanged); and Part 3 – Geotechnical Constructions (new standard), to provide space for new material; greater harmonization with ENs 1992–6; and better alignment with national supporting documents published in many European countries.

This work would make use of the background research being undertaken by TC250/SC7's Evolution Group 0 'Management and oversight'.

Eurocode 7 Part 1 does not follow the same structure of the other Eurocodes, leading to difficulty in use by structural engineers. Space needs to be provided for new material proposed for inclusion in Eurocode 7. Many national supporting documents follow the new structure that is proposed for Eurocode 7, thereby assisting implementation in Member Countries.

Proposed structure of EN 1997-1 & -2: 202x

Part 1 – General rules

1. General
2. Basis of geotechnical design
3. Materials
4. Durability
5. Geotechnical analysis
6. Ultimate limit states
7. Serviceability limit states
8. Execution
9. Reporting

Part 2 – Ground investigation

1. General
2. Principles of ground investigation
3. Planning of ground investigations
4. Sampling and groundwater measurements
5. Field tests
6. Laboratory tests
7. Reporting

Proposed contents of EN 1997-3: 202x

Part 3 – Geotechnical constructions

1. General
2. Slopes, cuttings, and embankments
3. Spread foundations
4. Pile foundations
5. Retaining structures
6. Anchors
7. Ground improvement
8. Reinforced ground structures

Part 3's common sub-sections

1. General
2. Limit states
3. Actions and design situations
4. Design methods and design considerations
5. Ultimate limit state design
6. Serviceability limit state design
7. Structural design
8. Execution

What happens next?

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Preparation of the quotation

Summer '13: NEN agreed to work with BSI as contracting NSB

Sep '13: TC250/CG met to agree provisional Quotation for Phase 1 Tasks

Nov '13: TC250 to agree Quotation to be submitted to EC

Dec '13: CEN to submit Quotation to EC

Q1 '14: expect decision by EC

Q2 '14: negotiation of contracts with members of PTs

Aug '14: work starts

Conclusion of the funded element of the work will be when the respective SC accepts the final PT draft

Selection of members of Project Teams

SC7/EG0 to write detailed specification for tasks to be performed by each Project Team (SC7/PT1 and PT2)

NEN/TC250 to make open call for experts to join the Project Teams

SC7/EG0 to appoint a selection panel to review applications

Selection panel to recommend to SC7 whom to appoint

Chairman of SC7 to attend TC250/CG selection meeting to finalise membership of PTs

Chairmen of SCs cannot apply to be members of PTs (but are appointed ex officio in coordinating role)

Members of Selection Panel cannot apply to be members of PTs

Membership of PTs must not be dominated by any one country

Other rules of engagement to be decideed…

SC7's Evolution Groups

Immediate tasks for SC7's Evolution Groups

All EGs have submitted Progress Reports No 3

SC7's Evolution Groups have been asked to:

1. Which clauses in the current EN 1997-1 and -2 are relevant to your EG's topic of interest?
2. Which clauses should remain unchanged in the next edition of Eurocode 7?
3. Which clauses should be deleted from the next edition of Eurocode 7? **And why?**
4. Which clauses should be changed in the next edition of Eurocode 7? What changes should be made? **And why?**
5. What new clauses should be added on your topic in the next edition of Eurocode 7? **And why?**

Answers to these questions are needed ahead of the next SC7 meeting in Bern in April 2014

Roles of existing and future groups/teams

(current) Evolution Groups

- Now officially part of SC7/WG1 'Evolution'
- Forward planning and blue sky thinking
- Review of practice
- Recommend changes to existing Eurocode

(future) Project Teams

- Will be contracted to NEN
- Implement changes based on consensus of views
- Prepare text of new Eurocode

(future) Review Groups

- May be established as CEN Working Groups?
- Review work of PTs
- Recommend acceptance of draft new Eurocode to SC7

Future of SC7's Evolution Groups

Evolution Groups have been doing SC7's 'blue sky' thinking

The role of the EGs that feed into Tasks 1 and 2 will change when the PTs are operational*

The role of EGs that feed into Tasks 3-6 remains unchanged until April 2015

*These EGs could assume a review and advisory role on the PT work, e.g.

- answering questions from the PT
- reviewing the PTs' work on behalf of SC7

Should SC7 combine EGs for this purpose?

Or establish new WGs specifically for the purpose?

Mapping Project Teams to Evolution Groups

PT	Title	Evolution Group
1	Harmonization Ease-of-use	EG2 – Maintenance and ease-of-use EG8 – Harmonization
2	General Rules	EG4 – Numerical methods, EG6 – Seismic design, EG8, EG9 – Water pressures, EG11 – Characterization, EG13 – Rock mechanics
3	Ground Investigation	EG2, EG6, EG11, EG13
4	Foundations Slopes Ground improvement	EG3 – Model solutions, EG7 – Pile design, EG10 – Calculation models, EG14 – Ground improvement
5	Retaining structures Anchors Reinforced ground	EG1 – Anchors, EG3, EG5 – Reinforced soil, EG10
6	Rock mechanics Dynamic design	EG3, EG6, EG13

Possible changes to Evolution Groups

EG/Title		Review/Advisory		Research
		Task 1	Task 2	Tasks 3-6
1	Anchors			Yes
2	Maintenance + Simplification	Yes		Yes
3	Model solutions			Yes
4	Numerical methods		Yes	-
5	Reinforced soil			Yes
6	Seismic design		Yes	Yes
7	Pile design			Yes
8	Harmonization	Yes	Yes	-
9	Water pressures		Yes	-
10	Calculation models			Yes
11	Characterization		Yes	Yes
13	Rock mechanics		Yes	Yes
14	Ground improvement			Yes

Programme for WG1 Meeting

1st Meeting of CEN/TC 250/SC 7/WG1
Evolution of Eurocode 7

Programme of SC7/WG1 meeting – Thursday

Time	1001/1002	1004	1005	1006
09.30–10.30	Plenary Session			
10.30–10.45	Break			
10.45–12.30	EG10 Calculation models	EG13 Rock mechanics	EG5 Reinforced soil	EG9 Water pressures
12.30–13.30	Lunch			
13.30–15.15	EG8 Harmonization	EG6 Seismic design	EG3 Model solutions	EG14 Ground improvement
15.15–15.45	Break			
15.45–17.30	EG7 Pile design	EG2 Maintenance & ease-of-use	EG11 Charac-terization	EG4 Numerical methods

Programme of SC7/WG1 meeting – Friday

Time	1001/1002	1003	1005	1006
08.30–10.15	EG7 Pile design	EG14 Ground improvement	EG5 Reinforced soil	EG13 Rock mechanics
10.15–10.30	Break			
10.45–12.30	EG8 Harmonization	EG9 Water pressures	~~EG3 Model solutions~~	EG11 Charac-terization
12.30–13.30	Lunch			
13.30–15.15	EG10 Calculation models	EG6 Seismic design	EG4 Numerical methods	EG2 Maintenance & ease-of-use
15.15–15.30	Break			
15.30–16.15	Plenary Session			
	Ad hoc follow-on sessions			

Closing Plenary Session

Closing Plenary Session: Friday 15.30-16.15 (1.5 hours)

1. Each EG Convenor to present 5 minute summary of progress (10 x 5 minutes = 50 minutes)
2. General discussion (40 minutes)
3. Each EG to prepare own notes of this meeting for uploading to LiveLink
4. Each EG has already submitted Progress Report No 3 – thank you!
5. Proposals/suggestions welcome for future planning of SC7's work in response to Mandate M/515

Closing plenary session

1st Meeting of CEN/TC 250/SC 7/WG1
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Convenors of SC7's Evolution Groups

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MOORMANN, Christian (EG7/DEU)	BOND, Andrew (EG8/GBR)	VOGT, Norbert (EG8/DEU)	VRETTOS, Christos (EG10/DEU)
	There is no EG12		
MORITZ, Lovisa (EG11/SWE)		HARRISON, John (EG13/GBR)	CROCE, Paolo (EG14/ITA)

Evolution groups 0–14

EG/Title		Convenor	Meetings	Members	Report
0	Management + oversight	Bond (GBR)	25	5	Yes
1	*Anchors*	*Farrell (IRL)*	*(Lots)*	*9*	*(No)*
2	Maintenance + Ease-of-use	Schuppener (GER)	10	8	Yes
3	Model solutions	Orr (IRL)	8	11	Yes
4	Numerical methods	Lees (CYP)	8	12	Yes
5	Reinforced ground	Vanicek (CZE)			Yes
6	Seismic design	Scarpelli (ITA)			Yes
7	Pile design	Moormann (GER)			Yes
8	Harmonization	Bond (UK)	16	10	Yes
9	Water pressures	Vogt (GER)	8	8	Yes
10	Calculation models	Vrettos (GER)			Yes
11	Characterization	Moritz (SWE)	5	6	Yes
13	Rock mechanics	Harrison (GBR)			Yes
14	Ground improvement	Croce (ITA)	5	8	Yes

Arrangements for 29th meeting

29th meeting of CEN TC250/SC7 will be held:

at Berne, Switzerland

on 3rd–4th April 2014

this will be a regular "administrative" meeting

Kongress + Kursaal Bern AG

Hotel Allegro Bern AG

Kornhausstrasse 3

CH-3000 Bern 25 Switzerland

www.kursaal-bern.ch

2nd Meeting of CEN TC250/SC7/WG1 will be held:

in <to be decided>

on w/c 13th October 2014 (tbc)

this will be another "Expert's Meeting"

Thanks to...

Hosts

Roman Schremser, Austrian Standards Institute

Dr Manfred Fross

Sponsor:

Austrian Federation of Foundation Contractors

Pre-meeting organization

Daniëlle Schoonheim-Addink (NEN)

Mark Lurvink (Secretary of SC7, NEN)

Thank you for attending!

CEN TC250/SC7 Who's who in Vienna (updated 15 October 2013)

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