

ETC3 MEETING 21.04.2015 - MINUTES

Participants : Gary Axelsson, Maurice Bottiau (chairman), Monika De Vos, Carlos Fernandez-Tadeo, Noël Huybrechts (secretary), Josif Josifovski, Alain Le Kouby, Ole Møller, Christian Moormann, Trevor Orr, Jaime Santos, Panu Tolla

Apologised : Paul Hoelscher, Robert Hofmann, Jean-Paul Volcke

1. Minutes of the previous webex meeting of 26.02.2015

Noël Huybrechts introduces the meeting and welcomes the participants.
No remarks with regard to the minutes of the previous meeting.
Open actions from the previous meeting will be addressed further in these minutes.
The minutes are approved.

2. ETC3 membership

UK confirmed to nominate a representative soon.
NL has still to formalise their representative(s).
UK and NL will be re-contacted (**action Noël**).

New ETC3 members from Eastern Europe (via I. Vanicek) : Chavdar Kolev (Bulgaria), Mait Mets (Estonia), Josif Josifovski (Macedonia), Andrey Ponomaryov (Russia), Jan Kos (Czech Republic).

Liaisons with CEN TC 288 (Christian Gilbert) (**action Jean-Paul/Maurice**), CEN TC 250/SC 7 (Andrew Bond) (**action Monika**) as well as CEN TC 341/ISO TC 182 (**action Paul**) have to be formalised.

ETC3 members are representing their national member society of ISSMGE, except the liaisons who are representing the related technical committee.

Updated list of ETC3 Members 21.04.2015 : see annex.

3. ETC3 website : www.ETC3.be

The old website is not active anymore. As decided 2 meetings ago, the new one will be an open website, without password. This means we need to verify which documents may be placed on the website.

Proposal content and logo :



1. Homepage : ETC3 + terms of reference
2. Members
3. ETC3 activities/events
(Meetings/workshop/DLT guidelines/Design example...)
4. Relevant reference documents
5. International ETC3-Symposium
(bulletins, templates, program, ..., proceedings)

Open actions from previous meetings :

- Activating the website in the public domain (**action Noël**) – mid May, together with 1st Bulletin of the Symposium.
- Sending relevant reference documents with regard to piles and the terms of reference (design, SLT, DLT, RLT, integrity testing) that can be posted on the new website (**action all ETC3 members**).

Just before the meeting, Carlos Fernandez sent a link to some documents about dynamic load tests.

4. International ETC3 Symposium :

Design of piles in Europe. How did Eurocode 7 changed daily practice ?

Crowne Plaza, Brussels, 28th – 29th April 2016

- Venue : option on the Crowne Plaza Hotel.
- Dates : 28th – 29th April 2016, after the CEN TC 250 SC 7 meeting on 27th April.
- Local Organising committee : see minutes of the previous meeting.
- Establishing Int. Advisory Committee : ETC3 Members, Antonio Gens, Experts (Flor De Cock, Roger Frank, ..) +liaisons (ETC10, EC 7, TC 288 and TC 341/ISO TC 182) (**action Maurice/Noël**).
- Proceedings :
 - Template for national reports has been distributed.
 - Template for key notes and general reports to be established (**action Noël**).
- **National reports :**
 - Via the national representatives in ETC3 (**action ETC3 members**).
 - No strict limit on # of pages (+/- 20 pages/country).
 - Content :
 - Proposal : see annex.
 - Load factors are not mentioned.
 - Negative skin friction is not mentioned → will be added (5.5.5).
 - Change the order of the design methods :
 - 5.3 ULS design based on soil investigation
 - 5.4 SLS design
 - 5.5 design based on load tests
 - 5.6 design based on experience
 - Design example : focus on axial loaded pile ; at the end of the report (before the references).
 - Adapted proposal will be distributed (**action Monika**).
 - Design example = most commonly used (based on calculation, experience or load tests).
 - It's not the aim to present the national reports as such, but to present general thematic reports, based on the analysis of the national reports.
- **Key note lectures** - open actions of previous meeting :
 - General overview/actual situation with regard to standardisation issues on pile testing in Europe - CEN TC 341/ISO TC 182 (Paul Hoelscher ?) (**action Noël**).
 - Static pile load testing (Flor De Cock, ...?).

- Practical application of Dynamic & Rapid pile load testing (Scandinavian expert ? – **action Panu**).
 - Actual situation with regard to CEN TC 288 standardisation : general + focus on piles and evolutions (Christian Gibert ?) (**action Jean-Paul**).
 - Concrete for deep foundations : joint activities CEN TC 288/CEN TC 104 + Activities of the Task Group EFFC/DFI (K. Beckhaus ?) (**action Maurice**).
 - Overview EC 7 (Andrew Bond accepted) & evolution of pile design (Christian Moormann).
 - Comparative design exercises/ETC10 (Trevor Orr).
 - Site topics (Quality control, monitoring, new measurement/integrity techniques,...
- **Design examples :**
- Monika De Vos contacted ETC10 (Trevor Orr).
 - Monika De Vos proposes 2 well documented sites in Belgium : description of soil layers & ground investigation results : see annex.
 - Remark of Ole Møller : no undrained shear strength, but maybe results of CU triaxial tests are sufficient.
 - Panu Tolla and Gary Axelsson will look for a “Scandinavian” example (**action Panu & Gary**).
 - German test site(s) with static and dynamic load tests on bored piles in sand, with extensive soil investigation (**action Christian**).
 - Maurice Bottiau asks for sites with another type of soil (chalk,...). (**action Alain**)
 - Site in northern Portugal (**action Jaime**).
 - **Please send the information (soil investigation + specify if SLT, DLT,... are available) in the next 2-3 weeks.**
 - Summary of the collected information + choice of the sites : next webex meeting.
- **Deadlines :**
- Bulletins : 1st bulletin mid May 2015 (**action Noël**) ; 2nd bulletin ECSMGE Edinburgh Sept 2015 ; final bulletin early 2016.
 - Design examples : info available → before summer holiday ; feedback → mid Nov 2015.
 - National reports : first draft → mid Oct 2015 ; feedback organising committee → end of Nov 2015 ; final version → end 2015.
 - General reports and keynotes : end of March 2016.
- **Programme :**
- Proposal : see annex.
 - Registration also on Thursday.
 - Time for discussion.
 - Based on the feedback from possible lecturers a detailed proposal of the symposium program will be elaborated (**action Maurice/Noël**).

5. Guidelines Dynamic load testing

Christian Moormann wonders what is the intention of the guidelines on dynamic load testing.

There are many documents available, but no practical guideline. The aim is to establish a kind of consensus document and to accelerate the standardisation process.

CEN TC 341 WG 7 – Non static testing of geotechnical structures : RLT, DLT (Paul Hoelscher, Carlos Fernandez).

DLT usually don't include pile driving formula.

ETC3 member(s) who take the lead and/or can contribute : Jaime Santos, Panu Tolla and/or Gary Axelsson ?, Paul Hoelscher ?, UK ?, Germany (information received after the meeting from Christian Moormann : Oswald Klingmüller, member of WG7 and convenor of the German WG on DLT).

Open actions from the previous meetings :

- J.P. Volcke mentions possible refusal of the RLT standard that is elaborated in WG7 (**action : Paul or Carlos**).
- Gathering existing and relevant documents/guidelines on the execution and interpretation of DLT and RLT. Just before the meeting, Carlos Fernandez sent a link to some documents about dynamic load tests. (**action Gary, Paul, Arne,...**)

6. Any other business

-

7. Next meetings

Online webex meeting :

- **11 June 2015 at 3.00 pm CET**

Face to face meeting :

- **Probably Wednesday 16th Sept 2015 in Edinburgh (Action Noël/Maurice).**

ANNEX

ETC3 – Piles 21.04.2015

AGENDA

- 1. Minutes of the previous meeting of 26.02.2015 + Actions*
- 2. ETC3 membership : actual situation*
- 3. ETC3 website*
- 4. International conference/symposium*
- 5. Guidelines dynamic load testing*
- 6. Any other business*
- 7. Next meeting*

2. Members & Liaisons

Country	New membership listperiod 2013-2017	Delegates
ALBANIA		
AUSTRIA	Robert HOFMANN	hofmann.geotechnik@aon.at
BELARUS		
BOSNIA HERZEGOVINA		
BELGIUM	Maurice BOTTIAU (chair)	maurice.bottiau@ffgb.be
	Noël HUYBRECHTS (secr.)	nh@bbri.be
BULGARIA	Chavdar KOLEV	ch_kolev@abv.bg
CROATIA		
CZECH & SLOVAK		
DENMARK	Ole MøLLER	nom@aarsleff.com
ESTONIA	Mait METS	mait.mets@gmail.com
FINLAND	Panu TOLLA	Panu.tolla@fta.fi
FRANCE	Sébastien BURLON	sebastien.burlon@ifsttar.fr
	Alain LE KOUBY	Alain.lekouby@ifsttar.fr
	Jean-Paul VOLCKE	jp.volcke@franki.fayat.com
GEORGIA		
GERMANY	Christian MOORMANN	christian@moormann-geotechnik.de
GREECE		
HUNGARY	J. PUSZTAI	pusztai@fugro.hu
ITALY	Alessandro MANDOLINI	alessandro.mandolini@unina2.it
ICELAND		
IRELAND	Ken GAVIN	kenneth.gavin@ucd.ie
ISRAEL		
LATVIA		
LITHUANIA		
MACEDONIA	Josif JOSIFOVSKI	ijosifovski@gf.ukim.edu.mk
THE NETHERLANDS	Ruud STOEVELAAR (?)	Ruud.Stoevelaar@deltares.nl
	Paul HOELSCHER (?)	Paul.Hoelscher@deltares.nl
NORWAY	A. SIMONSEN	arne.schram.simonsen@multiconsult.no
POLAND	Kazimierz GWIZDALA	kwiz@pg.gda.pl
PORTUGAL	Jaime SANTOS	jaime.santos@ist.utl.pt
ROMANIA		
RUSSIA	Andrey PONOMARYOV	andrey.pab@mail.ru
SERBIA		
SLOVENIA		
SPAIN	José M ^e ECHAVE RASINES	echaveim@gmail.com
	Leoncio PRIETO	lprieto@rodiokronsa.es
	Carlos Fernandez-Tadeo	carlos@fernandeztadeo.com
SWEDEN	Gary AXELSSON	gary.axelsson@elu.se
SWITZERLAND		
The former Yugoslav		
TURKEY		
UKRAINE		
UNITED KINGDOM	Melvin ENGLAND	melvin@loadtest.com;europe_info@loadtest.com

NL & UK formal representative?

LIASONS		
ECT 10	Trevor ORR	torr@tcd.ie
CEN TC 288		
EC7 (CEN TC 250)		
EC7 - evolution groups	C. MOORMANN	christian@moormann-geotechnik.de

EC7: contact with Andrew Bond
TC288: Christian Gilbert?

3. Website

Not yet online

Target: ultimate deadline mid-May

(together with 1st Bulletin of the int. symp)

4. International symposium

ETC 3 SYMPOSIUM – DESIGN OF PILES IN EUROPE

How did Eurocode 7 changed daily practice?

28-29 April 2016

Crown Plaza Brussels

SET-UP

Elaboration of national reports

→ template has been distributed (see next slide)

National representatives ETC3

→ organize elaboration of the national report

Programme of the symposium

→ General thematic reports based on the analysis of the national reports

→ Keynote lectures : important collaboration/interaction with European standardization process!

→ 1 keynote based on design examples – interaction with ETC10

→ **template of general reports & key notes** → will be elaborated

4. International symposium

National report – content (see template that has been distributed)

1. Regional geology
2. Current practice for Soil Investigation
3. Piling Technology & Classification
4. National relevant documents for the application of EC7
5. National design method according to the principles of EC7
 - 5.1 *General principles (Geot. Cat., Design Approach, methodology, ...)*
 - 5.2 *Definitions & symbols*
 - 5.3 *Design based on experience*
 - 5.4 *Design based on load tests*
 - 5.5 *ULS design based on soil investigation test results (including installation, model, correlation and safety factors)*
 - 5.5.1 Introduction
 - 5.5.2 Axial compression – single pile
 - 5.5.3 Axial tension – single pile
 - 5.5.4 Lateral loading – single pile
 - 5.5.5 Specific issues (group effect, cyclic loading, seismic design ...)
 - 5.5.6 Problems not covered by NA and future steps
 - 5.6 *SLS design (including OM for SLS design)*
 - 5.7 *Structural safety*
6. Design example (= local example)
7. Quality control, monitoring and testing practice
8. Particular national experiences/database with load tests
9. References

4. International symposium

Design examples

Proposing and selecting 2 to 3 sites :

- that cover a typical North European, UK-Central/Eastern Europe and South European subsoil profile
- Preferably extensive ground investigation results : CPT, SPT, PMT, lab tests

Interaction with ETC10 (T. Orr)

4. International symposium

Design examples

Proposal 1 : Tertiary Sand - BBRI, Limelette (B)

0.00 m – 1.00 m : fill

1.00 m – 6.00 m : loam (silt)

6.00 m – 8.50 m : sandy clay/clayey sand

8.50 m - ... : tertiary sand

Ground water at large depth (45 m)

3 CPT]	
2 Menard PMT]	surface 36 m x 18 m
3 borings with SPT]	
1 boring with undisturbed soil sampling at several depths + lab test :		
		centrally

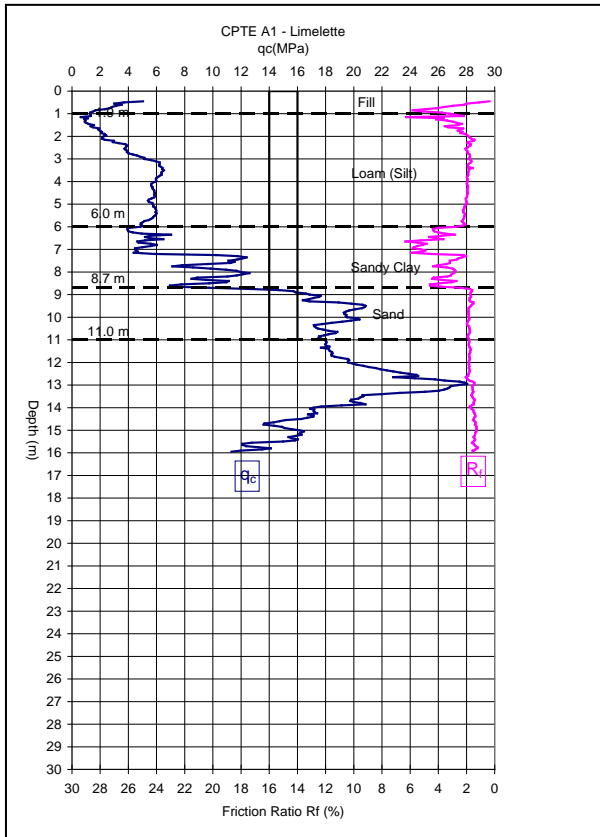
4. International symposium

Design examples

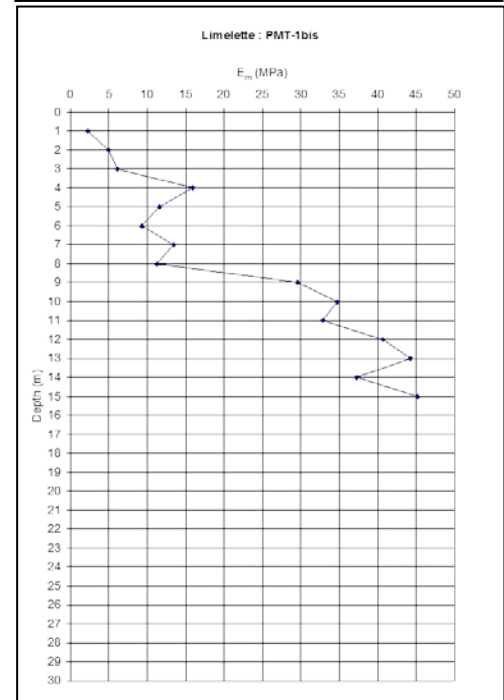
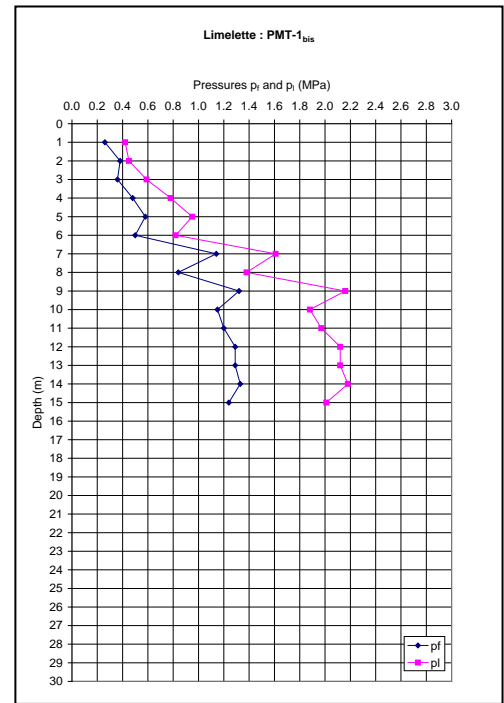
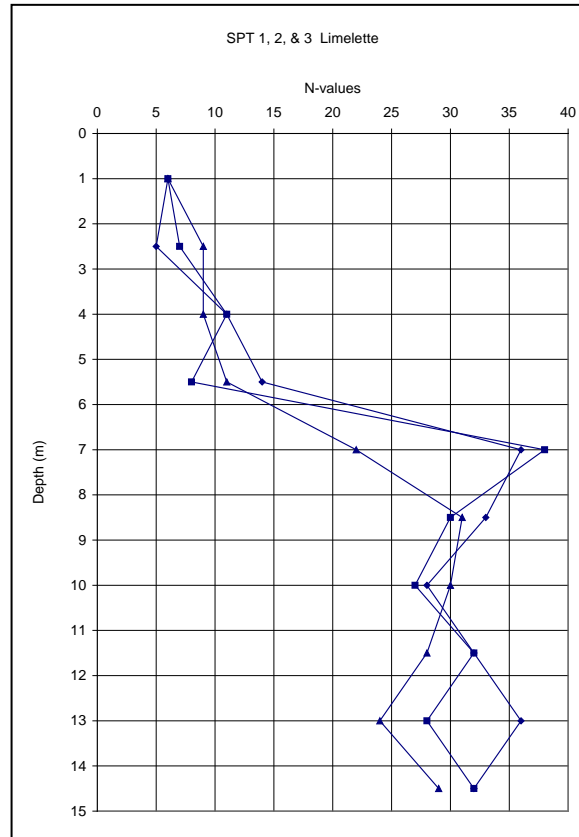
Proposal 1 : Tertiary Sand - BBRI, Limelette (B)

PMT

CPT



SPT



4. International symposium

Design examples

Proposal 1 : Tertiary Sand - BBRI, Limelette (B)

Table 1 - Physical characteristics of the soil at Limelette.

Characteristic	Sample depth		
	4.00 m – 4.50 m	7.00 m – 7.50 m	10.00 m – 10.50 m
γ_d (kN/m ³)	16.4	18.4	13.8
γ_n (kN/m ³)	18.8	20.8	15.0
w (%)	14.8	12.9	9.0
Sr (%)	67.6	82.3	27.0
w _L (%)	27.6	30.2	23.4
w _P (%)	18.7	15.0	20.7
I _P (%)	8.9	15.2	2.7

Table 2 - Results of triaxial tests.

Depth sampling	CU*-triaxial test		CD*-triaxial test	
	ϕ' (°)	c' (kPa)	ϕ' (°)	c' (kPa)
4.00 m - 4.50 m	34	0	35	0
7.00 m – 7.50 m	34	0	-	-
10.00 m - 10.50 m	34	0	35	0

*CU : Consolidated – undrained

CD : Consolidated - drained

4. International symposium

Design examples

Proposal 2 : Tertiary OC Clay - Sint-Katelijne-Waver (B)

0.00 m – 1.00 m : fill

1.00 m - ... : tertiary OC stiff clay

Ground water at 1 m depth

3 CPT]	
2 Menard PMT]	surface 36 m x 18 m
2 borings with SPT]	
1 boring with undisturbed soil sampling at several depths + lab test :		
		centrally

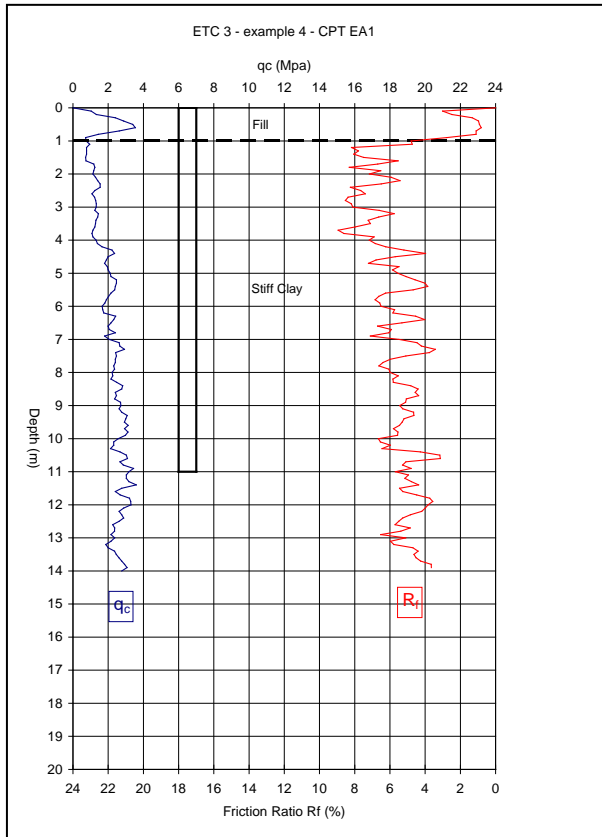
4. International symposium

Design examples

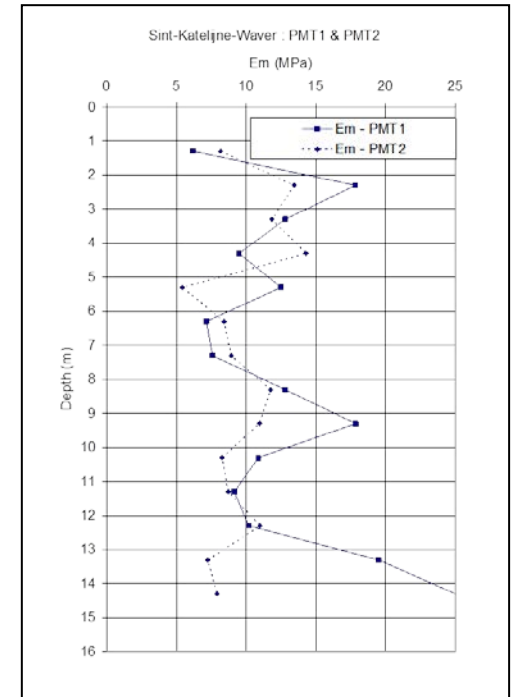
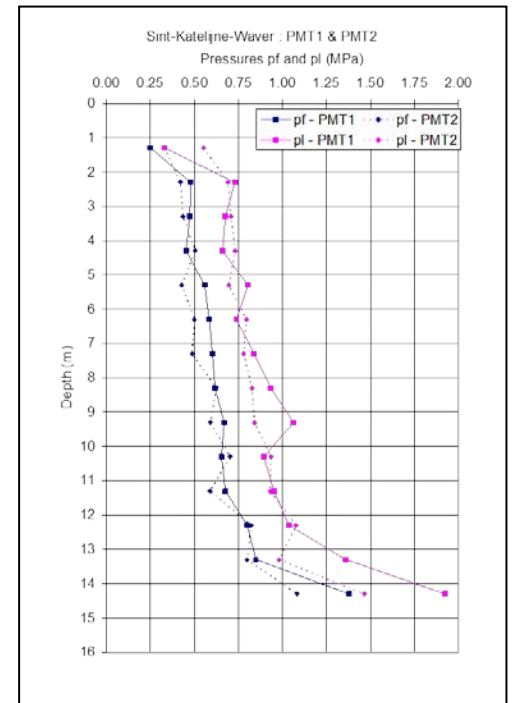
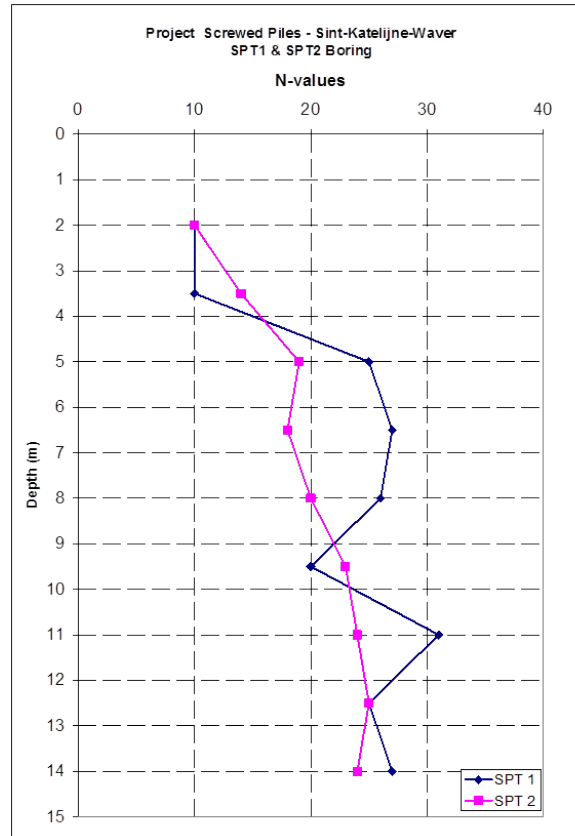
Proposal 2 : Tertiary OC Clay - Sint-Katelijne-Waver (B)

PMT

CPT



SPT



4. International symposium

Design examples

Proposal 2 : Tertiary OC Clay - Sint-Katelijne-Waver (B)

Table 1 - Physical characteristics of the soil at Sint-Katelijne-Waver

Characteristic	Sample depth			
	4.50 m – 4.90 m	8.50 m – 8.90 m	10.50 m – 10.90 m	13.50 m – 13.90 m
γ_d (kN/m ³)	15.7	15.3	15.5	15.4
γ_n (kN/m ³)	19.7	19.3	19.5	19.4
w (%)	25.3	26.0	25.8	26.1
Sr (%)	(101.8)	99.2	(100.9)	(101.0)
w _L (%)	72.2	65.1	75.9	71.8
w _P (%)	25.4	25.3	26.2	26.0
I _P (%)	46.8	39.9	49.7	45.8

Table 2 - Results of triaxial tests.

Depth sampling	CU*-triaxial test		UU*-triaxial test
	ϕ' (°)	c' (kPa)	Cu (kPa)
4.00 m - 4.90 m	26	20	88
8.50 m – 8.90 m	28	30	129
10.50 m – 10.90 m	26	40	158
13.50 m – 13.90 m	27	15	188

*CU : consolidated – undrained

UU : not consolidated - undrained

4. International symposium

Design examples

Other proposals ?

4. International symposium

Design examples

Pile characteristics :

- Pile type(s) ?
- Pile shaft diameter, pile base diameter, pile length ?

Determination of the pile capacity :

- Single pile / pile group ?
- Compression / tension ?
- Characteristic value / design value ?
- ULS / SLS ?
- Check structural capacity ?

4. International symposium

National report – deadlines

First draft : Mid-October 2015

Feedback by organizing Committee : End of November 2015

Final version : End 2015

Design examples – deadlines

Information available : Mid-October 2015 ?

Feed back : End of January 2016 ?

General Reports & Keynotes

Deadline: End of March 2016

4. International symposium

PROGRAMME (Time Schedule)

Wednesday 27 April 2016

18h30 – 20h00 Registration & Welcome reception (Crown Plaza Brussels)

Thursday 28 April 2016

9:00 – 9:30 Opening address & Introduction (BGGG-GBMS, ETC3, BBRI)

9:30 – 12:30 : Keynotes/general reports/invited speakers + coffee break

12:30 – 13:45 : Lunch

13:45 – 17:00 : key notes/general reports + coffee break

Evening : Banquet

Friday 29 April 2016

9:30 – 12:30 : Keynotes/general reports/invited speakers + coffee break

12:30 – 13:45 : Lunch

13:45 – 15:15 : key notes/general reports

4. International symposium

PROCEEDINGS

- No publisher, but via organizing secretariat (BBRI)**
- Template : proposal to use template of TC211-symposium 2012**
- On-line publication (free download)**
- Hard-copies for symposium participants (see ex. TC211-2012)**
- Content : see examples 1997-symposium; TC211-symposium (2012)**

4. International symposium

PRACTICAL ASPECTS WITH REGARD TO THE ORGANIZATION

- Organization committee / Int. advisory committee
- Venue: Option on the Brussels Crown-Plaza hotel
- 1st Bulletin (announcement) → Deadline mid-May 2015
- 2nd Bulletin → Deadline ECSGME Edinburgh (September 2015)
- National reports - template – collection – review
- General reports based on thematic analysis of the national reports

Other Key-notes/Guest lecturers

- Time schedule for reports & keynotes
- Programme
- Proceedings
- Sponsoring

5. Guidelines DLT

Collection of relevant data → on website

Guidelines → to be seen as an action/keynote at the ETC3-Symposium

6. Any other business

7. Next meeting

→ Webex meeting : 11 June 2015 15h00 CET

→ ECSMGE Edinburgh: probably on Wednesday 16.09.2015