

## Minutes of 10<sup>th</sup> Meeting of EFUC

Meeting at Donetsk National Academy for Construction and Architecture  
Derzhavina Str, No. 2, 86123 Makeevka – 23, Donetsk Region, Ukraine  
Monday, March 20<sup>th</sup> 2006

### Participants:

Lecturer Ing. CSc, J. **Maslak**, General Director Water Company Donetsk, UA; Mr. Malcolm **Farley**, Principal; aqua2, UK; Dr. J. **Raclavsky**, Brno University of Technology, CZ; Mr. J. **Raclavsky**, Brno, WSDTI and CZSTT, CZ; Mr. R. **Bielecki**, Chairman WSDTI and EFUC, D; Prof. Dr. D. P. F. **Möller**, University of Hamburg, D; Germany; Prof. Ing. V. **Bauer**, CSc, Faculty of Mining, Ecology, Process Control and Geotechnologies, Technical University Košice, SK; Prof. Dr. Sc. V. I. **Bratschun**, Prorektor Donetsk National Academy for Construction and Architecture, UA; Prof. A. J. **Naimanov**, Director Environment Faculty, UA; Doc. CSc L. G. **Slyoz**, UA; Mr. P. S. **Kachur**, Minister of Construction, and Architecture and Municipal Economy, Kiev, UA; Prof. Dr. V. **Muschanov**, Donetsk National Academy for Construction and Architecture  
and 50 students and Professors from Donetsk National Academy for Construction and Architecture

### AGENDA:

#### Sunday, March 19<sup>th</sup>, 2006

8:30 a.m. – 4:00 p.m. Excursion to Svajatogorskij Monestery, Slavjansk, Soledar.

8:00 p.m. Joint Dinner EFUC Hotel Kiev

#### Monday, March 20<sup>th</sup>, 2006

##### Session I

9:00 a.m. - 12:15

9:00 a.m.

Welcome

Prof. Dr. Sc. V. I. Bratschun, Prorektor Donetsk National Academy for Construction and Architecture

Ukraine has a population of about 48 Mio, Kiev has 3.2 Mio, Chrakow has 1.9 Mio, Odessa 1.2 Mio, Dnepropetrovsk has 1.1 Mio, as well as Donetsk. 10 % of the population is jobless. The country shows in its economical development a strong east-west difference. The Donetsk region with its mining of coal and salt is similar to the German “Ruhrgebiet”. Only 10% of the Donetsk region population work outside the Ukraine, mostly in Russia, compared with the 30% in the western part of Ukraine that primary work in Slovakia, Hungary, and Poland. The Ukrainian currency is the UAH (Ukraine Hryvnia). The exchange rate is 1 € = 6,06 UAH, due to March 15, 2006.

Dipl.-Ing Rolf Bielecki

President EFUC

9:15 – 9:35 a.m.

Implementation of the Bologna-Process into the education methods of the academy Donetsk

Professor V.I. Bratschun, Dr.Sc., Prorector Donetsk National Academy for Construction and Architecture (NACA), Ukraine

NACA has 400 staff members, 8.000 students, 26 faculties, 7 different study programs, Library contains 500.000 books. 3 Level based education Bachelor (Diploma): 4 years study 26 h a week; Magister of Engineering.: 1 year study, R&D, 45 h a week, self organized work; Magister of Science: 1 year study, research work and project work, scientific and practical in collaboration with scientific institutes and companies; PhD program. NACA changed study program to adapt to the Bologna process with international accreditation, offers language courses.

9:35 – 10:15 a.m.

Presentation of the International Master-Course program Water resources management, geotechniques, and underground construction and its content

Dipl.-Ing. R. Bielecki, Germany

Content of teaching at the University Lüneburg, Germany

Dipl.-Ing. R. Bielecki, Germany

Presentation of content of teaching at the Technical University Brno, Czech. Republic

Dr-Ing. J. Raclavsky, Phd, Czech. Rep.

Presentation of content of teaching at the Technical University Kosice, Slovak Republic

Prof. Ing. V. Bauer, Kosice, Slovak Republic

10:15 – 10:30 Coffee break

10:45 – 11:15 a.m.

Assessment of pipeline operational safety

Prof. A. J. Naymanov, Director Environmental Faculty, Ukraine

Calculating the probability of pipeline safety from the very early beginning in projecting the pipe system. Development of methods for identifying damaged pipe segments. Increasing safety by inserting cross-lines.

Mr. Bielecki asks for the lost of fresh water per day in the Donetsk region.

Lost of water in the Donetsk region is around 300.000 m<sup>3</sup> per day which is 50% of the total daily water production of 600.00 m<sup>3</sup>. 1m<sup>3</sup> water costs 0.40 US\$, which results in 120.000 US\$ profit loss per day, the total per year is 43.8 Mio US\$ profit loss. Donetsk regions calculation for pipeline renovation of 1.400 km lining length is around 150 - 200 Mio US\$, which is twofold of profit loss through pipeline leakage loss. Maybe a topic for an EC proposal. Daily consumption of fresh water per head in Germany: 129 liter.

Dr.-Ing. J. Raclavsky

Short overview about the situation of water consumption, price for m<sup>3</sup> water and trends since 1995 in the Czech Republic. He also reports about the ration of steel and PE-pipes in big and smaller cities in the Czech Republic.

11:15 – 11:45 a.m.

Pipeline cleaning methods

Docent L. G. Siez, CSc, Ukraine

Mechanical cleaning mostly used for drinking water, works effective, but only for short term use due to sharpness of the cleaning knives. Meanwhile cleaning knives have been replaced by cleaning spoons.

Hydrochemical cleaning works very sufficient, but self-constrained due to

- hard covered pipe walls which will not allow an effective contact of the hydrochemical cleaning water
- pipes with small diameter

Cleaning with a metal ball that moves dependent from the water pressure  
Pneumatic pressure blows an air wave into the pipe system that cleans the pipes walls.

All methods discussed have been practised in the Donetsk region.

11:45 a.m. – 12:15

The topic Production of Polycrete® components made of polymer concrete with a UP resin matrix for pipe and manhole systems by Dipl.-Ing. W. Meyer, Germany, has been reported by Ing. J. Raclavsky, CZ, during this meeting

12:15 – 12:45 Coffee break

12:45 -1:45 p.m.

Welcome address to the Minister of construction, and architecture and municipal economy P. S. Kachur

Prof. Dr. Sc. V. I. Bratschun, UA

The Minister of construction, and architecture and municipal economy, Mr. P. S. Kachur, visited the 10<sup>th</sup> EFUC Conference for one hour together with local political representatives and the press. The special problems of underground infrastructure in the Ukraine could be discussed during the meeting. He was interested in the costs of small HDD equipment, as well as the use of trenchless technology for reconstruction and new projects in water and waste water pipelines, as well as the use of anti-corrosion materials. The Minister also mentioned the necessary need of a good and bright education of engineers with a specialization in underground infrastructure. Due to the Ministers statement the German movie “Dimension of the Depth” was presented to the Minister.

1:45 p.m. – 2:45 p.m. Lunch

## **Session II**

2:45 p.m. -5:25 p.m.

2:45 p.m. – 3:15 p.m.

German information sheets and bulletins on Trenchless Technology

Dipl.-Ing. R. Bielecki, Germany

18 GSTT information sheets and bulletins are available:

### **GSTT Information Nr. 1**

Grabenlose Verfahren der Schadensbehebung in nicht begehbaren Abwasserleitungen

### **GSTT Information Nr. 2**

Qualitätssicherung bei der Sanierung von Abwasserkanälen und -leitungen

### **GSTT Information Nr. 3**

Abflußsteuerung von Abwasserkanälen und -leitungen durch Drehbogentechnik - Modellversuche und Betriebsergebnisse

### **GSTT Information Nr. 4:**

In Deutschland hergestellte bzw. vertriebene Geräte und Maschinen für den grabenlosen Neubau von Leitungen

**GSTT Information Nr. 5**

Anforderungen an Planung, Ausschreibung und Vorbereitung der Bauarbeiten von grabenlosen Unterquerungen nach dem gesteuerten Horizontalbohrverfahren

**GSTT Information Nr. 6**

Bau und Betrieb begehrbarer Leitungsgänge - Statusbericht

**GSTT - Information Nr. 7**

Verfahren zur Inspektion, Dichtheitsprüfung und grabenlosen Schadensbehebungen in Anschlußkanälen und Grundleitungen

**GSTT - Information Nr. 8:**

Baum- und Bodenschutz

**GSTT - Information Nr. 9:**

Instandhaltung von Deponieentwässerungsleitungen

**GSTT - Information Nr. 10:**

Leitfaden - Planung, Bau und Betrieb von begehrbaren Leitungsgängen  
Teil 1: Allgemeine Grundlagen

**GSTT - Information Nr. 11:**

Kostenvergleich offener und geschlossener Bauweisen unter Berücksichtigung der direkten und indirekten Kosten beim Leitungsbau und der Leitungssanierung

**GSTT - Information Nr. 12:**

Leistungsverlegung in vorhandenen Netzen/Cable-laying in existing networks  
Deutsch/Englisch

**GSTT - Information Nr. 13:**

Sanierung von begehrbaren Abwasserkanälen und Bauwerken der Ortsentwässerung

**GSTT - Information Nr. 14:**

Kriterienkatalog zur Auswahl der Bauweise für die Sanierung von Entwässerungsleitungen (Freispiegelleitungen)

**GSTT - Information Nr. 15:**

Empfehlungen für die Weiterbildung zu Geräteführern für steuerbare Horizontalbohranlagen (HDD)

**GSTT – Information Nr. 16**

Leitfaden - Planung, Bau und Betrieb von begehrbaren Leitungsgängen  
Teil 2: Betrieb und Instandhaltung von begehrbaren Leitungsgängen

**GSTT – Information Nr. 17**

"Verfahren zur Überprüfung der Arbeitsvorbereitung des Auftragnehmers einer HDD – Maßnahme durch einen vereidigten Sachverständigen"

**GSTT – Information Nr. 18**

Anforderungen an Mörtel für Abwasserkanäle und Bauwerke der Ortsentwässerung, Teil 1 Zementgebundene Mörtel

8 RSV information sheets and bulletins are available:

**Merkblatt RSV 1**

Renovierung von drucklosen Abwasserkanälen und Rohrleitungen mit vor Ort härtendem Schlauchlining

2004, 27 Seiten, DIN A4, broschiert, €33,-

**Merkblatt RSV 2**

Renovierung von Abwasserleitungen und -kanälen mit Rohren aus thermoplastischen Kunststoffen durch Reliningverfahren ohne Ringraum  
02/2000, 24 Seiten, DIN A4, broschiert, €29,-

**Merkblatt RSV 3**

Renovierung von Entwässerungsleitungen und -kanälen durch Auskleidungsverfahren mit Ringraum

09/2000, 24 Seiten, DIN A4, broschiert, €29,-

**Merkblatt RSV 4**

Reparatur von drucklosen Abwasserkanälen und Rohrleitungen durch vor Ort härtende partielle Inliner

08/2001, 20 Seiten, DIN A 4, broschiert, €29,-

**Merkblatt RSV 5**

Sanierung von Entwässerungsleitungen und -kanälen durch Roboterverfahren  
06/2005, ca. 22 Seiten, DIN A4, broschiert, €27,-

**Merkblatt RSV 6**

Sanierung von begehbaren Entwässerungsleitungen und -kanälen sowie Schachtbauwerken

12/2003, 24 Seiten, DIN A4, broschiert, €29,-

**Merkblatt RSV 7.1**

Renovierung von Anschlußleitungen mit vor Ort aushärtendem Schlauchlining  
07/2000, 24 Seiten, DIN A4, broschiert, €29,-

**Merkblatt RSV 8**

Erneuerung von Entwässerungsleitungen und -kanälen durch Berstlining  
08/2001, 21 Seiten, DIN A 4, broschiert, €29.

Moreover additional information sheets and bulletins have been distributed from the desk like roots in pipes, because roots migrate into pipes because of the bigger “free” volume in the pipe. These investigations have been done at IKT, Gelsenkirchen, (Germany), as well as other research activities.

The presentation “Heat production with sewage works” by Dipl.-Ing. M. Henze, Germany, will also be distributed from the desk, while Mr. Henze couldn’t attend the 10<sup>th</sup> EFUC Meeting

Additional information about the above mentioned material had been given by Dipl.-Ing. Rolf Bielecki, D.

3:15 p.m. – 4:00 p.m.

Earth Falls as a Result of Salt Leaching Effects in the Underground – Application of modern IT Concepts in Underground Analysis

Prof. Dr.-Ing. D. P. F. Möller, Germany

4:00 p.m. – 4:30 p.m.

Experiences in large diameter pipe jacking

Dipl.-Ing. R. Bielecki, Germany

First explained the classical air pressure driven principle, thereafter he focused on newer version where the pressure chamber is covered with Bentonit and the water will interact with the covered wall.

For wall thickness of pipes, drilling forces, pipe length, connecting material, pipe lining and curvature of pipe lining, etc. practical experienced values have been reported by Dipl.-Ing. Rolf Bielecki

4:30 p.m. – 5:10 p.m.

3. EFUC – Conference, 27. - 29. January 2007 in Kosice, Slovakia about

**Dimensions of Lithosphere**

- Strategies for the deposit of radioactive waste in Europe

- Production of geothermal energy

Prof. Dr.-Ing. D.P.F. Möller, Germany

5:10 p.m. – 5:20 p.m.

Prof. Ing. V. Bauer, Slovak Republic

Presentation of the first Announcement of the 3. EFUC – Conference, 27. -

29. January 2007 in Kosice, Slovakia

5:20 p.m. – 5.25 p.m.

Closing session and departure

Closing remarks

Prof. Dr. Sc. V. I. Bratschun, Prorector Donetsk National Academy for

Construction and Architecture

11<sup>th</sup> EFUC Meeting will be held in conjunction with the 3<sup>rd</sup> EFUC Conference  
in Kosice

Together with ITA, ISTT and EFUC the Faculty of Civil Engineering of the  
Wroclaw University of Technology (Prof. Dr. Cezary Madryas) plans for mid

October 2008 the X. International Scientific-Technical Conference in

Wroclaw with the topic “Underground Infrastructur in Cities”

Dipl.-Ing Rolf Bielecki

President EFUC

Prof. Dr.-Ing. Dietmar P. F. Möller

Donetsk, March, 20<sup>th</sup>, 2006