



Final Invitation

Segmental Retaining Wall Systems

Experience, Practical Adjustments and Case Studies
Prague 2012

2nd

**International
Conference**

**Prague, Czech Republic
29 Feb, 2012**



Organized by Czech Technical University in Prague, Faculty of Civil Engineering,
Department of Geotechnics in cooperation with KB-BLOK system, s.r.o and
NAUE, GmbH.

KB BLOK
PERFECT CONSTRUCTION SYSTEM

NAUE



- 1 - Bridge abutment pier in Prešov, Slovak Republic
- 2 - Bridge abutment pier in Nowy Targ, Poland
- 3 - Segmental retaining walls of highway bypass in Arad, Romania
- 4 - Retaining wall abutment piers in Ostrava - Mosnov
- 5 - Retaining wall on R1 highway in Ziar nad Hronom, Slovak Republic
- 6 - Arch bridge abutment piers in Milomlyn, Poland

INVITATION MESSAGE

Czech Technical University in Prague, Faculty of Civil Engineering together with KB-BLOK system, s.r.o and NAUE, GmbH decided to hold the 2nd International Conference in Prague on „Retaining Segmental Wall Systems – Experience, Practical Adjustments and Case Studies.“

The conference follows up on the previous conference topics discussed in 2010, further developing the practical points of view on design and construction of segmental retaining wall systems. The conference will be held in time, when a large number of retaining earth structures are designed or executed on the market territory of the European Union, despite of the depression in economics. Modern concrete materials, methods and procedures in retaining walls have been developed and used over the last 15 years.

It is my pleasure to invite you to attend this Conference in Prague and to meet with **leading international experts in retaining earth structures.**

It is intended for civil and structural engineers, architects and associated professionals interested in latest achievements and developments in design, construction, maintenance, rehabilitation and performance of reinforced earth structures. Participants will include designers, researchers, consultants, owners, contractors, operators, suppliers, representatives of regulatory authorities and any other persons involved.

I sincerely believe that knowledge gathered at the conference will be interesting and fruitful for your professional growth.



Josef Jettmar
Vice - Rector CTU in Prague

KB-BLOK system, s.r.o.

KB - BLOK system, s.r.o. is a purely Czech private company transacting business in the area of producing construction materials. Since its establishment, that is to say for nearly twenty years, the company has pursued a clear aim – to offer the very best on the market. This philosophy is reflected at several levels of our activities: KB - BLOK system, s.r.o. was the first company in the Czech Republic to use equipment from Columbia Machine in the USA for the production of concrete blocks, which is at the top in technological development and allows the production of a variety of top-quality products. We also place the same quality requirements on all other suppliers of machines and raw materials.

We have also entered into close relations with prominent Czech and foreign experts in the area of civil engineering, with designers, universities and research institutes. Thanks to these linked potential and creative abilities we can put new, often even daringly untraditional solutions on the market, with qualities surpassing classic, conservative construction materials. We are one of the few to then verify the properties of our products at certified testing laboratories.

We do not use our own network of distribution stores and outlets of building materials only for sales, but also as a source of valuable feedback – to gain incentives on further refining our existing products and meeting the market requirements for new products.

In the past we made sure that the market would not wait and that it would be necessary to react quickly to its needs. We then established an engineering division of our company, producing complete forms for the production of existing as well as new products. We have thus succeeded in substantially shortening the time from designing a product to putting it on the market; moreover, we can react flexibly to any requirements for shape changes and product properties. In the process, the engineering division of KB - BLOK system, s.r.o. has developed into a fully independent organizational unit whose services have already been used by foreign trading partners as well.

We attach high importance to co-operation with foreign partners since the possibilities of the relatively small Czech market no longer correspond to our needs in the area of further development. KB - BLOK system, s.r.o. is a founding member of BLOCKMASTERS – an association of European producers of concrete blocks. Thanks to the active operation of the association and exchange of experience, we can enrich the Czech market with news from Finland or Austria, for example.

All this contributes to the fact that KB - BLOK system, s.r.o. has been perceived as the quality leader and main innovator on the market for a long time. We are glad that nobody in this field calls one of the most frequently used blocks anything other than "KB - BLOK". There are a number of imitations, but the genuine "KB - BLOK" is the one and only! Thanks to our efforts, we believe that our additional products will also gain the same eminence in future.

ORGANISING PARTNERS



CZECH TECHNICAL UNIVERSITY IN PRAGUE

Faculty of Civil Engineering

Department of Geotechnics

The department is one of the leading Czech research and training institutions involved in geotechnics. Within theoretical courses, including soil mechanics and rock mechanics, students learn about mechanical and physical properties of soils, rocks, and the rock mass. In practical courses on geology, engineering geology and hydrology students gain the basic experience in valuation of soil and rock structures responding to previous geological processes. They are also taught to model relations between stress and strain for the solution of application tasks. The applied courses in foundations of constructions and underground structures focus on the interaction of subsoil with load-bearing structures, interaction of underground structures with the rock environment, and progressive foundation techniques and underground structures construction. Beside the traditional processes, students are taught modern methods of designing and estimating all types of geotechnical structures with the help of computers, and experimental testing conducted on models or in the field. More and more attention is also given to environmental considerations, specifically in all courses on geotechnics.

Within continuing engineering education programmes, the department offers specialized course of Geotechnical Engineering in lifelong education program accredited by the Czech Chamber of Certified Engineers and Technicians.

It is completed with a final project elaboration and the issue of a certificate of course completion.

The department research activities of optimization and testing of structural designs and monitoring of the response of the environment to the construction and operation of demanding geotechnical structures. Further, it revolves around geotechnical and ecological constructions including construction of the brownfields.

Due to the wide range of its interests, the department maintains extensive contacts with the practical domain. The staff takes part in geological surveys, geotechnical data collection, and geotechnical structures design, construction and monitoring. The department members cooperate in the erection of foundations of high-rise buildings with deep basements in town built-in areas, earth dams, sludge beds, superstructure of roadways and railways, overlaying clay dumps, industrial and community waste dumps, the underground, transport tunnels, galleries, pipe tunnels, gas tanks, storages of underground waste, including radioactive waste. They are likewise involved in conservation of historical monuments, such as sanitation of foundations of castles and chateaus, moving of a church, etc.

The education of doctoral degree students is provided within the study branches Transportation and Structural Engineering, Environmental Engineering, Building Engineering specializing in soil mechanics, rock mechanics, foundations of structures and building structures.

ORGANISING PARTNERS



CZECH TECHNICAL UNIVERSITY IN PRAGUE

Klokner Institute

Civil Engineering. Scientific results recently achieved and presented indicate an outstanding position of the KI CTU in the following scientific areas:

- (1) Theory of structural reliability and risk analysis of structural systems,
- (2) Structural diagnostics based on experimental mechanics, dynamics of engineering structures, numerical analysis and verification of numerical models,
- (3) Material research of concrete and composite materials, optimization of material properties and determination of their functional characteristics,
- (4) Experimental analysis of properties of existing construction materials.

The testing laboratories of KI CTU are accredited in mechanical, physical and rheological properties of building materials and static and dynamic experimental analysis of engineering construction works and structural members including the assessment of dynamic effects of actions on structures. KI CTU has also become a forensic expert institution for diagnostics, analysis of structural failures and testing of concrete, steel, timber and masonry structures.

At an international as well as national level, KI CTU has a long tradition and has achieved a considerable number of important results in the above fields of research. This is proved by extensive publication activities, international contacts and membership in international research organizations (e.g. JCSS, RILEM, CIB).

Research team activities in scientific fields relevant to the subject of the submitted research project are considerable. So far the proposer and his colleagues have participated (as leaders or co-leaders) in international Copernicus, Leonardo da Vinci and Jean Monnet projects, in 26 projects supported by the Czech Science Foundation, in 4 research plans of the Czech Ministry of Education, Youth and Sports and in several projects of the Czech Ministry of Transport and of the Czech Ministry of Industry and Trade. More than 800 scientific publications have been elaborated in the framework of these projects during the last 5 years. Most of the projects and publications were evaluated by reviewers as outstanding.

The Klokner Institute of the Czech Technical University in Prague (KI CTU), established in 1921, was the first building research organisation in central Europe. Main activities of the Institute concern science and research, education, expert and consulting activities, national and international standardisation. KI CTU is a member of many international scientific and standardisation organisations such as CIB, RILEM, JCSS, IABSE, CEN and ISO. The Institute was involved in the European projects COPERNICUS, Growth, presently in COST. KI CTU has obtained experience as a leader and co-ordinator of two previous pilot projects supported by the Leonardo da Vinci programme. The developed vocational training and materials are till now in a great favour of technicians involved in European construction industry. KI CTU is a responsible institution for implementation of Eurocodes in the Czech Republic.

ORGANISING PARTNERS



NAUE, GmbH & Co. KG

NAUE is an ISO EN 9001 - certified company. Its comprehensive range of geosynthetic products includes Bentofix®, Carbofol®, Combigrid®, Secudrain®, Secugrid®, Secumat®, Secutex® and Terrafix®. This portfolio meets all the requirements of geosynthetic functions in civil engineering, such as filtration, separation, protection, drainage, erosion control, sealing and reinforcement.

These products are used wherever superior technical, economical and ecological solutions are required for geotechnical construction projects.

The range of applications covers foundation improvement, flood defense, environmental engineering, base course reinforcement, tunnel sealing, dam construction, landfills, hazardous waste containment, etc.

Another special feature of work with NAUE, and which is a unique aspect of the company in the global geosynthetics arena, is NAUE manufactures all of its products in its own facilities. This dedicated ownership of the process ensures continuously high quality and allows for an optimal combination of products.

During the whole process of a construction project, whether it's in Germany, India, the United States, or elsewhere, NAUE's customers and partners have a fixed, capable contact person who is intimately connected to the quality controls in production and supply. And when it comes to product dimensions, NAUE is top of the league.

ORGANISING COMMITTEE

Prof. Josef Jettmar,

Chair
CTU in Prague

Jiri Jirak,

Vice – Chair
KB – BLOK system, s.r.o.

Martin Holy,

Naue, GmbH

Tereza Cihakova,

CTU in Prague

Josef Laksa,

KB – BLOK system, s.r.o

TECHNICAL AGENDA

OBJECTIVES AND SCOPE

The conference provides the forum to exchange views and experience on reinforced earth structures, in particular a practical point of view on design and construction of segmental retaining walls.

The objective of the development in the area of segmental retaining walls is to offer a financially effective alternative solution while maintaining reliability and the desired lifetime of the structure. Research and development of analytical software and methods of numeric analysis for assessing the behaviour of segmental retaining walls also play a key role.

RETAINING WALL SYSTEMS

The KB - BLOK systems have been designed for construction of gravity retaining walls. The system is composed of several concrete blocks that may be combined in many retaining wall variants. Block joints are dry: blocks in a single course are lock-joined, while two neighboring courses are interconnected by plastic pins. The inner space of the wall is filled with a suitable fill material. The blocks of the system are made on production facilities purchased in the USA, by dry cast technology with low water coefficient. High concrete strength may be achieved thanks to the above technology. Building a retaining wall system is quick and easy.

SESSIONS

The Conference Programme will start with the opening ceremony. Plenary sessions will take place after the opening Ceremony, commencing with two keynote lectures in Group 1. The keynote lectures covering the main conference subjects will be presented by the following distinguished and well-known speakers:

Prof. Dov Leshchinsky

Keynote lecture: Successful and Unsuccessful Design and Construction

Practice of MSE Walls

Professor Dov Leshchinsky has served a professor of civil engineering at the University of Delaware for nearly 30 years. Prior to joining the faculty in Delaware he worked as a geotechnical engineer with the Association of American Railroads in Chicago. At the University of Delaware he has conducted research on slope stability, soil reinforcing, geosynthetics and dredged materials. The National Science Foundation, US Army Corps of Engineers, Federal Highway Administration, Delaware Department of Transportation, and private industry have sponsored various research projects he has conducted. His main research thrust interfaces between theories and their applications to practice. Much of his work has focused on comprehensive design methods for reinforced steep slopes and walls as well as geotextile tubes. He has well over 100 technical publications and has advised about 30 doctoral students. Several of his design methods have culminated with the development of user-friendly software (FoSSA, ReSSA, MSEW, ReSlope, GeoCoPS). The design tools are used worldwide.

Prof. Leshchinsky has been involved with advanced geotechnical consulting for the past 20 years. Governmental/State agencies (e.g., FHWA, DSWA), geotechnical outfits (e.g., URS, WRA, MACTEC) and geosynthetic manufacturers had retained him as a consultant. He coauthored the design manual "Guidelines for Geofoam Applications in Embankment Projects," published and sponsored by NCHRP. He co-developed an NHI short course on Slopes and Embankments. He has been co-teaching short NHI courses on MSE Walls Reinforced Soil Slopes.

Prof. Leshchinsky served on various editorial boards (e.g., ASCE Journal of Geotechnical Engineering; Geotextiles and Geomembranes; Soils and Foundations). He has also served as expert witness involving failures of geotechnical structures. He delivered the 2008 Martin S. Kapp Lecture and is the recipient of the ASCE's 2010 Martin S. Kapp Achievement Award.

Prof. Ivan Vanicek

Keynote lecture: Reinforced Earth Structures and Eurocode 7

Expert in Geotechnical Engineering, educated in the Czech Republic, UK (Imperial College) and Russia (MISI, LISI).

Has recently solved many practical and theoretical problems in the field of reinforced soils. Most important monograph: Earth Structures in Transport, Water and Environmental Engineering, Springer 2008, 637 s. More than 450 examples of practical consultancy.

Chairman of the Czech Geotechnical Society. Main organizer of the European Conference on Soil Mechanics and Geotechnical Engineering in Prague, 2003, now Vice-president ISSMGE for Europe.

CONFERENCE PROGRAMME

8.30 - 14.00 Registration
 9.00 - 9.15 Conference Opening

9.15 - 12.30 Group 1: **Keynote Lectures**
 Chair: Jiri Jirak

Time	Keynote Lecture	Topic
9.15	Dov Leshchinsky	Successful and Unsuccessful Design and Construction Practice of MSE Walls
11.15 12.15	Ivan Vanicek Discussion	Reinforced Earth Structures and Eurocode 7

12.30 - 14.00 Lunch
 13.30 - 15.45 Group 2: **Design and Construction of Reinforced Soil Structures in Practice**
 Chair: Jiri Jirak

Time	Lecture	Topic
14.00	Lars Vollmert	Designing MSE Walls following Eurocode 7 – Design Codes and European Recommendations EBGED (German) and BS8006 (UK)
14.45	Andreas Herold	MSE-Walls for Large Infrastructural Projects – Practical Aspects on Design, Execution, On-Site Quality Control and Supervision – Large Scale Tests and Results
15.30	Discussion	

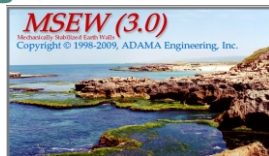
15.45 - 16.15 Coffee Break
 16.15 - 18.00 Group 3: **MSE Wall Systems – Design Characteristics, Verification and Certification**
 Chair: Jiri Jirak

Time	Lecture	Topic
16.15	Jiri Kolisko	Experimental Determination of the Connection Strength and the Shear Strength of KB-BLOK Segmental Concrete Units for Retaining Walls and Geosynthetic Reinforcement
17.00	Karel Dvorak	Certification of Construction Products to Specific Requirements
17.45	Discussion	

18.00 Closure of Conference

MSEW 3.0

Retaining walls calculation software



The company KB-BLOK system, s.r.o. has developed, for designers, software for calculating reinforced retaining walls. The software is called MSEW 3.0 (Mechanically Stabilized Earth Walls) from the company ADAMA Engineering, Inc., Newark, USA.

This software product is used for designing or assessing the reinforcement of retaining walls reinforced with geogrids and GeoStone, Gravity Stone, GeoGarden Stone and GeoZIQZAQ blocks in the face sections of these walls. There are two calculation modes to choose from: NCMA (National Concrete Masonry Association) or AASHTO (American Association of State Highway and Transportation Officials).

The software contains the database of geogrids used along with KB-BLOK system, s.r.o. portfolio facing concrete blocks.

The user may extend the geogrid database up to 100 various types.

Using the database, the geometry (height, embedment depth, wall front/back terrain slope, wall face inclination from vertical) of local and segmental walls, or terrain surcharge (random or constant), soil parameters and others.

The software output consists in the design or assessment of:

External stability:

- Footing bottom bearing capacity
- Direct sliding
- Eccentricity and overturning;

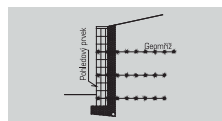
Internal stability:

- Strength of geogrids
- Connection strengths
- Pullout and total length of geogrids

In the design mode, the software generates the length of geogrids and their height arrangement. As options, one-type constant-distance, one-type optimum-distance, or multi-type geogrids may be chosen from.

The output may be generated as a DXF (for AutoCAD) format file, a BMP bitmap file, an Excel spreadsheet, a text document, or printed in the form of a complete report.

The program is available in Russian, Polish, Czech and English versions.



GENERAL INFORMATION

ABOUT PRAGUE, CZECH REPUBLIC

The organizers are proud to invite the attendants to the Conference to Prague, the city impersonating the Czech history and culture. Prague is also the most popular tourist destination in Czech Republic.



HOW TO ARRIVE IN PRAGUE

Prague is located in the centre of Czech Republic. It can be easily reached by car via four highways. Prague is also included in the Czech high-speed railway net operating Inter City Express (ICE) trains. Participants travelling by plane will arrive to the Prague Ruzyně located just 15 minutes drive (or bus ride) from the conference venue.



GENERAL INFORMATION

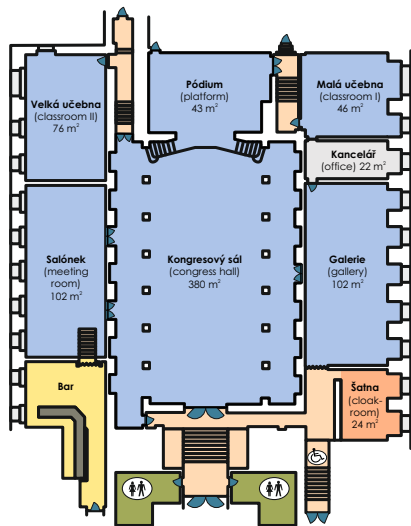
DATES

The Conference will be held on Wednesday, February 29, 2012.

VENUE

The Conference will take place in **Congres Hall of Masarykova kolej**. The Masarykova kolej is located in the centre of the Dejvice city quarter, in the Czech Technical University campus near an idyllic park, providing ideal conditions for a successful conference.

Address of the venue: **Masarykova kolej, Thakurova Street 1, Prague.**



LANGUAGE

The official languages of the Conference are **English and Czech**. Oral presentation and discussion will be held in both languages. Simultaneous translation will be provided.

CURRENCY

The currency unit in Czech Republic is CZK. The EURO will be accepted on Registration desk.

REGISTRATION AND INFORMATION DESK

The Registration and Information desk will be open from 8.30 to 14.00 on Wednesday only.

LUNCH

Lunch will be served to participants in front of the session room in Akademická restaurace between 12.30. – 14.00. Lunch is included in the registration fee.

TRANSPORTATION IN PRAGUE AND PARKING

The conference venue can be easily reached by public transport services:

BUS - from station Dejvicka on foot in 10 minutes

UNDERGROUND – from station Dejvicka on foot in 10 minutes

STREET – LINE – from station Thakurova on foot in 5 minutes

The conference venue can be easily reached by car as well. The free parking opportunity is limited. There are two underground parking fee-based services in Studentska Street. The first parking service is with entrance near the crossroad of Studentska Street – Evropska Street. The other parking service is with entrance near the crossroad of Studentska Street – Bechynova Street.



GENERAL INFORMATION

FOREIGN EXCHANGE

Facilities to exchange foreign currency are available throughout the city. Indication of exchange rate:
1 EUR – 25,00 CZK.

ELECTRICITY

The electrical supply is 220 Volts and 50 Hz.

WEATHER

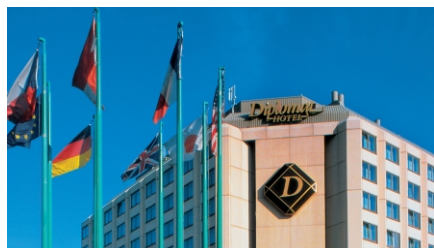
The climate is continental. Daytime temperature in December is usually between -5° C and -10° C.

ACCOMMODATION

Accommodation for conference attendees has been reserved in 2 hotels in the proximity of the conference venue under the password KB-BLOK. The organiser does not provide for direct booking of rooms; attendees are asked to book accommodation individually in the selected hotel. Prices and capacities are guaranteed until 10 February 2012. The price of the room includes breakfast, VAT and the applied local fees.

DIPLOMAT HOTEL

Evropská 15,
160 00 Praha 6,
www.diplomathotel.cz
Bookings at + 420 296 559 111,
info@diplomathotel.cz



DAPH HOTEL

Vítězné náměstí 4/684,
160 00 Praha 6,
www.daphotel.cz
Bookings at + 420 973 211 444,
rezervace@vkp.vlrz.cz

HOTEL DIAIP***

Military club
Prague



HOW TO REGISTER

Please register by sending the attached full-filled registration form by post, by email or fax to the address of Conference Secretariat separately per each participant. An attendance fee invoice will be issued in the next few days.

CONTACT

Retaining Segmental Wall Systems Conference 2012

Conference Secretariat
Josef Laksa
KB – BLOK system, s.r.o
Masarykova Street 635,
439 42 Postoloprty
Czech Republic
Phone: +420 415 778 345
Fax: +420 415 778 344
Email: laksaj@kb-blok.cz

REGISTRATION AND FEES

The participant registration fee includes:

- Admission to Conference opening
- Admission to Technical Sessions
- Delegate Bag
- Final Programme
- Coffee Breaks
- Lunches

CERTIFICATE OF ATTENDANCE

Sanctioning by CKAIT within the lifetime education program was requested for this event. If points are successfully awarded, participation certificates will be sent to participants after the event.

PAYMENT OF CONFERENCE FEE

The conference fee are to be fully paid prior to the conference by bank transfer to the bank account of the organizer KB-BLOK system, s.r.o upon reception of an invoice/tax document. Participants registered by 10 February 2012 who fail to pay the invoice by the due date (the date of crediting of the amount to the account shall be decisive) shall be charged a fee equal to the difference between the reduced and the standard conference fee in cash at registration desk. Registered persons whose payments are not credited to the organizer's account by 21 February 2012 shall not be admitted to the conference without paying of surcharge up to standard fee at the registration desk. **Payments of the conference fee in cash at the registration desk shall only be accepted in the amount of the standard fee or the surcharge up to the standard fee.**

CONFERENCE FEES

The amount of the conference fee is dependent on the date of sending of a firm registration form to the organizer of the conference. Reduced fee for students applies to students and post graduate students up to 28 years of age (a legible copy of a student's record book with a photograph and a name, or of a valid student's ID card shall be attached to the registration form). Reduced fee for members of CKAIT applies to members of CKAIT whose valid membership is proven with the registration form or at the registration desk.

Registration deadline

by 10.2.2012 at the conference

Conference fee

	reduced	standard
standard participant	EUR 50,-	EUR 70,-
public admin.	EUR 20,-	EUR 30,-
student	EUR 10,-	EUR 20,-

VAT as appropriate is included in above amounts.

CANCELLATION

Participation at the conference or the ordered services may only be cancelled in writing. Cancellation sent by 10 February 2012 shall not be subject to a cancellation fee. Cancellation after 10 February 2012 shall be subject to the cancellation fee of 50% of the registration fee. Cancellation after 21 February 2012 shall be subject to the cancellation fee of 100% of the total amount of the cancellation fee including any supplementary payments (this also applies to the registered persons who do not participate at the conference without cancellation!). Any payments or parts thereof shall be reimbursed as credit notes after final financial settlement of the conference by 31 March 2012.

Note:

We kindly ask for notification of any cancellation of participation (even yet unpaid!) of all persons whose filled registration forms have been sent to the organizer. The organizer orders and pays for the services according to the registered number of participants and pays the VAT upon issuing of an invoice. Therefore we must insist on compliance with the terms of cancellation and payment of the conference fee and any service fees in case of non-cancelling of participation. Participants expressly agree with the above terms by signing the firm registration form.

KB – BLOK system, s.r.o
Masarykova Street 635,
439 42 Postoloprty
Czech Republic

Phone: +420 415 778 311
e.mail: kb-blok@info.cz



VIBRO-PRESSED CONCRETE BLOCK SYSTEM



PLAYBLOK blocks



KB blocks



KB KLASIK walling system



KB ATLAS blocks



Overbuilding elements



Supporting walls



Garden architecture



Paving



**Transportation infrastructure
elements**



Supplements



**Fence sections, wicket gates,
yard gates**



Smithcraft wares



Roofing

www.kb-blok.cz

REGISTRATION FORM

International Conference on

Segmental Retaining Wall Systems

- Experience, Practical Adjustments and Case Studies,
Prague 2012

The person interested on conference attendance would self-register by filling in registration form and sending to Conference Secretariat address as soon as possible.

NAME:.....

SURNAME:.....

COMPANY:.....

BRANCH:.....

AFFILIATION:.....

PHONE NUMBER:

EMAIL ADDRESS:

Date of signature:Signature:

Registration and Information Conference Secretariat

Josef Laksa
KB – BLOK system, s.r.o
Masarykova Street 635,
439 42 Postoloprty
Czech Republic

Phone: +420 415 778 345
Fax: +420 415 778 344
Email: laksaj@kb-blok.cz
URL www.kb-blok.cz