



**UNDERGROUND
CONSTRUCTION**

PRAGUE 2013

12TH INTERNATIONAL CONFERENCE

UNDERGROUND CONSTRUCTION PRAGUE 2013

22–24 APRIL 2013 | PRAGUE, CZECH REPUBLIC

FINAL PROGRAMME

Sponsored by ITA-AITES

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ASSOCIATION
INTERNATIONALE DES TUNNELS
ET DE L'ESPACE SOUTERRAIN

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INTERNATIONAL TUNNELLING
AND UNDERGROUND SPACE
ASSOCIATION



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WELCOME

The ITA-AITES Czech Tunnelling Association welcomes you to the **12th International Conference „Underground Construction Prague 2013“**, which is held in Prague, the capital of the Czech Republic, from 22 to 24 April 2013. A number of important Czech and foreign experts who have accepted membership in the Preparatory Committee and the Scientific Council of the Conference were involved in its preparation.

In this final programme you will find all necessary information about the Conference including detailed information about the scientific programme. We are very pleased that a total of 143 papers are included in the Conference proceedings (including four keynote lectures and invited lectures in each session) by authors from 18 countries.

Each participant will receive a printed Book of Abstracts in Czech and English and an electronic version of Proceedings with all papers on CD in English and Czech or Slovak languages.

Four keynote lectures will be presented after the Opening Ceremony. Subsequently, a total of 68 lectures will be performed always in two parallel sessions by major world experts in the field of underground construction. The Technical Exhibition and Poster Session will also be well presented. The programme will be completed by excursions to tunnel construction in Prague.

We are convinced that the Conference will meet its main objective which is the dissemination of knowledge and experience in the preparation and implementation of underground structures of various kinds.

The Conference will surely be an opportunity to obtain new and interesting information and personal contacts.

We appreciate your participation and also thank all the Conference partners.

Ivan Hrdina
Chairman of Cz-TA
ITA-AITES vice-president

Dr. Alexandr Butovič
Chairman of the Preparatory
Committee

Dr. Matouš Hilar
Chairman of the Scientific Council

CONTACTS

Secretariat of the Preparatory Committee of the Conference:

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Organising Agency:

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PREPARATORY COMMITTEE AND SCIENTIFIC COUNCIL

Chairman of the Preparatory Committee:

Dr. Alexandr Butovič
Satra, spol. s r.o.

International Members:

Dr. Nick Barton, *Norway*
Dr. Stojan Bratojev, *Bulgaria*
Heinz Ehrbar, *Switzerland*
Søren Degn Eskesen, *Denmark*
Miloslav Frankovský, *Slovakia*
Dr. Vojtech Gall, *USA*
Prof. Robert Galler, *Austria*
Piergiorgio Grasso, *Italy*
Viktória Chomová, *Slovakia*
Martin Knights, *United Kingdom*
Dr. Davorin Kolic, *Croatia*

Local Members:

Prof. Josef Aldorf, *Technical University in Ostrava*
Prof. Jiří Barták, *Czech Technical University in Prague*
Otakar Hasík, *Metroprojekt Praha, a.s.*
Lenka Hovorková, *Guarant International, spol. s r.o.*
Dr. Eva Hrubešová, *Technical University in Ostrava*
Libor Mařík, *IKP Consulting Engineers, s.r.o.*
Dr. David Mašín, *Charles University in Prague*
Miloslav Novotný, *ITA-AITES Czech Tunnelling Association*
Prof. Jaroslav Pacovský, *Czech Technical University in Prague*
Dr. Tomáš Parák, *Mott MacDonald CZ, s.r.o.*
Dr. Jan Pruška, *Czech Technical University in Prague*
Dr. Markéta Prušková, *ITA-AITES Czech Tunnelling Association*
Lukáš Rákosník, *Satra, spol. s r.o.*
Dr. Karel Rössler, *Metrostav, a.s.*
Dr. Alexandr Rozsypal, *ARCADIS Geotechnika, a.s.*
Jiří Smolík, *Subterra, a.s.*
Martin Srb, *3G Consulting Engineers s.r.o.*
Boris Šebesta, *Metrostav, a.s.*
Dr. Richard Šňupárek, *Institute of Geonics AS CR, v.v.i.*
Dr. Karel Vojtasík, *Technical University in Ostrava*
Jaromír Zlámal, *Pohl CZ, a.s.*

Chairman of the Scientific Council:

Dr. Matouš Hilar
3G Consulting Engineers s.r.o.

Yann Leblais, *France*
Prof. Jakob Likar, *Slovenia*
Arif Rasulov, *Azerbaijan*
Prof. Ignacio del Rey, *Spain*
Prof. Anna Sieminska-Lewandowska, *Poland*
Prof. Wulf Schubert, *Austria*
Prof. Markus Thewes, *Germany*
Dr. Alun Thomas, *United Kingdom*
Prof. Walter Wittke, *Germany*
Prof. Bai Yun, *China*

THE CONFERENCE "UNDERGROUND CONSTRUCTION PRAGUE 2013" IS UNDER THE AUSPICES OF THE MAYOR OF PRAGUE, ASSOC. PROF. BOHUSLAV SVOBODA.



GENERAL INFORMATION ABOUT THE CONFERENCE

Conference name: Underground Construction Prague 2013
Conference date: 22 to 24 April 2013
Conference venue: Clarion Congress Hotel Prague
 Freyova 33, Prague 9 – Vysočany, Czech Republic
 www.cchp.cz

Official languages: English and Czech/Slovak
 simultaneous translation will be provided



The Clarion Congress Hotel Prague is a new modern hotel complex aimed at congresses and conferences. At the same time offers pleasant accommodation in comfortably furnished rooms, restaurant, bar and wellness center. Its advantage is an excellent transport accessibility – it is located directly at the metro station „Vysočanská“ (line B), less than 15 minutes drive from the city centre. It has sufficient space in underground garages for guests arriving by car. Next to the hotel a shopping gallery Fénix can be found.

CONFERENCE SCHEDULE

Monday, 22 April 2013

09:00–09:15	Opening Ceremony
09:15–10:25	Keynote Lectures I and II
10:25–10:50	Break
10:50–12:00	Keynote Lectures III and IV
12:00–13:30	Lunch
13:30–15:30	Parallel Sections 1 and 3
15:30–16:00	Break
16:00–18:00	Parallel Sections 2 and 4
19:30–23:00	Reception

Tuesday, 23 April 2013

08:30–10:10	Parallel Sections 6 and 7
10:10–10:30	Break
10:30–12:10	Parallel Sections 1 and 5
12:10–13:30	Lunch
13:30–15:30	Parallel Sections 3 and 4
15:30–16:00	Break
16:00–18:00	Parallel Sections 1 and 5

Wednesday, 24 April 2013

morning	Technical Excursions
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SCIENTIFIC PROGRAMME

MONDAY, 22 APRIL 2013

ROOMS ZENIT+NADIR

09:00–09:15

Opening Ceremony

Alexandr Butovič, Chairman of the Preparatory Committee
 Ivan Hrdina, Chairman of CzTA and ITA-AITES vice-president
 Martin C. Knights, ITA-AITES past president

09:15–10:25

Keynote Lectures I and II

Chairs:

Matouš Hilar, Alexandr Butovič

09:15–09:50

Ermín Stehlík (Czech Republic): Prague Metro construction – past, present and future

09:50–10:25

Libor Mařík (Czech Republic): Past and present of NATM in the Czech Republic

10:50–12:00

Keynote Lectures III and IV

Chairs:

Matouš Hilar, Alexandr Butovič

10:50–11:25

Heinz Ehrbar (Switzerland): The law of large numbers in underground construction – Risk Management for Mega-Projects – Lessons learned from the Gotthard Base Tunnel

11:25–12:00

Martin C. Knights (United Kingdom): Technology and innovation in tunnelling

13:30–15:30

Parallel Sections 1 and 3

ROOM ZENIT

Chairs:

SECTION 1 – Urban Transport Tunnels – Design and Construction

Vojtech Gall, Miloslav Frankovský, Boris Šebesta

13:30–13:50

Invited Lecture

Dr. Vojtech Gall (USA): Non-Disruptive Alternatives for Grade Separation Projects in Urban Settings Using Very Shallow Conventional Tunneling

13:50–14:10

A. Butovič (Czech Republic): The Blanka Tunnel Complex in Prague – the Unique Close Crossing of Big Profile Tunnels

14:10–14:30

Invited Lecture

Dr. Davorin Kolic (Croatia): Urban Transport Tunnels in Underground Urbanism

14:30–14:50

D. Cyroň (Czech Republic): Experiences with tunnel excavation by using Earth Pressure Balance Machines (EPBM) on the extension of metro line V. A

14:50–15:10

J. Panuška (Czech Republic): Construction process of three-vault metro station Veleslavín – excavation and secondary lining course

15:10–15:30

M. Frankovský (Slovakia): Prešov tunnel on the D1 motorway section in the town of Prešov

**ROOM NADIR SECTION 3 – Other Underground Structures – Design and Construction**

- Chairs:** Jakob Likar, Richard Šňupárek, Karel Vojtasík
- 13:30–13:50 *M. Horáček (Czech Republic):* Possibilities of caverns usage by the Czech Republic's energy sector
- 13:50–14:10 *R. Šňupárek (Czech Republic):* Present situation and development trends in the area of underground nuclear waste storage sites
- 14:10–14:30 *J. Likar (Croatia):* Adequacy of the yielding elements selection for underground construction in high squeezing grounds
- 14:30–14:50 *V. Horák (Czech Republic):* Feasibility study of underground garage at Petrov hill in the centre of Brno city
- 14:50–15:10 *J. Zlámal (Czech Republic):* Securing Calculation of the Gallery Ceiling according to the RMR, BLLL and RMI theories
- 15:10–15:30 *M. Schagerer (Czech Republic):* Construction No. 0065 Strahov tunnel 2. Construction – part 2B Excavated tunnel MO, relocation of utilities – a key to tunnel construction

16:00–18:00 Parallel Sections 2 and 4**ROOM ZENIT SECTION 2 – Non-urban Transport Tunnels – Design and Construction**

- Chairs:** Bai Yun, Libor Mařík, Miloslav Frankovský
- 16:00–16:20 **Invited Lecture**
Prof. Bai Yun (China): Trans-national railway under the Himalayas
- 16:20–16:40 *G. Harer (Austria):* The Austrian Koralm tunnel investigation, design and construction process for a large base tunnel project
- 16:40–17:00 *J. Němeček (Czech Republic):* Construction of rail tunnels on Votice – Benešov u Prahy railway track
- 17:00–17:20 *P. Balušík (Slovakia):* Modernisation of the railway line Holm – Nykirke, parts UHN-03 Holm and UHN-06 Fibo
- 17:20–17:40 *J. Kušnír (Slovakia):* Turecký Vrch tunnel
- 17:40–18:00 *J. Pechman (Czech Republic):* Jablunkov railway tunnel – dealing with a cave-in through the eyes of a planning engineer

ROOM NADIR SECTION 4 – Geotechnical Investigation and Monitoring for Underground Construction Projects

- Chairs:** Martin C. Knights, Heinz Ehrbar, Alexandr Rozsypal
- 16:00–16:20 *J. Barták (Czech Republic):* Deformations of surface structures during EPBS driving of Prague metro tunnels
- 16:20–16:40 *R. Katzenbach (Germany):* Enhanced inner urban tunnelling for the protection of World Heritage Properties
- 16:40–17:00 **Invited Lecture**
Prof. Anthony O'Brien (United Kingdom): Geotechnical Characterisation, Recent Developments and Applications
- 17:00–17:20 *K. Rössler (Czech Republic):* EPBM Support Pressures of Metro V. A. Excavations
- 17:20–17:40 *P. Duník (Czech Republic):* Extraordinary settlement of buildings around the cut and cover tunnels in Prague 6
- 17:40–18:00 *T. Ebermann (Czech Republic):* Construction of Metro V.A – First Massive Usage of Continuous Monitoring in the Czech Republic

**TUESDAY, 23 APRIL 2013****08:30–10:30 Parallel Sections 6 and 7****ROOM ZENIT SECTION 6 – Equipment, Operational Safety and Maintenance in Underground Structures**

- Chairs:** Bernhard Kohl, Viktória Chomová, Lukáš Rákosník
- 08:30–08:50 *F. Rainer (Czech Republic):* Operated road and highway tunnels in the administration of the Directorate of Roads and Motorways of the Czech Republic
- 08:50–09:10 *S. Leppla (Germany):* New concept of engineering inspection and supervision of tunnels and station of urban metro systems during service time
- 09:10–09:30 **Invited Lecture**
Bernhard Kohl (Germany): Safety in road tunnels – state of the art
- 09:30–09:50 *J. Štefan (Czech Republic):* The tunnel complex Blanka – Tunnel control system and its correlation to traffic lights
- 09:50–10:10 *K. Kreislová (Czech Republic):* Degradation of construction materials in road tunnels
- 10:10–10:30 *P. Příbyl (Czech Republic):* Risk analysis of road tunnels reflecting technological facilities

ROOM NADIR SECTION 7 – Risk Management, Contractual Relationships and Funding of Underground Construction Projects

- Chairs:** Søren Degn Eskesen, Martin Srb, Otakar Hasík
- 08:30–08:50 **Invited Lecture**
Søren Degn Eskesen (Denmark): Construction: Risk Management – New developments and case histories
- 08:50–09:10 *M. Srb (Czech Republic):* Assessment of Risk Areas of a Tunnel Project based on Expert Opinion
- 09:10–09:30 *B. Dvořáček (Czech Republic):* Amendment to the mining legislation – the Decree of the Czech Bureau of Mines No. 55/1996 Coll. – based on experience gathered during the exercising of main supervision by the mining administration agencies over the execution of activities carried out in mining-like way
- 09:30–09:50 *J. Mersini (Slovakia):* Application of FIDIC Conditions of Contract for Tunnel Works in Public Procurement
- 09:50–10:10 *M. Frankovský (Slovakia):* Formulation of Technical Requirements for Tunnels for the Design and Build (D-B) method
- 10:10–10:30 *L. Knížek (Czech Republic):* Rapid services – a European transport policy tool and an opportunity for the Czech industry and construction sector



10:50–12:30 Parallel Sections 1 and 5

ROOM ZENIT SECTION 1 – Urban Transport Tunnels – Design and Construction

Chairs: Martin Bosshard, Jiří Smolík, Tomáš Parák

10:50–11:10 *D. Krása (Czech Republic):* Systematic approach to the new Metro Line I.D design in Prague
 11:10–11:30 *G. Blazek (Germany):* Double-track tunnels of the extension of the Metro V.A line “Dejvická – Motol”, tunnel boring and final lining

11:30–11:50 **Invited Lecture**

Martin Bosshard (Switzerland): The Zurich Cross Rail: Tunnelling the City’s Challenging Ground – Highlights

11:50–12:10 *L. Vydrová (Czech Republic):* Construction of the Prague Metro V.A – Change in the conception of the Veleslavín Station construction

12:10–12:30 *J. Čeněk (Czech Republic):* Construction of the metro in Chennai, India

ROOM NADIR SECTION 5 – Numerical Modelling, Development and Research for Underground Construction Projects

Chairs: Robert Galler, David Mašín, Jan Pruška

10:50–11:10 **Invited Lecture**

Prof. Robert Galler (Austria): 3-dimensional numerical modelling in underground engineering – some remarks to the state of the art and actual research activities

11:10–11:30 *Z. Žižka (Czech Republic), M. Thewes (Germany):* Face stability of XL-diameter slurry shields

11:30–11:50 *J. Fillibeck (Germany):* Prediction of Tunnel-Induced Settlements in Soft Ground

11:50–12:10 *T. Janda (Czech Republic):* Modeling of instance response of upper structure due to advancing tunnel excavation

12:10–12:30 *M. Hilar (Czech Republic):* Load testing and numerical modelling of SFRC segments

14:00–15:40 Parallel Sections 3 and 4

ROOM NADIR SECTION 3 – Other Underground Structures – Design and Construction

Chairs: Wulf Schubert, Karel Vojtasík, Richard Šňupárek

14:00–14:20 **Invited Lecture**

Prof. Wulf Schubert (Austria): Requirements for non-transport underground structures

14:20–14:40 *A. Caravanas (Czech Republic):* Bunji Hydropower Project, 7100 MW

14:40–15:00 *N. Plasencia (Portugal):* Groundwater impacts of deep excavations – the Venda Nova repowering case

15:00–15:20 *R. Kuk (Czech Republic):* City Ring Road – Construction Project No. 0065 – Relieve Storm Water System C03

15:20–15:40 *P. Burian (Czech Republic):* Wheelchair Access to Můstek Underground Station on Prague Underground Lines A and B

**ROOM NADIR SECTION 4 – Geotechnical Investigation and Monitoring for Underground Construction Projects**

Chairs: Anthony O’Brien, Karel Rössler, Alexandr Rozsypal

14:00–14:20 *J. Pacovský (Czech Republic):* Tunnel Lining Loading Measurement of Drainage Gallery of Strahov Tunnel in Prague

14:20–14:40 *J. Pavlík (Czech Republic):* Geotechnical Survey for the Tramway Tunnel of Large City Ring Road Žabovřeská in Brno

14:40–15:00 *R. Chmelař (Czech Republic):* Exploratory gallery of Radlice tunnel in Prague

15:00–15:20 *M. Botella de Faragó (Spain):* Urban tunneling and the advantages of using InSAR SPN satellite technology to detect and monitor surface deformation

15:20–15:40 *J. Tlamsa (Czech Republic):* Geological exploration works on the new metro line V. A in Prague – assessment of expected and actually encountered geological conditions and their impact on design and realization

16:00–18:00 Parallel Sections 1 and 5

ROOM ZENIT SECTION 1 – Urban Transport Tunnels – Design and Construction

Chairs: Patrick Rennkamp, Jiří Smolík, Boris Šebesta

16:00–16:20 *P. Rennkamp (Germany):* Newest technology and trends in mechanized tunnelling

16:20–16:40 *J. Růžička (Czech Republic):* Metro V.A – Experience in designing for running tunnels

16:40–17:00 *A. Rasulov (Azerbaijan), T. Parák, P. Růžička (Czech Republic):* New Era in Metro Construction

17:00–17:20 *V. Veselý (Czech Republic):* New Metro Lines L3 and L6 in Santiago de Chile – Basic and Detail Design of New 35 km in the Underground of Santiago

17:20–17:40 *I. Lejčar (Czech Republic):* Urban railway tunnels (Newly connected 2) in Prague

17:40–18:00 *K.-H. Wennmohs (Germany):* Improving safety and reducing cycle time in conventional tunnelling with high performance bolting rigs in conjunction with a new innovative bolt system

ROOM NADIR SECTION 5 – Numerical Modelling, Development and Research for Underground Construction Projects

Chairs: Simon Greensted, Eva Hrubešová, David Mašín

16:00–16:20 *G. Volkmann (Austria):* The AT – Casing System – More than a Pipe Umbrella System

16:20–16:40 *S. Greensted (United Kingdom):* High Performance Sprayed Waterproofing Membrane: a Czech Tunnel Case Study

16:40–17:00 *J. Augusta (Czech Republic):* Expansive rock blasting – a new alternative in rock fracturing/splitting

17:00–17:20 *A. Boscaro (Italy):* Ground Conditioning for Mechanized Tunnelling: analysis of the correspondences between laboratory tests and results during excavation with EPB

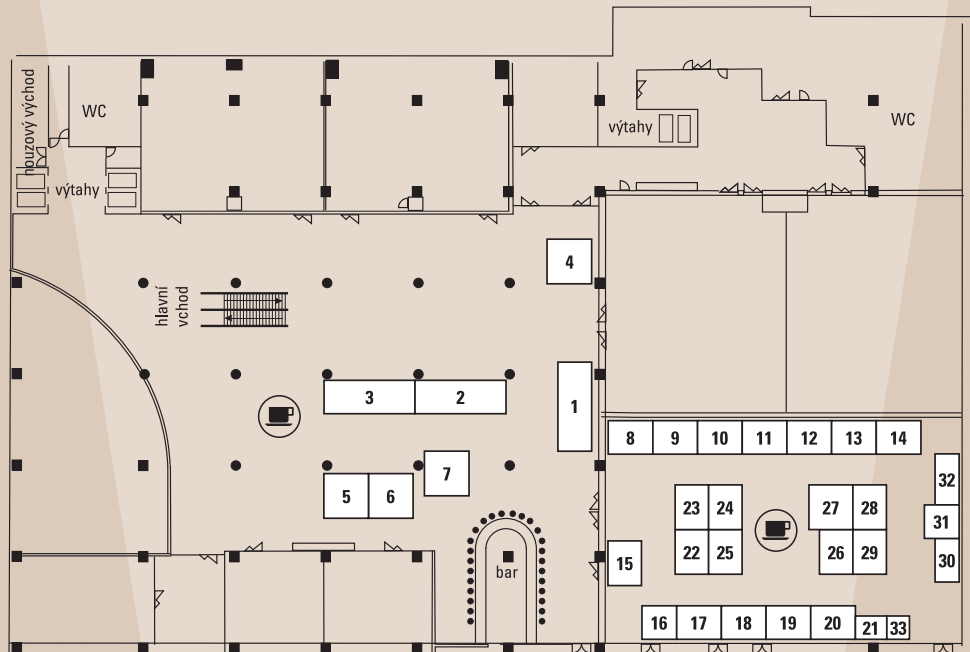
17:20–17:40 *T. Svoboda (Czech Republic):* Probabilistic analyses using Latin Hypercube Sampling method

17:40–18:00 *M. Levorová (Czech Republic):* Impact of thermal loading on tunnel stability

TECHNICAL EXHIBITION

The exhibition is located in the foyer of the congress floor and in the Meridian room, and will be open as follows:

Monday, 22 April 2013	08:00–18:00
Tuesday, 23 April 2013	08:00–18:00



List of exhibitors in alphabetical order:

3G Consulting Engineers, s.r.o.	30	GEOtest, a.s.	18	Metrostav a.s.	1
Amberg Engineering Brno, a.s.	16	Herrenknecht AG	4	Minova Bohemia s.r.o.	7
AMTEKO International s.r.o.	22	HOCHTIEF CZ a. s.	20	Mott MacDonald CZ, spol. s r.o.	26
Anton Vorek	24	IDEA RS s.r.o.	33	Promat s.r.o.	25
ARCADIS Geotechnika a.s.	6	IKP Consulting Engineers s.r.o.	28	PUDIS a.s.	11
Atlas Copco s.r.o.	5	INSET s.r.o.	27	SIKA CZ s.r.o.	3
BASF Stavební hmoty ČR s.r.o.	13	KRAMPEHAREX CZ s.r.o.	32	SMP CZ, a.s.	15
BEKAERT Hlohovec a.s.	31	LIEBHERR-Stavební stroje CZ s.r.o.	10	Subterra a.s.	2
DESOI GmbH	29	MACCAFERRI CENTRAL EUROPE s.r.o.	21	SUDOP PRAHA a.s.	12
Eltodo EG, a.s.	23	MAPEI, spol. s r.o.	8	TIWO, s.r.o.	14
FERALPI – PRAHA s.r.o.	19	METROPROJEKT Praha a.s.	17	Volvo Stavební stroje Czech s.r.o.	9

TECHNICAL EXCURSIONS

The conference participants can choose from five excursions to the underground structures in and around Prague organised on **Wednesday, 24 April 2013** in the morning. For available spaces please check with the registration desk.

Excursion A: The Blanka Tunnel Complex

The Blanka Tunnel Project in Prague is currently the largest underground structure being built in the Czech Republic. The total length of this ambitious project is 6 382 metres and it forms part of the North-west Inner City Circular Road of which a section about 17 km long is already in service. After its opening, expected in 2014, the tunnel will be the longest in the country and at the same time one of its sections will be the longest driven tunnel in the Czech Republic with its length of 2.23 km.

The visit will focus on the tunnel section at Královská obora which starts at the “U Vorlíků” crossroad first with a short cut and cover section at Letná followed by a driven section routed under the blocks of buildings, Stromovka (Královská obora park), river canal, Císařský ostrov (island), the Vltava river and then continues with another, slightly longer, cut and cover section to the portal at Trója. The total length is 3.09 km of which 2230 m are driven.

During this visit you will see the three lane tunnels, VAC machine room – one of the tunnels with the biggest cross section area in the country (300 m²), ventilation outlet shaft of 7 m diameter which runs closely under the three lane tunnels and Room No. 4 housing plant and equipment. The visit will focus on the tunnel furnishing.

Meeting point:

Information centre at the Letná construction site

Milady Horákové street, opposite the Sparta football stadium public – by tram No. 1, 5, 12, 25 or 26 from Hradčanská station (metro A), or by tram No. 1 from Vltavská station (metro C); Sparta stop

Transportation:

Excursion time:

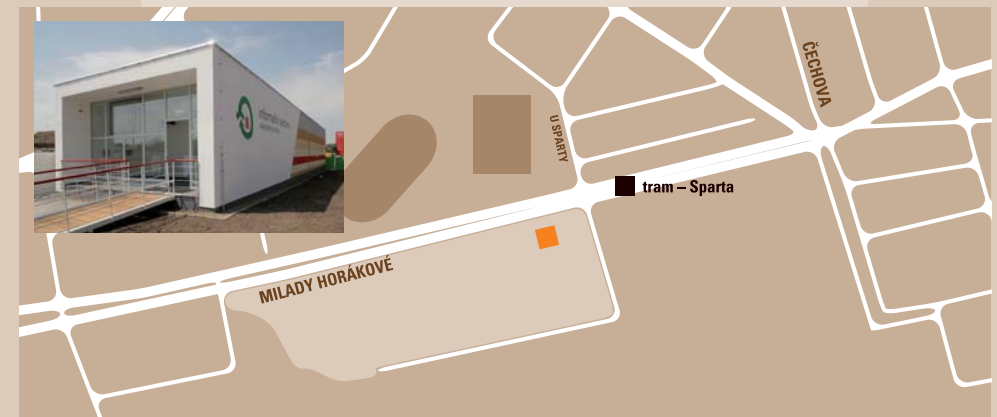
Recommended:

Provided:

09:30–11:30

solid shoes

English interpretation, hard hat, protective jacket





Excursion B: Section V.A of the Prague Underground

The V.A underground section is the extension of Line A from Dejvice to Motol. The total length of this section is 6.12 km and there are three driven stations at Červený vrch, Veleslavín and Petřiny and one cut and cover station at Motol. The Project is divided into 9 sub-projects.

The station at Petřiny is designed as a single driven nave of 217 m with an island platform situated 37 m below ground level. The axial distance between the rails in the station is 14.7 m. In the direction of Motol station there is a single turning track located in a single track tunnel between the two main line tunnels. All three tunnels are interconnected at the point where the turning track ends and the tunnel continues with the main ventilation plant room with the vent shaft. The exit at the north end of the station is via three escalators in a driven tunnel leading to the entrance hall. The driving operations at the station started in June 2010 by driving the access shaft called "Markéta" and at the moment the final lining operations are going on.

Veleslavín station is located approximately in the middle of Evropská Street between the existing railway line and the east end of K Červenému vrchu Street. The station is designed as a shallow driven structure with three naves and the island platform 19 m below ground level. The axial distance between the rails is 15 m. At the west end of the platform there is a cut and cover structure in which three escalators and lifts leading to the entrance hall are located. The positioning of the station, entrance hall and exits is designed so that there would be a direct link to the temporary bus terminal, tram stops at Evropská Street and it also takes into consideration the envisaged modernisation of the railway line including the express line station without any future need for modifications.

The visit will focus on Petřiny and Veleslavín stations where the concreting of the final lining is going on now. From both these stations it will be possible to see the completed single track tunnels driven with an EPB tunnel boring machine. The completed line will be put in service in the second half of 2014. The excursion also includes a walk through track tunnels between Veleslavín and Petřiny stop with 2 km length and duration of about 30 minutes. The path has a concrete base.

Meeting point: Clarion Congress Hotel Prague – 1st floor (street entrance)
Transportation: by bus, departure at 9:00
Excursion time: 09:30–12:00
Recommended: solid shoes
Provided: English interpretation, hard hat, protective jacket



Excursion C: Multi-utility Ducts in the Historic Centre of Prague

Prague has a large network of underground multi-utility ducts of about 90 km total length. These ducts contain the majority of service networks needed to sustain city life. The multi-utility ducts were built as part of major housing developments in the outskirts of the city but in recent decades they were also built in the historic centre. The total length of the duct network in the centre is 17 km and it consists of the backbone and distribution ducts. The backbone ducts (Category 2 ducts) with a cross section profile of 20 m² are located 25 to 30 m below ground level and they deliver water, gas etc. to the points where they are connected to the distribution ducts (Category 3 ducts). These are located 6 to 11 m below the ground level and their cross section profile is 20 m². They have branches leading to the buildings. The site visit to the multi-utility ducts in the centre of Prague will be organised with the support of the system operator – Kolektory Praha, a. s. The participants will be divided into groups and, after a brief introduction of the duct network and its control system, they will visit the main control room and a section of a duct in operation.

Meeting point: Kolektory Praha, a.s.
Senovážné náměstí 11, Praha 1
Transportation: public – by tram No. 3, 9, 14, 24 from Václavské náměstí (Wenceslas Square – Můstek station, metro A), or by tram No. 9 or on foot from Hlavní nádraží station (metro C); Jindřišská stop
Excursion time: 1st group 09:00–11:00, 2nd group 09:30–11:30, 3rd group 10:00–12:00
Recommended: solid shoes, comfortable clothes
Provided: EEnglish interpretation, hard hat, protective jacket





Excursion D: Josef Regional Underground Research Centre

The Josef URC is responsible for the operation of the Josef Underground Laboratory, the activities of which commenced in 2007 with the commissioning of 650 metres of underground galleries. Today there is available 5 km of underground galleries for the research activities and for the teaching of students and also the new administrative centre with laboratories is possible to exploit. The Josef Underground Laboratory is used by students from Prague universities as well as those from universities throughout the Czech Republic (approximately 300 students per semester). A total of 12 Czech and other European projects will make use of the underground facilities in 2013. The lab is located next to Slapy dam, close to Čelina village not far from the town of Přebíram (approx. 65 km from Prague).

Meeting point:	Clarion Congress Hotel Prague – 1st floor (street entrance)
Transportation:	by bus, departure at 8:00, return at 14:00
Excursion time:	09:30 – 12:30
Recommended:	solid shoes, warm clothes (temperature of 8 °C)
Provided:	English interpretation

Excursion E: Main traffic control centre in Prague (HDŘÚ Praha)

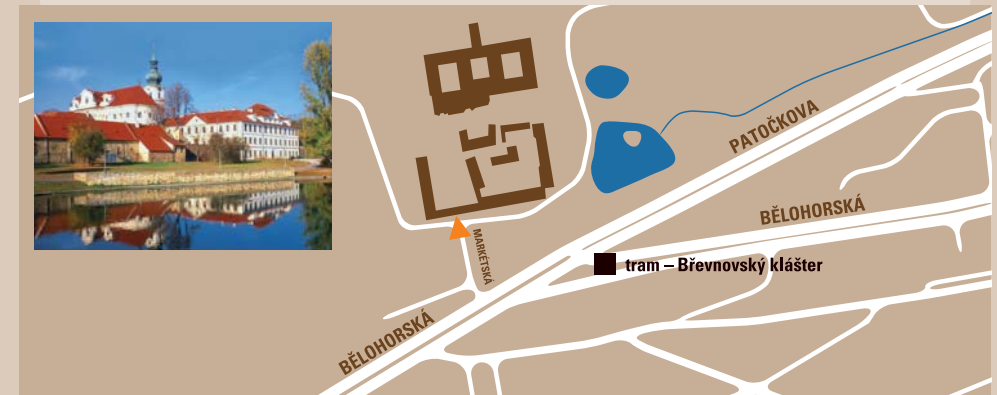
HDŘÚ Praha is the traffic control centre for road tunnels in Prague and it is the most advanced telematic traffic control system operated in Prague. The control centre is located in the building of the Central Dispatch Centre of the Prague public transport company at Prague 2. It is operated by members of the police. This specialised centre collects and processes data on the traffic on specific sections of the roads and road network, traffic data from telematic applications at each level of sensor profiles, process information from plant and equipment and alarms and warnings related to emergencies. The visit will focus on the control centre and everything related to traffic monitoring and control in tunnels in the centre of Prague.

Meeting point:	HDŘÚ - hlavní dopravní řídicí ústředna Na Bojišti 5, Praha 2
Transportation:	public – I.P. Pavlova station (metro C)
Excursion time:	09:30-11:00
Provided:	English interpretation



RECEPTION

The Conference Reception for participants and accompanying persons will be held in the historical site of the Břevnov Monastery on Monday, 22 April 2013 from 19:30.



REGISTRATION FEES

Delegate	11 500 CZK
Student	1 000 CZK
Accompanying person	2 300 CZK
Reception only	1 200 CZK

All prices include 21% VAT.

The delegate registration fee includes:

- Admission to the scientific programme of the conference including a poster section and exhibition
- Conference materials including electronic Proceedings and printed Book of Abstracts
- Attendance at the reception
- Participation in the technical excursion
- Coffee breaks and lunches

The student fee includes:

- Admission to the scientific programme of the conference including a poster section and exhibition
- Electronic Proceedings and printed Book of Abstracts
- Participation in the technical excursion
- Coffee breaks



The accompanying person fee includes:

- Admission to the opening ceremony
- Participation at the reception
- Guided walk in the historical centre of Prague on Monday, 22 April from 10:00 to 13:00
- Half day excursion by bus to Kutná Hora (UNESCO site) on Tuesday, 23 April from 12:30 to 18:00

GENERAL INFORMATION

REGISTRATION

The registration desk will be located on the congress floor of the Clarion Congress Hotel Prague (3rd floor) and will be open as follows:

Sunday, 21 April 2013	16:00–20:00
Monday, 22 April 2013	07:30–18:00
Tuesday, 23 April 2013	08:00–18:00

SPEAKER'S READY ROOM

All speakers are kindly asked to provide their presentation in electronic version in the Speaker's Room which is located in a room opposite the Nadir session room. It will be open as follows:

Monday, 22 April 2013	07:30–18:00
Tuesday, 23 April 2013	08:00–18:00

Official languages of the conference

English, Czech / Slovak

Translation

All presentations will be simultaneously interpreted to Czech and English.

Internet

An internet corner can be found in Kepler room near the Poster session.

Coffee breaks

Coffee breaks will be served in the foyer and in Meridian room where the exhibition is located.

Lunches

Lunches for registered participants will be served in Veduta restaurant on 2nd floor of the hotel upon voucher presentation.

Parking

The Clarion hotel offers underground garages of the Fenix shopping centre with capacity of 600 lots. The parking fee is not included in the registration fee.

Certificate of attendance

Upon request, the Certificate of Attendance will be distributed at the registration desk.

Poster session

The poster session is located in the Kepler session room where a board for each poster can be found.



CONFERENCE PARTNERS

The Czech Tunnelling Association ITA-AITES and the organisers of the 12th International Conference Underground Construction Prague 2013 would like to thank conference partners for their support.

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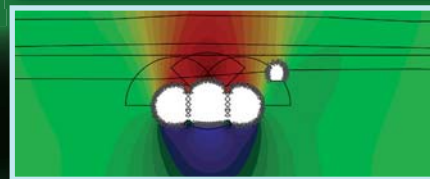
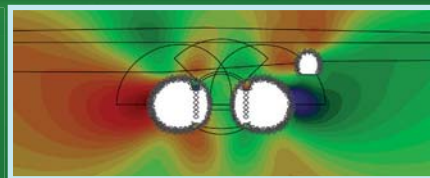
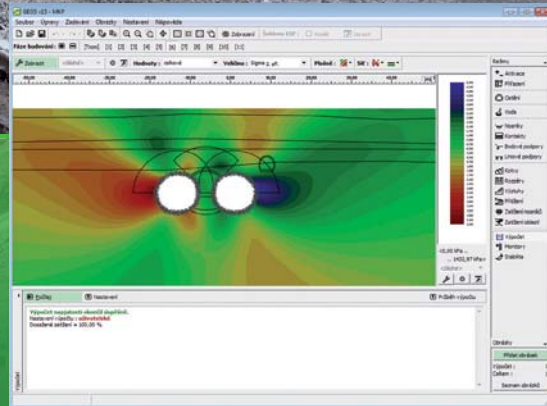


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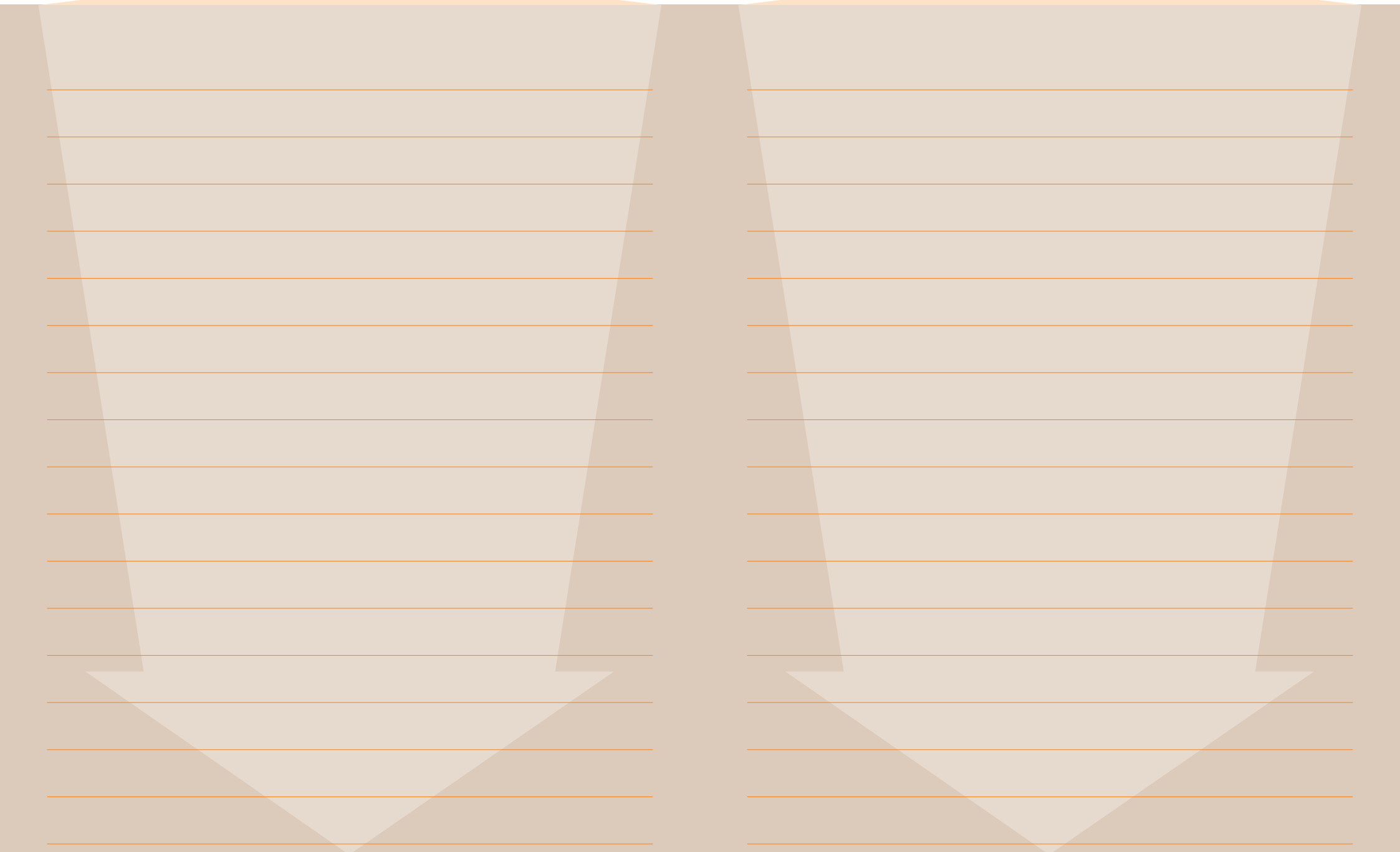
Tunnel design and foundation engineering

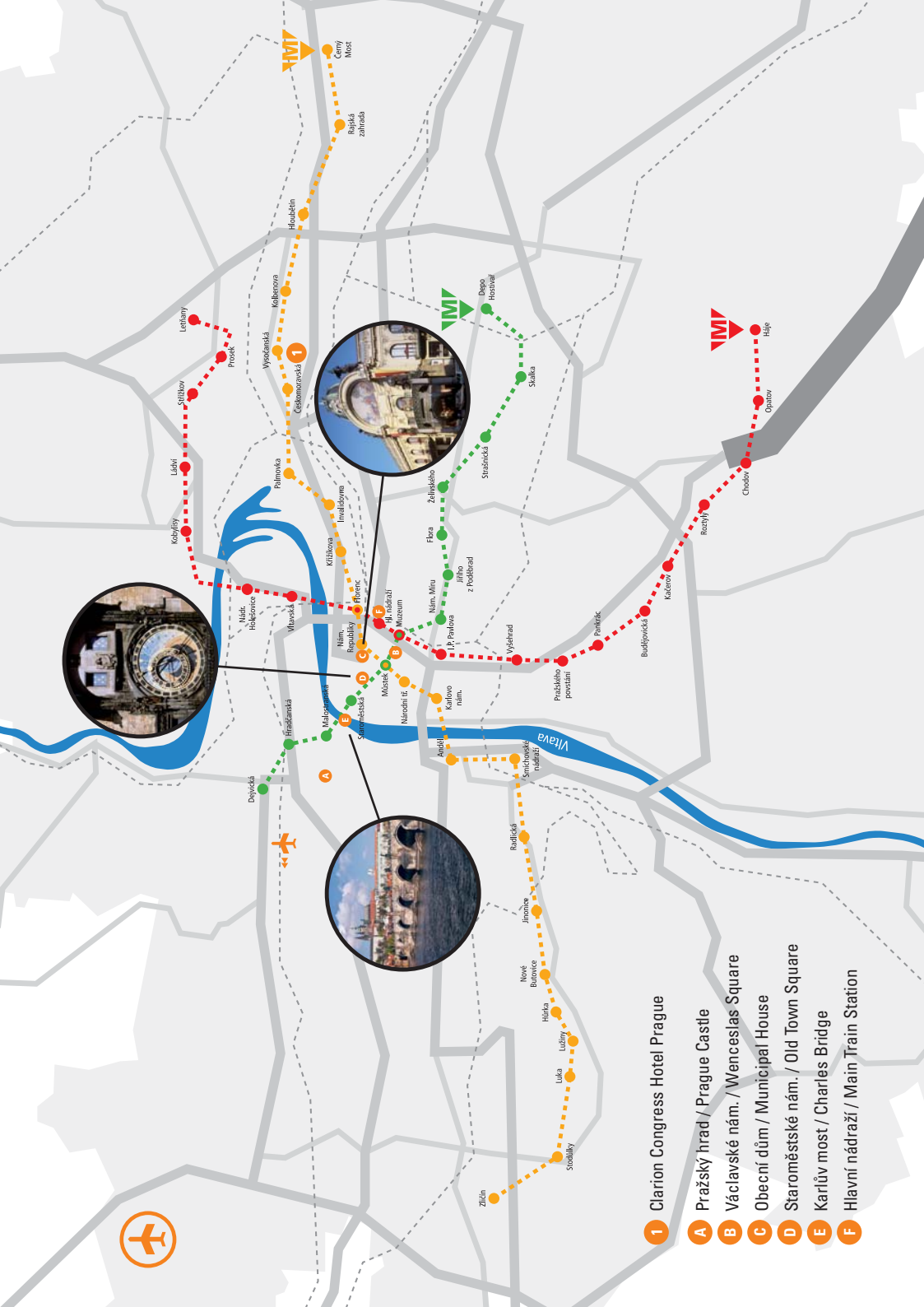
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E Kariův most / Charles Bridge

F Hlavní nádraží / Main Train Station