

ITA - AITES

MEMBER NATION 2008 ACTIVITY REPORT  
NATION MEMBRE - RAPPORT D'ACTIVITÉ 2008

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PART 1: THE ASSOCIATION. / 1ère PARTIE : L'ASSOCIATION.

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\*\*\*\* Name and address, E-mail, web site. / Nom et adresse, E-mail, site web.

-- answer / réponse -----

**NAME:** MAGYAR ALAGÚTÉPÍTŐ EGYESÜLET  
**English NAME:** HUNGARIAN TUNNELLING ASSOCIATION (HTA)  
**Address** (also for Secretariat): (-c/o FÖMTERV Engineering Co.)  
**Lövőház utca 37., H-1024 Budapest, Hungary**

**Presidency :**

**The President:** Pal **KOCSONYA** M.Sc., T.: +361 3459526, F.: +361 3459550,  
E-mail: [info@ita-hun.hu](mailto:info@ita-hun.hu), [p.kocsonya@fomterv.hu](mailto:p.kocsonya@fomterv.hu)

**Vice President:** Zsolt **BALOGH** M.Sc., T.: +361 3714232, F.: +361 2042943  
E-mail: [balogh@uvaterv.hu](mailto:balogh@uvaterv.hu)

**The Secretary:** Tibor **HORVÁTH** M.Sc., Ph.D., T.: +3626 319368, F.: +3626 314667,  
E-mail: [geovil@axelero.hu](mailto:geovil@axelero.hu),

**Members:** Dezső **KISS** M.Sc., T.: +36-1-465-2239  
E-mail: [kiss.dezso@hid.hu](mailto:kiss.dezso@hid.hu)

Gabriella **BENCSIK** M.Sc. T.: +36-1-371-3090  
E-mail: [gabriella.bencsik@hochtief.de](mailto:gabriella.bencsik@hochtief.de)

István **BENKOVICS** M.Sc. T.: +36-72-535-370  
E-mail: [benkovicsistvan@mecsekerc.hu](mailto:benkovicsistvan@mecsekerc.hu)

**Honorary President:** Gyula **GRESCHIK**, M.Sc., Ph.D., Univ. Professor, T/F.: +361 3556182  
E-mail: [greschik@iif.hu](mailto:greschik@iif.hu)

Web-site: [www.ita-hun.hu](http://www.ita-hun.hu)

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\*\*\*\* Type of structure. / Type de structure.

-- answer / réponse -----

- Nonprofit, open Association by the Hungarian law. Consulting firms, contractors, University professors, individual engineers are member of the Association.
  - Practically the whole Hungarian tunnelling community is represented.
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\*\*\*\* Number of members and type. / Nombre de membres et type.

-- answer / réponse -----

- 77 Members: 35 legal entities, 42 individuals,

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\*\*\*\* Title of the journal (if any). Important articles published in 2008.  
Titre éventuel de la revue. Articles importants publiés en 2008.

-- answer / réponse -----

The Association has no journal or regularly published magazine.

**Articles (in different professional journals):**

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\*\*\*\* Major events of the association during 2008.

Événements majeurs de l'association en 2008.

-- answer / réponse -----

- Preparations for WTC 2009 in Budapest go continuously with the participation of organizing and scientific committee.
- II. and III. semester of a postgradual four-semester educational program for engineers in tunnelling.
- Visit and lectures of site works of St Gellért square station on the 4<sup>th</sup> metro line in Budapest on 18th of January 2008.
- Announcement of competition for diploma works in tunnelling
- The 13<sup>th</sup> Széchy Memorial Lecture Day in Budapest on 8th of February in 2008.
- Professional Scientific Day on 21 of February, Lectures about finite element modelling of tunnel lining, Budapest University of Technology and Economics
- The (annual) General Assembly of the Association was held on 17th of April.
- Studytour to construction site on Csepel Island to the Central Sewage water treatment plant on 28th of April.
- Professional Scientific Day in Eger on 6th of June, « City under the city » Visit of site works at reconstruction works of cellar system under the city
- Visit of site works of Rákóczi square station on the 4<sup>th</sup> metro line in Budapest and awarding a prize to the winner of the diploma work competition on 4th of September.
- Participation in ITA-WTC 2008 held in Agra (India) (19-25 September), where Hungary reported the progress of the WTC2009.
- Geotechnika 2008, (Geotechnics in Ráckeve/Hungary, 2008.october 28-30, annual), a regular three-day conference.

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\*\*\*\* Summary in 4 lines of part 1 to be published in TRIBUNE.  
Résumé en 4 lignes de la 1ère partie à publier dans TRIBUNE.

-- answer / réponse -----  
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PART 2: ACTIVITY OF THE NATIONAL WORKING GROUPS.  
2ème PARTIE : ACTIVITÉ DES GROUPES DE TRAVAIL NATIONAUX.  
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\*\*\*\* Summary in 5 to 10 lines of the activity of the working groups.  
Résumé de 5 à 10 lignes de l'activité des groupes de travail.

-- answer / réponse -----

Hungarian Association has no WG-s, it held professional presentations  
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PART 3: UNDERGROUND ACTIVITY.  
3ème PARTIE : ACTIVITÉ DES TRAVAUX EN SOUTERRAIN.  
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\*\*\*\* Up to 20 lines to be published in the activity report in TRIBUNE concerning the  
significant projects under construction or in study.  
20 lignes maxi destinées à être publiées dans le rapport d'activité dans  
TRIBUNE concernant les projets significatifs en construction ou à l'étude.

-- answer / réponse -----

- **News about the Budapest Metro network:**

In Budapest, the 4<sup>th</sup> metro line is under construction. Two parallel tunnels with inner diameter 5,2 m are being built with two TBM-s. The total length of the line is roughly 10 km constructed in two stages.



In the first 7 km long stage there are ten stations with connecting and ventilation tubes between them. The stations are constructed with diaphragm wall box structures as a cut and cover structure, but most of them has parts constructed with shotcrete supported method also. The TBM-s cross the structure ready stations. The connecting and ventilation tubes/tunnels are constructed with mining, shotcrete supported method also.

In 2008 the construction continued with structural works of five stations on Buda side and five stations on Pest side. The two TBM-s constructed half of the total length of 7km long running tunnels and reached the fifth station, St. Gell er square station.



**St Gellért square station** is located beside the river Danube. One of the two main parts of the station is the cut and cover part with diaphragm walls and reinforced concrete horizontal supporting system, the other part is the closed mode structure with shotcrete external lining. (see next three pictures)





**Fővám square station** is located on the other side of the river Danube. The structure of this station is similar to the structure of St. Gellért station. The open method diaphragm wall box structure is between the closed method parts at both end of the station. The shotcrete supported structures are constructed with the help of freezing. (see next picture below)



**Kálvin square station** is the 7th station on the line, there is the connection with 3rd metro line. Here the complete station is inside a diaphragm wall box structure with specially shaped horizontal struts. (see the picture below)



**Rákóczi square station** is the 8th on the line . Similar structural arrangement than St. Gellért square station, but the horizontal supporting system is formed differently. Here the horizontal supports are big horizontal frames with large oval openings in the middle. An interesting part, that on the edge of one frame the names of Rákóczi's lands are readable as a print in the concrete. (see picture below)



- **Tunnels of the M6 expressway.** Four tunnel pairs will be constructed on the section Bátaszék-Bóly of the M6 expressway, which can be developed into motorway.

Tunnel lengths:      Signed „A”: 1356 m, constructed with closed (mining) method: 1271 m  
                              Signed „B”: 422 m, constructed with closed (mining) method: 339 m  
                              Signed „C”: 865 m, constructed with closed (mining) method: 742 m  
                              Signed „D”: 442 m, constructed with closed (mining) method: 344 m

The tunnels are constructed with 2-2 traffic lanes. Width of the carriageway: 8,0 m, width of the traffic lanes: 3,5 m, clearance height: 5,0 m.

Main characteristic data of the tunnel cross sections to be constructed with shotcrete mining technology:

Inner horizontal diameter of the tunnels to be excavated: 10,5 m; inner clearance: 8,8 m; width of the inner concrete lining: 35 cm; the width of the outer temporary shotcrete lining varies between 15-30 cm. The tunnels are constructed with minor laps.

The outer lining structures of the tunnels signed „B” and „C” are completed. In the tunnel signed „B” there are ongoing constructing works of the structures of the inner lining, performed with formwork car. In the tunnels signed „A” and „D” the excavation work and the construction of the outer lining are being performed at the moment.



- The research program aimed at resolving the **final disposal of the radioactive waste of small and medium activity originated from nuclear power stations** has been performed since 2002 within the investment program of the Radioaktív Hulladékokat Kezelő Közhasznú Nonprofit Kft. (Radioactive Waste Material Treatment Nonprofit Ltd).

Between 2002 and 2004 the exploration of the potential disposal area and its surroundings was performed with surface exploration methods. The final report of the exploration work concluded that from the point of view of geology the area was suitable to serve as final disposal of radioactive waste of small and medium activity. Subsequently, the underground exploration began in February 2005. This work is aimed at approaching the potential disposal area explored from the surface and at selecting of the final disposal area.

The actual drift advance commenced on 8<sup>th</sup> February 2005. According to the designs two parallel inclined shafts long 1700 m each are driven with an inner dimension of 21 m<sup>2</sup>. The inclined shafts are connected at every 250 m. Several prospecting chambers are installed in order to perform the analysis of rock and hydrogeological parameters. The drifts pass in granite material on their whole length. The deepening of the drift sections was and is being made using the boring-explosion technology. The drifts are supported with rock anchorage bolts and schotcrete. In January 2008 the total length of the driven drifts exceeded 3500 m.



Over the above mentioneds there are under construction many of tunnelling works for smaller sewers (diam. 1,7-3,5 m) along the country. Many of underground parkings were built recent years, as well.

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\*\*\*\* Other informations to be published as news in the ITA web site.  
Autres informations à publier sur le site internet de l'AITES.

-- answer / réponse -----  
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===== END / FIN =====