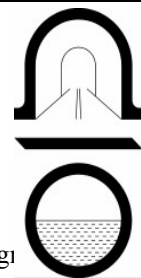


Το δελτίο των Σηράγγων



Ε.Ε.Σ.Υ.Ε. Μέλος της Ι.Τ.Α.

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<http://www.metal.ntua.gr/tunnelling/GTS>

Οκτώβριος 2002

Ο έχων τρεις διαστάσεις λοιπόν είναι τριδιάστατος και ο έχων τριπλάσια διάσταση (τριπλάσιο μέγεθος) είναι τρισδιάστατος.

Και μπορούμε να συνεχίσουμε εμείς με λέξεις όπως τρισμέγιστος, δηλ. είναι τρεις φορές μέγιστος, δίκωχο καπέλο, δηλ. έχει δύο κόγχες, δίφωνο, τρίχορδο, δίδυμο, κλπ.

ΘΕΜΑΤΑ ΟΡΟΛΟΓΙΑΣ

Από τον εκδότη.

Καθημερινά, στην άσκηση του επαγγέλματός μας παρατηρούμε δυσκολίες στη χρήση μιας ενιαίας ορολογίας. Προκειμένου να συμβάλλουμε στην αντιμετώπιση αυτής της έλλειψης προχωρήσαμε στη σύνταξη ενός υπό μόνιμη κατασκευή αγγλικού-ελληνικού και ελληνικού-αγγλικού γλωσσариού, που δημοσιεύεται στην ιστοσελίδα για τις δικές σας συμπληρώσεις. Οι παρατηρήσεις των συναδέλφων, στα λήμματα που δίνονται, θα συμβάλλουν αφενός στη βελτίωση του αφετέρου στην γενικότερη αποδοχή του.

Η στήλη αυτή δίνει επίσης το βήμα σε όποια από τα μέλη μας επιθυμούν να εκφράσουν τις απόψεις τους σε θέματα ορολογίας που τους απασχολούν.

Ας ξεκινήσουμε με τον όρο «τρειςδιάστατος» ή «τριδιάστατος» και «δισδιάστατος» ή «διδιάστατος». Τα περισσότερα λεξικά και οι ορθογράφοι αναφέρουν ως σωστό το «τρειςδιάστατος» και το «δισδιάστατος». Είναι όμως έτσι; Ο συνάδελφος Κ. Ζώτος σε παλαιότερη επιστολή του στο Ενημερωτικό δελτίο του ΤΕΕ εξηγεί:

Το πρόθεμα «τρις» είναι πολλαπλασιαστικό. Χρησιμοποιείται σε λέξεις που θέλουν να μεγεθύνουν την έννοια που ακολουθεί. Π.χ. τρισευτυχισμένος (τρεις φορές ευτυχισμένος), τρισκατάρατος (τριπλά καταραμένος), τρίςβαθα της ψυχής (το πολύ βαθύ μέρος της ψυχής). κ.ά.

Η σωστή λέξη είναι τριδιάστατος (όπως εξάλλου διδιάστατος και όχι δισδιάστατος). Το πρόθεμα «τρι» είναι απαριθμητικό. Π.χ. τριφύλλι (αυτό που έχει τρία φύλλα, τρίπτυχο (αυτό που έχει τρεις πτυχές), και ομοίως τρικάρτο σκάφος, τρίτομο λεξικό, τρίτροχο όχημα, τριήρης ναύς.

ΕΠΙΟΜΕΝΗ ΗΜΕΡΙΔΑ

Η επόμενη ημερίδα θα έχει σαν θέμα το φορτίο που αναλαμβάνει η μόνιμη επένδυση των σηράγγων. Για τις ημερομηνίες θα ενημερωθείτε σε επόμενο δελτίο.

ΠΡΟΣΦΑΤΟ ΣΥΝΕΔΡΙΟ

Το μέλος μας κ. Χ. Τσατσανίφους μας ενημερώνει για το 3ο Διεθνές Συμπόσιο με θέμα: «Γεωτεχνικά Θέματα Υπόγειων Κατασκευών σε Μαλακά Γεωυλικά», που έλαβε χώρα στην Toulouse 2002, 23-25 Οκτωβρίου 2002.

Στο συνέδριο συμμετείχαν 173 εκπρόσωποι από 23 χώρες. Η Ελλάδα εκπροσωπήθηκε με τέσσερις συνέδρους: Κ. Κουκαλιάρου / ΕΓΝΑΤΙΑ ΟΔΟΣ Α.Ε., Κ. Παπακωνσταντίνου / ΕΓΝΑ-ΤΙΑ ΟΔΟΣ Α.Ε., Χ. Ρίζου / ΟΜΙΛΟΣ ΤΕΧΝΙΚΩΝ ΜΕΛΕΤΩΝ Τ.Ε.Π.Ε. και Χ. Τσατσανίφους / ΠΑΝΓΑΙΑ ΣΥΜΒΟΥΛΟΙ ΜΗΧΑΝΙΚΟΙ Ε.Π.Ε. Επίσης συμμετείχαν δύο Έλληνες σύνεδροι προερχόμενοι από το Ηνωμένο Βασίλειο : Δ. Σελεμέτας / UNIVERSITY OF CAMBRIDGE και Σ. Ψωμάς / FABER – MAUNSELL.

Οι εργασίες του συνεδρίου διήρκεσαν δύο ημέρες, την δε τρίτη ημέρα πραγματοποιήθηκαν επισκέψεις σε τέσσερα εργοτάξια κατασκευής των επεκτάσεων του METPO της Toulouse.

Η θεματολογία του συνεδρίου περιελάμβανε τα ακόλουθα θέματα, η επεξεργασία των οποίων έγινε σε αντίστοιχες συνεδρίες:

- Μέθοδοι σχεδιασμού σιηράγγων : ευστάθεια, καθιζήσεις και επενδύσεις σιηράγγων (19 ανακοινώσεις)
- Κατασκευή σιηράγγων με διάτρηση (15 ανακοινώσεις)
- Εδαφικές κινήσεις λόγω ανόρυξης σιηράγγων : μετρήσεις και ανάστροφες αναλύσεις (21 ανακοινώσεις)
- Βαθιές εκσκαφές : σχεδιασμός και ανάλυση (20 ανακοινώσεις)
- Βαθιές εκσκαφές : κατασκευή (10 ανακοινώσεις)
- Αριθμητικές και φυσικές προσομοιώσεις (24 ανακοινώσεις)

Σε κάθε συνεδρία παρουσιάστηκαν τρεις ανακοινώσεις, οι οποίες είχαν επιλεγεί από τους αντίστοιχους προέδρους. Στη συνέχεια, ο Γενικός Εισηγητής της συνεδρίας ανέφερε στις υπόλοιπες ανακοινώσεις επί του θέματος και έθεσε κάποιους προβληματισμούς του ως θέματα προς συζήτηση, η οποία ακολούθησε. Εδόθησαν, επίσης, δύο Ειδικές Διαλέξεις: «Αποτελέσματα του Γαλλικού Εθνικού Ερευνητικού Προγράμματος ΕΥΠΑΛΙΝΟΣ», από τον Y. Leblais και «Γεωτεχνικά Θέματα Προσφάτων Κατασκευών Σιηράγγων στην Ιαπωνία», από τον καθ. Η. Ahaqi. Τέλος, κάποιες ανακοινώσεις παρουσιάστηκαν με μορφή πινακίδας (poster session).

Το συνέδριο διοργανώθηκε από την επιτροπή TC28 Underground Construction in Soft Ground της Διεθνούς Ένωσης Εδαφομηχανικής και Γεωτεχνικής Μηχανικής, στην οποία μετείχε, μέχρι του συνεδρίου, ο X. Τσατσανίφως και τον διαδέχεται ο Π. Βέττας. Το επόμενο συνέδριο θα πραγματοποιηθεί τον Απρίλιο του 2005 στο Amsterdam.

ΠΡΟΣΕΧΗ ΣΥΝΕΔΡΙΑ

2002 November 7-8, Gelsenkirchen GERMANY-1st International PFC Symposium. Theme: Numerical Modelling in Micromechanics Via Particle Methods. Topics: Fracture and damage mechanics of brittle rocks, add of concrete; Static and dynamic behaviour of a sand; Micromechanics of a clay; Blasting and cutting processes in the hard rock; Injections and frac-processes; Seismoacoustics and microseismology; Fatigue processes. ITASCA Consultants GmbH, Leithestr 111, D45886 Gelsenkirchen, GERMANY TLP: 49/209/1475630 or 1475632(fax); EM: pfc-symp@itasca.de.

2002 November 14-15, Turin ITALY-9th International Conference on Underground Space, organized on behalf of the International Organization on Underground Space (ACUUS). ACUUS 2002 Conference Secretary, c/o GEAM-Associazione Gmrisorse e Ambiente, Politecnico di Torino, Corso Duca degli Abruzzi 24, I-10129 Torino, ITALY TLP: 39/011/5647681 or 5647689(fax); EM: geam@polito.it

2002 November 17-20, Tokyo JAPAN-Shotcrete for the Underground Support IX. Japan Tunnelling Association, JAPAN. EM: jta@sspeia.orn.ne.jp

2002 November 25-27, Funchal (Madeira) PORTUGAL-EUROCK 2002, the 2002 ISRM-Sponsored International Symposium, being also the 9th symposium in the Eurock series, organized by the Sociedade Portuguesa de Geotecnia (SPG) (the ISRM NG PORTUGAL), in co-operation with the Madeira Civil Engineering Lab. Theme: Rock Engineering for Mountainous Regions. Topics: 1. Slope Stability (all topics related with

the safety of natural and man-made slopes in mountainous areas, are welcome, with particular emphasis on their mechanical characterization, design procedures, construction techniques, observation and monitoring) 2. Undermountain Works (the conception, design, and execution of tunnels, chambers, mining cavities, and others will be covered, taking a special consideration to the often complex state of stress of mountain regions); 3. Environmental Protection (in agreement with the current trend of environmental concern, and in view of the importance of the landscape preservation, both during and after the construction, many new aspects of Rock Mechanics are expected under this theme); 4. Case Studies (presentations of relevant examples of Rock Engineering projects are invited, in order to contribute to the dissemination of the knowledge among all those interested in this field). L: English. TS: Abstracts (200 words max.)-20020131; Acceptance-20020228; Papers-20020630. The 2002 ISRM Board, Council, and Commission Meetings will be held on / November 23-24, in conjunction with this Symposium. A technical exhibition is foreseen. Satellite meetings and short courses shall be organized. A social programme is being prepared. Post-symposium tours on Madeira, to Porto Santo (Madeira), to the Azores, and to CAPE VERDE are planned. Fee: EUR 900; EUR 100 for accompanying persons. Portuguese Geotechnical Society, c/o LNEC, Av. Brasil, 101, P-1700-066 Lisboa, PORTUGAL. TLP: 351/21/8443389 or 8443021(fax); EM: spg@lnc.pt Madeira Civil Engineering Lab., R. Agostinho Pereira de Oliveira. P-9000-264 Funchal (Madeira), PORTUGAL. TLP 351/291/765223 or 766386(fax).

2002 November 28, Funchal (Madeira) PORTUGAL-Workshop on Volcanic-Rocks, organized by the Sociedade Portuguesa de Geotecnia (SPG) (the ISRM NG PORTUGAL), in co-operation with the Madeira Civil Engineering Lab. in conjunction with the EUROCK 2002 Symposium (November 25-27). Topics A-Mechanical Characterization of Volcanic Rocks (both laboratory and field methods for the volumetric rock characterization will be covered, with relevant examples of applications to Engineering projects); B-Volcanic Constriction Materials (due to the needs of communities living in volcanic regions, most construction materials are obtained from volcanic rock masses, thus creating a body of knowledge that requires systematization and dissemination). L: English. I'S: Abstracts (200 words max.)-20020131; Acceptance-20020228; Papers-20020630. A technical exhibition is foreseen. A social programme is being organized. Fee: EUR 100. Portuguese Geotechnical Society, c/o LNEC, Av. Brasil, 101, P-1700-066 Lisboa, PORTUGAL. TLP: 351/21/8443389 or 8443021(fax); EM: spg@lnc.pt Madeira Civil Engineering Lab., R. Agostinho Pereira de Oliveira, P-9000.264 Funchal (Madeira), PORTUGAL. TLP: 351/291/765223 or 765385(fax).

2002 December 5, Paris FRANCE - Deferred Rupture, a technical meeting, organized by the Comite Francais de Mecanique des Roches (the ISRM NG FRANCE). Dr Sylvie Gender, Secretaire Generale du CFMR, BRGM/CDG/MA, 3, Avenue Claude Guillemin, B.P. 6009, F-45060 Orleans Cedex 2, FRANCE. TLP: 33/2/38643961 or 38643334(fax); EM: cfmr@brgm.fr.

2002, Seoul KOREA R -- 6th International Symposium on Environmental Geotechnology and Sustainable Geotechnology.

2002 -- 28th ITA Annual Meeting, to be held in conjunction with the World Tunnel Congress '2002. L: English; French (only at the General Assembly). Mr Claude Berenguier ITA/AITES Secretariat, 109, Av. Salvador Allende, F-69500 Bron, FRANCE. TLP: 33/78/260455 or 264039(fax); TLX: 370008 CETELYON.

2002 -- World Tunnel Congress '2002, sponsored by the ITA. L: English, French.

2003 February 5-7, Nancy FRANCE - International Colloquy After Mines 2003 - Impacts and Risks Management, an ISRM-sponsored Regional symposium, organized by the Groupement de Recherches sur l'Impact et la Securite: des Ouvrages Souterrains (Research Group on the Impact and Safety of Underground Works) (GISOS), and co-sponsored by the CFMR (the ISRM NG FRANCE). Themes (papers may deal with mines, underground quarries, or natural cavities): 1. Reconnaissance of the cavities; 2. Long-term behaviour of the cavities; 3. Management of the water; 4. Risks management; 5. Surveillance of the works; 6. Social and economic aspects. L: English, French. TS: Abstracts (1 A4-p.)-20020531; Acceptance - 20020730; Papers 20021030. Fee: EUR 300; EUR 180 for students. Secretariat du Colloque Apres-Mines 2003. Laego, B.E 90, F-54501 Vandœuvre-Les-Nancy, FRANCE. EM: apresmines2003@gsos.org

2003 February 9-12, New Orleans LA USA-Grouting and Ground Treatment 2003, organized by the DFI-Geoinst. of the ASCE.. USA. EM: grout2003@dfi.org

2003 February 11-14, Atlanta GA USA-Geosynthetics 2003. Industrial Fabric Association International, 1801 County Rd B W, Roseville, MN 55113-40621, USA. TLP: 1/651/2222508 or 6319334(fax); EM: generalinfo@ifal.com

2003 February 24-26, Cincinnati OH USA-Annual Meeting of the Society for Mining, Metallurgy, and Exploration. SME, 8307 Shaffer Parkway, P.O.. Box 625002, Littleton, CO 801625002, USA. TLP: 1/303/9739550 or 9793461(fax); EM: smenet@aol.com or meetings@smenet.org

2003 April 12-17, Amsterdam NETHERLANDS-29th ITA Annual Meeting, to be held in conjunction with the world Tunnelling Congress '2003. L: English; French (only at the General Assembly). Mr Claude Berenguier, ITA/AITES Secretariat, 109, Av. Salvador Allende, F-69500 Bron, FRANCE. TLP: 33/78/260455 or 264039(fax); TLX: 37 YON.

2003 A 1 12-17, Amsterdam NETHERLANDS-World Tunneling Congress '2003, organized by the Tunnelling and Underground Works Div. of the Royal Institution of Engineers in the Netherlands (KIV-TTOW) (the ITA NG NETHERLANDS), the Netherlands Society of Underground Spatial Planning (VOR), and the Netherlands Centre for Underground Construction (COB), and sponsored by the ITA. Theme: (Re)Claiming the Underground Spare. Topics: 1. Underground Space Use (Underground spare use for other activities than linear transportation, but including usage related to tunnels, such as stations; projects completed, under construction, in the planning stage, or conceptual; highlights for the specific use, special and attractive architecture, user comfort and safety, legal aspects, and urban planning); 2. Underground Space Construction (Design and construction of underground spare structures as defined in (1)); 3. Sustainability of the Underground Spare (In the first place, sustainability of the (urban) environment, of which the underground structure is a part, but also of the facility itself and its structure; fit for purpose provision of underground space in areas without option for above ground provision, or as replacement for above ground activities; design concepts with flexibility of use, and options for future adaptation; studies on the improvement of underground spare projects to the social and economic viability of the area; real experience in relation to the expectations; what methods of measurements are used?; cost effects, and return of investment for the community); 4. Underground Logistic Systems (ULS) (ULS is a local area transport mode specific system for a fast and high capacity distribution, using small containers or pallets, with special stations for the transit to other transport modes; added value by the linkage to the long distance transportation, such as the airway or (highspeed) train, especially if connected to the ULS in other areas; existing systems or concepts for developing an ULS); 5. Immersed Tunnels, and Submerged Floating Tunnels (SFT) (New developments, application of new technology; solutions for special constraints; special design issues; performance of completed structures, such as settlements, and behaviour of joints; developments with regard to SFT projects); 6. Cut and Cover Tunnels (Solutions for project specific constraints; special and new technologies; minimizing of the aboveground interruption; special experiences); 7. Rock Tunnelling (New developments; mountain tunnels); 8. Softground Tunnelling Incl. Shotcrete Methods (SM) (New developments related to any aspect of the softground tunnelling, including the TBM performance, and the NATM experience; micro tunnelling; tunnelling performances and disturbances, encountered on projects; special experiences to be recorded;); 9. Research and Development (Reconnaissance and sensing for a better control of the ground response (obstacles, pressure, settlements, prevention of calamities); research on the effectiveness of the ground improvement, and protection of contiguous foundations; effects of the groundwater pressure response; propagation of vibrations in the operational stage, and by the TBM, during the construction; ground investigation from the TBM; performance of the tunnel structure; tunnelling performance at the installation end; grouting control; beam action of tunnel structures built up from segmented rings; extruded concrete lining, and its potential for the permanent tunnel structure; geometry tolerances of prefabricated tunnelling segments, how to specify, and how to monitor; robotisation of the TBM tunnelling); 10. Design Aspects, and Risk Analysis (Examples of risk analysis studies for tunnelling and underground space projects, with regard to the project realization, and/or operational risks after the realization; effects of minimizing the risk and the project cost, on the design and the construction

method; input sources for risk parameters); 11. Contract Management and Financing (Effects on the contractual procedures by the type of owner; private public body (or bodies); special agency or ppp; technical knowledgeability; financing sources; Built Operate Transfer (BOT); distribution of risks between the owner and builder; which party to be responsible for the design and choice of the construction method?); 12. Member Country Presentations. L: English. TS: 2nd announcement-2001 End; Abstracts (200-300 words)-201120101; Acceptance-20020901; Papers-20020901. An international tunnelling and consultancy exhibition is being prepared. Technical excursions are foreseen. A programme for the accompanying persons is being organized. WTC2003, c/o Congress Secretariat VOR, P.O. Box 411, NL-2800 AK Gouda, NETHERLANDS. 31/182/539233 of 537510(fax); EM: info@wtc2003.nl or vor@betonvereniging.nl

2003 June 15-18, New Orleans LA USA-Rapid Excavation and Tunneling Conference (RETC), organized by the SME, in conjunction with the ASCE. An exhibition will be held. Society for Mining, Metallurgy, and Exploration, USA. TLP: 1/303/9793461(fax); EM: davis@smenet.org

2003 August 4-8, Singapore SINGAPORE - 12th ISSMGE Asian Conference on Soil Mechanics and Geotechnical Engineering, organized by the SE Asian Geotechnical Society (the ISRM MNG SE ASIA), and the National Univ. of Singapore. Theme: GeoASIA 2003: Geotechnical Infrastructure for the New Millennium. Topic: Load reclamation; Mass rapid transit system; Airports and ports; Underground infrastructure; Highways; Geoenvironmental engineering; IT and computer applications. L: English. TS: Abstracts 20020430; Acceptance - 20020930; Papers and 2nd bulletin - 20030228. An exhibition shall be held. Dr C.E Leung, Centre for Soft Ground Engineering, Dept of Civil Engineering, National Univ. of Singapore, 1 Engineering Drive 2, SGP-117576 Singapore, SINGAPORE. TLP: 65/8745113 or 8745097(fax); EM: 12arc@nus.edu.sg Dr Phoon Kok-Kwang, Secretary Organizing Committee for the 12ARC, 2003, Dept of Civil Engineering, National Univ of Singapore, Block EIA, #07-03, 1 Engineering Drive 2, SGP-117576 Singapore, SINGAPORE. TLP: 65 783, 8742149, 8742151, or 7791635(fax); EM: cvepkk@nus.edu.sg

2003 September 8-12, Sandton (Gauteng Johannesburg) S AFRICA - ISRM 10th International Congress on Rock Mechanics, organized by the s African National Inst. of Rock Engineering (SANIRE) (the ISRM NG S AFRICA), and The S African Inst. of Mining and Metallurgy. Theme: Technology Roadmap for Rock Mechanic. Topics: Behaviour of rock masses under very high stress to strength ratios; Design and stability of very deep open pits, and very high rock slopes; Deformation behaviour of rocks and rock masses; Modelling of the fracture and failure of rocks and rock masses; Dynamic effects; Remote excavation, mechanical excavation, including - the tunnel and raise boring; In situ tests, large scale tests, field tests, back analysis; Shallow and deep, large span excavations, civil excavations, caverns, etc.; Rock mass classification revisited-success stories, weaknesses, applications, developments; Probability and risk; Petroleum rock engineering; Environmental rock engineering; Dams, foundations, rock as a construction material; Fragmentation by blasting; Tunnels; Fundamental developments in rock engineering; Rock engineering education. L: English; French, German (only for the abstracts). TS: Abstracts (submitted to the respective NG)-20020531 Acceptance-20020731; Papers (submitted to the respective NG)-20030331; Papers (final submission)20030701. Several workshops/mini symposia are planned. 1 day technical visits, during the conference, will be organized. Panel discussions and preconference workshops shall be arranged. Post-Congress tours to the Lesotho highlands, the Pilanesberg game reserve/Witwatersrand deep mines (9 days), and the Krugex national park/Palabora mine are foreseen. Fee: USD 600 max. The 2003 LSRM Board, Council, and Commission Meetings will be held on September 06-07, in conjunction with this Congress. Mrs Korea Norman, The Conference Co-Ordinator, Technology Roadmap for Rock Mechanics, P.O.. Box 61127, ZA-2107 Marshalltown, S AFRICA. TLP: 27/11/8341273, 8341277, 8338156(fax), or 8385923(fax). web site: www.iarm2003.co.za

2003, Belgrade YUGOSLAVIA-31st Congress of the IAH.

2003, Boston MA USA-12th ISSMGE Pan-American Conference on Soil Mechanics and Geotechnical Engineering

2003, Marrakesh MOROCCO-13th ISSMGE African Regional Conference on Soil Mechanics and Geotechnical Engineering

2003, Singapore SINGAPORE-12th ISSMGE Asian Conference on Soil Mechanics and Geotechnical Engineering.

2004 February 23-25, Denver CO USA - Annual Meeting of the Society for Mining, Metallurgy, and Exploration. SME, 8307 Shatter Parkway, P.O. Box 625002, Littleton, CO 80162-5002, USA. TLP: 1/303/9739550 or 9793461(fax); EM: meetings@smenet.org or smenel@aol.com.

2004 May 22-27 - Singapore - World Tunnel Congress an International Tunnelling Association General Assembly, organised by the Tunnelling and Underground Construction Society (Singapore) (TUCSS), Institution of Engineers Singapore (IES) and the International Tunnelling Association (ITA). Scheme: Underground space development in urban environment. Topics: planning and development of underground space and infrastructures, geological and geotechnical investigations for underground projects, tunnelling in soils, rocks and mixed Bound, tunnel machine and mechanised excavations, design of tunnel lining and various underground supports, deep excavation and earth-sheltered structures, ground improvement and settlement control, tunnel repair and maintenance, safety issues in tunnelling and underground construction, social, political and environmental aspects of underground development. L: English. TS: Abstract-20030415 Acceptance20030615; Papers - 20031015. Prof Jian ZHAO, of Civil and Environmental Engineering, Nanyang Technological University, Block NI Nanyang Avenue, Singapore 639798. FAX: 65/7921650; EM: cjzhao@ntu.edu.sg.

2004 June 21-24,..GeoEng 2004 Theme: "GEO-Engineering for Resource Development" Location: TELUS Convention Centre Calgary, Alberta, Canada

2004 September 27-30, Las Vegas NV USA - MINExpo International 2004, an exhibition of mining related equipment and services. National Mining Association, 1130, 17th Street NW, Washington, DC 20036, USA. TLP: 1/202/4632625 or 4636152(fax).

2004, Helsinki FINLAND - 7th International Symposium on Environmental Geotechnology and Sustainable Development.

ΠΡΟΣ ΤΑ ΜΕΛΗ

Ενημερώνουμε τα μέλη μας για το internet site της Ε.Ε.Σ.Υ.Ε., το οποίο βρίσκεται στη νέα διεύθυνση:

<http://www.metal.ntua.gr/tunnelling/GTS>

Τα μέλη μας, που είναι σε θέση να μας στείλουν ενημερωτικά σημειώματα με φωτογραφικό υλικό για υπόγεια έργα και σήραγγες που κατασκευάζονται στην Ελλάδα, μπορούν να αποστείλουν κείμενα για δημοσίευση στο site και στο Δελτίο των Σηράγγων.