Ελληνική Επιτροπή Σηράγγων και Υπογείων Έργων (Ε.Ε.Σ.Υ.Ε.)

Μέλος της International Tunnelling and Underground Space Association (I.T.A.)

www.eesye.gr

Το Δελτίο Των Σηράγγων

ΝΟΕΜΒΡΙΟΣ 2017

Photo: Stola Josef Centre of Experimental Geotechnics, Prague

Το δελτίο των Σηράγγων

Ε.Ε.Σ.Υ.Ε. - Μέλος της Ι.Τ.Α.

www.eesye.gr

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Editorial

Στο παρόν τεύχος συγκεντρώσαμε όπως πάντα πληροφοριακό υλικό και παραπομπές για τις νεότερες εξελίξεις και έργα των Υπόγειων Κατασκευών. Αυτήν τη φορά επικεντρώνουμε το ενδιαφέρον μας στη "γειτονιά μας". Κατασκευαστικά επιτεύγματα πρωτοπόρα, εντυπωσιακά σύνθετα και μεγάλα έργα, στρέφουν το βλέμμα στις υπόγειες κατασκευές της Νοτιοανατολικής Ευρώπης σήμερα.

Επίσης με τη λήξη της θητείας του προηγούμενου ΔΣ κάνουμε τον απολογισμό της τριετίας που πέρασε. Έπειτα από την εκλογή του νέου ΔΣ, ευχόμαστε "σιδεροκέφαλοι & δημιουργικοί" όλοι οι συμμετέχοντες (εμού συμπεριλαμβανομένης, εάν μου επιτρέπεται να εύχομαι και στο πρόσωπό μου!) και αναμένουμε με μεγάλη χαρά τη συμμετοχή στις εκδηλώσεις και στο έργο της ΕΕΣΥΕ, παλαιότερων αλλά και νεότερων συναδέλφων.

Ως υπεύθυνη έκδοσης του δελτίου, θα ήθελα να σας καλέσω με τη σειρά μου να συνεισφέρετε στον εμπλουτισμό της ύλης και στη διαμόρφωση του περιοδικού, με όποιον τρόπο πιστεύετε. Ευχαριστώ θερμά το συνάδελφο και εκδότη των προηγούμενων τευχών του Δελτίου, Γιάννη Μπακογιάννη για τη βοήθεια και τις πολύτιμες συμβουλές του καθώς και τους Γιάννη Φίκιρη και Γιώργο Τσιφουτίδη για τη συμβολή τους στην ύλη του περιοδικού.

Καλή ανάγνωση!

Μαριλία Μπαλάση

Περιεχόμενα

1. ΤΟ ΝΕΟ ΔΙΟΙΚΗΤΙΚΟ ΣΥΜΒΟΥΛΙΟ ΤΗΣ Ε.Ε.Σ.Υ.Ε.

Έπειτα από τις εκλογές της Γενικής Συνέλευσης της 12ης Ιουλίου 2017, κατά την 1η συνέλευση των εκλεγέντων μελών την 25η Ιουλίου 2017, ορίστηκε ομόφωνα η συγκρότηση του νέου σώματος της επιτροπής. Το νέο Διοικητικό Συμβούλιο της Ε.Ε.Σ.Υ.Ε. που προέκυψε, για τριετή θητεία, έχει την ακόλουθη οργάνωση:

Πρόεδρος:	Ιωάννης Φίκιρης, Πολ. Μηχανικός
Αντιπρόεδρος:	Δημήτριος Αλιφραγκής, Πολ. Μηχανικός
Γεν. Γραμματέας:	Δημήτριος Λίτσας, Πολ. Μηχανικός
Ταμίας:	Ευάγγελος Περγαντής, Πολ. Μηχανικός
Εκδότρια ΔΕΛΤΙΟΥ ΣΗΡΑΓΓΩΝ:	Μαριλία Μπαλάση, Πολ. Μηχανικός
Μέλος:	Δημήτριος Παππάς, Πολ. Μηχανικός
Μέλος	Νικόλαος Ρούσσος, Μετ. Μηχανικός

Εκλέχθηκαν επίσης στις εκλογές ως “Εξελεγκτική και Εφορευτική Επιτροπή” οι:

Γιούτα-Μήτρα Παρασκευή

Μπακογιάννης Ιωάννης

Ραπτόπουλος Σταύρος

Παραθέτουμε απόσπασμα του απολογισμού της περασμένης τριετίας, 2014-2017, με τη λειτουργία και τις δράσεις της ΕΕΣΥΕ

2014

Ίδρυση της Ομάδας Νεαρών Μελών (Young Members Group)

Την Κυριακή 28 Σεπτεμβρίου 2014 διοργανώθηκε από την Ομάδα Εργασίας Νέων μελών της Ελληνικής Επιτροπής Σηράγγων και Υπογείων Έργων η **"Ημερίδα Σταδιοδρομίας για Επαγγελματίες Υπογείων και Γεωτεχνικών Έργων**", ως παράλληλη εκδήλωση του *2nd Eastern European Tunnelling Conference*. Στόχος της εκδήλωσης ήταν η διασύνδεση επαγγελματιών με γνώση ή/και εμπειρία στο χώρο των υπογείων έργων και της γεωτεχνικής μηχανικής εν γένει, με εταιρείες από την Ελλάδα και την Ευρώπη με σημαντική δραστηριότητα στο συγκεκριμένο χώρο. Συνολικά στην εκδήλωση έλαβαν μέρος εννέα (9) εταιρείες και περίπου ογδόντα (80) «υποψήφιοι». Οι εταιρείες που συμμετείχαν προέρχονταν από το χώρο της μελέτης, της κατασκευής και της διαχείρισης έργων:

- Hill International
- Dr. Sauer & Partners
- SYSTRA
- GEOS Ingenieurs Conseils
- GEODATA
- VINCI CONSTRUCTION
- OMIKRONKAPPA Consulting
- Lombardi
- Pini Swiss Engineers

Η εκδήλωση κρίθηκε επιτυχημένη από όλους τους συμμετέχοντες, καθώς δόθηκε η απαραίτητη ενημέρωση για τη δραστηριότητα και τις απαιτήσεις των εταιρειών και συνάμα δημιουργήθηκε το κατάλληλο κλίμα για γόνιμες και παραγωγικές συζητήσεις και επαφές.

Τα μέλη της ομάδας διοργάνωσης της "Ημερίδας Σταδιοδρομίας για Επαγγελματίες Υπογείων και Γεωτεχνικών Έργων" ήταν:
Ιωάννης Μπακογιάννης, Φορτσάκης Πέτρος,
Παναγιώτης Σπυρίδης, Γεώργιος Προυντζόπουλος,
Δημήτρης Λίτσας, Φίλιππος Χόρτης,
Αιμιλία-Μαρία Μπαλάση, Αικατερίνη Χατζηγεωργίου,
Αγγελίνα Δαμιανού, Μαρία Δεμερούτη,
Ιωάννα-Ειρήνη Μπαρμπάκου, Μαρία Στρατάκη,
Άλκηστις Τσιρογιάννη, Βαρδής Ιατράκης, Ανθή Ραχμάνη,
Μαρία Παϊδά, Αικατερίνη Χαλκιά, Παύλος Αστερίου

Διοργάνωση του 2nd Eastern European Tunnelling Conference (EETC 2014, Αθήνα).

Συνολικά 187 εγγεγραμμένοι (αλλά και κάποιοι μη εγγεγραμμένοι) παρακολούθησαν τις εργασίες και παρουσιάσεις το διήμερο 29 και 30 Σεπτεμβρίου 2014, ενώ 40 εξ αυτών συμμετείχαν στην τεχνική επίσκεψη της 1ης Οκτωβρίου στα εργοτάξια της επέκτασης του Μετρό προς Πειραιά. Ιδιαίτερη επιτυχία είχαν και οι συνοδές παράλληλες εκδηλώσεις που είχαν προγραμματιστεί στα πλαίσια του συνεδρίου. Είχε προηγηθεί στις 25 και 26 Σεπτέμβρη η επίσκεψη μελών του Εκτελεστικού Συμβουλίου της ITA στη Σάμο και το Ευπαλίνειο Όρυγμα. Τέλος, το Σαββατοκύριακο 27 και 28 Σεπτεμβρίου πριν την έναρξη του συνεδρίου, η ΕΕΣΥΕ φιλοξένησε την προγραμματισμένη συνεδρίαση του Εκτελεστικού συμβουλίου της ITA.
Την Κυριακή το βράδυ έγινε με την παρουσία εκπροσώπων της ITA η συνέλευση των εκπροσώπων των χωρών της **Ανατολικής Ευρώπης**.

ΕΤΗΣΙΑ ΕΚΔΗΛΩΣΗ ΤΗΣ ΑΓΙΑΣ ΒΑΡΒΑΡΑΣ / ΟΜΙΛΙΑ ΝΙΚΟΥ ΚΑΖΙΛΗ.

Την Πέμπτη 4 Δεκεμβρίου 2014, η ΕΕΣΥΕ διοργάνωσε στην Αίθουσα Εκδηλώσεων του ΤΕΕ εσπερίδα/ομιλία του διακεκριμένου μέλους μας και μέλους τότε του Εκτελεστικού Συμβουλίου της International Tunneling Association (ITA) Νίκου Καζίλη, με θέμα: «Η ΕΛΛΗΝΙΚΗ ΣΗΡΑΓΓΟΛΟΓΙΑ ΤΗΣ ΔΙΑΣΠΟΡΑΣ, ΣΗΜΕΡΑ».

2015

Ο νυν και οι πρώην πρόεδροι της ΕΕΣΥΕ υπέβαλλαν προς την ITA την υποστήριξη της υποψηφιότητας του συναδέλφου Ντίνου Σακκά για το βραβείο ITA COSUF 2015.

Στα πλαίσια της πρωτοβουλίας της International Tunnelling and Underground Space Association (ITA-AITES) να θεσμοθετήσει τα βραβεία ITA-AITES Awards αρχίζοντας από το 2015, είχαμε την υποψηφιότητα του Πέτρου Φορτσάκη για την κατηγορία: *Young Tunneller of the Year*

Ανακήρυξη Ευπαλεινίου Ορύγματος Σάμου ως "Παγκόσμιο Σηραγγολογικό Τοπόσημο" / "International Tunnelling Landmark"

Η Ελληνική Επιτροπή Σηράγγων & Υπογείων Έργων (Ε.Ε.Σ.Υ.Ε.) κατόπιν συστηματικής δουλειάς μελών της κατάφερε να ανακηρυχθεί το Ευπαλίνειο Όρυγμα Σάμου από την Διεθνή Ένωση Σηράγγων (ITA-AITES, http://www.ita-aites.org) ως: "Παγκόσμιο Σηραγγολογικό Τοπόσημο" / "International Tunnelling Landmark"
Πρόκειται διεθνώς για την πρώτη φορά που θεσμοθετείται ο συγκεκριμένος τίτλος στην ITA-AITES, γεγονός που αποτελεί μια ακόμη επιτυχία «διαπραγμάτευσης» της Ε.Ε.Σ.Υ.Ε.

Τεχνική επίσκεψη στις εγκαταστάσεις των υπόγειων υποδομών του Μινσκ.

Όπως είχε συμφωνηθεί κατά τη Γενική Συνέλευση των χωρών της Ανατολικής Ευρώπης που πραγματοποιήθηκε στην Αθήνα στις 28 Σεπτεμβρίου 2014, η αντίστοιχη Επιτροπή σηράγγων της Λευκορωσίας οργάνωσε και διεξήγαγε μια τεχνική επίσκεψη στις εγκαταστάσεις του Μετρό του Μινσκ. Η

εκδήλωση πραγματοποιήθηκε για 2 ημέρες, στις 23 και 24 Σεπτεμβρίου 2015. Το Μινσκ επισκέφθηκαν εκπρόσωποι από την Ελλάδα, την Ουγγαρία και την Τσεχική Δημοκρατία. Την ΕΕΣΥΕ εκπροσώπησε η αντιπρόεδρος κ. Βιβή Γιούτα.

ΕΤΗΣΙΑ ΕΚΔΗΛΩΣΗ ΤΗΣ ΑΓΙΑΣ ΒΑΡΒΑΡΑΣ / ΟΜΙΛΙΑ GIULIA VIGGIANI.

Τη Δευτέρα 30 Νοέμβρη στις 19:00, στην αίθουσα εκδηλώσεων της Πρυτανείας του ΕΜΠ, διοργανώσαμε διάλεξη της κ. GIULIA VIGGIANI, καθηγήτριας στο πολυτεχνείο TOR VERGATA της Ρώμης, με θέμα*: «Evaluating the effects of tunneling on historical buildings: the example of Line C of Romaunder ground».*

Το Σάββατο 19 Δεκέμβρη 2015 οργανώσαμε την τεχνική επίσκεψη ***στις σήραγγες της Ολυμπίας Οδού*** και συγκεκριμένα στη σήραγγα Παναγοπούλας Τ26, το σύμπλεγμα σηράγγων Πλατάνου Τ15 και το σύμπλεγμα σηράγγων Ακράτας Τ13Α και Β.

Την Πέμπτη 19 Νοέμβρη στο Hagerbach της Ελβετίας ανακοινώθηκαν τα βραβεία της ITA για το 2015. Υπενθυμίζουμε ότι ο Πέτρος Φορτσάκης είχε συμπεριληφθεί στη λίστα των υποψηφίων στην κατηγορία του Young Tunneller of the Year, γεγονός ιδιαίτερα τιμητικό για τον ίδιο αλλά και για την ΕΕΣΥΕ.

2016

ΣΕΜΙΝΑΡΙΟ – ΕΣΠΕΡΙΔΑ ΣΕ ΣΥΝΕΡΓΑΣΙΑ ΜΕ ΤΗ HERRENKNECHT AG ΓΙΑ ΤΑ ΜΗΧΑΝΗΜΑΤΑ ΟΛΟΜΕΤΩΠΗΣ ΚΟΠΗΣ ΣΗΡΑΓΓΩΝ

Στις 18 Μαρτίου του 2016, έγινε με μεγάλη επιτυχία μία σημαντική διοργάνωση από την ΕΕΣΥΕ και την ομάδα Νέων Μελών, του Ειδικού Σεμιναρίου για τα Μηχανήματα του ΤΒΜ.

Η εκδήλωση έλαβε χώρα στο Royal Olympic Hotel στην Αθήνα με βασική θεματολογία:

Την Ιστορία, τους τύπους, την λειτουργία των ΤΒΜ.

Το σύστημα των προκατασκευασμένων στοιχείων επένδυσης .

Τα πιθανά προβλήματα κατά την διάρκεια της εκσκαφής και την αντιμετώπισή τους.

Το μέλλον των ΤΒΜ και την εξέλιξή τους.

Την εκδήλωση παρακολούθησαν πάνω από 130 συνάδελφοι και στο τέλος της εκδήλωσης δόθηκε δεξίωση στους συμμετέχοντες.

3rd Eastern European Tunnelling Conference (EETC 2016).

Πραγματοποιήθηκε από 23 έως 25 Μαΐου 2016 στην Πράγα. Την ΕΕΣΥΕ εκπροσώπησε ο συνάδελφος Γιάννης Μπακογιάννης.

Ελληνική Υποψηφιότητα για την Αντιπροεδρία της ITA-AITES.

Η ΕΕΣΥΕ υπέβαλε επίσημη πρόταση στην ITA για την υποψηφιότητα του Νίκου Καζίλη για τη θέση του αντιπροέδρου της. Η σχετική ψηφοφορία διεξήχθη στη Γενική Συνέλευση του Σαν Φραντζίσκο, όπου δυστυχώς ο Έλληνας συνάδελφος δεν εκλέχθηκε.

ΕΤΗΣΙΑ ΕΚΔΗΛΩΣΗ ΤΗΣ ΑΓΙΑΣ ΒΑΡΒΑΡΑΣ / ΤΕΧΝΙΚΗ ΕΠΙΣΚΕΨΗ ΣΤΟ ΜΕΤΡΟ ΠΕΙΡΑΙΑ.

Με αφορμή τον εορτασμό της Αγ.Βαρβάρας, η Ελληνική Επιτροπή Σηράγγων και Υπογείων Έργων (ΕΕΣΥΕ) διοργάνωσε Τεχνική Επίσκεψη στην υπό κατασκευή επέκταση της γραμμής του ΜΕΤΡΟ στον Πειραιά το Σάββατο 17 Δεκεμβρίου 2016. Το πρόγραμμα περιελάμβανε επίσκεψη στον σταθμό Δημοτικού Θεάτρου Πειραιά, στην σήραγγα του επίσταθμου και στην έκθεση «Στην Επιφάνεια» που περιλαμβάνει τα ευρήματα της αρχαιολογικής έρευνας που προηγήθηκε της εκσκαφής του έργου.

2017

Τεχνική Επίσκεψη στο Μετρό Θεσσαλονίκης

Κατόπιν της τεχνικής επίσκεψης στο ΜΙΝΣΚ η ΕΕΣΥΕ ανέλαβε τη διοργάνωση συνάντησης εκπροσώπων των νοτιοανατολικών ευρωπαϊκών χωρών.

ΣΥΜΜΕΤΟΧΗ ΣΤΗΝ ΔΙΕΘΝΗ ΕΝΩΣΗ ΣΗΡΑΓΓΩΝ (ITA)

Η ΕΕΣΥΕ εκπροσωπήθηκε στις ετήσιες Γενικές Συνελεύσεις της ITA και στα Διεθνή Συνέδρια (WTCs) ως ακολούθως:

40η Γενική Συνέλευση και WTC 2104 στο Ιγκουασού από τον κ. Πέτρο Φορτσάκη.

41η Γενική Συνέλευση και WTC 2105 στο Ντουμπρόβνικ από τον κ. Γιάννη Φίκιρη.

42η Γενική Συνέλευση και WTC 2106 στο Σαν Φρανσίσκο από τον κ. Γιάννη Φίκιρη.

43η Γενική Συνέλευση και WTC 2107 στο Μπέργκεν από τον κ. Δ. Λίτσα.

Επίσης, η ΕΕΣΥΕ συμμετείχε στην Οργανωτική Επιτροπή του WTC 2015 με τον κ. Γιάννη Μπακογιάννη

Λοιπές Δράσεις ΕΕΣΥΕ

Έκδοση του «Δελτίου των Σηράγγων»

Η σημαντική περιοδική αυτή έκδοση αποτελεί το μέσο ενημέρωσης της επιτροπή. Συνολικά εκδόθηκαν 7 δελτία με τελευταίο αυτό του Ιουνίου 2017 με μεγάλη την προσφορά του εκδότη και μέλους του Δ.Σ. κου Ιωάννη Μπακογιάννη.

2. ΜΕΤΡΟ ΑΘΗΝΑΣ – ΓΡΑΜΜΗ 4

Σε εξέλιξη βρίσκεται η διαδικασία δημοπράτησης ενός εκ των μεγαλύτερων υπογείων έργων στην Ελλάδα σήμερα. Η γραμμή 4 του Μετρό Αθήνας Άλσος Βεΐκου-Ευαγγελισμός-Φάρος-Μαρούσι, με τις επεκτάσεις προς Βύρωνα/Άνω Ηλιούπολη και προς Περισσό και Εθνική Οδό, σχήματος «U», αποτελείται από 2 σκέλη ακτινικής μορφής, προς Γαλάτσι και Μαρούσι, και ένα κεντρικό τμήμα διερχόμενο από το κέντρο της Αθήνας. Το συνολικό μήκος της γραμμής είναι 33,5 χλμ και περιλαμβάνει 30 συνολικά σταθμούς. Απαρτίζεται από 5 διακριτά τμήματα Α,Β, Γ, Δ, Ε.

Το 1ο τμήμα της γραμμής, **Τμήμα Α - Άλσος Βεΐκου – Γουδί,** βρίσκεται στην παρούσα σε φάση δημοπράτησης.

(Ενημέρωση από την επίσημη ιστοσελίδα της ΑΤΤΙΚΟ ΜΕΤΡΟ)

http://www.ametro.gr/?page_id=9278

Την Πέμπτη 10 Αυγούστου 2017 και ώρα 11 π.μ. ολοκληρώθηκε η διαδικασία υποβολής φακέλων εκδήλωσης ενδιαφέροντος για το διαγωνισμό «ΓΡΑΜΜΗ 4 – ΤΜΗΜΑ Α΄, ΑΛΣΟΣ ΒΕΪΚΟΥ – ΓΟΥΔΗ– Α’ ΣΤΑΔΙΟ ΔΙΑΓΩΝΙΣΜΟΥ».

Στη διαδικασία συμμετείχαν τα εξής σχήματα, με βάση τη σειρά υποβολής φακέλων εκδήλωσης ενδιαφέροντος:

1. ΤΕΡΝΑ ΑΕ- VINCI-SIEMENS AG “TVS”
2. J+P ΑΒΑΞ ΑΕ- GHELLA SpA –ALSTOM TRANSPORT S.A.
3. ΑΚΤΩΡ ΑΤΕ – ANSALDO STP S.p.A – HITACHI RAIL ITALY SPA
4. FCC – ARCHIRODON-ΜΥΤΙΛΗΝΑΙΟΣ

Η παραπάνω εξέλιξη σηματοδοτεί την εκκίνηση της υλοποίησης της Γραμμής 4 του μητροπολιτικού σιδηροδρόμου της Αθήνας, του μεγαλύτερου έργου υποδομής, προϋπολογισμού δημοπράτησης για την πρώτη φάση 1, 45 δις ευρώ χωρίς ΦΠΑ, που εκτελείται αυτή τη στιγμή στην Ε.Ε.

Η Διοίκηση της Αττικό Μετρό εκφράζει την ικανοποίηση της για το ενδιαφέρον και τη συμμετοχή κατασκευαστικών εταιριών από την Ελλάδα και το εξωτερικό, καθώς η ολοκλήρωση του έργου θα συμβάλλει καταλυτικά στην αναβάθμιση της ποιότητας ζωής και των παρεχόμενων υπηρεσιών προς τους πολίτες της Αττικής.

ΓΕΝΙΚΑ

Το πρώτο τμήμα της υπόγειας Γραμμής 4, το τμήμα Α «Άλσος Βεΐκου – Γουδή», έχει μήκος περί τα 13χλμ και 14 νέους υπόγειους σταθμούς, τους εξής: Άλσος Βεΐκου, Γαλάτσι, Κυψέλη, Δικαστήρια, Αλεξάνδρας, Εξάρχεια, Ακαδημία, Κολωνάκι, Ευαγγελισμός, Καισαριανή, Νήαρ Ήστ, Ζωγράφου, Ιλίσια, Γουδή.

Επίσης, για τις ανάγκες του τμήματος Α της Γραμμής 4 θα κατασκευασθούν:

- Σήραγγα **διπλής τροχιάς μήκους περίπου 10,0 χλμ** με μηχανήματα ΤΒΜ.
- Συνδετήρια **σήραγγα μονής τροχιάς** μήκους περίπου 840 μ.
- Δέκα (10) φρέατα.

- Ένα νέο **Κέντρο Ελέγχου Λειτουργίας (ΚΕΛ)** για τη Γραμμή 4 και ένα νέο κτίριο συντήρησης και επισκευών των νέων συρμών που θα χωροθετηθούν σε διαθέσιμο χώρο στο αμαξοστάσιο Σεπολίων.
- Δύο **επίσταθμοι της γραμμής**, πριν το σταθμό Άλσος Βεΐκου (κάτω από την Λεωφ. Βεϊκου) και μετά το σταθμό Γουδή (κάτω από τη Λεωφ. Κατεχάκη).
- Η προμήθεια, εγκατάσταση και θέση σε λειτουργία τροχαίου υλικού **μέχρι 18 αυτόματων συρμών**, που θα απαιτηθούν για την λειτουργία του τμήματος «Α» της νέας γραμμής, ώστε να καλύπτουν την προβλεπόμενη επιβατική κίνηση κατά το έτος 2030.
- Εξετάζεται, επίσης, η προσθήκη ενός νέου σταθμού.

Προϋπολογισμός: **€ 1.450.000.000**

Διάρκεια κατασκευής: **8 έτη**, δηλ. 2019-2026

ΑΝΤΙΚΕΙΜΕΝΟ ΤΗΣ ΣΥΜΒΑΣΗΣ

Αντικείμενο της σύμβασης είναι η εκπόνηση της Οριστικής Μελέτης, της Μελέτης Εφαρμογής (ΜΕ), **η κατασκευή των έργων Πολιτικού Μηχανικού, η προμήθεια, η εγκατάσταση, οι δοκιμές και η θέση σε λειτουργία** του ηλεκτρομηχανολογικού και σιδηροδρομικού εξοπλισμού, η συντήρηση του Έργου, η εκπαίδευση του προσωπικού και η προμήθεια των ανταλλακτικών της Γραμμής 4 του Μετρό, Τμήμα Α΄ Άλσος Βεΐκου – Γουδή. Επίσης στο έργο περιλαμβάνεται η προμήθεια τροχαίου υλικού, καθώς και η κατασκευή Κέντρου Ελέγχου Λειτουργίας και κτιρίου συντήρησης και επισκευών συρμών στο Αμαξοστάσιο Σεπολίων.

Στο αντικείμενο των εργασιών περιλαμβάνονται ενδεικτικά και όχι περιοριστικά:

- Το σύνολο των Οριστικών Μελετών, των Μελετών Εφαρμογής των συμπληρωματικών και όλων των απαιτούμενων μελετών, σύμφωνα με τα οριζόμενα στα τεύχη του Β΄ Σταδίου του Διαγωνισμού.
- Πρόσθετες έρευνες (τοπογραφικές, γεωλογικές / γεωτεχνικές κλπ).
- Μετατοπίσεις δικτύων ΟΚΩ.
- Κυκλοφοριακές Παρακάμψεις.
- Αρχαιολογικές ανασκαφές.
- Γεωμηχανική παρακολούθηση των εκσκαφών.
- Προσωρινές και μόνιμες κατασκευές για τα έργα Πολιτικού Μηχανικού στους σταθμούς, στις σήραγγες και στα φρέατα.
- Εργασίες βελτίωσης εδαφών και ενίσχυσης των μέτρων άμεσης υποστήριξης των σηράγγων, κτλ, όπως και όπου απαιτείται.
- Εργασίες εφαρμογής προληπτικών και προστατευτικών μέτρων ή ακόμα και επισκευών όλων των κτηρίων και λοιπών υποδομών στη ζώνη επιρροής του Έργου.
- Αρχιτεκτονικά τελειώματα στους σταθμούς.
- Εργασίες αποκατάστασης περιβάλλοντος χώρου σταθμών και φρεάτων.

- Εφαρμογή των όρων των εγκεκριμένων Μελετών Περιβαλλοντικών Επιπτώσεων (ΜΠΕ).
- Προμήθεια και εγκατάσταση των απαιτούμενων Η/Μ και Σιδηροδρομικών συστημάτων.
- Προμήθεια του απαιτούμενου τροχαίου υλικού.
- Δοκιμές και θέση σε λειτουργία των Η/Μ και Σιδηροδρομικών συστημάτων.
- Οργάνωση και παροχή συντήρησης του Έργου. Ο χρόνος εγγύησης εκτείνεται σε τρία (3) έτη από την βεβαιωμένη περαίωση του Έργου.
- Εκπαίδευση του προσωπικού λειτουργίας και συντήρησης.
- Επισκευές, αποκαταστάσεις ελαττωμάτων και βλαβών και ό,τι άλλο απαιτείται κατά την περίοδο εγγύησης του Έργου.
- Προμήθεια των ανταλλακτικών του Έργου, όπως αυτά θα προσδιοριστούν στα τεύχη του Β΄ Σταδίου του Διαγωνισμού.

3. ΝΕΑ ΤΗΣ ΙΤΑ (από την ιστοσελίδα και τα ΝΕΑ της ΙΤΑ) ΚΑΙ ΤΩΝ ΜΕΛΩΝ ΤΗΣ

ITA TUNNELLING AWARDS 2017 FINALISTS

From 13th to 16th November the leading international specialists in Tunnelling industry will gather in Paris for the AFTES Congress and a special day on November 15th : a one-day event dedicated to the presentation of the finalists' projects followed by a banquet and the award ceremony : the ITA Tunnelling Awards. Launched in 2015 by the International Tunnelling and Underground Space Association, the first two editions of the ITA Tunnelling Awards gathered more than 450 attendees and 200 candidacies.

A few months before the event, the judges have examined the submitted candidacies and selected a list of finalists for each of 9 categories.

This year, the edition takes place in Paris, a meaningful location for underground space as it is one of the first cities that have used underground space as a lever of development and counts today more than 300km of underground galleries.

The 17-strong expert judging panel, chaired by the ITA President Tarcisio Celestino, has concluded its deliberation and based on the detailed evaluation, 30 entries have been chosen as finalists and will participate in the second evaluation stage to determine winners

MAJOR PROJECT OF THE YEAR-MORE THAN €500 MILLION

Confederation LRT Line	Canada
Delhi Metro Phase 3 expansion	India
Tehran Metro Line 6	Iran
Doha metro	Qatar

PROJECT OF THE YEAR-BETWEEN €50 MILLION AND €500 MILLION

MTR Shatin to Central Link (SCL) - C1103 Diamond hill tunnels	HK- China
Tunnel Emsor Poniente II	Mexico
Citybanan Norrströmstunneln	Sweden
Blue Plains Tunnel	USA

PROJECT OF THE YEAR-UP TO €50MILLION

Fjaerland Hydro power plants	Norway
Tunnel Kennedy	Chile
Southwark to City of London deep cable tunnel	UK

TECHNICAL PROJECT INNOVATION OF THE YEAR

Implementing BIM Concepts to Karavanke Tunnel	Slovenia
Trenchless construction of pedestrian underpass using rectangular box jack tunnel boring machine	Singapore
Construction of bifurcation section of underground expressway. Application of enlargement of TBM tunnel	Japan

TECHNICAL PRODUCT / EQUIPMENT INNOVATION OF THE YEAR

Strength monitoring using thermal imaging (SMUT)	UK
Automatic drilling jumbo	Finland
Rowa train - self driving trackless supply logistic system	Austria

SUSTAINABILITY INITIATIVE OF THE YEAR	
ITO metro Station	India
Anacostia River tunnel, Washington DC	USA
SAFETY INITIATIVE OF THE YEAR	
Telemach cutterhead disc robotic changing system	*HK-China*
BSCU SCL radial joint System	*UK*
MineARC's Guardian Remote Monitoring and diagnostics for refuge chambers	*Australia*
INNOVATIVE UNDERGROUND SPACE CONCEPT OF THE YEAR	
Bostanci Intermodal Hub	Turkey
Cavern Master plan of Hong Kong - Unlock hidden land resources for sustainable city development	HK- China
Underground cemetery in tunnels	Israel
YOUNG TUNNELLER OF THE YEAR	
Juan David Herrera	*Colombia*
Roberto Schuerch	*Switzerland*
Tobias Andersson	*Norway*
Michele Janutolo Barlet	*France*
Antnony Bauer	*USA*

The ITA Tunnelling Awards 2017: Highlight on category "Major project of the year over €500m"

4 finalists under the sign of transportation

November 13-16 2017 will see leading international specialists in the global tunnelling sector attend the AFTES Congress in Paris which will include a special one-day event: November 15 will be dedicated to the presentation of the finalists projects, followed by a banquet and the ITA Tunnelling Awards ceremony.

Launched in 2015 by the International Tunnelling and Underground Space Association (ITA-AITES), the first two ITA Tunnelling Awards events attracted more than 450 attendees and 200 candidacies. Several months prior to this event, judges scrutinise candidate applications to select a list of finalists for each of the nine categories.

One of these categories must be highlighted as it comprises mammoth projects with a budget over €500m. The "Major project of the year" category must also be highlighted this year, as all the finalists have developed transportation projects in big cities.

Tehran Metro (Iran): a high speed project

Costs: €514.6m

One mammoth project to be mentioned is the extension of the Tehran Metro: from the south east of Tehran, the line goes through the city center and ends in North West of the city. The line 6 of Tehran Metro will be 31.2km and will comprise 27 stations. This tunnel project is one of the longest in Iran. Started in 2015, this "lightning-project" has ended only 22 months later, in 2017, and a special record was established as 800m of tunnel excavation was achieved in a week.

This huge construction project required 35 access tunnels to build the "NATM" part of main tunnel and the volume of steel used in this project is 20x more important than the steel used in the construction of the Eiffel Tower. As the line passes beneath city center, various instruments and processes were used to lower the risks due to surface/subsurface obstacles (24 floors building, bridges, other metro tunnels, aqueducts…): ground leveling points, building settlements points, convergence pins, extensometers, inclinometers, crack meters…

Doha Rail Metro (Qatar): Tunnelling under sensitive structures

Costs: 16.2 bn€

Tunnelling beneath city centers, beneath buildings and especially specific structures has emerged as an increasing concern in the tunnelling industry. The Qatar Rail Metro is one good example of efficient management of mining under sensitive structures.

The Doha Metro includes the construction of twin bored tunnels and 31 stations. Planned to be operational in 2020, the elevated and at-grade rail network will be built in 2 phases. First phase is the Gold Line, Red Line and Green Line. Then, the second phase includes an additional Blue Line.

Not only the project saw 20 TBMs burrow silently beneath the city without a hint of disruption to the population, but the twin bore single track tunnels were constructed using EPB technology, in order to mitigate the risks related to surface settlements, collapse, rapid water ingress through karstic features, excavation under sensitive structures or below man-made sea water channels, with the application of face pressure.

Delhi Metro Phase 3 Expansion Networks (India): Safety first for "the" mega project in India

Costs: 4.2 bn€

"Safety First!" was probably the leitmotiv of the metro phase 3 expansion projects in Delhi. This project is one of the most ambitious underground

construction work in India as it comprises a 106km of tunnelling and 34 stations and had to cope with many technical challenges such as unforeseen geological conditions, densely populated areas

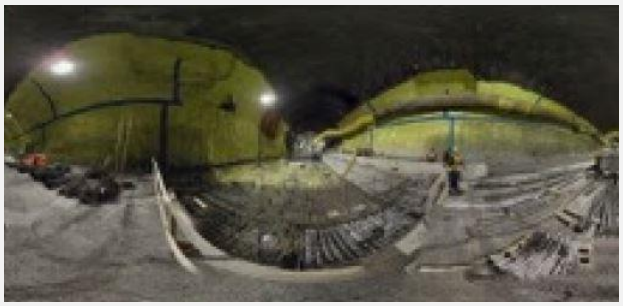
For 5 years, and thanks to many safety initiatives the accident occurrence rate has been reduced which has led to Lost Time Injury Frequency rate (LTIFR) less than 0.02 in Phase - III as compared to 0.19 in Phase - II.

Internal monitoring through site inspections and safety management initiatives such as Safety Trainings, Weekly Site Safety Walk & Monthly Safety Review meetings, were organized in When achieved, the project will reduce vehicle emission of various gases to the tune of 3.1 Million tonne per year. Fuel consumption will be reduced of 141353 thousand litters/ year.

Confederation LRT Line (Canada): a delicate excavation

Costs: 1.4 bn€

The Confederation Line is a state-of-the-art LRT system and Ottawa's largest transportation infrastructure project since the building of the Rideau Canal.



The Confederation Line is a P3 project between the City of Ottawa and Rideau Transit Group (RTG) funded by the Canada Federal Government and the Province of Ontario. The tunnel will span 2.9 kilometers, be on average 15 meters below the surface and will feature three stations in the Confederation Line project - Lyon, Parliament and Rideau.

In all, the project comprises thirteen stations and a 12.5-kilometre route, with 10 kilometers running above ground and 2.5 kilometers underground. Three stations will be located underground in the new downtown tunnel. The main excavation challenge for Lyon and Parliament stations was the close proximity of the basements. The stations are 18m wide in between buildings, 20m apart. The construction process foresaw an excavation by stages in order to transfer the ground loads from the arch to the invert through the cavern support, avoiding the loads into the basements.

4. ΕΡΓΑ ΣΤΗ ΝΟΤΙΟΑΝΑΤΟΛΙΚΗ ΕΥΡΩΠΗ

(Πηγή Hurriyet Daily News)
http://www.hurriyetdailynews.com/underwater-pedestrian-tunnel-crossing-istanbuls-bosphorus-to-go-out-to-tender-.aspx?PageID=238&NID=110452&NewsCatID=341

Underwater pedestrian tunnel crossing Istanbul's Bosphorus to go out to tender

Fatma Aksu – ISTANBUL

(Photo from Hurriyet Daily News

An underwater pedestrian tunnel connecting Istanbul's European and Asian sides will go out to tender on March 27. The two-kilometers tunnel, with a diameter between 12 and 15 meters, will connect the Kabataş district on the European side to Üsküdar district on the Asian side and will include moving walkways as well as bicycle and electric vehicle lanes.

The tender for drilling works was held in December 2016 and according to the tender agreement drilling works must be completed by March 12. Drilling work for the project, designed by the Istanbul Municipality's engineering and architecture company BİMTAŞ, was sold to an Ankara-based construction company for 7.5 million Turkish Liras.

Istanbul Mayor Kadir Topbaş previously dubbed the tunnel a "crazy project" that heralded his "mastership period" as mayor. The entire project is expected to finish before Topbaş's third term ends in 2019.

The tunnel will have two levels and will run 46 meters below the surface of the Bosphorus. On its top floor, pedestrians and cyclists will be able to commute between the continents, while on the bottom floor rubber tire-vehicles and electric cars will be able to drive.

The tunnel will connect to a transportation transfer center, which is currently under construction in Kabataş and is designed in the shape of a seagull with open wings located on a 10,000-square-meter pedestrian concourse. Kabataş was shut down to maritime traffic in July.

The transfer center is expected to have multiple interchange platforms to sea and road traffic with the city's rail system.

Currently, commuters in Istanbul can use ferries, the Bosphorus Bridge (renamed the July 15 Martyrs' Bridge after the failed coup attempt of July 2016), the Fatih Sultan Mehmet Bridge, the Yavuz Sultan Selim Bridge, the Marmaray underwater rail system, and the Eurasia Tunnel,

which is the first underwater highway tunnel, to cross from one continent to the other.

The Eurasia Tunnel is the road most recently put to use, having opened on Dec. 20, 2016 with a ceremony attended by President Recep Tayyip Erdoğan and Prime Minister Binali Yıldırım.

The Eurasia Tunnel pledged to reduce travel time between the two sides from an average of around 100 minutes during rush hour to just 15 minutes, contributing to the economy by decreasing fuel consumption and reducing carbon emissions.

March/05/2017

(Πηγή Rail Turkey)

https://railturkey.org/2017/04/06/tl-10-bn-for-istanbuls-new-metro-lines/

TL 10 bn for Istanbul's new metro lines

By Onur Uysal – April 6, 2017

This year, TL 10 bn is allocated for Istanbul's metro and suburban train projects.

This budget, including 9 metro projects of Istanbul Municipality, 4 metro projects undertaken by Transportation Ministry and Marmaray, is 50% more than the railway investment budget of Turkey including high speed train projects.

The greatest amounts within this budget are for metro connection to new airport, Göztepe-Ataşehir-Ümraniye metro and Kabataş-Meciyeköy-Mahmutbey metro.

Here below are the details of these 14 projects:

	Hedef Bitiş Yılı	2017 Bütçe	2017 Sonu Tamamlanma Oranı
Gayrettepe - 3rd Airport Metro	2022	2,115,704	45%
Marmaray	2019	1,411,768	87%
Göztepe-Ataşehir-Ümraniye Metro	2020	1,122,375	59%
Kabataş-Mecidiyeköy-Mahmutbey Metro	2021	1,028,019	58%
Kaynarca-Pendik/Tuzla Metro	2020	858,460	42%
Çekmeköy-Sultanbeyli Metro	2020	735,098	39%
Üsküdar-Ümraniye-Sancaktepe Metro	2017	619,195	95%
Ataköy-İkitelli Metro	2019	403,480	26%
Pendik-Sabiha Gökçen Metro Connection	2018	334,653	76%
Yenikapı-Sefakay Metro	2018	279,591	10%
Mahmutbey Bahçeşehir Metro	2020	270,333	10%
Bakırköy-Kirazlı Metro	2020	223,870	25%
Kirazlı-Halkalı Metro	2022	128,605	4%
Başakşehir-Kayaşehir Metro	2020	108,135	9%
Sum		**9,639,286**	**54%**

Üsküdar-Ümraniye-Sancaktepe will be commissioned this year. The reamining budget (5%) is for additional metro cars.

Two metro projects, Sabiha Gökçen airport metro connection and Yenikapı-Sefaköy metro are expected to be commissioned by next year.

The Marmaray project, where all citizens are looking forward to its completion, is expected to be commissioned by early 2019.

(Πηγή Rail Turkey)

https://railturkey.org/2017/02/01/marmaray-works-restarted/

Marmaray works restarted

By Onur Uysal – February 1, 2017

The engineering works have restarted at Marmaray after three years.

The works have mainly focused on reconstruction of stations and continues at both European side (Atakoy, Zeytinburnu) and Asian side (Kartal, Bostanci, Kiziltoprak). The construction works at Selamicesme bridge will start by today, which will be replaced by an underpass.

As mentioned in Rail Turkey 4 months ago, Turkish contractors were included in the project. Kalyon-Kolin-Cengis consortium has started working for this project by the beginning of this year. KKC Marmaray staff started to be seen in construction areas.

The second phase of the Marmaray Project, renewal of the suburban lines, had almost stopped due to the disagreement between TCDD and contractor. Transport Minister Mr Arslan had given speech about this problem and stated that the project will be completed by the extraordinary press of the goverment.

The new deadline of the Marmaray Project is announced as 2018. By completion of Marmaray Project, continious suburban service between Gebze and Halkali, continious freight train service between Asia and Europe and high speed train service to Haydarpasa (the city center at Asian side) will start.

(Πηγή: Infrustructure Reimagined)

http://www.infrastructure-reimagined.com/karavanke-tunnel/

SLOVENIA

BIM on Karavanke Tunnel

By Teress Elliot, 10/19/2017

Asfinag and DARS (Motorway Companies in the Republic of Austria and Slovenia) hired Elea iC to support **the design of the second tube for the Karavanke tunnel project**, an 8.0 km long, single tube, bidirectional motorway tunnel connecting Austria and Slovenia.

It was originally designed as a twin tube tunnel, but due to lack of traffic, it was built as a single tube. After commissioning, increasingly higher traffic, support deterioration and lack of safety measures meant that a second tube was required to efficiently operate the tunnel in the future.

Goal of the project: Pilot BIM

The goal was systematic implementation of BIM methodology to the project and exploring the benefits and challenges through planning, executing and controlling BIM related activities including the following:

Creation of comprehensive Employers Information Requirements that the client will also use in future projects

Creation of comprehensive BIM execution plan that the client will also use in future projects

3D modeling (Design and As-built models) 4D and 5D modeling, Model-based quality control

Geological and Geotechnical modeling

Use of models in operational phase

Further development of existing CAFM – Computer Aided Facility Management system.

Unique challenges

What makes this project unique is the complexity of the project scope including tunnel, highway and several minor roads, 3 bridges, retaining structures, portal buildings, utilities, disposal areas, etc. Also, there is the complexity of project organization (2 client organizations, 1 supervision company, 10 design companies currently involved in BIM design process) and the variety of BIM software (5 different design authoring tools) used on the project which encourages the team to push the limits of an open BIM approach.

App. 190 partial models are being exchanged across disciplines and coordinated in 5 Coordination models using IFC and BCF standard for interdisciplinary collaboration.

A closed BIM approach is used in each discipline to maintain the maximum efficiency of design process. In order to improve the interoperability and ensure quality of BIM deliverables a tunneling data structure is being developed on the basis of existing IFC standards so it can be used for advanced BIM uses (e.g. 4D, 5D modeling, CAFM, etc.)

Revit in connection with Dynamo Scripting and special add-ons is being used for specific needs in case of modeling long and complex structure – the tunnel. This enables efficiency in modeling of long, longitudinal segments and detailing.

The exchange of 4D and 5D models between different software solutions (design team, supervision and future contractor) presents another challenge that is and will be managed with custom interoperability solutions.

Planning & preliminary engineering

The team improved the overall project development process with better understanding of special clients`needs (e.g. use of project information in operational phase, transparency of investment – improved project controlling, etc.). The analysis of requirements led to better planning of overall project development–documented in the comprehensive BIM Execution plan. BIM in early design stages provided the ability to visualize and communicate the design with all project stakeholders. It was the first time that the all planned facilities, geology and infrastructure (scattered across 3 different project coordinate systems – Austrian, Slovenian national coordinate system and local coordinate system) was federated in one single model. The initial quantification and cost estimate (4D and 5D models) were created at that stage, which resulted in better understanding of project.

Federated Model

Detailed design

The team improved consistency of project documentation through performing constant quality control checks (identification of inconsistencies between partial models, evaluation of design changes,

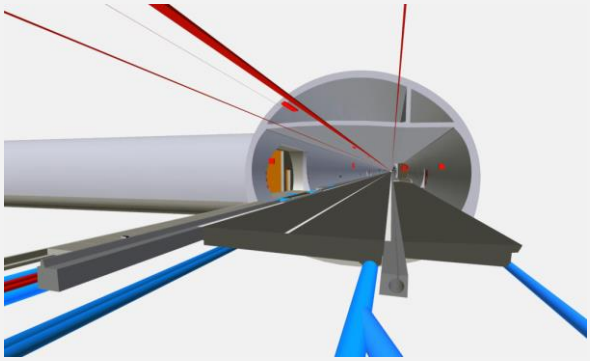
communication and implementation of design changes). Structural models were also used for reinforcement detailing which enabled time savings as several designers could model reinforcement in the same models simultaneously.

Design changes during collaboration process and design development were implemented to other discipline models (and consequentially to drawings that were generated from models) more efficiently using BCF standard for model based communication.

5D model generated out of app. 160 partial models was used to double-check the quantities provided by different design disciplines and to create more accurate cost estimates.

Cost estimates were presented to the client in various reports, spreadsheets and simulation.

Maintenance services were able to comment design solutions using accurate 3D models right from beginning optimizing design against equipment available.



Integrated analysis & simulation

Autodesk Navisworks Manage was used to federate all partial models which were created in 3 different coordinate systems and linked the elements with time schedule created in Microsoft Project resulting in comprehensive 4D model which was used to analyze and optimize time sequence of activities. The benefit was that the project team was able to visualize time schedule and communicate suggestions for improvement. The same time schedule and partial models were used to create 5D model in RIB iTWO software and analyze the cost estimates. 3D geological model combined with Revit Tunnel models presented a basis for 3D numerical analysis for tunnel excavation and support. In house program code was developed allowing direct communication between geological model and numerical models.

Communication & collaboration

Internal collaboration – closed BIM: Revit Server is used internally by disciplines that are using Revit as design authoring tool. Integrated communication and model sharing speeds up the internal coordination and design development, as many modelers can work on the same models simultaneously. Interdisciplinary collaboration – open BIM: IFC and BCF standard is used to share model between disciplines. The reason for this is that there are currently 10 design companies involved in the design development and a variety of authoring tools are used (Revit, Civil 3D, Allplan, ArchiCAD, Urbano). A Common Data Environment (ownCloud and BIM Collab) is used to exchange files between disciplines and to link – synchronize IFC reference models and BCFs with design authoring tools, coordination models, 4D and 5D models. All other documents (drawings, reports, etc.) are also exchanged and stored on the same platform.

By using LiDAR for scanning the existing parts of the tunnel we were able to analyze requirements for future excavations, reprofiling and backfilling. Raw data from LiDAR was used elsewhere to produce accurate surface models. Augmented reality was introduced in the tunnel for better understanding of the surrounding geology. By using Virtual reality models we were able to efficiently communicate with several key stakeholders. Design

solutions are readily available anywhere with sufficient data transfer by using stable cloud based solution. The model will be constantly updated during excavation in construction stage in order to gather all site information in 1 model for possible needs in the future.

Deliverables

Apart from traditional project deliverables (Drawings, Technical reports, etc.) also the following BIM deliverables are part of the submittal packages:

Design phase

BIM Execution plan (BEP).

Partial (discipline) 3D models provided in IFC standard format

Coordination models and quality control check reports

4D and 5D models provided in a form of various spreadsheets, reports and simulation

Construction phase

As built models in IFC standard format with linked as built documentation needed for facility management (central repository of as built data)

Coordination models and quality control check reports

5D models to be used for progress reporting and controlling by contractor and supervision

One of the main requirements that is implemented through BEP in the modeling process and deliverables is a consistent definition of Level of Detail (LoD) and Level of Information (LoI). Classification of tunneling elements and attribute tables were created in collaboration with the Client (Supervision and FM Department) and implemented in models on special – project specific IFC Property set. The attribute tables will be further developed during the project development and incorporated in the models.

Results

Consistency and accuracy of design documentation (Models, Drawings, BOQs, Cost estimates, Time schedules, Progress reports, etc.)

Improved communication between project stakeholders (Common Data Environment, Model-based revision, visualizations, Model-based communication)

Improved cost estimation and control, optimization of construction technology (sequencing) Controlling of construction progress and field changes Optimization of facility management processes

(Photos: Infrustructure Reimagined)

(Πηγή: Romania Insider)

https://www.romania-insider.com/bucharest-metro-line-5-opened-h2-2018/

ROMANIA

New Bucharest metro line to open in 2018

By Romania Insider, 11 July 2017

Bucharest metro operator Metrorex has completed the excavations at the future metro line 5 connecting the Drumul Taberei residential area to the center of the city.

Trains will be able to run to on this new line from the second half of 2018, said Marian Aldea, Metrorex general director. “We are marking an important milestone of this project, finishing the excavations, removing the shield, finishing the last tunnel,” said Aldea.

The subway line has seven kilometers, ten stations and a depot. The infrastructure work will be completed by the end of this year, and the finishes will be done in the first half of 2018, Aldea added.

Metrorex will use trains from the old fleet on the metro line 5. The company also plans to acquire 13 new trains, but this could take a year and a half or even two years.

editor@romania-insider.com

Photo: Romania Insider

(Πηγή: Brenner base Tunnel)

https://www.bbt-se.com/en/information/news/detail/news/over-3800-visitors-at-the-open-day-on-the-isarco-construction-site/

AUSTRIA - ITALY

Over 3,800 visitors at the "Open Day" on the Isarco construction site

09/24/2017

On Sunday, September 24, the 6th edition of the annual "Open Day" took place. More than 3,800 people took the opportunity to visit the construction sites of the Brenner Base Tunnel and to find out about the construction progress.

It was a premiere for the construction site Isarco river underpass: for the first time it was made accessible to the public, and promptly it met with great interest in the population. As usual, the day began with a Holy Mass.

Subsequently, all interested persons were given the chance to take 30-minute guided tours through the tunnels of the construction site Isarco.

They also experienced a "laser show" as well as the simulation of a blast. It was also possible to visit the Mules construction site, on bus tours guided by BBT SE staff. There, the current work was explained in detail. In particular, some of the components of the tunnel boring machine could be admired in Mules. The impressive machine will start operation northwards in the exploratory tunnel within a few months. The guided tours took place uninterruptedly until the late afternoon.

Another highlight was the mini-train "BBT-Express", which took the visitors on a tour across the northern part of the Isarco construction site. There, the shafts necessary for the crossing of the river Isarco are currently being built.

A varied programme entertained the guests throughout the day. This year, the "Roadshow Electromobility" was a highly appreciated novelty, which enabled visitors to test drive electric cars for free.

The visitors, which had arrived even from abroad, were enthusiastic: proof of the continuing great interest in this important European project.

(Photos: Brenner Base Tunnel)

5. ΝΕΑ ΑΠΟ ΤΟΝ (ΥΠΟΛΟΙΠΟ) ΚΟΣΜΟ

(Πηγή Tunnelling Journal Newsletter 09.08.2017)

http://tunnellingjournal.com/news/jacobs-engineering-group-inc-to-acquire-ch2m/

Jacobs Engineering Group Inc to acquire CH2M

By Tris Thomas on August 2, 2017

Jacobs Engineering Group Inc. and CH2M HILL Companies Ltd. have announced that they have entered into a definitive agreement under which Jacobs will acquire all of the outstanding shares of CH2M in a cash and stock transaction with an enterprise value of approximately $3.27bn, including approximately $416M of CH2M net debt.

A statement from Jacobs Engineering Group Inc. said, ‘The combination unites two industry-leading, innovative companies with complementary capabilities, cultures and relationships, resulting in a differentiated, end-to-end value proposition for clients and an enhanced platform for sustainable, profitable growth.’ ‘With trailing twelve month revenues of $4.4bn and a team of 20,000 employees, CH2M is a world-renowned design, engineering and program management firm, and is a leader in key infrastructure and government service sectors that Jacobs has previously targeted for growth, including water, transportation, environmental and nuclear. Applying CH2M’s advanced design,

technical and program management expertise across Jacobs' global footprint will enable the combined company to deliver more solutions to more clients in both the government and private sector.'

Steve Demetriou, Jacobs' Chairman and CEO commented, "By increasing our industry reach and adding to our already extensive skills, this transaction enhances our value to our clients and bolsters Jacobs' position as a premier consulting, design, engineering, construction, and operations and maintenance technical services firm. CH2M brings to Jacobs a talented, engaged team with capabilities and values that are very complementary to our own. Together, we will bring more solutions to our clients, give more opportunity to our employees and create increased value for Jacobs' shareholders. In addition, this transaction is consistent with our M&A criteria, accelerating our ability to achieve our financial growth targets and propelling Jacobs toward our vision of providing innovative solutions for a more connected, sustainable world."

"We are delighted about the prospects of combining CH2M with Jacobs," said CH2M Chairman and CEO Jacqueline Hinman. "Since late 2014, we've been transparent about our plans to pursue an ownership transition, providing sustained access to capital for growth. Considering all of the options, we focused on securing greater opportunities for our employees, delivering superior value to our clients and enhanced value for our stockholders, all while continuing to serve the higher purpose our company is known for, providing sustainable solutions for a better world. Throughout this time, we strengthened our business portfolio and performance, which put us in a position to deliver the best possible value and outcome for the future of the company. This was the unanimous choice of our Board, and the value Jacobs will provide to our stockholders, reflects genuine appreciation for our employees and the world-class work we deliver to our clients."

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http://tunnellingjournal.com/news/hs2-contracts-officially-signed/

HS2 contracts officially signed

By Tris Thomas on August 2, 2017

The UK's HS2 project took a major step forward today, with the formal signing of contracts to deliver the tunnels, bridges and earthworks that will carry the first phase of the UK's new high speed railway from London to Birmingham in 2026.

High Speed Two (HS2) Ltd Chief Executive, Mark Thurston, was joined by representatives from SCS JV, Align JV, CEK JV and Balfour Beatty VINCI, in a signing ceremony at the company's Birmingham head office. The winning companies, whose names were released by the Department for Transport last month, will deliver what will be the biggest investment in UK's transport

infrastructure since the building of the motorways.

A team made up of Skanska, Costain and STRABAG (SCS JV) will build the first section of the route, which is in tunnel between Euston and Old Oak Common and onwards to Northolt. Welcoming the contract award, Peter Jones, Executive Director and SCS JV board member said: "We are delighted to have been awarded these major contracts by HS2 which follow on from the South Enabling Works Contract awarded last year.

The awards are further testimony to the SCS collaborative approach and our strong track record in applying technology-based innovative solutions in the delivery of large-scale projects."

Align JV, a team made up of Bouygues, VolkerFitzpatrick and Sir Robert McAlpine will build the next stage, including the Colne Valley Viaduct and Chilterns Tunnel. Welcoming the contract award, Jérôme Furgé, Align Project Director said: "I have worked on many major projects around the world, and find it a special privilege to be working on HS2. This project will require a unique level of collaboration between all of us and the highest industry standards, expected by HS2, will be implemented in order to obtain the very best outcome. My Align colleagues and I are delighted to be part of the challenge to deliver a world-class asset to the UK."

The largely rural stages between the Chilterns Tunnel and Long Itchington will be built by a team made up of Carillion, Eiffage and Kier (CEK JV). Welcoming the contract award, Sean Jeffery, Executive Director and Chairman of CEK JV Board said: "We are delighted to have been selected to help deliver this major infrastructure project and look forward to working in partnership with HS2. Our involvement in this project will enable us to create many new jobs and training opportunities as well as working with a diverse range of supply chain businesses from across the UK."

A team made up of Balfour Beatty and VINCI will complete the route, taking the line north past Birmingham Airport and into the new Curzon Street station in the centre of Birmingham, as well as onward to a connection with the existing West Coast Mainline at Handsacre. Welcoming the contract award, Mark Cutler, Balfour Beatty VINCI HS2 Managing Director, said: "I am proud that our long-standing joint venture has been chosen to deliver these two important and complex sections of HS2.

This iconic rail infrastructure project will create significant opportunities for the UK construction industry and enable long term benefits in skills, jobs and regional prosperity. We look forward to building on our successful track record of major infrastructure projects, and playing our part in the delivery of HS2."

The contracts are two-stage, with the contractors spending the first 16 months working collaboratively with HS2 Ltd on the

detailed design before construction begins around 2018/19. Preparatory work has already begun on the project with geological investigation underway across the route and ecological and archaeological work due to begin soon.

Περισσότερα για το έργο στην ιστοσελίδα https://www.gov.uk/government/organisations/high-speed-two-limited

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(Πηγή: The Straits Times)
http://www.straitstimes.com/singapore/pub-awards-first-set-of-contracts-to-build-deep-tunnel-sewerage-system-phase-2

PUB awards first set of contracts to build Deep Tunnel Sewerage System (Phase 2)

PUBLISHED SEP 11, 2017

Jose Hong

SINGAPORE - PUB, Singapore's national water agency, appointed three contractors on Monday (Sept 11) to design and build the first batch of deep tunnels and link sewers for the Deep Tunnel Sewerage System (DTSS) Phase 2.

Over the next seven years, the three contractors will design and construct about 30km of deep tunnels and link sewers, as well as their supporting structures.

Construction will begin at the end of this year. In total, the contracts are worth $1.51 billion.

The three contractors are the Singapore branch of Ed Zublin AG, a joint venture between Penta-Ocean Construction and Koh Brothers Building & Civil Engineering Contractor, and the Singapore branch of Leighton Contractors (Asia).

Their work will be part of a network of 40km of deep tunnels and 60km of link sewers for DTSS Phase 2.

The contracts for the rest of the network will be awarded from 2018.

By its expected completion date of 2025, the DTSS will be connected to the Tuas Water Reclamation Plant.

The DTSS will then transport used water from the whole of Singapore into three centralised water reclamation plants for treatment.

There, the water will either undergo more purification to make Newater, or it will be discharged into the sea.

Mr Yong Wei Hin, director of the DTSS Phase 2 at PUB, said: "As the backbone of Newater production, the DTSS ensures the sustainability and resilience of the used water network to facilitate large-scale water recycling in Singapore and contributes to the goal of increasing the overall water recycling rate from 40 per cent to up to 55 per cent of total water demand in the long term."

6. ΕΚΔΗΛΩΣΕΙΣ ΣΧΕΤΙΚΕΣ (ΚΑΙ) ΜΕ ΥΠΟΓΕΙΑ ΕΡΓΑ

AFTES 15th International Congress 13 to 16 November 2O17, Paris

L'espace souterrain, notre richesse

AFTES, the French Tunnelling and Underground Space Association, is organising its 15th International Congress, to be held from 13 to 16 November 2O17. The congress with the general theme of «The value is underground » (L'espace souterrain, notre richesse), will highlight the latent value of underground space as a means of developing our living spaces, especially if urban planning harnesses it to establish a symbiosis between ground-level and underground. It will also focus on the abundance of, and the necessity of interweaving know-how and disciplines that are crucial to providing those spaces with a sustainable life.

(Info: http://www.aftes2017.com/en/)

BTS ANNUAL COURSES, 27 to 28 November 2017

Underground Health and Safety Course

The BTS runs a two-day annual Underground Health and Safety Course, which aims to provide a broad ranging introduction to the health and safety risks associated with the underground environment. This year's course will run from Monday 27th to Tuesday 28th November 2017 at the ICE. Booking is now open.

This course has been developed to focus exclusively on the underground environment. It aims to provide an introduction or enhance existing basic knowledge and develop an awareness of the particular health and safety challenges that working underground can pose.

(Info: https://www.britishtunnelling.org.uk/?sitecontentid=D6888C47-59C5-4C99-A6E1-8A57D562F85A)

STUVA Conference 2017 in Stuttgart, 6-8 December

International Forum for Tunnels and Infrastructure

Stuttgart will be the host for STUVA Conference 2017 (Dec. 6-8). The "family meeting of tunnelling professionals" will be staged in 2-years terms (every odd year) and with more than 2,400 experts from about 20 countries it is numbered among the world's leading get-togethers for underground construction experts.

(Info: https://www.stuva-conference.com/index.php?id=7&L=1)

ITA-AITES World Tunnel Congress 2018 21-26 April 2018, Dubai World Trade Centre Dubai, United Arab Emirates

The Role of Underground Space in Future Sustainable Cities

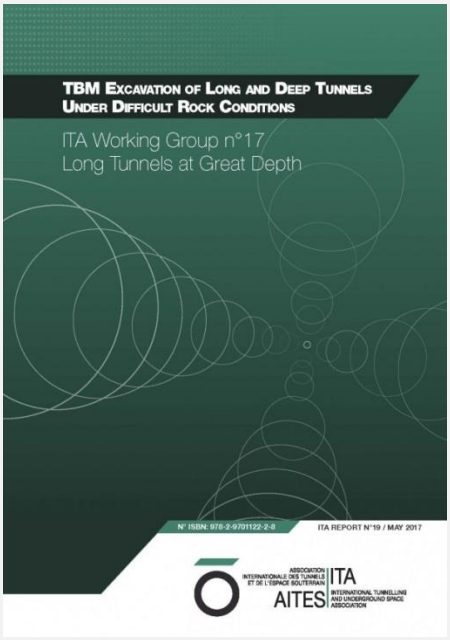
The ITA-AITES World Tunnel Congress is the world's leading tunnelling event, bringing together tunnel and underground space experts and professionals

from all around the world. It is the one tunnelling event you cannot miss! Join over 2000 engineers and professionals in exchanging the latest trends and innovations, learn from case studies, and discuss how tunnels will support future sustainable cities. Take the opportunity to network at multiple social events and, while you here, experience true Arabian hospitality and enjoy Dubai, the world's most cosmopolitan city, and all it has to offer.

(Info: http://www.wtc2018.ae/home/about-the-congress/)

7. ΝΕΕΣ ΚΥΚΛΟΦΟΡΙΕΣ

TBM EXCAVATION OF LONG AND DEEP TUNNELS UNDER DIFFICULT ROCK CONDITIONS



The aim of the present report is to

• Introduce a common technical language and a simplified classificationon the main geotechnical hazardsthat may be encountered during theexcavation of long and deep tunnels crossing difficult rock conditions;

• Analyse the influence and the consequences of these phenomenon regarding the various TBM types;

• Provide recommendations for the design, for the selection of the TBM type and for the mitigation measures to be implemented on-site.

The Appendix of the report is a worldwide date base collected by the members of the ITA Working Group 17 on the TBM tunnelling experience in difficult rock conditions gained over the last 20 years. The present report focuses on hazard scenarios that are associated – or their magnitude is by far increased – by the high overburden. However, as for more shallow tunnels, other hazard scenarios may be encountered during the tunnel construction of long and deep tunnels (e.g. rock falls, swelling, packing of fines around the shield, karstic phenomena, gripper bracing

problems, environmental aspects as gas, radioactivity or asbestos etc…), and so have to be additionally considered in the design phase of a project. In the same idea, the following nongeological related hazards are not handled in this report: fatigue of the workforce due to long travel distances, logistic difficulties in long tunnels, excessive wear and replacement needs for equipment and materials due to long construction times, maintenance needs for the already constructed parts of the project, and personnel fluctuation.

Published in: 2017

Author: WG 17

Download document:

21619-WG17-2017-BD_1.pdf

STRUCTURAL FIRE PROTECTION FOR ROAD TUNNELS

As an addition to PIARC guidelines, the scope of this ITA document is to provide recommendations for techniques and materials to answer these structural requirements and make tunnels and their ancillary structures more resistant to fire damage. These recommendations take into consideration the time – temperature curves as recommended by others and develop suitable means and methods for the protection of the structures. The aim or focus of the protection may vary from preventing minor damage to preventing a total collapse both during the fire event and during the rescue operation.

This document is intended to be a guideline and is to be used for road tunnels only and not for rail, mass transit, or pedestrian tunnels. However the basic principles for the protection of tunnels and underground structures may be applied to other types of structures; in such cases special consideration must be given to the particular application and its own unique operational and other site-specific elements. This document is for informational purposes only and applicable codes, standards and local regulations must be consulted for compliance to specific structural and life safety requirements of the locale in which the structure is located.

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Author: WG6

WG Publications

Download document:

WG6_without_annex-BD.pdf