

Devils Tower - Wyoming, USA



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Το περιοδικό μας είναι επιστημονικό. Όμως, αυτά που συμβαίνουν στην χώρα μας την τελευταία περίοδο ενδιαφέρουν όλους μας, ακόμα και τους επιστήμονες... Πολύ - περισσότερο, μάλιστα, τους μηχανικούς, που με την «καραμέλα» των κλειστών επαγγελμάτων πάνε να καταστρέψουν ένα κλάδο που τόσο πολύ έχει συμβάλει στην ανάπτυξη της χώρας. Έτσι, παραθέτουμε δύο χαρακτηριστικές γελοιογραφίες, που διεκτραγωδούν τα τεκταινόμενα.



How Fill Material Affects the Overtopping Process for Earthfill Dams

Johnson Malisa, F. W. Mtalo and Leif Lia

Model tests performed at a university in Tanzania reveal how various properties of the fill material affect behavior of an earthfill dam during the overtopping process. Understanding these influences can aid in improvement of breach prediction models.

For many small earthfill dams, significant overtopping potential exists if inflow exceeds the reservoir storage and spillway outflow discharge capacities. In the Arusha region of Tanzania, which contains about 150 small earthfill dams, several cases of failure have been reported.

This overtopping risk can never be completely eliminated. Thus, the challenge is to determine how embankments will perform before an overtopping event, primarily by determining the influence of soil materials on the process and rate of erosion during overtopping and breaching.

Erosion begins once the forces exerted by the overflowing water exceed the resistive forces of the exposed material. The extent of damage caused is a function of the embankment materials and overtopping depth and duration.

Discussions of dam overtopping must distinguish between the erosion characteristics of cohesive and noncohesive soil.¹ During overtopping of a dam made of cohesive material, the erosion phenomena result in the formation of an overfall.^{1,2} The overfall migrates upstream and advances through the embankment crest, breaching the dam. For noncohesive soil, the tractive stress analysis method may be appropriate, in which erosion occurs on a uniform but gradually reducing gradient or as a gradual upstream migration on a constant gradient.

Physical model tests indicate that the headcut advances progressively headward as its base deepens and widens. Breaching of the dam occurs when the headcut migrates through the upstream crest, which is called "time of breach initiation." The point at which erosion reaches the toe of the upstream slope is called "time of breach formation."

The upstream headcut advance is influenced by:

- Insufficient soil strength to stand vertically due to height of the headcut face;
- Stress relief cracking and induced hydrostatic pressure in the stress crack; and,
- Loss of foundation support for the vertical face due to the waterfall flow plunging effect and its associated lateral and vertical scour.

This type of erosion is a three-dimensional process, in which upstream migration is associated with lateral widening.¹ The rate of widening is a function of the headcut migration rate, and both are important in determining the timing and amount of water discharge through the breach.³

Background of dam breach modeling

A comparison of dam breach models shows the wide variability of results.⁴ Other summaries and analyses of dam breach models have been published.^{5,6}

Breach formation through embankment dams can be modeled using process-based models.⁷ Most models are based on steady state sediment equations related to homogeneous bank and adopted breach growth mechanisms. The modeler needs a significant number of assumptions and simplifications to simulate the breach, all of which can greatly affect the results.

In general, the breaching process is dominated by the interaction of flow hydraulics over the embankment and through the breach, the erosion process, soil properties, and geotechnical mechanisms. Simplification in any of these processes affects the results, especially geotechnical simplification concerning the breach widening process, which depends on removal of the lateral support of the breach side slope as a result of flow.

Further research into the breach process, including full-scale tests and scaled-down flume tests, is one of the top priorities for developing a better understanding of the dam break problem.^{5,8,9}

Experimental set-up, procedures

Physical model testing was conducted in an outdoor laboratory flume at the University of Dar Es Salaam in Tanzania. The flume was 10 meters long and 1.2 meters wide, with side walls 1 meter high. Inflow of 5 to 15 L/sec was supplied using pumps. The flume walls were mainly made of bricks, with a bottom of precast concrete slabs. Part of the wall was made of plastic glass, to allow lateral observation of the model during testing.

The homogeneous embankment models were made up of clay, silt, and fine sand. Material was selected based on the type of soil found in embankment dams in Arusha. Materials used have a plasticity index (PI) of 23 to 42 and liquid limits (LL) of 44 to 88. The soils were compacted in layers using hand-held timber and steel plate compactors. The soils were compacted to a different percentage of the Proctor value, except where the effect of compaction and moisture content were investigated.

A rolling carriage mounted on the flume side walls with an attached point gauge was used to obtain longitudinal bed profile, cross-sections, and water surface elevation. Inflow was supplied from the laboratory reservoir using a 4 inch-diameter (9.7 cm) pipe. A digital flow meter was attached to the pipe to record inflow. Outflow was measured using a V-notch installed downstream of the flume and the reservoir volume-elevation relation. The V-notch had a capacity of 17 L/sec, which was not adequate for all flows. Therefore, the reservoir elevation and storage records were an essential part of evaluating the outflow. The flume bottom was equipped with manually read piezometers for continuous water level measurement.

Before testing, the reservoir was filled to a known depth, depending on the dam height. During testing, the reservoir was completely filled and the embankment was overtopped. Inflow discharge stabilized slowly and then was maintained at a relatively defined constant flow. Maximum overtopping head attained was recorded for each test. Flow conveyance notches were cut on top of each model to direct flow during initiation of overtopping.

Pre-test soil material determination

Samples were taken for testing from the soil batch before model construction (particle grain size distribution and Atterberg limits) and from the compacted layers during construction (maximum dry unit weight, and optimum moisture content). The soil types used in these tests were:

- M1, reddish brown silty clay classified as CL in the Unified Soil Classification. The average maximum dry density

determined at optimum moisture content of 17 percent during the laboratory compaction test was 1.88 mg/m^3 .

- M2, darkish silty clay classified as CL. The average maximum dry density determined at optimum moisture content of 19.5 percent during the compaction test was 1.85 mg/m^3 .
- M3, brownish silty clay classified as SM. The standard compaction test on this soil shows that the soil has a maximum dry density of 1.95 mg/m^3 at an optimum moisture content of 14 percent.

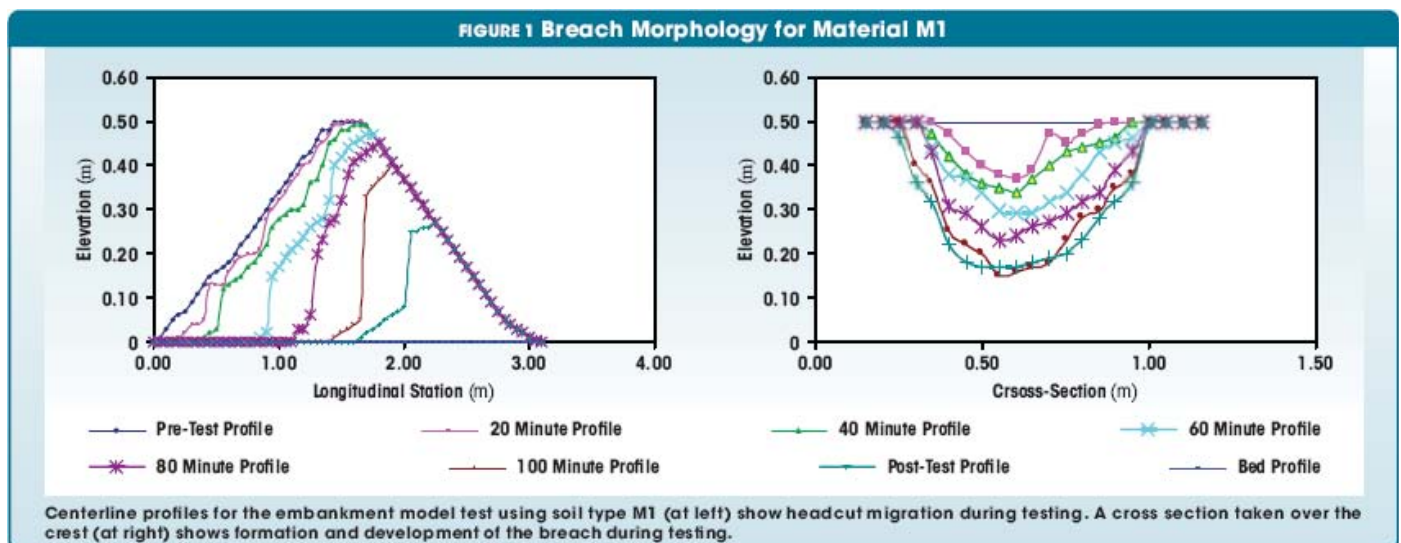
Results and discussion

During overtopping, flow on the downstream slope initiated rill and microrill erosion. This developed a network of rills that gradually formed a main rill(s). This observation seemed to agree with previous research.^{10,11} The study

showed the occurrence of significant undercutting, which was not reported by other researchers, produced by turbulence and hydraulic stresses surrounding the jet impingement area immediately downstream of the developed headcut during breach initiation.

Breach morphology during the breach formation phase was of a bellmouth shape. The hourglass shape and streamlines of the flow show good agreement with literature results.¹² The breach development and propagation also showed good agreement with other experiments.¹³

Figure 1 gives centerline profiles for an embankment model test conducted using soil M1 and an overtopping head of 5 to 10 cm, which shows typical headcut development. The erosion profile showed the development of several small headcutting steps on the downstream slope during the early stages of the test, but these coalesced into one headcut by mid-test.



The large overfall dominated the breaching process and finally migrated to the upstream crest, resulting in a total breach, lowering of the embankment elevation, and reservoir emptying. Figure 1 also shows the cross sections taken at the embankment crest station for the same test. The lateral erosion rate varied greatly over time during a breaching event, which is different from the assumption used in most breach models.

Most numerical models assume much more simplified breach opening morphologies than those observed during actual breaching events. On the other hand, it is easier to model static erosion using symmetrical breach opening geometries rather than continuous erosion dynamics, which normally is associated with the formation of complex geometries. The observation here shows the breach opening shape is complex and changing over time depending on the rate of headcut migration and widening. The final breach shape depends on stability of the side slope of the initiated breach channel, which is a function of the geotechnical properties of the dam model.

Different phases occurred in a complex manner during tests of the models made of cohesive material. These results show that the breaching process can be presented in three phases: breach initiation, breach formation/development, and reservoir depletion.

Detailed observations from the breach formation are:

- Headcutting was seen on the downstream face, contrary to the smoothing process observed in noncohesive material tests;¹²

- Crest overtopping initiates rill and microrill erosion on the downstream slopes of the embankments;
- This erosion changes into a network of rills that gradually develop into a main gully, which consists of multiple cascading overfalls. This main gully was observed to be similar to erosion channel for the noncohesive material;¹²
- The main gully migrates upstream through the downstream slope until one large headcutting channel remains;
- The headcut migrates toward the upstream crest of the embankment, and any further upstream migration of the headcut results in significant lowering of the crest elevation and increased discharge from the reservoir, leading to full breach development;
- As headcut migration continues, the erosion channel widens. The initial rapid widening and continued migration upstream are due to the turbulence and hydraulic stresses surrounding the area immediately downstream of the headcut;
- The hydraulic stresses erode the material at the base, resulting in undercutting, which eventually causes instability of the erosion channel banks, leading to discrete mass block failures. The failed masses are instantaneously transported by the breach channel flow, which leads to breach widening and further headcut migration;
- The above processes continue until a significant portion of the dam model is eroded and inflow to the model has been stopped;

- Upstream slope erosion at the entrance to the eroding channel was observed, producing a bellmouth shape. Slumping was observed on the upstream face, but the slumping rate was much lower than that observed during breach initiation; and,
- In the case of significant compaction of cohesive material, the breach widening erosion rates and final width were smaller than those observed in noncohesive material.

The effect of varying parameters on breaching

The effect of various parameters was investigated using the physical model tests. The base model had a crest width of 20 cm and upstream and downstream slopes of 1:2. Results are:

- Material grading. The M3 material, with relatively large average grain size, was more erodible than the M1 material. This accelerated the erosion process and led to a higher peak outflow and significantly wider final breach width;
- Compaction. Two compaction efforts were used during model construction, where one effort was half the number of blows of the normal effort used in other tests at the same lifting head and thickness of the layer to be compacted. The decrease in compaction effort accelerated the erosion process and led to a higher peak outflow and wider final breach width;
- Moisture content. One sample had moisture near the optimum (17.4 percent), and a second had a lower moisture content (12 percent), achieved by sun drying the soil before construction. Because the compaction efforts for these tests were basically the same, these tests show that the moisture content variation has a significant effect on the outflow hydrograph and breach top width;
- Downstream embankment slope. The upstream slope was kept constant at 1V:2H and the downstream slope was changed from 1V:2H to 1V:3H. The test with 1V:2H led to an earlier time to peak and a slightly higher peak outflow than the 1V:3H slope. Increasing the slope had some effect in delaying the breach initiation time, but the peak outflow and final breach width were similar for both slopes;
- Crest width. Crest width was increased from 0.2 meter in the base model to 0.3 meter. Increasing the crest width had almost no effect on the peak outflow and erosion rates. The increase in crest width was found to have a significant effect on time to peak at this scale; and,
- Breach location. The initial breach notch was cut once at the center and then at a distance of 10 cm from the flume wall on one side for the second test. The effect of

breach location is significant at this scale. The peak outflow was lower and the breach width smaller for the breach location on the side.

Headcut formation and migration analysis

Understanding how a headcut forms and moves is important to embankment dam erosion modeling. The migration rate of the headcut is a function of the soil material properties, hydrodynamic forces, and embankment geometry. For the headcut migration analysis, test material was placed in layers to the full depth and width of the flume. Factors that were varied included overfall height of the fill and moisture content of the material used. The tests described below were used to evaluate the effect of inflow discharge and soil properties on the headcut migration rates.

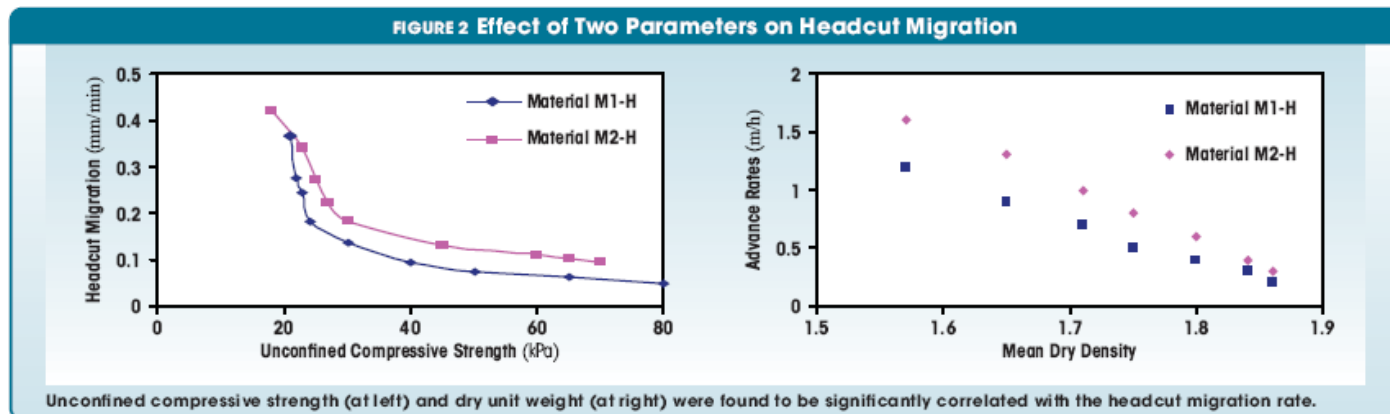
The headcut migration tests were conducted in the same flume using materials M1-H, M2-H, and M3. The M1-H and M2-H materials had slightly different properties from those used in the previous embankment model tests. The inflow discharge, overfall height, and water content were all varied under similar compaction efforts used in the embankment model scaled tests. The upstream face of the fill was protected from surface erosion using a thin layer of soil-cement mixture. Headcut position was monitored with time and water surface profiles, and flow measurements were taken at irregular intervals based on significant changes in headcut position.

The tests showed that the erosion process is influenced by soil properties and hydraulic parameters. Several erosion-resisting forces of the compacted cohesive soil — such as soil strength, dry density, and overfall height — controlled the headcut erosion more than the discharge variation. In some tests, the headcut migrated with a sloping face, which is a sign of stress detachment. In some tests, the headcut migrated with a vertical face where the tension cracking and larger mass failure were observed.

Effect of density and soil moisture variation

The headcut test was conducted with varying moisture content, which directly affected the dry density and strength of the compacted cohesive soil, but with constant flow rate and overfall height. The soil materials tested were observed to have a strong relationship between the dry density and unconfined compressive strength, which increased as density increased. At the overfall, the flow over the headcut created a reverse roller that removed material from the overfall base. When significant material had been removed, mass block failure occurred and the headcut migrated upstream.

Although stream power (discharge) was not observed to be highly correlated to headcut advance, the unconfined compressive strength and dry unit weight were strongly correlated with the headcut migration rate (see Figure 2).



The results showed that the compaction water content has a significant effect on headcut advancement.

Effect of overfall height and flow rate

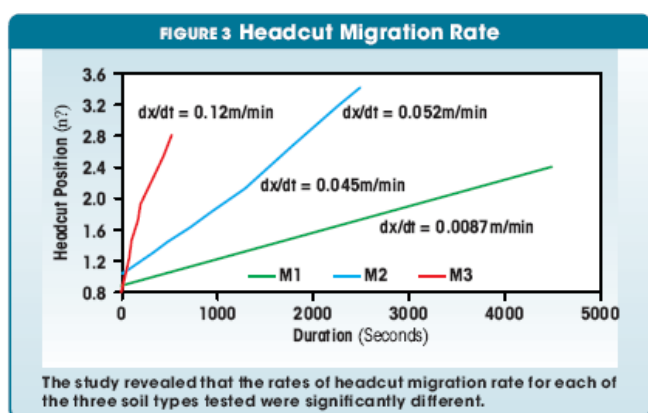
The effect of overfall height and flow rate were studied using a constant moisture content and controlled compaction for the two soil types. The tests were performed using overfalls with average heights of 0.3 meter, 0.45 meter, and 0.6 meter. The discharges were also varied in each

overall. It was observed that the headcut advance rate was slightly influenced by the discharge and overfall height variations (see Table 1). Both sloping and vertical erosion mechanisms took place on the headcuts. The erosion with sloping surface was mostly observed with the lower moisture content tests, while the high moisture content experienced erosion along a nearly vertical face. Undercutting, tension cracking, and mass failure of relatively large blocks of soil were also observed.

Test	Soil Type	Moisture Content (%)	Dry Density (mg/m ³)	Headcut Migration (m/sec)	Discharge (m ² /sec)	Headcut Height (meters)	Coefficient C (S-2/3)
1	M1-H	15.4	1.65	0.0001100	0.064	0.30	0.0004110
2	M2-H	16.1	1.77	0.0000505	0.075	0.25	0.0001878
3	M1-H	17.0	1.80	0.0000030	0.081	0.25	0.0001470
4	M2-H	17.7	1.88	0.0000100	0.012	0.20	0.0000775
5	M1-H	18.5	1.75	0.0000085	0.016	0.25	0.0000524
6	M2-H	19.1	1.78	0.0000035	0.014	0.25	0.0000788
7	M1-H	19.5	1.64	0.0000087	0.011	0.22	0.0000634

Effect of soil type

Headcut migration rates were significantly different for each of the soil types (see Figure 3). The rate for soil M3 was rapid, about 0.12 meter/min, as compared with the other soil types. The reason behind this is the low clay content of M3 when compared with that of M2 and M1. The rates of headcut migration in all tests were observed to increase significantly during the breach formation phase.



Effect of compaction

The effect of compaction on headcut migration was studied using three compaction efforts for material M1-H:

- Low: Wood plate compactor lifted 0.2 meter high (achieving 50 - 60% compaction);
- Medium: Steel plate compactor lifted 0.2 meter high (achieving 61 - 70% compaction); and,
- High: Steel plate compactor lifted more than 0.3 meter high (achieving 71 - 90% compaction).

Figure 4 shows that an increase in compaction at a natural moisture content significantly reduces headcut migration.

Headcut migration prediction

Determining the rate of headcut migration is one of the keys to predicting a cohesive embankment failure during overtopping. Flume tests allowed the headcut advance to

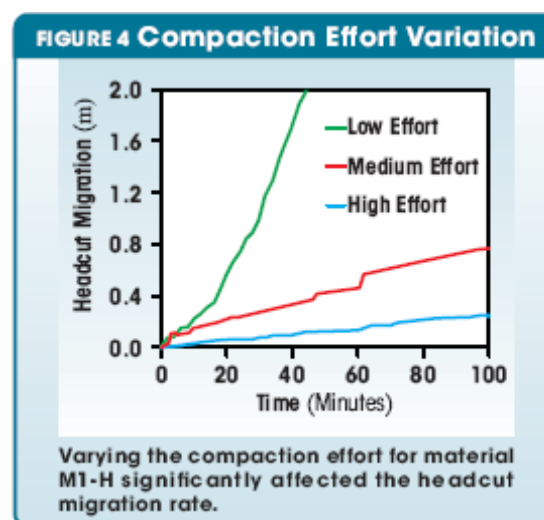
be observed in a setting where discharge, overall height, compaction energy, and compaction water content could be controlled. The simple relationship for headcut migration prediction uses the energy concept at the overfall as the deriving mechanism.^{14,15} There is a simple model describing headcut migration based on material-dependent coefficient C and hydraulic attack parameter A:¹⁴

Equation 1

$dx/dt = C(A)$ where:

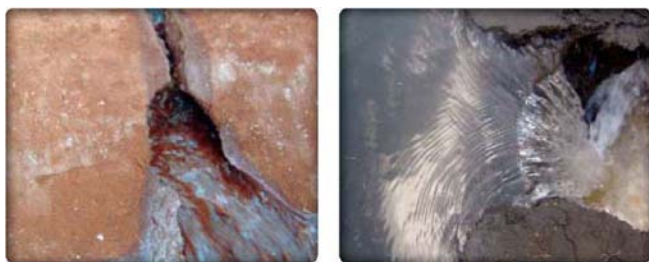
- dx/dt is headcut migration; and,
- A equals $(qH)^{1/3}$, where q is specific discharge of overflow in m³/sec/meter and H is headcut overfall height in meters.

There is no defined approach for determining coefficient C other than that based on observed migration rates, discharge, and headcut overfall height.¹⁴



The flume headcut migration test results were used to develop a relationship for coefficient C. The relationship was then compared with the results obtained during the embankment model tests. The flume measurement data are shown in Table 1 for the headcut advance tests and Table 2

for the embankment overtopping tests.



During breach initiation (at left), the undercutting mechanism resulted in mass slumping, causing rapid breach widening. During embankment overtopping (at right), an hourglass shape was observed.

The rate of headcut migration was reduced significantly for the model compacted at moisture content close to optimum. This shows that compaction moisture content has a significant effect on the erosion properties of the material used.

The results from the headcut advance tests where compaction was similar to the effort used during embankment model tests indicated that moisture content has a significant effect on headcut migration (see Table 1). By changing the moisture content from 15.4 percent to 19.5 percent, the associated change in the headcut migration was more than 50 times.

There is a reasonable correlation between coefficient C and compaction moisture content. The relationship in Equation

Test	Soil Type	Moisture Content (%)	Dry Density (mg/m ³)	Headcut Migration (m/sec)	Discharge (m ² /sec)	Headcut Height (meters)	Coefficient C (S-2/3)
1	M1	15.2	1.61	0.000114	0.028	0.50	0.00046790
2	M2	16.3	1.64	0.0000263	0.016	0.30	0.00015320
3	M2	17.6	1.68	0.0000900	0.012	0.28	0.00016700
4	M1	17.1	1.72	0.0000011	0.015	0.30	0.00000642
5	M1	18.6	1.67	0.0000016	0.018	0.50	0.00000760
6	M1	20.5	1.66	0.0000012	0.024	0.40	0.00000549
7	M2	20.2	1.50	0.0000016	0.037	0.30	0.00000687

2 was developed for coefficient C based on headcut advance test results.

Equation 2

$C = 2300(mc)^{-0.68}$ where:

— mc is the moisture content.

Results from embankment overtopping tests also show that the compaction moisture content plays a significant role in influencing the rate of headcut migration.

Values of coefficient C predicted from Equation 2 compare well with values of C computed from the embankment overtopping test results. These results indicate that a defined relationship between water content and coefficient C for a given compaction effort can be employed in the predictions and is independent of the embankment material texture for the range of soil types tested.¹⁴

The results in this study can be considered a step to developing a universal relationship for coefficient C for the most important parameters observed to significantly influence headcut migration rate (compaction water content and compaction effort). Increased water content (up to an optimal value) and increased compaction effort increase resistance of a soil to headcut migration.

Conclusions and recommendations

The equation developed in this study relating moisture content to coefficient C appears to be independent of soil texture for a specific compaction level. The headcut migration studies show promising effort in developing the universal relation for C for the soil parameters observed to have significant influence on headcut migration rate.¹⁴ Coefficient C will play a significant role in assessing the breaching potential for existing and proposed embankment dams. The results of the headcut migration test can be used in deve-

loping an emergency action plan in case of dam failure upstream of well-developed areas in the Arusha region.

Further large-scale tests on headcut migration need to be done to develop a universal relationship for C to the compaction water content and effort. This prediction will also be used to evaluate breaching potential of existing and proposed earthfill dams. The improvement of breach prediction models should take into consideration the integration of updated breach, hydraulic, and material parameter effects observed during embankment overtopping tests. This kind of integration will give more realistic breach hydrographs, which are needed for more accurate predictions of flood routing downstream of the dam.

Notes

¹Ralston, D.C., "Mechanics of Embankment Erosion during Overflow," *Proceedings of the National Conference on Hydraulic Engineering*, American Society of Civil Engineers, Reston, Virginia, USA, 1987.

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- ¹²Coleman, S.E., and D.P. Andrews, *Overtopping Breaching of Noncohesive Homogeneous Embankments*, Department of Civil and Resources Engineering, University of Auckland, Auckland, New Zealand, 2000.
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(HYDRO REVIEW WORLDWIDE / www.hydroworld.com, December 2010)

Ομιλία που δόθηκε στα πλαίσια της Ετήσιας Προσκεκλημένης Ομιλίας «Γ. Μαρίνος – Ι. Παπασταματίου» της Ελληνικής Γεωλογικής Εταιρίας, την 1η Δεκεμβρίου 2010, στο αμφιθέατρο του Εθνικού Ιδρύματος Ερευνών.

Η παγκόσμια Κοινότητα δείχνει ένα ολοένα αυξανόμενο ενδιαφέρον για την ανάδειξη, διατήρηση και προστασία της πολιτιστικής κληρονομιάς με τη διερεύνηση όλων των επί μερους παραμέτρων και ειδικότερα του γεωλογικού περιβάλλοντος και τη λήψη των απαραίτητων μέτρων. Για το σκοπό αυτό λειτουργούν Διεθνείς Οργανισμοί, όπως η UNESCO, το ICOMOS, καθώς και κρατικοί φορείς. Μάλιστα το θέμα αυτό αναφέρεται στο άρθρο 151 της Συνθήκης Ίδρυσης της Ευρωπαϊκής Κοινότητας. Στην Ελλάδα δραστηριοποιούνται διάφοροι Οργανισμοί, όπως το Ελληνικό Τμήμα του ICOMOS, η Εταιρία Έρευνας και Προώθησης της επιστημονικής Αναστήλωσης Μνημείων (ΕΤΕ-ΠΑΜ), η Πρωτοβουλία για την Ανάπτυξη της Πολιτιστικής Κληρονομιάς, το Ινστιτούτο Μεσογειακών Σπουδών. Επίσης η Πολιτεία έχει θεσπίσει το νόμο 3028/2002 για την προστασία των αρχαιοτήτων και εν γένει της Πολιτιστικής Κληρονομιάς.

Η προστασία των μνημείων και ιστορικών χώρων παρουσιάζει μια πραγματική πρόκληση για τους γεωεπιστήμονες και γεωτεχνικούς καθώς πρώτον θέτονται προβλήματα που είναι πολύ πιο σύνθετα από τα συνήθη της μηχανικής και δεύτερον προκύπτει η αναγκαιότητα διατύπωσης τεχνικών προστασίας και δημιουργίας υλικών αποκατάστασης που λαμβάνουν υπόψη αρχαιολογικούς και αισθητικούς περιορισμούς. Ειδικότερα τα θέματα έρευνας από γεωλογικής πλευράς σε σχέση με τα μνημεία είναι οι φυσικές και ανθρωπογενείς επιδράσεις στο γεωλογικό περιβάλλον, οι συνθήκες θεμελίωσης, οι δομικοί λίθοι ως υλικό αποκατάστασης και οι μη καταστροφικές μέθοδοι διερεύνησης. Είναι γεγονός ότι πολλά από τα αρχαία μνημεία υποφέρουν από μια σταδιακή γήρανση – διάβρωση των υλικών θεμελίωσης και αλλαγές στο γεωλογικό περιβάλλον, γεγονός που καθιστά τη γεωλογική έρευνα αναπόσπαστο τμήμα των εργασιών αποκατάστασης, έτσι ώστε αυτές να είναι αποτελεσματικές.

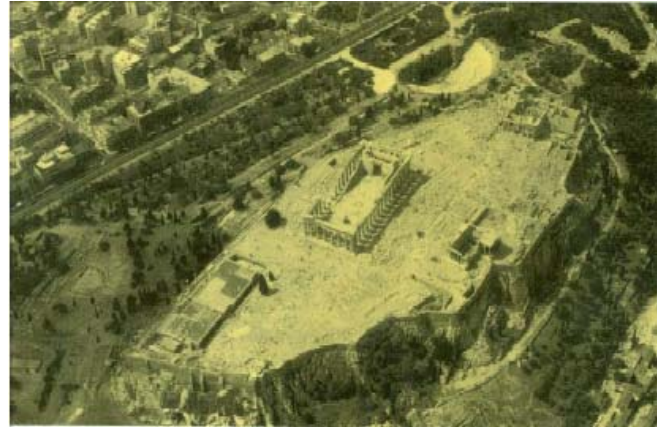
Στην Ελλάδα με την μεγαλύτερη παγκόσμια πολιτιστική κληρονομιά δεν υπάρχει πολιτική εναρμονισμένη στα Διεθνή πρότυπα και παραδείγματα άλλων χωρών, όπως π.χ. η γειτονική Ιταλία, αλλά αποσπασματική θεώρηση και αντιμετώπιση επί μέρους προβλημάτων έπειτα από κάποια φυσική καταστροφή ή στην καλύτερη περίπτωση λόγω του πιθανού κινδύνου μιας τέτοιας καταστροφής. Για το σκοπό αυτό είναι απαραίτητη η δημιουργία ενός Ινστιτούτου Χαρτογράφησης Κινδύνων σε πολιτιστικά μνημεία της Χώρας, αρχαιολογικού – αρχιτεκτονικού – ιστορικού ενδιαφέροντος όσο αφορά στις περιβαλλοντικές επιπτώσεις και ειδικότερα του γεωλογικού περιβάλλοντος. Απαραίτητη προς την κατεύθυνση αυτή είναι η συνεργασία του Υπουργείου Πολιτισμού με όλους τους σχετικούς φορείς, όπως το ΙΓΜΕ, ο ΟΑΣΠ, καθώς και οι Οργανισμοί – Εταιρείες που αναφέρθηκαν προηγουμένα.

Στη συνέχεια δίνονται οι γεωλογικές συνθήκες και προβλήματα αρχαίων μνημείων και ιστορικών χώρων που μελετήθηκαν με την πρωτοβουλία και στενή συνεργασία του Υπουργείου Πολιτισμού.

ΑΚΡΟΠΟΛΙΣ ΤΩΝ ΑΘΗΝΩΝ

Τα μνημεία της Ακρόπολης των Αθηνών διακρίνονται για την αναμφισβήτητη αισθητική και καλλιτεχνική αξία και παγκόσμια ακτινοβολία. Η Ακρόπολη συνδέεται όσον αφορά στο μνημειακό της χαρακτήρα με την εποχή του Περικλέους και μετέπειτα την κλασική περίοδο (450 – 330 π.Χ.) όπου

κτίστηκαν ο Παρθενώνας, το Ερέχθειο, ο Ναός της Νίκης, τα Προπύλαια.



Οι εργασίες προστασίας και ανάδειξης του χώρου άρχισαν από το 1834. Σχετικά με το βράχο τα πρώτα μέτρα στερέωσης χρονολογούνται από το 1930 με την κατασκευή των υψηλών λίθινων τοίχων βαρύτητας, σύνδεση χαλαρωμένων βράχων με σιδερένιες ράβδους και λιθοπληρώσεις. Το 1950 έγιναν πρόσθετες εργασίες βασισμένες στο άσπλο σκυρόδεμα (Φωτ.1). Οι επεμβάσεις αυτές ήταν μη ικανοποιητικές και γενικότερα ανεπιτυχείς.



Η πρώτη συστηματική προσπάθεια άρχισε το 1975 με τη συγκρότηση από το Υπουργείο Πολιτισμού Ομάδας Εργασίας Συντήρησης Μνημείων Ακροπόλεως.

Η γεωλογική μελέτη που εκπονήθηκε (ΙΓΜΕ, 1975) είχε σαν σκοπό τη διερεύνηση των γεωλογικών και υδρογεωλογικών συνθηκών, την επισήμανση τυχόν υφιστάμενων κινδύνων τοπικής ή γενικότερης σημασίας που συνδέονται με τις γεωλογικές συνθήκες και η διατύπωση κατάλληλων μέτρων προστασίας. Σημειώνεται ότι ο βράχος συνίσταται από ασβεστολιθικά πετρώματα και στη βάση από σχιστολιθικά.

Από τη συνεκτίμηση όλων των επί μέρους αναλύσεων προκύπτουν τα εξής:



- Στην άνω επιφάνεια, όπου και θεμελιώνονται τα μνημεία, οι συνθήκες είναι ικανοποιητικές και δεν δικαιολογείται οιασδήποτε ανησυχία. Αξιοσημείωτο μάλιστα είναι το γεγονός ότι η θεμελίωση του Παρθενώνα στη νότια πλευρά

έγινε σε βάθος 14μ. περίπου, μέσω άρτια δομημένων κυβόλιθων από ασβεστολιθικό υλικό, για να συναντήσει το ασβεστολιθικό υπόβαθρο που ήταν με κλίση.

- Στα πρηνή επισημάνθηκαν θέσεις όπου υφίστανται δυσμενείς συνθήκες για την ευστάθεια αυτών, λόγω ρηγμάτων και σπηλαίων, και επιβάλλεται η λήψη μέτρων, δεδομένου ότι πλην των άλλων δεν μπορεί να εκτιμηθεί ο χρόνος που οι συνθήκες αυτές θα καταστούν αθροιστικά κρίσιμες με άμεσο αντίκτυπο για την άνω επιφάνεια του λόφου.



Η λήψη μέτρων την περίοδο 1976-1983 δυστυχώς περιορίστηκαν σε μερικά τμήματα μόνο του βόρειου και ανατολικού πρηνούς, αυτά δε αναφέρονται σε: (α) καθαρισμό από τα φυτά και πλύσιμο των ρωγμών από τα χώματα, (β) πλήρωση των ρωγμών με κατάλληλο ένεμα στο χρώμα του βράχου, (γ) εφαρμογή αγκυρώσεων από ανοξείδωτο χάλυβα με χρώμιο, νικέλιο, μολυβδαίνιο, τιτάνιο σε αναλογία 18 / 10 / 2 / 0.5 και τέλος (δ) τοιχώματα υποστήριξης με λευκό

τσιμέντο οπλισμένο με ράβδους ανοξείδωτου χάλυβα.

Επειδή η κατάσταση του Ιερού βράχου της Ακρόπολης είναι επισφαλής, λόγω της συνεχούς υποβάθμισης των ποιοτικών χαρακτηριστικών της ασβεστολιθικής βραχομάζας στα πρηνή και ιδιαίτερα στο βόρειο, επιβάλλεται άμεσα η συνέχιση της εξαιρετικής επέμβασης που είχε αναληφθεί στο παρελθόν από το Υπουργείο Πολιτισμού.

ΝΑΟΣ ΕΠΙΚΟΥΡΙΟΥ ΑΠΟΛΛΩΝΟΣ

Ικτίνειος Ναός, Δωρικού ρυθμού στη θέση "Βάσσαι" Φιγείας Ν. Ηλείας. Χρονολογικά τοποθετείται στο τελευταίο τέταρτο του Ε' π.Χ. αιώνα.

Η προσπάθεια αναστήλωσης από τις αρχές του 20ου αιώνα, επαναλήφθηκε το 1975 για την ολοκλήρωση των ανασκαφών και προστασία του Ναού. Το 1987 προστέθηκε στέγαστρο προστασίας, από τις μεγαλύτερες μέχρι σήμερα προσπάθειες παθητικής διατήρησης μνημείων.



Με την γεωλογική μελέτη (ΙΓΜΕ 1976) διερευνήθηκαν οι συνθήκες θεμελίωσης, η σεισμικότητα της περιοχής, το υ-

δρογεωλογικό καθεστώς και η ποιότητα των ασβεστολιθικού πετρώματος, τόσο ως σχηματισμού θεμελίωσης, όσο και υλικού δόμησης ολόκληρου του Ναού.



Ο Ναός παρουσιάζει σοβαρά προβλήματα θεμελίωσης, δεδομένου ότι στο ανατολικό τμήμα εδράζεται απ' ευθείας στους ασβεστολίθους ενώ στο δυτικό παρεμβάλλονται αναβαθμοί από λαξευμένες πλάκες ασβεστόλιθου, χωρίς όμως επιμέλεια στη δόμηση αυτών, όπως στην περίπτωση της Ακρόπολης. Έτσι προκύπτουν σοβαρές διαφορικές κατακόρυφες μετακινήσεις.



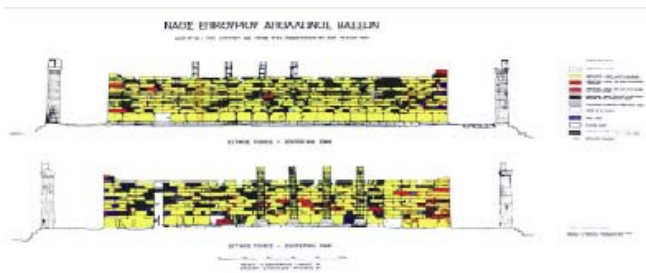
Σήμερα ο Ναός βρίσκεται κάτω από το στέγαστρο του 1987 σε φάση αναστήλωσης.



Το συνολικό μήκος του πρανούς για σταθεροποίηση είναι 300μ. περίπου, το ύψος 2 – 10μ. με κλίση γενικά απότομη κατά θέσεις δε και αρνητική.

Τα μέτρα που προτάθηκαν περιλαμβάνουν καθαίρεση από-κολλημένων βράχων, σφράγιση ρωγμών και κοιλοτήτων, κατασκευή τοιχίου ποδός, τοποθέτηση ηλώσεων, τοποθέτηση εκτοξευόμενου σκυροδέματος, κατασκευή δικτύου επιφανειακής απορροής.

Τονίζεται ότι στην περίπτωση του Κάστρου αυτού υλοποιήθηκε η μελέτη και εφαρμόστηκαν τα μέτρα που προτείνονται.



ΚΑΣΤΡΟ ΚΑΛΑΜΑΤΑΣ



Δεσπόζει της πόλης με υψόμετρο 80μ. περίπου. Αποτελεί ένα κλασικό ιστορικό μνημείο του 13ου αιώνα.

Στόχος της μελέτης ήταν η διερεύνηση των συνθηκών θεμελίωσης των τειχών και η διατύπωση μέτρων στερέωσης.



Σημειώνεται σχετικά ότι οι γεωλογικοί σχηματισμοί θεμελίωσης είναι κροκαλοπαγή που έχουν υποστεί σοβαρές αστοχίες, λόγω ρηγμάτων και διαβρώσεων, κυρίως στο Δυτικό τμήμα του Κάστρου.



ΚΑΣΤΡΟ ΚΥΠΑΡΙΣΣΙΑΣ

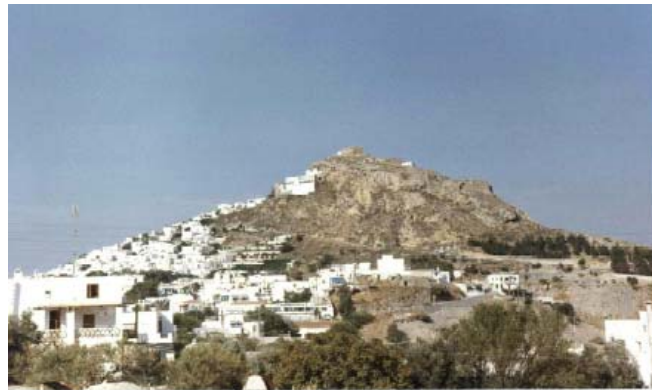
Αποτελεί κλασικό μνημείο με ίχνη αρχαιοελληνικής δόμησης (Μυκηναϊκή περίοδος), ενώ στα εξωτερικά τοιχώματα επικρατούν κατασκευές βυζαντινής τεχνοτροπίας καθώς και νεώτερες παρεμβάσεις.

Η γεωλογική μελέτη διερεύνησε όλα τα στοιχεία σχετικά με την παθολογία του Μνημείου. Οι σχηματισμοί θεμελίωσης είναι ασβεστολιθικά πετρώματα με κύριο χαρακτηριστικό τα ανορθωμένα στρώματα. Στη συνέχεια με βάση τα παραπάνω στοιχεία σχεδιάστηκαν τα μέτρα βελτίωσης - σταθεροποίησης τόσο των σχηματισμών θεμελίωσης όσο και των κτιστών κατασκευών έπειτα από κατηγοριοποίηση των φθορών που αναφέρονται στα περιμετρικά τείχη και σε αυτές στο εσωτερικό του Κάστρου.



Ειδικότερα τα μέτρα αυτά συνίστανται σε: αποψίλωση, σφράγιση και πλήρωση ρωγμών και κοιλοτήτων, τσιμεντένες βραχομάζας, εδαφοηλώσεις, αρμολόγημα - τσιμεντένες θεμελίωσης τειχούς, ηλώσεις βράχων, διευθέτηση επιφανειακών νερών.

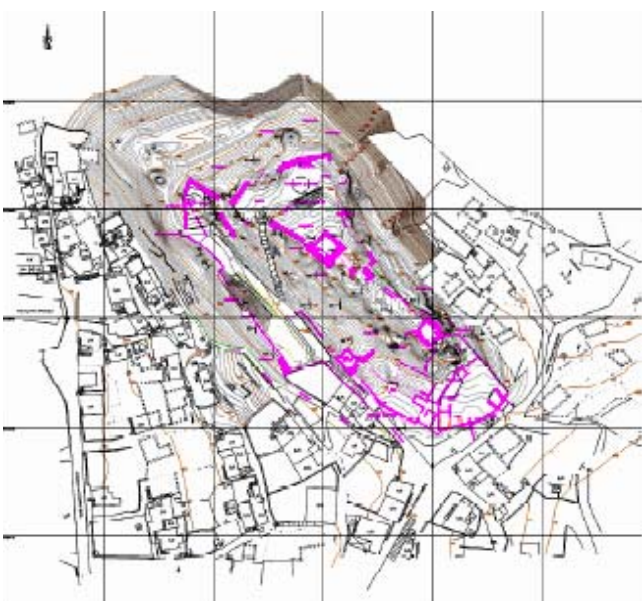
Μέχρι σήμερα δεν έχει αναληφθεί προσπάθεια αποκατάστασης του Κάστρου με βάση τις μελέτες – γεωλογική και γεωτεχνική.



Η γεωλογική μελέτη είχε σαν στόχο τη διερεύνηση των παραμέτρων που ελέγχουν τις φθορές της βραχομάζας (ασβεστόλιθοι και ψαμμίτες, έτσι ώστε να σχεδιαστούν τα κατάλληλα μέτρα προστασίας και διατήρησης των κτιστών κατασκευών καθώς και η προστασία της οικιστικής ζώνης της πόλης στη βάση του δυτικού πρανού.

Ειδικότερα τα μέτρα που προτείνονται με βάση την παθολογία του Μνημείου συνίστανται σε επουλώσεις των ρωγμών με κατάλληλο ένεμα, επιλεκτικές αγκυρώσεις των πλέων ασταθών ζωνών, κάλυψη με εκτοξευόμενο σκυρόδεμα, κατασκευή αναβαθμών, λιθοεπενδύσεις στη βραχομάζα για προστασία, τοίχος ποδός, αντιστηρίξεις με αγκυρώσεις και πλέγμα.

Τα μέτρα αυτά επανεξετάστηκαν και συμπληρώθηκαν μετά τον σεισμό του 2001 που προκάλεσε σοβαρές αστοχίες στα πρηνή. Δεν έχουν ακόμα πραγματοποιηθεί τα έργα αποκατάστασης και προστασίας σύμφωνα με τα συμπεράσματα της γεωλογικής και γεωτεχνικής μελέτης.



ΚΑΣΤΡΟ ΤΗΣ ΣΚΥΡΟΥ

Θεμελιώνεται σε λοφοειδή έξαρση και υψόμετρο 170μ., στη θέση όπου ήταν κτισμένη η αρχαία Ακρόπολη της Σκύρου, που σύμφωνα με την παράδοση ήταν τα ανάκτορα του Ομηρικού βασιλιά Λυκομήδη. Έχουν βρεθεί ίχνη που χρονολογούνται στην εποχή του χαλκού (2.500 – 1.800 π.Χ.). Η οχύρωση της Ακρόπολης είναι βυζαντινής εποχής.



ΠΑΛΑΙΟ ΦΡΟΥΡΙΟ ΚΕΡΚΥΡΑΣ

Η ιστορία του αρχίζει στα προβυζαντινά χρόνια (μέσα 6ου μ.Χ. αιώνα) και συνεχίζεται η οχύρωση μέχρι το τέλος της Ενετοκρατίας (1797). Κατέχει ιδιαίτερη θέση στη ιστορία της φρουριακής αρχιτεκτονικής, στα πλαίσια της Ευρωπαϊκής ιστορίας και μνημειακής κληρονομιάς.

Με βάση τη γεωλογική μελέτη υπάρχουν σοβαρά προβλήματα λόγω της αστάθειας των ασβεστολιθικών πρηνών στη Ν.ΝΔ/κή πλευρά του Δυτικού λόφου με άμεση επίπτωση στα

κτίσματα καθώς και στα πρανή του Ανατολικού λόφου έξω από τα περιμετρικά τείχη. Επίσης τα υλικά τεχνητών αναβαθμών και επιχωματώσεων κυρίως στο τμήμα Εισόδου – Προμαχώνων είναι υπεύθυνα για τις σοβαρές αστοχίες στα τείχη.



Προτάθηκε σειρά μέτρων βελτίωσης – σταθεροποίησης για τα βραχώδη πρανή (έλεγχος επιφανειακών νερών, επενδύσεις προστασίας με εκτοξευόμενο σκυρόδεμα, κατασκευή τοιχίων επένδυσης ή και αντιστήριξης, σφράγιση ρωγμών, κόψιμο δένδρων) διαμόρφωση και αποστράγγιση των υλικών επιχωμάτων στα περιμετρικά τείχη και τους προμαχώνες, καθώς και αποκατάσταση των κτιστών κατασκευών (ανακατασκευή, ενίσχυση θεμελίωσης, αρμολόγηση). Μέχρι σήμερα δεν έχουν υλοποιηθεί οι προτάσεις της μελέτης.



ΚΑΣΤΡΟ ΜΥΤΙΛΗΝΗΣ

Κτισμένο σε μικρό λόφο μεταξύ του βόρειου και νότιου λιμένα της πόλης, αποτελούσε ένα από τα μεγαλύτερα και ισχυρότερα Κάστρα της Ανατολικής Μεσογείου.



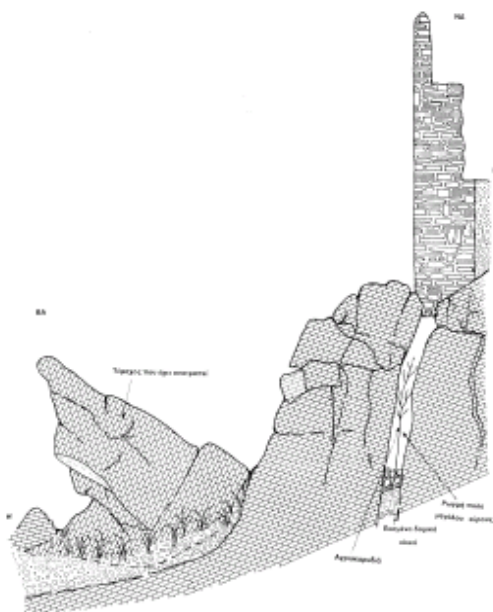
Ο αρχικός πυρήνας κατά τους Βυζαντινούς χρόνους φαίνεται ότι κτίστηκε πάνω στη Αρχαία Ακρόπολη. Μέχρι την απελευθέρωση της Λέσβου το 1912 το Κάστρο σωζόταν πλήρες, έκτοτε όμως η αλόγιστη χρήση οικοδομικών υλικών για την κατασκευή νεώτερων κτισμάτων είχε σαν συνέπεια τη σταδιακή φθορά του.



Στο πλαίσιο της γεωλογικής μελέτης έγινε θεώρηση και ανάλυση όλων εκείνων των παραμέτρων που ελέγχουν τις φθορές των ασβεστολιθικών σχηματισμών θεμελίωσης καθώς και των κτιστών κατασκευών και προτάθηκαν τα κατάλληλα μέτρα προστασίας. Σημειώνεται επίσης ότι οι επιχωματώσεις στο εσωτερικό του Κάστρου χωρίς αποστράγγιση συμβάλουν τοπικά σε αστοχίες στα τείχη.

Τα προτεινόμενα μέτρα αφορούν στα βραχώδη πρηνή θεμελίωσης του Κάστρου, στις επιχωματώσεις στο εσωτερικό του Κάστρου, καθώς και στις κτιστές κατασκευές, είναι δε ανάλογα με αυτά στο Παλαιό Φρούριο της Κέρκυρας.

Και στην περίπτωση αυτή δεν έχουν προχωρήσει τα έργα αποκατάστασης σύμφωνα με τα πορίσματα της γεωλογικής και γεωτεχνικής μελέτης.



ΦΡΟΥΡΙΟ ΛΕΥΚΑΔΑΣ (ΑΓΙΑΣ ΜΑΥΡΑΣ)



Το Φρούριο κατασκευάστηκε από τον Ορσίνι το 1300 και ακολούθησαν συνεχείς εναλλαγές Τουρκοκρατίας και Ενετοκρατίας. Στη συνέχεια το κατέλαβαν οι Γάλλοι, οι Άγγλοι και το 1864 περιήλθε στο Ελληνικό κράτος.

Το Φρούριο εντοπίζεται στο βόρειο άκρο της λιμνοθάλασσας, παρά την έξοδο της διώρυγας και χαρακτηρίζεται από σχεδόν επίπεδη μορφολογία.

Με βάση τη γεωλογική μελέτη το Φρούριο έχει θεμελιωθεί σε πρόσφατους εδαφικούς σχηματισμούς και περιβάλλον λιμνοθάλασσας, με αποτέλεσμα τις σοβαρές ζημιές στα τείχη, λόγω υποχώρησης της θεμελίωσης. Αξιοσημείωτο είναι το γεγονός ότι κατά την κατασκευή επειδή ήταν γνωστό το πρόβλημα της μικρής ανθεκτικότητας των σχηματισμών θεμελίωσης έγινε προσπάθεια βελτίωσης αυτών με σειρά ξύλινων πασσάλων.

Για την υποθεμελίωση των τειχών σε ορισμένο τμήματα που είναι ευπρόσβλητα σε σεισμική δράση θεωρήθηκε ως η βέλτιστη λύση η κατασκευή εδαφοπασσάλων.

Μέχρι σήμερα δεν έχει προχωρήσει η αποκατάσταση του Φρουρίου, με βάση τα πορίσματα της μελέτης.



Διάλεξη Άντας Αθανασοπούλου – Ζέκκου

Συμπεριφορά των Συστημάτων Αντιπλημμυρικής Προστασίας της Νέας Ορλεάνης κατά τον Τυφώνα Κατρίνα

Την Παρασκευή 17 Δεκεμβρίου 2010 δόθηκε διάλεξη από την Άντα Αθανασοπούλου - Ζέκκου, Επίκουρο Καθηγήτρια της Σχολής Πολιτικών Μηχανικών του Πανεπιστημίου του Michigan, Ann Arbor με θέμα: «Συμπεριφορά των Συστημάτων Αντιπλημμυρικής Προστασίας της Νέας Ορλεάνης κατά τον Τυφώνα Κατρίνα». Η διάλεξη δόθηκε στην Αίθουσα Εκδηλώσεων της Σχολής Πολιτικών Μηχανικών του ΕΜΠ και διοργανώθηκε από το Εργαστήριο Εδαφομηχανικής του ΕΜΠ σε συνεργασία με την ΕΕΕΕΓΜ και το ETAM (Ελληνικό Τμήμα Αντισεισμικής Μηχανικής). Στη συνέχεια δίνεται περίληψη της διάλεξης.

Ο Τυφώνας Κατρίνα, που έπληξε την περιοχή της Νέας Ορλεάνης την 29^η Αυγούστου 2005, προκάλεσε την πλέον καταστροφική αστοχία τεχνικού έργου στην ιστορία των Η.Π.Α. Η «Ανεξάρτητη Επιτροπή Διερεύνησης των Συστημάτων Αντιπλημμυρικής Προστασίας» (ILIT) συγκροτήθηκε για τη διερεύνηση της συμπεριφοράς του συστήματος αντιπλημμυρικής προστασίας κατά τη διάρκεια και μετά την απομάκρυνση του Τυφώνα Κατρίνα.

Η διερεύνηση περιέλαβε: (1) αρχική αναγνώριση πεδίου και συλλογή δεδομένων αμέσως μετά την άφιξη του Τυφώνα Κατρίνα (29 Αυγούστου 2005) και του Τυφώνα Ρίτα (24 Σεπτεμβρίου 2005), (2) επισκόπηση της ιδιόρρυθμης γεωλογίας της ευρύτερης περιοχής, (3) λεπτομερείς αναλύσεις της διαδοχής των γεγονότων κατά τη διάρκεια των Τυφώνων Κατρίνα και Ρίτα, καθώς και των αιτιών και μηχανισμών των κυριότερων αστοχιών, και (4) διερεύνηση και μελέτη οργανωτικών και υπηρεσιακών θεμάτων που επηρέασαν τη συμπεριφορά του συστήματος αντιπλημμυρικής προστασίας.



Τα αποτελέσματα της διερεύνησης οδηγούν στο συμπέρασμα ότι η λειτουργία του συστήματος αντιπλημμυρικής προστασίας της Νέας Ορλεάνης υπονομεύθηκε από τον συνδυασμό πολλών αρνητικών παραγόντων: (1) στις μεγάλες διαστάσεις του φυσικού φαινομένου, (2) στην κακή συμπεριφορά του συστήματος αντιπλημμυρικής προστασίας λόγω αστοχιών συγκεκριμένων τμημάτων του έργου, εσφαλμένων τεχνικών επιλογών και σφαλμάτων κατά τον σχεδιασμό, κατασκευή, λειτουργία και συντήρηση του συστήματος, και (3)

Ετήσια Ομιλία Ε.Γ.Ε. "Γ. Μαρίνος – Ι. Παπασταματίου"

Γεώργιος Κούκης

Ο ρόλος της Γεωλογίας – Τεχνικής Γεωλογίας στην ανάδειξη, διατήρηση και προστασία αρχαίων μνημείων και ιστορικών χώρων: παραδείγματα από τον Ελληνικό Χώρο

Πραγματοποιήθηκε, με μεγάλη επιτυχία, η Ετήσια Ομιλία της Εταιρίας «Γ. Μαρίνος – Ι. Παπασταματίου» για το έτος 2010. Ο προσκεκλημένος ομιλητής Καθηγητής Γεώργιος Κούκης παρουσίασε την ιδιαίτερα ενδιαφέρουσα ομιλία του με τίτλο: «Ο ρόλος της Γεωλογίας – Τεχνικής Γεωλογίας στην ανάδειξη, διατήρηση και προστασία αρχαίων μνημείων και ιστορικών χώρων: παραδείγματα από τον Ελληνικό Χώρο».

Η ομιλία περιελάμβανε μια διαφωτιστική ιστορική αναδρομή, επισημαίνοντας τη ζωτική σημασία και τον καίριο ρόλο της Τεχνικής Γεωλογίας, αλλά και της Γεωλογίας γενικότερα, στην προστασία και ανάδειξη των αρχαιολογικών μνημείων και χώρων, με έμφαση στον Ελληνικό χώρο. Ο Καθηγ. Γ. Κούκης παρουσίασε το ιστορικό και τα αποτελέσματα ερευνών στον ιστορικό βράχο της Ακρόπολης των Αθηνών και του Ναού του Επικούριου Απόλλωνα στις Βάσσες και στη συνέχεια παρουσίασε τα αποτελέσματα πρόσφατων μελετών σε σειρά αρχαιολογικών χώρων ανά την Ελλάδα, από τη Σκύρο, την Κυπαρισσία, τη Λευκάδα, κ.λ.π.

Στην εκδήλωση παρευρέθηκε μεγάλος αριθμός συναδέλφων, μελών και φίλων της Ε.Γ.Ε.



Μετά το τέλος της Ομιλίας, ο πρόεδρος της Ε.Γ.Ε., Αν. Καθηγητής Απόστολος Αλεξόπουλος, απένειμε τιμητική πλακέτα στον Καθηγητή Γεώργιο Κούκη.

(από την ιστοσελίδα της Ελληνικής Γεωλογικής Εταιρίας http://www.geosociety.gr/Omilia2010_gr.html)

Το κείμενο της ομιλίας παρουσιάζεται στην ενότητα «ΑΡΘΡΑ».

στα γενικότερα υπηρεσιακά και οργανωτικά προβλήματα των τοπικών και ομοσπονδιακών οργανισμών που ήταν υπεύθυνοι για τον σχεδιασμό, κατασκευή, λειτουργία, συντήρηση και χρηματοδότηση του συνολικού συστήματος αντιπλημμυρικής προστασίας.



ΕΛΛΗΝΙΚΗ
ΕΠΙΣΤΗΜΟΝΙΚΗ
ΕΤΑΙΡΕΙΑ
ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ
& ΓΕΩΤΕΧΝΙΚΗΣ
ΜΗΧΑΝΙΚΗΣ

ΕΤΗΣΙΑ ΓΕΝΙΚΗ ΣΥΝΕΛΕΥΣΗ ΕΕΕΕΓΜ

Την Τρίτη 21 Δεκεμβρίου 2010 διεξήχθη η ετήσια Γενική Συνέλευση της ΕΕΕΕΓΜ στην αίθουσα εκδηλώσεων του Τεχνικού Επιμελητηρίου Ελλάδος. Λόγω των συνεχών απεργιακών κινητοποιήσεων στα Μέσα Μαζικής Μεταφοράς την εβδομάδα αυτή, η συμμετοχή μελών στην Γενική Συνέλευση ήταν περιορισμένη (20 μέλη). Στη συνέχεια παραθέτουμε το απολογισμό των πεπραγμένων της Εκτελεστικής Επιτροπής, καθώς και τον οικονομικό απολογισμό, οι οποίοι εγκρίθηκαν ομοφώνως.

ΕΚΘΕΣΗ ΠΕΠΡΑΓΜΕΝΩΝ (14.05.2008 + 20.12.2010)

1. ΕΙΣΑΓΩΓΗ

Η παρούσα Γενική Συνέλευση είναι η πρώτη μετά τις εκλογές της 13^{ης} Μαΐου 2008.

Τα δύομιση χρόνια που πέρασαν από τότε ήταν εξαιρετικά πλούσια σε γεγονότα και δραστηριότητες που εμπίπτουν στους σκοπούς της Επιστημονικής μας Εταιρείας σύμφωνα με το Καταστατικό της.

Ένα μεγάλο μέρος του χρόνου και της δραστηριότητας της Εκτελεστικής Επιτροπής αφιερώθηκε στην προετοιμασία και στην διεξαγωγή του 6^{ου} Πανελληνίου Συνεδρίου Γεωτεχνικής και Γεωπεριβαλλοντικής Μηχανικής, καθώς και στην προετοιμασία του 15^{ου} Πανευρωπαϊκού Συνεδρίου Εδαφομηχανικής και Γεωτεχνικής Μηχανικής. Αυτοί ήταν κυρίως και οι λόγοι που η παρούσα ετήσια Γενική Συνέλευση γίνεται με καθυστέρηση.

2. Η ΕΚΤΕΛΕΣΤΙΚΗ ΕΠΙΤΡΟΠΗ

Κατά την προηγούμενη Εκλογική Γενική Συνέλευση της ΕΕΕΕΓΜ εξελέγησαν στην Εκτελεστική Επιτροπή οι Ανδρέας Αναγνωστόπουλος, Πάνος Βέππας, Μανώλης Βουζαράς, Μιχάλης Καββαδάς, Σπύρος Καβουνίδης, Δημήτρης Κούμouλος, Γιώργος Ντούλης, Μιχάλης Παχάκης και Χρήστος Τσατσάνιφους με αναπληρωματικούς τους Μιχάλη Μπαρδάνη και Γιώργο Ντουνιά.

Η νέα Εκτελεστική Επιτροπή συγκροτήθηκε σε σώμα στις 22.05.2008 με την ακόλουθη σύνθεση:

Πρόεδρος : Χρήστος Τσατσάνιφους
Α' Αντιπρόεδρος : Παναγιώτης Βέππας
Β' Αντιπρόεδρος : Μιχάλης Παχάκης
Γεν. Γραμματέας : Μιχάλης Καββαδάς
Ταμίας : Μανώλης Βουζαράς

Έφορος και Αναπληρωτής Ταμίας: Γιώργος Ντούλης
Μέλη : Ανδρέας Αναγνωστόπουλος
Σπύρος Καβουνίδης
Δημήτρης Κούμouλος

Στην ίδια Γενική Συνέλευση εξελέγησαν για την Εξελεγκτική Επιτροπή οι παρακάτω:

1. Ορέστης Παπαγεωργίου
2. Θεόδωρος Κοργιαλός
3. Αριστοτέλης Καμαριώτης

Η Εκτελεστική Επιτροπή κατά την περίοδο από της εκλογής της μέχρι σήμερα συνεδρίασε 19 φορές.

Παράλληλα, δεδομένου ότι τα μέλη της ήταν και μέλη της Οργανωτικής Επιτροπής του 6^{ου} Πανελληνίου Συνεδρίου Γεωτεχνικής και Γεωπεριβαλλοντικής Μηχανικής, που συνδιοργανώθηκε με το ΤΕΕ, έλαβε μέρος σε πολυάριθμες συνεδριάσεις της ευρείας Οργανωτικής Επιτροπής στο ΤΕΕ, της οποίας προήδρευε το μέλος της ΕΕ της ΕΕΕΕΓΜ Δρ. Σπύρος Καβουνίδης.

3. ΝΕΑ ΜΕΛΗ

Από την τελευταία Γενική Συνέλευση μέχρι σήμερα ενεγράφησαν στην ΕΕΕΕΓΜ τα κάτωθι μέλη (κατά σειράν εγγραφής):

1. Γρυπάρης Φαίδων, Πολιτικός Μηχανικός
2. Βρεττός Χρήστος, Δρ. Πολιτικός Μηχανικός
3. Αλεξανδρής Χρήστος, Πολιτικός Μηχανικός
4. Αργυρούδης Σωτήριος, Πολιτικός Μηχανικός
5. Κίρτας Εμμανουήλ, Πολιτικός Μηχανικός
6. Κτενίδου Όλγα - Joan, Πολιτικός Μηχανικός
7. Χατζηαντωνίου Κλεονίκη, Πολιτικός Μηχανικός
8. Κανελαϊδής Κωνσταντίνος, Πολιτικός Μηχανικός
9. Χιώτης Ευστάθιος, Δρ. Μηχανικός Μεταλλείων - Μεταλλουργός
10. Ζαχαράκη Καλλιόπη, Πολιτικός Μηχανικός
11. Ελεζόγλου Κωνσταντίνος - Θρασύμβουλος, Μηχανικός Μεταλλείων - Μεταλλουργός
12. Κουρετζής Γεώργιος, Δρ. Πολιτικός Μηχανικός
13. Πανόπουλος Αθανάσιος, Πολιτικός Μηχανικός
14. Κομπόγιωργας Σέργιος, Πολιτικός Μηχανικός
15. Φώτη Σοφία, Δρ. Γεωλόγος - Πολιτικός Μηχανικός
16. Παπαδοπούλου Ανθή, Δρ. Πολιτικός Μηχανικός
17. Καλλού Παρασκευή, Πολιτικός Μηχανικός
18. Τυρολόγου Παύλος, Δρ. Γεωλόγος
19. Πιτιλάκης Δημήτριος, Δρ. Πολιτικός Μηχανικός
20. Χαλακατεβάκης Νικόλαος, Μεταλλειολόγος Μηχανικός
21. Γκλαβάς Γεώργιος, Πολιτικός Μηχανικός
22. Φελέκος Στυλιανός, Πολιτικός Μηχανικός

Επίσης ενεκρίθη η εγγραφή των κάτωθι:

1. Αστερίου Παύλος, Πολιτικός Μηχανικός
2. Γιαννόπουλος Δημήτριος, Πολιτικός Μηχανικός
3. Καραμήτρος Δημήτριος, Δρ. Πολιτικός Μηχανικός
4. Ασπρούδα Παναγιώτα, Πολιτικός Μηχανικός
5. Χασιώτης Ιωάννης, Πολιτικός Μηχανικός
6. Καραουλάνης Παύλος, Πολιτικός Μηχανικός

4. ΑΘΗΝΑΪΚΗ ΔΙΑΛΕΞΗ ΓΕΩΤΕΧΝΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Την Δευτέρα, 25 Ιανουαρίου 2010, δόθηκε η 6^η Αθηναϊκή Διάλεξη Γεωτεχνικής Μηχανικής με προσκεκλημένο ομιλητή τον ομότιμο καθηγητή του Imperial College John Burland με θέμα «Interaction between geotechnical and structural engineers»

Η διάλεξη είχε εξαιρετική επιτυχία λόγω του ενδιαφέροντος περιεχομένου τους και του τρόπου παρουσίασής τους και υπήρξε μαζική προσέλευση ακροατών.

Οι Αθηναϊκές διαλέξεις, που δίνονται ανά διετία, είναι πλέον καθιερωμένος θεσμός της Εταιρείας μας και αποτελούν επισημικό γεγονός.

5. ΑΛΛΕΣ ΕΚΔΗΛΩΣΕΙΣ - ΔΙΑΛΕΞΕΙΣ

ΕΚΔΗΛΩΣΕΙΣ ΠΕΡΙΟΔΟΥ ΔΕΚΕΜΒΡΙΟΥ 2008 – ΙΟΥΝΙΟΥ 2009

ΔΕΚΕΜΒΡΙΟΣ 2008

Δευτέρα 15 : «Νεότερες απόψεις για το Αδριάνειο υδραγωγείο και την τεχνολογική του σχέση με αρχαιότερα ελληνικά υδραυλικά έργα». ΧΙΩΤΗΣ, Ευστάθιος - Μηχανικός Μεταλλείων - Μεταλλουργός ΕΜΠ, τ. Διευθυντή Ινστιτούτου Γεωλογικών και Μεταλλευτικών Ερευνών

ΙΑΝΟΥΑΡΙΟΣ 2009

Τετάρτη 14 : «Χαρακτηρισμός και Αποκατάσταση Ρυπασμένων Χώρων στην Ελλάδα». ΠΑΝΤΑΖΙΔΟΥ, Μαρίνα - Επίκουρη Καθηγήτρια Τομέα Γεωτεχνικής Σχολής Πολιτικών Μηχανικών Εθνικού Μετσοβίου Πολυτεχνείου, ΜΠΟΥΡΑ, Φωτεινή - Αναπληρώτρια Προϊσταμένου Τμήματος Διαχείρισης Στερεών Αποβλήτων ΥΠΕΧΩΔΕ, Υποψήφια Διδάκτορας Τομέα Γεωτεχνικής Σχολής Πολιτικών Μηχανικών ΕΜΠ.

Δευτέρα 26 : «Νεότερες απόψεις για τις παραμέτρους μηχανικής συμπεριφοράς των πετρωμάτων». ΤΣΙΑΜΠΑΟΣ, Γεώργιος - Αναπληρωτής Καθηγητής Τομέα Γεωτεχνικής, Σχολής Πολιτικών Μηχανικών Εθνικού Μετσοβίου Πολυτεχνείου.

ΦΕΒΡΟΥΑΡΙΟΣ

Τετάρτη 4 : «Difficult Tunnel Excavations and Supports in Low to High Overburden Conditions». LAUNAY, Jean - Vinci Construction.

Τετάρτη 18 : «Η συμβολή της γεωλογίας στην μελέτη και κατασκευή φραγμάτων». ΜΑΡΙΝΟΣ, Παύλος - Καθηγητής Τομέα Γεωτεχνικής, Σχολής Πολιτικών Μηχανικών Εθνικού Μετσοβίου Πολυτεχνείου.

Τετάρτη 25 : «Αντισεισμικός σχεδιασμός υπόγειων κατασκευών μεγάλων διαστάσεων σε μικρό βάθος. Οδικές σήραγγες, σταθμοί μετρό, υπόγειοι χώροι στάθμευσης». ΠΙΤΙΛΑΚΗΣ, Κυριαζής - Καθηγητής Τομέα Γεωτεχνικής Μηχανικής, Τμήματος Πολιτικών Μηχανικών Πολυτεχνικής Σχολής Αριστοτελείου Πανεπιστημίου Θεσσαλονίκης.

ΜΑΡΤΙΟΣ

Τετάρτη 4 : Διαλέξεις Νέων Γεωτεχνικών Μηχανικών (συνδιοργάνωση με την Ειδική Επιστημονική Επιτροπή Εδαφομηχανικής και Θεμελιώσεων του Τεχνικού Επιμελητηρίου Ελλάδας).

Δευτέρα 16 : «The Implementation of EC7 on German DIN Standards». VOGT, Norbert - Technische Universität München.

ΑΠΡΙΛΙΟΣ

Τετάρτη 1 : «Seismic Slope Safety Assessment». SARMA, Sarada - Emeritus Reader in Engineering Seismology, Department of Civil and Environmental Engineering, Imperial College of Science, Technology and Medicine.

Δευτέρα 13 : «Νέες Μέθοδοι Υπολογισμού Μεγέθους και Κατανομής Ωθήσεων σε Κατασκευές Αντιστήριξης για Βαρυτικά και Σεισμικά Φορτία». ΜΥΛΩΝΑΚΗΣ, Γεώργιος - Επίκουρος Καθηγητής Τομέα Γεωτεχνικής και Υδραυλικής Μηχανικής Τμήματος Πολιτικών Μηχανικών Πολυτεχνικής Σχολής Πανεπιστημίου Πατρών.

ΜΑΙΟΣ

Δευτέρα 4 : «The Nicoll Highway Collapse, Singapore». HIGHT, David - Visiting Professor, Geotechnics Section, Department of Civil and Environmental Engineering, Imperial College of Science, Technology and Medicine / Geotechnical Consulting Group.

Τρίτη 5 : Θεσσαλονίκη «The Nicoll Highway Collapse, Singapore». HIGHT, David - Visiting Professor, Geotechnics Section, Department of Civil and Environmental Engineering, Imperial College of Science, Technology and Medicine / Geotechnical Consulting Group.

Δευτέρα 11 : Ημερίδα Γεωτεχνικών Οργάνων (συνδιοργάνωση με την Ειδική Επιστημονική Επιτροπή Εδαφομηχανικής

και Θεμελιώσεων του Τεχνικού Επιμελητηρίου Ελλάδας.

ΙΟΥΝΙΟΣ

Τετάρτη 3 : «Μη γραμμική 3D προσομοίωση της σταδιακής κατασκευής, πλήρωσης, και σεισμικής απόκρισης φραγμάτων λιθορριπής (CFRDs) και αξιολόγηση της επίδρασης σημαντικών παραμέτρων». ΝΤΑΚΟΥΛΑΣ, Πάνος - Αναπληρωτής Καθηγητής Γεωτεχνικού Τομέα Τμήματος Πολιτικών Μηχανικών Πολυτεχνικής Σχολής Πανεπιστημίου Θεσσαλίας, Βόλος.

ΕΚΔΗΛΩΣΕΙΣ ΠΕΡΙΟΔΟΥ ΔΕΚΕΜΒΡΙΟΥ 2009 – ΙΟΥΝΙΟΥ 2010

ΔΕΚΕΜΒΡΙΟΣ 2009

Δευτέρα 14 : «On Seismic Design of Retaining Structures». SITAR Nicholas - Professor, Department of Civil and Environmental Engineering, University of California, Berkeley

ΙΑΝΟΥΑΡΙΟΣ 2010

Τρίτη 12, Πάτρα «Compensation grouting for limiting settlements of two railway bridges induced by a twin-tunnel excavation». THURNER Robert - KELLER GROUNDBAU Des. m.b.H.

Τετάρτη 13 : «Compensation grouting for limiting settlements of two railway bridges induced by a twin-tunnel excavation». THURNER Robert - KELLER GROUNDBAU Des. m.b.H.

ΜΑΙΟΣ

Δευτέρα 03 «Σύγχρονες Εξελίξεις στον Σχεδιασμό και την Κατασκευή Στραγγιστηρίων - Χαλικοπασσάλων για τον Έλεγχο Ρευστοποίησης». ΜΠΟΥΚΟΒΑΛΑΣ Γεώργιος - Πολιτικός Μηχανικός, Καθηγητής Σχολής Πολιτικών Μηχανικών ΕΜΠ

Πέμπτη 27 : «Liquefaction criteria for marine soils». MAGNAN Jean-Pierre - Πολιτικός Μηχανικός, Καθηγητής Εδαφομηχανικής και Βραχομηχανικής στις École Nationale des Ponts et Chaussées και École Nationale des Travaux Publics de l'État

6. ΗΜΕΡΙΔΕΣ -ΣΥΝΕΔΡΙΑ ΣΤΗΝ ΕΛΛΑΔΑ

Κατά την περίοδο αναφοράς διεξήχθησαν στην Ελλάδα, με ευρεία και ενεργό συμμετοχή μελών της ΕΕΕΕΓΜ οι ακόλουθες ημερίδες και συνέδρια.

- 5÷7.11.2008 3^ο Πανελλήνιο Συνέδριο Αντισεισμικής Μηχανικής και Τεχνικής Σεισμολογίας. Αθήνα.
- 13÷15.10.2008 1^ο Πανελλήνιο Συνέδριο Μεγάλων Φραγμάτων, Λάρισα.

- 14.04.2010 Ημερίδα «Σχεδιασμός Αντιστηρίξεων. Θεωρία – Μέθοδοι - Παραδείγματα Εφαρμογής», Αθήνα (συνδιοργάνωση με τον Σύλλογο Πολιτικών Μηχανικών Ελλάδος).

Λεπτομερείς αναφορές στις εκδηλώσεις αυτές έχουν περιληφθεί στα τεύχη των «Νέων της ΕΕΕΕΓΜ».

7. 17^ο ΔΙΕΘΝΕΣ ΣΥΝΕΔΡΙΟ ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ ΚΑΙ ΓΕΩΤΕΧΝΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Το συνέδριο διεξήχθη στην Αλεξάνδρεια Αιγύπτου (5 ÷ 9 Οκτωβρίου 2009).

Η ΕΕΕΕΓΜ συμμετείχε με 11 ανακοινώσεις μελών της, καθώς και με 7 ανακοινώσεις μελών της στο Earthquake Geotechnical Engineering Satellite Conference, 2-3.10. 2009, Alexandria, Egypt. Επίσης τα μέλη Γ. Γκαζέτας, Π. Μαρίνος και Π. Φορτσάκης συμμετείχαν στα προεδρεία.

Την Τετάρτη 7 Οκτωβρίου 2009, στα πλαίσια προώθησης του 15^{ου} ECSMGE στην Αθήνα, η ΕΕΕΕΓΜ συμμετείχε στην διοργάνωση εκδήλωσης στο Εθνικό Μουσείο Αλεξανδρείας για την παρουσίαση πρόσφατα ανακαλυφθέντος Ελληνιστικού αγάλματος.

Λεπτομέρειες για το συνέδριο δίνονται στο τεύχος 24 των ΝΕΩΝ ΤΗΣ ΕΕΕΕΓΜ.

8. 6^ο ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΓΕΩΤΕΧΝΙΚΗΣ ΚΑΙ ΓΕΩΠΕΡΙΒΑΛΛΟΝΤΙΚΗΣ ΜΗΧΑΝΙΚΗΣ

Το 6^ο Πανελλήνιο Συνέδριο, που συνδιοργανώθηκε με το ΤΕΕ, διεξήχθη στον Βόλο στο διάστημα 29.09 έως 01.10.2010.

Το συνέδριο είχε μεγάλη επιτυχία τόσο από πλευράς συμμετοχών, λαμβανομένης υπ' όψη της οικονομικής συγκυρίας (337 εγγραφέντες σύνεδροι και 47 μέλη οργανωτικής και επιστημονικής επιτροπής, προσκεκλημένοι, μέλη Διοικούσας Επιτροπής ΤΕΕ και Επιστημονικής Επιτροπής Πολιτικών Μηχανικών ΤΕΕ), όσο και από πλευράς επιστημονικού ενδιαφέροντος.

Υποβλήθηκαν 228 εργασίες (ρεκόρ). Επίσης έγιναν 19 ειδικές ομιλίες και μια εναρκτήρια διάλεξη από προσκεκλημένο ομιλητή (Αθ. Παπαγιαννάκης). Με πρωτοβουλία της ΕΕΕΕΓΜ προσκλήθηκαν πάλι στο συνέδριο εκπρόσωποι των Εθνικών Γεωτεχνικών Ενώσεων των χωρών της Νοτιοανατολικής Ευρώπης για να συμμετάσχουν σε ειδική συνεδρία με θέμα «Νοτιοανατολική Ευρώπη - Εφαρμογή Ευρωκωδίκων / Southeastern Europe – Application of the Eurocodes».

Κατά την διάρκεια του συνεδρίου ανακηρύχθηκαν επίτιμα μέλη της ΕΕΕΕΓΜ και βραβεύθηκαν για την προσφορά τους στην γεωτεχνική κοινότητα ο Ομότιμος Καθηγητής ΕΜΠ Θεοδόσης Τάσιος και ο Ταμίας της ΕΕ ΕΕΕΕΓΜ Εμμανουήλ Βουζαράς. Επίτιμο μέλος της ΕΕΕΕΓΜ ανακηρύχθηκε και ο Ομότιμος Καθηγητής ΑΠΘ Δημήτριος Βαλαλάς, ο οποίος, όμως, δεν κατέστη δυνατόν να παρευρεθεί στο συνέδριο.

Λεπτομέρειες για το συνέδριο δίνονται στα τεύχη 32 και 33 των ΝΕΩΝ ΤΗΣ ΕΕΕΕΓΜ.

9. ΔΙΟΡΓΑΝΩΣΗ 15^{ου} ΠΑΝΕΥΡΩΠΑΪΚΟΥ ΣΥΝΕΔΡΙΟΥ

Η προετοιμασία για την διεξαγωγή του 15^{ου} Πανευρωπαϊκού Συνεδρίου Εδαφομηχανικής και Γεωτεχνικής Μηχανικής στην Αθήνα το Σεπτέμβριο του 2011 (12-15), με θέμα "Geotechnics of Hard Soils – Weak Rocks" προχωρά με γοργούς ρυθμούς.

Εγκρίθηκαν 369 περιλήψεις ανακοινώσεων. Τα πλήρη άρθρα αναμένεται να υποβληθούν μέχρι τις 15.03.2011.

10. ΥΠΟΣΤΗΡΙΞΗ ΣΥΜΜΕΤΟΧΗΣ ΝΕΩΝ ΓΕΩΤΕΧΝΙΚΩΝ ΜΗΧΑΝΙΚΩΝ ΣΕ ΔΙΕΘΝΕΙΣ ΕΚΔΗΛΩΣΕΙΣ

Με δαπάνες της ΕΕΕΕΓΜ έλαβαν μέρος σε Διεθνή και Ευρωπαϊκά Συνέδρια Νέων Γεωτεχνικών Μηχανικών (YGEC) οι κάτωθι συνάδελφοι:

- Α. Παπαδοπούλου και Γ. Αναγνωστόπουλος : 19^ο Ευρωπαϊκό YGEC, Győr Ουγγαρίας (4÷6 Σεπτεμβρίου 2008)
- Κ. Κακδέρη και Π. Φορτσάκης : 4^ο Διεθνές YGEC, Αλεξάνδρεια Αιγύπτου (2÷6 Οκτωβρίου, 2009)
- Δ. Καραμήτρος και Ο. – J. Κτενίδου : 20^ο Ευρωπαϊκό YGEC, Brno Τσεχίας (30 Μαΐου ÷ 1 Ιουνίου 2010)

Το επόμενο Ευρωπαϊκό Συνέδριο Νέων Γεωτεχνικών Μηχανικών θα διεξαχθεί στο Rotterdam Ολλανδίας (5 ÷ 7 Σεπτεμβρίου 2011) και το μεθεπόμενο στην Σουηδία (2012).

11. ΔΙΕΘΝΕΙΣ ΣΧΕΣΕΙΣ

11.1. Γενική Συνέλευση ISRM (Τεχεράνη Περσίας, 22-23.11.2008)

Η ΕΕΕΕΓΜ εκπροσωπήθηκε στην Γενική Συνέλευση της International Society for Rock Mechanics του 2008 από τον καθηγητή της Σχολής Μεταλλειολόγων και Μεταλλουργών Μηχανικών ΕΜΠ Αλέξανδρο Σοφιανό.

11.2. Γενική Συνέλευση ISRM (Hong Kong, Chine, 18.05.2009)

Η ΕΕΕΕΓΜ εκπροσωπήθηκε στην Γενική Συνέλευση της International Society for Rock Mechanics του 2009 από τον καθηγητή της Σχολής Μεταλλειολόγων και Μεταλλουργών Μηχανικών ΕΜΠ Αλέξανδρο Σοφιανό.

Κατά τα διεξαχθείσες αρχαιρεσίες για την εκλογή Προέδρου της ISRM εξελέγη ο καθηγητής Xia-Ting Feng από το Institute of Rock and Soil Mechanics της Chinese Academy of Sciences.

11.3. Γενική Συνέλευση της ISSMGE (Αλεξάνδρεια Αιγύπτου, 4.10.2009)

Την Κυριακή 4 Οκτωβρίου 2009 διεξήχθη η Γενική Συνέλευση της International Society for Soil Mechanics and Geotechnical Engineering στην Αλεξάνδρεια Αιγύπτου, στην οποία την ΕΕΕΕΓΜ εκπροσώπησε ο Πρόεδρος της Εκτελεστικής Επιτροπής της Χ. Τσατσανίφους.

11.4. Γενική Συνέλευση ISRM (Νέο Δελχί, Ινδία, 24.10.2010)

Η ΕΕΕΕΓΜ εκπροσωπήθηκε στην Γενική Συνέλευση της International Society for Rock Mechanics του 2010 από τον καθηγητή της Σχολής Μεταλλειολόγων και Μεταλλουργών Μηχανικών ΕΜΠ Αλέξανδρο Σοφιανό.

11.5. Συμμετοχή σε Τεχνικές Επιτροπές της ISSMGE

Σημαντική υπήρξε η συμμετοχή μελών μας στις Τεχνικές Επιτροπές (Technical Committees) της ISSMGE:

- TC101 Laboratory Stress Strength Testing of Geomechanics:
Vassiliki GEORGIANNOU (GRE090051)

- TC102 Ground Property Characterization from In-Situ Tests:
1. George ATHANASSOPOULOS (-)
2. Dimitris GAZELAS (-)
- TC103 Numerical Methods in Geomechanics:
1. Achilleas PAPADIMITRIOU (GRE090103)
2. George BELOKAS (GRE090021)
- TC106 Unsaturated Soils
Michalis BARDANIS (GRE090017)
- TC202 Transportation Geotechnics:
Andreas LOIZOS (-)
- TC203 Earthquake Geotechnical Engineering and Associated Problems:
1. Achilleas PAPADIMITRIOU (GRE090103)
2. George ATHANASSOPOULOS (-)
(Kyriazis PITILAKIS Chairman and George BOUCKOVALAS Core Member)
- TC204 Underground Construction in Soft Ground:
1. Panagiotis VETTAS (GRE090145)
2. Stavroula SCHINA (GRE090125)
3. Petros FORTSAKIS (GRE090048)
- TC207 Soil Structure Interaction and Retaining Walls:
Pantelis PANTELIDIS (GRE090099)
- TC208 Stability of Natural Slopes:
1. George BELOKAS (GRE090021)
2. Pavlos TYROLOGOU (-)
- TC210 Dams and Embankments:
1. George DOUNIAS (GRE090041)
2. Dimitris GAZELAS (-)
- TC211 Ground Improvement:
1. Ioannis (John) MARKOU (-)
2. Athanassios PLATIS (GRE090112)
- TC212 Deep Foundations:
Emilios COMODROMOS (-)
- TC215 Environmental Geotechnics:
1. Marina PANTAZIDOU (GRE090098)
2. Demetrios COUMOULOS (GRE090034)
- TC301 Preservation of Historic Sites:
Dimitris EGGLEZOS (GRE090042)
(Christos TSATSANIFOS Core Member)
- TC304 Engineering Practice of Risk Assessment and Management:
Pavlos TYROLOGOU (-)
- TC306 Education
Marina PANTAZIDOU (GRE090098)

11.6. Συμμετοχή σε Τεχνικές Επιτροπές της ISRM

Representation of ISRM Suggested Methods in Electronic Form (RISMEF) : Michalis SEKELLARIOU

11.7. Επαφές με Αξιωματούχους της ISSMGE

Στα πλαίσια της διοργάνωσης του 15^{ου} ESMGE συνεδρίασε η Conference Advisory Committee στις 7-9 Ιουλίου 2010 στην Αθήνα. Στην CAC μετέχουν οι:

Jean-Louis BRIAUD, Πρόεδρος ISSMGE
Pedro SECO e PINTO, πρώην Πρόεδρος ISSMGE
Ivan VANICEK, Αντιπρόεδρος ISSMGE για την Ευρώπη
Roger FRANK, πρώην Αντιπρόεδρος ISSMGE για την Ευρώπη

Vicente CUELLAR, Πρόεδρος Οργανωτικής Επιτροπής 14^{ου} ECSGME (Μαδρίτης)
Neil Taylor, Γενικός Γραμματέας ISSMGE
William Van Impe, Πρόεδρος Federation of Geoengineering Societies (FGS)
Ανδρέας ΑΝΑΓΝΩΣΤΟΠΟΥΛΟΣ, Πρόεδρος Οργανωτικής Επιτροπής 15^{ου} ECSMGE
Μιχάλης ΠΑΧΑΚΗΣ, Γραμματέας Οργανωτικής Επιτροπής 15^{ου} ECSMGE
Χρήστος ΤΣΑΤΣΑΝΙΦΟΣ, Πρόεδρος ΕΕΕΕΓΜ

Στην συνεδρίαση της CAC μετείχαν οι:

Pedro Sêco e Pinto, Ivan Vaníček, Roger Frank, Henrique Dapena (αντικαθιστώντας τον Vicente Cuellar), Neil Taylor, William Van Impe, Ανδρέας Αναγνωστόπουλος, Μιχάλης Παχάκης και Χρήστος Τσατσανίφους, καθώς και τα μέλη της Εκτελεστικής Επιτροπής Πάνος Βέττας, Μιχάλης Καββαδάς, Σπύρος Καβουνίδης, Δημήτρης Κούμουλος, Μιχάλης Μπαρδάνης, Γιώργος Ντούλης και Γιώργος Ντουινιάς.

Στις 23-25 Νοεμβρίου 2010 συνεδρίασε εκ νέου η CAC στην Πράγα Τσεχίας με την συμμετοχή των Ivan Vaníček, Ανδρέα Αναγνωστόπουλου, Μιχάλη Παχάκη και Χρήστου Τσατσανίφους.

11.8. Επαφές με Αξιωματούχους της ISRM

Ο Πρόεδρος της ΕΕΕΕΓΜ συνεχάρη τον νεοεκλεγέντα Πρόεδρο της ISRM και τον προσέκάλεσε να συμμετάσχει στο 15^ο ECSMGE, ο οποίος απεδέχθη την πρόσκληση.

11.9. Πρόταση Προέδρου ISSMGE για την αλλαγή του ονόματος

Ο Πρόεδρος της ISSMGE πρότεινε την αλλαγή του ονόματος της International Society for Soil Mechanics and Geotechnical Engineering σε International Society for Geotechnical Engineering. Μετά από ψηφοφορία, η ΕΕ αποφάσισε να απορρίψει (οριακά / 5 εναντίον και 4 υπέρ ψήφοι) την πρόταση.

12. ΕΚΔΟΣΕΙΣ

Συνεχίζεται, με επιμέλεια του Προέδρου Χ. Τσατσανίφους, η έκδοση του ενημερωτικού δελτίου «ΤΑ ΝΕΑ ΤΗΣ ΕΕΕΕΓΜ». Μέσα στην περίοδο αναφοράς εκδόθηκαν είκοσι (20) τεύχη (αρ. 14 έως 33) εκ των οποίων το ένα (τ. 32 Σεπτεμβρίου 2010) σε πολυτελή έκδοση με την ευκαιρία του 6^{ου} Πανελληνίου Συνεδρίου Γεωτεχνικής και Γεωπεριβαλλοντικής Μηχανικής.

13. ΙΣΤΟΣΕΛΙΔΑ

Έχει δημιουργηθεί υποτυπώδης ιστοσελίδα της ΕΕΕΕΓΜ (www.hssmge.gr), στην οποία αναρτώνται, επί του παρόντος, όλες οι παρουσιάσεις των εκδηλώσεων της εταιρείας.

14. ΠΡΟΣΕΧΕΙΣ ΕΚΔΗΛΩΣΕΙΣ

Υπάρχουν σχετικές ανακοινώσεις στα «ΝΕΑ ΤΗΣ ΕΕΕΕΓΜ» Τεύχος 33 και στο υπό έκδοση Τεύχος 34 (Δεκεμβρίου 2010).

Αθήνα, 20 Δεκεμβρίου 2010
Για την Εκτελεστική Επιτροπή

Ο Πρόεδρος
Χρήστος Τσατσανίφους

Ο Γενικός Γραμματέας
Μιχάλης Καββαδάς

Αθήνα, 7/5/2009

ΕΚΘΕΣΙΣ ΕΞΕΛΕΓΚΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ

Οι υπογεγραμμένοι: Ορέστης Παπαγεωργίου
Θεόδωρος Κοργιαλός
Αριστοτέλης Καμαριώτης

Αποτελούντες την Εξελεγκτική Επιτροπή της Ελληνικής Επιστημονικής Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής συμφώνως προς την σχετική απόφαση της Γενικής Συνέλευσης της 13.5.2008 ελέγξαμε το βιβλίο εσόδων – εξόδων και τα λοιπά δικαιολογητικά της οικονομικής διαχείρισης της Ε.Ε.Ε.Γ.Μ κατά το έτος 2008 ήτοι από 1^η Ιανουαρίου 2008 έως 31 Δεκεμβρίου 2008 η οποία έχει συνοπτικώς ως ακολούθως:

Υπόλοιπον της 31 ^{ης} Δεκεμβρίου 2007	Ευρώ	75.696,54	✓
Έσοδα από συνδρομές και εγγραφές	Ευρώ	9.520,00	✓
Τόκοι καταθέσεων έτους 2008	Ευρώ	957,03	✓
Σύνολο εσόδων	Ευρώ	86.173,53	✓
Μείον έξοδα	Ευρώ	-10.681,50	✓
Υπόλοιπον εις νέον	Ευρώ	75.492,07	✓

Το ποσόν τούτου ευρίσκεται την 1.1.2009:

1. Εις τον υπ' αρ. 1140-102726-3 λογ/σμό Ταχυδρ. Ταμειουχρίου	Ευρώ	68.428,31	✓
2. Εις τον υπ' αρ. 104-002101-204280 λογ/σμό Ταμειουχρίου Τραπέζης Alpha Bank	Ευρώ	1.809,48	✓
3. Εις τον υπ' αρ. 104-00-2786019010 λογ/σμό Ταμειουχρίου PLUS Τραπέζης Alpha Bank	Ευρώ	5.067,06	✓
4. Εις το Ταμείον μετρητά	Ευρώ	187,22	✓
Σύνολον	Ευρώ	75.492,07	✓

Τομέας Γεωτεχνικής, Σχολή Πολιτικών Μηχανικών, ΕΘΝΙΚΟ ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ

Ηρώων Πολυτεχνείου 9, Πολυτεχνειούπολη Ζωγράφου, 157 02 ΣΟΦΙΑ, Τηλ. 210.7723434 Τηλ. 210.7723426, Ηλ.δ. geotech@central.ntua.gr

Κατά τον έλεγχο διαπιστώσαμεν, ότι το βιβλίο εσόδων – εξόδων και όλα τα υπόλοιπα δικαιολογητικά ευρίσκονται σε απόλυτο τάξη και αρμονία και σε πλήρη αντιστοιχία μεταξύ τους και με τον απολογισμό κατά το χρονικό διάστημα από 1 Ιανουαρίου 2008 μέχρι 31 Δεκεμβρίου 2008. Κατόπιν τούτου προτείνουμε την έγκριση του απολογισμού και την απαλλαγή από κάθε ευθύνη της Εκτελεστικής Επιτροπής και της Εξελεγκτικής Επιτροπής.

Η Εξελεγκτική Επιτροπή


Ορ. Παπαγεωργίου


Θ. Κοργιαλός


Αρ. Καμαριώτης

Αθήνα, 23/2/2010

ΕΚΘΕΣΙΣ ΕΞΕΛΕΓΚΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ

Οι υπογεγραμμένοι: Ορέστης Παπαγεωργίου
Θεόδωρος Κοργιαλός
Αριστοτέλης Καμαριώτης

Αποτελούντες την Εξελεγκτική Επιτροπή της Ελληνικής Επιστημονικής Εταιρείας Εδαφομηχανικής και Γεωτεχνικής Μηχανικής συμφώνως προς την σχετική απόφαση της Γενικής Συνέλευσης της 13.5.2008 ελέγξαμε το βιβλίο εσόδων – εξόδων και τα λοιπά δικαιολογητικά της οικονομικής διαχείρισης της Ε.Ε.Ε.Γ.Μ κατά το έτος 2009 ήτοι από 1^{ης} Ιανουαρίου 2009 έως 31 Δεκεμβρίου 2009 η οποία έχει συνοπτικώς ως ακολούθως:

Υπόλοιπον της 31 ^{ης} Δεκεμβρίου 2008	Ευρώ	75.492,07
Έσοδα από συνδρομές και εγγραφές	Ευρώ	945,00
Τόκοι καταθέσεων έτους 2009	Ευρώ	306,79
Σύνολο εσόδων	Ευρώ	76.743,86
Μείον έξοδα	Ευρώ	-13.881,70
Υπόλοιπον εις νέον	Ευρώ	62.862,16

Το ποσόν τούτο ευρίσκεται την 1.1.2010:

1. Εις τον υπ' αρ. 1140-102726-3 λογ/σμό Ταχυδρ. Ταμιευτηρίου	Ευρώ	61.216,90
2. Εις τον υπ' αρ. 104-002101-204280 λογ/σμό Ταμιευτηρίου Τραπέζης Alpha Bank	Ευρώ	313,60
3. Εις τον υπ' αρ. 104-00-2786019010 λογ/σμό Ταμιευτηρίου PLUS Τραπέζης Alpha Bank	Ευρώ	1.082,50
4. Εις το Ταμείον μετρητά	Ευρώ	249,16
Σύνολον	Ευρώ	62.862,16

Κατά τον έλεγχο διαπιστώσαμεν, ότι το βιβλίο εσόδων – εξόδων και όλα τα υπόλοιπα δικαιολογητικά ευρίσκονται σε απόλυτο τάξη και αρμονία και σε πλήρη αντιστοιχία μεταξύ τους και με τον απολογισμό κατά το χρονικό διάστημα από 1 Ιανουαρίου 2009 μέχρι 31 Δεκεμβρίου 2009. Κατόπιν τούτου προτείνουμε την έγκρισή του απολογισμού και την απαλλαγή από κάθε ευθύνη της Εκτελεστικής Επιτροπής και της Εξελεγκτικής Επιτροπής.

Η Εξελεγκτική Επιτροπή


Ορ. Παπαγεωργίου


Θ. Κοργιαλός


Αρ. Καμαριώτης

ΠΡΟΣΚΛΗΣΕΙΣ ΓΙΑ ΣΥΜΜΕΤΟΧΗ ΣΕ ΕΡΕΥΝΗΤΙΚΑ ΠΡΟΓΡΑΜΜΑΤΑ

engineering aspects are covered by Middindi Consulting, seismic data analysis and theoretical mine seismology aspects by HAMERKOP Scientific Services.

Friedemann Essrich
Project Leader, SiM Mining Consultants (Pty) Ltd.
www.sim.co.za

New initiative to identify core issues contributing to seismic risk in South Africa's platinum mining sector

Earlier this year, the South African Mine Health and Safety Council awarded a 1-year research project to a consortium of mine seismology and rock engineering experts to establish contributing factors driving seismicity and rockbursting in platinum mines.

In its proposal, the project team suggested building on the gold mines' experience when it comes to managing seismic risk. Gold mines have been operating digital seismic networks for over twenty years during which valuable insight was gained into the relationship between geotechnical setting, stress fields, mining practice and seismicity.



Seismic failure of a pillar holing in an intermediate-depth platinum mine

Notwithstanding past experience, there are clear differences between gold and platinum mines: Rock types, virgin and mining induced field stresses, the almost complete absence of regional fault systems on the platinum side to name only a few.

The project aims at exploiting similarities when it comes to underlying principles of mining induced seismicity and focusing on the differences between Witwatersrand gold mines and platinum mines in the Western Bushveld Complex. The two main task groups in the project relate to detailed rockburst investigations on one hand (see photo), and suitable practices and procedures that deliver information relevant to successful seismic risk management on the other. The latter refers mainly to seismic monitoring, geological mapping, rock mass property data and stress measurements.

The project commenced in August 2010 and will be completed by July 2011. Project management responsibility rests with SiM Mining Consultants; geotechnical and rock

ΔΙΑΚΡΙΣΕΙΣ ΓΕΩΤΕΧΝΙΚΩΝ Κ.ΛΠ. ΕΠΙΣΤΗΜΟΝΩΝ

Ο Κώστας Συνολάκης είναι ο νέος Διευθυντής του Ελληνικού Κέντρου Θαλασσίων Ερευνών

Η περαιτέρω ανάπτυξη του Ελληνικού Κέντρου Θαλασσίων Ερευνών αλλά και του Ινστιτούτου Θαλάσσιας Βιολογίας Κρήτης είναι ο στόχος του νέου του διευθυντή, καθηγητή του Πολυτεχνείου Κρήτης Κώστα Συνολάκη σύμφωνα με δήλωσή του ίδιου στο enet.



Συγκεκριμένα, ο κ. Συνολάκης ο οποίος αναλαμβάνει τη διεύθυνση του Ελληνικού Κέντρου Θαλασσίων Ερευνών (ΕΛΚΕΘΕ), σύμφωνα με σημερινή ανακοίνωση του υπουργείου Παιδείας, σημειώνει:

"Η εκλογή μου σαν Πρόεδρος-Διευθυντής του ΕΛΚΕΘΕ αποτελεί ιδιαίτερη τιμή, πολλώ δε μάλλον όταν η αξιολόγηση έγινε με πρωτόγνωρη για την Ελλάδα διαδικασία από το Εθνικό Συμβούλιο Έρευνας και Τεχνολογίας (ΕΣΕΤ). Η προεδρία του ΕΛΚΕΘΕ είναι μια μεγάλη πρόκληση, ειδικά σε αυτή την δύσκολη οικονομική συγκυρία. Σκοπός μου είναι η περαιτέρω ανάπτυξη του ΕΛΚΕΘΕ και του ΙΘΑΒΙΚ ούτως ώστε να πρωτοστατήσουν στην επιστημονική, οικολογική και οικονομική ανάπτυξη της νέας Ελλάδας.

Γνωρίζουμε ελάχιστα για την βιοποικιλότητα των θαλασσών μας και ακόμη λιγότερα για το τι βρίσκεται κάτω από τους βυθούς μας, ενώ πολλές παραλίες μας είναι σε απειληστική κατάσταση. Θα είναι ένα ταξίδι εξερεύνησης, και ευχαριστώ το Πολυτεχνείο Κρήτης και τα Χανιά, που με προσέλκυσαν πίσω στην Ιθάκη και μου έδωσαν αυτή την ευκαιρία υπηρεσίας της παγκόσμιας επιστήμης".

(Γ.ΛΥΒ. / enet.gr, Τετάρτη 29 Δεκεμβρίου 2010)



Ο Παύλος Μαρίνος «2010 Richard Jahns Distinguished Lecturer»

Ο Καθηγητής Παύλος Μαρίνος επελέγη από τη Γεωλογική Εταιρεία της Αμερικής (GSA) από κοινού με την Ένωση Τεχνι-

κών Γεωλόγων της ίδιας χώρας (AEG), ως ο «2010 Richard Jahns Distinguished Lecturer». Ο θεσμός χρονολογείται από το 1988 και για πρώτη φορά προκρίνεται μη Αμερικανός επιστήμων. Επιλέγεται κάθε χρόνο επιστήμων ο οποίος μέσω της «εξαιρετικής του έρευνας έχει συμβάλει στην προαγωγή της Τεχνικής Γεωλογίας και που τα αποτελέσματα της έρευνας αυτής είναι επίκαιρα». Ο επιλεγείς παρουσιάζει σειρά διαλέξεων κυρίως στα πιο σημαντικά Πανεπιστήμια (Σχολές Γεωλογίας, Πολιτικού Μηχανικού και Μεταλλειολόγων Μηχανικών) στις περισσότερες πολιτείες των Ηνωμένων Πολιτειών και σε Ιδρύματα του Καναδά. Προγραμματίζονται περί τις 60 διαλέξεις που θα πραγματοποιηθούν το πρώτο εξάμηνο του 2010.

Ένας σύντομος απολογισμός της σειράς διαλέξεων-μαθημάτων που έγιναν στα πλαίσια του βραβείου αυτού, παρουσιάζεται στη συνέχεια.

2010 "R.JAHNS DISTINGUISHED LECTURER"

The Association of Environmental & Engineering Geologists (AEG) and the Engineering Geology Division of America (GSA) jointly established the Richard H. Jahns Distinguished Lectureship in 1988 to commemorate Jahns and to promote student awareness of Engineering Geology through a series of lectures offered at various locations around the United States.

1. Number of lectures: 111
2. Number of venues: 96
3. Number of lectures outside USA: 19 (Australia: 6, Canada: 6, Greece: 1, India: 1, Switzerland: 5)
4. Number of participants attended
Total: 4318
Max in one lecture: 150
Mean per lecture: 39
5. Topics
 - i. Tunneling in difficult ground: 17
 - ii. Geological constraints and geotechnical issues in mechanized tunneling: 9
 - iii. Tunneling through karstic rocks: 12
 - iv. Rock mass characterization; a vehicle to translate Geology into the design of Engineering structures: 23
 - v. Geology in dam engineering. An evolving contribution of Engineering Geology for safety and efficiency: 20
 - vi. Geology of Athens, Greece. A case of urban Geology: 28
 - vii. Feature lecture and Review: 2
6. University Departments, AEG section, ASCE sections and other scientific/professional bodies

Geology/Earth Science Departments (or similar): 3
Civil Eng. Departments: 22
Geological Engineering Departments: 10
AEG Sections or Chapters: 2
ASCE¹ Sections: 3
Australian Geomechanics Association: 6
Canadian Geotechnical Society: 3
Swiss Tunneling Society: 1
Companies: 5
Other: 5
7. Level of students in lectures

Graduates: 23
Graduates and Undergraduates: 22
Undergraduates: 21

8. "Engineering geology" courses included in the University program (for 60 Departments)

Yes: 23
Somehow: 7
No: 30

9. Travel

Drive: 17240 miles
Flights: 32 domestic + 8 international (Australia included)

10. Total time spend

About 6 months in USA and 2 weeks in Australia

11. Universities visited

APPALACHIAN STATE U.
ARIZONA STATE U.
CALIFORNIA POLY POMONA
COLLEGE OF CHARLESTON
COLLEGE OF WILLIAM AND MARY
COLORADO SCHOOL OF MINES
CUNY
EAST TENNESSEE STATE U.
FLORIDA INTERNATIONAL U.
FURMAN U.
GEORGE MASON U.
GEORGIA TECH
KENT STATE U.
LAURENTIAN U. (CANADA)
M.I.T.
MISSISSIPPI STATE U.
MISSOURI SCIENCES AND TECHNOLOGY (3)
NORTH CAROLINA U.
NORTH CAROLINA STATE U.
NORTHERN ARIZONA U.
NORTHWESTERN U.
PORTLAND STATE U. (2)
PURDUE U. (2)
RADFORD U.
QUEENS U. (CANADA) (2)
RUTGERS U.
SAINT LOUIS U.
SAN FRANCISCO STATE U.
SOUTH DAKOTA SCHOOL OF MINES & TECHNOLOGY
STATE U. OF NEW YORK FREDONIA
TULANE U.
U. OF ALASKA FAIRBANKS (2)
U. OF CALIFORNIA BERKELEY
(U OF CALIFORNIA DAVIS)
U OF CALIFORNIA LOS ANGELES
U. OF CALIFORNIA RIVERSIDE
U. OF MISSOURI, KANSAS CITY (2)
U. OF MARYLAND
U. OF MICHIGAN, ANN ARBOR
U. OF MINNESOTA, DULUTH (2)
U. OF MISSISSIPPI (OLE MISS) (2)
U. OF NEVADA, LAS VEGAS
U. OF NEVADA, RENO
U. OF NORTH CAROLINA, CHARLOTTE
U. OF SOUTH CAROLINA
U. OF SOUTHERN MISSISSIPPI
U. OF TEXAS, ARLINGTON
U. OF TEXAS, AUSTIN (2)
U. OF TEXAS, SAN ANTONIO
U. OF WASHINGTON (2)
U. OF WISCONSIN-MADISON
VIRGINIA TECH
WESTERN CAROLINA U.
WESTERN WASHINGTON U.

12. AEG Sections visited

Allegheny-Ohio Section
Arizona Section
Baltimore – Washington – Harrisburg Section
Great Basin Section
Inland Empire Chapter and Inland Geologic Society
Intermountain Section
Kansas City - Omaha Section
Lower Mississippi Valley Section
New York / Philadelphia Section
North Central Section
Oregon Section
Rocky Mountain Section
Sacramento Section,
Saint Louis Section
San Francisco Section
South Nevada Section
Southeastern Section with Atlanta Geological Society
Southern California Section
Texas Section
Washington State Section
Also Chapter in Buffalo with the Buffalo Association of Professional Geologists.

ΠΡΟΣΕΧΕΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΚΔΗΛΩΣΕΙΣ

Για τις παλαιότερες καταχωρήσεις περισσότερες πληροφορίες μπορούν να αναζητηθούν στα προηγούμενα τεύχη του «περιοδικού» και στις παρατιθέμενες ιστοσελίδες.

5th International Conference on Earthquake Geotechnical Engineering, Santiago, Chile, 10 - 13 January 2011, www.Sicege.cl



**1st International Conference
Sustainable Construction
Prague, 3 - 4 February 2011**
www.udrzitelnavystavba.cz

Sustainable Construction is aimed to gather knowledge on fundamentals and substance of monitored phenomena of interaction of buildings and other structures with the surrounding environment, explain their causes and potential impacts for later use for securing economically competitive construction with an increased utility value and lower energy intensity, lower demand for raw material input and new land, while decreasing health and life hazard during natural disasters, accidents and calamities.

Sustainable Construction responds to newly defined requirements of the present time, when the task of a civil engineer is not only technical solution, including that for non-standard conditions, but also a new dimension, connected with ecological, sociological, architectural and, last but not least, economic needs. In this respect, the tasks enjoy the highest priority.

The Faculty of Civil Engineering, Czech Technical University in Prague has been working on the Research Plan of the Ministry of Education, Youth and Sports of the Czech Republic MSM 6840770005, solving the due topic.

The main aim of the conference is to facilitate exchange of experience in Sustainable Construction in a broader context not only from the perspective of the outcomes achieved in research so far, but also from a more general standpoint, particularly long-term strategy on a national as well as international level.

To accomplish this target, the conference is divided into two major parts. The first one implies the viewpoint of Sustainable Construction as a whole. Both national and international representatives of individual ministries and professional organisations dealing with these issues are planned to present. Therefore, it is intended for all conference participants.

The second part will focus on four major work topics creating the axis of Sustainable Construction and will be held in separate sections:

WP 1 - Construction on brownfields - the aim is to define the conditions leading to the preferable construction on the former underused building sites, instead of the construction on the "greenfields". The reason is that at the present time the pace of annexation of green-fields for new constructions is not acceptable from the sustainable development perspective.

WP 2 - Sustainable construction of buildings - the aim is to find a balanced relation between the construction activities and buildings with the interior environment of good quality on the one hand and the environmental burden on the other one in the whole life cycle of constructions - especially with respect to building materials and low energy consumption including renewable resources.

WP 3 - Waste utilization, recycled materials in the building industry - the aim is to define the conditions allowing reduction of waste production, to develop recycling of waste, particularly building waste materials and their reuse in new construction of buildings and other structures. How this point of view is allowed for during the designing of new buildings and structures and assessment of their life cycle.

WP 4 - Natural hazards (calamities, accidents) - optimisation of protection, interaction with structures - the aim is to reduce the negative impact of these phenomena both on lives of inhabitants and property damage. A risk analysis, a probability method, an optimisation of protection and a safe technical solution of buildings and structures under extreme conditions are the subject of the conference.

Ing. Daniel Jirasko, PhD; fdaniel.jirasko@fsv.cvut.cz
Ing. Jan Valenta, PhD; jan.valenta@fsv.cvut.cz

Fax: +420 233 334 206

Address:
Department of Geotechnics
Faculty of Civil Engineering, Czech
Technical University in Prague
Thdkurova 7
166 29 Prague 6
Czech Republic



12th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst
10-14 January 2011, St. Louis, Missouri, USA
www.pela.com/Sinkhole2011req.pdf

This highly successful interdisciplinary biennial conference series is the most important international meeting that concentrates on the practical application of karst science. It serves as a means for geologists and geographers, who study how and where karst develops and how sinkholes form, to interact with engineers and planners, who apply this information to building and maintaining society's infrastructure while protecting our environment.

Since the first meeting in 1984, the goal of these conferences has been to share knowledge, experience, and case studies that emphasize scientific understanding of karst with practical technological applications. Karst impacts groundwater and surface water resources, waste disposal and management, highways and other modes of transportation, structural foundations, utilities, and other infrastructure. Karst underlies about 25% of the USA and the land surface of the world, making this conference highly relevant to civil, geotechnical and environmental professionals, as well as to geologists, biologists, geographers, planners, developers, government officials, and others who work in karst areas.

Conference Tracks and Topics

Sessions on the following tracks are tentatively planned.

Karst Development & Mapping

- The Formation of Karst and Sinkholes
- Applications of Geophysics for Investigating Karst
- New Geotechnical Investigation Techniques for Karst
- GIS Mapping and Computer Databases of Karst Features
- Karst Imaging

Pro-Active and Remedial Engineering in Karst Terrain

- Foundation Design and Construction, Shallow or Deep
- Dams and Impoundments
- Engineering Man's Infrastructure in Karst
- Sinkhole Mitigation and Repair
- Grouting Techniques
- Low Permeability Barrier

Karst Water Resource Management

- Hydrology of the Missouri and Illinois Karst Areas and Water Resources Management
- Groundwater Tracing
- Storm Water & Waste Water Management
- Contaminant Monitoring and Remediation in Karst
- Modeling Groundwater Flow in Karst
- Planning and Regulation

P. E. LaMoreaux & Associates, Inc.
Attn: SINKHOLE CONFERENCE 2011.
1009A 23rd Avenue
Tuscaloosa, AL 35401, USA
Phone: (205) 752 5543 Ext. 46
Fax: (205) 752-4043
sinkholeconference2011@pela.com



www.co2geonet.com

The European Student Lecture Tour 2010-2011
"Geological storage of CO₂"
EAGE – European Association of Geoscientists and Engineers

Capturing CO₂ at large industrial plants and storing it underground in deep geological layers is a top priority in the race to significantly reduce atmospheric emissions of greenhouse gases (GHG), thus helping to mitigate climate change and ocean acidification. By storing CO₂ under-

ground, the carbon released through burning coal, oil and gas is returned back to where it was extracted, rather than released into the atmosphere.

Since the 90's, a huge research effort on CO₂ geological storage, especially in Europe, has led to significant outcomes and the technology has now reached a transition stage between research and worldwide deployment.

Στα πλαίσια του παραπάνω προγράμματος, το Ελληνικό Τμήμα της Πανευρωπαϊκής Ένωσης Γεωφυσικών (European Association of Geoscientists & Engineers, EAGE) σε συνεργασία με το Εργαστήριο Εφαρμοσμένης Γεωφυσικής της Σχολής Μηχανικών Μεταλλείων Μεταλλουργών του ΕΜΠ διοργανώνει διάλεξη με τίτλο «Υπεδαφική Αποθήκευση CO₂» που θα δώσει ο Καθηγητής Lombardi του Πανεπιστημίου της Ρώμης στο Αμφιθέατρο Πολυμέσων του ΕΜΠ (κάτω από την Βιβλιοθήκη του ΕΜΠ) την **Τρίτη 11 Ιανουαρίου 2011** και ώρα 12:30 μμ.

Η διάλεξη απευθύνεται σε φοιτητές μεταπτυχιακού (θα συμμετάσχουν οι φοιτητές του Δ.Π.Μ.Σ. «Σχεδιασμός & Κατασκευή Υπογείων Έργων») και προπτυχιακού επιπέδου αλλά και σε επιστήμονες συγγενούς περιεχομένου.

Περισσότερες πληροφορίες από:

Δρ. Γεώργιος Αποστολόπουλος
Επίκουρος
Καθηγητής
Εθνικό Μετσόβιο Πολυτεχνείο
Σχολή Μηχανικών Μεταλλείων Μεταλλουργών
Τομέας Μεταλλευτικής
Εργαστήριο Εφαρμοσμένης Γεωφυσικής
Πολυτεχνειούπολη, Ζωγράφου 157 80, Αθήνα
Τηλ. 210 772 2195
fax 210 7722203
e-mail: gapo@metal.ntua.gr



Διάλεξη καθ. Θ.Π. Τάσιου στο Μέγαρο Μουσικής

Στο πλαίσιο των εκδηλώσεων «Μέγαρον Plus», ο καθηγητής Θ.Π. Τάσιος θα μιλήσει την Πέμπτη 20 Ιανουαρίου 2011, ώρα 19.00, με θέμα «Επαγγελματικές Δεοντολογίες ή Κώδικες συμπεριφοράς Επαγγελματιών και Επιχειρήσεων κατά την άσκηση των κοινωνικών-τους λειτουργημάτων».

Είσοδος ελεύθερη με δελτία εισόδου από το ταμείο του Μεγάρου Μουσικής. Πληροφορίες στον αριθμό τηλεφώνου: 210.7282333.

Ακολουθεί η περίληψη της ομιλίας:

ΕΠΑΓΓΕΛΜΑΤΙΚΕΣ ΔΕΟΝΤΟΛΟΓΙΕΣ
(Ατόμων και Επιχειρήσεων)
Μέγαρον Plus, 20 Ιανουαρίου 2011

Στον Κύκλο των διαλέξεων «Φιλοσοφία και Κοινωνία» τις οποίες παρουσιάζει απο πέρυσι ο Καθηγητής **Θ.Π. Τάσιος**, εντάσσεται και η εκδήλωση της Πέμπτης, **20 Ιανουαρίου 2011**, όπου ο Θ. Τάσιος θα μιλήσει για το κοινωνικό ζήτημα «Επαγγελματικές Δεοντολογίες» ή Κώδικες συμπεριφοράς Επαγγελματιών και Επιχειρήσεων κατά την άσκηση των κοινωνικών-τους λειτουργημάτων. Η διάλεξη αναφέρεται πρώτα στα αμφοτερομερή οφέλη «άτομο-κοινωνία» μέσω επαγγέλματος, καθώς και στην ικανοποίηση και ορισμένων δημιουργικών αναγκών του Ατόμου-επαγγελματία. Τονίζεται η αναπόφευκτη ηθολογική βάση αυτών των εν επαγγέλματι σχέσεων. Ακολουθεί η διερεύνηση των συνθηκών που απαι-

τούν την κωδικοποίηση των κανόνων που διέπουν τις σχέσεις επαγγελματία προς τον περίγυρό του. Υποδεικνύονται δε τα πολλαπλά οφέλη που προκύπτουν απ' την εφαρμογή αυτών των Κωδίκων Επαγγελματικής Δεοντολογίας. Η διάλεξη ακολουθώντας εστιάζει στο μέγα καρκίνωμα της Ετεροδοσοληψίας (δωροδοκίας κ.λπ.), αναλύοντας τις συνθήκες που την προάγουν και το είδος των δράσεων που απαιτούνται για την εξάλειψή της. Εξ άλλου, γίνεται διεξοδικά λόγος για τις επιμέρους δεοντολογίες Υπαλλήλων, Ελεύθερων Επαγγελματιών και Επιστημόνων Ερευνητών. Σ' αυτήν την τελευταία κατηγορία, μάλιστα, αναφέρονται πλήθος από ηθοφιλοσοφικά προβλήματα, μεγάλης κοινωνικής σημασίας.

Η διάλεξη τελειώνει με μian κάπως φιλοσοφικότερη ανάλυση του νέου φαινομένου της Επιχειρησιακής Υπευθυνότητας, του οποίου αναγνωρίζονται οι μεγάλες κοινωνικές και περιβαλλοντικές συνέπειες.



Piling & Deep Foundations Middle East 2011
30 January - 02 February, 2011, Beach Rotana, Abu Dhabi, UAE
<http://www.pilingfoundationsummit.com/Event.aspx?id=389448>

Successful construction project performance relies on efficient delivery of piling and foundations in a timely and cost-effective manner.

Optimising foundation design provides the opportunity to maximise the functionality of piling structures while minimising material use, resulting in favourable construction methods and ease and speed of implementation and testing.

Piling & Deep Foundations Middle East 2011 is the fourth annual installment of the region's leading four-day Piling & Deep Foundation event series. This event will feature new and exclusive case study presentations from the latest piling and foundations projects including island, airport and city development works. Piling & Deep Foundations Middle East 2011 will provide a platform for best-practice discussions, regulatory updates and an exchange of innovative methods.

The summit will bring together key regional and international stakeholders from the geo-technical, piling and foundations sector. The executive speaker line up will feature contractors, consultants, developers and geotechnical experts to ensure that quality and value are delivered through the program.



**Russian experience and development
of innovative technologies for the construction of
tunnel projects in Sochi
February 7-10, 2011, Sochi, RUSSIA**

At the present time, transport infrastructure projects are being constructed in the city of Sochi (Russia) to prepare this city to host the 2014 Winter Olympic Games. Much work needs to be done within a short period of time. Tunnel construction for railways and roads, is an enormous part of the entire scope of work. Approximately 20 tunnels with a total length of over 40 km are currently under construction. Construction of such a large number of tunnels, within a short period, considering such difficult conditions as: urban area, conservation zone, mountain relief, unfavorable geological conditions with tectonic zones and seismic activity requires new approaches. Designers and constructors apply the most innovative and highly productive equipment from the world's leading manufacturers.

On the recommendation of the International Olympic Committee, the Russian Tunnelling Association together with the International Tunnelling Association has organized the International Conference «Russian experience and development of innovative technologies for the construction of tunnel projects in Sochi». The purpose of this Conference is to share Russian and International successful experiences in construction of transport tunnels, as well as to contribute to effective problem solving which occurred during the design and construction of tunnels in Sochi. The Conference will be held on February 8-10, 2011 in Sochi, Russia.

Specialists of Russian design, engineering, construction and research organizations and specialists of leading international companies will participate in the Conference.

At the Conference you will be able to discuss and exchange your points of view on various issues regarding design, construction and maintenance of transport tunnels under difficult geological and urban conditions.

The following topics are suggested for reports:

- base of standards for design and construction of transport tunnels;
- equipment and technologies for construction of tunnels using conventional excavation method;
- equipment and technologies for construction of tunnels using shield method (TBMs);
- equipment and technologies for construction of tunnels using cut and over;
- structure and materials for temporary support and lining;
- tunnel waterproofing;
- methods of passing through fault zones and unstable ground zones;
- methods and means of assessing and monitoring rock and lining condition during tunnel construction;
- consideration of landslide danger and protection of natural and urban environment during tunnel construction and maintenance;

- new experience in operation of transport tunnels (technological equipment, organization and safety of traffic, fire-safety measures, people evacuation, etc).

Participants should submit their applications between December 1, 2010 and January 21, 2011.

RUSSIAN TUNNELLING ASSOCIATION

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2nd International FLAC/DEM Symposium, 14-16 February 2011, Melbourne, Australia,
www.flacdemsymposium.com/index.php

6th International Conference on Dam Engineering, 15-17th February 2011, Lisbon, Portugal, <http://dam11.lnec.pt>

Piling & Deep Foundations Europe 2011, 22 - 23 February, 2011, Warsaw, Poland www.pilingfoundationeurope.com

International Conference on Tunnelling and Trenchless Technology, 1-3 March 2011, Kuala Lumpur (Malaysia), www.iem.org.my/external/tunnel/index.htm

14th Australasian Tunnelling Conference 2011 "Development of Underground Space, 8-10 March 2011, Auckland, New Zealand, www.atstunnellingconference2011.com

Geo-Frontiers 2011 - Advances in Geotechnical Engineering, 13-16 March, Dallas, Texas, USA, www.geofrontiers11.com



TUNNELS & UNDERGROUND CONSTRUCTION

2nd Annual Tunnels & Underground Construction Middle East

**Designing, constructing and operating cost-effective,
durable and safe tunnel and underground construction projects**

13 - 16 March, 2011, Beach Rotana, Abu Dhabi, UAE
www.tunnelconstructionme.com

As governments in the Middle East continue to invest in infrastructure, the number of tunneling and underground construction projects, both already in progress and planned, is on the increase.

Building on the success of the 1st Annual Tunnels & Underground Construction Middle East summit, which was held in May, in Abu Dhabi, IQPC Middle East is delighted to announce the dates for its 2nd annual event.

The 2nd annual event will be held between the 13th and the 16th March 2011 and for the second year in a row, the conference will take place in Abu Dhabi under the patronage of the Municipality of Abu Dhabi City.

However, this year's event is set to be bigger and better than ever before, with case-studies of successful projects

and projects in progress from the UAE, Qatar, Egypt and Saudi Arabia. Plus! With over 30 top-level speakers, you're certain to be able to access the level of expertise that you need to guide your tunnelling and underground construction projects to success.

With an agenda designed by the industry for the industry, If you're involved in the design, construction or maintenance of tunnels and underground construction projects, this will be the one event in 2011 that you can't afford to miss



2011 Rankine Lecture

<http://bga.city.ac.uk/cms/html/51stRankineLecture.pdf>

The 2011 Rankine Lecture will take place on Wednesday 16th March 2011 at Imperial College London. This year's presentation will be given by Prof. Scott W. Sloan of the University of Newcastle, NSW, Australia, on the subject of *Geotechnical Stability Analysis*.

ABSTRACT

Historically, geotechnical stability analysis has been performed by a variety of approximate methods that are based on the notion of limit equilibrium. Although they appeal to engineering intuition, these techniques have a number of major disadvantages, not the least of which is the need to presuppose an appropriate failure mechanism in advance. This feature can lead to inaccurate predictions of the true failure load, especially for cases involving layered materials, complex loading, or three-dimensional deformation.

This lecture will describe recent advances in stability analysis which avoid these shortcomings. Attention will be focused on new methods which combine the limit theorems of classical plasticity with finite elements to give rigorous upper and lower bounds on the failure load. These methods, known as finite element limit analysis, do not require assumptions to be made about the mode of failure, and use only simple strength parameters that are familiar to geotechnical engineers. The bounding properties of the solutions are invaluable in practice, and enable accurate solutions to be obtained through the use of an exact error estimate and automatic adaptive meshing procedures.

The methods are extremely general and can deal with layered soil profiles, anisotropic strength characteristics, fissured soils, discontinuities, complicated boundary conditions, and complex loading in both two and three dimensions. Following a brief outline of the new techniques, stability solutions for a number of practical problems will be given including foundations, anchors, slopes, excavations, and tunnels.

ΒΙΟΓΡΑΦΙΚΑ ΣΤΟΙΧΕΙΑ ΟΜΙΛΗΤΗ

Scott Sloan is Laureate Professor and Director of the Australian Research Council (ARC) Centre of Excellence in Geotechnical Science and Engineering at the University of Newcastle, NSW, Australia. He is a Fellow of both the Australian Academy of Science and the Academy of Technological Sciences and Engineering, and currently holds an ARC Laureate Fellowship. Scott is the recipient of various awards in-

cluding the Telford Medal and Telford Premium from the ICE and the Thomas A Middlebrooks Award from the ASCE. He also delivered the 2003 E H Davis Memorial Lecture at the invitation of the Australian Geomechanics Society. Scott is currently editor-in-chief of *Computers and Geotechnics* and serves on the editorial boards of 5 other international journals. He is the author of over 220 papers in geotechnical engineering and regularly engages with industry through his role as a Visiting Senior Principal with Coffey Geotechnics.

For full details of the presentation and information on how to book your place for the dinner which follows the talk please see the listings and flyer on the BGA website. Individual tickets are priced at £70 and tables of 10 at £700. Completed booking forms and any enquiries should be sent to Dr Cath O'Sullivan at cath.osullivan@imperial.ac.uk.

A half-day seminar at Imperial College on *Modelling Ultimate Limit States (ULS) in Geotechnical Finite Element Analysis* will precede the evening's presentation, from 1.30pm to 4.30pm. Full details are again available in the events section of the BGA website. To book places or enquire further please contact Dr Lidija Zdravkovic at l.zdravkovic@imperial.ac.uk.



8th Rencontres Géosynthétiques 22 - 24 March 2011, Tours, France

www.rencontresgeosynthesiques.org/index.html

Les Rencontres Géosynthétiques 2011 sont le huitième colloque francophone sur les géotextiles, les géomembranes et les produits apparentés organisé par le Comité Français des Géosynthétiques (CFG).

Ces rencontres techniques réservées à la présentation de cas réels d'ouvrages feront le point sur l'état de l'art, les pratiques recommandées et les normes en vigueur. Elles comporteront des exposés de synthèse, des communications, des présentations de posters, une exposition technique et des séances de formation.

Les communications présenteront des cas concrets d'applications des géosynthétiques en génie civil et environnement illustrant les fonctions essentielles de ces matériaux de construction.

Conference Themes

The Rencontres Géosynthétiques will deal with the following topics:

- Application / case studies
- Landfills
- Canals
- Reservoirs / Dams
- Transportation
- Infrastructure
- Durability / Lifetime
- Laboratory testing
- Performance
- Regulations / Approvals
- Resource conservation.

En préambule aux "Rencontres Géosynthétiques 2011", des cours de pré-formation sont proposés sur les matériaux géosynthétiques et leurs utilisations les plus fréquentes. Ils sont destinés aux participants qui ne sont pas familiers avec l'utilisation des géosynthétiques afin de leur permettre

de tirer le meilleur profit des exposés des deux jours suivants.

Ces cours porteront sur la présentation des nombreux types de géosynthétiques existant dans le domaine des géotextiles, des géomembranes et des produits apparentés et leurs conditions d'utilisation dans les différents types d'ouvrages (installations de stockage de déchets, infrastructures de transports et ouvrages hydrauliques).

Ces cours sont inclus dans le coût d'inscription ; ils n'auront lieu que si le nombre d'inscrits est suffisant. Pour plus d'informations sur ces cours, s'adresser au secrétariat des «Rencontres Géosynthétiques 2011» et, pour s'inscrire, se reporter au bulletin joint.

Mercredi 23 mars 2011

- Infrastructures de transport
- Géosynthétiques et lutte contre le changement climatique
- Installations de stockage de déchets
- Géosynthétiques et mesures

Jeudi 24 mars 2011

- Ouvrages pour la protection de la ressource en eau
- Durabilité des géosynthétiques
- Certification
- Fondations et soutènements

SECRÉTARIAT

Rencontres Géosynthétiques 2011

Séverine Beaunier

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HydroVision RUSSIA, 28 – 30 March 2011, Moscow, Russia,
www.hydrovision-russia.com

1st Scientific Symposium on Tunnels and Underground Structures in South-East Europe, 7, 8 & 9 April 2011, Dubrovnik, Croatia, www.itasee2011.com

International Conference on Vulnerability and Risk Analysis and Management (ICVRAM) and ISUMA 2011 Fifth International Symposium on Uncertainty Modeling and Analysis, April 11-13, 2011 in Hyattsville, Maryland, USA, www.asce.org/instfound/cdrm/icvrarm





**Mechanics and Physics of Porous Solids:
a Tribute to Pr. Olivier Coussy**

April 18 to 20, 2011, Paris
<http://navier.enpc.fr/events/mpps2011>

We are surrounded by porous solids. Since porous solids through which fluids can seep or flow are ubiquitous, they are of interest to a wide range of fields: food engineering, geosciences, civil engineering, building physics, petroleum geophysics, chemical industry, biomechanics and so on. Even though materials and fields are very diverse, all porous solids for all applications have one thing in common: they are subject to the same coupled processes such as freezing and swelling, drying and shrinkage, diffusion of liquids and creep, osmosis and expansion. Such coupled processes occur at the interface between physical chemistry and mechanics.

Since environmental engineering, petroleum geophysics, civil engineering, geotechnical engineering, biomechanics, food industry and so on, involve processes that pertain to both physical chemistry and solid mechanics, experts in each of those two fields interact regularly. However, the interface between those two fields is not often explored. This symposium aims at gathering scientists and industrials that either develop or utilize the concepts of the mechanics and physics of porous solids as envisioned by the late Pr. Coussy.

Presentations will be given by invited speakers but we invite participant to submit an abstract for a poster presentation.

Ecole des Ponts ParisTech
Laboratoire Navier
Mme KASPI Marie-Françoise
6-8 avenue Blaise Pascal
77455 Marne-la-Vallée cedex 2
FRANCE



13th International Conference of the International Association for Computer Methods and Advances in Geomechanics, 9-11 May 2011 Melbourne, Australia, iacmag2011.com

7th International Symposium on "Geotechnical Aspects of Underground Construction in Soft Ground", 16-18 May 2011, Roma, Italy, www.tc28-roma.org

GEDMAR2011 Geotechnical and Highway Engineering - Practical Applications - Challenges and Opportunities at the Future 3rd International Conference on Geotechnical Engineering for Disaster Mitigation and Rehabilitation 2011 combined with 5th International Conference on Geotechnical and Highway Engineering 17 - 20 May 2011, Semarang, Central Java, Indonesia, reliability.geoengineer.org/GEDMAR2011

WTC2011 Helsinki, AITES-ITA 2011 World Tunnel Congress and 37th General Assembly, 21-25 May 2011, Helsinki, Finland, www.wtc11.org

The 14th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering Hong Kong, China, 23 - 28 May 2011 www.cse.polyu.edu.hk/14arc



**4th Japan - Greece Workshop
Seismic Design of Foundations, Innovations in
Seismic Design, and Protection of Cultural Heritage
May 26-27, 2011, Kobe, Japan
www.civil.tohoku-gakuin.ac.jp/yoshida/4JGW**

Following the 1995 Kobe Earthquake a close scientific co-operation was initiated between the National Technical University of Athens (NTUA), Greece, and some Japanese institutes. As part of this cooperation a visit to Kobe of 25 graduating students from NTUA has taken place every year starting in 1999. In one of these visits an agreement was reached to organize this joint Japan-Greece Workshop. Starting in 2005, it was held successfully every two years.

The workshop serves as an international meeting at which specialists, governmental officials and professors in earthquake engineering and related fields may exchange ideas on the latest research results and technologies mainly on soil-foundation-structure interaction, seismic behavior of soft soil deposits, performance-based seismic design, lessons learned from recent earthquakes, innovations on seismic protection of structures, and seismic protection of monuments.

Researchers and engineers participated not only from Japan and Greece, but also from Algeria, China, France, USA, UK, India, Italy, and Germany.

The workshop strives to promote innovation, practice and safety in reducing the impact of earthquakes on our society and natural environment. We hope many participants will join this workshop to upgrade their knowledge and contribute for the progress of seismic disaster mitigation.

Workshop Topics

- Seismic analysis of shallow, embedded, and deep foundations
- Seismic design of foundations against liquefaction
- Site response of soil deposits
- Soil liquefaction and liquefaction-induced flow
- Remedial measures, repair-retrofit, and health monitoring of foundation-structure systems
- Performance-based design in geotechnical and structural engineering
- Innovations in seismic protection of structures and foundations
- Seismic protection of cultural heritage

The workshop is organized by the Earthquake Engineering Committee of Japanese Society of Civil Engineers, the Kobe Gakuin University, the Technical Chamber of Greece, the Hellenic Society for Earthquake Engineering, and the Laboratory of Soil Mechanics of National Technological University of Athens.

ΔΗΛΩΣΕΙΣ ΣΥΜΜΕΤΟΧΗΣ - ΠΛΗΡΟΦΟΡΙΕΣ :
Τηλ. 210.7724076, Τοτ. 210.7722405, www.Eltam.gr,
gazetas@ath.forthnet.gr



COMPDYN 2011 – 3rd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, 26-28 May 2011, Corfu, Greece, www.compdyn2011.org

Dams and Reservoirs under Changing Challenges, June 1 - 2, 2011, Lucerne, Switzerland, www.swissdams.ch

5^ο Διεθνές Συνέδριο Ασφαλικών Μιγμάτων και Οδοστρωμάτων, Θεσσαλονίκη, 1-3 Ιουνίου 2011, <http://iconfbmp.civil.auth.gr>



15^ο Διεθνές Συνέδριο Γεωμορφολογίας 2011
"Fluvial and coastal systems in tectonic active areas"
1 έως 4 Ιουνίου 2011
Εθνικό & Καποδιστριακό Πανεπιστήμιο Αθηνών, Αθήνα
www.geomorphology2011.geol.uoa.gr

Οι σύλλογοι Γεωμορφολόγων Ελλάδος, Ρουμανίας, Ιταλίας, Βελγίου και Γαλλίας διοργανώνουν το 15ο Κοινό Γεωμορφολογικό Συνέδριο με τίτλο "Fluvial and coastal systems in tectonic active areas".

Το συνέδριο θα αφορά σε δραστηριότητες σχετικά με τα ακόλουθα θέματα:

- Παλαιογεωγραφία & Παλαιοπεριβάλλον
- Φυσικές καταστροφές
- Εφαρμοσμένη γεωμορφολογία
- Γεωμορφολογική χαρτογραφία - τεχνικές και μέθοδοι
- Μεταβολές της στάθμης της θάλασσας και παράκτια τοπία



3rd International Symposium on Geotechnical Safety and Risk (ISGSR2011), Munich, Germany, 2 ÷ 3 June 2011 www.isgsr2011.de

Short course on Reliability Analysis and Design in Geotechnical Engineering, June 1st 2011, Munich, Germany, G.Braeu@bv.tum.de

XV African Regional Conference on Soil Mechanics and Geotechnical Engineering, Maputo, Mozambique, 13 - 16 June 2011, www.15arcsme-maputo2011.com.

2011 RETC Rapid Excavation & Tunneling Conference & Exhibit, June 19-22, 2011, San Francisco, California, USA, gury@smenet.org



3rd International Conference
25-26 June 2011, Santorini, Greece
<http://atlantis2011.conferences.gr>

Almost three years will elapse in June 2011 since the 2nd International Conference on the Atlantis. Hence, not only we have allowed enough time for people to recollect thoughts on the subject, but also we have strong indications that a possible revolution is in making. Therefore, your participation in the 3rd International Conference on the Atlantis Hypothesis will be profitable in discussing new findings.

The ATLANTIS conference series aims to serve as a forum for the presentation and constructive discussion of all the subjects related to the hypothesis of the lost land of Atlantis as well as all the relevant theoretical issues.

The purpose of these conferences is to gather specialists of all the different disciplines involved in highlighting the scientific aspects of this greatly interesting subject, provide a greater understanding of key issues on the Atlantis Hypothesis and in the same time offer networking opportunities at an international level.

Greece is the most appropriate location for hosting this conference series, as the ancient Greek great mind Plato formulated the Atlantis hypothesis.

The ATLANTIS 2011 conference will enable all of us to share and celebrate, once again, our common passion for this fascinating theme.

The 3rd International Conference on the Atlantis Hypothesis is devoted to the personality of late Professor **Antonis Kontaratos**, Vice-President of the International Program Committee of the Conference, former Professor of the University of Patras in Greece and former NASA's high ranking personnel in USA.

Scientific Sessions

- The mythology, archaeology, history and natural sciences of potential sites.
- Related Bronze Age and earlier issues with main emphasis on climatic patterns, earth and marine sciences, technological state-of-art, commerce spread and market penetrations, migration patterns, geographical explorations, conflicts.
- Theoretical issues on the explicit and implicit meanings and significances of the Platonic text, including hidden mathematical and musical patterns.

Contact

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 E-mail: atlantis@heliotopos.net





GEORISK 2011 Risk Assessment and Management in Geoenvironment, June 26 – 28, 2011, Atlanta, USA, <http://content.asce.org/conferences/GeoRisk2011>



15th ARC

**15th African Regional Conference
on Soil Mechanics and Geotechnical Engineering
"Resources and Infrastructure Geotechnics in Africa:
Putting theory into practice"
Maputo, Mozambique, 18 – 21 July 2011
www.15arcsmg-maputo2011.com**

On behalf of the International Society for Soil Mechanics and Geotechnical Engineering, the Mozambican Geotechnical Society (SMG) is pleased to extend an invitation for participation in the 15th African Regional Conference (15th ARC) on Soil Mechanics and Geotechnical Engineering, which will take place in Maputo, Mozambique, in July 2011.

The conference sessions will be held between Monday 18th July and Thursday 21st July, 2011. The theme of the Conference is **"Resources and Infrastructure Geotechnics in Africa: Putting theory into practice"**.

The proposed Conference themes are as follows:

- Roads
- Site characterization
- Materials Testing
- Environmental Engineering
- Foundations

Others, e.g., slopes, dams, retaining structures, etc

The main themes will be organized in sessions when the abstracts of papers are available and the main interests of conference delegates are known.

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IGSH 2011 Fourth International Geotechnical Symposium Geotechnical Engineering for Disaster Prevention & Reduction, 26 - 28 July 2011, Khabarovsk, Russia, www.igsh4.ru

IS – SEOUL 2011 Fifth International Symposium on Deformation Characteristics of Geomaterials, Wednesday-Friday, Aug. 31 – Sep. 3, 2011, Seoul, Korea, www.isseoul2011.org

EYGEC 2011

21st European Young Geotechnical Engineers' Conference
4 – 7 September 2011, Rotterdam, Netherlands
www.kiviniir.net/EYGEC2011

The Dutch department of the ISSMGE and Organising Committee have the pleasure of inviting you to Rotterdam, The Netherlands where the 21st European Young Geotechnical Engineers Conference will be held from September 4th to 7th, 2011.

Papers covering a wide spectrum of geotechnical engineering will be accepted. The European Member Societies are responsible for selecting papers and conducting peer review. After receiving all abstracts, the Conference Organizing Committee will specify the form of preparation of the final paper and with the help of the abstracts will define the detailed conference program and sessions.

The 21st European Young Geotechnical Engineers Conference will be held in the heart of Rotterdam. 'Manhattan on the Maas' has an impressive skyline which can be seen from afar, enhancing the city's imposing appearance. A city of great architecture spreading the Maas river, it features beautiful bridges, Europe's largest harbour and impressive (underground) constructions (www.rotterdam.info).

Contact:
eygec2011@kiviniir.net
Angelique van Tongeren
PO Box 30424
2500 GK The Hague
The Netherlands

Note: Abstracts from the individual national societies should be sent to Leon van Paassen, Secretary of the conference scientific committee through: EYGEC2011@kiviniir.net.



**ICoVP-2011, 10th biennial International Conference
on Vibration Problems**
September 5-8, 2011, PRAGUE, Czech Republic
www.icovp.org/index.asp

ICoVP-2011 aims to bring together scientists with different backgrounds who are actively engaged and working on vibration-related problems in all engineering disciplines, both in theoretical and applied fields.

Papers accepted will be either for oral or poster presentation in the following research areas:

- Mathematical Modelling in Sound and Vibration Analysis
- Experimental Techniques in Sound and Vibration Engineering
- Wave Problems in Solid Mechanics
- Structural Dynamics, Vibrations of Composite Materials Structures

- Analysis of the Non-Linear Deterministic / Stochastic Vibrations Phenomena
- Vibrations of Transport Systems
- Computational Methods in Vibration Problems
- Vibration Problems in Earthquake Engineering, Vibration of Granular Materials
- Active Vibration Control
- Vibration Problems Related to Biomechanics
- Signal Processing and Analysis
- Modeling and Identification of Linear Dynamical Systems
- Dynamics of Rotating Systems
- Vibrations and Dynamic Stability of Slender Structures, Beams, Plates and Shells
- Flow-induced vibrations, Fluid-structure interaction, Vibroacoustics, Aeroelasticity.
- Dynamic behaviour of elastomeric isolators

Other topics dealing with vibration problems are also invited.

Conference Contacts

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 B. Marvalová, Member of Organizing Committee, bmarvalova@icovp.org

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6th International Symposium on Sprayed Concrete, 12-15 September 2011, Tromsø, Norway, www.sprayedconcrete.no

XV European Conference on Soil Mechanics and Geotechnical Engineering, 12 – 15 September 2011, Athens, Greece, www.athens2011ecsmge.org

XV European Conference on Soil Mechanics & Geotechnical Engineering, Athens, September 12-15, 2011, Workshop on Education with the theme "Case histories in Geotechnical Instruction: Appropriate cases for each educational level", September 14, Wednesday pm. Organized by ERTC 16, Local host: Dr. Marina Pantazidou, mpanta@central.ntua.gr and manoliu@mail.utcb.ro

Slope Stability 2011 International Symposium on Rock Slope Stability in Open Pit Mining and Civil Engineering, www.slopestability2011.ca

24th World Road Congress "Mobility, Sustainability and Development", 26 – 30 September 2011, Mexico City, Mexico, www.piarcmexico2011.org

XIV Panamerican Conference on Soil Mechanics and Geotechnical Engineering (October) & V PanAmerican Conference on Learning and Teaching of Geotechnical Engineering & 64th Canadian Geotechnical Conference, Toronto, Ontario, Canada, 2 - 6 October 2011, www.panam-cgc2011.ca

The Second World Landslide Forum, "Putting Science into Practice", 3 – 9 October 2011, FAO Headquarters, Rome, www.wlf2.org

Landslides and Geo-Environment, Geotechnical Symposium in Balkan Region, October 2011, Tirana, Albania, fatos.cenalia@gmail.com, erjon.bukaci@gmail.com



IBSBI 2011

International Conference on Bridges and Soil-Bridge Interaction

13-15 October 2011, Athens, Greece
<http://ibsbi2011.ntua.gr>

The Hellenic Society of Bridges Study (H.S.B.S.) and the Hellenic Society of Earthquake Engineering (H.S.E.E.) organize an International Conference held in Athens, on 13, 14 and 15 October 2011, entitled: "Innovations on Bridges and Soil-Bridge Interaction".

CONFERENCE TOPICS

- Aesthetics and architecture of bridges
- Bridge monitoring
- Design methods
- Fabrication and construction
- High performance materials
- Seismic behaviour
- Vehicle-bridge interaction
- Old bridges and maintenance
- Stone bridges
- Long span bridges
- Geotechnical problems
- Soil-structure interaction
- Computational techniques
- Experimental research
- Isolation and damping systems
- Aeroelasticity
- Impact and explosion problems

KEYNOTE LECTURES

- Long span bridges
- Isolation and damping systems
- Cable-stayed bridges
- Seismic design of foundations for major bridges
- Seismic response of bridge piers with rocking foundation
- Displacement based design of bridges

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2nd ISRM International Young Scholars' Symposium on Rock Mechanics Beijing, China, October 14-16, 2011

The International Society for Rock Mechanics (ISRM) Commission on Education has the pleasure of announcing the 2nd International Young Scholars' Symposium on Rock Mechanics – three years after the successful 1st International Young Scholars' Symposium on Rock Mechanics which was held in Beijing, China. The 2nd Symposium will also be held in Beijing, this time on Oct. 14-16 immediately preceding the 2011 ISRM Beijing Congress.

The 2nd Young Scholars' Symposium aims to provide an ideal platform for idea and information exchange, plus knowledge and experience sharing. To develop and improve any subject requires continuity – through young researchers advancing the knowledge based on past information, and incorporating new techniques and new experiences. The Symposium will thus provide extra stimulus and encouragement to the Young Scholars so that they will tackle our outstanding rock mechanics and rock engineering problems with renewed vigour.

Recently, an ISRM Young Members Presidential Group has been formed and it is hoped that all six of the Young Members (each representing one of the six ISRM regions: Africa, Asia, Australasia, Europe, North America, South America) will be able to attend, giving Young Scholars an opportunity to discuss with them the ways in which Young Scholars interests can be addressed within the ISRM.

So, to all Young Scholars in rock mechanics, including young rock mechanics scientists, engineers and students, you are warmly welcomed to attend the Symposium. All professors, research scientists and engineers who are involved in rock mechanics education and the training of young rock mechanics scholars are also of course welcome to the Symposium.

Chinese Society for Rock Mechanics and Engineering (CSRME)
No.19 Beitucheng West Road, Chaoyang District, Beijing
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Email: secretariat@isrm2011.com



Beijing 2011, 12th International Congress on Rock Mechanics – Harmonizing Rock Mechanics and the Environment, 16 – 21 October 2011, Beijing, China, www.isrm2011.com



Practical Solutions for a Sustainable Future
Prague, Czech Republic, 17-19 October 2011
www.hydropower-dams.com

With nearly 2 billion people in the world still lacking a reliable electricity supply, and about 70 per cent of the world's hydro potential remaining to be exploited, there is no doubt about the need for more carefully planned hydro schemes to be implemented, without delay.

In many of the industrialized nations, the uprating of existing hydro plants can offer a clean and cost-effective solution for bringing new capacity on line to meet increasing demand.

- Aqua~Media International will continue to build on its extensive experience of bringing together international experts from all parts of the world to discuss practical, topical and challenging aspects of present and future hydro development.
- Great emphasis is placed each year on facilitating the active participation of those from the less developed countries, where the greatest hydro potential remains, and there is the greatest need to develop it.
- In Prague, financiers from the major IFIs, leading consultants, high level representatives of power and water authorities, decision makers from private and public developers, major contractors and suppliers will review progress, challenges, research needs, and above all how to help nations with hydro potential to meet their development goals.
- Project finance, environmental and social aspects, adaptation to climate change, increasing dam and powerplant safety and efficiency, and ways to maximize and quantify the multiple advantages of hydropower will all be high on the agenda.
- Technical sessions will be complemented by workshops, panel discussions, and a number of side events.

Themes for HYDRO 2011

- Global needs and challenges
- Environmental and social aspects
- Security/safety around dams
- Multipurpose schemes
- Hydro in synergy with other renewables
- Project financing
- Commercial aspects of hydro development
- Pumped storage
- Hydraulic machinery
- Civil engineering
- System management
- Project management
- Small hydro
- Sedimentation management
- Developments in marine energy
- Plant life extension

Contact details:
Aqua~Media International Ltd, PO Box 285, Wallington,
Surrey, SM6 6AN, UK



3^ο ΠΑΝΕΛΛΗΝΙΟ ΣΥΝΕΔΡΙΟ ΟΔΟΠΟΙΙΑΣ

Νοέμβριος 2011, Πάτρα

http://portal.tee.gr/portal/page/portal/INTER_RELATIONS/INT_REL_P/SYNEDRIA_EKDLWSEIS/2011/3odopoiias

2011 AFTES Congress "Espaces Souterrains de Demain", Lyon, France, 17 - 19 October 2011, www.aftes.asso.fr/congres_presentation-organisation.html

XI INTERNATIONAL CONFERENCE UNDERGROUND INFRA-STRUCTURE OF URBAN AREAS, 26-27 October 2011 Wroclaw - Poland, www.uiua2011.pwr.wroc.pl



WCCE-ECCE-TCCE Joint Conference 2 SEISMIC PROTECTION OF CULTURAL HERITAGE October 31 - November 1, 2011 Antalya, Turkey www.imo.org.tr/spch

The World Council of Civil Engineers (WCCE), the European Council of Civil Engineers (ECCE) and the Turkish Chamber of Civil Engineers (TCCE) are jointly organising a conference on the seismic protection of cultural heritage to be held in Antalya, Turkey on Oct 31 - Nov 1, 2011. All those interested in various aspects of the seismic protection of cultural heritage are invited to participate in the above mentioned WCCE-ECCE-TCCE Joint Conference. Papers reporting good quality experimental or analytical research and those reflecting interesting practical applications will be most welcome.

The major objective of the Joint Conference is to contribute to the betterment of the seismic retrofitting and restoration practice on cultural heritage, through disseminating the recent research results and communicating the recent successful applications.

The scope of the conference is rather broad to embrace all aspects of the problem concerning the architectural, structural, material etc dimensions.

CONFERENCE THEMES

- Cultural, artistic and historic evaluation
- Conservation
- Seismic vulnerability evaluation
- Seismic repair and strengthening
- Seismic monitoring and seismic control
- Innovative analytical approaches
- Innovative techniques
- Innovative materials

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Το Τεχνικό Επιμελητήριο Ελλάδας διοργανώνει το «3^ο Πανελλήνιο Συνέδριο Οδοποιίας» στην Πάτρα τον Νοέμβριο του 2011.

Σκοπός του Συνεδρίου είναι η παρουσίαση των νεώτερων εξελίξεων στον τομέα της οδοποιίας και ειδικότερα στην έρευνα, μελέτη, κατασκευή, ασφάλεια, συντήρηση και διαχείριση των οδικών έργων.

Με το Συνέδριο αυτό επιδιώκεται η ενημέρωση του τεχνικού κόσμου επί των παραπάνω θεμάτων, ιδιαίτερα αυτή την περίοδο που βρίσκεται σε εξέλιξη η υλοποίηση ενός εκτεταμένου προγράμματος Οδοποιίας στη χώρα μας.

Το Συνέδριο απευθύνεται στους Μηχανικούς, στα Ανώτατα Εκπαιδευτικά Ιδρύματα, στους Δημόσιους φορείς, στους Οργανισμούς, στις εταιρείες μελετών και γενικότερα σε όσους έχουν ιδιαίτερο ενδιαφέρον για τα θέματα της Οδοποιίας.

Θέματα του Συνεδρίου:

1. Γεωμετρικός Σχεδιασμός
2. Εθνικό Δίκτυο - Αυτοκινητόδρομοι
3. Τεχνικοοικονομική Σκοπιμότητα - Συστήματα Χρηματοδότησης - Παραχώρηση - Εκμετάλλευση
4. Διαχείριση - Δημοπρατήρηση - Ανάθεση Έργων
5. Οδική Ασφάλεια
6. Εξοπλισμός Οδών και Σηράγγων - Σύγχρονα Συστήματα Πληροφορικής
7. Συστήματα Διαχείρισης, Λειτουργίας και Συντήρησης Οδών
8. Έλεγχος και Διασφάλιση Ποιότητας Έργων
9. Τεχνικά Έργα Οδοποιίας - Νεότερες Εξελίξεις
10. Περιβαλλοντικές Επιπτώσεις

Εκτός από τις εισηγήσεις, στη διάρκεια κάθε ενότητας θα προσφέρεται χρόνος για συζήτηση και κατάθεση απόψεων ή προτάσεων σε όσους ασχολούνται ή έχουν άποψη για το θέμα της εκάστοτε ενότητας. Μέσα από έναν ανοιχτό και γόνιμο διάλογο, αναμένεται να προκύψουν τεκμηριωμένα επιστημονικά συμπεράσματα για τις προοπτικές όλων των σχετικών θεμάτων.

Για οποιοδήποτε πληροφορίες σχετικά με το Συνέδριο μπορείτε να απευθύνεστε στην γραμματεία του Συνεδρίου: Τμήμα Διεθνών Σχέσεων ΤΕΕ, Τηλ. 2103291362, 2103291351-2, 2103292618, e-mail: intrel@central.tee.gr.



ICAGE 2011 International Conference on Advances in Geotechnical Engineering, 7th - 9th November, 2011 - Perth, Australia, <http://www.icage2011.com.au>

AP-UNSAT 2011 5th Asia-Pacific Conference on Unsaturated Soils, 14 - 16 November 2011, Pattaya, Thailand www.unsat.eng.ku.ac.th



International Symposium on Advances in Ground Technology and Geo-Information (IS-AGTG)

1-2 Dec 2011, Singapore

www.is-agtg.com

The growth of mega cities has been particularly dramatic across parts of Asia. The need for quality living space coupled with the increasing density of infrastructural development poses unprecedented challenges and opportunities for the geo-industry. The purpose of this international symposium is to provide a platform to showcase recent advances in ground technology and geo-information systems. Innovative technology and their effective applications are needed to:

- (1) Propel productivity in the geo-industry;
- (2) Respond to more complex technical challenges in the development of underground space;
- (3) Support increasing social demand for sustainable and responsible development – green technology being one of the recent topical examples.

This symposium is jointly organized by Geotechnical Society of Singapore (GeoSS), National University of Singapore (NUS), and Tongji University. The main theme in this symposium is on geo-innovations applicable to all work processes from site investigation, design, construction, monitoring, testing, etc that can promote more creative exploitation of underground space/systems while improving safety, productivity, economy, and harmony with the natural environment.

Topics

- Innovative Construction Methods and Equipment
- New Design Methodologies
- Case Studies for Innovative Technology
- Wireless & Internet Technologies
- Data Acquisitions and Monitoring
- Electronic Transfer of Geotechnical Data
- Geo-Modeling and Geo-Informatics
- Simulation and Visualization
- Database and Data Mining
- Numerical Methods for Geo-Engineering
- Informationalized Construction
- New Laboratory Test Technologies

SECRETARIAT

Professional Activities Centre

Faculty of Engineering, National University of Singapore,
3 Engineering Drive 2, Blk E1 #05-15, Singapore 117578
Tel : (65) 6516 5113 Fax : (65) 6874 5097
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4th International Conference on Grouting and Deep Mixing,
February 15-18, 2012, New Orleans, Louisiana, USA,
www.grout2012.org

GEOAMERICAS 2012 II Pan-American Congress on Geosynthetics, Lima, Perú, 6 - 9 May 2012
www.igsperu.org

16th Nordik Geotechnical Meeting, 9-12 May, 2012, Copenhagen, Denmark www.ngm2012.dk

ITA-AITES WTC 2012 "Tunnelling and Underground Space for a global Society", Bangkok, Thailand, 18 to 23 May, 2012, www.wtc2012.com

Fifth International Symposium on Contaminated Sediments: Restoration of Aquatic Environment, May 23 - 25 2012, Montreal, QC, Canada,
www.astm.org/SYMPOSIA/filtrexx40.cgi?+P+EVENT_ID+1857+usr6/htdocs/astm.org/SYMPOSIA/callforpapers.frm

EUROCK 2012 - ISRM European Regional Symposium - Rock Engineering and Technology, 27 - 30 May 2012, Stockholm, Sweden, eva.friedman@svebefo.se

12th Baltic Sea Geotechnical Conference "Infrastructure in the Baltic Sea Region", Rostock, Germany, 31 May - 2 June, 2012, www.12bsgc.de

ISL 2012 NASL 11th International Symposium on Landslides, 3 - 8 June 2012, Banff, Alta, Canada, corey.froese@ercb.ca



International Conference on Geotechnical Engineering Education 4-6 July 2012, NUI Galway, Galway, Ireland

This International Conference on Geotechnical Engineering Education is organised under the auspices of the recently reformed TC306 Geo-engineering Education Technical Committee. It aims to highlight advances in geotechnical engineering education with renewed vigour, with emphasis on what fundamentals geo-engineering professionals must know and how these tenets should be taught in a way that will inspire students. High quality papers which showcase innovative attempts to improve geotechnical instruction and the quality of the engineers that emerge are welcome. The conference will also have a number of high-profile keynote speakers.

Contact person

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ANZ 2012 "Ground Engineering in a Changing World" 11th Australia-New Zealand Conference on Geomechanics, Melbourne, Australia, 15-18 July 2012,
www.anz2012.com.au

34th International Geological Congress 5 - 15 August 2012, Brisbane, Australia, <http://www.ga.gov.au/igc2012>



2nd International Conference on Transportation Geotechnics

10 - 12 September 2012, Sapporo, Hokkaido, Japan
<http://congress.coop.hokudai.ac.jp/tc3conference/index.html>

The 1st International Conference on Transportation Geotechnics (ICTG) was first held at University of Nottingham in 25-27 August 2008. The 1st ICTG has made a significant contribution to the promotion of co-operation and exchange of information and knowledge about the geotechnical aspects in design, construction, maintenance and monitoring of pavements in transportation infrastructures (roads, railways, airports). The 2nd ICTG will be hosted by the Japanese Geotechnical Society (Hokkaido Branch) and TC202 (former TC3) Japanese Domestic Committee of JGS, and it aims to offer a specialty session will discuss some assignments essential for further development in transportation geotechnics (ex. Unsaturated soils, Frost Geotechnics, Advanced Laboratory Testing), in addition to the topics of the 1st ICTG.

The conference will comprise parallel sessions over a 3 day period, including keynote lectures, oral presentations and discussion. Sessions will be chaired by internationally recognized academics and practitioners. Some workshops are also planned.

The conference is being organised under the auspices of ISSMGE by the Hokkaido Branch and TC202 Japanese Domestic Committee of JGS in association with TC202 of ISSMGE. Cooperation is also provided by TC 101 (Laboratory Stress Strain Strength Testing of Geomaterials), TC 106 (Unsaturated Soils) and TC 216 (Frost Geotechnics) of ISSMGE.

Specific themes and Workshops

Specific themes

1. Geotechnics for Pavement, Rail Track and Airfield
 - Ground improvement
 - Application of unsaturated soil mechanics
 - Advanced geo-tech for high-speed trains
 - Difficulties in transition zone between earthwork and bridge
 - Newly emerged issues
2. Geomaterial, including Nontraditional Materials
 - Mechanical characteristics
 - Applications to base, subbase, subgrade and foundation
 - Unbound aggregates
 - Recycled materials including reclaimed concrete and asphalt
 - Performance evaluation
3. Asphalt Mixtures and Hydraulically-bound Materials
 - Mechanical characteristics
 - Porous asphalt mixtures
 - Recycled aggregates in asphalt mixtures
 - Ferrous and nonferrous slag as aggregates
 - Performance evaluation

4. Earthworks for Transportation Facilities
 - Cut and fill in difficult terrain and geology
 - Quality control
 - Intelligent compaction and construction
 - Earthquake resistant technologies
5. Application of Geosynthetics
 - Material characterization
 - Performance evaluation
 - Other reinforcement technologies
 - Case studies with difficulty
6. Laboratory Testing and In-situ Testing
 - Material characterization
 - Advanced testing
 - Performance-based tests
 - Non-destructive characterization
 - In-situ instrumentation and tests
7. Modeling and Numerical Simulations
 - Performance of pavement, rail track and airfield
 - Material behaviour
 - Physical and numerical modeling
 - Back-calculation of deflection measurements
8. Design, Construction and Maintenance
 - Geotechnical input on Mechanistic-empirical design
 - Geotechnical approach on life cycle cost
 - Construction on soft ground
9. Performance Evaluation and Quality Control
 - Pavement, rail track and airfield
 - Porous pavements under heavy traffic
 - Investigation
 - Monitoring
10. Sustainability of Management and Rehabilitation
 - Distress surveys
 - Perpetual pavements, rail track and airfield
 - Use of recycled materials
 - Geotechnical approach on PMS
11. Risk Assessment and Environmental Issues
 - Traffic vibration and noise reduction
 - Seepage in porous pavements
 - Issues in cold climates including frost heave
 - Slope stability alongside roads and railways
 - Elution of hazardous substance from nontraditional materials

Workshops

There will be workshops on September 9, 2012, which are free of charge to conference participants. The details to be announced.

1. Intelligent Compaction Technologies
2. Geotechnical Challenges for Transportation Geotechnics in Extreme Climates
3. Geotechnical Challenges in Rail Track and its Transitional Zones

Contact person

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EUROGEO5 - 5th European Geosynthetic Conference, 16 - 19 September 2012, Valencia, Spain, www.eurogeo5.org



ISC' 4

4th International Conference on Geotechnical and Geophysical Site Characterization
September 18-21, 2012, Porto de Galinhas, Pernambuco - Brazil
www.isc-4.com

The International Society of Soil Mechanical and Geotechnical Engineering (ISSMGE), Brazilian Society for Soil Mechanics and Geotechnical Engineering (ABMS) and the Federal University of Pernambuco (UFPE) are honoured to invite you to participate in the 4th International Conference on Geotechnical and Geophysical Site Characterization (ISC'4) that will be held in Porto de Galinhas, Pernambuco - Brazil, on September 18-21, 2012.

Just before ISC'4 on September 15-18, we will hold the National Brazilian Geotechnical Engineering Conference, COBRAMSEG 2012, the most important technical event in our field held in Brazil.

The Conference is a privileged forum for discussions involving Geotechnical Site Characterization. The subject is broad and comprehensive, involving all practical, professional and academic areas of geotechnical, geophysical and geo-environmental engineering.

The main purpose is to exchange ideas and experiences among researchers, equipment manufacturers, and practicing engineers regarding the application of geotechnical and geophysical methods for solutions to real world problems involving soil, and soft rock strata. The general themes of the Conference involve the practical application of novel and innovative technologies in geotechnical and geophysical engineering, along with their interpretation and utilization for use in site characterizations.

Preliminary Themes - ISC'4

The general theme of the Conference involves the practical application of novel and innovative technologies in geotechnical and geophysical engineering, their interpretation, and their utilization for the purposes of site characterization.

Themes will address the following:

- Development of new equipment and methods.
- New approaches for interpreting in situ test data.
- Geophysical surveys using mechanical waves, and / or electromagnetic techniques.
- In-situ testing methods that include cone penetration, use of flat dilatometers, pressuremeters, vane, drilling and sampling, electrical, sonic and seismic waves techniques, as well as dynamic penetration.
- Applications of in situ testing to shallow and deep foundations, slopes, tunnels, excavations, and dams.

- Offshore site investigation for support of oil exploration and petroleum engineering.
- Applications of in situ technologies for solving problems involving environmental geotechnics.
- Non-textbook type geo-materials (gravels, calcareous and cemented sands, improved ground soil, residual soils, partially-weathered rock, unsaturated soils)
- Geotechnical investigations for construction in very soft, to extremely soft soils.
- Geoenvironmental sampling and testing.
- Studies for mine tailings, empondments waste repositories and by-product geo-materials.
- Use of in situ tests for evaluating the potentials for soil liquefaction, along with seismic ground hazards.
- Site investigations for support of infrastructure projects: ports, harbours, airports, roads, and pavements.

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International Conference on Ground Improvement and Ground Control: Transport Infrastructure Development and Natural Hazards Mitigation
30 Oct - 2 Nov 2012, Wollongong, Australia
www.icgiwollongong.com

This conference will be organized by the Centre for Geomechanics and Railway Engineering of University of Wollongong under the auspices of the Australian Geomechanics Society, the Southeast Asian Geotechnical Society (SEAGS), International Geosynthetic Society and relevant Technical Committee(s) of ISSMGE (TC 211 & 303).

It aims to promote ground improvement concepts and applications predominantly in the fields of transportation geotechnology and natural hazards mitigation. This Conference will act as a platform to disseminate the most recent research and field advances to the geotechnical community around the globe and is expected to be the biggest Ground Improvement conference to be held in Australia. Outstanding keynote lectures, State of Art (SOA) presentations, heritage lectures and numerous technical discussions will contribute three days of scientific and technical discourse followed by attractive excursion encompassing the natural landscape of the south coast of New South Wales.

Conference Themes

1. Soft Soil Consolidation
2. Sand and Gravel Piles, Stone Columns and Rigid Inclusions
3. Geosynthetics Reinforcement
4. Compaction and Vibroflotation
5. Grouting and Chemical Stabilization
6. Electro-kinetic, Electro-osmotic, Bio-engineering, Thermal and Explosion-based Techniques
7. Methods of Preventing Soil Erosion, Scour and Internal Piping
8. Ground Control in Underground and Surface Mine Excavations
9. Methods of Stabilisation of Landslides and Mass Movement
10. Surface and Sub-surface Drainage
11. Stabilisation of Fractured and Jointed Rockmass

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ACUUS 2012 13th World Conference of the Associated Research Centers for the Urban Underground Space Underground Space Development – Opportunities and Challenges, 7 – 9 November 2012, Singapore, www.acuus2012.com

GEOSYNTHETICS ASIA 2012 (GA2012) 5th Asian Regional Conference on Geosynthetics, Bangkok, Thailand, 10 - 14 December 2012, www.set.ait.ac.th/acsig/igs-thailand

First International Congress FedIGS, 12 – 15 November 2012, Hong Kong – China, www.fedigs.org/HongKong2012



**32. Baugrundtagung with exhibition
"Geotechnik"
Mainz, Germany, 26 – 29 November 2012**



Geosynthetics Asia 2012 5th Asian Regional Conference on Geosynthetics Bangkok, Thailand, 10 - 14 December 2012 www.set.ait.ac.th/acsig/conference

The International Geosynthetics Society-Thailand Chapter (IGSThailand), under the auspices of International Geosynthetics Society (IGS), organizes the Fifth Asian Regional Conference on Geosynthetics or Geosynthetics Asia 2012, which is scheduled from 10 to 14 December 2012 at Grand Centara Convention Hotel, Bangkok, Thailand. GA2012 will be hosted by the Asian Center for Soil Improvement and Geosynthetics (ACSIG) in the Geotechnical and Geoenvironmental Engineering Program (GGE) under the School of Engineering and Technology (SET) at the Asian Institute of Technology (AIT). The theme of this Conference is "Geosynthetics for Sustainable Adaptation to Climate Change".

The effect of climate change including global warming is not only limited in causing landslide disasters but also in increasing the frequency of occurrence of a variety of natural disasters. The intergovernmental panel on climate change (IPCC) reported that residences of many more millions of people are projected to be flooded every year through the 2080s because of rising sea level. Among at risk are low-lying and densely populated areas. Moreover, recent news items have identified that insurance companies are blaming bad weather slashing down their profit forecasts by millions of dollars. Consequently, the insurance companies have been forced to raise the insurance premium to recoup their losses.

The objective of GA2012 is to bring together geosynthetic researchers, consultants, owners, manufacturers, distributors, project regulators, contractors, and academics in order to share their knowledge, update information, create advance technologies, and discuss recent developments.

Keynote and theme lectures will be presented by world famous authorities in geosynthetics. Invited lectures will be delivered by IGS Chapters and IGS Council Members.

Technical visits to major geotechnical/geosynthetics projects will be organized.

Conference Themes

- Geosynthetics for Climate Change Due to Global Warming
- Sustainable Infrastructure Including Limited Life Geosynthetics (LLGS)
- Geosynthetics for Human Security
- Geosynthetics for Food and Agriculture
- Geosynthetics for Water Conservation
- Geosynthetics for Leisure Activities
- Geosynthetics for Futuristic Innovations
- Geosynthetics for Waste Disposal
- Geosynthetics for Coastal and Riverbank Erosions
- Case Histories from IGS Chapters
- Other Themes Related to Geosynthetics Engineering

More information may be found in
www.set.ait.ac.th/acsig/conference
Contact E-mail: bergado@ait.ac.th
or acsig@ait.ac.th



Conference to Commemorate the Legacy of Ralph B. Peck,
7th International Conference on Case Histories in Geotechnical Engineering & Soil Dynamics and Symposium in Honor of Clyde Baker, Chicago, USA, April/May, 2013,
<http://5geoeqconf2010.mst.edu>

ITA-AITES WTC 2013 "Underground – the way to the future", Geneva, Switzerland, 10 to 17 May 2013,
www.wtc2013.ch/congress

18th International Conference on Soil Mechanics and Geotechnical Engineering "Challenges and Innovations in Geotechnics", 1 – 5 September 2013, Paris, France
www.paris2013-icsmqe.org



EUROCK 2013
ISRM European Regional Symposium
Rock Mechanics for Resources, Energy and Environment
23-26 September 2013, Wroclaw, Poland

Contact Person: Prof. Dariusz Lydzba
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ANDORRA 2014 14th International Winter Road Congress
2014, 4-7 February 2014, Andorra la Vella (Andorra),
www.aipcrandorra2014.org

10th International Conference on Geosynthetics – 10ICG,
Berlin, Germany, 21 – 25 September 2014 www.10icg-berlin.com



13th ISRM International Congress on Rock Mechanics
Innovations in Applied and Theoretical
Rock Mechanics
29 April – 6 May 2015, Montreal, Canada

The Congress of the ISRM "Innovations in Applied and Theoretical Rock Mechanics" will take place on 29 April to 6 May 2015 and will be chaired by Prof. Ferri Hassani.

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International Society for Rock Mechanics

The ISRM Digital Library was launched – ISRM Members can download 100 papers per year for free

The ISRM Digital Library was launched in October 2010 during the New Delhi International Symposium.

The main aim of the ISRM Digital Library is to contain all the papers published in the ISRM Congresses and sponsored Symposia, thus giving them a greater visibility and making them available to all the rock mechanics professionals.

The ISRM Digital Library is part of OnePetro, a large online library managed by the Society of Petroleum Engineers. ISRM individual members registered on the ISRM website are allowed to download, at no cost, up to 100 papers per year from the ISRM conferences, and ISRM corporate members can download 250 papers.



To register on the OnePetro website (<http://www.onepetro.org>) as an ISRM member, the only necessary information is the username and the password used to access the members' area of the ISRM website. Non-members can purchase the ISRM papers online.

The ISRM digital library has now 2,500 papers published in 11 conferences, and these numbers are expected to double in the next six months.



International Society for Soil Mechanics and Geotechnical Engineering
Société Internationale de Mécanique des Sols et de la Géotechnique

From the President, 425-Day Progress Report

Distinguished Colleagues, Dear Friends,

This is my **fourteenth** progress report after 425 days as your President. Note that previous reports are on the ISSMGE web site (<http://www.issmge.org>) under "From the President" if you need them. In this report, I would like to talk to you about a present for you, the Corporate Associates Presidential Group, the new Kerisel Lecture, and the ISSMGE Board meeting in New Delhi on 8Nov2010.

Present: this is the end of the year for most of us, a period of celebration, a period of holidays, a period where we gather with our families and exchange presents. You are my professional family and I want to offer to you a geo-technical present. After some thought I would like to propose to you the following. Over the last 18 years, I have videotapes on DVD the lectures given by some of the most prominent geotechnical engineers in the world. These lectures were presented at my university and are called the Buchanan Lectures starting with **Ralph Peck** in 1993. The list is on my web site at https://ceprofs.civil.tamu.edu/briaud/buchanan%20web/lecture_series.htm. From that page you can download the written text but not the video. If you would like the videotape for some of those lectures please select which ones you wish to have, give me an address where to send the DVD, and I will send them to you free of charge. This is my present to you.

CAPG: this new group, approved by the Board, is the Corporate Associates Presidential Group. It will be formed of all the representatives of the companies (one per company) which are corporate associates of ISSMGE. The CAPG will assist ISSMGE in developing actions and activities that will enhance the commercial sector of the geotechnical profession. The CAPG members will have direct access to the President of ISSMGE and will be able to have a direct impact on the future of the Society. The reason for forming this group is to try to increase the participation of practitioners in the Society as well as increase the number of Corporate Associates. Along with **Harry Poulos**, I am working on establishing this important new group. More on this later.

Kerisel Lecture: I am very happy to report to you that the TC on Preservation of Monuments and Historic Sites lead by **Carlo Viggiani** as Chair and **Yoshinori Iwasaki** as Vice Chair has started the Kerisel Lecture. This new ISSMGE lecture was proposed by the TC to the ISSMGE Board and approved unanimously. The Kerisel lecture adds to our list of TC named lectures including the Ishihara Lecture in Earthquake Engineering, the Mitchell Lecture in Site Characterization, and the Bishop Lecture in Laboratory Testing. I hope that more TCs will follow suit and develop their own lectures as appropriate. These lectures are typically presented at conferences organized by the TCs.

ISSMGE Board meeting in New Delhi: The Board met in New Delhi on Sunday 7Nov2010. In the Open Session, reports were presented by **Mahavir Bidasaria**, President of the Indian Geotechnical Society, by **Manoj Datta**, Chair of the Int Conf on Environmental Geotechnics, by **Kenichi**

Soga on behalf of **Suzanne Lacasse** on the progress of the Technical Oversight Committee, by **Askar Zhussupbekov** on behalf of **Harry Poulos** on the progress of the Membership, Practitioners, Academicians, Committee, by **Charles Ng** on behalf of **Dimitris Zekkos** on the progress of the Innovation and Development Committee, by **Imen Said** on behalf of **Jennifer Nicks** on the progress of the Student and Young Members Presidential Group. The Board then moved to Executive Session and heard reports from all Board Members on their achievements and future plans. Also discussed were the 2013 Int Conf in Paris, the ISSMGE budget, a request from IDC, four requests from SYMPG, an update on FedIGS, a possible change for future Presidents terms, the name of the Society, the ISSMGE Foundation, the ISSMGE Bulletin, enforcement of ISSMGE conference fees, and the image of our profession.

Happy holiday season, best wishes, and don't forget your present,

Jean-Louis BRIAUD
President of ISSMGE
International Society for Soil Mechanics and Geotechnical Engineering

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ΠΡΟΣΦΟΡΑ ΘΕΣΕΩΝ ΕΡΓΑΣΙΑΣ ΓΙΑ ΓΕΩΕΠΙΣΤΗΜΟΝΕΣ

Από το μέλος της ΕΕΕΕΓΜ Νικόλαο Βλαχόπουλο, Assistant Professor / Professeur Adjoint στο Civil Engineering Department / Département du Génie Civil του Royal Military College of Canada / Collège Militaire Royal du Canada (Queen's-RMC Geo-Engineering Centre, Tel: (613) 541-6000 ext 6398) λάβαμε τις παρακάτω προσκλήσεις-προσφορές εργασίας για γεωεπιστήμονες:

SNOWDEN Mining Industry Consultants

Position Outline: Divisional Manager, Applied Geosciences, Vancouver, British Columbia, Head Office, Americas

Position Profile

In a leading role as Divisional Manager, Applied Geosciences, to be based in Vancouver and reporting to the General Manager, Americas, the exceptional individual selected for the role will be one of three Divisional Managers in the location including, Divisional Manager, Geotechnical Engineering and Divisional Manager, Mining Engineering.

Currently the Applied Geosciences Division has four team members, (one Senior Consultant, two Consultants and one Resource Geologist) who have a wide range of international experience.

Building on sound, detailed geological interpretation and mineral resource modelling, Snowden's Applied Geosciences Division works in all commodities from diamonds through coal to industrial mineral, base and precious metals and, in a wide range of geographic and geological environments.

Ideal Candidate Profile

- Master's Degree in Geology or relevant degree pertaining to the resources industry
- eligible to be registered as a P.Geo in BC
- MBA Degree will be most helpful
- at least 15 years experience in the Mining industry with at least 5 years in a service provision role and/or in a consulting firm
- nationally and usually internationally recognised as a professional consultant with a broad professional network in the Americas and a proven successful track record as a business developer who will recognise and develop opportunities to provide the Applied Geosciences team's technical and diversified capabilities to both existing and new clients
- an individual who will understand the importance of leadership, mentoring and assisting team members to continually develop their professional capabilities
- an individual well respected by clients and team members for developing innovative solutions to technical challenges and client needs and, for the use of best practices, including high ethical standards, Snowden values and culture

- achieving divisional budget and assessing the requirements for people, equipment, software and infrastructure in achieving business goals
- experience with technical auditing and due diligence reporting
- demonstrated ability to manage operational matters in the Division including resource allocation, proposals, quality control report and authorisations
- proven record for delivery and timely completion of Projects within budget
- specific technical and software skills, including:
 - geostatistics;
 - specialist software (such as DataMine which is utilised primarily at Snowden in Vancouver) as well as in-house company technologies;
 - intimate knowledge of reporting codes such as JORC, N143-101, CIM and SAMREC
- a good communicator who will strive to build and maintain both good internal and external relationships
- a professional with initiative and enthusiasm, creativity, excellent feedback and a likeable personality with quiet confidence
- a motivator, as well as motivated and dedicated to the practice of continuous improvement
- a travel lover, up to 15 -20% of time
- a mature thinker
- a good sense of humour

Compensation Package

- Base Salary to be determined by candidate experience and qualifications
- Bonus discretionary and under review
- Professional dues paid
- Related Conferences & Training Courses paid
- Vacation: first year is 3 weeks; thereafter is 4 weeks
- Wellness Days: 3 days per year for discretionary appointments or mental health
- Wellness Resources: \$300 pa to be utilized for personal wellness
- Comprehensive Benefit Package: includes long term disability
- Sabbatical: offered after 5 years of employment

Lewis Companies Inc. / Snowden Mining Industry Consultants, 965 Bay Street, Suite 3009, Toronto Ontario, M5S 2A3, Canada.

Contact: Lorraine Lewis, Managing Partner, tel. 416 929 1506.

AMEC Earth & Environmental

Position Outline: **Senior Rock Mechanics / Geomechanical Specialist – Mining**, Mississauga, Ontario (if Mississauga is not your choice location, Sudbury or Montreal are also available, as well as, locations in other provinces)

This is a senior position within AMEC Earth & Environmental and represents a significant opportunity to work with an established and highly experienced mining team from a base in Mississauga Ontario. While looking to join an established and well recognized team, our ideal candidate is also looking at the opportunity to help shape the direction of the organization by providing strong technical leadership. This position would suit a recognized technically oriented candidate looking for improved opportunities to participate in significant and world class projects.

An individual who takes pride in their work and the work of their co-workers/team and has a desire to constantly improve and raise the technical standards in the industry will find the AMEC Earth & Environmental Mississauga office an excellent environment to practice engineering. This individual will have the leadership capability to contribute to building and growing the team's technical capabilities, and project opportunities.

The ideal candidate will be capable of and look forward to the following challenges:

- Leading and working within a team of highly qualified technical experts to the successful completion of projects.
- Representing the issues as they relate to their technical discipline to other members of the project team (i.e., other disciplines), clients and regulators to arrive at suitable and successful solutions.
- Developing scopes of work, budgets, and proposals and overseeing their completion.
- Managing projects for both internal and external clients.
- Reinforcing and building upon an atmosphere of technical excellence.
- Liaising and coordinating with counterparts in around the world internal and external to AMEC.

While meeting these challenges, this individual can expect support from other senior personnel within the Mississauga and other offices as well as support from senior management. Specifically AMEC Earth & Environmental has an established Mining Group in excess of 200 members from across the company. This group has the support of senior management and support to team members and projects is both formal and informal.

Role responsibilities will include:

- leading, coaching and mentoring of staff
- cooperatively working and coordinating with other team members around world
- investigations, studies and designs for open pit and underground mines as well as rock cuts and foundations
- engineering analyses (empirical and computer modeling)
- report, budget and proposal preparation

While the main work load historically has been related to the mining industry, support to other types of projects would also fall within this individual's mandate.

Ideal Candidate Profile

The ideal candidate will demonstrate qualifications in the following:

- a professional engineer with a background in rock mechanics and geomechanical disciplines
- preferably, a minimum of 15 years experience including several years in the consulting industry
- a minimum of a Master's degree; a PhD is preferred.
- a team leader, builder and team player
- domestic experience combined with international experience would be an asset
- an excellent, proven track record of serving clients well
- excellent verbal communication and interpersonal skills
- Spanish and/or French language skills would be an asset
- a good sense of humour

Compensation Profile

Compensation commensurate with candidate experience and market conditions.

Position Outline: **Senior Rock Mechanics/Geomechanics Specialist - Mining**

AMEC's Earth & Environmental division is recruiting for a **Senior Rock Mechanics / Geomechanics Specialist** to join our team. This role is ideal for candidates that believe in people, teamwork, and diversity to deliver services in a safe and sustainable way and treating people with integrity and respect. Our team is aspiring to excellence and passionate about success. If these values appeal to you, consider this role at AMEC.

Responsibilities:

- Full rock mechanics/geomechanical design support from scoping level through to detailed design, operations and closure
- Defining site investigation and evaluation programs
- Collecting, analyzing and reporting geological / geomechanical data
- Design and implementation of open pit, rock cut slope stability design
- Design and implementation of underground mining methods, including stope spans, pillars and infrastructure design
- Design and monitoring of ground support, back fill systems, and geomechanical monitoring instrumentation
- Tunnel and shaft designs
- Leadership and mentoring of lesser experienced geotechnical staff
- Liaising with and coordination of contractors
- Demonstrated experience and leadership in project management, including budget, schedule and deliverable performance

Knowledge/Experience:

- A Bachelor degree in Engineering (Mining, Civil, or Geological) or related discipline
- Comprehensive understanding of rock mechanics and familiar with a wide variety of empirical and numerical modeling design tools

- Soil mechanics complementary expertise is an asset including an understanding of hydrogeology and implications
- A post-graduate degree in Geomechanics or related discipline is preferred
- Registered professional
- 10 years or more of relevant experience that preferably includes operating mines
- AMEC is committed to the principle of equal opportunity in employment.

Lewis Companies Inc.

965 Bay Street, Suite 3009, Toronto Ontario, M5S 2A3, Canada.

Contact: Lorraine Lewis, Managing Partner, Tel. 416 929 1506, lorraine.lewis@lewiscos.com



Το μέλος της ΕΕΕΕΓΜ Γιάννης Χασιώτης μας έστειλε την παρακάτω ανακοίνωση:

Al Khuwair Project

W a s t e w a t e r N e t w o r k

MonteAdriano Middle East is looking for a Project Manager and Construction Manager with very good work experience on Dams, especially Earth Dams. Please can you let me know if you know of anyone who would be interested in a PM or CM role and has experience in Earth Dams. MonteAdriano is a contracting company, started in 2009 in Oman and current has a Wastewater project, which you can read about more on our website at www.monteadriano.co.om. The project is in Oman, about 50 km from Muscat. Please send CV to recruitment@monteadriano.co.om.

Tania Beukes

Αντιγράφουμε από την ιστοσελίδα του έργου:

The project consists of networks of pipes connecting buildings to a central, from which the water is then pumped to Al-Ansab water treatment plant. After the water is treated, it is pumped into a separate network for irrigation purposes. In many cases, the excavations happen in existing roads to provide sufficient space for the pipes to be fitted and using appropriate equipments to dig pipe tunnels under the roads.

ΕΝΔΙΑΦΕΡΟΝΤΑ ΓΕΩΤΕΧΝΙΚΑ ΝΕΑ

Civil and Built Environment System First

Partners: Nottingham University and Roger Bullivant Ltd

Ask anyone in the construction industry about foundations, and they will tell you that they are the most important part of a building. Yet when it comes to reducing energy in the built environment, foundations have, up until now, been overlooked.



"The majority of people don't think about foundations because they are hidden in the ground," said Prof Saffa Riffat, head of the Institute of Building Technology at Nottingham University. "So when they talk about low carbon buildings, people talk about the buildings themselves, the windows and the doors...but in fact energy use of foundations is massive."

Riffat, who is also president for the World Society of Sustainable Energy Technologies, has worked with construction company Roger Bullivant Ltd to develop a modular house foundation system known as 'System First'. The process is designed to replace traditional trench-fill foundations using prefabricated steel beams that lay across concrete piles. These piles are covered with polystyrene slabs which are then covered with a layer of concrete screed to create a lightweight and insulated floor slab.

"System First provides a floor which is suitable for use in homes of the highest sustainability standards due to its exceptionally low heat loss through the floor," explained Riffat. "It uses significantly less concrete and raw materials than traditional flooring construction and has lower embodied CO2. The floor slabs also have minimal heat transmittance which reduces the building's energy requirements and CO2 emissions."

The System First technique is claimed to achieve an 88 per cent saving in water, a 75 per cent reduction in construction time and a 92 per cent saving in raw materials; foundation which would conventionally use 233 tonnes of cement can be reduced to 18 tonnes. The concept has already been demonstrated in a wide range of projects including in the BASF House, the Mark Group House, and the Solar Decathlon House at the Nottingham University Institute, in the Llanelli School extension, and in Buckshaw village in Lancashire.



But the team has gone one step further and combined System First with a 'Thermafoundation' process to turn the foundation piles into heat exchangers for a ground source heat pump. This provides a cost effective method to install ground loops for heat collection from the ground and could overcome barriers in rolling out ground-source heat pumps in the UK. According to Riffat, a home with a 80m2 footprint using this system could cut its carbon emissions from 45 tonnes to 11 tonnes.

"Thermafoundation can be used alongside solar roof panels which captures summer heat for storage in the ground below the building," said Riffat. "This heat can be extracted in the winter months and allows the heat pump to operate at a high coefficient of performance. Compared to a gas boiler, it could save around 50 per cent in carbon dioxide emissions."

Nottingham University estimates that energy generated in the operation of buildings currently contributes to over 50 per cent of the UK's total CO2 emissions. Domestic buildings alone generate around 28 per cent, while an average household in the UK produces around six tonnes of carbon dioxide each year. Around 4/5 of energy generated is used for heating purposes.



The UK government is attempting to slash these figures and wants all new housing in the UK to have zero carbon emissions by 2016. At the same time, it is predicted that of the necessary housing stock required by 2050, one third is yet to be built. Based upon the current carbon intensity of grid electricity the heat pump can save around 50 per cent of carbon emissions against gas boiler installations. Overall introducing System First to only 30 per cent of the UK construction market would save approximately 11 million tonnes of quarried aggregate annually.

"The project has the potential to change building practice in foundation structures," explained Riffat. "Embodied carbon is now a important issue affecting decision making in the construction sector and the technology developed under this project not only complies with future requirements in this area but extends the role of foundation structures from their traditional function as a passive element of building design to a working component of building occupancy."

Nottingham has contributed to the project in terms through design work for the heat pump and solar roof. Roger Bullivant has provided significant expertise in developing the System First and pile technology in a partnership with the University that has spanned over 12 years. As a result of the collaboration, students have had the opportunity to be at the forefront of innovative commercial activities and the practical application of sustainable technologies in the built environment.

The technology, claims Riffat, showcases the best in British engineering talent. "I feel quite sad about the situation in the UK, because when I exhibit in various places I look around and all the technology seems to be made in Germany or in China and unfortunately very few UK companies are making things. So this is a very good example of how the UK can make things, and we're proud of that achievement."

It is anticipated that tens of thousands of these foundation systems could be installed each year and the resultant wide scale use of ground source heat will lead to a dramatic reduction in heating supplied by gas boilers. The electrical energy required to operate the ground source heat pump would be offset by local renewable electricity generation. The processes involved are simple to replicate and the technology could be utilised anywhere in the world.

"We have completed the foundation system testing and have several demonstration," said Riffat. "Bullivant has tried to use the technology abroad, we don't want to constrain it to just the UK, we're talking about a world wide roll out... Roger is 72 years old now, and I know for him this project is a dream come true. After all this time working in foundations, and focusing on sustainability, this is a major thing."

Roger Bullivant has invested over £1.5m in the project which has received further funding of two EPSRC grants each of £120,000, a Knowledge Transfer Partnerships grant of £128,009 and an East Midlands Development agency grant £18,000 have been awarded for this research. Other companies involved include Metrotile, Rehau, Ice Energy and Hydratech.

(The Engineer—www.theengineer.co.uk, 3 December 2010)



More than 100 missing after deadly Colombia landslide

BOGOTA — Rescue workers recovered 23 bodies but said more than 100 people remained missing and feared dead Monday following a landslide that buried a poor Medellin suburb amid Colombia's heaviest rains in decades.

Colombia has been experiencing torrential downpours due to the La Nina weather phenomenon. The rains and floods have killed around 170 people so far this year, mostly in recent months, and affected 1.5 million others.

A sodden hillside collapsed on Sunday in Bello, near Antioquia province's capital Medellin, burying or destroying about 50 homes.

"Among the 23 bodies recovered are 11 children," said John Rendon, disaster coordinator for Antioquia state, where Bello is located. Local authorities said nine of the children were playing in a park when the landslide struck.

Claudia Patricia Molina, 37, lost her home when the hillside came crashing down with a roar that sounded "as if someone had placed a bomb." She was about four blocks away, visiting friends, when the slide struck.

"It shook powerfully and when we looked over we saw rocks falling," she said. A couple who lived next to Molina were buried alive with their 2-year-old daughter, she added.



Some 50 homes were buried or destroyed in the landslide.
(Federico Rios / EPA)

'Let them be found alive'

"At just past 2 in the afternoon I heard a loud buzzing sound," Jose Cardenas told the El Colombiano newspaper with tears in his eyes. "Then I ran for my house and I got one of my girls. It all became cloudy, you couldn't see anything because of the dust and explosions and shouts could be heard."



This home was among those destroyed when a hillside gave way in Colombia on Sunday.

Cardenas called the landslide "an announced tragedy" and blamed the disaster on a rubble heap near the top of the hill. "We sent letters to (officials), they closed the tip but they did nothing with the weight of earth and rubble that threatened us," he said.

Orfanelly Madrigal cried as workers and residents slowly dug at the mud that buried her children, her mother and other family members.

"I foresaw this tragedy," she said on local radio. "I told my mother this was a high-risk area but nobody believed me," she said. "I've lost half my family — my mother, four brothers, nephews and my 13- and 10-year-old daughters."

"We sent letters to (officials), they closed the tip but they did nothing with the weight of earth and rubble that threatened us," he said.

'No precedents in our history'

Colombia's President Juan Manuel Santos said on Sunday the number of homeless from the rains could reach 2 million.

"The tragedy the country is going through has no precedents in our history," Santos said, after flying over the coastal region of Atlantico to see the situation first hand.

In neighboring Venezuela, President Hugo Chavez blamed "criminal" capitalism for global climate change, including the region's rains that have also killed more than 30 and left tens of thousands homeless in his country.

(msnbc.com, 6 December 2010)



Tunnel-support test system wins civil engineering award

Innovative technology developed by engineers at Aberdeen University was awarded a prestigious international industry accolade at a ceremony in London on Wednesday night.

GRANIT (Ground Anchorage Integrity Testing) is a non-destructive test system for ground anchorages and rock bolts used to support tunnels, mines and retaining walls.

The system operates by applying an impulse axially through an impact device. The vibrational response of the bolt or anchor is captured via an accelerometer and data is transmitted to a computer.

The system then measures the load being borne by each individual rock bolt and the anchorage is tested. GRANIT will also identify bolts that are broken, corroded or poorly encapsulated.

It has the potential to provide an increased health and safety environment for individual mine and tunnel workers, and can be used as part of a regular condition-monitoring regime in order to protect and safeguard the tunnel or mine.

GRANIT, which is currently licensed to Halcrow, won the Technical Innovation category of the inaugural New Civil Engineering International Tunnelling Awards, which celebrate and reward outstanding work and innovation in the global tunnelling industry.

Aberdeen's GRANIT team comprises Prof Albert Rodger, vice-principal and head of the College of Physical Sciences at Aberdeen University, and Drs Richard Neilson, Ana Ivanovic and Andrew Starkey from the institution's School of Engineering.

(The Engineer-www.theengineer.co.uk, 9 December 2010)



Βράχος καταπλάκωσε δύο σπίτια στην Τιθορέα

Ένας τεράστιος βράχος αποκολλήθηκε από το βουνό στην Τιθορέα της Φθιώτιδας και έπεσε σε δύο σπίτια, καταστρέφοντας το ένα και προκαλώντας σοβαρές ζημιές στο άλλο.



Μόλις που πρόλαβαν οι έξι άνθρωποι που βρίσκονταν μέσα στο ένα σπίτι να απομακρυνθούν, πριν ο τεράστιος βράχος «σφηνωθεί» στα τρία δωμάτια του σπιτιού. Όλα αυτά συνέβησαν λίγο πριν τις 9 χθες το βράδυ και ήδη από το πρωί αρμόδιοι και επιστήμονες μεταβαίνουν στην περιοχή.



Το πρόβλημα όμως έχει παρελθόν, στο χωριό Τιθορέα, που βρίσκεται στους πρόποδες του Παρνασσού. Το 1999 δύο μεγάλοι βράχοι είχαν αποκοπεί από το βουνό και είχαν καταστρέψει και τότε δύο σπίτια. Τα σπίτια που κατέστρεψε η πτώση των βράχων χθες το βράδυ είναι σε απόσταση 30 μέτρων από εκείνα που είχαν καταστραφεί το 1999. Από τότε είχε διαπιστωθεί η ανάγκη άμεσων παρεμβάσεων για να σταθεροποιηθούν οι βράχοι ώστε να αποφεύγονται παρόμοια

γεγονότα. Είχαν γίνει ειδικές μελέτες από το ΕΜΠ, αλλά έμειναν «στα συρτάρια» .

Τα σπίτια στη νότια πλευρά του χωριού βρίσκονται ακριβώς κάτω από ένα πλέγμα βράχων, οι οποίοι κυριολεκτικά απο-τελούν μόνιμη απειλή αφού βρίσκονται σε απόσταση 300 μέτρων.

(www.kathimerini.gr με πληροφορίες από ΑΠΕ-ΜΠΕ, 20 Δεκεμβρίου 2010)



Στα Χανιά πανευρωπαϊκή άσκηση για τσουνάμι

Πανευρωπαϊκή άσκηση ετοιμότητας για την αντιμετώπιση των επιπτώσεων από ένα μεγάλο σεισμό και ενδεχόμενο τσουνάμι, θα πραγματοποιηθεί στα νότια του νομού Χανίων, όπως έκανε γνωστό σήμερα ο διευθυντής του εργαστηρίου φυσικών καταστροφών του Πολυτεχνείου Κρήτης καθηγητής Κώστας Συνολάκης.



Όπως είπε ο κ. Συνολάκης, «θα γίνει μια μεγάλη άσκηση της Ευρωπαϊκής Ένωσης, που θα την παρακολουθήσουν πολλές χώρες. Θα είναι μια άσκηση εκκένωσης σε περίπτωση μιας μεγάλης φυσικής καταστροφής, ενός μεγάλου σεισμού και ενός μεγάλου τσουνάμι».

Σύμφωνα με τον κ. Συνολάκη, στόχος της άσκησης είναι να καταγραφεί η λειτουργία των υπηρεσιών που εμπλέκονται στην αντιμετώπιση ενός ακραίου φαινομένου.

«Το σενάριο της άσκησης θα είναι πολύ ακραίο και το ζητούμενο θα είναι να δούμε πώς θα λειτουργήσουν οι υπηρεσίες της πολιτικής προστασίας και πόσο καλά θα λειτουργήσει η συνεργασία μεταξύ των Ελληνικών αρχών, των υπηρεσιών της Περιφέρειας και του Ευρωπαϊκού Κέντρου. Το ζητούμενο της άσκησης, με βάση το σενάριο, είναι μια μεγάλη καταστροφή ώστε αμέσως να ζητηθεί βοήθεια. Αυτό που θα παρακολουθήσουμε είναι πόσο γρήγορα θα ενεργοποιηθεί ο μηχανισμός βοήθειας από την Αθήνα και την ΕΕ, πόσο καλά θα λειτουργήσουν οι υπηρεσίες της Περιφέρειας και πόσο καλά θα ενεργήσουν οι τοπικές υπηρεσίες, ώστε να γίνει άμεση εκκένωση και άμεση αποτύπωση της καταστροφής».

Ο καθηγητής του Πολυτεχνείου τόνισε ότι η άσκηση θα έχει δυο στάδια, το θεωρητικό και το πρακτικό. Όπως επεσήμανε, «ήδη έχουν υποβληθεί τα σενάρια στην ΕΕ για έγκριση. Η εργασία αυτή είναι συνεργασία μεταξύ του ΙΤΕ (Ίδρυμα Τεχνολογίας Έρευνας,) του Εργαστηρίου Φυσικών Καταστροφών του Πολυτεχνείου Κρήτης και της Περιφέρειας. Έχουμε στείλει τα σχέδια, περιμένουμε την έγκριση της ΕΕ για το συγκεκριμένο σενάριο που θα είναι εξαιρετικά ακραίο. Η άσκηση θα ξεκινήσει επί χάρτου την άνοιξη και το πρακτικό μέρος της υπολογίζεται το χρονικό διάστημα από τον Νοέμβριο του 2011 μέχρι τον Φεβρουάριο του 2012».

Η περιοχή που έχει επιλεγεί για την άσκηση είναι η νοτιοδυτική Κρήτη, από το Ελαφονήσι μέχρι και την Αγία Ρουμέλη του νομού Χανίων.

«Η περιοχή επελέγη, καθώς η πρόσβαση είναι δύσκολη και μας ενδιαφέρει να δούμε την αμεσότητα στην παρέμβαση όσων θα εμπλακούν», είπε ο κ. Συνολάκης. «Το σενάριο προετοιμάζεται εδώ και ένα χρόνο, έχουμε σχεδόν ολοκλη-

ρώσει τη δουλειά μας και αυτή την περίοδο το κάνουμε ακόμα πιο δύσκολο- ακραίο», συμπλήρωσε.

(ΑΓΩΝΑΣ ΤΗΣ ΚΡΗΤΗΣ / ΑΠΕ, 28 Δεκεμβρίου 2010)



ΙΚΡΙΩΜΑΤΑ ΚΑΙ ΑΝΑΡΡΙΧΗΤΕΣ ΓΙΑ ΝΑ ΠΡΟΣΤΑΤΕΥΘΟΥΝ ΤΑ ΜΝΗΜΕΙΑ

Βραχοπαγίδες στους Δελφούς

Τυλιγμένη σε ένα ικρίωμα ύψους 80 μ. υποδέχεται πλέον τους επισκέπτες ενός από τους μεγαλύτερους και κορυφαίους σε επισκεψιμότητα αρχαιολογικούς χώρους στην Ελλάδα: των Δελφών. Είναι η απρόσιτη για το ευρύ κοινό – λόγω της πτώσης των Φαιδριάδων – κρήνη Κασταλία, που αφήνει «διψασμένους» τους επισκέπτες τα τελευταία 15 χρόνια.



Η απελευθέρωσή της από τους απειλητικούς βράχους έχει ξεκινήσει ήδη χάρη όχι μόνο στο ικρίωμα, αλλά και σε αναρριχητές που επιστράτευσε η Διεύθυνση Αναστήλωσης Αρχαίων Μνημείων ώστε να αδειάσουν τις βραχοπαγίδες που προστατεύουν ως τώρα την Κασταλία, ρίχνοντας τους βράχους σε ειδικά πλαστικά χωνιά προς το έδαφος.

Οι βραχοπαγίδες έχουν ήδη ξεπεράσει το χρονικό όριο αντοχής τους και έχουν πάρει κλίση σχεδόν 90%. Η διαδικασία της αποφόρτισής τους όμως δεν σημαίνει και την άμεση επαναλειτουργία της κρήνης. Στην τελική ευθεία όμως βρίσκεται η ολοκλήρωση ειδικής τεχνικής μελέτης για την ασφαλή πρόσβαση των επισκεπτών, που θα προβλέπει διακριτική μεν, αλλά ασφαλή στερέωση των επιθετικών βράχων.

Οι Πέρσες λέγεται πως είχαν φτάσει ως τον ναό της Προναίας, όταν δυο κομμάτια βράχων ξεκόλλησαν και τους πλάκωσαν. Ίδια τύχη είχαν και οι Γαλάτες μερικούς αιώνες αργότερα

(Μαίρη Αδαμοπούλου / ΤΑ ΝΕΑ On-line, 29 Δεκεμβρίου 2010)

What if Captured Carbon Makes a Getaway?

Study: Stored carbon may contaminate groundwater

Sequestered carbon dioxide from carbon capture and storage sites may leak into groundwater aquifers and pollute the water, according to a study by researchers at Duke University. Exposure to carbon dioxide alters the chemical composition of groundwater by making it more acidic and unsafe for drinking.

The political clout of the fossil-fuel industries was driven home this year with the death of cap-and-trade legislation in Congress. Among those flexing their muscles was the coal industry, which is responsible for more than 45 percent of the country's generating capacity.

In August, the Department of Energy reported that coal-fired power generation was up 8.7 percent from a year earlier. Total generation rose somewhat less, about 7.4 percent. In the short term, at least, the more power we use, the greater the proportion will be coming from coal.

One leading solution to the problem to the fossil fuel emissions generated by a coal-fired plant is injecting it into underground storage areas thousands of feet below the surface, a technology known as carbon capture and sequestration. The Energy Department announced this summer that it would finance 15 separate projects to develop iterations of this technology.

But the technology may hold some unwelcome surprises if the carbon dioxide finds its way out and up to groundwater aquifers, a new study by Duke University researchers indicates. It could react with minerals there and increase levels of pollutants, perhaps so much that federal regulators would deem the water undrinkable, experiments suggest.

Two researchers took samples of dry sediments from groundwater aquifers that sit above likely sites for carbon storage in eastern Maryland, Virginia, northern Texas and Illinois and exposed them to a steady stream of carbon dioxide.

"The chemical composition of our groundwater experiments was significantly affected by the addition of CO₂," wrote the authors, Mark G. Little of Duke's Center on Global Change and Robert B. Jackson, a biologist with the Nicholas School of the Environment. The hypothetical "groundwater" in the experiments became more acidic, which in turn had the effect of dissolving some of the minerals in the sediments.

In particular, the concentrations of iron, cadmium and zinc, among other minerals, increased by more than 1,000 percent after exposure to carbon dioxide.

A post on the Green Grok site of the Nicholas School predicts that the discovery "will provide fodder for the Nimby opponents of C.C.S. when the coal industry comes knocking on their door looking for storage sites."

(Felicity Barringer / NYTimes.com/Green blog, November 19, 2010)



Παρουσιάζει ελάχιστες φθορές για 30-40 χρόνια, είναι 12% φθηνότερο και μπορεί να ανακυκλωθεί

Μπορεί η ασφαλτος να είναι το πιο διαδεδομένο υλικό για τη δημιουργία δρόμων, όμως αυτό δεν σημαίνει πως δεν έχει μειονεκτήματα. Με πρώτο και καλύτερο το ότι το κόστος της εξαρτάται άμεσα από αυτό του πετρελαίου και επομένως αυξάνεται όταν η τιμή του «μαύρου χρυσού» εκτινάσσεται στις διεθνείς αγορές. Αλλά και το γεγονός ότι, μέσα σε λιγότερο από μία δεκαετία, ένας δρόμος από ασφαλτο εμφανίζει ήδη φθορές, με συνέπεια να χρειάζεται επιδιόρθωση. Έτσι, θα πρέπει να τεθεί εκτός κυκλοφορίας, προκαλώντας αύξηση της κυκλοφορίας στην περιοχή και πρόσθετη περιβαλλοντική επιβάρυνση, αν υπολογίσει κανείς την ενέργεια και τα υλικά που θα καταναλωθούν για τη συντήρησή του.

Ωστόσο, με συντονιστή τον καθηγητή του τμήματος Πολιτικών Μηχανικών του Πανεπιστημίου του Sheffield κ. Κύπρο Πηλακούτα, μία ομάδα επιστημόνων από το τμήμα και άλλες ευρωπαϊκές χώρες, αποτελούμενη κυρίως από Έλληνες και Κύπριους ερευνητές, ανέπτυξε ένα πρωτοποριακό υλικό οδοποιίας. Η έρευνα έγινε στο πλαίσιο του ευρωπαϊκού προγράμματος EcoLanes και το υλικό αυτό είναι ένας νέος τύπος σκυροδέματος για οδοστρώματα, το οποίο επιλύει τα παραπάνω προβλήματα. «Το βασικό πλεονέκτημα που έχει έναντι της ασφάλτου είναι η αντοχή του, αφού για 30-40 χρόνια παρουσιάζει ελάχιστες φθορές», εξηγεί στην «Κ» ο Κυριάκος Νεοκλέους, ερευνητής στο Sheffield και μέλος της ομάδας. «Κάτι που σημαίνει ότι έχει μικρότερα έξοδα συντήρησης και είναι πιο φιλικό προς το περιβάλλον, αφού δεν χρειάζεται συχνά επιδιορθώσεις».

Παρόλο που ακόμη και σήμερα δημιουργούνται δρόμοι από σκυροδέμα, η πρακτική αυτή είναι ακριβή - κυρίως λόγω του υψηλού εργατικού κόστους και επειδή όλες οι πρώτες ύλες του συμβατικού τσιμέντου εξορύσσονται, υφίστανται κατεργασία (και επομένως αγοράζονται) ειδικά γι' αυτό τον σκοπό. Γι' αυτό και η μεγάλη καινοτομία που φέρνει το καινούργιο υλικό είναι ότι ένα από τα βασικά του συστατικά προέρχεται από ανακύκλωση, αφού οι ίνες χάλυβα που αυξάνουν τη συνοχή του προέρχονται από παλιά λάστιχα αυτοκινήτων και φορτηγών. Έτσι, το νέο σκυροδέμα είναι κατά 12% φθηνότερο, ενώ, λαμβάνοντας υπόψη όλο τον κύκλο ζωής του, περιορίζει την κατανάλωση ενέργειας κατά 40%.

Η χρήση του χάλυβα από τα παλιά λάστιχα έχει διπλή οικολογική ωφέλεια, καθώς βοηθά επίσης στην επαναχρησιμοποίηση ενός προϊόντος από τα εργοστάσια ανακύκλωσης ελαστικών, το οποίο σε αρκετές περιπτώσεις καταλήγει στις χωματερές. «Παρόλο που ο χάλυβας αντιστοιχεί περίπου στο 15% του βάρους ενός λάστιχου, ακόμη και μετά τον διαχωρισμό συχνά περιέχει τόσο μεγάλη ποσότητα καουτσούκ, που δεν μπορεί να αξιοποιηθεί από τη χαλυβουργία», τονίζει ο κ. Νεοκλέους. Άλλωστε, οι ποσότητες που μένουν αναετοιμασμένες γι' αυτό τον λόγο μόνο αμελητέες δεν είναι, αν λάβει κανείς υπόψη του πως μόνο στην Ευρώπη ανακυκλώνονται ετησίως 2,3 εκατ. τόνοι ελαστικών.

«Με πολύ μικρές και οικονομικές παρεμβάσεις, όμως, οι ήδη υπάρχουσες μονάδες ανακύκλωσης μπορούν να παράγουν ίνες με τις προδιαγραφές που απαιτούνται για το σκυροδέμα μας, αποκτώντας έτσι μία σημαντική πηγή εσόδων», προσθέτει ο επιστήμονας. Και, εκτός από το ότι ο χάλυβας του προέρχεται από ανακύκλωση, το νέο υλικό είναι και πλήρως ανακυκλώσιμο μετά το τέλος ζωής του, αφού σε αντίθεση με την ασφαλτο, με κατάλληλη κατεργασία μπορεί να ξαναχρησιμοποιηθεί για νέο οδόστρωμα. Τα πειράματα που πραγματοποιήθηκαν εξάλλου τόσο στο Πανεπιστήμιο του Σέφιλντ όσο και στα υπόλοιπα επιστημονικά ιδρύματα που συμμετείχαν στο EcoLanes, έδειξαν πως το υλικό μπορεί να αντεπεξέλθει σε αντίξοες περιβαλλοντικές συνθήκες -π.χ. σε αρκετά ακραίες θερμοκρασίες ή σε υψηλή υγρασία- χωρίς να υποστεί φθορές. «Το ίδιο συνέβη και όταν, σε δεύτερη φά-

ση, πραγματοποιήσαμε δοκιμές σε πραγματικές συνθήκες», προσθέτει ο ερευνητής. Πιο συγκεκριμένα, το σκυρόδεμα χρησιμοποιήθηκε με επιτυχία στις εισόδους ενός εμπορευματοκέντρου στο Λονδίνο, σε δύο πολυσύχναστες οδούς στη Ρουμανία και την τουρκική πόλη της Αττάλειας, και σε έναν επαρχιακό δρόμο στην Πάφο όπου μάλιστα το έδαφος είναι σαθρό.

«Αυτό που επιβεβαιώσαμε επίσης είναι ότι προσθέτοντας μία πολύ λεπτή επίστρωση από άσφαλτο πάνω στον δρόμο, επιλύονταν τα όποια μικροπροβλήματα παρουσίαζαν μέχρι σήμερα τα οδοστρώματα σκυροδέματος, όπως ο αυξημένος θόρυβος ή οι κραδασμοί». Έτσι, οι διαφορές στη συμπεριφορά του υλικού είναι μόνο θετικές, αφού συν τοις άλλοις επιφέρει μείωση της κατανάλωσης καυσίμου από τα διερχόμενα οχήματα σε ποσοστό που μπορεί να φτάσει και το 10%.

Πώς εκμεταλλεύεται εμπορικά την ιδέα το Πανεπιστήμιο Sheffield

Η δοκιμή του υλικού στην Αττάλεια κρίθηκε τόσο επιτυχημένη που οι δημοτικές αρχές της τουρκικής πόλης έχουν ήδη χρησιμοποιήσει το σκυρόδεμα και σε έναν ακόμη κεντρικό δρόμο, ενώ θα το αξιοποιήσουν σύντομα σε μία περιφερειακή οδική αρτηρία, μήκους επτά χιλιομέτρων. «Το Πανεπιστήμιο του Sheffield ίδρυσε μία εταιρεία τεχνοβλαστό για την εμπορική εκμετάλλευση της ιδέας, καθώς μας έχουν προσεγγίσει αρκετά εργοστάσια ανακύκλωσης ελαστικών, ζητώντας πληροφορίες για το πώς θα μπορούσαν να διαχωρίζουν τις ίνες χάλυβα με τέτοιο τρόπο ώστε να χρησιμοποιούνται στο σκυρόδεμα», λέει ο κ. Νεοκλέους. Αν και, όπως παραδέχεται, αρχικά η οικονομική κρίση έκανε πολλές επιχειρήσεις διστακτικές στο να επενδύσουν στο νέο υλικό και να πάρουν το οικονομικό ρίσκο.

Η κατάσταση φαίνεται να αλλάζει πάντως τον τελευταίο καιρό, αφού ολοένα περισσότερα εργοστάσια ανακύκλωσης και εταιρείες οδοποιίας συνειδητοποιούν τα οικονομικά και πρακτικά οφέλη που προσφέρει το νέο υλικό. «Έτσι κι αλλιώς, δεν περιμένουμε πως η λύση του νέου σκυροδέματος θα διαδοθεί από τη μία μέρα στην άλλη, αλλά ότι σε πρώτη φάση θα ξεκινήσει να χρησιμοποιείται σε οδοστρώματα που έτσι κι αλλιώς θα κατασκευάζονταν από συμβατικό τσιμέντο - σε οδοστρώματα δηλαδή από τα οποία διέρχονται φορτηγά ή άλλα οχήματα μεγάλου βάρους και, γι' αυτό τον λόγο, θα πρέπει να είναι αρκετά ανθεκτικά». Επομένως, οι πρώτες εφαρμογές αναμένεται να αφορούν κυρίως χώρους στάθμευσης οχημάτων δημόσιας χρήσης, λιμενικές εγκαταστάσεις ή τους βοηθητικούς διαδρόμους στα αεροδρόμια.

(Κώστας Δεληγιάννης / Η ΚΑΘΗΜΕΡΙΝΗ, 23 Δεκεμβρίου 2010)

Συμβάσεις Παραχώρησης : Τι συμβαίνει αλλού!

Public-Private Partnerships Create Opportunity and Controversy

In California, a Road to Recovery Stirs Unrest

State engineers sue over a highway to Golden Gate Bridge because of foreign investors; Potential impact nationwide

For construction workers in California, the new highway being built to the Golden Gate Bridge from San Francisco should have been great news—bringing thousands of jobs at a time when the state is furloughing workers to cope with a record deficit.

But the "Gateway to San Francisco" is being built in a partnership with foreign investors under a new law that allows private firms to build public roads in California. And state engineers, who are missing out on much of the design work, are suing to stop it.



The case is among the first brought by a union to stop a public project being handled by private investors, an area that is growing in the U.S. as cities and states struggle financially. Lawyers for the state who are fighting the lawsuit and others familiar with the case say it poses a threat to the \$1 billion project, which is among the first public-private partnerships in California and a model nationwide for how municipalities can rebuild crumbling roads.

Daniel Near, a lawyer for the state's transportation department, says that the state's contract is legal. "They don't like the idea of losing control of state engineers designing and overseeing construction of projects," he says.

The union, which represents 9,000 public workers, brought the suit in State Superior Court in November claiming that state and county transportation agencies are "illegally proceeding with a public-private partnership." The suit is asking the court to force the state to put the project up for bid and stop work in the meantime. While the case awaits a hearing, construction is proceeding.

"They are holding the project hostage," says Paul Meyer, executive director of the American Council of Engineering Companies of California, a trade group representing private engineers. "If a judge temporarily stops this project, it will be a disaster."

Michael Likosky, a professor at New York University who is a specialist in public finance, says that the case holds ramifications for similar projects around the country. "Municipalities are rejiggering the way they handle construction of roads, bridges and other infrastructure—and this project is a watershed," he says. "If it is derailed, it could make it harder to put together these deals around the country."

Private investors, seeking alternative ways to make a profit, are teeing up more money than ever to invest in roads and other infrastructure projects. They are buoyed by new state laws allowing these deals as well as federal programs that are financing them.

President Obama's economic stimulus program pumped \$100 billion into infrastructure and energy partnerships and has attracted nearly three times as much in private money to fund a total of \$380 billion in projects, according to federal figures.

With budget deficits growing—California's shortfall rose to \$25.4 billion—Mr. Near says that such partnerships are the only ways for cash-strapped states to embark on new projects now.

The hard times inspired California to turn to a private firm when it decided to replace Doyle Drive, the 75-year-old, 1.6-mile road leading to the Golden Gate Bridge. The new six-lane road will be known as Presidio Parkway and wind through the Golden Gate National Recreation Area, connecting the city to the iconic bridge. The project was made possible last year when the state passed a law allowing private investment in public projects.

House Speaker Nancy Pelosi, the congresswoman from the district, was at the unveiling in 2009. "Together, we will build not only a new bridge," she said, "but a new opportunity for job creation and economic recovery here in San Francisco."

The project is projected to create 13,000 jobs over the next 30 years—between construction, maintenance and administration. While construction and planning began last year, it was only in recent weeks that the state announced it was entering a partnership with Germany-based Hochtief Concessions and Luxembourg's Meridiam Infrastructure to design, construct, operate and maintain the road.

California is to give the group a lump sum when the project is completed, scheduled for 2014, and pay off the rest over 30 years, saving the cost of selling bonds for the already cash-strapped state.

Bruce Blanning, executive director of the state engineers' union, is worried about the fate of state workers as more jobs move into private hands. In California, state-employed construction workers—like all state workers—were recently mandated to start staying home three days a month without pay.

"My paycheck was cut by 15% this year," says Matt Hanson, an engineer who is president of the Professional Engineers in California Government, a labor union that brought the lawsuit. "It is frustrating because the state could have floated a bond and done this project for less money with state workers."

Mr. Blanning said the issues go beyond state versus private workers doing the project. "Much of the design work can be done overseas," he says. "This isn't about union versus nonunion jobs; this is about taking away American jobs."

(Ianthé Jeanne Dugan / The Wall Street Journal, 1 December 2010)

India attributes footbridge collapse to lack of know-how

The collapse of a footbridge in India ahead of the Commonwealth Games has been attributed to a lack of technical know-how. Ignorance and improvisation in the building of the footbridge led to poor construction of the bars and joints on which a walking deck was to hang. The collapse injured 27 workers.

Lack of technical knowhow brought CWG bridge down

Lack of knowledge of a new construction technique and self devised ways to implement the project led to the recent collapse of the foot overbridge at Jawaharlal Nehru Stadium.

The Delhi government said this after a two-member fact-finding committee submitted its report on the collapse. The September 21 incident - less than a fortnight before the start of the Commonwealth Games (CWG) - had injured at least 27 labourers.

According to a statement from the chief minister's office, the committee blamed UK-based Macalloy that had supplied the bridge without "sufficiently" cautioning about its design constraints.

The government also came down heavily upon the constructor implementing the project as well as the Public Works Department (PWD) which was responsible for supervisory failure.

"The methodology of the construction was not given by the design consultant. The contractor M/s P and R Infrastructure Private Limited devised its own procedure without any approval," it said.

PWD had given the contract to P and R Infraprojects Ltd for a little over `5 crore. The company was blacklisted by the Delhi government after the mishap.

The panel, comprising former CPWD director general H. S. Dogra and IIT professor Ashok Gupta, said the government gave itself (PWD department) and its design consultants a clean chit on the matter. "The enquiry had found no substandard material in the bridge," it said.

The government came down the hardest on the foreign company.

"The collapse happened because of the failure of joint of Macalloy suspender bars which had been prescribed as part of design of suspension of deck of the overbridge with the main arch," it said.

The committee members recommended the government not to use Macalloy bars in similar projects till there is clearer understanding of how it is to be used.

The panel questioned the UK firm's "change in stand" over certain aspects of the initial drawings of the overbridge.

"After the collapse, the UK-based company said it feels that the orientation of the gusset plate were in wrong plane. But no such observations were made by them when the drawings were forwarded to them in April 2010 by M/s P and R Infra." Delhi government officials said the PWD will seek a clarification on the issue from Macalloy.

The government said the main fault originated in the bars and joints the overbridge was to be suspended from.

A thicker gusset plate was used because the recommended size was not available. It reduced the margin of rotation in the joint, contributing to the failure.

Rainbow Of Gloom:

- PWD had sold the footbridge's 'rainbow' design as a first of its kind in Delhi
- It was to use a prefabricated steel walking slab hung from 26 steel wire suspenders
- The overbridge was being constructed for visitors to walk to the stadium
- Its collapse less than a fortnight before the Games started drew global attraction
- An engineering division of the Indian Army constructed its replacement in less than a week
- The Delhi CM announced a `50,000 as compensation for the injured. Four labourers with serious injuries were to get Rs 1 lakh

FOB probe blames supplier, contractor

Insufficient knowledge of a new construction technique triggered the collapse of a key foot-overbridge near the Commonwealth Games opening ceremony venue a few days ahead of the opening ceremony, the Delhi government said on Tuesday. Macalloy, the UK company which supplied parts for the bridge, didn't give sufficiently warnings about design constraints and the contractor devised his own technique which proved faulty, it said.

The fault originated in the bars and joints on which the walking deck was to hang, possibly because of "asymmetrical loading which resulted in over-stressing of the Macalloy joint connecting the deck slab with the suspenders", said a PWD release. The footbridge was in the final stage of construction when it collapsed on September 21, injuring workers and raising worries about Games preparations.

H S Dora, a former CPWD DG, and Ashok Gupta, an IIT-Delhi's Civil Engineering Professor, who probed the incident, said "no substandard material has been found to have been used", virtually giving a clean chit to the POD and design consultant Tandon Consultants Pvt Ltd. The probe committee has recommended that Macalloy bars may not be used for its similar projects, the release stated, till there is "proper and clear understanding on the use and deployment of the Macalloy system". "Clarification from Macalloy is proposed to be obtained by the PWD, and, if required, further advice of the (probe) committee shall also be obtained before taking further action," the release read.

(Indian Express Group of Publications, 3 November 2010
στο ASCE SmartBrief, 3 November 2010)



Nanotechnology could make road-salting a thing of the past

Scientists have come up with a new water-repelling nanomaterial that could prevent ice buildup on roads, buildings,

power lines and airplane wings. The surface is designed to work like a nano-scale trampoline: when a water droplet hits the material, the nano-structure causes it to bounce straight back off before it has time to freeze. "We see this approach as a radical and much needed shift in anti-ice technologies," says one researcher.

'Ice-free' surfaces repel freezing water

CAMBRIDGE, Mass., Nov. 12 (UPI) -- Engineers at Harvard University say they've developed ice-free nanostructured materials that repel water droplets before they have a chance to freeze.

The finding could lead to a new way to keep airplane wings, buildings, power lines and even entire highways free of ice during the worst winter weather, a university release said Friday.

The technology provides a solution that is more efficient and sustainable than conventional solutions like chemical sprays, salt and heating, the researchers say.

Scientists at the Harvard School of Engineering and Applied Sciences focused on preventing rather than fighting ice buildup.

"Freezing starts with droplets colliding with a surface," says Joanna Aizenberg, a Harvard professor of materials science. "But very little is known about what happens when droplets hit surfaces at low temperatures."

Watching high-speed videos of supercooled droplets hitting surfaces that were modeled after those found in nature, they saw that when a cold droplet hits the nanostructured surface, it first spreads out, but then the process runs in reverse as the droplet retracts to a spherical shape and bounces back off the surface before ever having a chance to freeze.

By contrast, on a smooth surface without the structured properties, a droplet remains spread out and eventually freezes.

"We see this approach as a radical and much needed shift in anti-ice technologies," says Aizenberg.

In comparison with traditional ice prevention or removal methods like salting or heating, the nanostructured materials approach is efficient, non-toxic and environmentally friendly, she said.

(United Press International 12th November 2010 στο ASCE SmartBrief, 15th November 2010)



Javadieh bridge in Tehran draws international acclaim

A new cable-stayed bridge in Tehran has been hailed as a work of creativity and diligence. The Javadieh bridge, which is earthquake-resistant and features an asymmetrical main arch, was designed to reduce traffic congestion and curb air pollution. The project has drawn attention from international engineers.

The heavy steel structure, which is called the new symbol of Tehran because of its unique construction, was inaugurated during a ceremony on November 10, 2010.



Tehran's new cable-stayed Javadieh Bridge has been inaugurated during a ceremony attended by the mayor of the Iranian capital Mohammad-Baqer Qalibaf.

"The Javadieh Bridge is a symbol of the creativity, experience and expertise of the Iranian people and a result of their cooperation, patience and persistence," *Hamshahri* quoted Qalibaf as saying during the inauguration ceremony.

"The project also shows the capabilities of our engineers who showed their independence in the year of 'redoubled effort and redoubled diligence' as named by the Leader of the Islamic Revolution [Ayatollah Seyyed Ali Khamenei]," he added.

Qalibaf had earlier announced that the unique design of the bridge had caught the attention of many international experts and three foreign engineers had asked for the help of Iranian experts to develop a similar project in their countries.

Director of Tehran Municipality's Engineering and Civil Work's Organization Dr. Maziar Hosseini also ensured people of the structure's quakeproof quality.

The unique design of the Javadieh Bridge has made it a distinctive structure in the world and maintains earthquake resisting standards, *jamejamonline* quoted him as saying.

The new Javadieh Bridge helps reduce traffic in four major highways and contributes to cutting air pollution and fuel consumption.

Because of its particular geometric specifications and asymmetrical main arch, engineers had to implement asymmetrical piers, and a single high tension cable to suspend the bridge from its middle section.

Another unique feature of the structure is the use of eight shock transmitters below the deck, which transfer the vibration load of the deck to the lateral columns.

In case of strong shocks such as earthquakes, the hydraulic transmitters become locked and the entire vibrating load will be transferred to the piers.

The bridge has twelve 19-, 37- and 61-strand high strength cables, which can withstand 250, 450 tons, and 800 tons respectively.

The inner strands of these cables are covered with special anti-corrosion plastic coating and all of them have special anti vandalism and polyethylene protective sleeves.

(Press TV (Iran) 14th November 2010, στο ASCE Smart-Brief, 15th November 2010)

Bridges that resist the rust - This bridge uses no rebar in an effort to avoid corrosion

The new Belfast Bridge over the Little River in Maine is being designed to avoid rust and corrosion. The bridge is built on concrete-filled tubular arches made of lightweight plastic strengthened with carbon fibers. With a 50-foot span, it is the largest of seven bridges in the state constructed with this method.

Strong, lightweight, easy-to-assemble arches with no steel bars may solve a New England problem



Workers construct a backpack bridge over the Little River in Belfast, Maine. (Fred Field for The Boston Globe)

BELFAST, Maine — At first glance, the bridge being built over the Little River does not look high-tech. Covered with concrete and surrounded by dirt, it looks like any other bridge construction site.

But the view from below is distinctive. The bridge rests on dark gray, tubular arches made of a lightweight plastic strengthened by carbon fibers. The tubes are filled with concrete that is protected from the elements. The design is meant to ward off corrosion, the bane of New England bridges.

Bridges have long been built with concrete stabilized by steel reinforcing bars. In New England, road salts migrate through the concrete to the rebar, and corrosion sets in. As rebar corrodes, it expands, fracturing the concrete.

"As it expands it pushes against the concrete," said Habib Dagher, a University of Maine engineering professor. "It is like a slowly exploding piece of dynamite inside the concrete."

Dagher is director of the Advanced Structures and Composites Center at the university, where the bridge system was developed. He said carbon fiber bridges, because they lack rebar, should last longer than traditional designs.

And for some projects, he said, they are cheaper and faster to build — a key concern. Inspections since a 2007 bridge collapse in Minnesota have revealed a long list of unsound spans across the country that need to be replaced.

The Belfast bridge, with its 50-foot span, is the seventh, and largest, to incorporate the carbon fiber design. All are in Maine.

Brit Svoboda, chief executive of Advanced Infrastructure Technologies, which licensed the technology from the university, said he hopes to see 30 to 40 such bridges built next year, including one in Massachusetts. The Massachu-

setts Department of Transportation has awarded the company a contract to design a bridge in Fitchburg.

The new design is called the "bridge in a backpack," because the carbon fiber tubes can be rolled up and are small enough to fit in a large bag.

Before construction begins, the hollow tubes are inflated, formed into an arch shape, and infused with resin to harden them. This work is done offsite. Dagher said a 50-foot tube weighs 200 pounds or so, and can easily be trucked to the bridge's location.

On site, the tubes are braced in position 3 or 4 feet apart, then topped with composite decking. A concrete footing is poured around the base of the arches, and finally, the tubes are filled with concrete, pumped in through holes at the top of the arches.

Dagher said the carbon fiber tube performs several functions: It is a form, and it reinforces the concrete and protects it from weather.

Work on the new design began nine years ago, supported by grants from the Federal Highway Administration and the Army Corps of Engineers, which wanted bridges that can be deployed quickly in remote places.

Svoboda said transportation officials from across the country have visited Maine to learn more about the technology. And since the carbon fiber arches are lighter and easier to transport over light-duty roads than steel girders, or precast concrete beams, many less-developed countries have come calling, Svoboda said.

"That's where my calls are coming from," he said. "South America, Central America, islands in the Pacific, the Caribbean."

Svoboda said the design reduces the carbon footprint of bridge-building by streamlining manufacturing, distribution, and assembly. "Our carbon fiber is a fuel-based product," he said. "So we are not green, we are just greener."

The company's biggest challenge is aversion to new technology, Svoboda said.

Nate Benoit, a project manager in the Maine Department of Transportation's bridge program, agreed that bridge engineers are a cautious lot. "But you want it that way," he said.

Benoit said Maine spends \$110 million annually for bridge rehabilitation. State legislation following the collapse in Minnesota increased bridge funding and specified support for composite bridge technology.

"The technology is still in its infancy," Benoit said. "We want to improve the design by building a few."

The first bridges have been overbuilt, for obvious reasons.

The first major "bridge in a backpack" on a state road, built in Pittsfield in 2008, was outfitted with strain gauges. Benoit said state engineers studied deflection under the weight of loaded dump trucks and found it withstood the excess weight.

Benoit said the initial cost has been slightly higher than for standard bridges, but varies from project to project. Dagher believes the new bridge system could soon bring substantial savings to highway departments.

"Right now this technology is coming in on par with existing designs before we even have scale-up; it's where we are doing only onesies and twosies and we're still learning as we go," he said.

"The idea is that as you scale up, the cost is going to drop significantly."

(Murray Carpenter / The Boston Globe 15th November 2010, στο ASCE SmartBrief, 15th November 2010)



BART extension to used shredded tires to absorb shock, cut noise

Old car tires -- some 250,000, ground into a sort of rubber gravel -- will serve as shock absorbers for an extension of San Francisco's BART metro system. The rubber will also help reduce noise and cost about \$1.5 million less than other noise-reduction methods.

Where the rubber meets the rails: BART to San Jose will ride on old tires

Thousands of cars are expected to be removed from Bay Area freeways with the project to extend BART to San Jose.

But cars -- or more specifically, their old tires -- are also shaping up to be a key building material for the job.

Construction crews plan to use at least 250,000 old tires, ground up into 3-inch chunks and laid under large sections of the tracks, to act as shock absorbers, reducing vibration and noise along the route as BART is built from Fremont to San Jose's Berryessa neighborhood in the next seven years.

State officials plan to announce details of the tire project this week.

Sending trains over a bed of shredded rubber tires will cost about \$1.5 million less than traditional noise-reduction methods, say supporters of the idea. It also helps create a new market for about 40 million tires that California residents discard every year, which can clog landfills, end up in piles that can cause toxic fires, or fill with rain and breed mosquitoes.

"Tires are a valuable resource. They are almost indestructible," said Stacey Patenaude, a materials recycling engineer with the state Department of Resources Recycling and Recovery in Sacramento. "It's incredible that we actually throw them away."

Under the BART plan, crews will dig down about two feet and lay an 18-inch layer of shredded tires, then encase them in fabric. The tires will be compacted and covered in gravel, with the tracks built on top. The material, called TDA, or "Tire Derived Aggregate," costs about \$150 a foot, said Patenaude.

A more traditional method of reducing train vibration, by building the tracks on top of rubber mats and concrete slabs, costs about \$250 a foot, she said.

The most expensive technique can cost up to \$900 a foot. In that method, called a floating slab, crews build concrete trenches and sit the tracks on top of large rubber discs, which act like shock absorbers.

"Everybody wants mass transit," said Patenaude. "If you can save money and still accomplish what you need to do, that's a win-win."

Through programs funded by a \$1.75 fee on the purchase of each new tire, the state has diverted about 70 percent of California's waste tires -- up from 34 percent in 1990 -- for

other uses, including rubberized asphalt, athletic tracks and crash barriers. They are also burned in cement kilns for fuel. Others are retreaded.

About 660,000 shredded tires were used to build the Dixon Landing Road onramp at Interstate 880 in Milpitas a decade ago.

"It saved Caltrans \$250,000 that they would have spent buying crushed volcanic rock from Oregon," said Patenaude.

State officials have paid for tests to see whether the tires, which contain petroleum products and metals, leach toxics into groundwater. Although small amounts of iron and manganese were detected, they are in low levels below health concerns, said Patenaude. Tests also were done in which tiny shrimp were placed in the runoff water and suffered no health consequences, she said.



A pile of tires at Oxford Tire Recycling in Westley, Stanislaus County, 1998. The following year, a lightning-sparked fire of the pile, then estimated at 6 million tires, burned for 34 days. (Ray Chavez, Bay Area News Group)

The idea of laying the old tire chunks under railroad tracks, still in its relative infancy, began in earnest in Silicon Valley. Ten years ago, the Valley Transportation Authority used them for 2,200 feet of the route from downtown San Jose to Campbell when the agency extended its Vasona line.

"It has exceeded our expectations for long-term performance," said Bernice Alaniz, a VTA spokeswoman.

The plan to bring BART to San Jose has three main phases. The first is a five-mile section that will extend from Fremont south to Warm Springs. Crews are already working on that

stretch, and the line is scheduled to open to the public in 2014.

BART spokesman Linton Johnson said the shredded tires will be used in sections of the line, although he said exact amounts won't be known until the final construction contracts are awarded.

The next section will run 10 miles from Warm Springs to the Berryessa neighborhood in North San Jose at Las Plumas Avenue. Construction will start in 2012. That section will use 7,800 feet of shredded tires and 7,500 feet of the floating slab method to cut vibration in areas where buildings are closest to the track or the most sensitive structures, like hospitals, are located, said Alaniz.

The final six miles, from Berryessa to Santa Clara, involve digging tunnels under downtown San Jose. No firm dates are set yet because funding has not been secured, although some estimates place completion at 2025.

(Paul Rogers - progers@mercurynews.com / San Jose Mercury News (Calif.) στο ASCE SmartBrief, 22 November 2010)



Scour evaluation probe helps minimise infrastructure risks

Researchers from North Carolina State University have developed a probe that allows engineers to assess the scour potential of soils at various depths and on site for the first time.

The probe could be used to help evaluate the safety of civil infrastructure before and after storm events.

Scour, or erosion of soil around structures due to water flow, is responsible for a range of critical infrastructure failures - from unstable bridges to the levees that gave way in the wake of Hurricane Katrina.

'The in situ scour evaluation probe, or ISEP, is the first technology that allows technicians in the field to measure the scour potential of soils without the need for excavation,' said Dr Mo Gabr, a professor of civil, construction and environmental engineering at the university.

Understanding scour potential is important because it can help authorities prepare for, or minimise the impact of, events such as the failure of the levees in the wake of Katrina. Scour has also been linked to approximately 60 per cent of the bridge failures in the US, according to the US Federal Highway Administration.

'The ISEP's ability to measure scour potential at different depths helps us predict how the soil will behave in the future as various layers of soil are eroded or scoured,' Gabr said.

The ISEP will also allow end users to perform scour assessment more frequently, since they will not have to take physical samples back to a lab for analysis. More testing data means researchers will have a larger data set to work with, which should help them to more accurately predict scouring rates and behaviour.

The new probe uses a water jet to burrow a hole into soil. Researchers can track the rate at which the water displaces the soil to determine the scour rate. Researchers can also manipulate the velocity and flow rate of the water to

simulate various natural events - from normal stream flow to hurricane-induced surges.

The researchers plan to take the ISEP to North Carolina's Outer Banks later this month to help with research efforts related to dune erosion.



The ISEP will help authorities prepare for, or minimise the impact of, events such as the failure of the levees in the wake of Hurricane Katrina

(The Engineer, 16 November 2010)



Bacteria repairs concrete

Students at Newcastle University have genetically engineered a bacteria called *Bacillus Subtilis* to enable it to repair cracks in concrete which can cause catastrophic structural failure.

The genetically-modified bacteria has been programmed to swim down fine cracks in the concrete. Once at the bottom, it would produce a mixture of calcium carbonate and a bacterial glue which would combine with the filamentous bacterial cells, effectively 'knitting' a building back together.

Ultimately hardening to the same strength as the surrounding concrete, the 'BacillaFilla' - as it is named - has been developed to prolong the life of structures which are environmentally costly to build.

The students' instructor Dr Jennifer Hallinan said that the bacteria could be particularly useful in earthquake zones where hundreds of buildings have to be flattened because there is currently no easy way of repairing the cracks and making them structurally sound.

The BacillaFilla spores only start germinating when they make contact with concrete - triggered by the very specific pH of the material - and they have an in-built self-destruct gene which means they would be unable to survive in the environment.

Once the cells have germinated, they swarm down the fine cracks in the concrete and are able to sense when they reach the bottom because of the clumping of the bacteria.

This clumping activates concrete repair, with the cells differentiating into three types: cells which produce calcium carbonate crystals, cells which become filamentous acting as reinforcing fibres and cells which produce a Levans glue which acts as a binding agent and fills the gap.

The nine students, whose backgrounds range from computer science, civil engineering and bioinformatics to microbiology and biochemistry, recently presented their idea at the International Genetically Engineered Machines contest (iGEM).

(The Engineer, 17 November 2010)



Ένας «μικρός σειсмоγράφος» σε κάθε σπίτι

Θα παρέχει έγκαιρη και αξιόπιστη πληροφόρηση για σεισμούς άνω των 4 Ρίχτερ στην Ελλάδα, αλλά και στα Βαλκάνια

Ο φόβος και ο πανικός που προκαλεί ένας σεισμός είναι ανεξέλεγκτος. Βροχή πέφτουν τα τηλεφωνήματα από ανήσυχους πολίτες στο εργαστήριο Γεωφυσικής του Αριστοτελείου Πανεπιστημίου Θεσσαλονίκης έπειτα από κάθε σεισμική δόνηση έστω και αν το επίκεντρο βρίσκεται χιλιόμετρα μακριά. Η ακατάπαυστη σεισμολογία που ακολουθεί, αλλά και η παραπληροφόρηση μπορούν να προκαλέσουν κοινωνικές και οικονομικές επιπτώσεις. Οι φήμες για επικείμενη ενεργοποίηση του ηφαιστείου στη Σαντορίνη που κυκλοφόρησαν αμέσως μετά μια αισθητή σεισμική δόνηση τον περασμένο Ιούνιο αναστάτωσαν το νησί στην έναρξη της τουριστικής περιόδου. Δεκάδες τηλεφωνήματα δέχθηκε το σεισμολογικό του ΑΠΘ από χώρες της Ευρώπης που ζητούσαν πληροφορίες γι' αυτή τη φήμη, ανησυχώντας για τα παιδιά τους ή για συγγενείς τους που έκαναν διακοπές στη Σαντορίνη.

Αυτή την ακατάπαυστη φημολογία και τις συνέπειές της επιχειρεί να περιορίσει το Αριστοτέλειο Πανεπιστήμιο μέσω του Διαδικτύου. Ένας «μικρός σειсмоγράφος» θα υπάρχει πλέον σε κάθε σπίτι ώστε να παρέχει έγκαιρη και αξιόπιστη πληροφόρηση για τους σεισμούς άνω των 4 Ρίχτερ που έχουν σημειωθεί στην Ελλάδα, αλλά και στην ευρύτερη περιοχή των Βαλκανίων. Σε ελάχιστα λεπτά ή και δευτερόλεπτα ο χρήστης μπορεί να έχει πρωτίστως μια σαφή εικόνα για το επίκεντρο και για το μέγεθος και στη συνέχεια πληροφορίες για τη σεισμική δραστηριότητα στο συγκεκριμένο επίκεντρο, αλλά και μια εκτίμηση για τις επιπτώσεις που μπορεί να προκαλέσει ο σεισμός στην ευρύτερη περιοχή. Η ενημέρωση αφορά σε σεισμούς άνω των 4 Ρίχτερ, καθώς «μόνο νονοκέφαλο θα προκαλούσε η ενημέρωση για 20-30 σεισμούς κάτω των τριών Ρίχτερ που σημειώνονται ημερησίως στην Ελλάδα», διευκρινίζει ο καθηγητής Σεισμολογίας του ΑΠΘ κ. Κώστας Παπαζάχος. Η επιστημονική ενημέρωση των πολιτών μέσα από την ιστοσελίδα του Εργαστηρίου Γεωφυσικής του ΑΠΘ και του Σεισμολογικού Σταθμού (<http://seismology.geo.auth.gr>), θα ξεκινήσει εντός του Δεκεμβρίου ή αρχές του επόμενου έτους. Ο καθένας έχει τη δυνατότητα να παρακολουθεί άμεσα τους σεισμούς που αναλύονται από τους σεισμολόγους του Εργαστηρίου Γεωφυσικής του ΑΠΘ σε καθημερινή βάση για την περιοχή που τον ενδιαφέρει. Από τον διαδικτυακό τόπο ο κάθε χρήστης μπορεί επίσης να κατασκευάσει χάρτες σεισμών (πρόσφατων ή ιστορικών) να αποθηκεύσει τους καταλόγους των σεισμών (π.χ. μελέτες σεισμικότητας και σεισμικής επικινδυνότητας κ.λπ.). Παράλληλα, μπορεί να αντλήσει στοιχεία για κάθε σεισμογενή περιοχή της χώρας ή των βαλκανικών χωρών (Αλβανία, Μαυροβούνιο, Σερβία, FYROM, Βουλγαρία, Τουρκία) και των άλλων χωρών (Ιταλία, Κύπρος, Γερμανία, Σλοβακία) με τις οποίες το σεισμολογικό δίκτυο του ΑΠΘ συναλλάσσει διαρκώς δεδομένα. «Ο σεισμός δεν έχει εθνικότητα. Μια ισχυρή σεισμική δόνηση στις Πρέσπες ή στην Οχρίδα επηρεάζει άμεσα την Καστοριά και τη Φλώρινα», επισημαίνει ο κ. Παπαζάχος. Η επεξεργασία και η αποστολή σε πραγματικό χρόνο των σεισμολογικών δεδομένων επεκτείνεται και

στην άμεση πληροφόρηση μέσω SMS. Ο σεισμολογικός σταθμός έχει ήδη εισάγει ένα σύστημα ειδοποίησης μέσω μηνυμάτων (SMS) για τη γένεση ισχυρών σεισμών προς τους φορείς της πολιτείας με στόχο τον συντονισμό της δράσης και επέμβασης σε περίπτωση μεγάλου σεισμού.

Η καινοτομία αποτελεί εξέλιξη του ψηφιακού δικτύου την τελευταία τριαντακονταετία. Η ανιχνευσιμότητα των σεισμών βελτιώνεται με ταχύτατους ρυθμούς. Τρεις μόνο σειсмоγράφοι λειτουργούσαν πριν από τον μεγάλο σεισμό της Θεσσαλονίκης (1978) με αποτέλεσμα να χάνεται το 70% των σεισμών στον βορειοελλαδικό χώρο. Δεν αναλύονταν δηλαδή από σεισμολόγους, δεν συμπεριλαμβάνονταν στους σχετικούς καταλόγους και άρα τα αντίστοιχα δεδομένα δεν μπορούσαν να χρησιμοποιηθούν για θεωρητικούς ή πρακτικούς σκοπούς. Μετά την ίδρυση του δικτύου του ΑΠΘ (1981) υπερτριπλάσιος ήταν ο αριθμός των σεισμών (10.300) άνω των 3 Ρίχτερ που είχε καταγραφεί το διάστημα 1981-1990 σε σχέση με την προηγούμενη δεκαετία (3.200 σεισμοί). «Σήμερα, επειδή η σεισμικότητα δεν μεταβάλλεται, καταγράφονται περίπου 13.400 σεισμοί/10ετία, δηλαδή έχουμε 3-4 σεισμούς την ημέρα μεγέθους μεγαλύτερο ή ίσο των τριών Ρίχτερ», διευκρινίζει ο κ. Παπαζάχος.

(Γιώτα Μυρτσιώτη / Η ΚΑΘΗΜΕΡΙΝΗ, 27 Νοεμβρίου 2010)



U.K. Spray-On Solution Aims To Strengthen Masonry Bridges

Railroad maintenance crews in the U.K. have been using sprayed polymer to strengthen track ballast for about a decade. One contractor now aims to go one step further and use strengthened ballast as a non-intrusive reinforcement for some of the country's 25,000 aging brick-and-stone arch bridges.



Balfour Beatty Rail Ltd., Redhill, is offering a method to treat a bridge and its polymer-coated ballast as a composite structure. The resulting enhanced strength of the arch can eliminate the need for concrete or steel reinforcement, says Andy Curzon, BBR's head of technical services.

The technique, called XiSPAN, would preserve the appearance of arch bridges, many of which are over a century old, says Curzon. "We think it's cheaper than a structural solution. But obviously it depends on the specific bridge." The contractor and the national railroad owner Network Rail Ltd.

will soon select a single-arch bridge for a full-scale test, he adds.



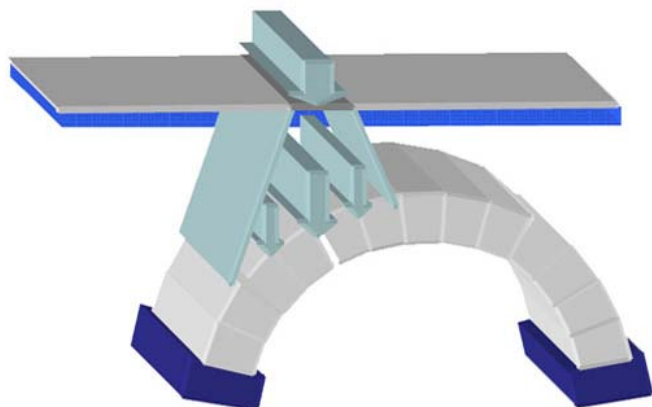
Polymer-coated ballast has been used on rail track, but it has yet to be tested on a bridge.

From a construction point of view, XiSPAN will be identical to the polymer-coated ballast technique now used by BBR and other contractors. A two-component, fast-acting polymer is sprayed to penetrate the ballast to form a reinforcing cage that effectively converts loose pieces of rock into a flexible slab, amenable to engineering analysis.

The patented XiTrack ballast system has been developed over the last decade by geotechnical engineering firm 2Ei Ltd., a company spun off by Heriot-Watt University, Edinburgh, and the polymer supplier Dow Hyperlast Ltd., High Peak.

For about 10 years, BBR has used XiTrack on ballast that is subject to high loading or that sits on weak or variable foundations. Last year, the contractor recruited the Sheffield-based engineering firm LimitState Ltd. to provide analysis and design skills to extend the technique to bridge strengthening.

LimitState has developed software that models the behavior of both a masonry arch and the materials above it. Traditional methods do not account for the composite behavior of the arch and its soil and are less accurate, says Matthew Gilbert, LimitState's managing director.



Software modeling is used to predict a bridge arch's composite behavior in hope of finding a new approach for strengthening masonry bridges.

By also including the treated ballast in the calculations, "we are talking about the potential for a completely new approach to strengthening masonry bridges," says Gilbert. But, he suggests, until full-scale trials are done, XiSPAN will remain only a theoretical prospect.

(Peter Reina / Engineering News Record, 8 December 2010)



Concrete from shale sand is more durable, less permeable

An Ottawa scientist has developed a new, stronger type of concrete that may add years to the lifespan of Canada's bridges.

Daniel Cusson, the scientist leading a research team studying the new concrete, said the key is using shale sand that evenly retains water, making it less permeable. Normal versions of concrete — made from cement, sand, and other additives — are more prone to erosion from substances like road salt.

"The salt and moisture can diffuse and reach into the pores of the concrete and reach the re-enforcements," Cusson said.

"But our concrete has a low permeability ... it's very dense."



The new concrete is to be used on the Seaway International Bridge near Cornwall, Ont., in 2011. (Canadian Press)

The concrete is being developed in a National Research Council lab, and so far tests have proven the concrete's strength. It is set to be used on improvements to the \$75 million Seaway International Bridge near Cornwall, Ont., in 2011.

Cusson said his concrete is more expensive than regular mixtures, but he expects it to last up to 60 years, which could save millions down the line.

"The concrete virtually does not crack," Cusson said.

Glenn Hewus, senior vice president of engineering at Canada's Federal Bridge Corp. Ltd., said he's excited to put the new concrete to use.

"In terms of maintenance, in terms of longevity, in terms of repair, this concrete is a drastic step up from what we have now," Hewus said.

The NRC lab's next challenge? Developing a concrete that can withstand a dynamite blast.

(CBC.ca (Canada), December 23, 2010 στο ASCE Smart-Brief, December 27, 2010)



New pads will help protect PATH tunnels from terrorism

Officials at the Port Authority of New York and New Jersey are installing "blankets" over four PATH subway tunnels under the Hudson River to protect them from terrorist attacks. These tunnels are vulnerable because they are inserted below a layer of thick silt and mud rather than embedded in bedrock, and the pads should reduce the amount of water that would flow into the tunnels in case of an explosion and help them resist blasts.

The PATH tunnels are getting an overcoat to protect them from terrorism.

Port Authority officials are lowering massive "blankets" over the near-exposed PATH subway tubes beneath the Hudson River, a dramatic step in the agency's rush to secure them against a potential terrorist-bomb attack, sources said.

The PATH is especially vulnerable to bombs because the century-old tunnels are not dug into bedrock. Instead, they're inserted below a layer of thick silt and mud.

A barge fitted with a crane lowers the reinforced blankets to cover the top of the tubes.

Officials would not say what the blankets are made of, citing security concerns.

The pads would reduce the amount of water that would flow into the tunnels in case of an explosion, and would also help them resist the blast by exerting pressure on the tube, sources said.



BOMBS AWAY! A crane lowers a "blanket" onto a PATH subway tunnel under the Hudson River to protect it against terrorism.

All four tubes below the Hudson -- two going to the World Trade Center, two going to the West Village -- are expected to get the treatment, sources said.

The work has progressed from the Jersey City shoreline -- not far from the PATH hub at Exchange Place -- toward the World Trade Center.

It's the latest step in the agency's \$600 million plan to "harden" its subway system against terror plots.

Those plans, first reported by The Post, also include ringing the inside of the tunnels with blast-resistant steel and building huge floodgates to seal off a tunnel in case water comes gushing in after a blast.

While the measures may not prevent terrorism, they could reduce the level of damage to the system from an attack and ensure the safety of thousands of passengers.

The tunnel padding is part of the PA's \$5 billion plan to secure its sites, including airports and other facilities.

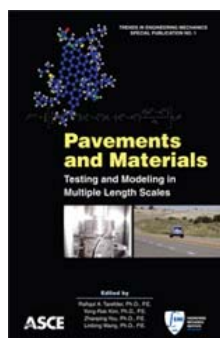
In 2006, law-enforcement officials foiled a plot to bomb the PATH system.

That same year, a terrifying report about the vulnerability of the PATH tunnels to a bomb was leaked to the media.

The report said that if a small explosive -- with enough power to blast a 50-foot hole in a tunnel -- were detonated, more than a million gallons of Hudson River water per minute would surge into the PATH tubes.

(Tom Namako / New York Post, December 27, 2010 στο ASCE SmartBrief, December 29, 2010)

ΝΕΕΣ ΕΚΔΟΣΕΙΣ ΣΤΙΣ ΓΕΩΤΕΧΝΙΚΕΣ ΕΠΙΣΤΗΜΕΣ



Pavements and Materials: Testing and Modeling in Multiple Length Scales

R. A. Tarefder, Y.-R. Kim, Z. You, L. Wang, Editors

Trends in Engineering Mechanics

Special Publications (TEMSP) 1

Selected papers from the Pavements and Materials: Characterization and Modeling Symposium, part of the EMI 2010 conference, held in Los Angeles, California, August 8-11, 2010. Sponsored by the Mechanics of Pavements Committee of the Engineering Mechanics Institute of ASCE.

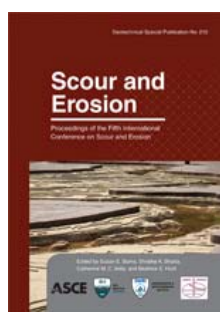
This collection contains 18 peer-reviewed technical papers on the proper characterization and modeling of pavements and roadway materials. Such efforts are often extremely challenging because of significant material heterogeneity at different length scales and the complexity and variability of damage and distress at a minute scale. Therefore, testing and modeling at multiple length scales can be ideal tools to gain accurate insight into the mechanisms and factors that affect the performance of mixture and structure scales. This special publication addresses the current advances and ongoing efforts in multiple length scale research in the area of pavement materials, mixtures, and structures

Topics include:

- characterization and modeling at asphalt mixture component scale,
- modeling at asphalt concrete laboratory specimen scale, and
- characterization and modeling at large or pavement scale.

Pavement materials and design engineers and researchers will benefit from the multiple length scale characterization and modeling techniques and methods presented in this publication.

(ASCE Press, 2010)



Scour and Erosion

Susan E. Burns; Shobha K. Bhatia; Catherine M. C. Avila; Beatrice E. Hunt, Editors

Geotechnical Special Publications (GSP) 210

Proceedings of the 5th International Conference on Scour

and Erosion, held in San Francisco, California, November 7-10, 2010. Sponsored by the Geo-Institute of ASCE; Environmental and Water Resources Institute of ASCE; International Society for Soil Mechanics and Geotechnical Engineering.

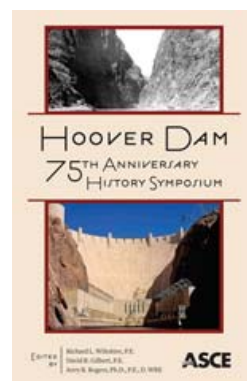
This collection contains 113 papers on scour and erosion, which constitute some of the most critical threats to maintaining infrastructure and quality of life throughout the world. As the human population expands, the responsibilities of engineers, scientists, and designers continue to increase. The demand for a creative approach to effective control of scour and erosion also becomes more pressing, requiring cross-disciplinary synthesis of information from the fields of hydraulic and geotechnical engineering. The papers presented in this book examine the scour and erosion of hillside, fluvial, estuarine, and coastal environments at the interface of water, soil, and rock.

Topics include:

- bridge scour;
- erosion of soils;
- scour and erosion of dams and levees;
- scour of offshore platforms and underwater pipelines;
- numerical modeling;
- physical model tests;
- rock scour;
- case histories, management, and field studies;
- monitoring;
- countermeasures, stream stability, and erosion of slopes; and
- FHWA equations and design standards.

This proceedings will be valuable to anyone working in the fields of geotechnical or environmental engineering.

(ASCE Press, 2011)



Hoover Dam 75th Anniversary History Symposium

Edited by R. L. Wiltshire, D. R. Gilbert, J. R. Rogers

Proceedings of the Hoover Dam 75th Anniversary History Symposium, held in Las Vegas, Nevada,

October 21-22, 2010. Sponsored by the History and Heritage Committee of ASCE.

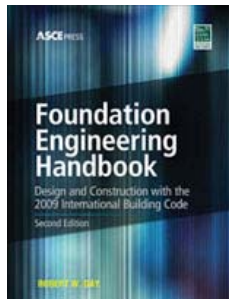
This collection contains 20 papers that commemorate the dedication of the Hoover Dam, which many regard as the world's greatest dam design and construction project of the 20th century. These papers cover wide-ranging topics and provide readers with an understanding of the dam's outstanding engineers and magnificent engineering and architecture.

The Hoover Dam is still the highest concrete dam in the Western Hemisphere. Between 1939 and 1949, it was the world's largest hydropower installation. Even today, it produces more than four billion kilowatt-hours of electricity each year, making it one of the largest hydropower installations in the United States.

Topics include:

- politics, economics, technology, and history;
- concrete technology;
- engineering, hydraulics, and structural; and
- civil engineers, architecture, and construction.

(ASCE Press, 2010)



Foundation Engineering Handbook

Second Edition

Robert W. Day

Revised to cover the 2009 International Building Code, *Foundation Engineering Handbook, Second Edition* presents basic geotechnical field and laboratory studies, such as sub-surface exploration and laboratory testing of soil, rock, and groundwater samples. The book then discusses the geotechnical aspects of foundation engineering, including conditions commonly encountered by design engineers, settlement, expansive soil, and slope stability. Details on the performance or engineering evaluation of foundation construction and the application of the 2009 International Building Code are included in this valuable resource.

(Copublished McGraw-Hill and ASCE Press)



Bodenmechanik und Grundbau

Das Verhalten von Böden und Fels und die wichtigsten grundbaulichen Konzepte

Lang, H.-J., Huder, J., Amann, P., Puzrin, A.M.

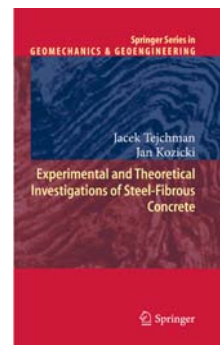
Das vorliegende Buch ist bewusst kompakt gehalten und verzichtet weitgehend auf Doppelspurigkeiten und Redundanz. Die Gliederung ist übersichtlich und der Inhalt auf Anwendbarkeit angelegt, wobei Tabellen und ausgearbeitete Beispiele nützlich sind und der Kontrolle des Verständnisses des Lesers dienen sollen. Bodenmechanik wird als die Wissenschaft vom (mechanischen) Verhalten der Lockergesteine verstanden, während Grundbau die darauf beruhenden baulichen Schlussfolgerungen des Ingenieurs - und natürlich auch der Ingenieurin - subsummiert, die dem Problem angemessen erscheinen. Die Autoren vermeiden ganz bewusst jede weitere Trennung des Inhaltes in Bodenmechanik (schon gar 'theoretische Bodenmechanik' !) und Grundbau, weil eine solche Trennung weder sinnvoll noch zielführend ist, wenn es - wie in diesem Buch - um Praxis- und Anwendungs-orientierten Ausbildungskonzepte geht, die nicht nur für Studierende des Bauingenieurwesens angelegt, sondern auch in der Praxis des Tiefbaues gefragt sind. Die Autoren betrachten den Inhalt des Buches nach wie vor (und vor allem auch unabhängig von allen Veränderungen und Bezeichnungen der Studiengänge und -Abschlüsse) als die Basis, die jeder universitär gebildete Bauingenieur auf dem Gebiet Bodenmechanik/Grundbau be-

herrschen sollte und auf welche sich weiterführende Lehrveranstaltungen abstützen können. Da Normen wenig zum Verständnis des Sachgebietes beitragen können, ist das Buch weitgehend 'normenfrei'. Deshalb kann das Buch in allen Ländern gebraucht werden.

Content Level » Research

Stichwörter » Baugrubenabschlüsse - Bauwesen - Böden - Fels - Festigkeitseigenschaften - Fundament - Grundwasser - Setzungsberechnung - Sohldruckverteilung - Spannungsausbreitung - Stabilitätsprobleme - Tiefgründung

(Springer, 2011)



Experimental and Theoretical Investigations of Steel-Fibrous Concrete

Springer Series in Geomechanics and Geoengineering

Jacek Tejchman and Jan Kozicki

Concrete is still the most widely used construction material since it has the lowest ratio between cost and strength as compared to other available materials. However, it has two undesirable properties, namely: low tensile strength and large brittleness (low energy absorption capacity) that cause the collapse to occur shortly after the formation of the first crack. Therefore, the application of concrete subjected to impact, earthquakes and fatigue loading is strongly limited. To improve these two negative properties and to achieve a partial substitute of conventional reinforcement, an addition of short discontinuous randomly oriented, fibres (steel, glass, synthetic and natural) can be practiced among others. Steel fibres are the most used in concrete applications due to economy, manufacture facilities, reinforcing effects and resistance to the environment aggressiveness. By addition of steel, fibres, the following properties of plain concrete: tensile spitting strength, flexural strength, first cracking strength, toughness (area under the stress-strain curve), stiffness, durability, impact resistance, fatigue and wear strength increase, and deflection, crack width, shrinkage and creep are reduced. In turn, compressive strength can slightly increase or slightly decrease. Addition of steel fibres aids in converting the brittle characteristics to a ductile one. Fibres limit the formation and growth of cracks by providing pinching forces at crack tips. They bear some stress that occurs in the cement matrix and transfer the other portion of stress at stable cement matrix portions. Real effects of fibre addition can be observed as a result of the bridging stress offered, by the fibres after the peak load. The fibre reinforced concrete specimens develop first a pattern of fine distributed cracks instead of directly failing in one localized crack. This is an important feature as it allows one for the design of structures that can provide a high margin of safety. The degree of concrete improvement depends upon many different factors such as: size, shape, aspect ratio (ratio between length and diameter), volume fraction, orientation and surface characteristics of fibres, ratio between fibre length and maximum aggregate size, volume ratio between long and short fibres and concrete class. The fibre orientation depends on the specimen size and flow direction of the fresh concrete against the casting direction.

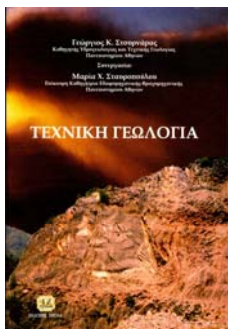
Fibre-reinforced concrete has found many applications in tunnel linings, wall cladding, bridge decks, pavements, slabs on grounds, factory (industrial) floors and slabs, dams, pipes, fire protection coatings, spray concretes. It can be also used as an efficient method for repair, rehabilitation, strengthening and retrofitting of existing concrete structures.

In spite of positive properties, fibrous concrete did not find such acknowledgment and application as usual concrete. There do not still exist consistent dimensioning rules due to the lack sufficient large-scale static and dynamic experiments taking mainly into account the effect of the fibre orientation.

The intention of the book is twofold: first to summarize the most important mechanical and physical properties of steel-fibre-added concrete and reinforced concrete on the basis of numerous experiments described, in the scientific literature, and second to describe a fracture process at meso-scale both in plain concrete and fibrous concrete using a novel discrete lattice model in different quasi-static boundary value problems.

The book includes 6 Sections and is organized as follows. After a short introduction in Section 1, Section 2 summarizes the most important properties of fibrous concrete, Section 3 includes detailed descriptions of experimental results on concrete and reinforced concrete elements with steel fibres from the scientific literature. Next, theoretical models from the scientific literature applied to fibrous concrete are shortly described (Section. 4). In Section 5, our novel discrete lattice model is first outlined. Later, numerical results on the basis of a discrete lattice model are demonstrated, for different quasi-static boundary value problems involving a fracture process in plain concrete (Section 5.1) and fibrous concrete with straight steel fibres (Section 5.2). Numerical results are qualitatively compared with corresponding laboratory tests. Finally, general conclusions from the research, and future research directions are enclosed (Section 6).

(Springer, 2010)



ΤΕΧΝΙΚΗ ΓΕΩΛΟΓΙΑ

Γεώργιος Κ. Στουρνάρας

Συνεργασία : Μαρία Χ. Σταυρούλου

ΑΠΟ ΤΟΝ ΠΡΟΛΟΓΟ... «Το παρόν βιβλίο *Τεχνικής Γεωλογίας* προορίζεται, βασικώς, για τους φοιτητές του Τμήματος Γεωλογίας και Γεωπεριβάλλοντος του Πανεπιστημίου Αθηνών, αλλά πιστεύουμε ότι είναι χρήσιμο και στους επαγγελματίες συναδέλφους Γεωεπιστήμονες. Ως εκ τούτου, η ύλη του συνδέεται με την ύλη όλων των μαθημάτων που συνιστούν το νέο Πρόγραμμα Σπουδών του Τμήματος. Αυτό, αποτελεί μια ενότητα καθορισμένη, σαφή και ευπροσάρμοστη στις νέες εξελίξεις της Επιστήμης, που, στην περίπτωση της Τεχνικής Γεωλογίας, είναι ραγδαίες. Από την άλλη πλευρά η Τεχνική Γεωλογία, που πάντα παραμένει Γεωλογία, αποτελεί, μαζί με τη γνώση που η ίδια παράγει, τη σύνθεση των μαθημάτων *Εδαφομηχανικής, Βραχομηχανικής, Υπόγειας Υδραυλικής, Γεωτεχνικών Κατασκευών και Γεωλογίας Τεχνικών Έργων*, που, επίσης, διδάσκονται από εμάς...».

ΠΕΡΙΕΧΟΜΕΝΑ

Πρόλογος

1. Εισαγωγή
 2. Τεχνική συμπεριφορά των γεωυλικών
 3. Τεχνική Γεωμορφολογία
 4. In situ διερεύνηση ιδιοτήτων των γεωυλικών
 5. Βελτίωση της συμπεριφοράς των γεωυλικών
 6. Αστάθεια γεωλογικών σχηματισμών
 7. Περιβαλλοντική θεώρηση των τεχνικών έργων
 8. Φράγματα
 9. Σήραγγες
 10. Ορυχεία και μεταλλεία
 11. Υπόγειες αποθηκεύσεις υδρογονανθράκων
 12. Συγκοινωνιακά έργα – Οδοποιία
 13. Κανάλια
 14. Αρχές ακτομηχανικής
- Παράρτημα Φωτογραφιών
Βιβλιογραφία

(Εκδόσεις ΤΖΙΟΛΑ, Νοέμβριος 2010)



GÉOTECHNIQUE LETTERS

In January 2011, ICE Publishing will launch *Géotechnique Letters*, edited by Professor Matthew Coop, City University of Hong Kong, P.R. China.

Géotechnique Letters is a vehicle for the rapid international dissemination of the latest and most innovative geotechnical research and practice. Papers will be published within six weeks of submission, avoiding the delays imposed by printed journals, whilst still maintaining rigorous peer reviewing standards.

The journal will cover the same broad range of geotechnical engineering as *Géotechnique*, while its shorter format and express publication will suit the presentation of novel or emerging ideas and designs, current case studies or the results arising from recently completed research, or work in progress that may be of immediate interest to the wider geotechnical community.

Content published in *Géotechnique Letters* will have the same status as any other journal publication. Should authors wish to submit a related article to any other journal, including *Géotechnique*, and that article be on a similar topic, they must reference *Géotechnique Letters* and not repeat any sections of text or illustrations.

Papers should be limited to 2000 words, be of high quality and scientifically correct, be able to stand alone, be placed clearly in the context of the latest research or engineering practice, and contain sufficient information to allow readers to review critically the conclusions reached.

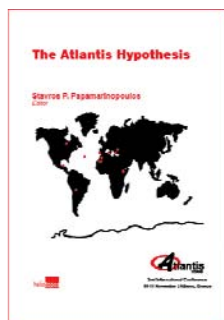
If you would like to publish with *Géotechnique Letters*, then please [email me](#) a brief outline of the paper you would like to write by 15th December. All published work will be [fully free to view](#) in 2011 on ICE Virtual Library and will be reviewed by a prestigious international [advisory panel](#).

I look forward to hearing from you.

Kind regards,

Ben Ramster

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 w: www.geotechniqueletters.com



"The Atlantis Hypothesis" (Atlantis 2008)

Proceedings of the 2nd International Conference, Athens, Greece, 10-11 November 2008

Ed.: Stavros P. Papamarinopoulos

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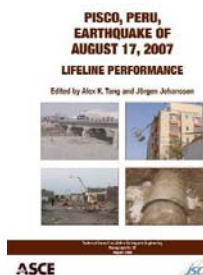
(ΗΛΙΟΤΟΠΟΣ, Ιανουάριος 2011)

Practical Guide to Grouting of Underground Structures

Raymond W. Henn

Presents a hands-on discussion of grouting and provides a foundation for the development of practical specifications and field procedures. With a pragmatic approach, Henn concentrates on types of drilling, mixing, and pumping equipment, as well as their application.

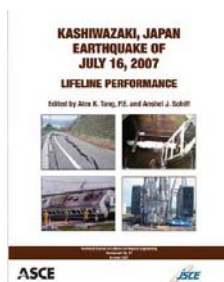
(ASCE Press, 15 Jan 2011)



Pisco, Peru Earthquake of August 15, 2007 Lifeline Performance

Alex K. Tang, Jorgen Johansson

(ASCE Press, 2010)

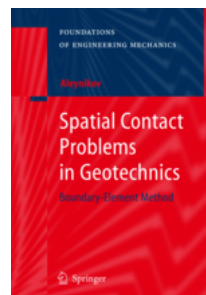


Kashiwazaki, Japan, Earthquake of July 16, 2007 Lifeline Performance

Series: Technical Council on Lifeline Earthquake Engineering Monograph (TCLEE)

Editors: Alex K. Tang, Anshel J. Schiff

(ASCE Press, 2010)



Spatial Contact Problems in Geotechnics

Boundary-Element Method

Series: Foundations of Engineering Mechanics

Aleynikov, Sergey

Originally published in Russian as "Boundary Element Method in Contact Problems for Elastic Spatial-and-Nonhomogeneous Bases", 2000, Publishing House of Civil Engineering Universities Association, Moscow, Russia,

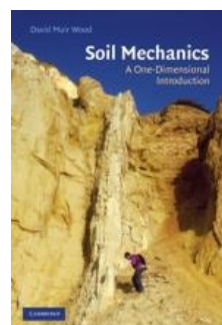
The book presents a systematic approach to the numeric solution of a broad class of spatial contact problem in geotechnics. New techniques and efficient computing algorithms are considered on the basis of the boundary element method – a modern method of structural mechanics and theory of elasticity. Their practical application enables complex-shaped foundations to be designed with high reliability, under spatial loads. Much attention is paid to the formulation and analysis of spatial contact models for elastic bases. Along with classical schemes of contact deformation, new contact models are discussed for spatially nonhomogeneous and nonlinearly elastic media, adequately describing the soil properties. The boundary element method was effectively implemented in an originally developed Rostwerk software. The boundary element solutions are compared with the known experimental data as well as with solutions of similar problems by means of other methods and engineering approaches.

The proposed boundary element method for solving spatial contact problems is applied to demonstrate the possibility for developing new foundation constructions. A new procedure is described for the determination of the soil deformation modulus, developed from the solution of a contact problem for impression of a conical indenter into an elastic half-space.

All the topics under consideration are accompanied by extensive calculation data. The original results are complemented by a detailed review of the world literature.

This work is intended for the audience of research workers, design engineers, post-graduate students, undergraduates specializing in structural mechanics, theory of elasticity and geotechnics.

(Springer, 2010)



Soil Mechanics: A One-Dimensional Introduction

David Muir Wood

This book teaches the principles of soil mechanics to undergraduates, along with other properties of engineering materials, to which the students are exposed simultaneously. Using the critical state method of soil mechanics to study the mechanical behavior of soils requires the student to consider density alongside effective stresses, permitting the unifica-

tion of deformation and strength characteristics. This unification aids the understanding of soil mechanics. This book explores a one-dimensional theme for the presentation of many of the key concepts of soil mechanics - density, stress, stiffness, strength, and fluid flow - and includes a chapter on the analysis of one-dimensional consolidation, which fits nicely with the theme of the book. It also presents some theoretical analyses of soil-structure interaction, which can be analyzed using essentially one-dimensional governing equations. Examples are given at the end of most chapters, and suggestions for laboratory exercises or demonstrations are given.

- This book tries to integrate soil mechanics teaching with the teaching of other elementary civil engineering subjects

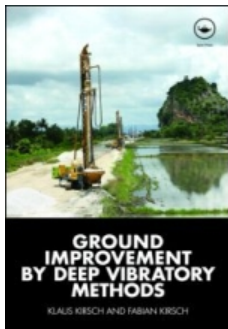
- The book introduces critical state ideas in order to emphasize the importance of volume change and density in soils

- The book includes a chapter on soil-structure interaction as an integrating subject which is often neglected in civil engineering degree programs

Contents

- Introduction
- Stress in soils
- Density
- Stiffness
- Seepage
- Changes in stress
- Consolidation
- Strength
- Soil-structure interaction
- Envoi, exercises; numerical answers

(Cambridge University Press, 30.11.2010)



Ground Improvement by Deep Vibratory Methods

Klaus Kirsch & Fabian Kirsch

Vibro compaction and vibro stone columns are the two dynamic methods of soil improvement most commonly used worldwide. These methods have been developed over sev-

enty years and are now in a position of unrivalled importance amongst modern foundation measures. The first works on granular soil by densification, and the second is used to displace and reinforce fine grained and cohesive soils by introducing inert material.

This practical guide for professional geotechnical engineers outlines the development of vibratory deep compaction, describes the equipment used, sets out the methods and techniques and provides state of the art design principles and quality control procedures. It also identifies the practical limitations of the methods. Case studies from South East Asia and the Middle East are used to illustrate the methods and to demonstrate how they apply in real world conditions. The book concludes with some variations of the basic methods, evaluates the economic and environmental benefits of the methods and gives contractual guidance.

Contents

- Ground improvement methods
- History of vibratory deep compaction
- Deep soil improvement by vibratory methods
- Compaction of granular soils
- Improvement of fine grained and cohesive soils by vibro replacement stone columns
- Method variations and related processes
- Environmental considerations
- Contractual implications

(Spon Press, 07.06.2010)



Introduction to Tunnel Construction

David Chapman, Nicole Metje & Alfred Stärk

Tunnelling provides a robust solution to a variety of engineering challenges. It is a complex process, which requires a firm understanding of the ground conditions as well as structural issues. This book covers the whole range of areas which you need to know in order to embark upon a career in tunnelling. It also includes a number of case studies of real tunnel projects, to demonstrate how the theory applies in practice.

The coverage includes:

- both hard rock and soft ground conditions
- site investigation, parameter selection and design considerations
- methods of improving the stability of the ground and lining techniques
- descriptions of the various tunnelling techniques
- health and safety considerations
- monitoring of tunnels during construction.

Clear, concise and heavily illustrated, this is a vital text for final year undergraduate and MSc students and an invaluable starting point for young professionals.

David Chapman is Reader in Geotechnical Engineering at the University of Birmingham, UK.

Nicole Metje is a Lecturer at the University of Birmingham, UK.

Alfred Stärk is a Senior Tunnelling Manager with the tunneling contractor ALPINE BeMo Tunnelling GmbH in Innsbruck, Austria.

Contents

- Introduction to Tunnelling
- Site Investigation and Laboratory and Field Testing
- Tunnelling Techniques
- Tunnelling Design Issues
- Modelling
- Monitoring
- Case Studies
- Summary of Key Aspects
- Bibliography

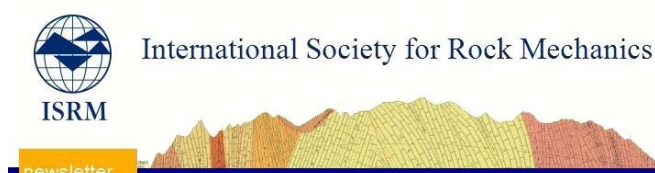
(Spon Press, 19.05.2010)

ΗΛΕΚΤΡΟΝΙΚΑ ΠΕΡΙΟΔΙΚΑ



www.issmge.org

Κυκλοφόρησε το Bulletin Vol. 4, Issue 4, December 2010 της International Society for Soil Mechanics and Geotechnical Engineering.



www.isrm.net/adm/newsletter/ver_html.php?id_newsletter=58&ver=1

Κυκλοφόρησε το Τεύχος No. 12 – Δεκέμβριος 2010 του Newsletter της International Society for Rock Mechanics.



www.geoengineer.org

Κυκλοφόρησαν τα Τεύχη #71 και #72 του Newsletter του Geoengineer.org (Νοέμβριος και Δεκέμβριος 2010) με πολλές χρήσιμες πληροφορίες για όλα τα θέματα της γεωτεχνικής μηχανικής. Υπενθυμίζεται ότι το Newsletter εκδίδεται από τον συνάδελφο και μέλος της ΕΕΕΕΓΜ Δημήτρη Ζέκκο (secretariat@geoengineer.org).



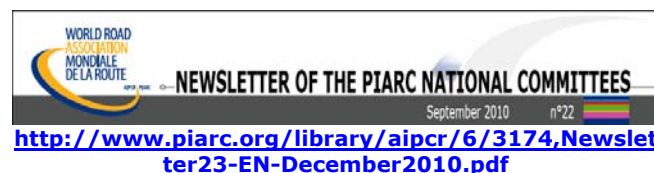
**INTERNATIONAL TUNNELLING AND
UNDERGROUND SPACE ASSOCIATION**
ita@news n°37

http://ita-aites.org/index.php?id=792&no_cache=1

Κυκλοφόρησε το Τεύχος No. 37 – Δεκέμβριος 2010 των ita@news της International Tunnelling Association.



www.piarc.org



<http://www.piarc.org/library/aipcr/6/3174,Newsletter23-EN-December2010.pdf>

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Κυκλοφόρησε το Τεύχος No. 5 (Δεκέμβριος 2010) του ITACET Foundation.



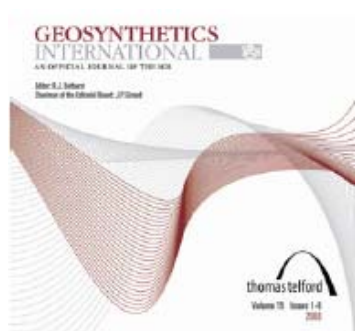


Geomembranes. Πρόσβαση μέσω της ιστοσελίδας
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<http://www.geosyntheticssociety.org/Resources/Newsletters/2010-11-IGS-News-e1.pdf>

Κυκλοφόρησε το Τεύχος #3 του 26^{ου} Τόμου (Νοέμβριος 2010) των IGS News.



Geosynthetics International www.thomastelford.com/journals

Κυκλοφόρησαν τα τεύχη αρ. 4 και 5 του 17^{ου} τόμου (Αύγουστος και Οκτώβριος 2010) του περιοδικού Geosynthetics International. Πρόσβαση μέσω των ιστοσελίδων
<http://www.icevirtuallibrary.com/content/issue/gein/17/4>
και
<http://www.icevirtuallibrary.com/content/issue/gein/17/5>
αντίστοιχα.



Geotextiles & Geomembranes www.geosyntheticssociety.org/journals.htm

Κυκλοφόρησαν τα τεύχη αρ. 5 και 6 του 28^{ου} τόμου (Οκτώβριος και Δεκέμβριος 2010) και το τεύχος αρ. 1 του 29^{ου} τόμου (Φεβρουάριος 2011) του περιοδικού Geotextiles &



Association of Geotechnical and Geoenvironmental Specialists www.ags.org.uk/site/newsletters/nldec10.pdf

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