President's open'g letter message: "Dilemmas of observ. eng'g in geotech. on soft compress. clays", VII Conf. Polish Com. Geotech. Pozman, 1984, pg.128-130

7.4. List Prezydenta ISSMFE

Prof. Victor F.B. de Mello - Prezydent ISSMFE - nie mogąc uczestniczyć w obradach VII Krajowej Konferencji Mechaniki Gruntów i Fundamentowania, przesłał do Polskiego Komitetu Geotechniki następujący list:

International Society for Soil Mechanics and Foundation Engineerin

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VICTOR F.B. DE MELLO, President ISSMFE 1981-85

Dear Colleagues,

To those of you attending the VII Conference of the Polish Committee on Geotechnics, I am happy to submit my brief message of greetings, regretting the unfortunate fact that despite the gratitude and friendly enthusiasm with which your Committee's invitation for my participation was received, problems of distance and time made my personal attendance impossible. As Officers of the Society, at your service, we emphasize that our truly International Society's technical and human relationships flourish in direct result of the enthusiasms nourished at the roots, at the local and regional gatherings

The topics selected for this geotechnical conference certainly intertwine most suggestively. It was in problems of compressibility and consolidation of soft clays that our Terzaghian era of geotechnique was brought to light; through ever-changing tests, continually revised by research and improved theorization, the needs of "ever-recent" newly challenging problems were faced and temporarily solved; and, in the wake of each advance, the desire to firm-up and consolidate the technological gain has engendered the standardizations, irrefutably necessary for consistency in reference communication, but requiring careful watch to avoid stifling renewed revisions

Moreover it would be redundant to emphasize that civilizations and cities have predominantly developed beside natural waters, and even if there was some range of choice in the early urbanization in avoiding softer water-logged areas, many factors, of growth, of development of land transportation fills, of expanding industrial areas, etc., have inexorably led to ever-increasing needs of occupation of soft compressible sites, and of ever more stringent demands on soil and foundation engineering.

On the one hand, the exponentially growing capacities of industrial developments have led to innumerable inventive solutions within the area of "soil reinforcement". Along this avenue the possibilities have proven well, and appear limitless. The sore limitation is, and will be, costs. At what costs per capita or per square meter does mankind plan to push itself ever more to the brink of tighter survival? Why is it that we condone with the absence of any indications on costs of the many undisputably ingenious treatments that soil-reinforcement engineering produces, sponsored and defended by patents and potent enterprising? Costs are only reduced in synthetic industrial output by the concept of multiples, and this does not apply to soils, in their tenuous natural equilibrium at close to FS = 1.00, and absolutely non-repetitive conditions at the finer scale.

On the other hand, despite all our efforts at improved research-assessment-knowledge-communication of Nature's complex reality, we are yet repeatedly humbled. And so in engineering we are permitted to breathe the joys of temporary successes, good for the moment, while always insufficier satisfactory for tomorrow: let us really enjoy the reality that we will never know enough!

I recommend it as especially appropriate to draw such a sobering lesson from what is probably the most brilliantly and extensively

engineered prototype test in geotechnique. Every geotechnician is earnestly invited to study carefully the Report nº 13, Swedish Geotechnical Institute "Long term consolidation beneath the test fills at Väsby, Sweden", Y.C.E. Chang, Linköping 1981. Conceived by Terzaghi, nurtered by our most outstanding colleagues and institutions, twice subjected to extensive doctoral analyses, instrumented and re-instrumented, and so on: and, above all, at the present moment, the only long-term consolidation prototype study, thus eagerly sought for support in an area of total ignorance and very expensive and slow acquisition of any further light!

Could it be by a mockery of coincidence that from such immense efforts no real theory (i.e. generalizable) should have evolved? Or, if any did evolve, how could we possibly have hit, by coincidence, on a condition whereby, after a while, the self-induced pore pressure by destructurations maintains exact compensation with the simultaneous tendency to pore pressure dissipation, so that densities and strengths do increase, but apparent degrees of consolidation (pore pressure dissipation) show only negligible change over the last 12 years?

Is it a particular condition of that specific sensitive clay investigated? Do we extract the hint that if we investigate too deeply into a specific individual soil, the benefit-cost ratio of our acquisition of knowledge and engineering solutions may be reduced, because the truths detected become singular?

Sobering indeed it may be to ponder that in engineering our efforts are dictated by benefit-cost reasonings: between decisions-actions, and quest-knowledge; between estimated knowledge and researched facts; between laboratory and field, model and prototype; and so on. And the optimum points may generally lie in a carefully balanced compensation of extremes, between statistical generalizations extracted from groups of case histories, and almost deterministically-controlled research efforts on single cases.

May the discussions of the Conference be stimulating and fruitful, within the enthusiasm of doing our best, while cheerfully recognizing how little we really know, or will ever know.