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IGS News

A Bulletin of Indian Geotechnical Society, Chennai Chapter

www.igschennai.in

Editors : Prof. S.V. RAMASWAMY & Er. I.V. ANIRUDHAN

Geotechnical Calendar

National

- **16-19 December, 2009**, Guntur, Andhra Pradesh, **IGC 2009**, RVR & JC College of Engineering will host Indian Geotechnical Conference IGC-2009. Prospective authors are asked to submit abstract of about 300 words by e-mail to igc2009.guntur@gmail.com before 15, March 2009. Contact Prof. M. Rama Rao, muvvalaramarao@rediffmail.com rao_muvvala@yahoo.co.in
- **October -November 2010**, New Delhi, 6th International Congress on Environmental Geotechnics, Prof. Manoj Datta :mdatta@civil.iitd.ac.in, Prof. R.K. Srivastava: rksciv@yahoo.com, Dr. G.V. Ramana: ramana@civil.iitd.ac.in

Paper competition on Geotechnical Engg topics for ME/ M.Tech students and Research Scholars in Tamilnadu.

Dates:

Receiving the paper - 30 April 2009
Short-list - 15 May 2009
Presentation and award - June 2009

Coordinator, Dr. K. Premalatha, Anna University, e-mail:kvprema@annauniv.edu. Ph. 044-22203229, 09841772508

International

- 15 May 2009, Frankfurt, ISSMGE TC18 - International Conference on Deep Foundations - CPRF and Energy Piles, http://www.issmge.org/home/
- 25 - 27 May 2009, Kyoto, Japan, International Symposium on Prediction and Simulation Methods for Geohazard Mitigation, http://nakisuna2.kuciv.kyoto-u.ac.jp/tc34/is-kyoto/
- 15 - 17 June 2009, IS-Tokyo 2009 - International Conference on Performance-Based Design in Earthquake Geotechnical Engineering - from case history to practice, http://www.rs.noda.tus.ac.jp/ytsoil/IS2009.htm
- 22 - 25 July 2009, Harbin, China, The 3rd International Geotechnical Symposium (IGS2009) on Geotechnical Engineering for Disaster Prevention and Reduction, igs2009.hit.edu.cn
- 2 - 6 October 2009, Alexandria, Egypt, 4 iYGEC'09 - 4th International Young Geotechnical Engineers' Conference, http://addon.webforum.com/issmge/view.asp?EventID=2049&Lang=Eng
- 5-9 October 2009, Alexandria, Egypt, 17th International Conference on Soil Mechanics and Geotechnical Engineering. Honorary Secretary, Indian Geotechnical Society, www.2009icsmge-egypt.org

From the Editor's Desk ... The Diamond Jubilee Year 2008

We wish all the members a warm welcome to the New Year 2009 and hope for a peaceful and joyful year ahead. We had a very eventful year 2008 with several programmes that would have definitely benefited the members. Meaningful discussions during the seminars and workshops show that the members are eagerly waiting for such programmes.

We conducted three seminars and one workshop during 2008, starting with a one day session on geotechnical investigation. We had one similar programme in 1993 with focus on the content and interpretation of Geotechnical Investigation reports. The present seminar conducted on 23 February 2008 discussed new developments and the current practices. There was a unanimous plea for more responsible reporting from the investigation agencies. Between 1993 and 2008, practically there was no difference with regard to the complaints about poor quality of investigations and the investigation reports. It is high time, the investigation agencies stop complaining about the budget allotment because of better awareness among the end users. A hard bargaining on the quality requirement is necessary. Dr. Varghese Chummar, F.S. Engineers made the inaugural speech of the seminar. Shri Murali Iyengar, Geotechnical Consultant, Dr. K.S. Ramakrishna, L&T, ECC, Dr. R.G. Robinson, IIT Madras, Prof. K. Ilamparuthi, College of Engg. Guindy, Anna University, Dr. S.V. Prasad, Geomarine Consultants, Mr. V. Balakumar, Simplex Infrastructures and Mr. I.V. Anirudhan, Geotechnical Solutions, made presentations on various issues. Prof. S.R. Gandhi, Er. Elangovan, Mr. K.V. Sivanarayana, Mr. Rambabu, Mr. K. Senathipahi, etc. participated in the panel discussions moderated by Shri Murali Iyengar.

There was a sponsored one day seminar on Wave Equation Analysis of Pile Driving Methodology and Performance on 25 June 2008. Dr. Frank Rausche, PDI Inc. made presentations on low strain pile integrity testing, Dynamic testing on piles and PDA and Pile testing and Cross hole analyzer followed by a demonstration of new equipment in the field. The programme was attended by more than 100 participants. Mr. Ravikiran Vaidya made a presentation on his experience with pile integrity testing and pile dynamic testing with particular reference to Chennai region.

The next two programmes were in connection with the Diamond Jubilee celebrations of Indian Geotechnical Society. The one-day seminar on Segmental pre-cast driven piles was held on 26 July 2008 with lead speakers from industry. Shri Shankar Guha, Vice President, Simplex Infrastructures, presented the growth profile of segmental - jointed - precast piles in India. Dr. K.S. Ramakrishna, L&T ECC, initiated the seminar and explaining how the segmental pre-cast piles can accelerate the construction process with a sound foundation system. The import of heavy diesel hammers are increasing and this can improve the construction schedules. Dr. Sunil S. Basarkar of ITD Cementation presented case studies where indigenous technology worked well. Er. Ashirvatham, L&T ECC presented with case studies the advantages of pile driving analyzer at segmental precast driven pile sites. Every pre-cast pile is a tested pile. That was the conclusion by Er. Ashirvatham. Prof. Gandhi, IIT Madras, presented number of photographs that depicted the casting to final driving of a segmental pre-cast pile.

The workshop on horizontal directional drilling technology was arranged in association with the International Society for Trenchless technology (ISTT), Vermeer Manufacturing Co., and Digital Control Incorporated (DCI). Over the years, the ISTT has been instrumental in educating and promoting the benefits of trenchless technology all around the globe through its international and regional conferences, seminars and affiliates. Today there are 25 affiliated societies and 3500 members worldwide carrying the trenchless message.

Prof. Samuel T. Ariaratnam, Arizona State University, Tempe, Arizona USA, who carried out considerable pioneering work in trenchless construction methods particularly on Horizontal Directional Drilling, presented the key topics. Other speakers in the workshop included Mr. Navneet Mathur, Vermeer Manufacturing Company, Mr. Sean Wharton, Earth Tool Co. and Mr. Ehteshamul Haque, Digital Control Inc.

We also conducted a few lectures during the year and all the programmes were well attended. Prof. K.S. Subba Rao, IISc Bangalore (Rtd.) delivered the Terzaghi Memorial lecture of

The IGS - AIMIL Best Chapter award for IGS Chennai Chapter for the Diamond Jubilee Year was converted into just a certificate for conducting IGC 2006

From the Editor's Desk... Contd.

2008. He talked about the Design Principles and Some Case Studies of Tailing Pond Dykes.

The Indian Geotechnical Conference IGC 2008 held at IISc Bangalore had a large attendance from Tamilnadu, especially from Chennai. Prof. S.R. Gandhi and Prof. K. Rajagopal presented keynote lectures in the conference, while several members chaired or co-chaired the sessions. It was a wonderful feeling when many delegates shared pleasant memories of IGC 2006. It was heartening to note that many members form Chennai Chapter won awards for IGS best paper in journals and conferences. The IGS-AIMIL Best Chapter award was snatched away from the Chennai Chapter at the last minute.

The Chennai Chapter is planning more programmes during the year 2009 for the benefit of its members. We will be organizing a paper contest for ME, M Tech. and PhD Students of Geotechnical Engineering and related disciplines during the first half of 2009. The important dates relevant to this contest are given in this issue of the news letter.

One of the greatest losses the geotechnical community suffered during 2008 is the sad demise of Shri K. R. Datye on September 28. It is very difficult to find such a fine geotechnical engineering practitioner who committed himself to the development of simple methods of energy saving techniques, particularly in the field of geotechnical engineering. The IGS Annual lecture he presented in 1981, 'Simpler Techniques of Ground Improvement,' is a document that should be re-read and understood in the present scenario of concentrated developments. The developments that we experience today is catering only large urban oriented projects, while the rural needs are totally neglected. Mr. Anirudhan personally benefited immensely by working under him for more than five years. The association gave him the rare insight to geotechnical engineering, which, he feels, gave him the courage to travel along the path of integrity and true service. Thousands of villagers who benefited from his simple engineering solutions to their problems will remember him for ever as the source of their energy.

Prof. S.R. Gandhi delivering a keynote lecture during IGC 2008

Below:
Shri I.V. Anirudhan, Prof. K. Ilamparuthi and Prof. S.R. Gandhi during Chapters meeting at IGC 2008 at IISc Bangalore.

Personal Column

1. **Shri N.P. Rajmane** (LM-713), SERC, Chennai, received the prestigious ICI Award for "Outstanding Concrete Technologist for 2008". Shri N.P. Rajmane is presently the Deputy Director and Head, Concrete Composites Lab, SERC, CSIR Campus, Taramani, Chennai, India.
2. **Dr. R. Ayothiraman** (LM-569), moved from IIT Guwahati and joined IIT Delhi.
3. **Prof. S.V. Ramaswamy** (LM-08) presented his paper "Globalization and Geotechnical Engineering Education and Practice", at Indian Geotechnical Conference - 2008, Bangalore, Dec. 17 - 18, 2008. He chaired the sessions at IGC 2008, National Seminar on Geotechnical Problems - Case Studies, Indore, Oct. 5, 2008 and National Symposium on Geoenvironment, Geohazards, Geosynthetics and Ground Improvement - Experiences and Practice, New Delhi, July 4 - 5, 2008.
4. **Mr. G. Padmanabhan** (LM-840), CED, IGCAR, Kalpakkam, attended 3rd International Conference on Site Characterization held at Taiwan during 1st April 2008 to 5th April 2008 and presented his paper "A case study of seismic and geotechnical characterization for a Nuclear Facility Site".
5. **Dr. V. Balakumar** (LM-55) and **Prof. K. Ilamparuthi** (LM-26) received the IGS-AIMIL Biennial Prize for the best paper on Instrumentation for their paper "Performance Monitoring and Numerical Simulation of Piled Raft Foundation of a Twelve Storied Building" published in IGS Journal Vol. 37(2), April 2007
6. **Dr. Kumar Pitchumani** (LM-241), **Mr. S. Selvam** (LM-700), and others received IGS-Shri A.G. Dastidar Biennial Prize for the best paper on Ground Improvement for their paper 'Efficient Project Procurement through Holistic Engineering - A Case Study in Ground Improvement' published in IGC 2006 proceedings.
7. **Prof. R. Sundaravadivelu** (LM-203) and others received the IGC-ONGC Biennial Prize for the best paper for their paper "Effect of Interaction Analysis Methods on the Estimation of Natural Period of Berthing Structures", published in IGC 2006 proceedings.
8 **Prof. K. Rajagopal** (LM-160) and others won the IGS Chennai Chapter Biennial Prize for best paper on Deep Foundation and Retaining Structures for their paper "Response of Piles under Passive Lateral Loads - A Numerical Approach" published in IGC 2006 proceedings
9. **Dr. V. Balakumar** (LM-55) was awarded Ph.D degree during 29th convocation of Anna University. His work "Experimental Studies of Model Piled Raft on Sand and Field Study of Prototype Behaviour" won him the degree.
10. **Dr. Danial Thangaraj D** (LM-733) was awarded his Ph.D degree during 28th convocation of Anna University for his study on soil raft interaction.
11. **Dr. Makarand Khare** (SM-823) received his Ph.D degree in Geotechnical Engineering from IIT Madras and is presently working in L&T ECC Madras. Dr. Makrand worked on negative drag on piles.
12. **Dr. Praveen Kumar R** (SM-837) received his Ph.D degree in Geotechnical Engineering from IIT Madras in 2008 and is presently doing his Post Doctoral research in Australia.
13. **Dr. S. Murugesan** (LM-822) received his Ph.D degree from IIT Madras in 2008 and presently working with Garware Ropes, Hyderabad. Dr. Murugesan researched in the topic of encased stone columns.
14. **Prof. S. V. Ramaswamy** (LM-08), **Prof. K. Rajagopal** (LM-160) and **Prof. S.R. Gandhi** (LM-13) have been re-elected to the IGS National Executive Committee for the period 2009-2010.
15. **Prof. K. Rajagopal** (LM-160) is presently the Head, Civil Engineering Department, IIT Madras.
16. **Prof. S.R. Gandhi** (LM-13) is presently the co-chairman of Engineering Unit of IIT Madras.
17. **Prof. K. Ilamparuthi** (LM-26) is the Chairman, Faculty of Civil Engineering, Anna University.
18. **Dr. Kumar Pitchumani** (LM-241) has become Chartered Engineer (CEng.) of Institution of Civil Engineers, London. He is presently the Senior Geotechnical Engineer at COWI A/S, Ajman, UAE.
19. **Dr. Thirunakkarasu** (LM-117) has been elected Chairman, Institution of Engineers (India), Tamilnadu State Centre.

Activities - January 2008- December 2008

One Day Seminar on Geotechnical Investigations held on 23 February 2008

Dr. Varghese Chummar, F.S. Engineers, delivering the inaugural lecture

Dr. V. Balakumar, Consultant, Simplex Infrastructures, talking on the end user awareness

Prof. A. Boominathan, IIT Madras, talks on new developments in geotechnical investigation methods

Prof. K. Ilamparuthi, Anna University, presents his lecture on the developments in Pressure Meter testing for soil

Dr. R.G. Robinson, IIT Madras gave a lucid presentation on the developments in Cone Penetration testing.

Shri Murali Iyengar, Geotechnical Consultant, Chennai, highlights the planning aspects of geotechnical investigation for Mega Projects.

Technical Lectures

Dr. R. Kerry Rowe, Vice-Principal (Research) and Professor of Civil Engineering, Queen's University, talked on 'LONG-TERM PERFORMANCE OF CONTAMINANT BARRIER SYSTEMS.' The programme was held on 8 October 2008.

Prof. J.N. Mandal, Department of Civil Engineering, IIT Bombay, delivered a lecture on 'DEVELOPMENTS IN LAND FILLS AND DESIGNING WITH GEOSYNTHETIC CLAY LINERS' on 9 July 2008

Mr. Graham Morphett, Managing Director, Uretek India Private Limited, delivered a lecture on 'URETEK SOLUTIONS FOR GEOTECHNICAL ENGINEERING PROBLEMS' on 2 June 2008.

One Day Workshop on Horizontal Directional Drilling held on 4 August 2008

Prof. S.T. Ariaratnam, Arizona State University, Tempe, Arizona USA, presented the topics Introduction to Horizontal Directional Drilling, Drilling Fluid Applications in HDD and Planning for HDD Projects.

Mr. Sean Wharton, Earth Tool Company, presenting the topic HDD Assist

Mr. Navneet Mathur, Vermeer Manufacturing Company presented several aspects of HDD in India

Technical Lectures

Dr. Rajah Gnanendran, Senior Lecturer, University of New South Wales at ADFA, Canberra, Australia, gave a talk on 'Design and Performance Prediction of Reinforced Embankments on Soft Soils: Inferences from Sackville and Leneghans Reinforced Embankments' held on 20 March 2008

Prof. K.S. Subba Rao, Chairman, Project Management Group, IISC., Bangalore, delivered the Terzaghi Day Lecture 2008 "Tailing Pond Dykes-Design Principles and Some Case Studies" on 8 November 2008

Dr.Frank Rausche, PDI Inc. gave lectures on the topics 'Introduction to low strain testing of piles and Pile Integrity Tester", 'Introduction to dynamic testing of piles and PDA' and 'Methods for Testing of Piles by Cross Hole Method' on 25 June 2008.

The Re-generative Economy - Shri K.R. Datye

Indian Academy of Social Sciences awarded Shri K.R. Datye, the prestigious 'PV Sukhatme ISSA Silver Jubilee Gold Medal' during the 31st session of the Indian Social Science Congress in December 27-31, 2007. He gave the following short speech after receiving the award.

The economic divide in India has now reached such a stage that it threatens internal security. At the same time environmental degradation is reaching alarming proportions. The structure of representative democracy helped the technical and administrative intelligentsia to consolidate their power during the four decades after independence. After pro-market reform, corporate management and big finance have started making the key policy decisions. The fact, however, remains that the state as well as the market have not only failed in protecting the environment and providing livelihood security for the poor but have worsened the environmental degradation and dispossession of the poor.

It is impossible to protect the environment and provide livelihood security for the poor without sustaining and extending the common property domain and taking collective action from below. The political system offers little prospect of decentralization and accountability of people's representatives. The only way is building neighbourhood communities from below and empowering them to regulate resource use and private property relations in the neighbourhood and adopt a pathway that provides for livelihood security for all and opportunities to build nature's capital.

This will be possible only through the building up of a regenerative eco-economy. The paradigm of a regenerative ecosystem goes beyond the concept of conservation that aims merely at restricting consumption of non renewable resources in order to extend their use over a longer period. Regeneration implies not merely conserving but enhancing the capacity of neighbourhood eco-systems through regenerative methods and the use of external factors so as to provide for the well being of all.

Concurrently the quality of life in society will be improved by reducing the social and physical distance between producers and consumers and by making users the providers of the various services and infrastructure. The neighbourhood will then channel social energy into productive activities by reversing the process of the degradation of work and the wastage of social energy in competition and conflict resolution. The overall economic efficiency will be increased by avoiding redundant transaction and energy loss in transportation and transmission.

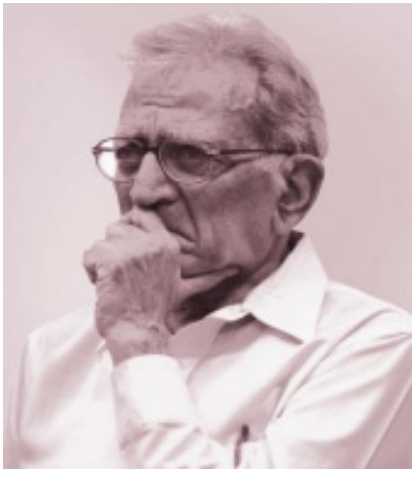
The transformation to a regenerative economy will require a science that focuses on human capacities for need fulfilment. I have devoted myself to demonstrating that such an economy is not only possible but realisable in the immediate future. However, demonstrable evidence needs to be made available of the tremendous potential for overcoming cultural and institutional barriers that block the way to a just and humane society. Small group initiatives to build community organizations should be strengthened; but it would be a tragedy if such efforts are lost in localism, in which case they may even widen the rural and urban divide.

The theoretical framework of a regenerative ecosystem as well as the strategic and detailed pathway for a transition to a just, equitable, regenerative and prosperous society needs to be collectively worked out with a rigorous scientific assessment of its potential to satisfy human needs. This task needs the involvement of scientists, engineers and professionals of various sorts. Given the rapidity with which global capital is imposing itself, the task has become much more urgent. I have made a small beginning in this direction. But I am optimistic that if a small but significant number of committed people take up these tasks and recognise that there is more to life than consumption and there is a fundamental human need for taking up creative and intensive work, freely chosen by manual and intellectual workers, we will soon be in a position to evolve a grounded demonstration of the tremendous prospects of a regenerative eco-economy.

Action can best begin at a work place and service centres – *shram seva kendra*s – in rural areas and small towns in the neighbourhood. It is here that the uneducated manual workers and intellectuals can work together without class or caste distinctions to work towards the new democratic and equitable society that has brought us all together. The learners will include small groups of poor, who are given necessary entitlements and right to small plots of land and produce of common land and access to necessary water 'on demand'. This will provide the biomass base required for the regenerative ecosystem. However, equally importantly, this needs to be supplemented by entitlements to non-farm biomass and renewable energy based processing facilities and resources for the poor that will give us a high multiplier in translating every unit of energy use into use value. Only this can carry us to a truly modern dispersed industrial society with a prosperous future for all. A pathway can then be charted of correcting, in a phased manner, the imbalance of trade in monetary as well as energy terms between rural areas and the globalised mega city economy.

Building the technological foundation of such a neighbourhood society, planning based on micro-macro interaction will be required. It is a challenge for the intellectuals to set up the *shram seva kendras* as schools of practice of engineering technology and management that bring together the activities of education, research, production, processing, marketing and management at one site. This is what needs to be demonstrated. Another aspect of the demonstration should be that the marketable surplus of the rural small town neighbourhood can very well meet the needs of food, shelter, water, energy and infrastructure of the towns on the urban periphery or in the corridors of the highways, railways and waterways. I urge that we all take on the task of this demonstration.

Tribute: Shri K.R. Datye (15 September 1926 - 28 September 2008)



K. R. Datye was born in the then princely state of Gwalior in 1926. After graduating first in Mathematics he rejected the chance of a Cambridge scholarship and decided to take up engineering, graduated as a civil engineer and decided to join government service. His life had been characterized by the twin concerns of professional excellence and social commitment. He had a twenty-year stint in government service when he worked with the Central Water and Power Commission (CWPC) and the Government of Maharashtra (GoM). In 1967 he quit government to start his independent consultancy and has since then scaled many professional heights and has earned the reputation of being the man to turn to when there is a difficult problem that does not seem to be capable of being solved by conventional methods. He has served on and headed a number of committees for various government and research agencies including the Planning Commission, the Indian Standards Committee for Earth Dams, the Central Board of irrigation and Power, Empowered Committee for the Rajiv Gandhi Watershed Mission of the Government of Madhya Pradesh, the Central Building Research Institute in India as well as the American Society of Civil Engineers (ASCE), the International Association of Bridge and Structural Engineer, the International Society of Soil Mechanics and Foundation Engineering. He received "Scroll of Honour" in recognition of outstanding contributions in the field of Geotechnical Engineering at the 2000 Millennium Conference of the Indian Geotechnical Society. He had been closely associated, among others, with Baba Amte and his centre, the Shramik Sanghatana, Shahade, the Bhoomi Sena, Thane, and the Equitable Water Movement and the Shramik Mukti Dal in South Maharashtra.

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Growth of Geotechnical Wisdom

BOOK POST

IGS Chennai Chapter wishes its Members and their Families a very peaceful and joyous **New Year 2009**

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IGS DIAMOND JUBILEE YEAR 2008

Competition for Students

The IGS Chennai Chapter is conducting a paper completion among the geotechnical students so that their research works can be presented to the practising engineers and academicians apart from helping the students to have confidence in their own work. Papers based on the original work carried out by the students for their thesis work are invited for a review and about eight papers will be short-listed for presentation and final selection. The authors of two selected papers will be presented awards and offered free registration and conveyance for attending the forthcoming Indian Geotechnical Conference IGC 2009 at Guntur. These two papers in an abridged form with four A4 size pages may be submitted to IGC 2009 for the inclusion in the conference. Research Scholars and final semester M.E. / M.Tech and Soil Mechanics and Foundation Engineering/Geotechnical Engineering, Geo-environmental Engineering and Transportation Engineering students who are working in a problem related to geotechnical engineering can participate. Tentative programme for the competition is given in the first page. More details will be available on the Chapter website.

One Day Seminar on Segmental Precast Driven Piles
Held on 27 July 2008

Dr. K.S. Ramakrishna, L&T ECC, presented the lead lecture 'A Sound Foundation to Accelerate Construction in India' during the seminar.

Shri Ashirwatham, L&T ECC, delivered the lecture 'Critical Aspects of a Pre-Cast Piling Project.

Shri Shankar Guha, Simplex Infrastructure, receiving a memento from **Dr. B. Ramanathan** after delivering his lecture on Growth of Precast Piling in India with Simplex.

Prof. S. R. Gandhi, IIT Madras, presented a collection of photographs of casting to complete installation of a segmental pre-cast driven pile

Dr. Sunil Basarkar, ITD Cementation, shared his experience on segmental precast piling practice citing case studies from ITD Cementation projects.