

ASCE

AMERICAN SOCIETY OF CIVIL ENGINEERS

INDIA SECTION

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asce.is.email@gmail.com

President's Message

Dear Member,

At the outset, I wish to congratulate you all on the participation in the elections of India section that were held recently during June 2013 and now we have a new team headed by me and other colleagues to enable smooth working of the professional activities of the Section. We seek your co-operation, active support and participation in the events of ASCE IS. One of the rare privileges we had was the swearing in of the new team during the visit of ASCE leadership to India during 7-16 August 2013 and the ASCE president ASCE President Gregory E. DiLoreto, P.E., P.L.S, D.WRE, F. ASCE, administered the oath of the office on 10th August 2013 in Taj Palace, New Delhi. Mr. DiLoreto addressed the members and discussed the global issues related to sustainability. The need for sustainable design and development is highlighted in the presentation. The basis and the need for sustainable design are available in www.sustainableinfrastructures.com. Executive Director, and Chief Staff Officer and Secretary Patrick J. Natale, P.E., CAE, F.ASCE presented the development of report card for the infrastructure in USA. Report card depicts the condition and performance of infrastructure in USA, based on physical conditions and the needed fiscal investments for improvement. Once every four years, this is done and provides a comprehensive assessment of the USA's major infrastructure categories in ASCE's Report Card for America's Infrastructure. Using a simple A to F school report card format, the Report Card provides a comprehensive assessment of current infrastructure conditions and needs, both assigning grades and making recommendations for how to raise the grades. An Advisory Council of ASCE members assigns the grades according to the following eight criteria: capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation. Since 1998, the grades have been near failing, averaging only Ds, due to delayed maintenance and under-investment across most categories. The 2013 Report Card grades indicate that America's cumulative GPA for infrastructure rose slightly to a D+. The grades in 2013 ranged from a high of B- for solid waste to a low of D- for inland waterways and levees. Solid waste, drinking water, wastewater, roads, and bridges all saw incremental improvements, and rail jumped from a C- to a C+. No categories saw a decline in grade this year.

Now in India, the stage is set for a mega infrastructure push, as the Cabinet Committee on Investment (CCI) government of India decided to fast-track 36 stalled projects, including 28 power projects, with an investment of over Rs 1.5 lakh crore, a move that is expected to boost faltering economic growth. Report cards of similar nature are desirable in India to enable optimum investments and targeted growth. ASCE has considerable knowledge bank and expertise in sustainability and infrastructure and there is a need for interaction of ASCE and ASCE- India Section at all levels for the benefit of the world's population.

I look forward to your active participation and understanding of the needs of the Civil Engineering profession in India. This can be accomplished by discussing the state of infrastructure in India in various forms, enrolling more members in ASCE, organizing and participating in seminars, opening up of student chapters etc.

Best regards

Prof. G L Sivakumar Babu, President, ASCE IS

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News from Regions

Northern Region News

Expert Lecture on “Trenchless pipeline renewal and construction” By Dr. Declan Downey, Ex. ISTT Chairman and Environment Manager, Trenchless Opportunities Ltd., UK at IIT Delhi on July 24th 2013

The lecture was conducted in association with Indian Institute of Technology Delhi at the Department of Civil Engineering on July 24th. Mr. Pradeep K Gupta, CEO, EMMAR MGF has graced the occasion as chief guest. The talk was attended by many eminent faculty of IIT Delhi and members from Delhi.

The lecture was well received and concluded with a very interactive Question & Answer session followed by the vote of thanks by Mr Satish Vij President ASCE IS NR.

Dr. Declan Downey Visit July 24th 2013

ASCE IS NR organized a technical lecture of Dr. Declan Downey at Civil Engineering Department, IIT Delhi on July 24th 2013 on Trenchless technology for renewal of sewerage and drainage system.

Mr. S K Vij, President ASCE IS NR and Mr. Arif Siddiqui Secretary ASCE IS NR and Dr. A K Keshari, Professor IIT Delhi and ASCE Core committee member were key in organizing this program.

Mr. Pradeep Gupta, CEO EMMAR MGF was Chief Guest for the evening and Dr. A K Keshari, Professor IIT Delhi moderated the session. Dr. Arvind Jain, Head of Civil Engineering Department was also present during the lecture session.

Dr. A K Keshari welcomed all the attendees and the chief guest. Dr. Arvind Jain briefed the gathering about the IIT Delhi. Mr. S K Vij, President North Region, briefed the students and the faculty members about the ASCE IS NR activities and the plan for opening the student chapter at IIT Delhi.

Dr. Downey explained the students about the trenchless technology and it's applications. He also discussed some case studies of drainage renewal projects of New York. It was first time many of the students came across to this technology and interacted well with Dr. Downey to make there understanding clear.

Mr. Pradeep Gupta, Chief Guest addressed the students at the end of the session.

Southern Region News

Technical Lecture on “Single Piles vs. Pile Groups Lateral Response under Static, Cyclic and Dynamic Loading” By Prof. A. Boominathan, Indian Institute of Technology Madras at IISc, Bangalore on July 5th 2013

The lecture was conducted in the Department of Civil Engineering, IISc. The lecture was attended by 30+ students and faculty of IISc and delegates from Industry.

Prof. Boominathan has explained the possible modes of lateral loads coming on the pile supported structures and drew his objectives of the present study. He considered the effect of various soil-pile parameters and loading characteristics on the lateral response of single piles and pile groups embedded in clay. Prof. Boominathan explained that the study has a two-pronged approach.

In the first, laboratory 1g model tests have been conducted on model single piles and pile groups in clay under three types of lateral loading conditions: static, cyclic and dynamic. The effects of various parameters such as spacing between piles, number of piles and configuration, embedment length and loading characteristics on load deflection and bending behaviour of pile groups were investigated. Based on the experimental results, the p-y curves were developed and p-multipliers were evaluated for static and cyclic loading. Numerical analyses were carried out by p-y curve approach using LPILE and GROUP software with inbuilt and experimentally evaluated p-multipliers for static and cyclic loading. The non-dimensional charts proposed in the study based on the model single piles and pile groups test results along with the field data of single pile tests were used to predict the behaviour of pile groups in the field. In the case of dynamic experiments, the pile group impedance and interaction factors were evaluated considering pile-soil-pile interaction.

In the second, field lateral dynamic load tests were conducted at two different petrochemical complex sites in India and the measured dynamic constants of the soil-pile system. A three-dimensional finite element analysis was performed using ABAQUS to predict the nonlinear response of the soil-pile system under dynamic lateral loads. He explained that the finite element analysis was able to predict well the dynamic lateral response of pile for soft as well as stiff soil sites.

Eastern Region News

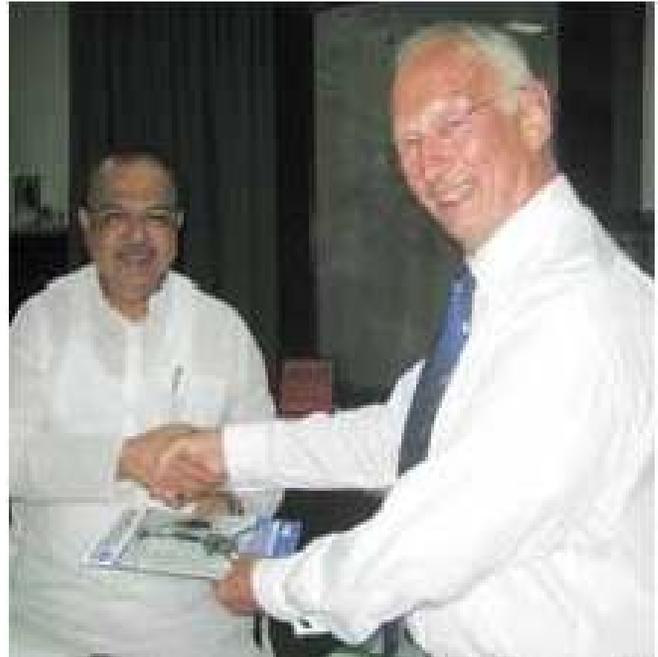
ASCE and IEI Joint Evening Lecture (22nd July)

An Evening Lecture was jointly hosted by ASCE-IS Eastern Region and West Bengal State Centre, The Institution of Engineers (India)-Civil Engineering Division at Sir R N Mookherjee Hall, IEI Kolkata from 6:00pm onwards on Monday, July 22, 2013. The theme of the lecture was "Trenchless Renewal of Water & Wastewater Pipelines" delivered by Dr. Declan B. Downey, Ph.D., FCIWEM, and Principal, Trenchless Opportunities Ltd. UK.

Dr. Downey arrived in Kolkata on 22nd July morning. He briefly met the Honorable Mayor of Kolkata. Dr. Downey presented the evening lecture at Sir R N Mukherjee Hall of the West Bengal State Centre at the headquarters of Institution of Engineers, India. The following morning, he flew to Mumbai to deliver his second talk at the prestigious Veeramaata Jijabai Technological Institute in Mumbai, which was organized by the Western Region of ASCE IS.

The Welcome Address was given by Dr. Chandidas Saha, Chairman, IE(I), WBSC. This was followed by Er. Sandip Kr. Deb, President, ASCE-IS-ER & Hony Secretary, IE(I), WBSC who enlightened the audience about activities of ASCE-IS & IEI. Later theme of the lecture was introduced by Dr. Abhijit Dasgupta, Chairman, CE Divn., IE(I), WBSC. This was followed by the Introduction of the Speaker beautifully presented by Er. Nilangshu Bhusan Basu, FIE Principal Chief Engineer, KMC.

The theme speech was beautifully elaborated by Dr. Declan Boyd Downey. The problems with modern world space constraints and how trenchless technology addressed this issue was presented with many examples in a very lucid language. This was followed by a question answer session where the audience had a chance to ask specific questions about the modern technology and its advantages in particular applications.



Dr. Downey with Honorable Mayor of Kolkata
 Photo Courtesy by KMC

The vote of thanks was given by Er. Srirup Mitra, Secretary ASCE-IS-ER.

High Tea sponsored by Mr. Swarup Dutta, Precision Survey Consultancy was served to the attendees at the end of the session.

Later Dinner was organized at Calcutta Swimming Club for the prominent dignitaries and was sponsored by Mr. Nahata.

Tech Briefs

Students Complete World's Tallest LEGO Tower



A group of high school students in Wilmington, Delaware recently completed a 112-foot Lego tower constructed from over 500,000 bricks that sets a new Guinness World Record for the world's tallest free-standing LEGO tower. The Wilmington tower eclipses the previous record holder, a Czech-built 106-foot, bricked rendition of the Prague tower.

The build team from John Dickinson High School completed this astounding tower that stands about five stories high as part of Tower Fest. The LEGO tower, of course, couldn't be supported by plastic nubs alone, so the builders stacked bricks around a large metal pipe as well as using lifts in the extremely tall build process. Beyond the High School build team, this has been a summer-long academic project for students all over from the Red Clay Consolidated School District. Students from around the district have been involved in different facets for the project including talking to architects and engineers, learning about proportions and ratios using the brick and also the economics of buying hundreds of thousands of Lego pieces.

The Stack New York's Tallest "Off-site" Constructed Structure Rises

There is no dearth of iconic structures in the Manhattan area. Just as the news of the topping out of World One Towers was dying down, comes this news about a seven-story, 28 unit apartment building on an infill site in the area. What is remarkable about the building is that it is completely factory built. Known as "The Stack" the building is a brainchild of architecture firm, Gluck+. The designers have coined the term "off-site construction" for the method they have used instead of it being a "prefabricated" or "modular building." The Stack is composed of 56 steel-and-concrete modules built in a factory in Berwick, Pennsylvania. The structure has one-two and three bedroom apartments. According to the architects, a similar, but conventionally constructed building would have cost at least 15 percent more. Moreover, it would have also



taken anywhere between two to six months more, as compared to conventional methods. The building is expected to be ready for occupation by October 2013. The structure, once complete, will be New York City's tallest residential structure built using the off-site construction method. However, it could soon lose its title to a 32-story apartment building being designed by SHoP Architects in Brooklyn, which is expected to be completed by next summer.

(Photo Courtesy: Gluck+)

Electric Concrete. Anybody?



From being used to making business cards to even canoes, concrete surely has come a long way. Scientists are trying to find innovative ways to use this material. The latest being the possibility of conducting electricity through it. Extensive decking of infrastructure with wires and sensors could mean a true smart city, where roads or flyovers would automatically let concerned authorities know when they need repairs.

A lot of research has been going on around the world on the subject of electrically conductive concrete. Not only can they make infrastructure smart, they can also be used for a myriad other

applications. For example, the National Research Council of Canada (NRC) is working on making the technology useful for melting dangerous ice on roads or heat up floors of homes.

Then there is also research going on to use electrified concrete to block electromagnetic signals. What this could mean is a fully secure building, from where no data can escape. This could herald a new era in cyber security. While there are already jamming systems that enable the same in buildings where sensitive data is stored, doing it using concrete would offer a more economic option.

What is the key ingredient then that needs to be mixed in order to make electric concrete? Conductive aggregates like Graphene seem to hold the answer. While it may take some time for the technology to be made a commercially viable option, the prospects it holds has already got the scientific community excited. It remains to be seen as to how long it is before electric concrete is used in a large scale.

Source: Txnochologist.com

Innovative Empire State Building Program Saves Millions



The innovative energy efficiency program at the Empire State Building has exceeded guaranteed energy savings for the second year in a row, saving \$2.3 million and providing a new model for building retrofits that is now being rolled out across the US.

In 2009, the Empire State Building, President Bill Clinton and Mayor Michael Bloomberg launched a comprehensive retrofit at the landmark property to reduce costs, increase real estate value and protect the environment. In 2011, the Empire State Building beat its year-one energy-efficiency guarantee by a remarkable 5 percent, saving \$2.4 million. In year two, the iconic property surpassed its energy-efficiency guarantee by nearly 4 percent. As with the first year's results, all information and monitoring and verification reports can be viewed at www.esbsustainability.com.

Courtesy: International Journal of SEWC

Rising Sun Taipei City Project Phases 1 and 2 Underway



The US\$1.4 billion Rising Sun Taipei City development in Chongqing, China is being developed by the Rising Sun International Real Estate Venture Investment LLC. The project will include high-rise residential units, a four-storey shopping mall, a hotel, movie theatre, service apartments with retail facilities, mixed-use office and commercial units and related amenities. The development will have over 1.09 million square meters of built-up area and will be built in nine phases. "Phases I and II are already underway, while work is on the verge of starting for the remaining seven phases," said Robert Houser, Hill International's project director for the Rising Sun Taipei City development. "The aim is to complete the project by December 2016."

Courtesy: International Journal of SEWC

DMCC Proposes Next Tallest Commercial Tower



The Dubai Multi Commodities Centre (DMCC) announced on Tuesday it is planning to build what could ultimately be the tallest commercial tower in the world, in the Jumeirah Lakes Towers development. The company announced that the tower will be taller than the 508-meter (1,666-foot) Taipei 101, the world's current tallest completed office building. "Building the world's tallest tower is in the Dubai DNA," Ahmed bin Sulayem, Executive Chairman of DMCC, told The National. "We will use the best technology, the best materials and the best designers in the world to bring this project to life." The DMCC Business Park would comprise 107,000 square meters (1 million square feet) of commercial and retail space.

Courtesy: International Journal of SEWC

Events

ASCE Events

The 23rd Annual Louisiana
Civil Engineering Conference & Show
September 25-26, 2013 | Kenner, Los Angels

ASCE - 143rd Annual Civil
Engineering Conference
Civil Engineers - The Foundation of the Nation
October 9-12, 2013 | Charlotte, North Caroline

2nd T&DI Green Streets, Highways
and Development Conference
November 3-6, 2013 | Austin, Texas

3rd International Conference on
Urban Public Transportation Systems
November 17-20, 2013
National Conservatory of Arts and Crafts,
Paris, France

Other Events

The Big 5 Construct India 2013
Organised By: FICCI
September 2-4, 2013
Bombay Exhibition Centre, Mumbai

CECON + CI Summit
September 11-14, 2013 | OMNI Dallas

Coasts, Marine Structures
and Breakwaters 2013
From Sea to Shore - Meeting the
Challenges of the Sea
September 18-20, 2013 | Edinburgh, UK

Carbon Management
Technology Conference
October 21-23, 2013 | Hilton Alexandria Old
Town, Alexandria, VA

Innovative World of Concrete
ICI-IWC 2013
International Conference on
Innovations in Concrete for Meeting
Infrastructure Challenges
October 23 - 26, 2013
Hitex / NAC, Hyderabad, Andhra Pradesh, India

OTC Brasil 2013
An Event Organised by IBP and OTC
October 29-31, 2013 | Rio De Janeiro

International Colloquium on
Architecture Structure Interaction for
Sustainable Built Environment
Organised by: SEWC (India)
November 18-20, 2013 | India Habitat Centre,
Lodhi Road, New Delhi, India

International Conference on Trends and
Challenge in Concrete Structures
Organised by: ICI - Ghaziabad
December 19-21, 2013
Ghaziabad, NCR Delhi, India

Arctic Technology Conference
February 10-12, 2014
George R. Brown Convention Center,
Houston

The Fourth International fib
Congress 2014, Mumbai
February 10 - 14, 2014 | Renaissance Mumbai
Hotel & Convention Centre, Mumbai

For enquires, please contact asce.is.email@gmail.com

C/o Department of Civil Engineering, Indian Institute of Science, Bangalore - 560012.



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