



Message from the President



Dear Members,

Belated Greetings for the festivities of Baisakhi, Bihu, Vishu, Poila Baisakh and Puthandu. It was that time of the year again when people could catch a glimpse of India's diverse cultures. The Eastern, Northern & Southern parts of the country celebrated their first harvest festival of the year with vigour and fervour.

The month of April has passed without much activities of IAStructE. The all important GC meeting IAStructE is scheduled for 1st May 2019 and the secretariat has been busy making preparation for this event. During this month, some of the important events that took place are :

- Brain Storming session on the provisions of IS:1893 (Part-1) and IS:13920 took place at IIT Gandhinagar. Four of the GC members of IAStructE were invited by the Director, IITGN for this event and they actively participated in this important session.
- A technical lecture on the topic of "Use of Geothermal Energy in Building Heating & Cooling" was given by Dr. (Ms) Tanusree Chakraborty, Associate Professor, Civil Engineering Department, IIT Delhion 24th April 2019 at New Delhi. This was a part of the monthly technical lecture series that we organise on a regular basis.


The activities for organising the refresher course on "Building Sustainable Structures: Green Concepts", which is planned to start from 18th May 2019 is gaining momentum. This is a course spread over 7 consecutive Saturdays, with total time of 28 hours. Faculty chosen for the course are experts in the field, and well renowned persons from the industry / academia.

As you are aware, this generation of structural engineers are faced with unprecedented challenges, both technical as well as societal. The effects of climate change and global warming are possibly the two inter-related issues which they are confronted with and which are likely to be of greatest concern to the engineering profession in coming years. This refresher course is therefore extremely relevant for all the structural engineers practicing today.

Happy Reading !

Thanks and Regards

(Alok Bhowmick)

Newsletter Editorial Team		IAStructE Secretariat	
Chief Editor: Er. Anal Sheth Editorial team members: Er. Manoj Mittal Er. Alok Bhowmick Er. Bhavin Shah Er. Maulesh Shah		Indian Association of Structural Engineers K-69A , Basement, Kalkaji, New Delhi 110019 Tel: (011) 45794829 ; Email:iastructe@gmail.com Website:www.iastructe.co.in Face book: https://www.facebook.com/IAStructE-1702347580065625/	
Newsletter Contents		Call for advertisement in Newsletter	
<ul style="list-style-type: none">✚ Technical lecture✚ Brainstorming session on codes✚ Forthcoming events✚ Refresher Courses✚ IAStructE Journal: Call for articles✚ Featured Article✚ About IAStructE✚ Membership Information		The association invites sponsored advertisement for the IAStructE newsletter. Annual advertisement (12 issues) of 1 page may be incorporated for INR 50,000.	
Technical Lecture			
Use of geothermal energy in building heating and cooling			
Technical Lecture by Dr. (Ms) Tanusree Chakraborty, Associate Professor, Civil Engineering Department, IIT Delhi on the topic “Use of Geothermal Energy in Building Heating & Cooling” was organized on 24th April 2019 at New Delhi.			
			
Technical lecture by Dr. Tanusree Chakraborty			
Brainstorming session on BIS Codes			
Director, IIT Gandhinagar, Prof. Sudhir K Jain has undertaken a world bank sponsored project for preparing a commentary of the new editions of seismic codes IS 1893 Part 1 and IS 13920, including recommendations and propose modifications in the codal provisions for consideration of BIS committee, CED 39. As a part of this project, a brainstorming session was organized at IIT Gandhinagar on 8th April, 2019. The session was attended by 26+ eminent participants having mix of academicians, practicing engineers, etc. Also, there was representation from BIS and few members from technical committee of BIS (CED 39). From IAStructE, there was representation by 4 governing council members (namely Prof. Mahesh Tandon, Mr Alok Bhowmick, Mr Vipul Ahuja and Mr Bhavin Shah). The meeting saw most vibrant and positive			

discussions that are possible on a complex topic such as the codes. Everyone was most engaged and freely shared their views. During the session, each clause of IS 1893:2016 & IS 13920:2016 was discussed & debated in detail and the suggested modifications/corrections/ feedback were noted for further perusal. This initiative will help for further improvement of above mentioned IS codes.



Brainstorming session on IS1893 and IS13920 at IITGN

Forthcoming event

Workshop of finite element method

A one-day workshop on finite element method is being organized by IAStuctE on 11th May 2019 from 10 am to 4 pm at CEPT University, Ahmedabad. The workshop will consist of basic FEM theory and introduction to FEM software, ANSYS. Registration to the workshop is free but mandatory. Interested participants may register at the following link:

<https://forms.gle/5BCSGttxpnqPDBdg6>

Refresher Course on “Building Sustainable Structures: Green Concepts”

IAStuctE in collaboration with Bennett University is organizing refresher course on “Building Sustainable Structures: Green Concepts” starting from 18th May 2019, which will be concluded on 29th June 2019. It will be a 28 Hrs course. The lectures will be held on every Saturday morning from 9.30 AM to 01.45 PM (with 15 mins. Tea break in between). The venue shall be Seminar Hall (3rd Floor), Academic Block A, Bennett University, Plot Nos 8-11, TechZone II, Greater Noida 201310, UP. There will be an expert faculty for each lecture. Course participation fee shall be Rs. 5,000/- for IAStuctE members and Rs. 6,000/- for non-members, Rs 3,000/- for academicians and Rs 1600/- for Students. An early bird discount of 10% shall be available on registration on or before 05 May 2019. The GST @ 18% will be applicable on the Registration fee. Interested professionals may send their nomination to IAStuctE Secretariat. For more details please visit iastructe.co.in.

Structural Engineering Digest: The quarterly Journal of Indian Association of Structural Engineers	Contents of last Issue
<p>The Chairman and other members of the SED Editorial Board invite article contributions for the quarterly journal. Write to iastructe@gmail.com for</p> <ul style="list-style-type: none"> ✚ Journal subscription ✚ Article Submission ✚ Sponsored Advertisement <p>Deadline for submission of next issue: 1st June 2019</p> <p>Submission template and ethics statement can be availed by emailing iastructe@gmail.com.</p>	<ul style="list-style-type: none"> ▪ Lecture on Engineers Day 2018: Sir Mokshagundam Visvesvaraya ▪ Applications of Natural Rubber Bearings for Protection of Civil Engineering Structures against Earthquakes ▪ Application of Vibration Control in The Indian Landscape & Need for Important Provisions for Future Codes ▪ Structural Retrofit of Heritage Building Using Seismic Isolation ▪ Sri Sathya Sai Sanjeevani Hospital at Ballabgarh, Haryana ▪ Cracking in Concrete and its effect on Post-Installed Anchorages ▪ High performance Concrete ▪ Strength Assessment and Repair of Pipe Bridge: A Case Study ▪ Bridge-O-Phobia in Today's Bengal

Featured Article : Development of the World's largest telescope (FAST)

(information and pictures adopted from <http://fast.bao.ac.cn/en/>)



World's Largest Telescope (FAST)

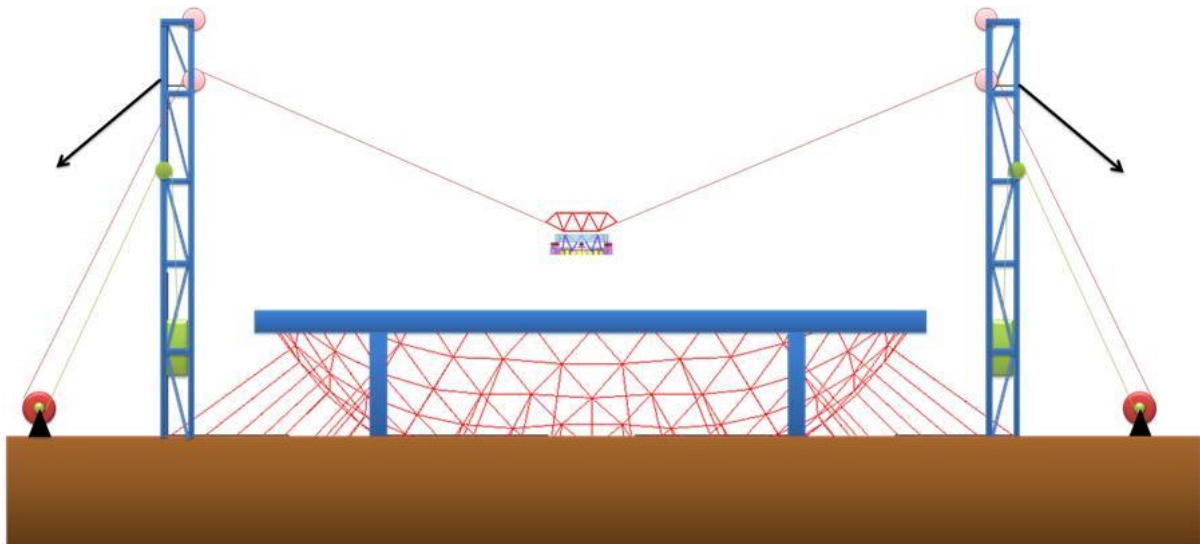
It seems that the next enthusiastic news for structural engineers after the tall statues is the large telescopes. The recently operational FAST (Five-hundred-meter Aperture Spherical radio Telescope) also called "China's eye of heaven" is the world's largest and most innovative telescope developed with a vision to achieve major breakthroughs in frontier scientific fields. Among other activities, FAST can be used to survey neutral hydrogen in the space, observe pulsars, track spacecraft and communications. Located in a strategically selected natural depression location in China, and comprising of an inverted cable mesh geodesic dome structure, retaining and shielding walls, large perimeter beam and towers, the telescope can be viewed as a marvellous civil and structural engineering

feat. It is one of the best examples for accomplishment of a large flexible cable structure. The technical system consists of an active reflector, feed cabin suspension system and a measurement and control system.



The reflector system includes a 500 meter aperture cable mesh composed of as many as 7000 strands of steel cables, reflecting elements, actuators, ground anchors, perimeter beam, wind-shield wall and noise-shield wall. The reflecting element cable mesh is installed on the annular latticed perimeter beam. There are 2400 nodes in the network, by which 4600 reflecting panels are installed on the cable mesh to reflect the radio wave. Every node is connected with a down-tied driving cable and an actuator device, which is then connected with the ground anchor. A noise-shield wall is installed around the perimeter of the reflector, and outside is a wind-shield wall. All of these devices form a complete active reflector system. The function of the reflector is to reflect the electromagnetic wave to the focus, so that the receiver could receive and record the signals. Also it can transform actively and hold the weight of the back frame, panels and wind load.

The feed cabin suspension system includes a cable support system with six tower supports. The towers are as much as 100 m tall built around the depression in the mountainous terrain. For spatial position adjustment of the feed cabin, a steel cable support system, cable reel and guide rope are installed. Parallel robotic systems ensures the positional adjustments to a spatial accuracy of 10 mm. For safety and health monitoring of the system, lightening protection, cable stress monitor, emergency prevention and dealing equipment are provided.



Since the entire structural system is devoid of a rigid structure, a well-defined reference frame is provided for various reasons such as spatial coordinate measurement, real time measurement and reaction control during operations. Activities like site exploration, earth work, reflector and feed cabin control, receiver and terminal system control, real time detection and health monitoring of the telescope are referenced with a datum net comprising of 10 stations.

The development of the telescope is funded by the National Development and Reform Commission (NDRC) and managed by the National Astronomical Observatories of Chinese Academy of Sciences (NAOC), with the government of Guizhou province as a cooperation partner.

The article is compiled by Anal Sheth. She is a structural engineer and an academician.

About IAStructE

The Indian Association of Structural Engineers (IAStructE) is the national apex body of structural engineers in India established with the objective to cater to the overall professional needs of structural engineers. The association has become the source of expertise and information concerning all issues that involve structural engineering and public safety within the built environment. It has no commercial aim or objective. IAStructE is purely a professional learned society with the prime objective of supporting and protecting the profession of structural engineering by upholding professional standards and acting as a mouthpiece for structural engineers. IAStructE endeavors to ensure that its members develop the necessary skill in structural engineering and work to the highest standards by maintaining a commitment to professional ethics and standards within structural engineering. IAStructE strives for continued technical excellence; advancing safety and innovation across the built environment. It also strives to make available to the Government, Public Sector and Private Sector - a credible source of well qualified and experienced Structural Engineers. A nationwide database of Structural Engineers has been compiled and is being constantly updated. IAStructE undertakes a broad range of technical activities which are aimed at information sharing and capacity building. The association provides opportunity for all the members to develop various skills in structural engineering and helps members to be at the forefront of structural engineering practice. Towards achievement of its aims and objectives, IAStructE is engaged in organizing the following: CPD Courses for Professionals at all levels Refresher Courses for Fresh Graduate Engineers, Student's orientation program, Seminars/Workshops, Technical Lectures by Experts, Technical Discussions on Contentious Issues. IAStructE is currently operating from four regional centers. These regional centers located in the Eastern, Western, Northern and Southern parts of the country effectively cater to the professional needs of members residing/practicing all over the country.

How to become a member?

Membership form and details are available at <http://www.iastructe.co.in/membership-form.html>

For membership information and other details contact the Indian Association of Structural Engineers Secretariat.

Membership Benefits

Membership of IAStructE is a sought after professional accreditation. Your membership of IAStructE can help you enhance your intellectual, academic, technical and professional status. It provides inter connectivity to the fellow professionals and the fraternity. Some of the benefits of membership is provided below:

- ✚ Complimentary magazine subscription: All members (except Student Members) receive a complimentary subscription to the Institution's flagship publication 'Structural Engineering Digest' (SED). Published quarterly, each issue allows members to remain connected to the association through the provision of technical papers, Industry and Institution News, Featured articles, Professional Guidance on everyday matters affecting the practicing structural engineers. [Released]
- ✚ Access to all Technical Lectures, organized every month, at no charge
- ✚ Access to Technical Discussions held regularly
- ✚ Access to the association's library (Including e-library)
- ✚ Discounts in attending Seminars and Workshops organized by the association
- ✚ Full on-line access to the current volume and entire e-archive of journal "Structural Engineering Digest (SED)", Refresher Course Materials, Technical Lectures E-Newsletters and other Technical Resources of the Association.
- ✚ Opportunity to network with professional structural engineers of eminence and to meet potential employers in the association.
- ✚ Opportunities for professional development