



The Institution of Engineers (India)

U.P. State Centre, Lucknow

"94 Years of Relentless Journey Towards Engineering Advancement for Nation Building"

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From Chairman's Desk



The Institution of Engineers (India) has prepared draft 'IEI Vision' in order to fulfill the obligations laid down in the Royal Charter. It is a road map to promote an environment to enable ethical ethos and pursuits of professional excellence for engineering fraternity in the country so as to provide leadership for serving the humanity by involving in all aspects of inclusive development process in the country.

The 'IEI Vision' mainly focuses on issues-attaining sustainable world; meeting out increased energy demand, drinking water, clean air; safe disposal of waste; globalization of engineering practices; upgrading quality of engineering education, research & development; involvement of engineers in national policy making; strengthening of infrastructure and creation of employment. Hon'ble members may send their views/suggestions regarding 'IEI Vision' for consideration & inclusion in it.

At our State Centre, the period under reference started with the **Workshop on 'Disaster Management-Towards Building a National Response'** on **March 08, 2014** which proved highly successful & well attended. Thanks to **Er. Ravindra Kumar**, Convener. This was followed by **'World Water Day'** celebration on **March 22, 2014** on the theme **'Water & Energy'** - a very relevant issue in the present context. This activity was again well attended & successful one. Congratulations to **Er. Jamal Nusrat**, Convener. A **Lecture Meeting on 'Future of Canal Irrigation in India'** was organized on **March 23, 2014**. **Er. P.K. Sinha**, Participatory Irrigation Expert was the Speaker. This activity attracted a record number of participants. Thanks to **Er. B. N. Agarwal**, Past Hony. Secretary & Convener who took pains to organize the activity. **'Holi Milan'** was organized on **March 29, 2014** which was graced by **Prof. (Dr) Abhishek Mishra, Minister of Science & Technology, UP Govt.** This activity again attracted a record number of members with their families. A **Lecture Meeting** was organized on **April 11, 2014** on **'Frontiers in Space Technology'**. **Er. Arun Sinha**, Former Senior Scientist, ISRO, Trivendrum was the speaker. The meeting was very well attended. **Dr. Jitendra Singh**, Former Vice Chancellor of Nalanda Open University, Patna & well known Architect of the country delivered a talk on **'World Trends in Sustainable Building Design'** in a **Lecture Meeting** organized on **April 21, 2014**. This activity proved to be very popular and was attended by a large number of members including many senior members.

We promise to maintain the momentum of activities in the coming days too & solicit your more & more participation which is of course increasing day by day for which I extend thanks to all of you.

V. B. Singh, FIE

Forthcoming Events at IEI, U.P. State Centre

S.N. Date	Event	Convener
01. May 11, 2014	National Technology Day	Er. Arun Kumar
02. May 17, 2014	World Telecom & Information Society Day	Er. Praveen Malhotra
03. June 05, 2014	World Environment Day	Er. R N Bhargava

Report on Workshop on 'Disaster Management – Towards Building a National Response System'

The Institution of Engineers (India) UP State Centre, Lucknow organized a Workshop on 'Disaster Management – Towards Building a National Response System' on March 8, 2014. Padmshree Prof.(Dr.) R. C. Sobti, Vice Chancellor, Babasaheb Bheem Rao Ambedkar Central University, Lucknow was the Chief Guest who inaugurated the Workshop and in his address, stressed the need of individual's role in mitigating disasters and offering relief responses to the affected people. He also expressed concern about the time lag between occurrence of disaster and rescue operations. Earlier Er. V. B. Singh, Chairman, IEI, UP State Centre welcomed the august gathering and said that the Kedar Valley tragedy of last year could have been averted or minimized, had early warning been given by the weather department. We were also not prepared to handle such situation. In the wake of such incidences it is important to make a national response system right from predicting and warning about future natural disasters to post disaster management system.



Chief Guest Padmshree Prof.(Dr.) R C Sobti lighting the lamp.

Dr. Dhruv Sen Singh, Professor, Centre of Advanced Studies in Geology, Lucknow University while delivering the key note lecture on the theme, emphasized the need of immediate disaster response to minimise the damage caused by various kind of disasters related to weather, earthquake, tsunami, flood, drought, biological, industrial either natural or man-made. He also laid importance on right decision, at right time, at right level, by right people, for right person, at right place. Guest of Honour Er. I. Satyanayaran Raju, Council Member, IEI narrated the success story of handling Phalin Cyclone in Odisha and flood control in Andhra Pradesh. Sri. V. K. Joshi, Former Director, Geological Survey of India (GSI) said that the Kedar temple remained covered by snow for over 400 years but no damage was caused due to it's stable foundation. The new construction was done overlooking environmental and geological conditions of the valley with the result that everything was vanished as pack of cards in disaster. He also talked about the report submitted by the GSI in 1997 about the Kedar Valley settlements which had warned about the settlements in the river valley areas and so recommended it's sustainable development. However the report remained buried in the government files and when the 2013 disaster occurred the Government of India asked for the reference by which the report was submitted.

Dr. Bhanu, Director, Purvanchal Gramin Vikas Sansthan advocated for community participation, their awareness and management of disasters-pre, during and post event. He further talked about community based disaster response system being executed with assistance of State Disaster Management Authority (SDMA) in some parts of State. Mr. A. K. Agarwal, Senior Scientist, UP Remote Sensing Application Centre presented a detailed

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Report on World Water Day Celebration

The Institution of Engineers (India) UP State Centre, Lucknow celebrated World Water Day on March 22, 2014. Er. D. K. Dudeja, Chief Engineer, PACT, UP Irrigation Deptt., was the Chief Guest who inaugurated the function by lighting the lamp. Addressing the gathering he said "Water is the base of our life, cause of our existence, first element of agriculture/food. It's excess brings floods and shortage is drought. It is sufficient if we rightfully manage it and is in shortage if we fail". Like every year the State Centre



Chief Guest Er. D. K. Dudeja inaugurating the function

celebrated the World Water Day in which Er. B K Dubey Secretary IWWA, read the message of United Nations according to which - "Water and Energy are interdependent, we must conserve water and should cautiously utilize the energy. It is the precondition for satisfactory future". He also threw light on the important issues raised in the message of United Nations. Earlier Er. Girish, Past Chairman of UP State Centre welcomed the guests and emphasized that the water and energy are complimentary to each other. Water and energy both are valuable resources and their proper utilization is essential for the society, country and world. Keynote Speaker Er M S Gulati besides stressing the need of energy and water, informed that only 1/3 of world population gets sufficient water and yet most of them get polluted water which brings diseases and problems. Their usages & management is essential for survival. Prof. Jamal Nusrat, Convener told that our progress is slow, these issues should take the fore front in our decisions; we must conserve, recycle, reuse, renovate and regenerate water and energy both and also enforce promotion and penalties for right and wrong doers. Finally Er. J. S. Mishra, Hony. Secretary IE(I) thanked all the present members who joined the day.

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account of flood maps prepared by them using high resolution satellite imageries and explained the importance of such maps in managing the disaster by concerned departments like Irrigation, PWD, Town Planning,



A view of Technical Session

Report on Lecture Meeting on 'Future of Canal Irrigation in India'

A Lecture Meeting was organized by the Institution of Engineers (India), UP State Centre on March 23, 2014 at Lucknow on 'Future of Canal Irrigation in India'. The function was started with the lighting of lamp by the Chief Guest Er. A K Ojha, Engineer-in-Chief & HOD, UP Irrigation Deptt. In his address he laid emphasis on canal irrigation and it's future prospects in India. The Keynote Speaker Er. P K Sinha, Retd. Chief Engineer, Irrigation Deptt. & Participatory Irrigation Management Expert in



Inauguration of the meeting

his address said that at the beginning of the eighteenth century, India was the 'irrigation champion' of the world. While the British government initially neglected the maintenance and upkeep of the numerous but mostly small irrigation structures, it soon spotted the potential for large-scale canal irrigation as an economic enterprise and took to canal building as a business on a massive scale. In around 1900 AD, canal irrigation systems in India were in a far better state than today in terms of their operation and maintenance (O&M), productivity impacts, and financial returns. Although after independence the colonial tradition of big and massive canal construction was kept alive, the management of canal irrigation has become pathetic in terms of all the criteria on which it excelled a century ago. The motives for irrigation development have changed, as has the politics around it as well as the nature of the Indian state and society. Most of all, the veritable and pervasive ground water boom in Indian agriculture during recent decades raises questions about the relevance of traditional canal irrigation for Indian farmers who want on-demand irrigation, all round the year. Canal irrigation policy can chart several alternate courses in the future, of which four were explored : (i) continue in a business-as-usual mode, keep throwing good money after bad, and decline into irrelevance; (ii) maximize the areal extent of conjunctive use of surface and groundwater by truly functioning as extensive irrigation systems as they were originally designed; (iii) reform the irrigation bureaucracies for greater professionalism, accountability, and performance orientation; (iv) reconfigure public irrigation systems as hybrid systems in which the irrigation departments are responsible for reliable bulk water deliveries and private irrigation service providers (ISPs) retail the water to irrigators. Public irrigation can serve the country far better if a considered strategy of reinventing the role of reservoirs and canal distribution is pursued in today's changed context. For this to happen, the first step is to establish a credible information and monitoring system to assess public irrigation performance against its design and current objectives. The event was organized by Er B N Agarwal, Past Hony. Secretary, The Institution of Engineers (India), UP State Centre. In the end Er J S Mishra, Hony. Secretary, The Institution of Engineers (India), UP State Centre proposed vote of thanks.

SDMA and Administration. Dr Venkatesh Dutta, Professor, Environment Department, Baba Saheb Bheemrao Ambedkar Central University conducted the Workshop. Er. Ravindra Kumar, Advisor, WWF-India and Convener of Workshop briefed about the theme of the Workshop and summed up the suggestions emerged after discussion with learned audience. Er. J. S. Mishra, Hony. Secretary proposed the vote of thanks. The recommendations that emerged included : *There is need to revisit the delay in disaster management regarding building a national response system , Community participation is important and must be promoted in disaster mitigation, Pooling of all resources- human, financial and technical of the country or for that matter international cooperation is important towards building a national response system in the time of distress, Right information in right time, at right place for right people and right decision by right person at right level must be ensured which helps minimise the damages of life & property and Continuous updating of Disaster Mitigation Plans for minimising natural or man- made disaster should be based on recent forecasts/ study and reports by expert national/international agencies.*

Report on Lecture Meeting on 'Frontiers In Space Technology Through Fifty Years and Beyond'

A Lecture Meeting on 'Frontiers in Space Technology through Fifty Years and Beyond' was organized by The Institution of Engineers (India), UP State Centre on April 11, 2014. Dr. Arun Sinha, Former Senior Scientist, Indian Space Research Organisation (ISRO) was the speaker. Er. V. B. Singh, Chairman, The Institution of Engineers (India), UP State Centre welcomed the guests & introduced the speaker. Er Arun Sinha while delivering his lecture said that Phenomenal Scientific and Technological developments have occurred during the last hundred years. The present century is reaping



Guest Speaker Er. Arun Sinha addressing the audience

the application benefits to the society in all facets. SPACE TECHNOLOGY is a strategic sector towards Societal gains. Globally, Space Technological and Exploratory events commenced since 1957 with a spate of accomplishments in Launch Vehicles, Satellites and Interplanetary missions. USSR & USA spearheaded the programme initiating Launch Technology with small Satellites to major ones including Communication Satellites; Space probes including Mars and other interplanetary missions, Human Space Flights and International Space Shuttles conducting wide ranging experiments for Mankind. This includes advanced Launchers, Propulsion Technology Space Stations, Interplanetary Probes, Space Elevator, Space Habitat, Tourism and Odyssey etc. Now about the Indian legacy, November 21, 1963 was a historic moment for India when a pencil rocket was fired from Thumba Equatorial Rocket Launching Station (TERLS), Trivandrum. Indian Space Research Organisation was formed at Bangalore with constituent centres across the country, notably including Vikram Sarabhai Space Centre, Trivandrum (VSSC), ISRO Satellite Centre, Bangalore (ISAC), Space Applications Centre, Ahmedabad (SAC) and Satish Dhawan Space Centres (SDSC), SHAR Launch Centre, near Nellore (AP). This apart, Liquid Propulsion Systems Centre, Inertial Systems Centre, Remote Sensing Agencies, Tele-command, Ranging and Tracking Station, Master Control Facility, Satellite Integration and Test Establishment and Deep Space Network were incorporated over the period for diversified functioning.

India's Space Program has completed fifty years since inception with a fabulous success story in Launch Vehicles, Satellites and Applications in Society, namely Broadcasting, Remote Sensing, Tele-Medicine, Tele-Education, Meteorology, Disaster Management and others. It is noteworthy to mention about CHANDRAYAAN I, MARS ORBITER MISSION, PSLV & GSLV Launchers. This GSLV utilizes indigenous Cryogenics Technology. This is a hall mark in India's high Technology sector realizing complexities in frontier Science and Engineering. In the Satellites domain, Remote Sensing and Communication Satellites as IRS, GSAT and INSAT are milestones and the best performing in the world. Magnetic and Electronic Materials/Components indigenization played a vital role in Space Applications like Avionics, Controls, Guidance & Communication. ISRO's roadmap for the next quarter of the century is outlined. This includes GSLV Mark III Launchers, advanced Propulsion Systems, Space Recovery Experiments, Reusable Vehicles, future Chandrayaan, Mars & Manned Space Flight missions, apart from specific Satellites for regular applications.

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Report on Lecture Meeting on 'World Trends in Sustainable Building Design'

A Lecture meeting was organized by the UP State Centre of The Institution of Engineers (India) on April 21, 2014. Dr Jitendra Singh, Former Vice Chancellor, Nalanda Open University, Patna & well known Architect delivered talk on 'World Trends in Sustainable Building Design'. He said that our urban population has increased by 30% which is equal to entire population of USA. In 1951 there were only 7 metro towns in our country but now the number has increased to 23. The growth of global economy and the



Guest Speaker Dr. Jitendra Singh lighting the lamp.

rising population has raised concrete jungles threatening flora & fauna. Population growth is demanding more of new buildings and shortage of land is forcing us to go high. Demand of electricity & water is increasing and there is no end to it. Waste generation and disposal is increasing adding to the problem. Nearly half million people die in Asia due to urban air pollution. A commercial construction generates up to 5.5kg of solid waste per square foot of floor space. 30% of total energy & 60% of total electricity is consumed by buildings. 7 billion litres of water is used to flush toilets. Buildings have become major source of the pollutants that damage urban air quality & contribute to climate change.

All these factors have forced us to go for Sustainable Buildings-buildings that use less water, optimize energy efficiency, conserve natural resources, generate less waste, provide healthier spaces for occupants, close to nature and have minimum 'Ecological Foot Print'. Day lighting design carefully selects window type, orientation of building & exterior shading which utilizes sun light & reduces electricity consumption. Direct use of solar energy should be treated in a package in order to achieve sustainable design. By adopting solar passive energy solutions like providing heat resistant & reflective glasses, more than 50% operational energy consumption is reduced. Eaves prevent sunshine from penetrating into building which reduce heat loading during summer time. Solar energy can be used to produce food, heat, light and electricity. It is to be ensured that even a drop of water is not wasted. The sewer water is to be treated & used further. The rain water harvesting is done to increase underground water. Now it is possible to erect Zero Electricity and Zero Water buildings which do not require water or electricity from outside. He gave example of 71-storeyed building constructed by China which is such shaped that it generates wind energy which meets out it's full requirement. He also talked about 'The Urban Cactus' building having project at Rotterdam which have deep overhangs shadowing lower level resulting in reduced energy consumptions. He gave many other examples of such green buildings constructed world over. He laid emphasis on use of materials that can be recycled. While concluding talk, he remarked that nature should not be seen as an enemy to be conquered. It should be taken as basis of all the life and a milieu to which architecture can & must perform harmoniously. Earlier Er. V B Singh, Chairman, IEI, UP State Centre welcomed the guests and spoke about the importance of Sustainable Buildings. Finally Er. J S Mishra, Hony. Secretary moved vote of thanks. A large gathering attended the meeting including many senior members.

Report on Holi Milan organized at IEI, UP State Centre on 29th March 2013

The Institution of Engineers (India), UP State Centre organized Holi Milan for the members and their families in the evening of 29th March 2014. The function was inaugurated by Chief Guest Prof.(Dr.) Abhishek



Chief Guest Prof.(Dr.) Abhishek Mishra inaugurating the Holi Milan function.

Mishra, Minister for Science & Technology, UP Govt. by lighting lamp. He extended greetings on this occasion to all present. Members were greeted by



Artists presenting the entertainment programme

Er V B Singh, Chairman & Er J S Mishra, Hony. Secretary by applying *gula tika* on their foreheads. Members also exchanged pleasantries. A colourful &

lively entertainment programme was presented by the famous artists – Smt. Padma Gidwani, Shri Rajesh Arora, Madan Gopal, Ravi Saraswat & many others which was enjoyed and appreciated by all present. One of the



Members enjoying the entertainment programme

members Er D K Srivastava also presented his song. The Milan was concluded with delicious dinner. About 260 persons attended the function.

Request for Invigilation Work for AMIE Exams

Members are requested to send their willingness for Invigilation Work in AMIE SUMMER 2014 Examinations to be held from 7th to 13th June 2014. A remuneration of Rs300/- shall be paid per meeting of 3hrs.

J. S. Mishra, MIE
Hony. Secretary

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Space Spin-off benefits are important. Significantly, Modern Materials & Composites playing a vital role in Rocket Materials are equally amenable for Medical Applications in Orthopaedics & Rehabilitation Aids as Prosthetics and Orthotics. Jaipur foot was modified as PUF based by VSSC. Also Artificial Heart Pump (AHP) / Left Ventricular Assist Device (LVAD) was successfully developed for the medical community. Special materials were created for Dental Implants and other medical applications. Hence, ISRO is committed to its social responsibility towards welfare of the society. It is needless to say that ISRO has a unique culture of self reliance with a focused VISION and MISSION. Globally India is in the Space Power hub. In the end Er. J.S. Mishra, Hony. Secretary proposed vote of thanks.

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