



# The Indian Engineer

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## Message from the Chairman



ECI continued its dialogue with Member Associations (MAs) to promote the registration of Professional Engineers (PEs). This activity needs to be accelerated so has to have a critical mass of Professional Engineers which can then be presented to Ministry of HRD to seek statutory backing. It will be recalled that a draft Engineers' Bill was submitted by ECI to the Ministry long back which the Ministry decided not to pursue but said that a registered society can do such registration which led ECI to start the registration of PEs. Recently, a Committee appointed by AICTE drafted another Engineers' Bill which was discussed with many stakeholders, including ECI. It is understood that this is being revised and the revised draft will be discussed with stakeholders again.

ECI also emphasized on the implementation of Internship Program, as per the MoU with AICTE by the MAs. The AICTE has recently launched a new policy on Internship which includes internship of 6 months (done in part or in one go) as compulsory requirement to award graduate engineering degree by Engineering Colleges / Technical Universities approved by AICTE.

ECI has offered to AICTE approved engineering colleges/institutes/universities facility to get Affiliate Status of ECI which would help them in their interaction with students. Academia and industry. The Affiliate Institutions can use ECI Affiliate Logo and brandings, apart from availing the benefits of (a) Interaction with Industry, (b) Organizing business, conference, & workshops, (c) conducting joint research programs or jointly take up consultancy projects, (d) Interaction with domestic and overseas peer groups and (e) Exchange programs for faculty and students etc.

MAs could play a major role in developing and organising Internship programmes, after matching with needs of Industry with the academic institutions and thus facilitate to meet compulsory internship requirement as per AICTE guidelines.

ECI and CIDC together initiated an APP based Online National Proficiency and Efficiency Test (NPET) in consultation with AICTE for students of engineering colleges. This provides an opportunity for students to register online and go through a test in their subject and make self-assessment of the level of learning. This gives an opportunity to students for improvement and getting internship support.

All these activities would also bring revenue to Mas who need to become more active. ECI is always ready to help and support MAs and as may be needed. I would welcome suggestions from MAs regarding other initiatives to be taken by ECI which the MAs will support.

  
(Uddesh Kohli)

## From the Editor's Desk

### Smart Cities, an Engineering Challenge (Part-1)



The Human being is largely attracted by the opportunities to learn, earn, excel in career and a better quality of life, socially and economically. Migration of population from small village to town, to bigger town and then to metro cities and even to the cities of opportunities across the world.

The smart city mission of Government of India focuses on promoting the cities that provide core institutional, physical, social and economic infrastructure; provide decent quality of life to city dwellers; sustainable environment and smart solutions.

Historically, most of the old cities in India are natural cities near the water source (river or sea, lakes), and these have grown around largely by private business initiatives. But one can find number of examples of organised cities by kings or Dharm gurus with features of a smart city. Governments have taken up development of such cities in the recent years; like Varanasi, Allahabad, Lucknow, Rameswaram etc. Due to inadequate planning and resources these cities have yet to achieve the status of a smart city.

Indian cities developed after Independence are around road infrastructure, this has posed a different kind of engineering challenge to achieve smart city objectives.

Engineering solution to achieve the objectives of the smart city is to approach the development of the proposed cities in an integrated manner which would require detailing of the action plan in a prioritised manner.

First step is to identify sectors which conform to the requirements of a smart city such as: Road ( main connecting roads, approach lanes, service lanes the colonies); Sewerage and drainage system (sewerage treatment, garbage collection and treatment, street, road cleaning); Electricity ( generation including, distribution and supply, billing and payment collection, street lighting) ; Water supply ( water treatment, storage, water source development, water harvesting, gardens, lakes, ponds, public toilets) ; Schools and Colleges( libraries, printing facilities, stationery suppliers etc), Hospitals & labs (for primary, secondary, tertiary level of treatment, physio therapy and other facilities depending upon the size of the city); Communication facilities both land line and mobile phones , internet and internet providers; entertainment venues, sports facilities ( play grounds, coaching facilities, stadiums, sports federations etc.), City transport ( public transport, private driven public transport, private vehicle density, transporters, connectivity to railway stations, airports and other important place like industrial estates, cyber hub, passport office, District Centres, hospitals etc., non-polluting vehicles, transport bottlenecks, parking, illegal control on road space, fuel supply pumps/ charging stations, connectivity to public places etc.); planned shopping complexes ( easy excess to day to requirements, vegetables, flowers, business centres and mandis for bulk supplies and storage etc.); Civic facilities providers Municipal Corporation , District Centre, Police, Civil Court, Employment Exchange and labour placement centre, arrangements for law and order control, disaster management(pollution control board and disaster risk mitigation unit). The last but not the least is the maintenance of heritage and history and facilities for tourism and tourists.

This is fairly an exhaustive list to approach to make a smart city (things may vary depending upon the size of the city and possible /or anticipated expansion).

Step 2 is to carry SWOT analysis

Managerial approach is to carry out a detailed analysis using SWOT (Strengths, Weaknesses, Threats, Opportunities) tool. This has a matrix concept which is normally used in a development project.

For Instance, take the case of Road infrastructure in Indore City of Madhya Pradesh, India:

Strengths	Weaknesses	Threats	Opportunities
1. Total length of road network (around 1710 Kms of this 234 Kms are main roads, 211 kms medium and 936 kms of city roads) is quite manageable.	1. Congested roads restrict vehicle movement	1. Cooperation of the residents in providing additional space for redevelopment.	1. Mixed land use in area-based development will make efficient land use.
2. Shared public spaces	2. Population Density in core areas is over 1028/ha	2. Funding duration may be long.	2. Housing for all.
3. Shared parking spaces.	3. Population Growth in the city is alarming, 2.67 million by 2021.	3. Limitations for private investment in roads.	3. Redevelopment of the public land.
4. Main road and connectivity in the city exits.	4. High floating population and transport		4. creation of walkable localities.
5. Connected NH47 and 52	5. Inter City Service Limited, operates bus service, complemented by metro taxi and unorganised paratransit system.		5. Preserve and create open space and create city forest.
			6. Inter-section improvement

This exercise can be repeated in identified sectors. This will form the base for integrated planning to make the Indore City a smart City.



(JL Narayan)  
Executive Director, ECI

## Condolence

The ECI and all members expressed their deep Condolence for the Sad Demise of the Past President of CSI, **Dr. Anirban Basu** with whom members have spent many pleasant moments by working together for the growth and benefit of the Society. Really it is very painful and a great loss to the Society as a whole. The members of the entire Society pray to the God for keeping his soul in peace and bless his entire family with strength and confidence to overcome this sad moment.



The ECI and all members expresses deep Condolence of the sad demise of **Mrs. Sudha Raju**, Past Chairperson, CSI Bangalore Chapter and Regional Vice President of Region-V. She passed away on 19th August, 2019 (Monday evening). She was the Chairperson during 2001-2002 and 2003 to 2005. She got fellowship during 2018. The members of the entire Society pray to the God for keeping her soul in peace and bless her entire family with strength and confidence to overcome this sad moment.

## Registration of Professional Engineers

### 1) Introduction

Registration of Professional Engineers, Associate Professional Engineers, Student Engineers, and some other categories on a voluntary basis is going on since December 01, 2015.

Member Associations (MAs) have a major role to play as they call for applications, screen them through their set up National Committees (NCs) for respective fields/disciplines of engineering. These NC give their recommendations to the Board of Registration of Professional Engineers (BRPE) set up by ECI.

### 2) Benefits of Registering

The Registration, enhances the credibility and image of the Engineer. His/her acceptance by industry, institutions, clients and other organisations goes up when he/she mentions the fact of this registration as PE (or APE or SE) which distinguishes him/her from those who are not registered. We are informing the various government departments, public sector organisations, local authorities, industry associations regarding the National Register.

Specifically, it will result in; (i) Better credibility and possibility to make use of the branding of ECI and concerned Member Associations, as the names are being listed on the website (ii) Using the Certificate of Registration as PE in the National Register as a part of CV, and (iii) Better prospects for assignments/jobs after this is publicised to client/employer organisations.

### 3) National Registers

There are separate National Registers for (i) Professional Engineer (P.E), (ii) Associate Professional Engineer (APE), (iii) Apprentice/Graduate Engineers (ApE), (iv) Junior Apprentice Engineer (JrApE), (v) Student Engineer (SE) and (vi) Diploma/B.Voc Student Engineer (DiSE). There are separate National Registers under each category for different engineering fields/disciplines: Construction, Consulting, IT, Computers/Telecom/Civil/Electrical/Mechanical/Chemical/Mining/Meta llurgy/Industrial/Aeronautical Engineering, etc. The details and Criteria for registration under each category, Disciplines and Code of Ethics which the applicant has to sign, are given on the website [www.ecindia.org](http://www.ecindia.org).

### 4) Categories and Fee

Initial registration fee is Rs. 3000 for PE, Rs. 2000 for APE, App. E & Jr. App. E and Rs. 1000 for SE plus applicable GST. And for other categories, the fee is Rs. 2000. plus the applicable GST. The fee structure is subject to change in future. The registration is subject to renewal after 5 years.

### 5) Continuous Professional Development (CPD)

Each PE/APE is expected to meet minimum CPD requirement before being considered for registration or renewal of registration. Nature of the programmes constituting CPD activities and credit hours to be earned are given on the web site [www.ecindia.org](http://www.ecindia.org). It is the aggregate of credit hours earned in 5-years that will determine as to whether a PE has secured at least 250 credit hours within his/her five years' registration validity period or not, for re-registration. MAs have a major role in organizing the CPD programmes for respective disciplines.



## Engineering Council of India's News & Main Activities

Engineering Council of India selected the topic "Role of Engineers in achieving Sustainable Development Goals" for its Annual National Conference which was held on 29 November, 2019. ECI sent communication to Member Associations, Engineering Colleges/Universities, public and Private Sector Industries for Sponsorship and contribution of technical papers.

Professor J L Narayan took over as Executive Director of Engineering Council of India in August 2019.

ECI and CIDC together initiated an APP based Online National Proficiency and Efficiency Test (NPET) for students of engineering colleges. This provides an

opportunity for students to register online and go through a test in their subject and make self-assessment of the level of learning and thus opportunity for improvement and getting internship support.

ECI formulated two proposals to conduct EDP one on "Construction of Finishing Works & Services" which was held on November 18-19, 2019 at Bangalore and other on "Rehabilitation & Strengthening of Structures".

During July-September, 63 Nos. of applicants have applied for registration as Professional Engineers, they have been registered on the National register after due appraisal by the BRPE.

### News from Partners

AICTE organized a workshop to discuss "Challenges in Implementation of AICTE Internship Policy and other Quality initiatives" on 29th September, 2019. The Workshop was attended by Executive Director, ECI.

### News from Member Associations

#### Association of Consulting Civil Engineers (India) (ACCE(I))

ACCE(I), Devangere centre has organised a National Seminar and Exhibition on "Construction and Demolition Waste Management" from August 08 to 10, 2019 at SSM Culture Centre, BIET, Davangere. For details please visit at [www.acce.in](http://www.acce.in).

#### Indian Society of Agriculture Engineers (ISAE)

Indian Society of Agriculture Engineers (ISAE) organized Interaction Meeting of ISAE Executive Council with Dean's of Agriculture Engineering Colleges and Industry representatives. Executive Director, ECI also participated in the interaction meeting. ISAE and the Ministry of Agriculture organized: Water Security Global Conference, a Convention of BHU, 8th Asian Australia Conference on precision Agriculture and an International Symposium on AI base of Future Technology in Agriculture being organized at PAU, on October 14-17, 2019. Mr. Sundar from ICAR coated production level of 380 million tons of food grains and 26 million of fruits in 2018-2019. He informed that a scheme of "Super Straw Management Systems" with technology from Punjab Engineering College is in place with provision of Rs 600 Crore in 2018 and of Rs. 500 crores in 2019 to fight smog within 50 kms of the centres. ICAR has Rs. 200 crore for research

alongwith institutions and industry but it is lacking, Rs. 600 crores for manufacture of hybrid tractors to control price rise. ECI representative emphasized on the registration of engineers, discussed about the diversification of Agriculture, curriculum with more specialized fields with focus on AI, Internet of Things, Digitization of Curriculum, Farm Mechanization and Internship for better placement by meeting industry and research needs. Mahatma Phule Krish Vidyapeet, Rahuri alongwith ISAE is organising International Symposium on AI from 7-9 January, 2020.

For details please visit : [www.isae.in](http://www.isae.in).

#### Computer Society of India (CSI)

CSI is organising a National Convention on Digital Democracy - IT for Change" on January 16-18, 2020 at KIIT, Bhubaneswar, Odisha. For details please visit at [www.csi-india.org/csi2020/](http://www.csi-india.org/csi2020/)

#### Construction Industry Development Council (CIDC)

##### July

##### *2 days' workshop on Arbitration and Conciliation*

Tripura State PWD, CIDC and CIAC organized a 2 days' workshop on "Arbitration and Conciliation" at Pragna Bhawan, Agartala on 5th July. The workshop was inaugurated and chaired by the Hon'ble Chief Minister

of Tripura Shri Biplab Kumar Deb. The workshop was attended by Shri U Venkateswarlu, Chief Secretary, Tripura, Vice – Chairman, State Planning Board, Tripura Shri R K Mathur, Member, State Planning Board, Tripura and DG, CIDC Dr. P R Swarup, Principal Secretary PWD, Shri Shashi Ranjan, Special DG, CPWD (North East), Shri V K Jaiswal, Regional Executive Director of the Airport Authority of India (NE Region) Shri Sanjiv Jindal and officials and engineers of various department of Tripura State Government.

### August

#### *Skill upgradation training programme for Horticulture technicians (Mali)*

CIDC with the support of CPWD organised a 30 days' skill upgradation training programme for Horticulture technicians (Mali) working at different sites of CPWD. The programme was jointly inaugurated by Shri Prabhakar Singh, DG, CPWD and Dr. P R Swarup, DG, CIDC on 7th August, 2019 at Sunder Nursery, Delhi.

#### *7th Task Force meeting*

7th Task Force meeting of CIDC vender database was organised on 8th August, 2019. The meeting was inaugurated by Shri R K Mathur, Vice Chairman, State Planning Board, Tripura. Shri H Rammawi, Vice Chairman, State Planning Board, Mizoram, was guest of honour on this organisation.

The meeting was attended by the top brass of Construction Industry, top officials from Central Government Ministries and public sector units.

#### *"Mega Skilling, Testing and Certification Camp"*

In accordance with the Skilling India program of the Hon'ble Prime Minister, Central Public Works Department (CPWD) with the help of Construction Industry Development Council (CIDC) organized a "Mega Skilling, Testing and Certification Camp" for the first time for 1000 construction workers of various trade from September 28 to October 2, 2019 at CPWD's National Academy, Ghaziabad. The camp was inaugurated by the chief guest Shri Prabhakar Singh, Director General, CPWD. Dr. P R Swarup, DG, CIDC was guest of honor on this occasion.

One such camp was also organized at Lucknow on 11th October, where 200 workers were certified. CPWD and CIDC have planned to organized similar Mega camps in Kolkata, Guwahati, Chennai and Mumbai also.

### Indian Institution of Industrial Engineering (IIIE)

IIIE Surat Chapter Announces 61st National Convention & 5th International Conference on 12-14 December 2019 on the theme "Roll of Industrial Engineering in Developing Economies" at SVNIT Surat, Gujrat. For more details contact Conveners Dr. Ravi Kant, Hon. Secretary, IIIE Surat Chapter, (M) 09714827744 / Email: ravi792002@gmail.com or Dr. Tushar N. Desai (Chairman IIIE Surat Chapter), (M) 09924680088 / Email:tushardesai@svnit@gmail.com or Shri.Atik M.Desai (President IIIE Surat Chapter), Website: <http://icie2019.com>.

### Indian Buildings Congress (IBC)

IBC has organised various training programmes with Institute for Training of Building Professionals (ITBP) during this period, which are as below:

S. No.	Program Title	Participation level	Duration (days)	Date
1.	Use of Glass & Glazing Systems in Buildings	SEs/EEs (Civil & Electrical) & Architects	2	August, 2019
2.	Basics of E&M System in Buildings Complex for Engineer & Architects	SEs/EEs (Civil & Electrical) & Architects	1	September, 2019
3.	Design and Installation of Plumbing Systems in Buildings	SEs/EEs/AEs (Civil)	2	October, 2019
4.	Two day Executive Development Program on Project Management	SEs/EEs (Civil & Electrical) & Architects	2	November, 2019
5.	Tile Master Training for Engineers	EEs/AEs (Civil)	1	December, 2019

### Indian Association of Structural Engineers (IAStruct)

IAStructE organized Refresher Course on "Application of New Seismic Code for Highway Bridges- IRC:SP:114-2018" starting from 24th August 2019, which was concluded on 28th September, 2019. For any clarification

please contact Mr. Vikas Verma, Manager IAstructE, Tel: 011-45794829, Email: iastructe@gmail.com. Please click here for Announcement, Flier & Lecture schedule.

IAstructE is organized Refresher Course on "Refresher Course on "Performance Based Design for Buildings & Bridges", starting from 14th September 2019, which was concluded on 19th October 2019. For any clarification please contact Mr. Vikas Verma, Manager IAstructE, Tel: 011-45794829, E-mail : iastructe@gmail.com. Please click here for Announcement, Flier & Lecture schedule.

IAstructE is organized two day International Seminar on "Performance Based Design of Buildings & Bridges for Enhanced Seismic Resilience" during 08 – 09 November 2019 at PHD House, New Delhi. For any clarification please contact Mr. Vikas Verma, Manager IAstructE, Tel: 011-45794829, Email: iastructe@gmail.com. Please click here for Announcement & Seminar Brochure.

### **Institute of Marine Engineers (India)**

IME(I) launched a course ENGINE ROOM SIMULATOR (MANAGEMENT LEVEL) on September 18, 2019. For the detail please visit at <https://imare.in/news/glomars-2019.aspx>.

The Institute of Marine Engineers, Vizag Branch, presented their Global Maritime Seminar called "Glomars 2019" at the Taj Gateway Hotel on 16th of August 2019.

IME(I) inaugurated a Full Mission Engine Room Simulator at IME(I) on July 24, 2019. For details please visit at [https://imare.in/news/inauguration-of-full-mission-engine-room-simulator-at-ime\(i\).aspx](https://imare.in/news/inauguration-of-full-mission-engine-room-simulator-at-ime(i).aspx).

### **Broadcast Engineering Society (BES)**

BES is organising 26th International Conference & Exhibition on Broadcast & Media Technology on the theme "Disruptive Technologies: Shaping Future Broadcasting" on February 13 to 15, 2020 at Hall Nos. 7 A B C & E, Pragati Maidan, New Delhi. For further details please visit at <https://www.besindia.co.in/>

### **Indian Institute of Chemical Engineers (IICHE)**

IICHE Students Chapter, Dept. of Chemical Engineering, Shroff S.R. Rotary Institute of Chemical Technology is organising SCHEMCON 2019 which will be held on 17 and 18 October 2019 at Ankleshwar. For the details please send the mail at [schemcon2019@sriect.in](mailto:schemcon2019@sriect.in) or visit at <https://www.schemcon2019sriect.com/>

Northern Regional Centre, IICHE is organising CHEMCON 2019 which will be held during 16 to 19 December 2019 in New Delhi, to be organised by. For the details please send the mail at [director.iichenrc@gmail.com](mailto:director.iichenrc@gmail.com) or visit at <http://www.chemcon-2019.com/>

### **Indian Institution of Plant Engineers (IIPE)**

IIPE is organising a Boiler Operation Engineer Examination (BOE) for focusing on Preparation & Guidance by the Directorate of Steam Boilers - Maharashtra State. Program will be conducted on 12-10-2019 at Mumbai. For details please visit at [www.iipemaharashtra.org](http://www.iipemaharashtra.org). Mr. Ranganathan Chandrashekhar has taken over as National President,

Mr. Ashok Yadav as Chairman Maharashtra Chapter and Mr. Narasimhan Prakash as Vice Chairman, Tamil Nadu Chapter.

### **Indian Society for Technical Education (ISTE)**

49th National Annual Faculty Convention of ISTE to be held during December, 2019. Nomination are invited from teachers of all Government, Aided and Unaided Technical Institutions for the various ISTE AWARDS for the year 2019. Details regarding each award and nomination forms are available in the website of ISTE "[www.isteonline.in](http://www.isteonline.in)".

Parul Institute of Engineering and Technology, Gujarat - Diploma Studies ISTE Student Chapter was inaugurated on 19-9-2019.

Aditya College of Engineering & Technology, Surampalem conducted one-day guest lecture on Emerging Technologies of the Future-Nano Technology by Dr. K. Lal Kishore, Former Vice Chancellor, JNTUA, Anantapur & Chairman, ISTE Andhra Pradesh Section.

Somaiya Vidyavihar K.J. Somaiya College of Engineering, Mumbai conducted one week AICTE-ISTE Approved SF-STTP on Networking Fundamentals with Hand on Training (in collaboration with CISCO Networking Academy) from July 1-6, 2019.

Shri Ramdeobaba College of Engineering and Management, Nagpur conducted one week AICTE-ISTE Approved SF-STTP on Statistics for Data Analysis using R from 15th to 20th July, 2019.

M.B.M. Engineering College, Jodhpur and ISTE Rajasthan Section Organised Orientation Programme on 10-8-2019.



Shri Ramakrishna Engineering College, Coimbatore organised one-day National Workshop on Raspberry Pi (From Scratch to App) on 6-8-2019.

#### **Mining Engineers' Association of India (MEAI)**

MEAI, Jaipur, Rajasthan Chapter is organising a Seminar on "Industrial Minerals: Resources, Mining and Future Prospects" on 19th October 2019 at Mining Welfare Centre, Mansarovar, Jaipur Rajasthan. For the details please visit at [www.meai.co.in](http://www.meai.co.in).

#### **The Indian Institute of Metals (IIM)**

IIM is organising an International Symposium on "Advanced Materials for Industrial and Societal Applications" on November 13, 2019 at Samudra, Kerala Tourism Development Corporation (KTDC) & Hotel Uday Samudra, Kovalam, Thiruvananthapuram.

IIM organising it's 57 National Metallurgists' Day on November 14, 2019 and it's 73rd Annual Technical Meeting on November 15-16, 2019 at Thiruvananthapuram. For the details please visit at <https://www.iimnmdatm2019.org>.

IIM is organising an International Conference on Steelmaking and Casting- Sustainable Technology and Practices (SMCSTP 2020) on February 6-7, 2020 at Jamshedpur. For details please visit at [www.smcstp2020.com](http://www.smcstp2020.com).

IIM, Jamshedpur Chapter organised a Student's Seminar on Metallurgical and Materials Engineering "Behind the Teacher's Desk" (BTDD-2019) in collaboration with CSIR-National Metallurgical Laboratory and Tata Steel Limited on September 5-6, 2019 at CSIR-National Metallurgical Laboratory, Jamshedpur

#### **Consulting Engineers Association of India (CEAI)**

CEAI, is organizing "EnggIN2019" a B2B or RBSM with the Ministry of Commerce & Industry, Government of

India to promote Indian Engineering Services in FIDIC ASPAC Conference 2019 which was held on 7 - 9 July 2019 in parallel with the FIDIC ASPAC 2019 Conference Session. For details please visit at <https://ceai.org.in/author/ceai-eventsmanager/>

#### **Indian Society for Trenchless Technology (IndSTT)**

IndSTT is organising "No Dig India Show 2019" - International Conference & Exhibition on "Sustainable Development Through Trenchless Technology" on December 11-12, 2019 at Aerocity, Opposite Pullman Hotel, IGI Airport, New Delhi. For details please visit at [www.indstt.com](http://www.indstt.com).

#### **The Aeronautical Society of India (ASI)**

ASI is organising a National Conference on Environmental Testing of Aerospace Systems - Advances and Future Trends (CETAS) on October 11-12, 2019 at Vikram Sarabhai Space Centre at Thiruvananthapuram. For details please visit at <http://aerosocietyindia.in/>

#### **The Institute of Electrical and Electronics Engineers. (IEEE)**

IEEE is organising an International Conference on Innovative Sustainable Computational Technologies (CISCT) on October 11-12, 2019 at Dehradun, Uttarakhand, India for details please visit at [www.conferences.ieee.org/](http://www.conferences.ieee.org/)

#### **The Institution of Electronics and Telecommunication Engineers (IETE)**

IETE has organised 62nd Annual IETE Convention & Intern on 28-29 September, 2019 at Dr Rammanohar Lohia, Avadh University, Hawai Patti, Allahabad Road, Ayodhya (UP), India.

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