JANUARY 2016

VIEWPOINT

OFFICIAL QUARTERLY MAGAZINE OF CEAI

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Consulting Engineers Association of India

Rodic Consultants Pvt. Ltd.

(An ISO 9001:2008 Certified Company)

"Build Together a Better World"

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Regional Offices: Patna, Jammu, Guwahati & Ranchi

General Description

Rodic Consultants Private Limited (RCPL), founded in year 2000 is one of the fastest growing, civil engineering consultancy firms in India. Enriched with strength of more than 600 skilled, focused and motivated professionals, RCPL continuously strives to deliver a quality and valuable services to a large number of satisfied clients present Pan India. Passionate about delivering excellence with premium standards of commitment and involvement, our professionals possess technical expertise and competencies to outshine the organization at every work level.

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- **Highways and Bridges**
- **Railways**
- **Power**
- **Hydro Power**
- **Urban and Rural Infrastructure Planning and Development**
- **Tunnels**
- **Inland Waterways**
- **Water Resources, Supply & Public Health Engineering**

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- **Value Engineering**
- **Pre-Feasibility and Feasibility Studies**
- **Detailed Design**
- **Detailed Project Report**
- **Construction Supervision**
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- RCPL is featured in Dun & Bradstreet's premier publication 'Leading SMEs of India 2014'.

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- ✓ Resident Engineers-Highway having more than 15 years of exp. In highway sector.
- ✓ Bridge Engineers having more than 15 years of exp. In construction of highway bridges.
- ✓ Bridge Engineers (Cable Stayed Bridges) having more than 15 years of exp. In bridge construction & must have exp. Of construction of iconic bridges i.e. cable stayed bridge, extradosed bridges.
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- ✓ Sr. Bridge Design Engineers having more than 15 years of exp. In designing of highway bridges.
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Please visit our website: www.rodicconsultants.com for vacancies or mail to contact@rodicconsultants.com

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Message From Chief Editor

Dear Fellow Consulting Engineers,

As the New Year dawns many introspect and resolve to take actions to improve their lot. The same applies to the Engineering Fraternity. When we look back we find that what stands out is **an urgent need for the Engineering Fraternity to be recognised as one of the main professions for the growth and sustained progress of the country**. In fact it is the **King Post** which supports the functions of the other professions and entwines them for the good of the country.

"Make in India", the cause that the Honourable Prime Minister Mr. Narendra Modi has very rightly espoused is a necessity for the country. It can be made a reality by good, capable, trained and experienced engineers and other professionals. No amount of monetary inflow or other necessities can make it happen unless the engineers of the soil are made prime partners.

Air, water and food are prime essentials for survival. Once those are taken care of, mankind's attention moves on to satisfying other needs. The digital age dawned quite some time ago but India is still not into manufacturing *chips,* whereas other countries are exporting the same for years. The big question is Why? The answers can be varied; nevertheless the Government and the Private Sectors both need to realign their targets. Whilst the top and bottom lines are necessary targets, the Government and the Private Sectorsmust also look at what the country requires so as to be in the forefront of the nations of the world. They must take that upon themselves to fulfill those needs.

The Service sector, no matter how easily launchable, maintainable and lucrative, cannot provide assured unfettered water and food for the masses. Agriculture needs to be reinforced with Manufacturing and both, in turn, by relentless innovation. Only when these basics are irreversibly established and their output assured, can the country launch whole heartedly with élan on to other sectors. In India, inspite of so many years of freedom, the two are not yet issues of the past; they keep raising their heads again and again. To keep these under control, close coordination between the Government, Private Sector and the Public is essential. Once sustenance for the masses is assured, the country can move forward in other sectors albeit *sans* monopolisation. **Engineers, Engineers, Engineers!** are the *sine qua non* for fulfilling these requirements albeit with due responsibility, authority and accountability so that they can work in accordance with ethical practices and give their best. Surely no one would like the kind of publicity that companies or persons get when they adopt questionable practices.

Electronics and its derivative - Information Technology are the two biggest sectors today. India and Indians may be reasonably upto speed in the software sector of these but have a long way to go to attain credibility in the hardware sector. There again it is

the engineers and scientists who need to be in the forefront, with adequate funding, to get these sectors off the ground in India so that all components - A to Z - are made in India. India has made great strides in the Space programme which goes to show that it has great talent and capabilities. It can surely align itself to leap frog into the electronics and Information Technology sectors, with consequential benefits to all other sectors through increased automation which would also minimize menial tasks.

The Government has initiated the task of simplifying laws, rules and regulations for ease of doing business which ought to promote investments. With a new budget in the offing it is expected that there will be more clarity regarding Government policies, and investment in projects and businesses would increase.

The Engineering Fraternity needs to be ready to pitch in and do their bit. However, the legislation for the profession of engineering must be enacted so that they can perform their task with due diligence in an ethical manner.

CEAI has been pursuing for the same with the Ministry of Human Resources, Government of India and creating awarenessamongst others about it.

CEAI will continue to do so till the goal is achieved.

ENGINEERS! UNITE TO BE HEARD & RESPECTED

Best regards.

Samarjit Chatterjee

Challenges and Strategies for Infrastructure in the Himalayan Region

Sanjeev Gupta
General Manager,
Tata Consulting Engineers Ltd

Abstract

The Himalayas are geologically a young mountain range but of complex geological formation with active faults and thrusts. This region experiences high tectonic activity, which results in alteration of the land contours and the courses of rivers. The region thus comes under the classification seismically "most active" Zones IV and V as per IS: 1893. This region is also subjected to extreme climatic conditions.

Due to the rugged terrain and harsh climate, this region has been difficult to access and has thus remained economically backward with most of the people leading a hand to mouth existence. The literacy level is also low.

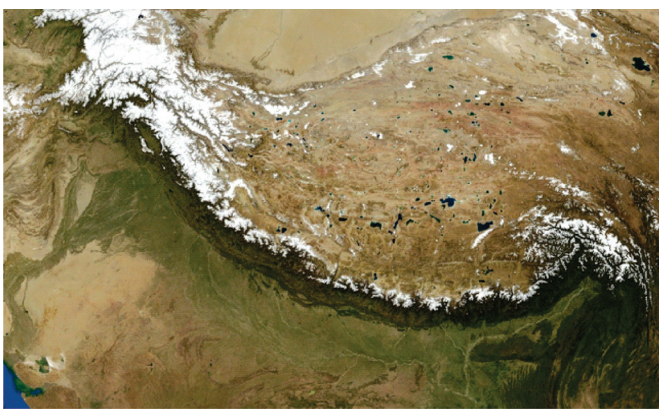
With improving infrastructure and consequent accessibility, the region sees a large influx of tourists due to its inherent beauty, the flora and fauna. places of pilgrimage, opportunities for adventure tourism – trekking, paragliding, rafting, mountaineering, etc.. Tourism is the mainstay for the livelihood of the people. As compared to other states, the basic infrastructure in the mountain states in terms of roads, water, power supply, schools and hospitals needs much to be done.

The development of this region needs to be implemented in a planned manner considering its topography, geology, rainfall, wind, seismicity, avalanches, melting of snow, river courses, etc. The structures need to be planned, designed and built for withstanding the probable natural forces. Later they need to be maintained in order that they remain functional and safe for their design life.

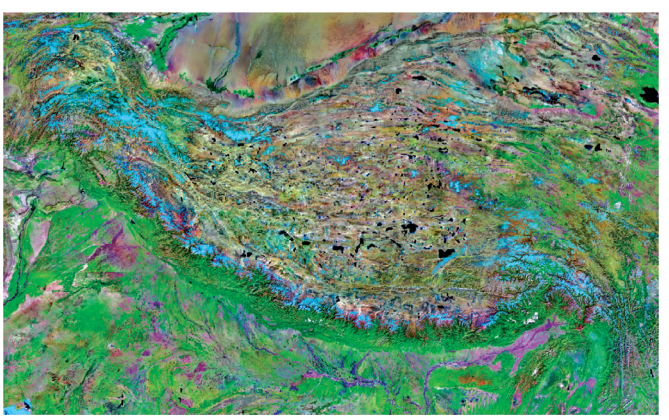
This paper attempts to highlight the challenges of planning, designing, constructing and maintaining the infrastructure in the Himalayan Region albeit with proper attention to the geology, geotechnical and structural aspects, environmental impact and the quality of construction.

1. INTRODUCTION

The Himalyan Ranges were formed by lifting of the land mass on account of the collision of the two tectonic plates the Indian with the Eurasian. The fold mountain ranges thus



US National Aeronautics and Space Administration



Landsat-7 imagery of Himalayas Mountain Range

formed are made up of sedimentary and metamorphic rocks and run in an arc over 2400 kilometers long and ranging in width from 400 kilometers in the west to 150 kilometers in the east. They comprise the Greater Himalayas and several parallel lower ranges.

The Himalayan region has resplendent vistas with some of the highest mountains in the world. Its flora is breathtaking and the fauna is too but it's sparsely populated due to its rugged terrain and harsh clime. However, in the past few years natural **catastrophes** have increased in thisregion, leading to loss of lives (human and animal), caused by changes in topography, environment, etc. many of which are due to manmade infrastructure or its failure per se. The occurrence of calamities caused by natural forces such as extremely heavy rainfall, cloud burst, wind, earthquake, landslide, melting of glaciers, avalanches, etc. coupled with the man-made changes to the eco-system lead to irreparable physical, social, economic and ecological damages. The major issues that plague the fragile ecosystem of the Himalayas inhabited by economically backward and a low literacy society are:

(a) Rapid unplanned growth of hill towns and villages,

(b) Indiscriminate use of land for commercial and residential purposes, and

(c) Inadequate attention with regard to the geology, geotechnical aspects, structural requirements and environmental impact,

(d) quality of construction,

(e) availability of skilled labour, and

(f) appropriate plant and equipment,

To correctly comprehend the issues from an engineering perspective it is essential to first understand the challenges that the region presents.

2. CHALLENGES AND SUGGESTIONS

The Himalayan region is full of challenges which from an engineering point of view can be broadly divided into the following categories:

(a) Geological Formations.

i. Tectonically active region where the Indian and Eurasian plates meet.

ii. Dip/ strikes of the rock strata is towards the valley in most places.

iii. Folds, faults and thrusts with major lineaments and shear zones.

iv. High in-situ stresses and large overburden.

v. Poor crushing strength of rock.

vi. Entrapped paleo- river channels with large quantum of water.

vii. Squeezing, creep, rock burst, stress relieving phenomena.

viii. Topography is mountainous – the slopes are steep.

(b) Extreme Weather Condition.

(c) Cloudbursts/ Thunder Storms and consequent floods.

(d) Lightning

(e) Seismic Activity.

These need to be addressed sensibly with solutions based on socio-economic and engineering considerations to obviate disasters due to the above. The engineering solutions are discussed below however it is necessary that all the works including their foundations must be designed and supervised by competent engineers with the requisite qualifications and experience.

(a) Geological Formations:

The Himalayas being the youngest amongst the mountain ranges of the world have one of the most fragile topographies and a complex geology. Although the geological phase of rapid and major upheavals has ceased, the Himalayan mountains are still rising by approximately 5 mm a year due to tectonic activities, and also on account of the number of faults and thrusts in the region. Time and again nature reminds us that the Himalayas are still geologically active and structurally unstable. Due to movements over the past eons, most of its rock formations – the stratified sandstones, are fractured and crushed. Water penetrates deep into the interior and deteriorates the rock from inside. The base of the rock is thus eroded. All these result in a high number of landslides in the region. Although landslides and earthquakes will continue to occur in the region due to movement of the tectonic plates, but the probabilities of landslides are also increasing due to loosening and erosion of the top soil caused by deforestation to make way for human settlements, infrastructure and cultivation.

The tectonic boundary in the Himalayan region has already been mapped to a large extent .To monitor and update the tectonic movement extensive instrumentation needs to be installed at appropriate locations. The information from those sensors should be distilled and passed on to the concerned authorities so that they could act accordingly and save lives during disasters

Due to complex geological formation of the Himalayan Region, it is recommended that site selection for any project be done after thorough study of the regional geology involving adequate exploration and data rationalisation modelling using realistic parameters. In this area of geological variations in short distances, estimating representative geotechnical parameters remains a challenge. Hence, conservative parameters need to be selected based on the test results and experience in similar type of strata.

Roads or structures of any type should not be built adjacent to deep valleys/ cuts where the dip and strike direction are towards the valley. In some cases it may be possible to be built then after carrying out ground improvement. Projects should be located away from the tectonically active zones. Projects located in tectonic active zone are highly prone to serious damage during earthquake. The latest example being the Udhampur - Katra section where the railway alignment had to be rerouted as earlier it ran through the Main Boundary Thrust (MBT) i.e., main junction between the Eurasian Tectonic Plate and the Indian Tectonic Plate due to which the tunnel section underwent serious damage even with the provision of heavy supports, etc.

Underground structures such as tunnels need to be designed for the expected insitu stresses, water pressure and sheared zone, etc. apart from strike/ dip and support systems. The NATM method of construction for tunnels, cavern, etc. enables the facilitates to be based on “Design as you see” is generally preferred.

It is necessary that the alignment of even existing roads is based on the dip/ strikes of rock and realigning the existing roads passing through the unfavourable geological formation. That would provide improved stability to roads even during occurrence of natural calamities.

(b) **Extreme Weather Conditions:**

The Himalayan Region has four seasons – spring, summer, monsoon and winter but the last two which last for 7-8 months are the most unpredictable and prone to natural disasters. The climate changes very fast, it’s unpredictable and dangerous, there can be sudden rainfall, floods, high winds, snowstorms and other forms of precipitation. Lightning during thunderstorms, in addition to these also creates problems.

The extreme weather conditions result in increased weathering cycles for rocks (due to precipitation and temperature variation) and soil erosion due to rain waters, floods, etc. which also cause landslides.

Structures must be built on stable foundations, which in turn need stable terraced areas, for which retaining structures are essential. At the same time provision for adequate stormwater drainage must also be made. The materials of construction chosen must also be suited to withstand the climatic conditions and provide safe, dry, airy and habitable temperatures inside.

(c) **Flood:**

Heavy run-off on account of cloud bursts are a regular seasonal feature of the Himalayan region. However efforts can be made by strengthening and constructing the infrastructure considering the maximum run-off and highest flood levels experienced in last 100 years and its related effect like river bank erosions, landslides, sudden settlement of land, etc. Construction of structures along river banks needs to be discouraged or even banned. The water ways must also be cleaned every year. The river banks facing the impact of the water due to change in course of the water

River changing course near Rudraprayag

Rapids near Gabani village, District Rudraprayag

require to be diverted and dispersed. To channelize and train the river gabions, groynes/ spurs and retaining walls are necessary.

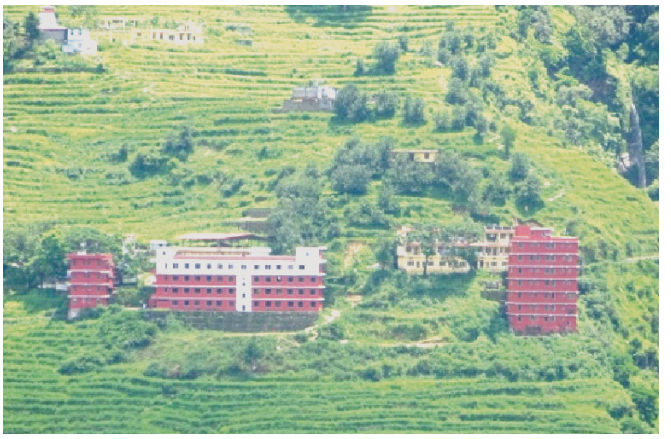
Building near Teen Dhar in District Tehri (Gharwal) near NH 58

Slope stabilisation in power house of Alakhnanda Hydro Power Plant

(d) **Topography:**

The whole Himalayan Region has highly sloping terrain on account of which development has to follow the contours

Slope stabilisation with provision of intermediate terraces in Lamgondi village, District Rudraprayag



Slope stabilisation with provision of intermediate terraces around Bharat Seva Asharm near Ukkhimath, District Rudraprayag

Toe wall along NH 58 near Rudraprayag

Slope stabilisation in power house of Alakhnanda Hydro Power Plant

and sites levelled/ terraced.The slopes must be stabilised to prevent landslides.

(e) **Landsides:**

Most of the landslides occur due to erosion of soil, splitting of soft rock caused by flow of rainwater along the steep slopes/ cuts. The increase in velocity of water along the slopes speeds up the erosion process. The simplest way of controlling such landslides is through creation of intermediate catch water drains and terraces along the slope for channelising and dissipating the energy of the water.

The above solution may not be feasible in all cases especially in a complex situation where other measures would need to be adopted either individually or in combination:

i. Providing suitable drainage system (catch-water drains) at the top to streamline the flow of rain water and allowing it to discharge at the appropriate suitable locations.

ii. Construction of toe walls in sections to strengthen the toe of landslide zones.

iii. Installing safety nets to arrest the rock fall, and prevent landslides.

iv. Strengthening the slope with installation of soil nailing / rock anchors/ rock bolts/ shot creating.

v. Seismic Activity

Ensuring building stability during seismic activity is a prime necessity: Damage to houses and other infrastructure can be avoided or minimised to a large extent by founding the structures on stable soil/ strata and designing the structures to resist seismic forces. There is need to create awareness among the people by the Government and NGOs that this is an essential aspect for all construction.

Transportation in the mountainous terrain becoming a major obstacle, it is therefore suggested that light weight prefabricated structures be used instead of conventional method of RCC construction. Where local timber can be used that would be the most suited albeit designed to withstand seismic and other forces.

Aganwadi construction using prefabricated earthquake resistance structures at Bhiri village, District Rudraprayag

Ensuring Road Connectivity: Road connectivity is essential post an earthquake or any other disaster so that relief can be provided. The roads, bridges, tunnels and all the cross drainage works must be designed to withstand the forces of nature and the traffic loads. In zones prone to landslides it may be advisable to construct tunnels and also long span bridges with foundations on firm and stable strata. They would also help to reduce the distance to be travelled.

Inspite of all the challenges, infrastructure development is essential for developing the region, albeit considering all aspects of engineering relevant to the site.

3. INFRASTRUCTURE DEVELOPMENT

In adequate knowledge, know-how or non availability of funds should not form the basis of culpable disasters. Although Government departments and agencies are actively working to improve the infrastructure but the pace is slow due to limitation of resources (trained manpower, plant & equipment) plus adequate and timely funding,all backed with current technology. All these must be given timely consideration and due weightage even for urgent/ emergent works in times of disasters so that long term sustainability is assured although priority at that point of time is to restore normalcy and immediate serviceability. This is essential so that long term quality, safety, stability and robustness are also addressed. It is thus necessary that pre-planning be done for the type of works that could be necessary post a disaster.

Time and again nature has demonstrated against indiscriminate tampering which consequently result in natural disasters. Denuding the hills of the vegetation for cultivation, cutting of trees,hills and mountain sides, blocking or altering natural courses of rainwater runoffs, river courses and their waterway disturb the already fragile ecology.

Development of the infrastructure needs to be done with due respect and proper study of all the above and the geological conditions of the region in consonance with the advances of our understanding of Nature and those in the field of engineering to provide solutions. The ubiquitous web and consequent globalisation have made easier to search information about the techniques used elsewhere in the world together with data on their success for stabilising areas in similar geological conditions.

One of the important aspects is to formulate and implement proper strategies to counteract the challenges to enhance the safety, stability and robustness of the structures.

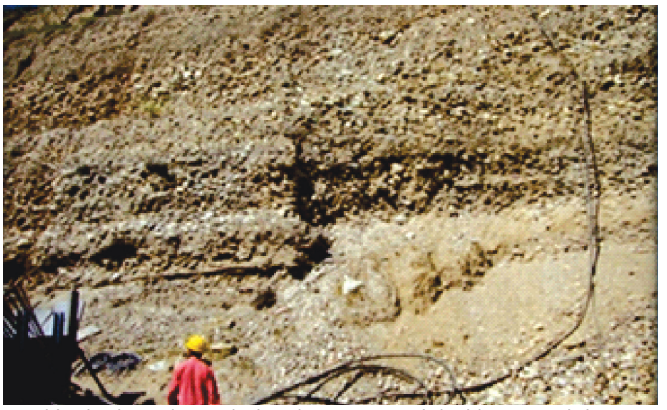
The major Infrastructure developments taking place in the Himalayan region are:

(a) Hydel Projects: These have seen a spurt in the past few years. The hydropower plants constructed in the Himalayan region are mostly run of the river projects, with dams to create sedimentation reservoirs and also help control the run-off. However, a good weather forecasting algorithm linked to a reliable mechanism needs to be put in place at earliest to predict the precipitation and run-off with consequent filling of reservoirs so that people downstream could be warned and water could be released in time and disasters averted. The system must link all the run-off zones, hydro plants, storages, etc. for a catchment area/ river basin in real time so that the data and situation can be monitored locally as well as remotely at all times (including cloud bust) so that action can be initiated and taken in time to avert disasters. Primarily ofcourse it must be ensured that there is adequate free board available all along the length of the river to contain the flood waters or those released from one or more storages based on a 100 years return period of precipitation data. A system also needs to be put in place to establish the coordination/ warning systems to convey/ issue alert to the habitants and plants downstream.

(b) Roads: Transportation is the life line for sustenance and growth. Roads are the easiest and speediest to implement for providing connections between the remote areas and the developed or fairly developed areas. They also help in expediting interaction and thus the socio-economic developments of the area.

In mountainous region the roads normally start at the foot of a hill and rise to a saddle/ pass to cross over to the next. In these areas the hill sides must be cut and the slopes stabilised. However, the cutting must be done on the side where the dip is away from the valley since any cut made in the direction of dip of the rock strata and along the side having natural slope for surface run off are basically unstable and thus highly susceptible to landslides due to denudation. Adequate measures need to be taken such as the provision of a toe wall at the location of weak rock mass in conjunction with a catchwater drain and vegetation to prevent erosion and weathering.

Poverty, illiteracy and the need to earn a livelihood from tourism drive the habitants to indulge in unplanned and unauthorised ribbon expansion of settlements



Vertical cut through river borne material without retaining structure and ground improvement.

Landslide along a road due to an unstable slope, uncompacted fill and absence of a retaining structure.

along the road side with little regard to safety. They are disasters in waiting but can be addressed by creating rest areas and markets in safe zones which would provide the necessary opportunities for people to earn their livelihood.

(c) Construction of Buildings: Buildings for housing and other purposes have to been done with due consideration of the forces that occur during an earthquake, high winds funnelled through the valleys during storms, lightning, etc. plus keep them well away

Structure in imminent danger of collapse due to denudation and inadequate edge distance from the river

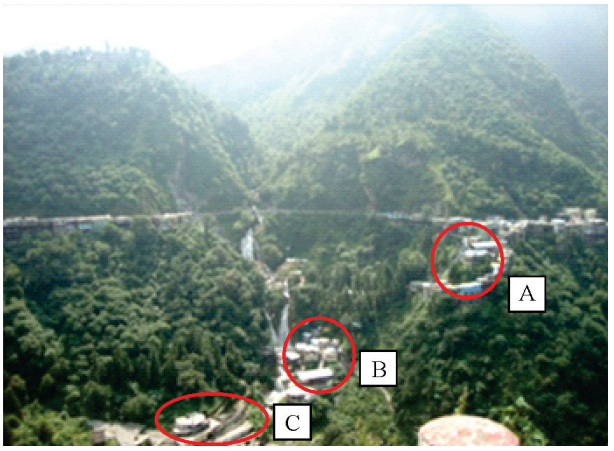
House collapse due to landslide in Chandrapuri village, District Rudraprayag due to the 2013 floods. Safe distance was not kept from edge of slope nor was the slope stabilised or retained.

Landslides along the National Highway in Uttarkashi District due to the 2013 floods.

Chandrapuri, Rudraprayag

Construction in Tiwada, Rudraprayag

Devprayag as seen from NH 58



Construction around Jharipani Falls, Mussoorie. The founding strata needs to be checked for the houses along the slope at A, B & C, from the road to the river. The stormwater flow if not trained would erode the water way all the way from the top of the mountain to the river below.

from areas prone to floods, landslides, glacial movement, avalanches, etc. What is really required is relocating people on a mass scale especially those staying in unsafe zones by creating awareness among the people and preventing construction in dangerous zones. Close monitoring in urban, semi-urban and even rural areas of unauthorised and non-engineered construction would go a long way to prevent disasters on account of the above.

Conclusion: The Himalayan region is a geologically difficult terrain with extreme climatic conditions and serves as a large laboratory for geologist and geotechnical engineers to update their understanding about nature. The region being seismically active, all the Infrastructure works in the region are prone to landslides, earthquake, floods, etc. which also result in loss of lives and properties. The damage can be controlled by designing and constructing infrastructure with the help of the latest technology and avoiding geologically unsafe zones.

The infrastructure needs are tremendous to alleviate the living conditions of the peopleand provide easier access for tourism, the major source of livelihood of the people. What is required is sustained accessibility during monsoons and winters so that the tourist flow could be extended for a greater period. Better infrastructure would of course also help improve trade and commerce by making easier to export the produce of the region, give an impetus to small scale non-polluting industries, back seat offices with internet facilities.

To improve the quality of life and safety the society, the government and the NGOs must make collective efforts. For this the society needs to be first more educated plus become economically stronger and independent so that they can understand the necessity and be ready to contribute to the cost of implementation of latest technologies. Globalisation and digitisation can be of great help in understanding good practices used elsewhere in the world.

To minimise damage, on account of natural events, it in necessary that monitoring of soil strata and land movement is done along with forecasting of such events. Good fail proof communication systems are also necessary and a chain of command so that the population can be alerted of an imminent danger when it is forecasted, and they be asked to move to safer locations.

An educated and economically stronger population would be less prone to risking their lives for earning their lively hood. Besides, they would also insist on and support the government to implement better technology and they themselves play an important role in protecting the area from natural calamities.

Good infrastructure is essential for the region to grow and prosper. In addition it is essential for the country's defence - territory marking and border security.

"Make In India" and "Digital India" Initiatives

Pradeep Chaturvedi
Member
Governing Council, CEAI

"Make in India" Initiative

"Make in India" initiative (MII) touched 2.1 billion impressions on social media by end of December 2014 and thus became the largest and fastest growing government initiative on digital media. Make in India, has seen an overwhelming response on its digital platform since its launch. The initiative also reached an overall fan base of over 3 million on its Facebook page during first six months. According to the numbers, the Make in India Facebook page added a new member every three seconds, a feat that has not been achieved by any other department of the Government of India and very few in the private sector. On Twitter, MII had as many as 0.263 million followers in the first 90 days. The MII initiative has been abuzz since the very first day with its launch video garnering over 5.7 lakh viewers on YouTube. Not just the social network, even the website (www. Make in India.com) has seen immense interest by users with page views over 5.5 million being accessed by over 1.7 million users across the world.

An analysis was made of digital connect. Total impressions and mentions of conversations indicate that two-thirds of the overall mentions were from regions outside India. 'Ease of Doing Business' was the topmost on the questions that were asked on the digital media. An analysis of the top region based on mentions showed queries from India, USA and UK occupying the first three places in that order. Subsequently Australia, Germany, UAE and Japan occupied the following positions. Participation among different age groups indicated that globally, people between 21 to 35 years of age contributed more than half of Make in India conversations. In India, people between 21 to 35 years of age led the discussions about Make in India.

A gender analysis indicated that globally males were twice as active as females around Make in India discussions. Further analysis by the Department of Industrial Policy and Promotion (DIPP), Government of India indicated that on average, two conversations appeared on social media every minute on Make in India. Pharmaceuticals, healthcare and biotech remained among the most discussed industries. Many conversations revolved around the topic "India plans to revise investment and start-up policies" and "Make in India: China wants to push polluting 'Sunset' industries to India". Most of the participants considered that SMEs growth and global investment were the most discussed subjects.

'Make in India' which focuses on attracting businesses to invest and manufacture in India aims to make India a global manufacturing hub, while bringing about an economic transformation in the country. The programme has consciously taken the Digital First approach in propagating its agenda across the globe. With 25 sectors to promote and with the ever-growing digital landscape, the Make in India initiative is all set to grow multi-fold in the coming years.

What is Make in India Programme?

Make in India is an initiative of the Government of India, to encourage companies to manufacture their products in India. It was launched by Prime Minister, Narendra Modi, on 25 September, 2014. He had hinted of this initiative in a speech of 15 August 2014. On 29 December 2014, a Workshop was organized by the Department of Industrial Policy and Promotion, which was attended by Modi, his Cabinet Ministers, Chief Secretaries of States and various industry leaders. This Workshop chalked out the Road Map.

Focused Sectors

The major objective behind the initiative is to focus on 25 sectors of the economy for job creation and skill enhancement. These sectors are:

1. Auto Components
2. Aviation
3. Automobiles
4. Biotechnology
5. Chemicals
6. Construction
7. Defence
8. Electronic Systems
9. Electrical Machinery
10. Food Processing
11. IT and BPM
12. Leather
13. Mining
14. Media Entertainment
15. Oil and Gas
16. Ports
17. Pharmaceuticals
18. Renewable Energy
19. Railways
20. Roads
21. Space
22. Thermal Power
23. Textiles
24. Tourism
25. Wellness

What does Make in India Initiative Aim?

The three major aims for the initiative are:

1. Increase GDP Growth and tax revenue
2. Promote high quality standards in production and minimizing the impact on the environment, i.e. zero defect in production and zero effect on environment.
3. Attract capital and technological investments in India.

Incentives

Under the initiative, brochures on the 25 sectors and a web portal were released. Before the initiative was launched, foreign equity caps in various sectors had been relaxed or removed. The application for licenses was made available on-line. The validity of licenses was increased to 3 years. Various other norms and procedures were also relaxed.

In August 2014, the Cabinet allowed 49% Foreign Direct Investment (FDI) in the defence sector and 100% in railways infrastructure. The defence sector previously allowed 26% FDI and FDI was not allowed in railways. This was in hope of bringing down the military imports of India. Earlier, one Indian company would have held the 51% stake this was changed so that multiple companies could hold 51% share.

In a major boost to the government's agenda, in March 2015 Parliament of India passed Insurance Bill, raising the ceiling for foreign investment in the sector. The law has hiked the foreign direct investment limit for insurance companies to 49% from earlier 26%.

In November 2015, Government of India has announced a number of measures to support larger FDI induction into India's economic growth and also steps for Ease of Doing Business.

Expectations from Make-in-India

Make-in-India is a leadership programme and the leadership is aptly defined by "dreams and details". What it really means is that a leader needs to have a dream and should also work out the details for converting that dream into reality. The Prime Minister has exhibited his dream of Making India a manufacturing hub by attracting large FDIs and creating jobs. The foreign investors and manufacturers will be attracted into India only when they find ease of doing business; not just for projected low cost of labour. Ease of doing business also has two components, one is cost inside the gate that means the costs controlled by the industry. At the same time, it also has costs outside the gate which depends on government policies and external factors. Every government works on two fronts, that is trade and opening up for business investments. Though Make-in-India programme is mainly for opening up business investments but the trade is also been at the same time given equal importance. It is necessary that the opening up for business investments should gain a favourable spot before the trade is promote otherwise that will have adverse impact. In other words opening of markets quicker is not desirable as the foreign manufacturers will dump the products manufactured outside. Speed of promoting ease of doing business should be faster. And, at the same time manufacturing facilities should be selectively created depending on raw material availability, skilled labour availability and other market friendly policies of the state government. Every state is not the same. It is also necessary to identify accredited and

trained skills development institutions and grade them on their quality so that the foreign industries find it easy to take the right kind of skilled persons. SMEs have a large role in the manufacturing sector and contribute to 75% of the manufactured goods and 80% of the employment and that needs to be properly catered for.

Poverty eradication is the major compelling purpose for development. To overcome poverty, government is expected to create on an average one million jobs a year – which cannot come from the agriculture sector; and manufacturing sector has to play an important role. Trust is lacking at the moment and important element in ensuring success of Make-in-India programme is the creation of the trust and the speed of this programme. Inclusive growth through job creation calls for domestic economic and market reforms to be in place; centre and state to cut red tape and to find ways to jump start the apex cycle. Labour laws need to undergo major reforms responding to the needs of the emerging business scenario. At the same time contract enforcement procedures have to be strictly adhered. This also calls for education reforms so that skills development programmes are ingrained into our education scheme from the very beginning.

The mission of Make-in-India is basically making India a competitive manufacturing hub that would provide multiplier effects to other sections of economy. It is not just a facility for exports.

The government is drawing plans to counter the challenge of ease of doing business through interactive mode. Initiatives have been undertaken to find out ways of how to make India's manufacturing a part of value chain. The government is also looking at the Young India advantage and realizes fully that if demographic dividend is not fully utilized it might convert into a demographic explosive bomb and create problem. Therefore, the manufacturing sector has to move at a pace where it outbeats the requirement of jobs by Young India. This is one important reason that the government has focused on Start-Up Initiative. This programme is going to be launched very shortly. The government has also worked out a plan to launch specific business hubs matching the available skilled work force. It has also been realized that large scale manufacturing can be promoted only through extensive R&D growth and therefore the Department of Science and Technology has initiated a major programme on promoting R&D for the industry. In terms of 'Make-in-India Initiative', 'Digital India Initiative', 'Start-Up Initiative' etc the government is trying to build upon the existing R&D work force of ten thousand only in two cities of Hyderabad and Bangalore.

The government has also realized that urbanization is becoming a major challenge and if it is not converted into advantage it is likely to create inconvenient situation. The concept of Smart Cities is expected to create larger opportunities where value addition in manufacturing and services sector go hand-in-hand with urban migration.

'Make-in-India' has to capture more value in India. Recently FT has reported that India was the most favoured destination for FDI during the year 2014. The World Economic Forum has also given India a pat by raising its position by 20 points in the competitiveness index.

Strong IT sector is to be leveraged and for that the Digital India Initiative has been launched by the government which has the details below:

"Digital India" Initiative

Digital India Initiative of Government of India is to integrate government departments and people of India. It aims at ensuring government services are made available to citizens electronically by reducing paperwork. The initiative also includes plan to connect rural areas with high-speed internet networks. Digital India has three core components. These include the creation of digital infrastructure, delivering services digitally and digital literacy.

The project is slated for completion by 2019. A two-way platform will be created where both the service providers and the consumers stand to benefit. The scheme will be monitored and controlled by the *Digital India Advisory Group* which will be chaired by the Ministry of Communications and IT. It will be an inter-ministerial initiative where all ministries and departments shall offer their own services to the public healthcare, education, judicial services etc. The Public-Private-Partnership model shall be adopted selectively. In addition, there are plans to restructure the National Informatics Centre. This project is one among the top priority projects of the Modi Administration.

The initiative is commendable and deserves full support of all stakeholders. However, the initiative also lacks many crucial components including lack of legal framework,

absence of privacy[1] and data protection laws, civil liberties abuse possibilities, lack of parliamentary oversight for e-surveillance in India, lack of intelligence related reforms in India, insecure Indian cyberspace, etc. These issues have to be managed first before introducing Digital India Initiative in India. Digital India project is worth exploring and implementation despite its shortcomings that can be rectified before its implementation.

Challenges before Digital India

The Government of India entity Bharat Broadband Network Limited (BBNL) which executes the National Optical Fiber Network project is custodian of **Digital India** (DI) project. BBNL had ordered United Telecoms Limited to connect 250,000 villages through GPON to ensure FTTH based broadband. This will provide the first basic setup to achieve towards DI and is expected to be completed by 2017.

The **Digital India** initiative is a promising initiative of the Indian Government. Many companies have shown their interest in this project. It is also believed that e-commerce would facilitate the DI project. However, it is not free from challenges and legal hurdles. Some believe that DI cannot be successful till mandatory e-governance services in India are introduced. Having incomplete implementation of the National e-Governance Plan of India will only affect the success of the DI project. India has poor regulations in the field of privacy protection, data protection, cyber law, telegraph, e-governance, e-commerce, etc. Further, many legal experts believe that e-governance and DI without cyber security is useless. The cyber security trends in India have exposed the vulnerability of Indian cyberspace. Even the National Cyber Security Policy 2013 has not been implemented till now. In these circumstances, critical infrastructure protection would be a really tough task to manage for the Indian Government. The project also lacks the concept of proper e-waste management.

Related Initiatives

The DI initiative must be read along with the Draft Internet of Things (IoT) Policy of India. However, the problems, the challenges and the deficiencies in the Indian legal structure remain the same.

Civil Liberties Issues

Initiatives like DI and IoT would be required to comply with the civil liberties requirements in general and civil liberties protection in cyberspace in particular. India has not given any importance to privacy and privacy laws so far. Indian government indulges into mass surveillance in India and projects like Aadhaar, Central Monitoring System, Netra, NATGRID, etc are operating without any law and parliamentary oversight. The intelligence agencies of India like Intelligence Bureau and law enforcement agencies like Central Bureau of Investigation are operating for decades without any law and parliamentary scrutiny. DI and IoT would further strengthen the mass surveillance activities of the Indian Government if proper procedural safeguards are not implemented and practiced.

Issues for Discussion

India has no choice other than boosting the manufacturing sector given its demographics. Though the government has been trying to promote manufacturing for many years, the sector continues to languish. The manufacturing sector investment, jobs and exports have not grown at a rate commensurate with the nation's needs. Indian manufacturing is held back by its lack of competitiveness on multiple fronts, including the ease of doing business, taxation, cost of inputs, industrial relations, infrastructure and supply chain. The political and administrative attitudes towards manufacturing are less than friendly, it not outright hostile. Hence, the share of manufacturing in the GDP is falling and India's is experiencing jobless growth.

Issues that need immediate attention are as follows:

- How can the government make manufacturing in India attractive for the domestic and foreign investors?
- How can administration, taxation and trade treaties be harnessed to promote manufacturing in India?
- How can the politics and bureaucracy be tuned for exponential growth of manufacturing in India?
- How can India develop its small businesses to improve the supply chain and the quality?
- How can the successful multinationals in India promote the country as a manufacturing destination?

Opportunity for Consultants

The Prime Minister has set up a challenging task and is expecting quick actions and returns. Somehow that is not taking place. There are a number of reasons for such a situation. The most important of them is the interface which can convert government's policies and framework into workable 'action plan' and a body of professional experts who can create confidence in outsiders to invest in India. There is also an urgent need for professionals to demystify the concepts and make it comprehensible to various stakeholders in India and abroad.

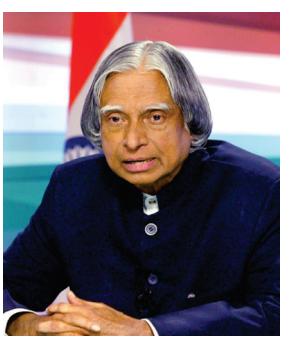
The government's no pollution and climate resilient development plan can reduce the impacts of climate change in India while also delivering many social, economic and environmental benefits, for instance: electrifying the homes of the poor, creating rural employment opportunities for young people, and averting premature deaths from acute respiratory infection from indoor and outdoor air pollution.

India's Intended Nationally Determine Contribution lodged to the UNFCCC in October 2015 estimates that more than US$ 2.5 trillion (at 2014-15 prices) will be required to meet India's low pollution and climate resilient development plan between now and 2030. Industrialised countries are being requested to help India meet and enhance its commitments by providing strong public and private sector finance and technology.

The funding mentioned in the previous paragraph will all be utilized through the market mechanism where the role of knowledgeable professionals, mainly the consultants, will be of paramount importance. This provides another opportunity for the consultants to find appropriate solutions to ensure that 'Make in India Initiative' and 'Digital India Initiative' are success. Inter-linkages need to be developed as the future growth will be through climate resilient route.

The Consulting Engineers Association of India has intellectual, technical and financial capabilities to comprehend government's actions and project them to outside agencies in their language. CEAI members can also work as important interface between India and outside agencies to develop business in such a manner that the businessmen from all over the world feel comfortable and confident in coming to India. This is possible and needs to be elaborated. Once CEAI does that, it will be a service to the Nation as well as creating opportunities in India and abroad for its members.

Prime Minister has set challenging and ambitious but desirable target. All professionals need to work to this target and explore to provide solutions. FDIs will flow into India not only for government's expectation, but on the basis of expression of interest by professionals in India who have to create the necessary framework to execute government plans.



Dr A P J Abdul Kalam

Scientist, Author and Former President

My message, especially to young people is to have courage to think differently, courage to invent, to travel the unexplored path, courage to discover the impossible and to conquer the problems and succeed. These are great qualities that they must work towards. This is my message to the young people.

SEMINAR ON ENGINEERING SMART CITIES

CEAI organized two-day Seminar on "Engineering Smart Cities" at Manekshaw Centre, New Delhi on September 25-26, 2015.

Mr. Sudhir Dhawan, President CEAI, in his Welcome Address stated that CEAI has taken timely action in organizing this seminar when Government of India through Ministry of Urban Development is promoting development of 100 smart cities in India and various aspects of it including engineering aspects need to be debated elaborated and then finalized. He pointed out that a recent World Bank report on 'Urbanisation in Asia' states that India and her neighbours are going through a tortuous process of urbanization – slow, messy and partly hidden.

This report further highlights that urban population growth is not driven by rural to urban migration as is commonly thought. It says that 44% of the urban growth that India experienced between 2001 and 2011 was due to natural increase and 29.5% to the re-classification of rural settlements into census towns.

While welcoming the Chief Guest of the inaugural session Mr BibekDebroy, Member, NitiAayog, Mr Sudhir Dhawan alsoemphasized the need for the Engineers Bill and a review of the Contract Conditions in procurement of services and sought his help.

The similar message was echoed more than once, when Dr. Sudhir Krishna, Former Secretary MoUD, in his Keynote Address, mentioned that India has the lowest urbanization in the world at 31% and so did BibekDebroy, Member, NitiAayogwhen he also said that India has had low rates of urbanization.

It was music to the ears of all engineers present in the hall when Mr. Debroy reassured that the Bill is on the agenda. On Contract Conditions he opined that the issue is much more difficult but requested that some information be sent to him so that he could look into it. (The details have since been forwarded to him).

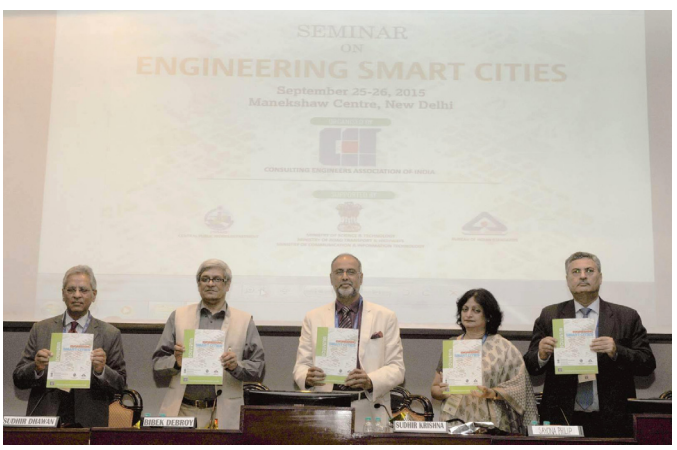
On Smart Cities Mission Mr. Debroy made it clear that the Centre will not set targets as it is the states that will rope in private players and involve citizens to create facilities and infrastructure, unlike that in Jawaharlal Nehru National Urban Renewal Mission (JNNURM).

He said, "What is significantly different about this way is that as compared to JNNURM, it is not that the government is planning to do A, B, C, D. It is not that the government is going to spend X amount of resources. It is about states involving the private sector, and involving citizens."

"Smart Cities will have to provide good quality but affordable housing, cost-efficient physical, social and institutional infrastructure," he added.

At the start of the day there was an enormous amount of confusion in the minds of the audience on 'What is a Smart City'. However, as the day proceeded from the Inaugural to the Plenary and to the Smart Sessions much clarity emerged. Ms. Sayona Philip in her Seminar Introduction presented an elucid description of the concept of a Smart City with indicators and metrics for measuring its smartness.

The Chair of the Plenary Session, Dr. M. Ramachandran, Former Secretary, MoUD talked about on 'how do we work out the Smart City, now that states have more freedom and central control is a lot less and people get an opportunity to plan for their city?' The Co-Chair for this session was Mr. Mahendra Raj.



Inauguration of Souvenir on Engineering Smart Cities

Chief Guest Mr Bibek Debroy, Member Planning Commission delivering Inaugural address

View of Participants

Mrs Sheila Dikshit is being received at Manekshaw Centre

Mr. V Suresh, Former CMD HUDCO, explained how to build safe and secure city and how to use waste as a resource.In his theory of 'Waste to Wealth – Refuse to Resource – Trash to Cash', he talked about integrated townships, e-governance & citizen services, waste management, water, energy and mobility.

Mr. NSN Murty, PwC defined a Smart City as a city that laughs, one that is healthy and all departments need to work together. Then he talked about how to monetize the value drivers using smart grids and analytics.

Mr. Ashok Khurana, Former DG CPWD, dwelt upon the monitoring and evaluation of Smart Cities for maximizing efficiency, effectiveness and impact.

Dr. Chandan Chowdhury, MD Dassault Systems, made a presentation on 3DEXPERIENCity as an enabler to create and manage smart & sustainable cities. He said that if we want to create a city that is meant for its citizens, the first thing to do is to create a digital plan for the city. He called it a digital twin. Using it, one can simulate the city and anticipate events.

Smart Session 1: Effectiveness of Smart Planning and Implementation

The session was chaired by Mr. Ajay Pradhan, MD, CH2Mhill. He called JNNURM as Urban Development 1 and Smart Cities Mission as Urban Development 2. The Co-Chair was Mr. AP Singh, Director Engineering, MECON.

Mr. Parveen Sharma, VP INTEC, talked about virtual construction using BIM integration and analysis. His mantra is that in a Smart City it is the Technology that makes it happen. He supported his claim through many examples of projects that his company has undertaken.

Mr. Guru Prakash Sastry, Regional Manager, Infosys focused on the Infosys Experience of High Efficiency Building through planning, design & operations. There exists a huge opportunity to follow their model as, as per McKinsey Report, over 60% of India of 2030 has not yet been built. His key attributes of a smart city are:

- Integrated goal oriented approach
- Data driven design decisions
- Continuous monitoring of performance parameters
- Continuous feedback

Mr. Ramakant Jha, ILFS presented a detailed Case Study of GIFT city. The presentation had details of design. His vision of operations & maintenance is **"Identify the defect before consumer notices it;** rectify the defect before receiving the complaint.

Mr. Sutanu Ghosh made a presentation on 'Environmental Sustainability' and discussed the implications of various notifications, procedures and systems.

Smart Session 2: Smart Grid & Energy Management

The session was chaired by Mr. Sanjay Banga, Head Business Development & Power Management, Tata Power. Since the incandescent bulb was invented, there has been no change in the electricity business. However, since the advent of the New & Renewable Energy, with smart metering and consumers becoming generators of electricity, there has been a threat to the business model.

The session was Co-Chaired by Dr. V Subramanian, Former Secretary MNRE and Chairman, Indian Wind Energy Association.

Mr. ChitnisChintamani, Head Consumer Engg., Tata Power presented a hard core utility perspective of their experience in Mumbai. Four utility companies are competing in the market. He talked about their innovative strategies for competing in a competitive market.

Mr. BiswajeetChatterji, Principal Consultant, STUP spoke on Smart Grid for a Smart City. He talked about the global

Mrs. Sheila Dikshit, Ex. Chief Minister Delhi, addressing the gathering. Also seen Mr Mangu Singh, MD, DMRC and Mr Sudhir Dhawan, President CEAI.

Mr Mahendra Raj being felicitated by Mrs Sheila Dikshit, Ex. Chief Minister Delhi. In view are Dr Mangu Singh, MD, DMRC and Mr Sudhir Dhawan, President, CEAI.

challenges faced in Smart Grid opportunity and how he has innovated to compete in the new environment.

Mr. SC Dhapare, Head Transmission Planning, Tata Power, deliberated on the concept of Smart Metering Solutions.

Mr. Vikram Gandotra, Siemans, dwelt on the concept of Self Healing Networks – future of urban power grid. He supported the concept by explaining Singapore's model.

Smart Session 3: Smart Water Solution and Waste Minimisation.

This session was Chaired by Dr. PC Jain and Co-Chaired by Mr. Amitabha Ghoshal, Stup.Dr. Jain said that when he was born in 1936, there were clean rivers and abundant water supply. In these past 50 to 60 years all water bodies have been ruined.

The first speaker was Dr. PN Ravindra, EE, BWSSB. His talk was on ICT initiatives for water supply system using wireless networks and mobile metering.

Mr. Dilip G. Sonwane, GSH, Urban Development, TCE was the next speaker. His topic was Smart Water Management – a BAPL case study. He explained the complexities in implementing smart water metering and saving capital cost of over Rs. 17 Cr. in the BAPL project.

Mr. Amitava Basu, President ICT, said that unless we encourage clean & hygenic living and focus on municipal waste management, we are unlikely to move towards a smart city.

Mr. NavinPorika, Dy Manager, EIL, presented a case study on water reclamation – towards water smart city and highlighted the social benefits for his solution.

The second day opened with a Plenary Session on Transport Systems. Smt Sheila Dikshit, Former Chief Ministry of Delhi was the Chief Guest for this session. She shared with participants on her vision for Delhi and how it was achieved during her 15 years tenure as Chief Minister of Delhi. She mentioned metro style of transportation for people coming from outside Delhi gives picture of India. However, she compared the Cantonment area and other parts of the cities in the quality of maintenance and cleanness. She said during her tenure, over 70 flyovers and good roads were constructed and the Barapula Flyover has given easy connectivity with East Delhi and South Delhi. As per her vision, smart city would have good health care, good education, housing for poor, and provide clean water.

During this plenary session Dr Mangu Singh, Managing Director, DMRC delivered a keynote address.

Smart Session 4: Smart Transportation

Dr Mangu Singh, Managing Director, DMRC chaired this Session. It was co-chaired by Mr S C Mehrotra, Co-Chairman of Seminar Advisory Committee.

Mr Mangu Singh said that the transportation is back bone of a city but traffic scenario in even medium city is bad. Also, average low speed, congestion, road accidents are major issues in cities. However, Delhi has shown a way by integration of public transport through implementation of metro service. He suggested the need of unified transport authority for proper guidance.

The first speaker of this session Mr Pranavant, Sr Director, Deloitte, talked about the challenges in citieshaving more than one million population. Major challenge being faced by cities is lack of skill development. He stressed upon three main requirements for a smart city i.e.Economical, Environmental and equal investment for all. We need to improve green technologies for achieving intended goals.

As per Mekensey Report, there were 377 million people in cities in 2011 which will be increased by 590 million people by 2030.

Mr AK Purkayastha, General Manager, MECON talked about technology based solution for smart parking and smart traffic lights. "The way forward" suggested by him are priority to mobility of people, wealthy use of public transport for making an advance city, make parking a commodity, smart payment and ticketing etc.

Smart Session 5: Smart IT, Communications & System Integration

Dr. Sudhir Krishna, Former Secretary, MoUD, chaired this session. It was co-chaired by Mr Deepak Agarwal, Director General, Consultancy Development Centre.

Mr Gopi Krishna, Executive Vice President & COO of Voltas Ltd presented his views on enabling the smart cities. Smart city must have safe environment, lower energy consumption and adequate quantity of water. Smart city is designed in layers such as service layer below physical layer, control layer, intelligent layer. There must be data base analysis to provide smart solutions, smartness required a wide variety of sensors. Smart city required role of systems integrator.

Mr Chandan Ghosh, Head, Geo-Hazards, NIDM talked about Disaster Resilient Smart City. He said we wait for the crisis to occur and then moving into find a solution. Instead, we must have adequate disaster management. He suggested that building in smart city zone must be tagged foratleast 100 years guarantee/ warrantee. We should check vulnerability of buildings, weather and metrological predictions.

Mr Kamal Gulati presented his experience on Internet of things (IoT) and Internet of every thing (IoE). He explained the concept of internet of things comprising Deivce, Network and application. He suggested the need of installing sensorson bridges and buildings.

Mr Ajay Gupta, GM, Siemens said that city surveillance to be engineered and brought at one platform. Meaning of terrorism is changing. He stressed the need of situational awareness. We must have a top down approach.

While summarizing the session, Co-Chairman, Mr Deepak Agarwal, said IT being the biggest unifier brings safety and support various systems.

Smart Session 6: Role of Engineers in Engineering Smart Cities

The last session emphasis was on the role of engineers and engineering in the development of smart cities which was chaired by Mr Amit Sharma, ED and COO of Tata Consulting Engineers and co-chaired by Dr S Chatterjee, Past President CEAI.

Mr. BK Sinha, Head - Civil, Bureau of Indian Standards (BIS) presented his view on Standardisation – the way forward. He said that the Indian Economy slowly shifting from rural areas to urban cities and towns and eventually from 31% of the urban population to 50% urban population by 2031. In order to cater to the aspirations of the people, it is necessary to modernise our cities. Mr Sinha referred to the international standards that provide guidelines and mentioned how BIS has formed CED59, a sectional committee on the 'Standardisation in the field of Smart Cities'. This would cover the components of planning, design, integration, implementation, operation, maintenance, assessment, etc.

Mr S Raghupati, Sr. Associate Director, UDP Intl., talked about Master Plan of KLCC development as a Smart City in Kuala Lumpur. Mr Raghupathy made a presentation on the development of Kuala Lumpur City Centre. He brought out the importance of program management for well coordinated and effective implementation of projects. He recommended to create separate chapter in NBC / CDP for development norms / regulations for Urban Design aspects ensuring responsiveness to people / pedestrians.

Mr. U K Mitra, Sr GM, Holtec talked about Social Infrastructure required for a smart city. Sustainable slum development with modern amenities is important so that they form an integral part of the Smart city development. Engineers have a major role in this. He recommended to develop a standard tender document for implementation of slum / area development project, in-house or through consultant.

Mr. Jasvinder Singh, DGM, MECON, talked about Planning Smart Cities - The GIS Approach. GIS is an important tool with exhaustive parameters which can be used when developing a Smart city by policy makers, planners, developers and implementers. He recommended to create GIS base for maps for all cities, including mapping of all revenue records, municipal services, utility networks, etc. Advancements in space technology leading to high resolution image capturing, aerial photogrammetry, high end computer graphical modelling, intuitive analytical tools on software front, all need to be utilized to the fullest extent.

A valedictory session was held at the end of the seminar. Dignitaries at the dais were Mr S C Mehrotra, Co-chairperson of the Seminar Advisory Committee, Mr Sudhir Dhawan, President CEAI, Ms Sayona Philip, TCE, Mr A P Singh, MECON, Ms Jayasree Kurup, Times of India.

Mr Somenath Ghosh, Chief Rapporteur and Honorary Secretary CEAI presented report of the two-day seminar.

CEAI ANNUAL GENERAL MEETING

19th Annual General Meeting of the CEAI was held on 31st October 2015 at 12 noon at CEAI Centre, Vasant Kunj, New Delhi 110070. 24 CEAI members attended the AGM. During the meeting following business was transacted:

(i) Confirmation of Minutes of 18th AGM held on 20th December 2014
(ii) Adoption of Annual Report of CEAI ending 31st March 2015
(iii) Passing of Audited Accounts of Association for the year ended 31st March 2015.
(iv) Appointment of M/s A.L. Sehgal & Company as Auditor for financial year 2015-16
(v) Extension of support to save Hall of Nations at Pragati Maidan which is a unique creation of joint efforts of Shri Mahendra Raj & Shri Raj Rewal.

NATIONAL REGISTER OF ENGINEERS

CEAI has taken initiative to establish 'NationalRegisterofEngineers' in collaboration with other professional associations ie IAstructE, ACCE(I) and ECI.

To encourage more members to join this forum, it has been decided to waive the Processing fee and the registration fee for two years from our members and others as mentioned in the application form till further notice.

Members are, therefore, requested to support the cause for solidarity ofengineers promoted by CEAI.

Application form for registration is available from CEAI Secretariat. A soft copy of the same has already been sent to all members. Please forward your applications at the earliest.

Participation of CEAI at 13th International Conference & Exhibition on Sustainable Habitat & Smart Cities held at Jaipur on December 9,10 & 11, 2015 by Municipalika

1.0 The above event was 13th in the series of Municipalika and was basically organized by "Good Governance India Foundation" with lead role by Mr V Suresh, Advisor to Foundation and Ex CMD of HUDCO at Jaipur Exhibition and Convention Centre, Sitapur, Jaipur.

2.0 The Conference cum Exhibition which had Canada as partner country, Singapore as participating country and US Green Building Council as Associate Partner was inaugurated by Chief Minister of Rajasthan. During the function, the CM awarded many winning entries from students of various Engineering Colleges on **"what type of smart cities they are visualizing and how to create them".**

3.0 Canada being a partner country led by Mr Nadir Patel, High Commissioner, Canada to India brought big delegation with the representation of 44 Canadian Companies. Some of them already have representation in India and some may not. They may be looking for local partners. Therefore, a hard copy of list of such companies has been obtained. Canada High Commission Delhi has agreed to share soft copy as well if required by CEAI.

4.0 CEAI was an Institutional Partner of Municipalika, therefore, one complimentary stall of 2mx3m out of 140 stalls was allocated to CEAI in which CEAI along with its two members ICT & CEG participated. TCE also sent their brochures indicating their capabilities in Engineering Smart Cities. While CEAI projected their activities and its association with FIDIC, a major back drop promoting the National Register of Engineers' was also promoted. ICT demonstrated their popular project in urban infrastructure, CEG exhibited their

overall capability including the facilities available in their test house. A certificate of appreciation was issued by the organisers to CEAI for their participation in the event. CEAI profile was also included in their Souvenir.

5.0 Some visitors enquired about activities of CEAI & collected membership forms (6 nos). One of them pursuing Ph.D, suggested to open membership for College faculty and students also. On intimating the opening of Regional centre at Jaipur, some of them wished to know the details of activities at Jaipur.

6.0 CMD of Jaipur Metro Mr Goyal was contacted and he has shown interest in FIDIC Conditions of Contract Training Programme. He also sought list of FIDIC publication available with CEAI which was given.

As various Metros assisted by ADB and other funding agencies are using FIDIC Conditions, it may be worthwhile to approach all Metros and get their prior estimate of delegates so that one Module of FIDIC training on Conditions of Contract is conducted within this financial year.

7.0 Various Municipal Corporations (Mayors/ Commissioner / CE/ SE/ XEN) of Rajasthan and other States were contracted to assess their requirement for FIDIC Training. Municipal Corporations deal with small value contracts and, therefore, they do not use FIDIC Conditions nor they have shown interest in FIDIC Training.

8.0 Many products manufacturers indicated their interest in giving representation on their products to CEAI member if so desired by CEAI.

Conclusions

i) To enhance visibility, whether to open CEAI membership for faculty members and students.
ii) To approach all Metro Rail Corporations indicating estimated delegates fee for two days module at Delhi in the current financial year and seek number of likely participants in FIDIC Training Programme.
iii) To organizing some technical talks / one day seminar on a current subject at Northern Region as CEG known in Jaipur.
iv) To circulate list of Canadian Companies to members for their benefits.
v) To organize a couple of technical talks /presentation from manufacturers if consider useful.

ASSESSMENT OF EARTHQUAKE PRONE STRUCTURES

CEAI has decided to form small committee to prepare an action plan for some social work. The committee will be headed by Mr. H. S. Dogra former DG CPWD and will comprise of following:

- Mr. H. S. Dogra - Chairman
- Mr. Subhash Mehrotra
- Mr. V. P. Agarwal
- Mr. R. Gogia

Other members wishing to join this team are most welcome. In fact, encouraging response has, in the meantime, been received from our members.

We propose to offer our services to SDMC to help them formulate solutions for strengthening of buildings against earthquake. The preliminary plan of action is:

- SDMC will identify distress buildings and same will be proposed to CEAI for strengthening
- CEAI will get the detailed survey done and also prepare plan of the buildings which do not have
- CEAI will get the structural analysis done and then propose remedial solution.
- SDMC will decide the strengthening work in consultation with owner of the building.

AWARD TO DR PREM C JAIN

ET & Saint Gobain India celebrated 350 years of Saint Gobain.

On the occasion, Indian Green Building Council was awarded for the Indian Institution making the most significant contribution to promoting sustainability in the Construction Industry in India. In the picture, Dr Prem C Jain, Life Member of CEAI is receiving the award.

Intensive efforts of Dr Jain have started to make a difference.

The last one month have brought lots of recognition to IGBC - GBC 2015 Gandhinagar 19-21st November, Washrooms & Beyond Honors Mumbai 2nd December, Municipalika 2015 Jaipur 9th December, and later by Times of India Honeywell Chief of Jury for Smart Building Award.

HOLTEC RECEIVED IEI INDUSTRY EXCELLENCE AWARDS 2015

The Institution of Engineers (India) is the largest body of engineers with about 7.50 lacs members. They instituted the awards for excellence in the year 2008. The awards are considered extremely prestigious and coveted. Proud recipients of the awards include SAIL, Tata Steels Ltd., Kirloskar Brothers Ltd., Larsen & Toubro Ltd., Tata Motors Ltd., Bharat Electronics Ltd., TCS, Neyveli Lignite Corporation Ltd., Bharat Heavy Electricals Ltd., NTPC Ltd., Hindustan Aeronautics Ltd., BrahMos Aerospace Private Limited, Bharat Forge Limited, JK Tyre and Industries Limited and Hindustan Zinc Limited etc.

The awards are in two categories:

1. For Engineering Manufacturing & Processing
2. For Engineering Services & Consultancy

Awards are given to industry/industries selected on the basis of assessment report of the Committee comprising of experts, constituted for the purpose. The assessment Committee comprises of Prof. R.M. Vasagam, Council Member, IEI as Chairman and other Committee Members as Dr. O.N. Mohanty, Mr. P. Chaturvedi, Dr. K. Venkatasubbaiah who are also Members of IEI Council.

This year considering the achievement and performance **Holtec Consulting Private Limited** was selected for IEI Industry Excellence Award 2015 for **Engineering Services & Consultancy.**

The awards were presented during the Inaugural Ceremony of the 30th Indian Engineering Congress organized by The Institution of Engineers (India) on 18 December 2015 at Guwahati. Shri Umesh Shrivastava, Executive Chairman, Holtec Consulting Private Limited received the award in presence of about 700 delegates from Dr. Tathagat Roy, Governor, Tripura.

FIDIC NEWS

FIDIC CONFERENCE AT DUBAI

The FIDIC International Infrastructure Conference 2015 held on 13-15 September 2015 at the Dubai World Trade Centre, Sheikh Rashid Hall.

Deliberations were held on the themes

i) FIDIC Best Business Practice Forum
(ii) Infrastructure Outlook "It's A Small World"
(iii) Market Efficiency.

FIDIC honoured Mr. Subhash Mehrotra in Awards Function held during Gala Dinner on 14th September 2015 during the FIDIC Annual Conference in Dubai for his dedicated services for the past 10 years as Chairman Membership Committee of FIDIC.

FIDIC YOUNG PROFESSIONALS AWARD 2016 – CALL FOR NOMINATIONS

FIDIC and the FIDIC Young Professionals Forum are pleased to announce the launch of the FIDIC Young Professionals Award in 2016.

The purpose of the Young Professionals Award is to highlight and promote the talent of next generation leaders in the consultancy engineering industry across the world, and to encourage an active and effective participation of FIDIC young professionals (YPs) for maintaining the sustainable development of the industry.

The YP Award is open to all young professionals (YPs) aged 40 and under and working for consulting engineering firms that are members of FIDIC Member Associations.

The Awards competition provides an opportunity for Member Associations to reach a larger number of YPs in

your country and encourages their membership in your association. It is also an opportunity to recognise and promote the activities of your current YP groups, and the added value they bring to the industry.

The Award winner will receive complementary registration to the FIDIC International Infrastructure Conference in Marrakesh (25-27 September), and an invitation to attend the FIDIC Gala Award Dinner.

The instructions and the nomination form have already been forwarded to all members. Interested young professionals are requested to submit their nominations before 26th February 2016 to CEAI Secretariat.

For more details visit FIDIC website www.fidic.org

OTHER NEWS, VIEWS & NOTES

ECI EMINENT ENGINEER AWARD

Engineering Council of India (ECI) proposed to give Eminent Engineers Awards, 2016 to two eminent persons with engineering background who have contributed significantly to the industry category and the second to the research and consultancy category of engineering profession. As in the last year, two Awards will be given, one in the industry category and the second research and consultancy category, which will be conferred on the winners at the Foundation Day function to be held on April 4, 2016 at New Delhi.

An independent Top-Level Jury for selecting the winners for the Award had been constituted, under the Chairmanship of Dr Kirit S. Parikh, Chairman Integrated Research and Action for Development (IRADe) and former Member, Planning Commission, for selecting the awardees.

ECI invites nominations from corporate sector, industry associations, professional associations of engineers, government bodies, academic and research institutions, etc.

Criteria for the Award

"Eminent Engineer Award" is to be given to a person with engineering background who has made most distinctive and extraordinary contributions to any field of engineering, be it in academics, research, design, consultancy, project implementation, industry, while holding top level engineering/management positions in corporate, government, industry, academic, research and other institutions, etc.

He/she should:

i) Have demonstrated exceptional innovative thinking and exemplary leadership qualities.

ii) Have impeccable and unblemished record, with no record of any disciplinary or criminal proceedings.

iii) Have impacted significantly to the cause of sustainable economic development and social welfare.

For more details contact : Mr. B. R. Jain, Director, Engineering Council of India, 1304, Hemkunt Chambers, 89, Nehru Place, New Delhi-110019, Ph: +91 – 11 – 26283281, Fax: +91 – 11 – 26283283, Mobile: +91 - 87500 65714, Email: director@ecindia.org

VIEW POINT

Input from Members

The next issue of the View Point will be published in April 2016. Members are requested to send articles and other material for incorporation in the next issue of View Point by 31st March 2016. The material could inter alia comprise:

- Technical articles
- Photographs of current or completed projects (completed in last one year)
- Awards received by an individual/ organization
- Any other news of members interest.

MORTH CIRCULAR

With continued efforts of CEAI and its members particularly Mr Atul Bhobe of S N Bhobe & Associates Pvt. Ltd and Mr K K Kapila, CMD, ICT Pvt Ltd, Ministry of Road Transport & Highways has finally issued this circular acknowledging the efforts of CEAI. The same is being reproduced here under:

GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS

A-5, Sec.62, IAHE Campus,
Institutional Area, Noida, U.P.

No. RW-NH- 34048/7/2013-S&R (B) Dated -1st January, 2016

To,

1 The Principal Secretaries /Secretaries of all States/U.Ts. Public Works Department dealing with National Highways, and other Centrally Sponsored Schemes.
2 The Engineers-in-Chief and Chief Engineers of Public Works Departments of States/U.Ts dealing with National Highways, and other Centrally Sponsored Schemes .
3 Director General (Border Roads), Seema Sadak Bhawan, Ring Road, New Delhi-110 010.
4 The Chairman, National Highways Authority of India, G-5&6, Sector-10, Dwarka, New Delhi-110 075
5 Director, Indian Academy of Highway Engineers, Noida, UP.
6 The Managing Director, NHIDCL, PTI Building, New Delhi-110001.

Subject: Procurement of consultants for Independent Engineer/ Authority Engineer /Preparation of DPR -Reg. Amendments.

Madam/Sir,

Ministry has received representation from Consulting Engineers Association of India for improving certain Terms and Conditions for engagement of consultants in the existing RFP document. The existing provisions of RFP on the issue of return of earnest money deposit and debarment of consultants have been reviewed in the Ministry and following modifications have been made.

2.1 Ministry has decided that earnest money deposit may be returned to all the bidders except preferred and next preferred bidder within a week of opening of their financial bids. Further, the earnest money deposit of next preferred bidder may be returned within a week of issue of LOA.

2.2 Ministry has decided that conditions barring Consultants from participating in the bid due to non-performance in the past shall be in line with the existing policy in this regard for Civil Contracts issued vide Ministry's policy circular dated 5th October, 2015 for EPC projects. Accordingly a suitable para as given below should be incorporated in RFP.

"The Bidder including individual or any of its Joint Venture Member should, in the last 2 years, have neither failed to perform for the works of Expressways, National Highways, ISC & EI works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder including individual or any of its Joint Venture Member, as the case may be, nor has been expelled or terminated by Ministry of Road Transport & Highways or its implementing agencies for breach by such Bidder including individual or any of its Joint Venture Member".

3. The contents of the circular may be brought to the notice of all concerned in your organization.

Yours faithfully,

01/01/2016

(Devender Kumar)
Assistant Executive Engineer Engineer [S&R (Bridge)]
For Director General (Road Development) & SS

Copy for information and necessary action to:

7 All Technical officers in the Ministry of Road Transport & Highways
8 All ROs and ELOs
9 The Secretary General, Indian Roads Congress- With request to publish in Indian Highways Journal
10 Technical Circular File of S&R (B) Section
11 NIC- for uploading MoRT&H's website under "What is new".

Copy for kind information to:

12 PS to Hon'ble Minister (RTH&S)
13 PS to Hon'ble MOS(RTH&S)
14 Sr. PPS to Secretary (RT&H)
15 PPS to DG (RD) & SS
16 PPS to JS&FA
17 PS to ADG-I/ADG-II
18 PS to JS(T)/JS(H)/JS(LA)/JS(EIC)

ADVERTISEMENT IN VIEW POINT

VIEW POINT is quarterly publication. It is circulated to all CEAI Members, Government Departments, Public/ Private Sector Undertakings, Construction Firms, Contractors, Consultants, Foreign missions in India and others related to engineering profession.

In order to encourage members and others, we have reduced the advertisement tariff considerably.

The advertisement tariffs per issue are given below:

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	Inside Front Cover	-	Rs. 10,000/-
	Inside Back Cover	-	Rs. 10,000/-
	Full Page	-	Rs. 5,000/-

In case the advertisement is to be inserted in consecutive four or more issues of View Point, a rebate of 20% will be admissible.

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