AUGUST 2015

VIEWPOINT

OFFICIAL QUARTERLY MAGAZINE OF CEAI

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Consulting Engineers Association of India

Women Engineers of MECON towards Engineering Excellence

MECON LIMITED
(A Government of India Enterprise)

A House of Engineering Excellence ... Aiming beyond...

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Message from Chief Editor

Dear Fellow Consulting Engineers,

Engineering is perhaps the largest knowledge based profession and, as one of the past President of FIDIC, William D Lewis, had put it 'the largest contribution to the quality of life that we enjoy today is made by engineers'. Their role, contribution and importance to the society need to be recognized in public at large. Engineers are mostly shy to tell the stories of their own accomplishments, in their proper perspective to the society at large. As Engr. Lewis adds, '…. Let the public visualize a world without engineering …. A world without bridges, tall buildings, clean water, electricity, communication, rapid transportation'. We have to reverse this situation, if we have to get our due place in the society. We have to 'step out of the shadow of anonymity and exercise leadership'.

It is most unfortunate that in India, the Government by large, for more than the past six decades, did not and have not yet appreciated the need to regulate and recognize the engineering profession by statute. On the top of that, our compatriots from the complementary profession of Architecture are willfully misinterpreting the existing law to create a monopoly of sorts. We commented on this matter in the last issue of View Point. CEAI, along with Indian Association of Structural Engineers, Association of Consulting Civil Engineers and Institution of Engineers (India) have taken some initiatives in this direction, since forming of the Engineers Action Group, early this year, to effectively represent the engineering fraternity and looking after its interests in a sustained manner.

Apart from pursuing the legislation for Engineers, which is of paramount importance, we have some immediate challenges to face. All these emanate from a rather blurred vision of the administration that results in their losing sight of the irreplaceable contribution of engineers. Apparently they do not fully comprehend and thereby appreciate the crucial and overwhelmingly major role of the engineers in all kind of development, operational and maintenance schemes in all projects. In fact, in some cases, the engineers are practically sidelined, from participating in the decision process, in spite of engineer's readiness to contribute in the discussions and the decision process. This is evident from the manner in which the Government chose to conduct the drawing up of Unified Building Bye Laws (UBBL), Model Building Bye Laws by TCPO, the Inter Ministerial Group (IMG) meeting on Export of architectural services and the like.

The Ministry of Urban Development, Government of India, entrusted the Delhi Urban Art Commission (DUAC) with framing of the draft UBBL for Delhi. Practicing Engineers were not invited for participating in code of such significance. Even their suggestions

were mostly ignored. The Delhi Development Authority (DDA) is responsible for the final processing of the UBBL draft, as prepared by the DUAC. Representatives from the Engineers met the Lieutenant Governor of NCT of Delhi to draw his personal attention to the matter. That was followed by a meeting with the Engineer Member, DDA and his senior officials to explain the observations and comments of the Engineers on a few important aspects of the UBBL draft. Specific comments and suggestions on the relevant provisions in the draft have also been conveyed to DDA and have emphasized the need to stipulate compliance with the National Building Code (NBC).

Thereafter Mr. Sudhir Dhawan, President, Mr. V. P. Agarwal, Mr. Alok Bhowmick and Dr. S Chatterjee had a meaningful meeting with the Principal Secretary, PWD, Government of Delhi, along with the Engineer in Chief, PWD. The next meeting was with the Hon'ble Minister of PWD, Government of Delhi, to apprise him of the issues pertaining to regulating the engineers in private practice and the possibility of the Government of Delhi issuing a notification on registration of engineers in Delhi for conducting Safety Audit of Buildings, introduction of Professional Engineers Act in Delhi, as was done in Gujarat in the aftermath of Gujarat earthquake and capacity building exercise for earthquake resistant design.

The observations and suggestions of the Engineers were well appreciated by all and the task to empanel private practicing structural engineers for Safety Certifications has been set into motion by the Principal Secretary, PWD, Delhi. CEAI is now initiated the process of preparing the draft format for this procedure to be submitted to the Engineer-in-Chief, PWD, Delhi.

A subsequent meeting with Chief Town Planner, DDA to discuss the Model Building Bye Laws was also fruitful as these would be applicable for implementation by all States. We expect that the recommendations proposed by the Engineers would be favourably incorporated in their final document.

Best regards,

Samarjit Chatterjee

Quality of Human Resource in Emerging Countries
- Genesis And Way Forward

Amitabha Ghoshal*
CEAI

Preface

Inadequate Quality of human resource in countries entering the Development Phase is an accepted problem, but its effects are a major challenge for the knowledge based vocations like Engineering Consultancy. With the wane of colonial rules across Asia and Africa, there has been a surge of Developmental ambitions in all the countries that have long suffered from political and commercial exploitation during the past centuries.

For rapid development of industry and trade, the aspiring Governments find lack of physical infrastructure as the biggest threat and they want to get over this hurdle by creating new facilities fast. Many of them got over the other big problem of funds by borrowing from International Financing Institutions. The next problem is that of qualified skilled manpower and many wellconceived development plans are suffering from poor quality of output, as also interminable delays in execution, on this account. Creation of skilled manpower to address the rising demand, and training them to deliver quality, is a serious challenge for all these countries. Some countries have developed their home bred solutions that have started making a positive impact on the development pace. It is desirable that the experiences of various countries are critically examined and the new entrants to the development race benefit from experience of others.

Historical Background

Today's emerging markets are necessarily the countries that had missed out on the Industrial Revolution that took place from around the mid 18thcentury to the mid 19thcentury in various countries spread across Europe.

The world, that had been dependant on Agriculture and Trade for thousands of years, suddenly became exposed to rapid revolutionary changes with the invention of Steam Engine, Internal Combustion Engine, Electricity, Printing Technology (that made knowledge easily shareable) and Manufacturing Process for Metals, and all of these happened within the confines of Europe. These introduced radical changes in the agriculture process, the system of production of goods, transport and trade, mining and metallurgy, and more importantly development of mechanised arms like the rifle and rapid action guns!

Capitalism developed with hitherto middle class gaining control over manufacturing process and they started ruling over workers and got indirect control over government decisions. Capitalists required two main inputs for making windfall profits - cheap supply of raw materials and ready market for selling their product. Colonisation of countries, who did not have exposure to the benefits of Industrialisation, became the easy route.

Thus, countries in Asia and Africa, who were the leaders of civilisation, particularly civilisations that grew in the riverine deposits like Nile, Tigris-Euphrates, Indus-Ganges, Mekong, Yangsikiang, became colonised. The world got divided into two distinct entities with high level of disparity in scale of economy and wealth. This disparity went on increasing rapidly with systematic transfer of resources, introduction of education system that suited the requirements of administering the colony, deterioration and eventual elimination of all traditional skills and knowledge that were appropriate for the environment.

The population of the countries under foreign control lost all self respect and got imbibed with borrowed technologies. The pace of development within their country slowed down and was not directed towards creation of national wealth or improvement of living conditions of the populace.

After the two great World Wars, that were indirect effect of colonisation, the colonial rules started getting dismantled starting from mid 20th century. In parallel, the monarchies started getting replaced by new regimes born out of revolutions, which sometimes were bloody and costly in terms of human sufferings. All these new regimes, poverty stricken and with poor Institutional Capacity, faced the rising ambi-

* Chief Advisor to Board of Directors, STUP Consultants Pvt. Ltd., India
The Author made a presentation on this theme to the FIDIC-ASPAC conference at Tehran in May 2015.

tion of population hungry for closing the gap in development status and wealth with the countries that have achieved very high levels of living standard with the benefit of capitalist achievements in colonial environment.

The Slow Climb

The new regimes initially had to depend on the expatriates that were manning the senior positions, and encouraged the native staff to take over responsibility. Some succeeded, but most were very slow to adapt themselves to the new responsibility, given the reluctance of the serving managers to train and the lack of self confidence of the trainees. Gradually, the locals took over responsibility, but there were initial complaints on quality issue, specially on managerial aspects. The problem became acute with sudden growth of demands of technical manpower. There were very few technical institutions that provided quality education and training facilities. There was capacity expansion of these followed by creation of new institutions. To meet the ever increasing demand of technical manpower new institutions are set up rapidly, without appropriate infrastructure and training facilities. Lack of trained teachers with proper experience is the other reason for poor quality of the students coming out of these institutions.

The pace of growth of trained engineers can be understood by the Indian statistics: in 1950 the country had less than ten engineering colleges and by the turn of the century the number has gone up to over 5,000 and the production has risen from two thousand to more than a million. Every country is finding its own solution. Countries like Malaysia and Indonesia, who have resources that can be exported, initially depended on consultants and contractors from developed countries and made training of local engineers by the foreign firms mandatory. This brought good results eventually. Countries like India, that were short of foreign exchange, had to depend mostly on training of local manpower through multiple route.

Some of the efforts that gave good result are

- On job training of new entrants by senior staff.
- Continuing education course run by professional bodies like Institution of Engineers, where faculty included trained senior engineers from design firms and construction firms.
- Deputation of selected young professionals to developed countries for further education and on job training. Such opportunities are availed by young engineers by individual enterprise also, but often such trained staff opts to stay back in the country of training.
- For training of teachers, increased interaction between Industry and Academia is encouraged. This has been bringing rich dividend both for teachers and the Industry.
- Teacher training programme and exchange programme with developed countries have yielded good result
- Setting up of Centres of Excellence in Engineering education, e.g, Bandung University in Indonesia, BUET IN Bangladesh, IITs in India, has helped push up standards of education. Products of such Centres have received acceptance internationally and in the process set up good examples to follow by other academia.
- Opportunities have been created for distant education courses under Open Universities for upgrading skill of working persons.

While such localised efforts are making a change for the better, there exists a big gap between emerging countries and the developed country standards. The demand dictates production of technocrats in large numbers, but with limited infrastructure and trained manpower constraint, the quality is improving albeit slowly. Uncontrolled production of technical manpower creates problem of unemployment and more importantly generate unemployable technical manpower.

Role of ASPAC

Trans-national bodies like FIDIC Member Associations in The Asia-Pacific Region (ASPAC) can provide valuable support in lifting the standards by sharing experiences and facilities available in the region.

- ASPAC can expedite creation of a Regional Training Centre where courses can be run on specialised subjects by arranging International Faculty to train multi country trainees, nominated by respective Member Associations (MAs)
- A centre for Transfer of Technology, that will help spread latest developments in Engineering field, will be of great help to ASPAC members and same can be initiated by ASPAC.
- A Data Base of trained manpower from member countries and facilities for transfer of such skilled personnel across them can help in upgrading the quality standards.
- Continuing Education Courses run by member countries can be publicised through Newsletter and all members encouraged to make entry to such courses possible.
- Entry to Centres of Excellence of technical education can be made open to regional country students and exchange of Faculty Members encouraged.

Conclusion

It is important to note that technical manpower from these emerging countries produce excellent results when working in developed countries, when on deputation or when attending higher studies in renowned universities. The problem is not in quality of manpower but that of the technical environment and of training facilities! It is for FIDIC-ASPAC to put together thoughts and solve this problem fast, for benefit of the emerging countries.

Learning The Unconventional Way:
Consultancy Services for Landside Development at Angre Port

Manish Kumar
Manager Civil,
Tata Consulting Engineers Ltd.

Angre Port at Jaigad, Ratnagiri Maharashtra was a unique project involving TCE. It's not that TCE has not worked on ports earlier, but the context and priorities on this project made it unique. This paper highlights some key challenges faced by the team.

TCE being a knowledge based organization which dwells on continual improvement and innovations, learning is pretty much a routine. What made this learning experience different from day to day learning was the pace at which the project had to move and the accuracy that was needed to be maintained. The team had to hit the road running and in spite of hitting bumps every now and then, the team managed to stay on course. The team defied limitations and rose to the occasion, and tasted success with perseverance and hard work.

As the famous businessman Eli Broad once said *"To me, unconventional thinking is approaching a problem and asking, 'Why not? Why can't something be done?' If someone can't give me a good reason why you can't do something, I find a way to do it."*

Introduction

Angre Ports Private Limited, a constituent company of the Chowgule Group, has established a cargo handling facility in Ratnagiri at Jaigad. Adjacent to the cargo handling facility, Lavgan Dockyard Private Limited, another constituent company of the Chowgule Group, has established a ship repair facility. Jaigad is one of the seven identified locations for development of port facilities by Government of Maharashtra under the BOOST Scheme. The port is located in Ratnagiri District along the southern bank of Shastri River and is approximately 110 nautical miles south of Mumbai. The proposed location is well protected by the surrounding hill and the land mass from the monsoon winds and waves.

Bird's Eye View of Cargo Jetty with Container Yard in Background

Ship Repair Yard

Angre Port is a futuristic terminal offering year-round handling and storage facilities for containers, dry but and liquid cargo. There are four berths, three multipurpose berths and one liquid cargo berth. With a draft of 13m, Angre Port is equipped to handle vessels of up to 35,000 DWT including handy size vessels.

120,000 sq m of secure customs notified storage space is located adjacent to the Cargo Jetty. This area is equipped to offer customers a wide range of services including dry bulk, break bulk and unitized cargo facilities. Open area storage together with covered transit shed availability are provided in this are. The area is fully serviced and is equipped with first class fire fighting facilities throughout.

A further are of 20,000 sq m is being prepared to accommodate the construction of a tank farm facility where molasses and other liquid cargo will be handled and stored.

The ship repair yard is centered around a 12,500 Gross tonne state-of-the-art ship lift system. There are six dry repair berths and three wet repair berths, and the yard can handle repair of up to nine vessels at a time. Vessels up to 140 m length and 10,000 DWT can be repaired at this facility.

TCE's Contribution

Perkins Eastman Design Consultants India Private Limited were appointed for the overall design of the master plan, buildings and ancillary land development. TCE was a sub-consultant engaged to further develop the details, determine the requirements and distribution of all utilities primarily for the landside of the development plan plus to distribute utilities to the pier structures.

Hand Drawn Master Plan, Credits Mr. Chaitanya Karnik, Perkins Eastman

Challenges Faced

Dublin Port Company had already been appointed to prepare the marine side master plan for both these facilities and a structural consultant was also hired for the engineering of the marine structures before TCE came on board the project. By then the master plan had already been prepared, construction of cargo jetty was underway, excavation for ship repair yard was in progress and reclamation of container yard was in advance stages. It was an elegant master plan but that also meant limited flexibility in terms of major changes and intense agility was expected to deal with technical issues in context to decisions already made.

Fire Water Pump House on Mooring Dolphin: The plan was to provide a Central Fire Fighting capability for Port Jetty, Cargo Terminal and Ship Repair Yard. After considering and evaluating various alternatives, a pump house on a portion of the mooring dolphin was found to be the most cost effective solution with operational flexibilities and was finally implemented.

Fire Water Pump House on Mooring Dolphin

Utility Catwalk along the Approach Jetty

Fire Monitor on Cargo Jetty with Foam Concentrate Line

Utilities Distribution at the Cargo Jetty: Routing of utilities on the cargo jetty also posed a unique challenge since the design and drawings based on which the construction of jetty had begun didn't have adequate provision for utilities. After few brain storming sessions and several rounds of discussion with the stakeholders a utility catwalk was conceptualized.

The steel catwalk was designed to hang on the downwind side of the approach jetty, as the windward side was designated for docking tug boats. To make sure that there were no conflicts in the proposed scheme and that the construction could continue efficiently, detailed drawings were prepared right at the concept stage.

The catwalk carried the utilities to the main berth from where they were then taken into a narrow trench in the middle of the berth. In order to fit the utilities in restricted space, water and foam concentrates were conveyed separately in smaller diamerter pipes and mixed at the foam monitor.

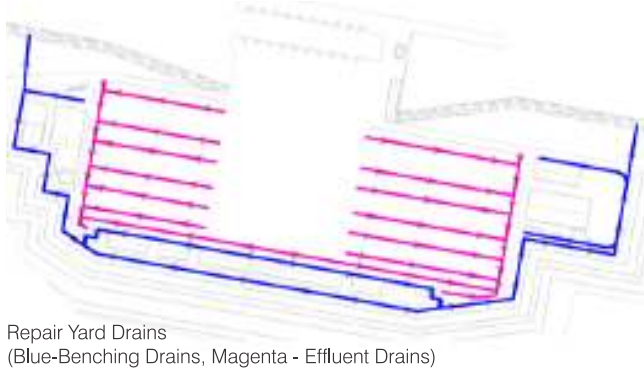
Design of Container Yard Pavement: The stacking of containers was proposed to be done by reach stackers. There again it was a challenge to design the pavement, resting on reclaimed land, which could take care of the axel loads of a reach stacker. The font axle load being around 110T and since no codes included such loads, discussions were held with academic and research institutes and it was then decided by TCE that the pavement would be designed in line with the MORSTH guidelines. Alternatives were worked out, One with rigid pavement and other with paver blocks. Taking into account the cost, ease of construction, phasing, extension and other business parameters, the alternative with paver blocks was adopted.

Design of Ship Repair Yard Buildings and Utilities: The site for the ship repair yard was prepared by excavating more than 2 million cubic meters of laterite and basalt rock. As per the operational requirements the finished level for the ship repair yard was required to be 6.6 m with respect to Chart Datum. The restriction of top and bottom levels raised fairly complex challenges.

Some of the buildings / workshops in the repair yard were about 30m high and up to 90m long. Being located at the shore line these buildings are exposed to very high wind loads and consequently, high uplift pressures. Normally uplift is countered by the dead weight of the structure and its

Workshops in Ship Repair Yard

A View of Repair Yard Benching 60m High



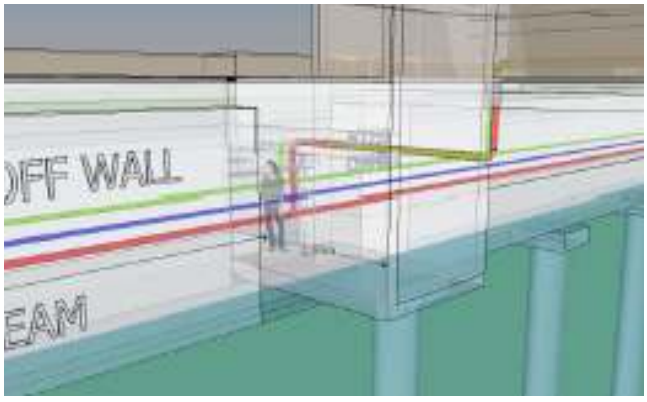
Repair Yard Drains
(Blue-Benching Drains, Magenta - Effluent Drains)

foundation. In this case, the depth required additional excavation in basalt which was difficult, expensive and a time consuming process. Hence to restrict the depth of foundation to 800 mm below finished floor level, the isolated foundations were anchored to the ground using anchor bolts. In a few specific cases the anchor bolts used were pre tensioned. However, for two large workshops, nominal localized excavation was carried out.

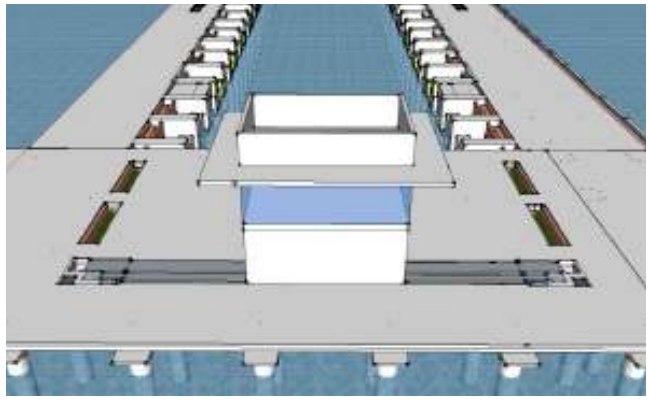
This restriction in depth of excavation also imposed a tough challenge by restricting the depth for storm water drains and sewer lines The port falls in a high rainfall area and receives more than 4000 mm of rainfall annually. The entire repair yard was planned at one level due to operational constraints. Besides, most ships come in for repair during the monsoon season.

The drainage needed to be designed for draining the peak runoff from ship repair yard slab and at the same time preventing the runoff from the benching (nearly vertical ~ 60m high cliff) from rushing into the yard. Again after evaluating options, two independent drainages were provided. One as a benching drain and the other system for effluent drains for collecting effluent from the repair yard and workshops. These drains were led to treatment plants.

The routing of utilities, specially electrical (HT and LT), fire fighting and water supply within the yard and on the piers



3D Model of Unitility Transfer from Landside to Marine Side


3D Model for Cable Routing from Control Room and Hoist Pits

was particularly difficult because of operational requirements and space constraint cliff on the southern side and sea on the northern side plus a complex network of rails in the transfer and repair yards. This problem was compounded by the dense network of storm and effluent drains.

The utilities were therefore laid to form a ring around the repair yard and tap offs were provided for repair berths and buildings. Utilities were to be laid in trenches on all sides except the north where a utility tunnel was provided.

The transition of cables and pipes from the utility tunnel to the marine side was extremely complicated because of the number of turns and minimum turning radii limitations of the cables. In order to make sure that the arrangement would work, a detailed 3d model was prepared for conflict resolution.


Transfer of Electrical Cables from Landside to Marine Side

Cabling for Ship Lift Synchronous Motors: A rather unique situation was faced while routing the power, control and signal cables from ship lift control room to twenty hoist motors (ten on each side of the ship lift table) and six capstans, through the pier structure, since the structure which had already been designed by the marine structural consultant provided very little scope for change in design.

There being no margin for error, a 3D model was prepared detailing the structural components and various routing options were then deliberated. The final routing scheme which could meet all the functional and operational requirements involved a raceway in the floor to take the cables from Control Room to an access chamber and then run, through an array of conduit segments cast in the beams to the hoist pits.

Learnings

Working on the project gave the team insights about how the engineering solutions have to be devised while still complying with codal requirements. As engineers to a project of this nature, where there are multiple stakeholders, client priorities are based on business plans, investments, site context and constraints the engineering solution needs to take all these into consideration but without sacrificing mandatory technical requirements.

> *" Without your involvement you can't succceed. With your involvement you can't fail."*
>
> *- Dr. A.P.J. Abdul Kalam*

Role of Mecon Women in Emerging India

Our country is changing politically, economically and socially, very rapidly. The place of a woman in free India is becoming more and more secure with the change of times. She has begun to take her due place and her voice is heard as forcefully as that of the man. She is becoming an equal partner in the conceptualization of Emerging India!

MECON is a customer focused organization, providing globally competitive value added consultancy, engineering, turnkey execution and project management services and emerging as an engineering think tank for the country. With its empowered women employees working hand in hand, it becomes even simpler to achieve the colossal goals for the nation's ambitious development plans. This also in turn works as an inspiration to work in MECON for women, because they know that projects executed at MECON are projects executed for the nation.

Over the last 5 decades, MECON has been involved in 'Nation building' by way of contributing to its economic growth, as Consultant to various mega projects in Steel & other sectors like Power, Oil & Gas and Infrastructure. MECON's workforce comprise women employees more than 15% and they take pride in being equal partners in contributing towards such nation building activities by being associated in execution of various projects from Concept to Commissioning. They work hand in hand with their male counterparts in every sphere of project execution. They are associated with conceptualization of projects, designing of various technological units & services units related to a project, monitoring construction & progress at site, as well as, commissioning of each of such units.

As more women pursue careers in engineering and technology, MECON has sought to develop initiatives to evolve them as highly proficient individuals. MECON has identified the value of empowering women and has therefore tried to make their life easier to facilitate a proper work- life balance. Empowering women and achieving gender equality has always been of prime importance to the organization. MECON helps its women employees to gather experience and expertise and imbibes in them qualities like independence, radical thinking, Leadership and decision making abilities. Our company has always followed the policy of equal rights and opportunities with an exemplary model to assure our women the respect & dignity of professional growth, a safe environment and a perfect place to learn and execute projects that will take our nation to greater heights.

"I am no bird; and no net ensnares me: I am a free human being with an independent will."

MECON women not only enjoy the luxury of working in metro offices but also take care of site related activities at remote places under adverse conditions, challenging environments with constraints in available resources. Women in MECON have always played a vital role in numerous projects, at sites and at engineering offices. Their intellect, sincerity & dedication have always been and are an asset to the company. They have been allotted critical projects without any gender bias and they have taken it up with utmost professional probity to deliver the same on time to the satisfaction of all. We have women engineers and professionals, looking after almost all technical as well as managerial disciplines, contributing in the overall development of the organization. Our women employees are also involved in Community Development activities by actively participating in various CSR initiatives of the organization.

MECON Women's career advancement is promoted through personal mentoring programs and quick grievance redressal cell such as sexual harassment cell, of which we are proud not to have registered a single complaint since the beginning. The atmosphere provided to them is conducive for them to excel in their professional commitments without the hassles of personal impediment. The women feel safe and cared-for, both at our engineering offices and our site offices, which in turn aid to their competence to walk shoulder-to-shoulder with their male counterparts.

MECON is registering with WIPS (Women in Public Sector) and we believe that this will further give our women employees the exposure of interactions with other women in Public sectors. It will also be a means of learning to enhance their effectiveness in both career management and in overall development as an individual, which can then be passed on to others. After all, it is said that if you teach a man, you teach a person, but, if you teach a woman, you teach a family!

Seminar on Engineering Smart Cities

Smart Cities being a signature project of the Hon'ble Prime Minister, with its vast experience in engineering consultancy, CEAI plans to host a Seminar on 'Engineering Smart Cities', to be held on 25th& 26th September 2015, at Manekshaw Centre, in New Delhi. The focus of the Seminar would be on the planning and engineering aspects of Smart Cities and the Seminar theme would endeavour to cover the entire gamut of services across relevant sectors including urban mobility infrastructure, water and power utilities, information and communication technology, sustainability solutions, etc.

The seminar is supported by the Government of India- Ministry of Science & Technology, Ministry of Road Transport & Highways, Ministry of Communication and Information Technology, Central Public Works Department (CPWD) and the Bureau of Indian Standards. The Advisory Board is headed by Dr. Sudhir Krishna, former Secretary (MoUD).

Registration Fee

CEAI Members	₹ 6000/-*
Non-CEAI Members	₹ 8,000/-*
Students	₹ 2,500/-*

*Service tax of 14% will be applicable

Please contact CEAI Secretariat or visit CEAI website www.ceai.org.in for more information about the Seminar.

CEAI National Awards for Women Engineers

CEAI has been pursuing for increasing the involvement of women engineers in the engineering profession. To further their passion, CEAI has decided to celebrate this year as "Women Engineers Year 2015" and organize technical lectures as well as other events for and by the women engineers.

In order to recognize, honour and promote the contributions made by Women Engineers in India, CEAI has instituted the following Awards especially for Women Engineers:

1) Sherpa Award (for Young Women Engineers)
2) Innovation in Engineering Award
3) Lifetime Achievement Award

Nominations are invited for the Sherpa Award and Innovation in Engineering Award from women engineers. Application form for the awards is available on the CEAI website www.ceai.org.in. Please contact CEAI Secretariat for more information about the Awards.

The last date for receipt of applications is 30th September 2015.

Technical Lectures

a) Technical Lecture on 'Hopper failures in Steel Coal Bunkers- A case study'

In order to recognize and honor the vast contribution made by women engineers in India, CEAI has decided to celebrate the year 2015 as Women Engineers' Year. As a part of this endeavour a technical lecture on "Hopper Failures in Steel Coal Bunkers- A case study" was delivered on 7th May 2015 in the office of Tata Consulting Engineers Ltd., Bangalore by a woman professional, expert in Structural Engineering Design, Ms.Surovi Ganguly, Senior General Manager with Tata Consulting Engineers Ltd.

b) Technical Lecture on 'Urban Disaster Risk Reduction: Key Challenges'

As an initiative of Young Professionals' Forum (YPF), CEAI organized Technical Lecture on "Urban Disaster Risk Reduction: Key Challenges" on 8thMay 2015 at CEAI Centre. The lecture was delivered by a Young Professional, Mr. Anup Karanth, Associate Director, TARU Leading Edge Pvt. Ltd. 25 people from different organisations attended the Lecture.

Mr.AnupKaranthmaking his presentation

A view of the participants

During the lecture, Mr.Anup Karanth highlighted the challenges of urban disaster risk reduction in India, gave a comprehensive outlook of hazard risk, issues centered on vulnerability, need for conduct of urban risk assessment, management options (case studies) and highlighted the fundamental role of the professionals in vulnerability reduction.

c) Technical Presentation by CETCO

As a part of CEAI's programme of technical exchange of information, a Technical Presentation on 'Active Waterproofing Technology' was held on 5th June 2015 at CEAI Centre Vasant Kunj, New Delhi.

The presentation made by CETCO Lining Technologies India Pvt. Ltd., a global building material solution provider with over 60 years of waterproofing technology experience. They supply solutions for various Waterproofing applications such as Tunneling, Property Line, Backfilled Walls, Plaza Deck and Green Roof Applications.

CETCO have production facilities at Bhuj, Gujarat and Sriperumbdur, Chennai.

For more details about the products of CETCO,
Contact **Mr. Vijay Khatri,** CETCO India.
Mob +91-9999115644.
Email: vijay.khatri@cetco.in.
Website: www.cetco.in

d) Technical Lecture on 'Human Factor to Road Safety'

In continuation of our activities for the year 2015 as 'Women Engineers Year', CEAI organized a technical lecture on "Human Factor to Road Safety" on

Mr Sudhir Dhawan, President CEAI addressing the participants

A view of the Participants

22ndJuly 2015 at Consultancy Development Centre, India Habitat Centre, New Delhi. 25 people from various organisations attended the lecture.

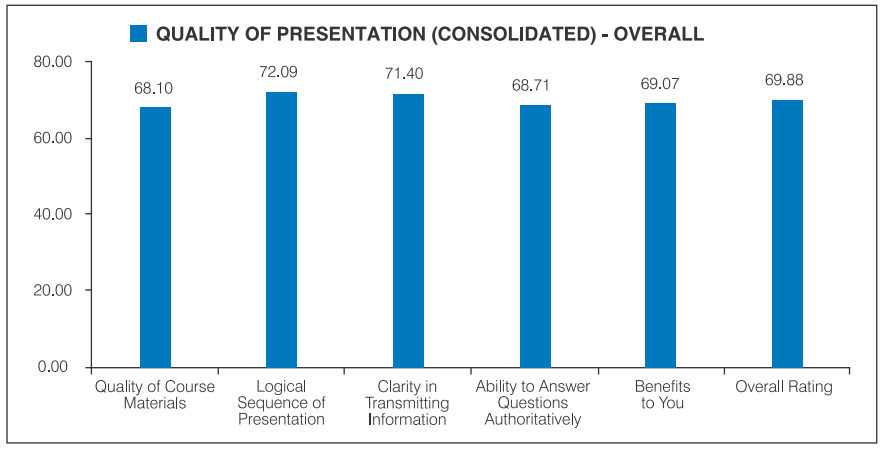
The lecture was delivered by Dr. Neelima Chakrabarty, Sr. Principal Scientist, CSIR-Central Road Research Institute.

Seminar on EPC Contracts Risks, Claims & Conflicts Management

CEAI-Western Region Centre in association with Quantum Global Solutions (QGS) successfully conducted a seminar on "EPC Contracts Risks, Claims & Conflicts Management" at Mumbai on 5th June 2015.

During the inaugural session Mr. A P Mull, Past President CEAI while according a warm welcome to all the dignitaries and participants, briefed them on CEAI, its activities and the need for legislation for engineers. Mr. Uttam Sengupta, Chairman CEAI-WRC briefed the participants about the seminar and stressed on the importance of identifying and managing risks in contracts. He added that QGS are specialists in the management of claims and contracts. Mr. B Ravindranath, Head of Operations, Domestic Projects Group, Voltas Limited addressed the audience on the relevance and importance of the issues of risks, claims and conflicts to be discussed in the seminar. Dr. H Subbarao, Vice President CEAI and Co-Chairman CEAI-WRC introduced the speakers from Quantum Global Solutions, Mr. Tom Kapapa and Mr. Steven Beaumont. Mr. Jeffrey Nambiar, Hon. Secretary cum Treasurer, CEAI Western Region Centre, proposed a Vote of Thanks.

67 participants from around 27 different organisations comprising Consulting & Contracting firms, Government Departments, Public Sector Undertakings et al attended the seminar.



Mr. B Ravindranath, Voltas Ltd., addressing the participants

Mr. Tom Kapapa, QGS making his presentation

Mr. Steven Beaumont, QGS presenting a Case Study

Lto R: M/s. Uttam Sengupta, A P Mull, Tom Kapapa, Steven Beaumont, H Subbarao & Jeffrey Nambiar

Participants absorbed in the presentations

Mr. Uttam Sengupta, Voltas and Chairman CEAI-WRC making his presentation

Mr. Tom Kapapa, Operations and Technical Director for Quantum Global Solutions who took all the sessions has over decades of experience in the Construction Industry working in the UK, Europe, Africa, Asia and the Middle East.

Mr. Tom Kapapa covered Pros & Cons of EPC Contracts, Types of Risk Mitigation in EPC Contracts, Why EPC Contracts?, Common problems faced on EPC Projects, Claim and Conflict Management, Enforcing the Contract in EPC Projects and the Dos and Don'ts on a Construction Project. The unique use of media that QGS uses to trigger negotiations and avoid protracted dispute was appreciated by all present. He also continuously harped on the need to maintain Good Records at all stages of a project, regardless of what the case may be.

Mr. Steven Beaumont, Executive Director, Quantum Global Solutions presented the Case Study on a Major Retail Development and then conducted a workshop on the same. The presentation by the various participant groups showed that they had understood the processes and logic involved in claim management and administration in Construction Contracts.

Mr. Uttam Sengupta Head Risk Management, International Operation Business Group, Voltas Limited presented the Risk Allocation Algorithm.

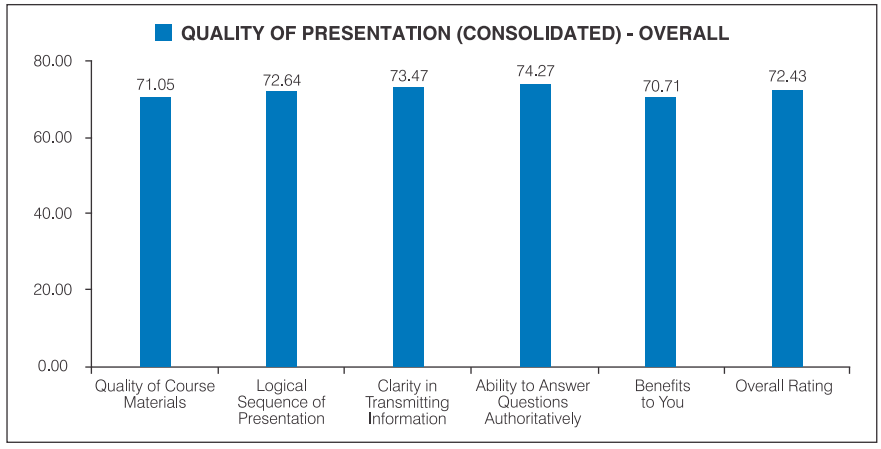
Seminar on Advance Course on Steel Design - 2

CEAI-Western Region Centre jointly with Institute for Steel Development & Growth (INSDAG) very successfully conducted the "Advance Course on Steel Design-2" at Mumbai on 26th -27th June 2015.

The course was a sequel to the Advance Course on Steel Design held in June 2012 which inter alia dealt with the Limit State Design of Steel Structures. The present course was configured based on the feedback received for the earlier course.

During the inaugural session Mr. A P Mull, Past President CEAI and Former MD & CEO Tata Consulting Engineers accorded a warm welcome to all the dignitaries and participants, briefed them on CEAI, its activities, the responsibilities and accountabilities of engineers and the need for legislation for engineers. He urged all the engineers to design and construct as per codes and standards at the least and go beyond them when necessary.

Dr. H Subbarao, Vice President CEAI, Co-



The participants found the courses to be very useful. The feedback received from the participants is very encouraging and they have suggested that such seminars be organised at shorter intervals.

Participants, Faculty & Organisers of the Advance Course on Steel Design-2

SNAP SHOT OFTHE EVENT

Mr. A P Mull welcoming participants

Dr. Subbarao briefing

Mr. Satpal Kundan, addressing

Mr. U Sengupta addressing

Dr. V V Nori presenting

Mr. V Vardam presenting

Mr. J Nambiar presenting

Dr. Sathishkumar presenting

Participants interacting

Mr. M M Ghosh presenting

Participants interacting with faculty

Participants interacting

Views of audience

Chairman CEAI-WRC and CMD Construma Consultancy introduced the themes for the course while recapitulating the first course. He stressed on the need for proper design especially for seismic forces and also to treat fire as a load. He also briefed regarding the speakers who inter alia included Dr. S R Satishkumar, IIT Madras and Dr. V VNori, Chairman Shirish Patel & Associates. Mr. Uttam Sengupta, Chairman CEAI-WRC and Head, Risk Management IOBG, Voltas Ltd. briefed the participants on the activities of CEAI-WRC and the need for keeping abreast with the state of the art in design and construction. Mr. Satpal Kundan, Jt. Managing Director, Chempro Expertise, dwelt on the importance of steel structures when projects are to be done in a short time. Mr. M M Ghosh Assistant General Manager, INSDAG dealt on the topics to be covered during the two days course. Mr. Jeffrey Nambiar, Hon. Secretary cum Treasurer, CEAI Western Region Centre and Director, Chempro Expertise, proposed a Vote of Thanks.

Over 100 participants comprising individual persons and those from around 50 different organisations encompassing Consulting & Contracting firms, Government Departments, Public Sector Undertakings to Faculty and Students from Engineering Institutions/Colleges, et al from all over the country plus from Bhutan and Nepal attended the course. The topics covered were:

Recap of Limit State Design Dr. Harshavardhan Subbarao
Design of Buildings, Structures for Wind Loads Mr. M M Ghosh
Design of Connections - Welded Dr. S R Satishkumar
Design of Connections - Bolted Dr. S R Satishkumar
Welding Procedure Specification Mr. Jeffrey Nambiar
Design of Hollow Sections Mr. M M Ghosh
Fatigue Dr. S R Satishkumar
Buckling of Plates Dr. S R Satishkumar
Design of Buildings, Structures for Seismic Forces Dr. S R Satishkumar
Detailing for Seismic Forces Dr. S R Satishkumar
Innovative Composite Steel Bridges Dr. V V Nori
Fire as a load on the Structure Dr. Harshavardhan Subbarao
Case Study- Building for Chemicals & Industrial Plants Mr. A P Mull
Case Study-Steel Structures & Dextra High Tensile Bars Mr. Vinod Vardam

Participants keenly followed all the sessions and sought clarifications plus shared their knowledge and experience during the sessions as well as during the breaks.

The feedback as summarised is based on weighted ratings given in the chart below. It reports on 5 parameters-

Quality of Course Material
Logical Sequence of Presentation
Clarity in Transmitting Information
Ability to Answer Questions Authoritatively
Benefits to You, plus the
Overall Rating

Awards Received by CEAI Members

a) M/s. Mehro Consultants received ACCE(I) Award 2014 for excellence in use of Hollow Sections in steel structures for "Integrated Terminal Building Kolkata Airport".

b) Dr. R N Vakil received ACCE(I) Gaurav Award (Life Time Achievement)

The Awards were given on 12th June 2015 during ACCE(I) 2014 Awards Convention and Consultants Colloquium - 2015 held at Hubballi, District Dharwad, Karnataka.

New CEAI Members

CEAI welcomes the following new members who joined recently as members:

Member (Individual)

Mr. Inder Gandhi

Mechanical Engineer from Indian Railways SCRA Steam and worked in various Zonal railways in India and railroads. Later he worked in RITES as a Divisional (Training) Head. Presently he is working in private engineering industry and consultancy companies.

Mr. Rajiv Maini

B.Tech (Civil Engineering from IIT Delhi. 31 years ex-perience in Project Management, Operations and engineering of basic & detailed design, approval of engineering documents/ execution drawings for combined Cycle Thermal Power Projects, Coal based Thermal Projects, Hydro Electric Projects, steel plants, LNG, GAS transmission and City gas distribution networks. Presently he is an independent consultant.

Mr. N Srikumar

B.E (Civil) from Bangalore University. 26 years experience in civil engineering and valuation works for Banks and Income Tax Department.

Affiliate Member (Individual)

Mr.Chhotelal Bhagirathi Yadav

B.E (Construction Engineering) from Mumbai University. 15 years experience in Construction Supervision for Highways and Bridges. He is presently working with ICT Pvt. Ltd. as Senior Manager.

Member (Organisation)

Ramboll India Pvt. Ltd.

Represented by: Mr.S KMishra, General Manager - Business Development

Ramboll provides consultancy services for Buildings, Transport, Environment, Energy, Oil & Gas, Management Consulting and Telecom.

Mukesh & Associates

Represented by: Mr. D Manojkumar, Managing Partner

Mukesh & Associates provides consultancy services for Building projects, Roads,Water Supply, Quality Audit

Affiliate Member (Organisation)

Penta India Cement & Minerals Pvt. Ltd.

Represented by: Mr. Manoj Thakur, AGM

Penta India provides detailed engineering services for cement plants, lime plants, mining, grain industries, mineral processing/ processing plants as well as original equipment manufacturers in India and abroad in the area of evaluation of raw materials, conceptualizing the projects in terms of overall system and subsystems.

Stantec Consulting Pvt. Ltd.

Represented by: Mr.JayeshHariyani, Director

Stantec provides consultancy services for building design, project management consultancy, interior design services, infrastructure design etc.

FIDIC International Infrastructure Conference

The FIDIC International Infrastructure Conference 2015 will take place on 13-15 September 2015 at the Dubai World Trade Centre, Sheikh Rashid Hall. The Conference will provide with the opportunity to discuss key topics and business trends happening in the global market today.

Registration Category	Registration (4 July - 7 Sept 2015)	On-site Registration (13 - 15 Sept 2015)
FIDIC Member (Full registration)	$ 990	$ 1050
Non-Member (Full registration)	$ 1200	$ 1300
Accompanying person	$ 450	$ 450
Conference Day cards - Monday 14 Sept (Day 1 sessions) - Tuesday 15 Sept (Day 2 sessions)	$ 550	$ 600
Special "FIDIC Best Practice Forum" - Sunday 13 Sept (One-day Forum previous to the conference)	$ 550	$ 600
Young Professional (Full registration)	$ 900	$ 960
Student	$ 350	$ 370

Please complete the registration form and fax/email to FIDIC 2015 Conference Secretariat at MCI Middle East LLC Tel No: +971 (0) 4 311 6300 | Fax No: +971 (0) 4 311 6301 | Email: fidic2015@mci-group.com

Please visit Conference website www.fidic2015.org for further details.

Online Training Course on FIDIC Contracts Management and Administration

FIDIC is conducting online training course on Contracts Management and Administration from 27 August to 10 December, 2015. This training course explains and illustrates the practical use of the FIDIC Conditions of Contract for Construction (the "Construction Contract") and the FIDIC Conditions of Contract for Plant and Design-Build (the "Design-Build Contract"). The course is designed to help the participants have confidence in working with these documents whether representing Employers, Consultants or Contractors. It provides extensive checking measures and work exercises to give all delegates a comprehensive understanding of proper management of these contracts.

The course programme is based on lectures in combination with directly related case work through which participants will work on real life cases and practise application of the various contract conditions. The case work will take place on a chat type of platform where the course participants present and discuss a case input in writing. Presentations, assessments and discussions of the submitted replies will take place in an on-line classroom. The virtual platform for case work is provided by Podio (www.podio.com) and the classroom sessions are run on Adobe Connect. This on-line course requires that Participants have access to a computer with internet connection either at their workplace or at home, whichever is more convenient in regard to the timing of the sessions. Work assignments may be undertaken at any time; lectures and classroom participation require being available at predetermined hours. Participants will be divided into groups according to the most suitable time zone.

Hardcopies of the course books involved (the FIDIC Red and Yellow books) will be mailed to all participants who have settled the course fee. All lectures and classroom sessions are recorded and can be reviewed at any time, not to miss any session.

A Certificate of Successful Completion requires having responded in writing on Podio to all questions and attending at least half the classroom sessions.

A Certificate of Participation requires having participated in 50 % of all activities.

The programme comprises 9 sessions over a five months period, starting end of August 2015. Each session lasts up to two hours. The preparation of case work must be made between the sessions and the outcome will be discussed during the next classroom session.

For Programme content and course details contact:
ZáhonyiZoltán, FIDIC Accredited Trainer and Coordinator
EMail:
zoltan.zahonyi@zandpartners.com

Registration and Payment:
Silvia Fossati, Training Manager,
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Tel: +41 (0)22 799 49 00,
Fax: +41 (0)22 799 4901
E-mail: sfossati@fidic.org,
Web: www.fidic.org

Global Exhibition on Services

The Ministry of Commerce and Industry, Government of India, Services Export Promotion Council (SEPC) and the Confederation of Indian Industry (CII), jointly organized the first Global Exhibition on Services (GES) from 23 -25 April 2015 at PragatiMaidan, New Delhi. The main objective of the Global Exhibition was to promote greater exchange of trade in services between India and the rest of the World. More than 60 countries participated in the fair and over 5000 structured buyer-seller meetings were convened during the event.

Hon'ble Prime Minister of India, Shri Narendra Modi, inaugurated the Exhibition on 23rd April, 2015.

The organisers had made CEAI the official partner for the GES and had also offered exhibition space to CEAI at the GES.

CEAI Exhibition stall at GES, PragatiMaidan

OBITUARY

CEAI is deeply grieved to announce the passing away of Mr. C R Alimchandani, Chairman & Managing Director of STUP Consultants Pvt. Ltd.

Mr.Alimchandani was awarded CEAI Life Time Achievement Award 2014 for his tremendous contribution for the engineering profession.

He graduated in Civil Engineering from Pune University, breaking all past records. Thereafter, he obtained a Post Graduate Diploma in Prestressed Concrete in 1959 from France standing first amongst his course mates. His expertise lay in Structural Design of Major Structures in Structural Concrete and Structural Steel - especially structures in Prestressed Concrete.

Working with STUP Consultants Pvt. Ltd., Mumbai, India since its inception in 1963 he became its Chairman and Managing Director in 1975. Under his leadership, STUP Consultants Pvt. Ltd. has diversified into all disciplines of Structural and Civil Engineering and Architecture the company now has a team of 1500 selec-ted and well trained experts working in 36 countries through 14 offices.

In 1967 he was awarded the ACTIM Medal by the Government of France as the best Alumni out of 40,000 scholars, from all over the world, trained by them in France. In 1986 he was awarded the FIP Medal in recognition of his work in organizing the FIP Congress at Delhi. In 2002 he was awarded one of the 7 Gold Medals to World Experts by the Japanese Construction Industry at the 2002 fib Congress at Osaka. In 2004 he was awarded the International Award of Merit in Structural Engineering by IABSE, Zurich in recognition of his lifetime contribution to the development of Prestressed Concrete. In March 2013 he was awarded the Silver Medal for the UK-India Education and Research Initiative for outstanding contribution to Concrete Science. He received an award for the tallest Natural Draught Cooling Tower in the World.

CEAI conveys its deepest condolences to his family members and prays that Mr. C R Alimchandani's soul rests in peace.

CEAI joins the nation in its grief at the sad demise of a great Scientist, Engineer and former President Dr. A. P. J. Abdul Kalam. In every capacity he contributed something different for the nation and excelled in that. He totally changed the rules of the game when he was President of India and that is why he is known as "People's President". It is a great solace that he wais the recipient of highest civilian award Bharat Ratna during his life time. CEAI members pay their respectful tribute and homage to the great man and pray that his soul rests in peace.

VIEW POINT

Input from Members

The next issue of the View Point will be published in November 2015. Members are requested to send articles and other material for incorporation in the next issue of View Point by 15th November 2015. 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

FIDIC PUBLICATIONS AVAILABLE FROM CEAI SECRETARIAT	
1	**FIDIC Contracts Guide** (1st Ed. 2000) (Construction, Plant & Design- Build and EPC/Turnkey Contracts)
2	**Short form of Contract** (1st. Ed.1999) Agreement, General Conditions, Rules for Adjudication and Notes for Guidance
3	**Form of Contract for Dredging & Reclamation work (1st Ed 2006)**
4	**Design- Build- Operate (DBO) Contract** (1st Ed 2008)
5	**Guide to Design-Build-Operate Contract** (1st Ed. 2011)
6	**Plant & Design-Build Contract** (1st Ed:1999).Conditions of Contract for Plant & Design-Build for Electrical & Mech. Plant & for Building &Engg. Works Designed by the Contractor. Gen. Conds; Guidance for the Preparation of Conditions of Particular Application; Forms of Tender.
7	**EPC/Turnkey Contract** (1st Ed. 1999) Conditions of Contract for EPC Turnkey Projects. General Conditions; Guidance for the Preparation of Conditions of Particular Application; Forms of Tender and Agreement etc.
8	**Construction Contract (1st Ed.1999)** Conditions of Contract for Construction for Building and Engineering Works designed by the Employer. General Conditions; Guidance for Preparation of Particular Conditions; Forms of Tender, etc.
9	**Construction Contract MDB Harmonised Ed, for Building &Engg. Works Designed by the Employer.**
10	**Construction Subcontract, 1st Ed 2011. For Building and Engineering works designed by the Employer**
11	**Understanding the New FIDIC Red Book,** (2006)
12	**Design-Build and Turnkey (Orange Book) 1st Ed 1995. Reprinted 2011.**
13	**Operation, Maintenance and Training (OMT) - FIDIC Guidelines for the provision of OMT services**
14	**Works of Civil Engineering Construction (Red Book) Part I & II and Supplement (4th Ed. 1987 Reprinted 2011)**
15	**RED Book GUIDE :**Gude to the use of FIDIC Conditions of Contract for Works of Civil Engg. Construction 4th Ed. 1989.
16	**Risk & Insurance in Construction, 2nd Ed 2003,** by N G Bunni
17	**Electrical and Mechanical Works 3rd Ed.(Yellow Book):** Conditions of Contract for Electrical and Mechanical Works (3rd Edition 1987; Reprinted 1988)
18	**Electrical and Mechanical Works (Yellow Book): Supplement 1st Ed. :** Supplement to the 3rd Ed. 1987 of Conditions of Contract for Electrical Mechanical Works (1st Ed. 1997)
19	**Electrical and Mechanical Works (Yellow Book) Guide 3rd Ed.** Guide to the use of the FIDIC Contract for Electrical and Mechanical Works (1988), includes Yellow Book conditions
20	**Client - Consultant Agreement (White Book) 4th Ed. 2006.**
21	**Client-Consultant Agreement (White Book) Guide 2nd Ed. 2001**
22	**Model Representative Agreement (1st Ed 2013)**
23	**FIDIC Guidelines for Selection of Consultants 1st Ed 2003**
24	**Insurance of Large Civil Engineering Projects** (2004)
25	**Quality Management Training Kit** (1st Ed. 2001) – Training Kit – quality management in the consulting engineering industry
26	**FIDIC Guide to Practice** Business of a professional services firm
27	**Professional Indemnity and the Insurance of Project Risk : Actions Guide**
28	**Business Practice Training Manual**
29	**Building the Capacity of the Consulting Firms**
30	**Improving the quality of construction : A Guide for Action**
31	**Standard Prequalification Form for Contractors**3rd Ed 2008.
32	**FIDIC Integrity Management Guidelines (1st Ed. 2011)**
33	**Quality Based Consultant Selection Guide 2011**
34	**FIDIC Procurement Procedures Guide 1st Ed 2011**

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MRC has its registered & head office at New Delhi, with branch office at Bangalore.

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