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CONTENTS

From President's Desk

In the present age of Global warming when all countries are fighting against rise in temperature, there is acute need to construct energy efficient homes. Heating and Air Conditioning element is having largest share of energy consumption in our homes. The better insulation of houses is one such idea to implement. The orientation and design of our house should be such that it keeps the hot air out during the summer and the warm air in during the winter.

State and local building codes typically include minimum insulation requirements for energy efficient houses but due to our lifestyle and habits developed over the time, it is seen that our home exceed those mandates in most of the cases and as such in few cases we surpass the code insulation standards.

Each and every house is made up of hundreds of items made up of different materials having different energy requirement. Therefore, to optimize energy efficiency, we should also consider the interaction between the insulation and other building components and start working on whole house system design approach. In this way we will be able to develop a comprehensive plan for the house right from the start that incorporates both design and advanced technologies to create home that deliver the greatest energy savings and performance.

Besides installing the modern technology driven costly gadgets, air sealing, is the best, easiest and cheapest insulation technique of a house. First thing therefore needed is to ensure our house is not leaking conditioned air. Sealing the gaps at all the openings and penetrations through our roofs and walls, windows, doors, vents, electrical conduit, and any other holes is most vital to prevent leakage of conditioned air. Further double-glazed windows having larger 'R' Value should be preferred for better thermal insulation of windows.

HVAC is the area which consumes maximum energy. Therefore, selection of energy efficient system plays a critical role in making our house energy efficient. We can break the house into zones and can set independent temperatures for each room. We do not need to run the HVAC in those rooms which are not in regular use. Mini split heating and air conditioning units are much efficient as they are able to control a home in separate zones. LED lights is other best option for energy efficient lighting house designs. In the kitchen and bath rooms of our homes we should use energy Star rated appliances to save on energy consumption.

The society at large therefore needs to make collaborative efforts in this direction so as to save on energy consumption in our houses.

(Vijay Singh Verma)

Mid Term Session and Seminar on "Common Data Environment for Infrastructure Project Management" at Bhopal

Inaugural Session

Shri Gopal Bhargav, Hon'ble Minister, PWD, Govt. of Madhya Pradesh, being welcomed by presenting floral bouquets

The Mid Term Session and Seminar on the theme **"Common Data Environment for Infrastructure Project Management"** was held in Kusha Bhau Thakre Hall, Bhopal, Madhya Pradesh on January 28-29, 2023. The Inaugural Function of the Mid Term Session and Seminar was held on January 28, 2023, which was attended by several high ranking dignitaries. Shri Gopal Bhargav, Hon'ble Minister of PWD, Govt. of Madhya Pradesh, was the Chief Guest. The dais was shared by Shri Sukhveer Singh, Pr. Secretary, PWD, Govt. of M.P.; Shri Vijay Singh Verma, President, IBC; Shri O. P. Goel, Founder President, IBC; Shri Pradeep Mittal, Immediate Past President, IBC; Shri R.K.Mehra, Secretary, PWD, Govt. of M.P.; Shri G.P. Mehra, P.D., PIU, M.P PWD; Dr. Amarnath C.B. Key Note Speaker, and Shri V.R.Bansal, Honorary Secretary, IBC. All the dignitaries on the dais were welcomed by presenting floral bouquets.

Shri Gopal Bhargav, Hon'ble Minister, PWD, Govt. of Madhya Pradesh, Lighting the Ceremonial Lamp

The Inaugural Function started with lighting of ceremonial lamp by the Chief Guest, Shri Gopal Bhargav, Hon'ble Minister of PWD, Govt. of Madhya Pradesh. All the dignitaries on the dais also joined

the Chief Guest in lighting of ceremonial lamp. Maa Saraswati Vandana was also played during the lighting of lamp.

IBC publications and Souvenir being released by the Chief Guest

To mark the occasion, the Chief Guest, released the compendium of technical papers selected for the Seminar named as 'Preliminary Publication'; Bi-monthly magazine of IBC named as 'Built Environment' and the Souvenir of the event.

Welcome address by Shri G.P. Mehra, PD/PIU, M.P., PWD

Shri G.P. Mehra, Project Director / Projector Implementation Unit (PD / PIU), M.P., PWD delivered the welcome address. While welcoming the Chief Guest, all dignitaries, speakers and delegates in the event, he expressed his happiness that M.P. Government consented to organize the Seminar in Bhopal on the topic having potential to bring all the stakeholders of planning, execution, operation & maintenance on a common platform for quick decision making. He further informed that the country is celebrating its 75th year of independence as 'Amrit Mahotsav'. It is therefore enjoined upon by the Government of MP to maximize the progress in the development of infrastructure which is the key function of PWD. He thanked all the participants of the event and expressed the hope that the knowledge gained by them in the session will be implemented in the upcoming projects.

Shri O.P. Goel, Founder President Addressing the Gathering

Shri O.P. Goel, Founder President, IBC in his address informed that IBC is a body to promote and encourage the science and practice of conceiving, planning, designing, constructing and maintaining built environment which includes evolving standards, innovative and new materials and reviewing and making suggestions to the Government for various improvements. This is achieved by expression of collective ideas of members belonging to all disciplines connected with built environment. The IBC is conducting 2 to 3 seminars every year at different places in the country. It has brought out many standards and documents through its technical committees and has encouraged professionals by recognizing best works through awards to the excellence in built environment. He expressed his immense pleasure for the Mid-Term Session of IBC along with the 102nd Meeting of Governing Council & Seminar on the topic 'Common data Environment for Infrastructure Project Management' being organized by IBC's Madhya Pradesh State Chapter in Bhopal. He further mentioned that any Infrastructure Project involves input of large number of professionals and activities. Initial Planning, Designing, Coordination, Monitoring, Controlling, Foreseeing issues and Problems, for which Common Data Environment is essentially required to cut down on time and costs. The Seminar will spread awareness about the topic and its utility in large projects. He also hoped that the deliberations of the Seminar will be very useful to all the participants and also act as a guide to all Building Departments throughout the Country may it be the Central Govt., State Govt., Public Sector or Private Sector. He also wished the programme to be a grand success.

Presidential address by Shri Vijay Singh Verma, President, IBC

Shri Vijay Singh Verma, President IBC, in his address, mentioned that the topic "Common Data Environment for Infrastructure Project Management" selected for the Mid Term National Seminar of the Indian Buildings Congress is not only new, but it will be the key for successful planning, designing and implementation of the most complicated Projects and will become a necessity in future. The implementation of successful planning & designing of projects through collaborative process of "Common Data Environment" will not only help all the stakeholders like Engineers, Consultants, Architects, Experts, Contractors and maintenance units in the construction industry but will also benefit the general public. He mentioned that for any infrastructure project, the real time record and management of huge data generated from the stage of conception to execution like, surveying, field reports, calculations, drawing, design, correspondences etc can be maintained accurately through Common Data Environment which not only helps in effective implementation and maintenance of the project but also plays a major role for resolution of construction disputes, if any.

Timely approval of the proposals and decision making during the planning, design and construction of a project is the biggest key to avoid time and cost overrun in completion. The work flow of different activities can be seen and monitored on real time basis through dash board by the Senior officers and the experts with the help of "Common Data Environment" and the delay, if any, by any one in decision making is known immediately.

With the help of time lapse camera, physical progress of the project can be seen through "Common Data Environment". Compilation of activities of Quality Assurance Testing reports, Measurement certification & quality Auditing etc. in "Common Data Environment" can be helpful in fixing real time responsibilities of individuals for effective implementation of any project. For ensuring a balance in demand and supply of resources, he stressed the need of adopting "Common Data Environment" in all future projects. He also mentioned that Tourism Department of Government of Madhya Pradesh is successfully implementing its "Onkareshwar Ekatma Dham Project" by adopting "Common Data Environment" in its all activities of planning, designing, tendering & execution successfully, which is an example in itself for all other departments and Ministries to follow. He also wished the Seminar a grand success.

Dr. Amarnath C.B., delivering his Keynote Address

Dr. Amarnath C.B., in his keynote address, stressed the need of digital transformation of construction industry in the country. He informed that Building Information

Modeling (BIM), as a model-based approach, has various implications for the information and data management of construction projects. In particular, data exchange during the planning and execution of BIM-based projects creates unique demand for the management of data, since the participants involved exchange different kinds of information at various levels and detail according to their individual requirements, and not just once but repeatedly and back and forth. To address these issues, procedures for structuring, combining, distributing, managing, and archiving digital information must be set up and technically supported within a framework for integral model-based project management. He defined the CDE as a common digital project space that provides distinct access areas for the different project stakeholders combined with clear status definitions and a robust workflow description for sharing and approval processes.

He further explained that the centralization of data storage within the CDE reduces the risk of data redundancy and ensures the availability of up-to-date data at any time. Further more, the CDE leads to a higher rate of reusability of information, simplifies the aggregation of model information and simultaneously serves as a central archive for documentation. Since this environment is accessible for all the project participants, it should be used as a platform for BIM-based collaborative processes. Since all the information created during the BIM processes over the lifecycle of the building project is stored in the environment, a presumably large amount of data should be considered when establishing a CDE.

In addition to the data repository, the structure of the stored information is an essential part of the CDE. This structure must be agreed on, at the beginning of a project and should be updated and reviewed on an ongoing basis – a requirement that is frequently made a contractual obligation. The project-specific application of metadata for different information resources should be agreed, if necessary contractually.

BIM-based collaboration requires all project partners to exchange well-defined information between each other at certain times, which are contractually agreed. The exchange should take place exclusively via the CDE so that bilateral exchange without storing information in the CDE is prevented. To ensure each project participant has the required, up-to-date information for the respective processes, the author must enter created model content at agreed times.

Another important aspect of project management is internal communications between the parties involved. By centralizing all information in the CDE, this can also serve as a central communication platform. A significant advantage is that the information transmitted can be directly linked to information from the model and thus significantly increases the power of expression by avoiding redundant communication paths. An essential tool for maintaining model quality is projects standards, which are agreed upon at the beginning of the project and by the EIR. Project standards include definitions of how information needs to be structured as well as modeling guidelines. Before information is imported as models by the project participants, the quality of the information must be checked.

Redundancies occur when the same information is stored in different objects or properties. In the context of collaborative BIM processes, redundancies are often unavoidable or are sometimes even desirable. If redundancies are present or desired, it is important these do not lead to inconsistencies. BIM data management must make clear which redundancies exist, and for what purpose. The complexity and dynamic nature of building projects mean that the evolution of BIM-data is a highly dynamic process. When defining the content and functionality of a project-specific CDE, it is necessary to ensure that the chosen system can meet these changing requirements.

Shri Sukhveer Singh, Principal Secretary, MP, PWD addressing the gathering

Shri Sukhveer Singh, Principal Secretary, MP, PWD, in his address apprised the audience as to how the Information Technology has entered into our day-to-day life and is helping in making various tasks and processes easy for the benefit of common man.

He mentioned that many things have gone into the hands of IT, like internet of things, block chain of technology. One cannot think of progressing without the aid of technology. The complexity of architectural planning, structural designing, execution, supervision, operation & maintenance of any infrastructure project cannot be easily handled manually and therefore, there is a need of a platform which could collaborate all the stakeholders, bring all the data on it, analyse it and enable efficient and easy decision making.

He expressed that the co-ordination of various departments besides Architects, Engineers, Services experts and other stakeholders in the construction is a huge challenge. He gave an example of how the workflow of a project moves in Government. Planning is done by planning department; approval is accorded by the finance department and the project related data is collected from different sources and different stakeholders by the Architects and Engineers.

He expressed that common data environment platform should be able to solve the problem of co-ordination and collaboration of different stakeholders, so that it makes the task easy for them. He further informed that we should not confine our actions only for public buildings in 'Building Sector'. Rather, a technology like 3D printing which can help in rapid and quality construction of housing in private sector by general public at affordable cost should be further developed. India is far behind many countries in 3D printing technology. He stressed the use of technology keeping in view the local environment and needs.

He emphasized the need to revive the traditional knowledge in construction of buildings instead of promoting the western technologies which are not suitable for our country having large variations in temperature, rains besides geological features. He exhorted IBC to develop some digital audio-visual material which could be accessed by the general public for ensuring quality construction and maintenance of their houses.

Shri Gopal Bhargav, Hon'ble Minister of PWD, Govt. of Madhya Pradesh, addressing the gathering

Shri Gopal Bhargav, Hon'ble Minister of PWD, Govt. of Madhya Pradesh, who was the Chief Guest of the inaugural function, expressed his happiness to see that representative from 17 state and experts are participating in the 2 daylong Seminar on "Common Data Environment for Infrastructure Project Management". He mentioned that due to transformation of communication technology, the world has come closer. In the new age of technology, there is acute need of interaction and transfer of technology for the global development. In his address, he informed that the Common Data Environment platform will prove to be a milestone in the Building construction sector. With the help of tool, there will be better co-ordination among all stakeholders in the building construction sector like, Architects, Engineers, and Consultants, Experts of various services, Contractors and Maintenance agencies. For self-reliant Bharat and self-reliant Madhya Pradesh in line with the dream of our beloved Prime-Minister and to complete the initiatives taken by the Hon'ble Chief Minister of Madhya Pradesh, it is necessary to complete the infrastructure projects without any time and cost over-runs. He mentioned that there has been time and cost over runs in completion of the projects due to absence of co-ordination between various departments. With the help of technology, the resources in construction can be utilized more

Obituary

Shri Jag Jiwan Lal Fmr. Chief Engineer, CPWD & Permanent Invitee of Governing Council, IBC left for his heavenly abode on 3rd April, 2023. He was Life Member of Indian Buildings Congress and had a long and active association with IBC.

Indian Buildings Congress deeply mourns the sad demise of Shri Jag Jiwan Lal and prays to the Almighty to grant "Sadgati" to the departed soul.

optimally and India will be able to compete with the likes of China, Japan, South Korea and USA. He further asked all the experts present in the function to find out a workable solution to solve the problem of abnormally low rates being quoted by few contractors leading to either delivering bad quality of work or abandoning the projects. He exhorted the experts attending the Seminar to send their well-considered recommendations which could be implemented by the Government.

Shri G.P. Mehra, P.D., PIU, MP, PWD felicitated the Chief Guest Shri Gopal Bhargav, Hon'ble Minister of PWD, Govt. of Madhya Pradesh by presenting him a Shawl and Memento. He also felicitated the other dignitaries present on the dias by presenting a shawl and memento to each.

Shri Ashok Kumar, Jt. Project Director, PIU, felicitated Shri G.P.Mehra, PD/PIU, M.P., PWD by presenting a shawl and memento.

Shri V.R. Bansal, Honorary Secretary, IBC presenting the Vote of Thanks

Shri V.R. Bansal, Honorary Secretary, IBC presented the vote of thanks. He thanked Shri Gopal Bhargav, Hon'ble Minister of PWD, Govt. of Madhya Pradesh for having spared his valuable time out of his busy schedule and to inaugurate the function. He assured the Hon'ble Minister that IBC will deliberate all the issues raised by him at the appropriate forum of IBC to find an accelerated solution. He thanked Shri Sukhveer Singh, Principal Secretary, M.P., PWD for taking keen interest in the implementation of all the minutest details of the event. He also thanked Shri R.K. Mehra, Secretary MP, PWD for his extra ordinary management of the event. He thanked Dr. Amarnath C.B., the keynote speaker for having spared his valuable time and made his thought-provoking presentation. He thanked Shri V.S. Verma, President, IBC who took upon himself to arrange this event and also for his out-of-the-box thinking in selection of new Topic of the Seminar "Common Data Environment for Infrastructure Project Management".

He thanked Shri O.P. Goel, Founder President, IBC being the torch bearer and guiding force behind IBC. He thanked Shri Pradeep Mittal, Immediate Past President, IBC, who had been associated with IBC as Honorary Secretary for a fairly long period and President during the last term. He thanked Shri G.P. Mehra, PD, PIU, MP, PWD and his whole team for their hard work and untiring efforts in making this event a grand success. He thanked all the delegate and audience who came in large number from far off places and made the event successful.

View of Audience in Inaugural Session

The Inaugural Session was concluded by playing National Anthem.

"The Rich must live more simply so that the Poor may simply live."

- Mahatma Gandhi

Technical Session - I

Shri H.S.Dogra, Chairman & Shri R.K. Mehra, Co-Chairman of the Technical Session-I alongwith presenters of papers on the Dais.

General

The Technical Session I of the Seminar was held in "Kusha Bhau Thakre Hall" at Bhopal. Shri H.S.Dogra, Chairman, Civil Engineering Division Council, BIS and Former DG, CPWD was the Chairman and Shri R.K.Mehra, Secretary, PWD, Government of Madhya Pradesh was Co-Chairman of the Technical Session-1.

The presenters of the papers Dr. Senthil Kumar V, Associate Professor, IIT, Palakkad; Shri Sandeep Navlakhe, Executive Vice President, Tata Projects Limited; Shri Brijesh Parmar, General Manager (Architecture), Shapoorji Pallonji Company Pvt. Ltd.; Shri B.S. Mukund, Head-BIM, L&T Construction; Shri V.S. Verma, President, IBC,and Project Director, MPSTDC and Shri Aditya Pratap Singh, AVP, Meinhardt Singapore Pte Ltd. also shared the dais with the Chairman and Co-Chairman of the Session. All the dignitaries on the dais were welcomed with bouquet of flowers. Thereafter, starting the session, the Chairman welcomed all the delegates and the authors and invited speakers to deliver their presentation.

Papers Presented

First paper was presented by Dr. Senthil Kumar V, Associate Professor, IIT, Palakkad on "Project Data Integration and Interface using Common Data Environment in BIM enabled Project Experience on Adoption and Benefits-a Case Study".In his presentation he informed that the common data environment (CDE) for information sharing is the recent development in the Indian AEC sector which may need to be adopted widely to resolve the inherent adverse characteristics such as lower productivity, rework, delay, and overspending of the Indian Building Industry. The advent of Building Information Modeling (BIM) in the AEC sector necessitates the deployment of the CDE for improving the effectiveness of the BIM. There is a lack of understanding and research studies around the CDE in contrast with the BIM implementation-related studies around the world. Especially, the literature is lacking in understanding the influence of CDE adoption on institutional/organizational climate while executing the project. He mentioned the identified 7 key levers i.e. Regulations, Collaboration and Contracting, Design and Engineering, Supply Chain management, Onsite Execution, Technology and Capacity Building that could improve the productivity by 50-60%. With the help of charts, he explained how BIM could make digital transformation of the conventionally scattered stakeholders into a connected, integrated and collaborated team and the unstructured information into a structured data/ federated data with the help of common data environment. He explained having regard to the people aspect, how does the technology adaptation change them. He explained BIM is going to capture all

the information and in sharing the data in a controlled environment besides the manner in which the processes, people and technology could be integrated for success of the project. He explained the technology adoption model using the Activity Theory. For BIM and CDE to succeed, all stakeholders must involve themselves as adaptation of BIM and CDE is inevitable in future projects. He also informed that the implementation cost of the BIM & CDE in the projects is negligible looking into the long-term and short-term benefits. The cost of implementation of BIM and CDE as per industry standards around the Globe is approximately ranging between 0.5 to 1.0 % of the total project cost, whereas the benefits are huge.

The major benefits of the technology are automated version control, easy communication, Issue RFI History, automated change management/drawing comparisons, file sharing/ authorizing, automated transmittal and submittal records, assists in setting agenda for the co-ordination meeting, remote access and discussion, better quality management, and limitless model accessibility.

The case study of the IIT Palakkad Campus where it was adopted by the author revealed the realization of benefits like easy resolution of RFI's, less lead time to issue/RFIs resolution, informed decision making, pro-active services co-ordination, pro-active clash detection, model drawing accuracy and quality checking project planning, site inspection. In the project, it has benefitted the owner, authority engineer, PMC, TPQA, contractor, sub-contractors, vendors, and future facility management agencies. Major challenges faced during the implementation were lack of guidelines and enabling SOP for CDE & BIM implementation in public projects, Team's/ project workflow alignment with existing practices, resistance to change, lack of studies on ROI (Return on investment) and value streaming mapping, lack of awareness and skill sets among the team members, lack of tool maturity and customization.

Second Paper was presented by Shri Sandeep Navlakhe, Executive Vice President, Tata Projects Limited on "CDE for Infrastructure Project Management". In his presentation, Shri Navlakhe explained how the CDE and BIM manages the stakeholders like owner, architect, consultants, planners, designers, contractors, sub- contractors, supplier, schedulers, O&M team members by bringing them on the same dashboard from across the globe on real time basis. He mentioned that the CDE is an online platform, accessible to all stakeholders where construction project data is stored, managed, and accessed. It allows users from all phases namely pre-construction, construction and O/M, can contribute and access the data. It can store entire project's lifecycle information. It allows the storage in various formats like graphical/non-graphical data. In CDE, complete information required by any stakeholder will be present. It is user friendly, easy to adapt interface is there. In CDE there is mobile accessibility, web accessibility irrespective of geological location.It permits multiple users to work simultaneously on single file. It enables users to go through the modification done by anyone.It contains up-to date information.In CDE users can update hindrances, transmittals, RFIs and it is accessible to everyone.It allows various discipline files to collaborate in single platform. It reduces design related coordination issues. It helps in extracting project analytics, project progress, and material requirement for entire lifecycle or defined duration of time. He also explained the benefits of use of CDE which included:

- Minimal Design changes leads to Cost Saving
- Accessibility of Real time updated information
- Quality Assurance
- Efficient Supply Chain Management
- Regular Tracking/ Analysis of the project
- Collaborative Work Environment
- Enhanced decision Making

He also gave an overview of the case study of their projects 'Noida International Airport' and 'New Parliament Building.'

Third Paper was presented by Shri Brijesh Parmar, General Manager (Architecture), Shapoorji Pallonji Company Pvt. Ltd. on "CDE in Construction". In his presentation, Shri Parmar informed that a well utilized common data environment enhances a project's overall quality and efficiency. Choosing a CDE that allows us to do more than just information is crucial given the amount of information, people and processes that are constantly in motion on any significant construction project. To meet all requirement of a project on schedule is difficult. If the common data environment is properly specified, building projects shall be more resistant to changes in the external environment such as laws, technological advancements and shifting attitudes

of local landowners in the case of long- term projects. He mentioned that for rightful administration of any project, the key is to provide accurate and relevant information to those performing tasks or processes. With the project's growing complexity, it is challenging to fulfil this criteria. Large amount of distinct data is created during various stages of the building projects which is disorganized, unstructured, repetitive & unsecured. CDE resolves most of these problems as it digitally stores the data in a structured format, centrally manages and access the stored information/ data and also BIM. He briefly explained the PAS 1192:2 processes and procedures for formulating EIR-Employer Information Requirement, Procurement and Contract award, Mobilization, Project information Model and Asset information Model. The four phases of process are carried out by the CDE namely, work in progress, area of sharing of data, publishing of data duly validated by design team and archives of data. He gave a brief about importance of CDE in Construction Projects and typical CDE implementation structure in an engineering construction company. He also briefed about the top cloud CDE Platforms in contemporary times viz, Auto Desk BIM 360, Trimble Connect, Bim Sync, Asite, Aconex etc.

Fourth Paper was presented by Shri B.S.Mukund, Head-BIM, L&T Construction on "Digital Project Management". In his presentation he briefed about common construction problems like difficulties in communication & co-ordination, safety of workers, materials and machinery, construction time scheduling and time/cost overruns. He expressed all these issues have been successfully and effectively resolved through CDE and BIM which facilitates everyone by providing visibility. There are infinite solutions. As on date types of networks available are PAN (Personal area network for communication at individual level), LAN (local area network for communication within a office/ building)), MAN (metropolitan area network for communication within a city), WAN (wide area network for communication globally). The CDE and BIM is compatible with all types of network for communication with all stakeholders. Cloud computing is a model for allowing, convenient, on demand access from anywhere, to a shared pool of computing resources. Cloud computing allows flexibility to operate from anywhere and at any time, Recovery of data is easy in the event of any disaster, software are updated automatically, Pay as you use, allows increased collaboration, there is complete control of the document, data remains secured and it is location independent. CDE remains there for the entire life cycle of the project. All the team members are assigned their role and responsibility for allowing access and to perform various functions, in the system as per the role and responsibility assigned to them. On requirement basis, the permission can be granted to new members or permission can be restricted to existing members in the project team at any stage. In nutshell, based on the role & responsibility of the individual in the project, we can secure our data by giving following types of access permission:

- ✓ View Only
- ✓ View + Download
- ✓ Upload Only
- ✓ View + Download + Upload
- ✓ View + Download + Upload + Edit
- ✓ View + Download + Upload + Edit + Delete

CDE access is based on Role & Responsibility in the project based on ISO19650 and within this environment the project team does functions: Design Collaboration, Data Management, Markups, RFI (Issues), Approval system, Transmittal, Revision management, Field BIM etc. For effective data governance, data management involves, data architecture management, data development, database operation management, data security management, reference and master data management, data warehousing and business intelligence management, document and content management, metadata management and finally data quality management. Approval system is defined which could be one stage review to any number of stage review processes. In CDE enabled projects, since all the data is stored in the central repository and all the team members have access to the same based upon their role and responsibility, the entire review process happens in the CDE Environment. This enables for all team members to know the status of their documents, also automatized dashboards can be generated for projects control purpose. There is revision management as well. Thus, CDE helps the document controller to keep on top of the information, helps the project manager to keep work on track, assist site manager with daily tasks, and saves on site staff time. It requires the team to be regularly trained and updated for the recent advancement in the technology.

Fifth Paper was presented jointly by Shri V.S.Verma, President, IBC and Project Director, Ekatma Dham, MPSTDC and Shri Aditya Pratap Singh, AVP, Meinhardt Singapore Pte Ltd. on "Enabling EPC Contract with CDE & BIM". In his presentation he mentioned that CDE and BIM is not only a digital representation used to plan, design, control and maintain facilities, but it also affects how project participants traditionally define their roles and work together & the level of information extracted from the BIM models to help drive the project. He mentioned that through the lens of contract functions, BIM and CDE implementation in EPC projects can be implemented more effectively. By employing the strategy of CDE &BIM, the business can pay greater attention to each of the three purposes (Engineering, Procurement, Construction) that formal contracts serve in order to increase exchange efficiency. He mentioned that there are set protocols established to execute the project using BIM technology. If these standards are established in pre-tender stage, then it will enforce the contractor to drive the project as per set and established protocols. ISO -19650 is a standard that drives the BIM tools and their application. Rather than historical role of various specialists like planners, architects, engineering designers, constructors, fabricators, material suppliers, financial analysts and others, one can focus on the complete process of project management in conjunction with the implementation of BIM & CDE requirements by adopting the owner's perspective. Therefore, he also stressed the importance of employer vision to be provided in the tender stage. He also detailed the necessity of few points which must be captured in the tender stage for the successful implementation of the CDE and BIM. The list of such few points to be captured are:

- Producing the Model Elements to the Level of Development (as defined in the Conditions) and at the project stage identified in the 'Model Delivery Table' of the Conditions.
- Performing the additional modeling activities or uses identified in Appendix of the Conditions.
- Comply with all specified standards, processes, and procedures in respect of the development, use, transmission, exchange, storage, and archiving of Digital Data.
- Appendix of the Conditions contains a 'Model Delivery Table' which stipulates the required BIM modeling activities or uses and the respective responsible project participant at different stages of the project. Mean while, other Appendix can elaborate on Conditions that set sout the specific standards, methods, and procedures for BIM-related deliverables as well as the methods and procedures for the exchange and collaboration of digital data and models. These appendices serve as a useful tool to allocate responsibility and unify the standard of deliverables from all project participants.
- Digital Data Exchange
- Employer information requirement in terms of BIM & CDE adoption.
- BIM Management
- Information Manager appointed by EPC Contractor, and
- Setting the Protocols & Workflow for proper Implementation of BIM Techniques & CDE requirements.

Summing Up

Shri R.K.Mehra, Secretary, PWD, Government of M.P. &Co-Chairman of Technical Session-1, while summing-up the papers presented during the session, mentioned that CDE & BIM provides the seamless digital transformation which probably is being done at large scale by L&T and TATA in their infrastructure projects. He also mentioned that Govt. of MP will also adopt the CDE & BIM technology in their upcoming project., However, in a Government sector, where ensuring regular fund flow is difficult, how the CDE & BIM can be used is required to be seen. The CDE & BIM are must for any project and necessary capacity building has to be done in this direction by imparting regular training to personnel.

The Session was, thereafter, declared closed by the Chairman with the appreciation of authors.

Thereafter, The Chairman, Co-Chairman and all authors/ presenters of papers were felicitated by presenting shawl and mementoes to each. The certificate of participation was also given to each presenter of the paper.

Felicitation Gallery

Sh. R.K. Mehra being felicitated by Sh. S.L. Suryavanshi

Sh. V.S. Verma being felicitated by Sh. S.L. Suryavanshi

Dr. Senthil Kumar V. being felicitated

Shri Sandeep Navlakhe being felicitated by Sh A.R. Singh

Sh. Brijesh Parmar being felicitated by Sh. S.R. Gourkhede

Sh. B.S. Mukund being felicitated by Shri Jiley Singh Bhagel

Sh. Aditya Pratap Singh being felicitated by Sh. G.P. Mehra

"Education is the most powerful weapon which you can use to change the world."

- Dr. A P J Abdul Kalam

Technical Session - II

Shri Manoranjan Mishra, Chairman & Dr. Madhura Yadav, Co-Chairman of the Technical Session-II alongwith presenters of papers on the Dais

General

The Technical Session II of the Seminar was held in "Kusha Bhau Thakre Hall" at Bhopal. Shri Manoranjan Mishra, E-in-C-Cum-Spl. Secy., Orissa P.W.D, was the Chairman and Dr. Madhura Yadav, Professor and Dean, faculty of Design at Manipal University Jaipur, was Co-Chairman of the Technical Session-II. The presenters of the papers Lt. Col. Naveen Meka, MES Net Section E-in-C's Branch, New Delhi; Shri C.K.Verma, Former Special D.G., CPWD; Dr., K.M.Soni, Former Additional D.G., CPWD& Chairman Technical Committee, IBC; Shri C.P.Tripathi, HOD-Structural Engineering Department, M/s C.P.Kukreja Architects; Shri Hari Om Gera, Director, Constructure Design Private Limited, Delhi; Arch. Saurabh Chandra, Director, and Dr. Pratibha Rani Bose, Associate Director, Engineering & Disaster Management, DDF Consultants Pvt. Ltd., also shared the dais with the Chairman and Co-Chairman of the Session. The Chairman, the Co-Chairman and the presenters of Papers who presented their papers were welcomed with floral bouquet. Thereafter, the Chairman welcomed all the delegates and the Authors and invited speakers to make their presentation.

Papers Presented

The first paper in Technical Session-II was presented by Dr. K.M.Soni on the topic "Common Data Environment and Building Information Modeling". In his presentation he broadly explained CDE &BIM and the necessity of its adoption. He mentioned CDE is a digital information platform which centralizes Project Data storage and access related to a construction project. It is an inclusive repository of data generated by a project team through the design, construction and operation phases. Whereas BIM shows the workflows and may also include documents like project contracts, estimates, reports, material specifications, and other information relevant to a project's design and construction processes. Multi-disciplinary project stakeholders can access the CDE anytime and anywhere using a computer, mobile phone, tablet or machines in the field. He detailed out the elements of CDE, the stakeholders in a construction project submittal. He mentioned that BIM is mainly used by the designers and architects however certain data of design is required to be assessed by other stakeholders like contractor and owner for their requirement of the project like rendering, report generations etc., without

accessing to BIM App. CDE helps to extract data without accessing to BIM Software, CDE also helps in integrating field updates. He explained the benefits of CDE which includes, data can be accessed at any time and from any place, prevents loss and manipulation of data, collaboration team approach, makes data available for further analysis, improves project quality and efficiency and creates confidence and builds trust among the project participants without barriers to collaboration, increases adoption and data sharing. He also detailed the applications of CDE and BIM and mentioned that BIM is an effective and powerful tool in project management.BIM is a user-friendly information landscape that is transparent and coherent, with all the project's participants having access to it. He also informed that there are many user specific models of BIM like 3D, 4D, 5D, 6D,7D for use by different stakeholders. It helps in identification of clashes, making clash free models and reduce construction rework and material Waste. He explained the broad objectives of the CDE and BIM which includes identification of disruptions and their timely removal in the project management, effective monitoring and improving quality of construction and service in a cost- effective manner by controlling the time and cost over-run. CDE can transform the construction by improving the timeline, controlling the budget and reduction in error of construction.

Second paper was presented by Shri C.K.Varma, on the topic "Common Data Environment: A Collaborative Way of Project Management". In his presentation he mentioned that CDE is a cloud based solution, single source of truth and can transform the construction and however it can also be single source of problem. He mentioned that data must be reliable and consistent, it must be updated in a timely manner, and it must be accessible by all who need it. For the stakeholders and construction engineers and experts involved in construction who are to use it, there is no necessity for them to know how CDE works or flows, because it is too much complicated. The data can include estimates, reports, detailed material specifications, installation details and much more. With the help of cartons/sketched depicting persons of different disciplines on their job, he explained the eco-system of CDE. For managing hundreds of thousands of documents to manage the entire programme of work, he outlined the necessity of CDE. He explained the four essential engineering ingredients i.e. Plan, Design, Build and operate of any construction project can now very conveniently be handled by BIM and further communicated to all stakeholders through CDE as a single source of truth. It is possible to move from 2D world of lines & shapes to 3Dworld of objectives & data, like structural analysis, visualization, Energy modeling of the building, construction sequencing, co-coordinating, clash detection and construction drawings etc. CDE brings sustainability in construction through collaboration powered by information & communication technology. CDE is necessary to make the same data available any time any place to all stakeholders. Email communications are eliminated. CDE leads to collaborative working resulting into team spirit, reduced error, better timeline, budget management & increased productivity. He mentioned 3D Printing, Digital Twins and Signing of digital Contracts are the future of Construction Technology.

Third paper was presented by Lt. Col. Naveen Meka on the topic "Cloud Based Infrastructure Monitoring Mechanism using Web Based Project Monitoring Portal". In his presentation he informed that Footprints of MES has a widespread presence pan- India. Remoteness of stations particularly at Northern, Eastern borders and sparse Islands made a daunting challenge in implementing project monitoring solution. In order to obviate this criticality, WBPMP was developed through Bhaskaracharya National Institute for Space Application and Geo-informatics (BISAG-N) based on functional requirements rendered by the MES. WBPMP which is cloud based mechanism is an internet- based application, binding all stakeholders of MES as well as its users accessing common repository of data. WBPMP has fostered efficiency, enabled speedy decision-making capability and achieved an effective paperless monitoring mechanism. The portal captures data from administrative approval onwards till final stage of completion. Total of 94 static fields pertaining to any given project is captured at the grass root level entity. The details of project are initially filled up by Garrison Engineer and are further validated by his Commander Works Engineer (CWE). Thereafter, the information is viewed by all concerned stakeholders upto the highest level in the Headquarters thereon. In addition, Armed Forces users also access this common data information in form of predefined format of reports. This ensures intricate monitoring of projects by all responsible stakeholders. During the course of process, the pre-format reports will be generated automatically under

the report tabs. All reports will not only be accessed within the technical chain of command but also by the staff channel (mapped with specific or multiple Chief Engineer Zones).

The system generates 13 pre-format reports and returns like Monthly Progress Report (MPR), Quarterly Progress Report (QPR), project wise expenditure report, hindrances encountered while execution of work, contractual details, physical and financial completion status, observations of Technical Examiners (TE) visiting work sites, maintaining record of visiting officers to sites such as the Project Management Group, MES stakeholders & formation commanders, comprehensive repository of projects, targets pertaining to tendering of contracts and planned physical completions etc. as overall repository of works is created in the form of common data base. Slippages in monthly updations will automatically trigger email reminders to his CWE within 24 hours, Chief Engineer in 48 hours and 72 hours to higher Headquarters. The information validated by CWE is then available to all stakeholders as common data in the form of uniform reports. In addition, messaging and broadcasting facility within the application enables seamless and encrypted communication among the stakeholders.

Lt. Col. Meka informed that MES being a military organization as such nature of works undertaken requires the data to be kept secure against potential cyber-attacks or phishing activities. Therefore, in order to achieve this, encryption of data was implemented two pronged. Encryption of data was at server level using Transparent Data Encryption (TDE) and at application level using pg-crypto. The enabled selected fields are encrypted to 256bit AES thus making the application more resilient. In addition, encryption of data during transit using SSL-TLS and while at rest has been achieved holistically. The method protects data stored in the database by encrypting underlying files and not data itself. This primarily prevents the data from being hacked or being copied to another server. Therefore, in order to open the files, the person operating the system have to have the original master key or the encryption certificate. Encryption of the database is done at the page level. He further explained how MES has spear headed implementation of several e- initiatives in other functional aspects such as budget management, digitized measurement of work, enlistment of contractors, approvals of products etc. He informed with the use of WBPMP, the MES has benefited of reduction in work execution time, improved user interfaces and satisfaction, faster and effective decision making, overall cost reduction of projects and improving in efficiency, improved Morale, Collaboration and productivity of the project team and improved transparency & accountability in the organization.

Fourth paper was presented by Shri C.P.Tripathi, HOD-Structural Engineering Department, M/s C.P. Kukreja Architects, on the case study of "LRB Base Isolator for Seismic Control of Hospital Building at Jhanjharpur, Bihar". In his presentation Shri C.P.Tripathi explained about the size of building, importance given in design and the seismic zone in which the building is situated. He mentioned that the hospital buildings have onerous responsibility to take care of the victims if any severe seismic event occurs the structural system of the hospital therefore should be capable to withstand it structurally, allow no damage or minimum damage to non-structural parts, hospital equipment etc and hospital must be able to carry out its normal function without any interruption. For preventing damage to structure, conventional system requires bigger and stronger elements which may reduce time period and increase forces, resulting in more sway, drift and vibration. It is very difficult to keep hospital equipments and non-structural elements intact in such situation, thus, new approach is required. Therefore, new seismic control system (SCS which is also called earthquake Protective System) have been developed which either prevents the seismic energy to be pumped into the structure by isolating superstructure from the base and sub-structure using base isolation device (BID) or allows it to enter but absorbs by using mechanical device called Passive Energy Dissipaters (PED).

He detailed out different types of available earthquake protective systems and outlined 'Base Isolation as the most common system. In base isolation, superstructure is isolated from the substructure by using a flexible base to decouple the superstructure from energy produced due to seismic event. The Base isolation helps control the seismic input to the structure to get desired output to achieve desired performance in the form of stresses, strains, deformation, drifts, sway, accelerations etc.

In the hospital, Lead Plug Rubber bearing (LRB) type base isolation device has been proposed. With the help of sketches, he explained the details of LRB. He brought the characteristics of LRB isolators: vertically rigid, horizontally flexible, damping, energy restoring, decreases acceleration by decoupling structure and

increasing time period of vibration, easily maintainable, easily installable & replaceable and simple to manufacture as all components are easily available. In the hospital it has been used at base level and is rigidly connected to columns stubs at base and load transfer system at top using anchor bars and bottom and top flanges. Base isolator needs uninterrupted movement of the substructure alongwith the earth movement, so building is provided enough free space/ gap for the movement and superstructure is allowed to move freely without any constraint. The gap is termed as Moat. He briefed about the sizes of columns & beams as well as specifications & sizes of the lead rubber bearing. He informed that the structure was analyzed for 11 important seismic events taken place all over the world. On the bases of study, they have developed matching site- specific response spectrum. By applying EQ forces as per IS-1893-2016 provisions, the most sophisticated and comprehensive non-linear time history analysis has been carried out to find the real behavior of the building in all cases of seismic event. He informed that in the case study of the structure, it was found that the isolation performance of the building was exemplary. Displacement and acceleration parameters are much below the criteria of fragile curve set by FEMA (Federal Emergency Management Agency). LRB can sustain significant compressive load due to use of lead which is robust.

Fifth paper was presented by Shri Hari Om Gera, CEO-cum- Director, Constructure Designs Pvt. Ltd. on the topic "Energy Dissipation by Dampers". In his presentation Shri Gera informed the usages and types of dampers. The dampers are mostly used in construction, automobile, military and aerospace. He dealt on Fluid Viscous Dampers/ Friction Dampers which could be further categorized based upon their applications/ mounting:

- Lock up Devices or Shock Transmission Devices
- Shock Absorbers
- Vibration Isolators
- Gun Mounts
- Fluid Springs
- Air Springs
- Shock Isolation Systems
- Satellite Deployment Systems
- Custom Design of Standard Components

To control the damaging effect of the earthquake, he informed about the application of dampers in Buildings and Bridges as energy dissipation devices. The dampers are passive control devices in which control action is activated due to movement of structure. Passive energy dissipating devices include Friction Damper, Metallic Yield Damper, Viscous Elastic Damper, Tuned Mass Damper, Base Isolator etc. The active control action is developed by external activated devices to change the spectrum. The activated control force is based on measurement of external disturbance and /or structural response. Sensors are employed for measurements purpose and with the help of computer, the digital signal activates the required external forces. Artificial damping is induced after installation of device. The benefit of the damper includes performance based design, dissipates energy sustainably, adding damping to structure, mitigate base shear, so minimize demand on foundations, piers, minimize storey drift, displacement and acceleration on structure, reduces demand and cost on isolation devices as devices are smaller with dampers. He also made presentation on viscous damper, its behavior,, properties and various viscous damper solutions, lock-up devices, cable damper for cable stay bridges, hydraulic buffers, friction dampers etc.

Sixth paper was presented by Arch. Saurabh Chandra and Dr. Pratima Rani Bose of DDF Consultants Private Ltd. on "Base Isolation Technique" for high rise buildings from the architectural perspective. In their presentation, they highlighted the importance of 'Resilient Building Technology' and also informed of the important five pillars for design namely High performance, Technology advancement, State of Art, Disaster Resistant and Energy efficient. They informed base isolation is basically decoupling of base of the building from the superstructure movement and thus energy transferred from base to superstructure is significantly reduced. They also displayed a video of a sample structure created in lab with base isolators being shaked to show the effectiveness of the base isolators. Critical facilities should be functional post disasters. With the help of actual photographs they showed the post disaster failures of non- structural elements of buildings which became non-functional and thus stressed the necessity of making non-structural elements more disaster resilient to maintain their functionality. They also played a audio-visual video recorded during actual earthquake depicting the damage taking place to various non-structural members. With the help of

graphs, they shared that the investment on structural elements in office buildings is only 18%, in hotel 13% and in hospitals it is 8% and balance investment is on non-structural elements plus contents. They also informed that the during the earthquakes between 1990 to 2003, the non-structural damage to the buildings had been around90% due to earthquake of magnitude 6 to 9.9%.Therefore, they stressed the need of earthquake resistance of Non-structural components. They brought out the basic requirements of an isolation system which include damping + resistance to vertical and other service loads. They also exhibited a slide of concept design by Lenz Architects (Levitating Buildings at Mars) on 'Magnetic Levitation' of a building. They gave an overview of the Isolators: elastomeric isolators and sliding isolators and explained the various elements of the isolators with the sectional drawing sketches alongwith their functioning. They also brought out the advantages and disadvantages of different technologies i.e. Passive bearings, dampers and hybrid. Base isolation reduces the basic effects due to seismic activity. i.e. reduced seismic loads and reduced deformations. They also displayed a video of interiors falling down/getting damaged in few buildings during earthquake. The Base isolation minimizes the oscillation. They also informed about the case study of Sardar Patel Police Bhawan, Patna, where base isolation technique has been adopted.

Summing Up

Summing up the papers presented by each presenter Dr. Madhura Yadav, Co-Chairman of the Technical Session-II, thanked all presenters and experts for their highly informative presentations in highlighting how data and time is important. By referring the presentations of different authors, she mentioned that Dr. K.M. Soni, explained the importance of application of CDE in large projects where deign is complex. He also briefed about hard, soft and class-3, 4D models etc. Shri C.K.Varma spoke on how CDE improved the time line in construction and controlling the budget, different stages of CDE and safety & security of data. Lt. Col. Naveen Meka explained the web based monitoring system, reduction in execution time, operational mechanism, auto-generated reports through the software. Shri C.P. Tripathi spoke on design of buildings in earthquake prone areas, base isolator process, seismic control system active, passive, hybrid and the base isolation methods. Shri Hariom Gera briefed about different type of dampers, energy dissipation by dampers in buildings in earthquake zone, the structural response under the lateral forces and wind forces. Dr. Pratima Rani Bose briefed upon base isolation technique for high-rise buildings and earthquake resilient building technology. She also highlighted how the post disaster critical facilities should remain functional.

Shri Manoranjan Mishra, E-in-C-Cum-Spl. Secy., PWD, Odisha and Chairman of Technical Session-II, profusely lauded the presentations made by all presenters. He mentioned that BIM 7 CDE will bring sweeping changes in the construction Industry to make it more sustainable. He expressed the need to monitor the changes happening around for ensuring seamless flow from the information to the work and from work to the information so that ultimately we get the correct and reliable output. Reliability of the system depends on the efficiency raise to the power in which we operate. Suppose the reliability of the system is 0.9 and we have 16 such system so (0.9)16 will be the ultimate efficiency of that system. He described that this is one of the platform where building information will come and ultimately we will save time and reduce the error as described by the speakers.

To conclude, the Chairman appreciated the authors and declared the session closed.

Thereafter, the Chairman, Co-Chairman and all authors/ presenters of papers were felicitated by presenting Shawl and Mementoes. The certificate of participation was also given away to each presenter of the paper.

View of audience

Felicitation Gallery

Shri Manoranjan Mishra being felicitated by Sh G.P. Mehra

Dr. Madhura Yadav being felicitated by Sh S.L. Suryavanshi

Lt. Col. Naveen Meka being felicitated by Sh Sanjay

Sh. C.K. Varma being felicitated by Sh. A.R. Singh

Dr. K.M. Soni being felicitated by Sh. S.R. Baghel

Sh C.P. Tripathi being felicitated by Sh J.S. Baghel

Sh Saurabh Chandra being felicitated by Sh Anand Raney

Dr. Pratima Rani Bose being felicitated by Sh Sanjay Mascay

Sh. Hariom Gera being felicitated

Authors Gallery

Dr. Senthil Kumar V.

Sandeep Navlakhe

Brijesh Parmar

B.S. Mukund

V.S. Verma &Aditya Pratap Singh

Lt. Col Naveen Meka

C.K. Varma

C.P. Tripathi

Hariom Gera

Saurabh Chandra & Dr. Pratibha Rani Bose

"Not all of us can do great things. But we can do small things with great love."

- Mother Teresa

Valedictory Session – January 29, 2023

The Valedictory Function of the Mid-Term Session and Seminar on "Common Data Environment for Infrastructure Project Management" was held at Kusha Bhau Thakre Hall, Bhopal, Madhya Pradesh on January 29, 2023. Shri Vasudevan Suresh, Former President, Indian Buildings Congress and Former CMD, HUDCO, was the Chief Guest of the function. Shri Vijay Singh Verma, President, IBC; Shri O.P. Goel, Founder President, IBC; Shri Pradeep Mittal, Immediate Past President, IBC; Shri G.P. Mehra, PD, PIU, M.P.PWD and Chairman, M.P.Chapter of IBC; Shri V.R.Bansal, Honorary Secretary, IBC and Shri M.C. Bansal, Chief Rapporteur for the Seminar shared the dais alongwith the Chief Guest.

Welcome Address by Shri G.P. Mehra, PD, PIU, M.P., PWD and Chairman, M.P.Chapter of IBC

The function started with the welcome Address by Shri G.P.Mehra, PD, PIU, M.P., PWD and Chairman, M.P. Chapter of IBC.In his address, Sh. Mehra thanked Shri V.S.Verma, President IBC for having given the opportunity to organize the Seminar, besides thanking Shri Pradeep Mittal, immediate past President, IBC and Shri V.R.Bansal, Honorary Secretary, IBC for having guided through out in making various arrangements. He thanked all the speakers for their very effective presentations that generated interest of the delegates and kept them glued to their seats throughout the presentations. He thanked all his team members for having made all the arrangements for the Session and Seminar at a short notice of one weak and made the event successful. He thanked all the delegates who came from far off places out of the State of M.P., to attend the event. He thanked the Government of Madhya Pradesh for according its approval for the programme. He thanked the police officials in maintaining law & order during the programme. He thanked the Hon'ble PWD Minister, Govt. of M.P. for having spared his valuable time for inaugurating the inaugural function which made the event a memorable one. At the end he thanked one and all who attended the function and made the event successful.

Recommendations

The following Recommendations emerging out of the papers accepted, presentations made and discussions held during the two Technical Sessions were tabled and read out by Shri M.C.Bansal, Chief Rapporteur and Advisor (Tech.), IBC during the Valedictory Session held on January 29, 2023:

1. Having regard to the mammoth task of creating enormous built space and to overcome the drawbacks of manual planning, conventional information and management processes coupled with conventional labor intensive technology, the construction industry needs to explore and adopt new, innovative and state-of-art common digital platform for storing, updating, modification, retrieval, utilization of all data /information and integration of the data/ information with management processes to meet the defined targets.

2. The centralization of data storage within the Common Data Environment (CDE) organizes the data in a proper structured format, reduces the risk of data redundancy and ensures the availability of up-to-date data at any time.

3. CDE in construction projects enables the team to review the RFI's collaboratively rather than working in traditional fragmented workflow, thus enabling better informed decisions.

4. CDE Enables real time collaboration on BIM Model amongst project owners, design team, contractors and site team which is necessary for successful completion of a infrastructure Project.

5. CDE/BIM enables the system to automatically send the alert on real time basis to the stake-

holders/Project team members for taking immediate action on their part in the project in the event of any modification of the data or submission of any new file.

6. The system keeps track of revisions to various files and upload models enabling comparison across versions to show that one can keep track of how the design is developing over time.

7. Common Data Environment provides the way to deal with the problem of inaccuracies in adoption of tremendous amount of digital data by creating a single source of sharing and conveying flawlessly same meaning/ interpretation of the data to various stakeholders/ members of project team.

8. CDE/BIM enables in conceiving a building virtually before it is constructed and greatly helps in visualizing problems in its planning, designing, co-ordination and other related facets clearly. Information Technology through CDE and BIM helps building planners, architects, engineers to understand and prevent these problems before-hand by providing a plausible solution, rather than allowing the same to be a cause of the construction issue.

9. The CDE leads to a higher rate of reusability of information, simplifies the aggregation of model information and simultaneously serves as a central archive for documentation. Since this environment is accessible for all the project participants, it should be used as a platform for Building Information Modeling (BIM) based collaborative processes.

10. CDE enables the Project owners, to plan and manage the resources efficiently with the aim to ensure economy of services, conserving of non-renewable natural resources, Integrated waste management, Integrated multi modal public transportation, Energy generation from renewable resources like Sun & Wind etc., leading to higher quality of life and higher order of operational efficiency at lower life cycle cost.

11. CDE enables in quickly locating the required raw material in short supply, from the inventory maintained by the vendor in his different stocks thereby reducing time and cost over-run.

12. The CDE enables in evaluation and selection of appropriate construction materials having regard to the local availability, embodied energy, associated health hazards, potential for future recycling, life cycle cost, aesthetics etc.

13. CDE can be immensely helpful in the management of infrastructure projects in hilly areas where topography is very much challenging in difficult terrain having topographical barriers, to maintain the eco-system and to avoid degradation of earth and forest.

14. For administration and governance of township the CDE enables in effectively managing all services including fire prevention/ fire detection and fire fighting with the help of on line intelligent and smart digitized solution systems, sensors, Big data analytics, SCADA, ERP Solutions, integrated digital control/ command centers, disaster proof mechanism and satellite surveillance.

15. The adoption of CDE system by associating with appropriate processes will enable the Construction industry in India to make it globally competitive, more productive, cost effective, and efficient, environment friendly and sustainable by in-depth study and analysis of the prevailing gaps in the international and national standards regarding construction practices and technologies.

16. In today's ultra competitive business environment – fast paced, large scale projects are becoming the standard. Therefore for proper scheduling, managing resources optimally with least wastage and targeted efficient progress, the project management teams essentially should use advanced project management tools like CDE / BIM to effectively update and manage the data as well as to supervise and monitor the real time activities so as to keep the project on track.

17. CDE enables the Project owners in effective resolution of disputes in arbitration by quickly making available all the relevant authentic information from one source.

18. Appropriate training & knowledge of the CDE, BIM and other associated processes need to be imparted to planners, architects, engineers, contractors, artisans and to the students in

technical institutes that will have a significant impact on the construction industry.

19. There is need to adopt digital task force road map by drawing 10-year Action Plan for India's Built Environment Digital Transformation and all action oriented recommendations for immediate/ Short/Long term implementation of CDE/BIM in construction industry in India be implemented:

(a) In immediate term implementation 2023 to 2025, all Ministries should mandate for integrating BIM and digitalization in their upcoming projects and support key Indian AEC Sector organizations to layout a strategic road map for them to digitally transform. Academia to introduce awareness session and faculty development programmes on BIM and Digitalization in the Indian tertiary education system.

(b) In medium term implementation 2026 to 2030, all Ministries should build digital twins for their existing and upcoming assets and hand holding of Indian AEC sector organizations to make sure they can deliver BIM and digital twins. Academia to start introducing BIM and digital capability courses in the in the Indian tertiary education system.

(c) In long term implementation 2030 to 2033, all Ministries should plan for a National digital Twin by integrating their Built Environment Assets and to collaborate with Indian AEC Sector organizations who have digitally transformed for delivering National Digital Twin services. Academia to make sure the Indian tertiary education system is generating BIM and Digital skilled graduates.

Shri V.S. Verma, President, IBC delivering his address in Valedictory Function

Shri V.S.Verma, President, IBC,in his address expressed his deep satisfaction as President, IBC in organizing the Seminar/ Workshop at the venue which was his dream. He narrated his first interaction, on the topic of Seminar before its selection, with Shri G.P.Mehra, PD/ PIU, M.P., PWD and Chairman M.P.Chapter of IBC, and appreciated the prompt & positive response of Shri Mehra. The topic chosen for the Seminar came from his heart and was well taken by everyone. He thanked all the speakers for having spoken effectively at length about CDE and enlightening the audience. Though, whenever any new technology is introduced there are reservations in its implementation but looking into far- reaching advantages of CDE over the conventional system, he expressed hope that the Government of Madhya Pradesh will begin introducing CDE in all of its major projects. In line with the suggestions given by Shri Sukhveer Singh, Principal Secretary, M.P., PWD, IBC need to penetrate into masses to be more public-centric in solving their problems being faced in built environment. He assured that IBC will certainly make efforts in this direction. He appreciated all 35 exhibitors for having displayed their technology and products for improvement of built environment. He highlighted the problem inhuge wastage of time and money being faced by common public in locating the exact address of someone in need and stressed upon the need to develop some mechanism/technology in this direction.

Shri V. Suresh, Past President, IBC and Former CMD, HUDCO delivering his address

Shri Vasudevan Suresh, Past President IBC and Fmr. CMD, HUDCO, in his valedictory address, thanked Shri V.S.Verma, President IBC for having taken the bold initiative to take up a topic of Common Data Environment which in normal course no one could take. CDE not only involve all the stakeholders but will also sensitize the executives in Government functioning who

are responsible for decision making at various levels including the top executives for the timely completion of the construction projects. He Congratulated the Technical Committee for incorporating 14 technical papers in its Preliminary Publication released during the event and the authors of the papers who dealt the topic in a threadbare manner easily understood by a common reader. He also congratulated the Advisor Technical of IBC in bringing out and presentation of well drafted recommendations emerged out of the deliberations that took place during two day long Seminar. He talked about the economy of the country reaching 5 trillion dollar by 2025 and 10 trillion dollar by 2030. He stated that India is the fastest growing country in the world inspite of recession going all over the world. Construction sector is contributing 1.2 trillion dollar each year. CDE is providing a platform for all the necessary data. He thanked CPWD for initiating a policy on adopting CDE in large projects. India is only at the starting point of CDE. He talked about disaster resilient buildings and their construction technology, life cycle analysis of buildings, cost cutting, planning and designing and timely completion of projects, maintenance of buildings, and the helping hand CDE can extend to the professionals in controlling arbitration. He also spoke on the economics of the CDE in the project.

Before conclusion of the Valedictory function, the Authors whose papers were published in the Souvenir were felicitated by presenting a shawl and memento besides the certificate of participation. All the dignitaries on the dais were also felicitated by presenting shawl and memento to them.

Shri V.R. Bansal, Honorary Secretary, IBC, presenting the Vote of Thanks

Shri V.R. Bansal, Honorary Secretary, IBC, presented the Vote of Thanks. He thanked all the speakers for sharing the knowledge through presentation of their papers. He thanked all the participants for having travelled from far off places in large numbers for their participation and making the event successful. specially thanked Shri G.P.Mehra, PD/PIU, M.P., PWD and Chairman, IBC MP Chapter, and all the members of -the organizing team for putting in hard work for the past one month for organizing such a memorable and successful event.

The valedictory function ended with playing of National Anthem.

Congratulation

IBC proudly congratulates Shri V. Suresh, Former CMD, HUDCO on his appointment by BIS as Chairperson of National Building Code sectional committee (CED 46) and to lead for its next revision to be brought out in 2025. Shri Suresh has been continuously associated with NBC work for the earlier versions since 1966. Shri Suresh was also Member Secretary and Vice Chairman for 2005 and 2016 version of NBC. He is Life Member and Past President of IBC.

Inauguration of the Exhibition

Chief Guest Inaugurating the IBC Stall

Chief Guest being welcomed by President, in IBC Stall

Chief Guest interacting in IBC Stall

Chief Guest being briefed by Hony. Secretary in IBC Stall

After the Inaugural session was over, the Chief Guest of the function also inaugurated IBC Stall and the Exhibition on construction materials& technologies within the compound of "Kusha Bhau Thakre Hall", Bhopal. More than 30 companies had displayed samples of innovative construction materials and technologies in the exhibition. The Hon'ble Minister took interest in the exhibition and also interacted with few exhibitors. Indian Building Congress as well as the PWD of Government of Madhya Pradesh had also displayed their activities in the exhibition.

Cultural Programme, on 28th January 2023

In the evening, a cultural programme was held. The programme started with a solo performance by stand-up comedian Shri Himanshu, Bawandar, finalist of India Laughter Challenge. Thereafter, Ms Sayali Kamble and Shri Mohd. Danish, famous singers gave their performances. The audience appreciated and enjoyed the performance by the artists. The cultural programme was followed by dinner.

Gallery of the Artists performing in the Cultural Evening

Performance by Ms. Sayali Kamble

Performance by Ms. Sayali Kamble & Shri Ritesh Sharma

Performance by Shri Himanshu, Bawandar

Performance by Mohd. Danish

Ms. Sayali Kamble being welcomed by Sh. GP Mehra

Sh Himanshu, Bawandar being welcomed by President

Mohd. Danish being welcomed

Cultural Programme – 29th January, 2023

In the evening, cultural programme was organized at Hotel "Courtyard by Marriot". In the cultural Programme, Nritmay Ram Katha by Ms. Samiksha & Group; Light Music and dance performance by Artists as well as by the participants and their families. The audience appreciated and enjoyed the programme.

The cultural programme was followed by dinner.

Gallery of the Artists performing in the cultural programme

Ladies Programme

Many delegates were accompanied by their spouses. To keep them engrossed and make them feel participatory, the ladies committee organized different programmes such as Ramp walk, mehandi, fancy dress show, tambola etc. besides site seeing. These programmes were enjoyed by the spouses /families accompanying the delegates.

Gallery of Ladies Programme

4th Executive Committee Meeting

4th Executive Committee Meeting of Indian Buildings Congress was held in Kusha Bhau Thakre Hall, Bhopal, Madhya Pradesh on January 28, 2023. Twelve Members including the Permanent invitees were present. At the outset, Shri V.S. Verma, President IBC welcomed the E.C. Members and the permanent invitees, thereafter the agenda items were taken up. Hony. Secretary informed the Committee that CPWD, which had withdrawn its institutional membership of IBC, has since restored the same.

In the meeting, the proposed amendment in Memorandum of Association and Rules and Regulations of IBC regarding formation of chapter and increase in the quota of women candidates for co-option in Governing Council of IBC was approved for placing before GC. Also, the proposals to request Vice presidents to monitor the activities of the chapter falling within their jurisdiction and report it to EC; approval of 62 new applications for enrolment as the

life members of IBC; call for suggestions for theme from the EC & GC members for the National Seminar to be held along with 26th Annual Convention and to call for the nominations for "Smt. Satya Goel Memorial Award" from the EC/GC members were approved besides decision on other routine issues.

5th Executive Committee Meeting

5th Executive Committee Meeting of Indian Buildings Congress was held at Hotel Babylone Capital, Raipur (Chhattisgarh) on 3rd March 2023. Ten Members including special invitees were present. At the outset, Shri V.S. Verma, President IBC welcomed the E.C. Members and the permanent invitees, thereafter the agenda items were taken up.

In the meeting, besides decisions on the routine matters and taking note of the progress made by the publication committee, the following important decisions were taken:-

i. Approval to the proposals to make IBC publications available to viewers for reading only on IBC website,

ii. Approval of 32 new applications for enrolment as the life members and one for Institutional member of IBC,

iii. Approval of the theme for the National Seminar to be held alongside National Convention decided as "Net Zero 2070 and Built Environment",

iv. Approval of constitution of a CDE cell in IBC and constitution of its committee,

v. Approval of name of Smt. Shilpi Sonar from Chhattisgarh as recipient of "Smt. Satya Goel Memorial Award"

vi. Decision on the tentative dates and venue for the 26th Annual Convention and National Seminar.

102nd Governing Council Meeting

102nd Governing Council Meeting of Indian Buildings Congress was held in Kusha Bhau Thakre Hall, Bhopal, Madhya Pradesh on January 29, 2023 where forty one members and special invitees were present. At the outset, Shri V.S. Verma, President IBC welcomed the Governing Council members and invitees and briefed the progress after the 101st G.C. Meeting which was held at Patna on 6th November, 2022. The house applauded the sincere efforts and arrangements made by Shri G.P. Mehra, PD-PIU & Chairman, IBC MP Chapter and his team for the successful conduct of Mid-Term Session and the Technical Seminar. After brief introduction of the participants, the agenda items were taken up for decision. The following important decisions were taken.

- Minutes of 101st GC Meetings held on 6th November, 2022 at Patna were confirmed and approved by Governing Council.
- In the sub-committee for "Model template for preparation of Cost-estimate of the Built-Environment projects" Sh. H.S. Dogra, Fmr. DG, CPWD and Sh. Sudhir Kumar, Fmr. ADG, CPWD shall also be co-opted.
- All the GC members were requested to use their good offices in realizing the arrears form the Institutional` members of their state or in their area of influence.

Press Coverage

हिन्दुस्तान एक्सप्रेस

कॉमन डाटा इनवार्यमेंट बिल्डिंग निर्माण के क्षेत्र में मील का पत्थर बनेगा : मंत्री भार्गव

इंडियन बिल्डिंग कांग्रेस की दो दिवसीय कार्यशाला शुरू

भोपाल। लोक निर्माण मंत्री गोपाल भार्गव ने कहा है कि कॉमन डाटा इनवार्यमेंट बिल्डिंग निर्माण के क्षेत्र में मील का पत्थर साबित होगा। इस सॉफ्टवेयर से बिल्डिंग कन्सट्रक्शन से जुड़े सभी घटक इंजीनियर, सलाहकार, आर्किटेक्ट, विशेषज्ञ, ठेकेदार, मेन्टेनेंस करने वाली एजेन्सी आपस में समन्वय के साथ कार्य कर सकेंगी। मंत्री भार्गव ने यह बात इंडियन बिल्डिंग कांग्रेस द्वारा कॉमन डाटा इनवार्यमेंट फॉर इन्फ्रा-स्ट्रक्चर प्रोजेक्ट मेनेजमेंट एण्ड इन्वेस्टमेन्ट इन कंसट्रक्शन टेक्नोलॉजी विषय पर 2 दिवसीय कार्यशाला के शुभारंभ पर कही। कार्यशाला में मध्यप्रदेश सहित 17 राज्य के प्रतिनिधि और विशेषज्ञ शामिल हुए हैं।

मंत्री भार्गव ने कहा कि आत्म-निर्भर भारत और आत्म-निर्भर मध्यप्रदेश के निर्माण के लिये प्रधानमंत्री नरेन्द्र मोदी के सपने और मुख्यमंत्री शिवराज सिंह चौहान की पहल को पूरा करने के लिए आवश्यक है कि देश और प्रदेश में सुदृढ़ आधे-संरचना निर्धारित समय-सीमा में निर्मित की जाए। उन्होंने कहा कि हम व्यवहार में देखते हैं कि निर्माण क्षेत्र से जुड़ी इकाइयों, शासन के विभागों में आपसी समन्वय की कमी होने से प्रोजेक्ट पूरे होने में समय लगता है। परिणामस्वरूप बिल्डिंग की लागत भी बढ़ती है। मंत्री भार्गव ने कहा कि नवीन तकनीकी का उपयोग गुणवत्तापूर्ण निर्माण और समय-सीमा पर नियंत्रण के लिए किया जाना चाहिए। उन्होंने कहा कि जब हम संसाधनों का बेहतर उपयोग करेंगे तो चीन, जापान, दक्षिण कोरिया और अमेरिका से बेहतर आधे-संरचना भारत में निर्मित की जा सकेगी। उन्होंने बिल्डिंग कांग्रेस में आये विशेषज्ञों से अपेक्षा कि वह इसके लिए बेहतर सुझाव दें, जिनको मध्यप्रदेश सरकार लागू करेगी।

प्रमुख सचिव लोक निर्माण सुखबीर सिंह ने कहा कि नवीन तकनीक का उपयोग स्थानीय पर्यावरण और जरूरतों को दृष्टिगत रख कर किया जाना चाहिए। इंडियन बिल्डिंग कांग्रेस के अध्यक्ष विजय सिंह वर्मा ने कहा कि मध्यप्रदेश में पत 18 वर्ष में उल्लेखनीय कार्य हुआ है। इसको और अधिक बेहतर बनाने के लिए कॉमन डाटा प्लेटफार्म मददगार साबित होगा। कार्यक्रम में इंडियन बिल्डिंग कांग्रेस के स्मोविनियर का विमोचन भी किया गया।

Hindustan Express

इंडियन बिल्डिंग कांग्रेस की दो दिनी कार्यशाला

मंत्री भार्गव ने कहा-ऐसा सुझाव दें, ठेकेदार टेंडर लेने के बाद काम छोड़कर नहीं जाएं

समाचार की कमी से होते हैं प्रोजेक्ट पूरा होने में देरी

Haribhoomi News

Other Meetings

Felicitation of Shri Chinmay Debnath, President, IE (I) and Vice President IBC by IBC Head Quarter

Felicitation of Shri Chinmay Debnath, President, IE (I) and Vice President IBC

Shri Chinmay Debnath, President, IE (I) and Vice President IBC visited the office of IBC for the first time after taking over as the President of IE(I), on 24th Feb. 2023. He was felicitated by Shri O.P. Goel, Former Director General (W), CPWD and Founder President, IBC and Shri V.R. Bansal, Former Chief Engineer MCD and Hony. Secretary IBC along with a number of office bearers at the Conference Hall of IBC Head Quarter Building, R K Puram, New Delhi. The function was attended by a number of members / permanent invitees of EC/GC and life members of IBC.

Meeting with Director, CSIR-CBRI, Roorkee

Shri Vijay Singh Verma, President, IBC and Shri V.R. Bansal, Honorary Secretary, IBC called upon Prof. R. Pradeep Kumar, Director, CSIR-CBRI at Roorkee on 20th March, 2023 for a customary meeting.

Director CSIR-CBRI, extended a warm welcome to the President and Hony. Secy., IBC. The President, IBC presented Prof. R Pradeep Kumar, Director, a set of IBC publications i.e. Preliminary Publication published during Mid Term Session, IBC Journal and Built Environment. Shri Verma briefly explained about the activities of IBC and requested for support of CSIR-CBRI in all its activities. Shri Verma also informed that for ensuing National Seminar, they have selected the topic as 'Net Zero 2070 and Built Environment'. Prof. R. Pradeep Kumar, Director, CSIR-CBRI informed that CSIR-CBRI has been doing some good work on this goal and assured full technical support besides wholehearted participation in Annual convention.

Meeting with Director CSIR-CBRI at Roorkee

Meeting in progress

Group Photo CSIR-CBRI at Roorkee

He further assured full cooperation of CSIR-CBRI in all the activities of IBC. Thereafter, both the President and Hony. Secy. were taken for a round of their testing facilities and also had opportunity to interact with Shri N.K. Negi, Chief Scientist & Head, Development Construction and held discussions with extension group & his team on varied topics.

Meeting with Speaker by IBC Delegation

A delegation of Indian Buildings Congress (IBC) comprising of Shri V.S. Verma, President, IBC; Shri V.R. Bansal, Hony. Secretary, IBC, Sh. P.K. Jain, Fmr. CE and Chairman, IBC Kota Local Chapter, and other members of IBC Kota Chapter met with Hon'ble Shri Om Birla ji, Speaker, Lok Sabha, on 21st March, 2023. The meeting was a part of the planned two-days visit to Delhi i/c visit to Parliament House, Pradhan Mantri Sangrahalaya and other tourist places of Delhi by the members of IBC Kota Local Chapter with their families.

Bouquet offered to Hon'ble Om Birla ji, Speaker Lok Sabha by Sh. Vijay Singh Verma , President IBC.

IBC Delegation in meeting with Hon'ble Sh. Om Birla, Speaker, Lok Sabha, at his office in Parliament House

The delegation first met at his residence for an informal meeting where the delegation was offered sumptuous breakfast and thereafter, Hon'ble speaker interacted with the group members. Hon'ble speaker was greeted by Sh. V.S. Verma, President, IBC with floral bouquet. Sh. P.K. Jain and other office bearers of IBC Kota Local Chapter felicitated Hon'ble speaker with pagri, shawl and an 'Abhinandan Patra'. Sh. V.S. Verma President and Sh. VR Bansal, Hony. Secretary, IBC then presented him a memento and a set of IBC periodicals.

Thereafter, after the scheduled visit of Parliament House, the group again met Hon'ble speaker in his office at the Parliament for a formal meeting. He was apprised of the activities of IBC by President, IBC which he appreciated very much. He then spoke about the infrastructure works being carried out at Panchayat level and lack of proper planning in its implementation. He exhorted the IBC to work in this regard and reiterated IBC Kota Chapter to work towards developing a model village in his constituency.

Meeting with Lt. Gen. Arvind Walia, E-in-C, MES

Shri Vijay Singh Verma, President, IBC; Shri V.R. Bansal, Honorary Secretary, IBC, called upon Lt. Gen. Arvind Walia, E-in-C, MES in the afternoon of 21st March 2023.They were accompanied by Maj. Gen. Ashok Kumar, DG, MES and Vice President, IBC.

Sh. V.S. Verma, President, IBC greeted Lt. Gen. Walia by presenting him a floral bouquet. He also presented a set of IBC publications i.e. Preliminary Publication published during Mid Term Session, IBC Journal and Built Environment to E-in-C, MES and also briefed about the activities of IBC and the forthcoming Annual Convention and National Seminar and solicited the support of MES in the same. Lt. Gen. Walia informed that MES has been doing commendable work in the field of 'Net zero' and assured contributing a paper in the seminar. The meeting overall was very cordial and fruitful and full cooperation of MES was assured in all the activities of IBC including its Annual Convention and National Seminar.

Activities of Local/State Chapters

Surat Local IBC Chapter

Representation of IBC in "ACE REFLECT Surat 2023" held on 10th February 2023 at Surat International Exhibition & Convention Centre (SIECC)

On the request of the organisers of Visitor Promotion-Exhibitions & Conferences, Indian Buildings Congress supported their event "ACE REFLECT Surat 2023" held on 10th February 2023 at Surat International Exhibition & Convention Centre (SIECC), without any financial commitment. The IBC was represented in the event by Shri Dilip Patel, Secretary, IBC Chapter Surat and Professor at Surat NIT .

The event was an exhibition of architecture, building materials, art, and design, and was Asia's leading trade fair in this field. The exhibition was an opportunity for professionals, industry experts, and enthusiasts to explore the latest offerings from some of the leading companies in these fields.

The highlights of the event included the stalls of AQUEL Company, BenQ, ZULAS N MORE, Surie Polex, Huliot Pipe, Balas, L&T Electricals & Automation, Tata Steel PRAVESH, Semitron Conchem, NCL VEKA Ltd., MX Power Track, Foremost Marbles, Millenium Marbles, MSAFE Equipments, Salamander Window and Door System Pvt. Ltd, Blue star Ltd, Chirag Netting Solutions, HP Composites, Kelvin Plastic Pvt. Ltd., Changi Lighting, Daxesh Furniture, and Akemi Technology. These stalls showcased a wide range of products and services, including water fixtures, projection technology, furniture systems, automation products, doors and windows, tile adhesives, UPVC solutions, solar energy products, electrical power socket systems, plumbing and drainage solutions, scaffolding equipment, doors, windows, netting solutions, lighting products, and stone and auto chemistry solutions.

The exhibition was highly informative event that offered a unique opportunity to explore the latest offerings in the fields of architecture, building materials, art and design. The event was well-attended and offered visitors the chance to interact with industry experts and learn about the latest products and services. The exhibits were well-presented, and the stall coordinators were knowledgeable and eager to answer any questions from visitors. It was a wonderful experience all around.



Shri Dilip Patel, Secretary, IBC Chapter Surat and Professor at Surat NIT alongwith students visiting various stalls in exhibition

Rajasthan State Chapter – Jaipur

3rd meeting of IBC Chapter Jaipur was convened on 25th Feb 2023 under the Chairmanship of Shri C.L. Verma, Chairman, IBC Jaipur Chapter, in Conference Room, Rajasthan Housing Board, Jaipur. Engineers/ Architects/Builders from PWD, RHB, JDA, PHED, CPWD, JVVNL and RUDSICO were present in the meeting. Sh. K.C. Meena, Chief Engineer, Rajasthan Housing Board and Vice President of IBC graced the occasion. Sh. V.R. Bansal, Honorary Secretary, IBC also joined the meeting virtually.

Meeting in Progress of IBC Chapter, Jaipur

Deliberations in the meeting included to advise RHB to adopt CDE, to enhance membership base of IBC and to approach JDA, RSRDC, Builders & others to enroll themselves as Institutional members of IBC. In the meeting it was also decided to make efforts for allotment of office accommodation for IBC within Rajasthan Housing Board campus and to have regular interactive meetings/seminars.

Himachal Pradesh State Chapter – Shimla

A general meeting of Himachal chapter of Indian Buildings Congress was held on 4th March, 2023 under the Chairmanship of Engineer-in-Chief, H.P. PWD, to review the activities of chapter. The meeting was attended by about 30 engineers of H.P. PWD. In the meeting it was emphasized to give boost to the membership drive. It was further informed to the members that office/library of chapter has been opened in room no. 509 of Nirman Bhawan and the books supplied by IBC Head Quarter have been kept in the library for discussion/consultation.

Participants of General Meeting

Presentation in progress

In the meeting a presentation was also made by Rashmi group of companies on TMT Steel and by Indian Oil Total Private Ltd. on Bitumen derivates products. The issues discussed in the presentations were very much useful for the engineers.

Chhattisgarh State Chapter – Raipur

National Seminar and Material Expo on Innovative Building Materials and Technologies at Raipur on 4th March, 2023

Indian Buildings Congress, Chhattisgarh State Center (IBC-CSC), Raipur, organized a seminar on **"Innovative Building Materials and Technologies"** in association with Tata Tiscon, M/s Pasa Associates Pvt. Ltd, Raipur supported by CREDAI, Chhattisgarh, The Indian Institute of Architects, Chhattisgarh Chapter, Practicing Engineers Welfare Association, Raipur, MAPEI and Armacell, on 4th March 23 at 10:30 am at Hotel Babylon Capital, Raipur. Eminent speakers were invited to deliver their presentations on the topic.

Dr. M.K. Verma, Vice Chancellor, Chhattisgarh Swami Vivekanand Technical University was the Chief guest of the inaugural function which was presided over by Sh. Vijay Singh Verma, President, IBC and PD, MPSTDC while Sh. Pradeep Mittal was guest of honor. The dais was shared by Sh. Salil Rai Shrivastava, Chairman, Chhattisgarh State Centre, Indian Buildings Congress and OSD, Department of Housing and environment, Sh. V.R. Bansal National Hony. Secretary, IBC, Sh. S.K. Aggarwal, National Vice-President, IBC, and Sh. Alok Mahawar. The dignitaries were welcomed by presenting them floral bouquets.

View of Audience

Inaugural Address by Dr. M. K. Verma, Chief Guest & Vice Chancellor, Swami Vivekanand Technical University, Chhattisgarh

View of Exhibition Hall

Sh. Vijay Singh Verma, President, Indian Buildings Congress, in his opening address, welcomed the dignitaries on the dais, all the members, panelist, and audience. He briefed everyone attending the seminar about the history, role, and vision of Indian Buildings Congress. While expressing the relevancy of the seminar in the present-day scenario, he stitched the main reasons of the need of material expo and National seminar on innovative building materials and technologies.

Dr. Manmohan R Kalgal making his presentation

Dr. Manmohan R Kalgal, consultant and past president of ICI, Bengaluru Chapter elaborated the energy trends in construction technology and material.

Dr. Amarnath C. B., Digital Transformation strategist and President of India BIM Association from Mysore, in his presentation explained the use of BIM in infrastructure project management and insisted that it is the most appropriated time to overtake conventional method by BIM technologies which will results in the fast completion of projects and will impart in the development of the Nation.

Sh. Kishore Kumar Dasam and Vishnu Datta Ayenampudi of Larsen and Tubro Ltd, shared their experience and views on advantages of implementation of at Indian Institute of Technology, Bhilai projects and other construction projects over the conventional construction management tools.

Sh. Nazmul Hussain of Tata steel Ltd, Kolkata mentioned the initiatives taken by M/s Tata steel Ltd for the improvement of innovative steel products in the construction industries and emphasized the use of welded wire mesh in the concrete.

Sh. S. J. Vijay making his presentation

Sh. S. J. Vijay, Chairman, Hommision India Pvt. Ltd and Salmon Leap India, Mumbai, in his talk, mentioned the importance of 3 D monolithic modular precast buildings as a building product (BAAP) particularly in rural India.

Sh. Siddharth Mondal, regional technical manager of M/s Fischer India, in his presentation, explained the principles of passive fire and how to control the fire by innovative technologies and by implementation of advanced tools of fire control.

Sh. Deepak Patni, Director, Digital Energy, Schneider Electrics, explained the use of digital technologies in building automation, and elaborated the advantages of automated buildings over the conventional buildings.

Dr. Debasish Sanyal, Dean, National Institute of Technology Raipur and life member, Indian Buildings Congress, in his concluding remarks, summed up glimpses of all the speakers and thanked them for sparing their valuable time for the seminar.

Sh. Pradeep Mittal, Immediate Past-President, Indian Buildings Congress, also shared his thoughts and congratulated the IBC Chhattisgarh Chapter for organizing this one-day seminar and material expo. Sh. S. K. Agarwal, National vice President also thanked the organizers for conducting seminar and exhibition on such a relevant topic of Innovative building materials and technologies. He mentioned that the seminar has been well attended by over 500 participants of the Indian Buildings Congress, Chhattisgarh Sate center under the chairmanship of Sh. Salil Rai Shrivastava, Chairman, Chhattisgarh State Centre, Indian Buildings Congress and OSD, Department of Housing and environment. He also applauded the efforts by Sh. Alok Mahawar, Dr. Goverdhan Bhatt, Sh. Anil Tiwary, Sh. Deepak Shirke to make the event successful under the guidance of all Indian Buildings Congress, Chhattisgarh Sate center members.

All the dignitaries present on the dais as well as all the speakers and other eminent personalities attending the seminar were honoured by presenting a memento.

At the end, Sh. Anil Tiwary, Joint Secretary, Indian Buildings Congress, Chhattisgarh Sate center presented the vote of thanks. He thanked all the distinguished guests of National Executive Committee members for participating in the seminar, all Associates, Co-sponsors and all the panelist for their valuable deliberations and the participants for attending the seminar and exhibition and making it grand success.

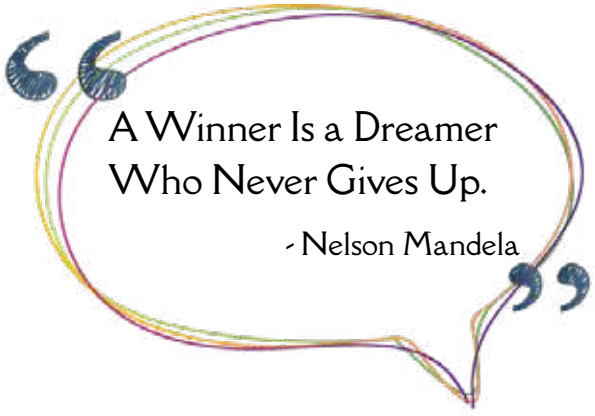
Kota Local IBC Chapter

Delhi Tour by the Members of IBC Kota Chapter

Meeting with Honorable Speaker Lok Sabha Shri Om Birla ji at his Kota Camp office

During the Kota visit by Hon'ble Speaker, Lok Sabha, India, Shri Om Birla ji, a IBC delegation had a courtesy meeting with him on 5th March, 2023 at his Kota camp office. During the general discussions, Hon'ble Speaker showed his faith in IBC Kota Chapter by assigning it the task of planning and proposing basic infrastructures required at Gram Panchayat level and developing one of them as a model. He also graciously accepted to the proposed two-day visit of Parliament House, Prime Minister's Museum, Amrit Udyan etc. by IBC Kota Chapter members along with the families of IBC members on March 21-22, 2023.

On 21.03.2023, 34 members of IBC Kota Chapter alongwith their family members and 21 members of IBC from Delhi including IBC President, Sh. Vijay Singh Verma, Honorary Secretary, Sh. V. R. Bansal and past president IBC Sh. Pradeep Mittal ji met for an informal meeting at residence of Honourable Shri Om Birla, On behalf of IBC, Hon'ble Speaker was honoured by Shri Vijay Singh Verma, President, IBC, Sh. V.R. Bansal, Hony. Secretary and Sh. P.K. Jain, Chairman Kota Chapter by presenting shawl, garland, pagri, bouquet, appreciation letter and memento.



Garland and memento offered to Hon'ble Om Birla ji, by Sh. P. K. Jain, Chairman IBC Kota Chapter, & others

Meeting with Hon'ble Speaker, Lok Sabha

Accompanied by a representative of the Hon'ble Speaker, the group proceeded as per the scheduled tour of the Parliament House to watch the proceedings of the Lok Sabha.

Thereafter, in a formal meeting with the Hon'ble Speaker Parliament Office, Hon'ble speaker appreciated the vision of IBC and put forward his views as to how IBC can put in its effort in preparation of the Gram Panchayat Infrastructure Development Plan. He wishes to encourage IBC to work towards creating a model scheme in this regard. He expressed his desire to continue working in this direction by the IBC Kota chapter in his constituency.

Thereafter, the group went to see the Prime Minister's Museum, Teen Murti Chowk, and with the help of the guide, had an in-depth view of the chronological activities and important decisions of the past Prime Ministers.

The next day, on 22.03.2023, in the forenoon, the members visited various historical monuments (Lal Kila, Qutub Minar, Jantar Mantar etc.). In the evening, the group visited Akshar Dham Temple courtesy the arrangements made by former President, IBC, Sh. Pradeep Mittal.

IBC Kota Chapter conveyed his gratitude to Hon'ble Lok Sabha Speaker, Shri Om Birla ji and his staff for their positive outlook and cooperation in organizing the visit to Parliament House and Prime Minister's Museum, besides facilitating all the arrangements for stay and transportation.

IBC Members & their families at Parliament House Premises

Madhya Pradesh State Chapter - Bhopal

One Day Training Program

IBC MP chapter organised one day training program on the topic of **"Quality Control and Project Management in Building Construction Work"** on 18th March 2023 at Lotus Hall, Hotel Courtyard Marriott, Bhopal. On this occasion, IBC MP Chapter invited the guest speakers from Mumbai and Delhi to share their experience with the nominated delegates of MPPWD including chief engineers and superintend engineers of different zone of PIU, MPPWD.

Presidential Address by
Sh G.P Mehara, Chairman IBC MP Chapter

The program was inaugurated by Mr. R.K. Mehra (Secretary, MPPWD) and Mr. G.P. Mehra (Project Director PIU MPPWD, & Chairman IBC MP Chapter) presided over the inaugural function.

Starting the proceedings, all the dignitaries were welcomed by presenting them a floral bouquet. Inaugurating the session, Sh. R.K. Mehra (Secretary, MPPWD), in his inaugural address, spoke about the government policy being planned for quality control of infrastructural projects.

Sh. G.P. Mehra, PD-PIU, MPPWD made a presentation on CPM technique for better project management and quality control and emphasised that the government building project work should be of high quality and timely delivered so that it becomes an inspiration for other sectors.

Mrs. Yogini Deshpande (director Renuka consultant) shared her experience in quality control of RMC concrete and the modern non-destructive testing technique for different building component.

Next speaker, Mrs Suprabha Marathe (Retired Deputy Municipal Commissioner Mumbai) shared her experience on the departmental work which she had lead while in Municipal service. She shared that for the ingredient of concrete like aggregate and sand etc. query/ source could be centrally empanelled by nominated agency at government level so the quality of that material would be ensured to which would consequently ensure better quality of the works. This was one very important point that is very relevant for government projects.

Continuing the sequence of knowledge sharing, Mr. Praveen Nigam, Executive Engineer from MPPWD, threw light on good construction practice for building works and shared the do's and don'ts for different component of building works to ensure better quality of construction.

The last speaker for the day was Mr. Rajesh Rastogi of M/s Eclectic Design Studios, Delhi who spoke about the modern-day practices in the field of Architectural PMC. He emphasised that the architectural and PMC work should be done by two different agencies and PMC agency should be engaged first before engaging the Architectural firm. PMC agency should do the feasibility survey and freeze the requirements for the project.

View of Audience

Presentation by Sh. P.K. Nigam, EE, MP PWD

At the conclusion of the session, all the speakers were facilitated by presentation of mementoes to them. In his concluding remarks, Sh. G.P. Mehra announced that this type of knowledge exchange programme will continue in future under the banner of IBC. Sh. S.L. Suryavanshi, Addl. Project Director, PIU, MPPWD proposed vote of thanks.

West Bengal State Chapter - Kolkata

Seminar on "Construction Management, Assessment of Structural Health, Use of Chemicals and Retrofitting of Structures"

Indian Buildings Congress, West Bengal Chapter organized Seminar on **"Construction Management, Assessment of Structural Health, Use of Chemicals and Retrofitting of Structures"** on 22nd March, 2023 Wednesday from 5 P.M. to 9 P.M. in Conference Room of "Pranjali behind Maidan Sub-division, P.W.D, Hastings" Kolkata.

The Seminar consisted of two sessions viz Inaugural Session and Technical Session. The Seminar was attended by more than 70 members and dignitaries. Shri Amitabha Ghoshal President, Stup Consultants India Ltd. having vast experience in mega projects was the Chief Guest, who delivered keynote speech covering various aspects related to topic of the Seminar. Shri B. K. Dam, Chairman and Shri A. Ghoshal, Chief Guest lighted the Inaugural lamp marking the beginning of the Seminar. Shri B.K. Dam, Chairman, West Bengal State Centre welcomed the dignitaries, expert speakers, members and invitees and briefed about the activities of the Centre. Shri Kalyanmoy Mitra, Vice-Chairman presented the Vote of Thanks in Inaugural Session.

In the Technical Session Shri Srikumar Bhattacharya, Former E-in-C & E.O. Secretary, P.W.D., Advisor to Project Review Cell of Finance Department, Govt. of West Bengal made his presentation on "Retrofitting of Heritage Structures" covering actual works of Writers Buildings, Town Hall and Calcutta High Court which were very interesting. Shri Chanchudh Bhattacharya, an eminent expert, made presentation on "Assessment of Structural Health of High Rise Buildings." Shri Shiladitya Basu, Sr. Vice President of Hindcon Chemicals Ltd. and IBC National Award Winner, made a versatile Technical presentation on "Use of Construction Chemicals for Rehabilitation Works".

Various questions from participants were clarified by the authors. The Report of Seminar was published in local Daily Newspaper "EI SAMAY " (The Times of India Group) from Kolkata on 1st April, 2023.

Lighting of Ceremonial Lamp

Sh. Amitabha Ghoshal making his presentation

Congratulation

IBC congratulates Shri Subhasish Panda, IAS on taking over as Vice Chairman DDA. Shri Panda is an officer of the 1997 – batch IAS officer of the Himachal Pradesh cadre. Panda did an M.Phil degree in environmental science from Jawaharlal Nehru University and Master's degree in governance and development from the UK's Institute of Development Studies.

National News

The World's Longest Highway Tunnel (9.02 Km.) - Atal Tunnel

The 9.02 km long Atal Tunnel at Rohtang has created a new record! Located at an altitude of more than 10000 ft, this tunnel connects Manali with Lahaul, and has been recognised as the world's longest single tube highway at this height by the World Book of Records, London.

Referring to this, a Border Roads Organisation (BRO) spokesperson stated that they have received a certificate from the World Book of Records stating the same. The Ministry of Defence also shared this message and added that Atal Tunnel has now been officially certified as the World's Longest Highway Tunnel above 10000 Feet by the World Book of Records.

This iconic tunnel is an engineering marvel in the Himalayas, and has proved to be a game changer for Lahaul and Spiti district as it offers safe and all-weather connectivity to the remote regions, and eventually with the rest of India.

While the south portal of the tunnel is near Manali, standing at a height of 9840 ft, the north portal is at Sissu in the Lahaul valley, at a height of 10,171 ft. Apart from safe travel, the tunnel has reduced the distance between Manali and Keylong by 46 km, thereby saving more than two hours of travel time.

As per the reports, the tunnel has been built at a cost of INR 3200 crore, and is also the world's first tunnel that offers 4G internet connectivity. CCTV cameras are installed at every 60 m in the tunnel, while surveillance is carried out through the control room. Then, there are emergency exit doors that have been installed at every 150 m in the tunnel.

Delhi Model of Rehabilitation of Slum Dwellers

On 2nd Nov. 2022, the Hon'ble Prime Minister, Sh. Narendra Modi inaugurated a unique EWS (Economically Weaker Section) housing project of 3024 houses completed by Delhi Development Authority at a cost of Rs. 345 Cr. The project is being showcased by the Govt. and thousands of jhuggi dwellers from all part of Delhi are curiously visiting the Kalkaji flats to oversee their dream of future. Then EWS coming in says that the response after seeing the flats, has been ecstatic. This is an Iconic project of Mr. Pramod Adlakha, M.D., M/s. Adlakha Associates Pvt. Ltd., Architectural-Engineering Consultants, New Delhi the first in-situ redevelopment (EWS housing) project at Kalkaji Extension, New Delhi.

Though the Central and State Governments are constructing lakhs of houses in the Urban cities to rehabilitate the weaker sections of the Society and the Jhuggi dwellers, this project is different from other rehabilitation projects. This is the first "In-situ Rehabilitation" scheme completed and handed over in Delhi. The Latin phrase 'in-situ' means 'onsite', meaning thereby that the houses are constructed at the same spot where these slums exist, thereby ensuring that the livelihoods of people are secured.

There are 3 slum clusters in Govindpuri, Kalkaji South of Delhi, with about 8000 shanties located next to some affluent colonies like East of Kailash, Greater Kailash,

Chittranjan Park. Instead of uprooting and relocating them to farflung areas of Delhi, the Govt. introduced a novel concept of in-situ slum rehabilitation i.e. constructing flats in the same area, without endangering the livelihoods of the people.

The total scheme has been divided into two phases. In the phase - I, 3024 number of Jhuggi's dwellers are being rehabilitated, which was inaugurated by the Prime Minister, the site vacated by these 3024 Jhuggis, shall be developed for construction of another 3000 houses.

The Consultant Architect of the project, Mr. Pramod Adlakha, M.D. Adlakha Associates Pvt. Ltd. stated that another limitation was the site condition, which is undulating in nature with ground level difference of more than 7M. To accommodate 3000 families within the Control Norms of Master Plan of Delhi,was impossible. Thus a special relaxation was granted by the Ministry of Urban Development, raising the density to 600 + 10% DU/Ha instead of 200 DU/Ha and FAR to 400 instead of 200. Thus the entire proposal was a challenge due to high density development and higher FAR on an undulating site. The final project has been acclaimed by all including the Delhi Urban Art Commission. Appreciating, the DUAC in its letter wrote "The Commission observed that the proposal is unique of its kind for an in-situ Rehabilitation".

The accommodation in a dwelling unit include two rooms, kitchen, WC, bath and a balcony. Some of the green building parameters considered are the sewerage treatment plant, dual water supply, re-circulation of treated water for WC& horticulture, rain water harvesting, segregation of wet & dry cores, use of CLC blocks for walls instead of clay bricks, solar street lights, use of LED fixtures, courtyard concept for adequate natural ventilation & light.

Despite weaker section housing, their aspirations of high living standards is achieved in the project from the finishes provided, viz. vitrified floor tiles, coloured ceramic tiles in W.C. and Bathroom, Kota stone in common corridors, stairs, passage. UPVC windows, kitchen with granite working platform, internal finishing with acrylic distemper, external finishing with textured paint, VDC high grade concrete roads. Lift lobby marble stone cladding, footpaths heavy duty interlocking pavers..

278 किमी लंबे EV हाइवे का ट्रायल

दिल्ली–जयपुर इलेक्ट्रिक व्हीकल हाइवे का पिछले साल सितंबर और अक्तूबर महीने में किया गया ट्रायल सफल रहा है। जिसकी कुल लम्बाई 278 कि.मी. है। एनएच फॉर ईवी वर्किंग ग्रुप के सदस्यों ने ट्रायल रिपोर्ट पर चर्चा के बाद कुछ सुधार और फैसिलिटी बढ़ाने का सुझाव दिया है। इसे सभी इलेक्ट्रिक वाहनों के लिए खोलने पर अपनी सहमति दे दी है। ऐसे में एनएचईवी ने अधिकारिक तौर पर जल्दी ही दिल्ली–गुड़गांव–जयपुर के बीच इसे खोलने की तैयारी शुरु कर दी है। ट्रायल मे रोड की वास्तविक स्थिति में इलेक्ट्रिक गाड़ियों का प्रदर्शन, जाम व बारिष जैसी विकट परिस्थितियों मे समय और रेंज की स्थिति, प्रति वाहन और प्रति सीट का खर्च, डीजल और पेट्रोल के मुकाबले प्रदूषण की स्थिति आदि पॉइंट्स को शामिल किया गया था। रिपोर्ट में दावा किया गया कि जिन पॉइंट्स को जाचने के लिए ट्रायल हुआ था, उसके अपेक्षा से ज्यादा अच्छे परिणाम मिले हैं। ऐसे में दिल्ली गुड़गांव से जयपुर तक के बीच का सफर न केवल सस्ता और सुविधाजनक होगा बल्कि पर्यावरण की दृष्टि से भी यह लाभदायक साबित होगा। इस इलेक्ट्रिक व्हीकल हाईवे पर 20 चार्जिंग, स्टेशन बनाए गए है जिनकी चार हजार वाहनों को चार्जिंग की क्षमता है।

International News

Bio-Receptive Technology on Concrete

As urbanization and climate change continue to change our cities, architects and designers are looking to biophilic design to help mitigate the harmful effects. The harmful effects on our cities lead to decreased biodiversity, heat stress, high use of water and energy for cooling, a lack of water-retaining capacity, flooded streets, as well as severe air pollution.

Aiming to provide a means to turn our concrete jungles into places where plants can thrive, Respyre, an advanced bio-receptive technology company in South Holland, a province of the Netherlands, has created eco-concrete, a type of building material that covers any vertical surface with moss and low-maintenance plant life.

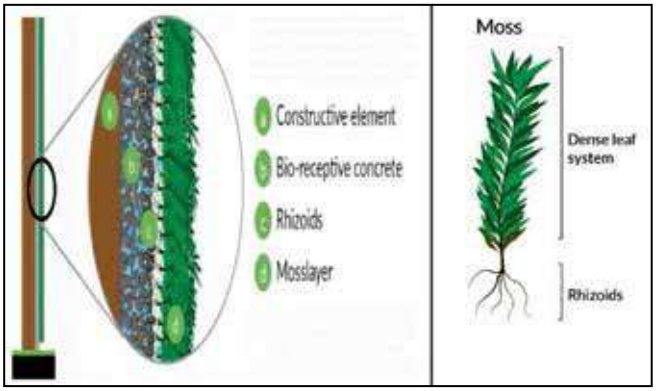
In the Netherlands, more than 500 species of moss occur of which about 40 species grow on stony materials

including concrete. The aim is to apply this concrete as a layer on existing but otherwise bare concrete surfaces. By doing so these bare surfaces will over the time be transformed into moss overgrown 'living' surfaces. The main reason why certain types of concrete support spontaneous and abundant growth of moss are that these are relatively porous surface resulting in a high moisture retaining capacity which improves its bio-receptivity towards moss growth.

The team of researchers at Respyre has created a means for moss to grow on concrete without harming the overall structure. The Respyre's bio-receptive concrete could be cast into almost any object, from plant bins to vertical surfaces. The researchers at Respyre say it is an innovative, patent-pending, bio-receptive concrete solution. After hardening, the bio-receptive concrete's surface accommodates the growth of moss. Several unique characteristics of the concrete make it bio-receptive which include its porosity and water retainment, micropore texture, acidity, and nutrients that are included in the mixture."

Moss differs from other types of vegetation due to at least one important aspect: it absorbs most of its growth-supporting nutrients via its leaves and not via its rhizome (root) system. The rhizomes are essentially only used to attach itself to the underlying substrate without harming underlying element and thus it purifies air. The absence of roots also means it is not land-bound, as it can grow everywhere, at every height and orientation, without the need for bins to provide roots with nutrients and water. Uptake of nutrients via its dense leave system provides mosses with the potential to clean passing air and water from contaminants. Mosses can also provide water absorption and retention in case of heavy rainfall, evaporative cooling on hot days, and have a soundproofing effect. From an aesthetic point of view, there might also be benefits to be found in a bio-diverse green wall compared to lifeless grey surfaces. All together, growing moss on receptive concrete has the potential to contribute to the liveability of cities and improve the well-being of citizens.

The solution can either be plaster, a prefabricated concrete element or concrete poured on location. The product of Respyre technologies can easily be applied on existing structures but also efficiently incorporated into new projects. This is a quick, easy and cost-effective way of incorporating nature in the urban environment. Once placed in a suitable environment the bio- receptive concrete facilitates the spontaneous growth of moss. With the added nutrients moss is incited to grow quickly. Alternatively the moss can also be grafted, leading to even quicker results. Either way, moss covers the surface within a couple of months and immediately start to provide its benefits. Unlike other green facades moss facades require no complicated anchoring system. Technological solution provides all needs of anchoring the moss as well as an environment where it can thrive autonomously. A moss facade based on the Respyre solution requires no tending too, making it an even more cost-effective solution.



Moss growth on bio- receptive concrete wall

Reference:- Respyre Advanced Bio Receptive Technology

"अगर आप मन से स्वतंत्र है, तो वास्तव में आप स्वतंत्र हैं।"

- डॉ. भीमराव अम्बेडकर

List of New Members of IBC enrolled

IBC welcomes the following New Members enrolled during 07/01/2023 to 03/03/23

S.No.	M.No.	Name	Qualification	Designation	Department	City	State
1.	ML-9520	Shri Sumeet Singh	M.Arch.	Prinicipal Architect/ Proprietor	Sumeet Associates	MUMBAI	Maharashtra
2.	ML-9521	Shri Gurpreet Shah	MS in Urban Design, B.Arch.	Principal Architect	Creative Group LLP	NEW DELHI	Delhi
3.	ML-9522	Shri Charanjit S. Shah	B.Arch.	Founding Principal	Creative Group LLP	NEW DELHI	Delhi
4.	ML-9523	Shri Pradipkumar Jaywantrao Pawar	Diploma in Civil Engg.	Former Assistant Executive Engineer	Maharashtra PWD	NASIK	Maharashtra
5.	ML-9524	Shri Ajoy Kumar Sinha	B.Sc. (Engg.) Civil	Former Chief Engineer	PHED, Bihar	PATNA	Bihar
6.	ML-9525	Shri Mukesh Kumar	A.M.I.E	Executive Engineer	Bihar BCD	PATNA	Bihar
7.	ML-9526	Shri Mahendra Pal	M.E. (Strct.)	Chief Engineer	Military Engineer Services	GANDHI NAGAR	Gujarat
8.	ML-9527	Shri Surya Prakash Ratna	B.T (B.Sc. Civil Engg.)	Executive Engineer	Bihar BCD		Bihar
9.	ML-9528	Shri Gajendra Kumar	B.Tech. (Civil), B.Arch.	Junior Engineer	Bihar BCD		Bihar
10.	ML-9529	Shri Mithilesh Kumar	B.Tech. (Civil)	Junior Engineer	Bihar BCD	PATNA	Bihar
11.	ML-9530	Shri Brajesh Kumar	B.Sc. Engg.	Executive Engineer	Bihar BCD	PATNA	Bihar
12.	ML-9531	Shri Bikash Kumar Pandey	Honours (Math)	Internal Financial Advisor	Bihar BCD	PATNA	Bihar
13.	ML-9532	Shri Shashi Bhushan	B.E. (Civil)	Executive Engineer	Bihar BCD	PATNA	Bihar
14.	ML-9533	Shri Ramesh Jha	B.E. (Civil)	Chief Engineer	Urban Development Department	PATNA	Bihar
15.	ML-9534	Shri Kritesh Kumar	B.E. (Computer Science)	Project Co-ordinator	Kritesh Construction Pvt. Ltd.	PATNA	Bihar
16.	ML-9535	Shri Gautam	M.Tech.	Assistant Engineer-cum-Estimating Officer	Department of Planning & Development	PATNA	Bihar
17.	ML-9536	Shri Harendra Kr. Upadhyay	B.Sc. Engg.	Executive Engineer	Rural Works Department	PATNA	Bihar
18.	ML-9537	Shri Lala Guru Bakhz Das	B.E. (Civil)	Junior Engineer	Bihar BCD	BHAGALPUR	Bihar
19.	ML-9538	Shri Pritesh Patel	B.Tech. (Civil), M.Tech. (Strct.)	Assistant Engineer	Bihar BCD	ARA	Bihar
20.	ML-9539	Shri Indra Kumar	B.Tech. (Civil)	Sr. Divisional Engineer	Northern Railway	LUCKNOW	Uttar Pradesh
21.	ML-9540	Shri Ranjeet Kumar	M.Tech.	Sr. Divisional Engineer/Cord.	Northern Railway	LUCKNOW	Uttar Pradesh
22.	ML-9541	Shri Rakesh Kumar	B.E. (Civil)	Chief Workshop Manager	Northern Railway	LUCKNOW	Uttar Pradesh
23.	ML-9542	Shri Tarun Bansal	B.Tech.	Contractor	Tarun Bansal Contractor	BATHINDA	Punjab
24.	ML-9543	Shri Madhusudan Pathak	B.Sc. Engg. (Civil)	Former Chief Engineer	Telecom Department	PATNA	Bihar

S.No.	M.No.	Name	Qualification	Designation	Department	City	State
25.	ML-9544	Shri Dina Nath Prasad	B.Sc. Engg.	Former Superintending Engineer	Road Construction Department	PATNA	Bihar
26.	ML-9545	Shri A. Umasankar	B.E. (EEE), M.E. (PS), MBA (HR)	Dy. Gen. Manager (Engg.-Elect.)	Airports Authority of India	CHENNAI	Tamil Nadu
27.	ML-9546	Shri Ashok Kumar	B.Tech. (Civil Engg.)	Executive Engineer	Uttarakhand PWD	HALDWANI	Uttarakhand
28.	ML-9547	Shri Dhanurjay Majhi	B.Tech. (Civil Engg.)	Assistant Executive Engineer (Civil)	Water Resources	BHUBANES-WAR	Odisha
29.	ML-9548	Shri Rajeev Kumar Gupta	B.Tech.(Civil), M.E. (Earthquake Engg.)	Chief Engineer	CPWD	DELHI	Delhi
30.	ML-9549	Shri Sheikh Javaid Maqbool	B.E.	Superintending Engineer	PWD Roads & Buildings	SRINAGAR	J & K
31.	ML-9550	Shri Bhaskar Das	B.Tech.				West Bengal
32.	ML-9551	Shri Sandeep Kumar Dubey	B.E. (Mech.), A.M.I.C.E. (Civil)	Approved Valuer & Chartered Engineer	Sanjeev Shrivastav & Associates	RAIPUR	Chhattisgarh
33.	ML-9552	Shri Shiv Singh Thakur	Diploma in Civil	Vice President	Raipur Development Authority	RAIPUR	Chhattisgarh
34.	ML-9553	Shri Satyendra Chandrakar	B.Tech.	Chief Consultant	Satyem Associates	RAIPUR	Chhattisgarh
35.	ML-9554	Shri Choure Ganesh Bapurao	B.E. (Civil), ME (Geotech), PGDCM	Executive Engineer	Maharashtra PWD	PUNE	Maharashtra
36.	ML-9555	Ms. Anshu Dadwal	B.Arch.	Assistant Engineer	HP PWD	SHIMLA	Himachal Pradesh
37.	ML-9556	Ms. Sarojini Sharma	B.Arch.	Principal Architect	Tourism	SHIMLA	Himachal Pradesh
38.	ML-9557	Shri Vijay Rana	AIIA	Assistant Engineer	HP PWD	SHIMLA	Himachal Pradesh
39.	ML-9558	Shri Dilip Das	B.E.	Executive Engineer	Tripura PWD	AGARTALA	Tripura
40.	ML-9559	Shri Parth Sindolia	B.E. (Hons)	Project Manager	NBCC (India) Limited		Rajasthan
41.	ML-9560	Shri Amit Sharma	B.E. (Mechanical)	Executive Engineer	HP PWD	SHIMLA	Himachal Pradesh
42.	ML-9561	Shri Deevanshu Kakkar	B.Tech.(Civil), MBA (Fin)	Founder	Newwave Infratech	JAIPUR	Rajasthan
43.	ML-9562	Shri Amit Kakkar	M.Tech., MBA	Chief Engineer	Rajasthan PWD	JAIPUR	Rajasthan
44.	ML-9563	Shri Arun Kumar	B.Tech. (Elect.)	Director	Design Centre Consulting Engg. Pvt. Ltd.	GHAZIABAD	Uttar Pradesh
45.	ML-9564	Shri Sushil Laxman Gaikwad	PGDM (Operations), B.E. (Civil)	Proprietor	Sushil Gaikwad	THANE	Maharashtra
46.	ML-9565	Shri Niraj Kumar	B.Tech (Civil Engg.)	Project Manager (Civil)	NBCC (India) Limited	NEW DELHI	Delhi
47.	ML-9566	Shri Thangmuansang Guite	M.Tech. (Civil Engg.)	Managing Director	Tunnu Engineering and Consultancy	CHURA-CHANDPUR	Manipur
48.	ML-9567	Shri Varun Gupta	B.Tech. (Civil)	Technical Manager	Civil Technoglobal Advanced Testing Centre	CHHIND-WARA	Madhya Pradesh
49.	ML-9568	Shri Sahil Rana	B.Tech.(Civil Engg.)	Assistant Engineer	HP PWD	NAHAN	Himachal Pradesh

S.No.	M.No.	Name	Qualification	Designation	Department	City	State
50.	ML-9569	Shri Anmol Kumar	M.Tech (Strct.)	Assistant Engineer	HP PWD		Himachal Pradesh
51.	ML-9570	Shri Arvinder Sharma	BBA	Proprietor	Rikhi Construction Company	SUNAM	Punjab
52.	ML-9571	Dr. Kranti Kumar Maurya	Ph.D	Assistant Professor	NIT Patna	PATNA	Bihar
53.	ML-9572	Shri Sitaram Dehariya	B.E. (Civil), MBA	Dy. General Manager	NBDC Limited	MAJHGAWAN	Madhya Pradesh
54.	ML-9573	Shri Subhash Chandra Mishra	B.Tech. (Civil)	Former DGM	Noida Authority	NOIDA	Uttar Pradesh
55.	ML-9574	Shri Anil Kumar Gupta	Diploma in Civil Engg.	Former Superintending Engineer	Raipur Development Authority	RAIPUR	Chhattisgarh
56.	ML-9575	Shri Shaukat Jeelani Pandit	B.E. (Civil)	Former Chief Engineer	J & K PWD	SRINAGAR	J & K
57.	ML-9576	Shri Virag Saxena	B.E. (Civil)	Partner	Sallies Consultants	INDORE	Madhya Pradesh
58.	ML-9577	Shri Vinod Jindal	Graduate	Partner	Pankaj Jindal Contractor	PATIALA	Punjab
59.	ML-9578	Shri Harshwardhan	D.E. (Civil), D.M. (Cons. Mgmt.), AMICE (I), AMIE, B.Tech. (Civil)	JE-D (Civil)	IUAC	NEW DELHI	Delhi
60.	ML-9579	Shri Dhananjay Chamalwar	B.E. (Civil), ME (Geotech), LLB	Superintending Engineer	Maharashtra PWD	NAGPUR	Maharashtra
61.	ML-9580	Shri G.P. Mehra	B.E. (Civil)	Engineer-in-Chief	MP PWD (PIU)	BHOPAL	Madhya Pradesh
62.	ML-9581	Shri Varinder Kumar Sharma	M.E. (Civil Strct.)	Lab Technician	Thapar Institute of Engineering & Technology	PATIALA	Punjab
63.	ML-9582	Shri Abhishek Koshta	B.E.	Assiatant Engineer	MP PWD	RATLAM	Madhya Pradesh
64.	ML-9583	Shri Raj Mani Singh	B.E. (Civil)	Executive Engineer	MP PWD	REWA	Madhya Pradesh
65.	ML-9584	Dr. C.B. Amarnath	Ph.D in BIM	President	India BIM Association	HULIKERA	Karnataka
66.	ML-9585	Shri Dayaram Tomar	Diploma in Civil Engg.	Assistant Engineer	MP PWD	GUNA	Madhya Pradesh
67.	ML-9586	Shri K.P. Kujur	B.E. (Civil)	DPE	MP PWD (PIU)	KATNI	Madhya Pradesh
68.	ML-9587	Shri Devendra Kumar Medhekar	B.Arch., M.U.D.P	Architect	MP PWD	BHOPAL	Madhya Pradesh
69.	OM-9588	Ms. Monali Shyam Tapre	B.Arch.	Architect	Monali Wakode	THANE (W)	Maharashtra
70.	OM-9589	Ms. Manisha R. Patil	B.E. (Electronic & Tel.), M.Tech. (Electronic)	Electronic Engineer		AKOLA	Maharashtra
71.	ML-9590	Shri Amit Khare	B.E. (Chem.), M.E. Env. MBA, Ph.D	Proprietor-Director	A2 Environment Consultant	RAIPUR	Chhattisgarh
72.	ML-9591	Shri Mandeep Dawar	B.Tech.	Assistant Engineer	MP PWD	INDORE	Madhya Pradesh
73.	ML-9592	Shri Abhishek Chauhan	B.Tech., MBA	Deputy Director	Directorate of Environment, Govt. of Punjab	CHANDIGARH	Chandigarh
74.	ML-9593	Shri Gurkarn Singh Sihra	B.Tech. (Civil Engg.)	Junior Engineer	Water Resources Department	JAGRAON	Punjab

S.No.	M.No.	Name	Qualification	Designation	Department	City	State
75.	ML-9594	Shri G.P. Verma	B.E. (Civil)	Superintending Engineer	MP PWD	BHOPAL	Madhya Pradesh
76.	ML-9595	Shri Alok Mandloi	B.E. (Civil)	SDO	MP PWD (PIU)	ANJAD	Madhya Pradesh
77.	ML-9596	Shri Anurag Yadav	B.E., M.Tech.	Project Engineer	MP PWD (PIU)	BHOPAL	Madhya Pradesh
78.	ML-9597	Shri P.K. Jha	B.E. (Civil)	Executive Engineer	MP PWD (PIU)	BHOPAL	Madhya Pradesh
79.	ML-9598	Shri Rais Mohammad Khan	B.Tech.	Project Engineer	MP PWD (PIU)	BHOPAL	Madhya Pradesh
80.	ML-9599	Shri Arvind Kumar Gupta	B.E. (Civil)	Project Engineer	MP PWD (PIU)	BHOPAL	Madhya Pradesh
81.	ML-9600	Col. Naveen Kumar Meka	M.Tech. (Power System)	OIC Mesnet	MES	NEW DELHI	Delhi
82.	ML-9601	Shri Sunil Kumar Jatav	B.Tech. (Elect.)	Assistant Engineer	MP PWD (PIU)	GWALIOR	Madhya Pradesh
83.	ML-9602	Shri Niraj Kumar	B.Sc. (Engg.)	Project Manager (Civil)	NBCC (India) Limited	BHOPAL	Madhya Pradesh
84.	ML-9603	Shri Indradev Patel	B.Tech. (Civil)	Assistant Engineer	MP PWD (PIU)		Madhya Pradesh
85.	ML-9604	Ms. Arti Patel	B.E. (Civil)	Project Engineer	MP PWD (PIU)	DHAMNOD	Madhya Pradesh
86.	ML-9605	Shri Abhinav Singh Parihar	B.Tech. (Civil Engg.)	Project Engineer	MP PWD (PIU)	GUNA	Madhya Pradesh
87.	ML-9606	Shri Aditya Pratap Singh	B.Arch., MBA (CPM)	A.V.P.	MEINHARDT	DELHI	Delhi
88.	ML-9607	Shri Piyush Kumar Chaturvedi	B.E. (Civil)	Additional Director (Tech.)	MP STDC	BHOPAL	Madhya Pradesh
89.	ML-9608	Shri Sunil Kumar Nigam	B.E. (Civil)	Project Engineer	MP PWD	BHOPAL	Madhya Pradesh
90.	ML-9609	Shri Sunil Kumar	B.E. (Civil), M.Tech. (Environmental Engg.)	Former Superintending Engineer (Civil), VRS	MCD	DELHI	Delhi
91.	OM-9610	Shri S. Saravanan	M.E. (Civil), AMIE, MBA	Tech. Officer D (Civil)/E-in-Charge (Civil & Tech.)	Advanced Data Processing Research Institute	SECUNDE-RABAD	Telangana
92.	ML-9611	Shri Naveen Kumar	M.Tech. (Constn. Engg. & Mgmt)	General Manager-North (India)	Sanrachana Structural Strengthening Pvt. Ltd.	LAKHIMPUR KHERI	Uttar Pradesh
93.	OM-9612	Shri Sushil Kumar Solanki	B.Arch, M.B.EM	Associate Professor	School of Planning & Architecture	NEW DELHI	Delhi
94.	ML-9613	Shri Harikrishna Nartu	B.Tech. (Civil), M.. (Foundation)	Project Director	NHAI	BERHAMPUR	Odisha

List of New Institutional Member

S.No.	M.No.	Name	Qualification	Designation	Department/ Institutions	City	State
1.	IM-90214	Shri Pitambar Datt	BE, ME (Civil)	Director	Beacon Infralab India Pvt. Ltd.	BHOPAL	Madhya Pradesh

From Editor-in-Chief Desk

Engineering Organizations of Government - To develop Senior and Middle level Engineers in Professional fields beyond office responsibility

1. Normal responsibility of engineering professionals in the Government working is works management and maintenance. Besides, they have to deal estimation and design. Of course they share the administrative responsibility. It is considered desirable to make them knowledgeable through interaction, experience sharing and breaking water-tight compartment of their organization. For this purpose the management must give proper guidance and prompt Engineers to work beyond. Suitable avenues are to be found by these Engineers themselves also.

2. Training is generally organized within the organization in major engineering departments. In State Governments, training is organized by a separate training institute. Besides training is arranged by Engineering Institutes and others. It is desirable that all engineering professionals are given required training in suitable training institute. By imparting training, knowledge base is enhanced and horizons are widened. In fact as required for project requirements, specific training should be arranged. Besides training, tours to engineering projects can also be organized, to enhance knowledge base. As per specific requirements, even higher studies are to be arranged. Preferably these should be project related.

3. Bureau of Indian Standards (BIS) is framing codes and standard specifications. They need services of engineers to draft codes. It is desirable that top management should depute senior and middle level engineers, to various committees of BIS. It will help in enhancing knowledge base of engineers. Of course they should feel proud of the fact that some role is played by them for framing BIS codes.

4. All engineering professionals know about Institution of Engineers (I). They must become members of the Institution. At State and Local centers of the Institution, they can participate and enhance their horizons. Besides, they can feel elated by contributing technical papers. There are number of other organization also in the country engaged in professional activities. Of these, The Indian Roads Congress (IRC) is supported by Ministry of Road Transport and Highways. Engineers working under this discipline must join IRC and take advantage of professional documentation as also conferences arranged from time to time.

5. Indian Buildings Congress is the front runner in Built Environment and very well known to everybody. Its membership will be helpful to enhance professional knowledge in the field of Built environment. There are several other organizations to enhance professional competence. It will be desirable to become member of some of these organizations.

6. One more field is connected with Engineering profession and that is Arbitration. The membership of Indian council of Arbitration is desirable, to enhance knowledge base in this field. Besides, Indian Institute of Technical Arbitration is specially connected with Engineers and its membership is also desirable.

7. Sharing of experience by contributing papers in different technical journals of Engineering organizations will be helpful to develop the personality and confidence level of engineering professionals. In fact it also gives a satisfaction of achievement. In fact avenues are open. It is for the professionals to participate and gain as also share his experience.

(K. B. Rajoria)

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