

Recommendations

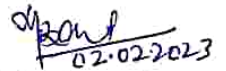
IBC's MID Term Session and Seminar -28-29.01.2023 at Bhopal

“Common Data Environment for Infrastructure Project Management”

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, 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.


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