

AEC FORUM

GEOSPATIAL + BIM + DIGITAL TWIN

21 - 22 August 2025, Hotel Vivanta, New Delhi

CONFERENCE REPORT 2025

www.aec-forum.com





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Executive Summary

The AEC Forum 2025, held on August 21 - 22 at Vivanta, Dwarka, New Delhi, India, was a landmark event dedicated to advancing digital and resilient infrastructure. Bringing together policymakers, industry leaders, technology experts, think tanks, researchers, and thought leaders the forum provided a platform to address India's critical infrastructure challenges and explore innovative digital solutions.

With the theme "**Resilient Infrastructure Through Digitalization: Enabling Viksit Bharat,**" the forum highlighted the urgent need for robust infrastructure systems that can withstand rapid urbanization climate impacts and support India's vision of being "Viksit Bharat" by 2047. Discussions focused on the integration of cutting-edge technologies such as Geospatial, Building Information Modeling (BIM), and Digital Twin to drive efficiency, sustainability, and resilience across the infrastructure value chain.

Alongside these technologies, the forum also spotlighted emerging technologies (AI, AR/VR, Cloud based project management and others and their potential roles in transforming sector workflows, emphasizing the need for seamless integration to enhance project outcomes.

A series of thought-provoking sessions delved into key topics, including policy frameworks for Digital Twin adoption, strategies for modernizing highways and railways, and advanced solutions for airport, port, building & campuses and water network Infrastructure. Experts shared actionable insights on leveraging technology to improve safety, optimize workflows, and foster innovation in infrastructure planning and execution.

The forum also celebrated project & innovation excellence in the sector through the AEC Excellence Awards. These awards recognized organizations for their commendable

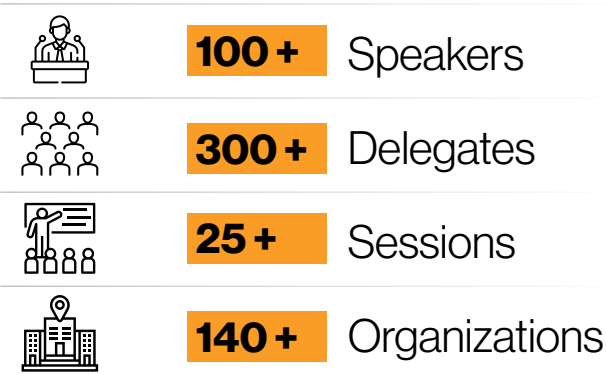
contributions in projects of national interest and innovation of digital solutions to sectors like roads, highways, rail, metro, port, airport, building, campus and water utility infrastructure, showcasing exemplary achievements and inspiring others in the industry.

The forum emphasized collaboration, creating opportunities for stakeholders to engage in meaningful dialogue, share best practices, and forge strategic partnerships.

As a catalyst for progress, the AEC Forum 2025 reinforced the importance of technology convergence, investment in digital transformation, and aligned policies to address the pressing demand of resilient infrastructure development. The outcomes of this event will guide future efforts to build a sustainable, efficient, digital and climate-resilient infrastructure framework for India.



Forum in Numbers



Key Objectives

- Establish the need for resilient infrastructure and its importance in economic growth and nation building.
- Discuss the need for supportive regulatory frameworks and policies to enable the adoption of digital solutions.
- Foster discussions on attracting investment for digital infrastructure projects and technological advancements.
- Address key challenges plaguing the AEC sectors.
- Discuss the potential of digital technologies in transforming the AEC sector.
- Provide a platform for stakeholders related to infrastructure development to share knowledge, ideas, best practices, Innovation and foster collaboration

Key Highlights

Delegate Profile



Speaker profile



Safe, Sustainable and Resilient Infrastructure through Digitalization



SANJAY KUMAR



SRIKANT SHASTRI



**MAJ. GEN. SAMEER SRIVASTAVA
AVSM, VSM**



AMIT PROTHI

Opening Remark: **Sanjay Kumar**, Founder & Chief Executive Officer, Geospatial World

The AEC Forum 2025 by emphasizing the evolution of geospatial technologies and their critical role in designing, building, and maintaining resilient, sustainable infrastructure. He highlighted the urgency of embracing digitalization, including geospatial data, BIM, and digital twins, to meet India's infrastructure demands for Viksit Bharat by 2050. Stressing an inclusive approach, Sanjay called for widespread collaboration and policy advocacy, particularly endorsing a national digital twin policy to enhance infrastructure planning and resilience against climate and disaster risks.

Keynote Address 1: **Srikant Shastri**, Chairperson, Geospatial Data Promotion & Development Committee (GDPDC) Government of India

Srikant Shastri highlighted the urgent need for digital twins as a critical focus under India's National Geospatial Policy to drive economic prosperity and urban resilience. He emphasized three key success factors for digital twins: robust data accessibility and interoperability, effective cross-agency collaboration to break data silos, and comprehensive user education to ensure accurate, real-time implementation. Further, he called for AI readiness to enable predictive maintenance and optimized infrastructure management, reinforcing the importance of speed and collaboration for achieving India's national digital twin vision by 2035.

Keynote Address 2: **Maj. Gen. Sameer Srivastava AVSM, VSM**, Additional Director General, Land Works and Environment, Indian Army

Maj. Gen. Sameer Srivastava detailed the Indian Army's infrastructure mission emphasizing operational readiness, fiscal discipline, and future-proofing amid challenging terrains and climates. He highlighted ongoing efforts to integrate digital tools like BIM, IoT, and digital twins alongside sustainable practices including net-zero cantonments and energy efficiency. Collaboration with industry and adoption of advanced construction methods were noted as key enablers to enhance infrastructure resilience and strategic utility. The address concluded with a focus on agility, innovation, and technology absorption to transform military infrastructure into a force multiplier for national security.

Keynote Address 3: **Amit Prothi**, Director General, Coalition for Disaster Resilient Infrastructure

Amit Prothi underscored the increasing frequency and economic impact of disasters worldwide and highlighted the vital role of the Coalition for Disaster Resilient Infrastructure (CDRI), led by India, in promoting resilient infrastructure globally. With 50-member countries, CDRI fosters knowledge sharing, risk assessment, and innovation to mitigate disaster losses. Emphasizing digitalization, the coalition advances tools like AI and remote sensing to enhance early warning, planning, and faster recovery, aligning with global climate resilience goals.

Safe, Sustainable and Resilient Infrastructure through Digitalization



ERIC DESROCHE



SATISH MV



TAPAN MOZUMDAR

Keynote Address 4: Eric DesRoche, Director-Infrastructure Business Strategy, AEC Design, Autodesk

Eric's Keynote emphasized the transformative power of digital tools in reshaping the future of infrastructure. By leveraging BIM, AI, and cloud technologies, Autodesk is driving greater efficiency, sustainability, and safety in infrastructure projects. His presentation highlighted how outcome-based BIM can help meet global demands for resilient infrastructure, while ensuring reduced costs and improved project delivery. Through strategic collaborations, particularly with Esri, Autodesk is bridging the gap between engineering and geospatial data, empowering smarter decision-making and supporting long-term sustainability in the built environment.

Keynote Address 5: Satish MV, Executive Committee Member & Advisor to CMD, Larsen & Toubro

Satish highlighted L&T's early adoption of BIM and digitalization, highlighting how technologies like BIM, digital twins, and AI are revolutionizing construction. He showcased L&T's success in implementing 3D BIM and AI for projects such as the Navi Mumbai Airport and high-speed corridors, driving precision, efficiency, and safety. Satish also underscored the importance of adopting these technologies across all projects, both large and small, to build a robust digital ecosystem. He called for collaboration with the government to establish policies that promote the use of digital twins in infrastructure, which will further enhance planning, execution, and sustainability.

Keynote Address 6: Tapan Mozumdar, Senior Vice President, The Global Network for Zero

Tapan Mozumdar highlighted how digitalization, particularly Building Information Modeling (BIM) and digital twins, is transforming the construction industry by enhancing decision-making, improving safety, and driving sustainability. He emphasized the importance of achieving net-zero goals, ensuring that infrastructure projects are designed to be energy and resource-independent. Addressing the challenge of interoperability, he noted that for BIM to reach its full potential, seamless integration across various software platforms is essential. Finally, he called for greater collaboration between the government and the construction sector to enforce sustainable practices and adopt digital tools across all project scales.

Geospatial + BIM + Digital Twins: Enabling Connected Infrastructure Systems



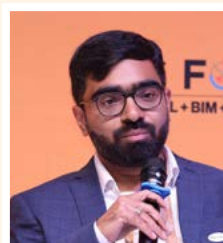
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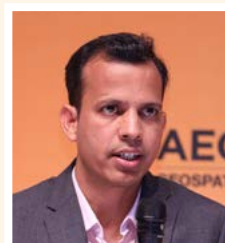
RAJAN AIYER



KKV N RAJU (SHARATH)



ABHISHEK SINHA



KAILASH CHANDOLA

Moderator: **Ananya Narain**, Vice President Consulting, Geospatial World

As the session moderator, Ananya Narain expertly facilitated an engaging discussion around the intersection of digital twins, geospatial data, and BIM in the future of connected infrastructure. Drawing on her deep understanding of the subject, she highlighted the critical need for seamless data integration across industries and the importance of collaboration in driving efficiency and sustainability. Ananya also underscored the role of standards, policy frameworks, and capacity building in ensuring the successful adoption of these technologies. Her moderation not only kept the session insightful but also emphasized how these innovations are set to reshape the built environment.

Panellist 1: **Rajan Aiyer**, Managing Director, Trimble

Rajan Aiyer, shared valuable perspectives on the future of connected infrastructure, emphasizing the critical role of data, stakeholders, and the systems that underpin the industry's digital transformation. He discussed how integrating geospatial intelligence, BIM, and digital twin technologies can unlock greater efficiency and resilience in infrastructure projects. He also **highlighted the need for a robust policy framework and industry-wide collaboration to ensure the successful adoption of these technologies, stressing that it's not just about technology, but also about building the right ecosystem to support its growth.** His insights reinforced the idea that the future of infrastructure relies on standardized approaches, clear mandates, and capacity enhancement across the sector

Panellist 2: **KKV N Raju (Sharath)**, Managing Director, Clove Technologies

Sharath's insights during the session focused on the pivotal role that standards, policy frameworks, and ecosystem development play in shaping the future of connected infrastructure. As he navigated the conversation around the integration of geospatial, BIM, and digital twin technologies, Sharath emphasized that **successful implementation hinges not only on the adoption of innovative tools but on creating a solid foundation of well-defined policies and clear mandates.** He also underscored the importance of industry collaboration to accelerate technology adoption, ensuring all stakeholders are aligned and equipped to leverage data effectively.

Panellist 3: **Abhishek Sinha**, Solution Architect, Bentley

Abhishek highlighted the increasing importance of data-driven approaches in transforming infrastructure projects, both in the design and operational phases. Drawing from global case studies like Singapore's 3D tendering and Sydney Airport's digital twin implementation, he showcased how **leveraging BIM, GIS, and digital twin technologies is not just a trend but a necessity for enhancing efficiency, reducing errors, and ensuring a seamless flow of information.** He emphasized that India, while already adopting these technologies in parts, is poised to embrace more advanced applications such as 3D model-based tendering and AI-driven decision-making.

Panellist 4: **Kailash Chandola**, Co-Founder & Chief Executive Officer, Arth

Kailash emphasized the critical importance of seamless integration between geospatial data, BIM, and digital twins to create connected infrastructure. **He underscored that successful implementation hinges on maintaining discipline in data management and ensuring real-time collaboration throughout the project lifecycle.** By highlighting the impact of IoT integration and operational efficiency, Kailash demonstrated how these technologies not only enhance safety but also significantly improve sustainability and long-term asset management.

Digital Twin Strategy: Policy, Institutional Readiness and Standardization



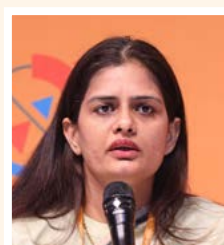
RAGHU SRINIVASAN
PVS, VSM



ANANYA NARAIN



A. S. KIRAN KUMAR



YASHASVI MUND



VAIBHAV DANGE

Keynote Address: **Raghu Srinivasan, PVS, VSM**, Director General, Border Roads Organization

Director General of the Border Roads Organization (BRO), in his keynote highlighted the organization's pivotal role in developing critical infrastructure in India's border regions, often under extreme conditions. He emphasized the need for innovative technologies, especially in geospatial sciences and digitization, to enhance road construction, tunnel development, and disaster management. General Srinivasan also discussed the ongoing surge in border infrastructure development, which aims to triple the current road network, and **called for industry and academia to collaborate on tailored solutions for faster and more efficient execution.**

Moderator: **Ananya Narain**, Vice President – Consulting, Geospatial World

Ananya Narain expertly moderated the session on Digital Twin Strategy for Indian infrastructure, facilitating a rich discussion on policy, institutional readiness, and standardization. She emphasized the importance of a collaborative approach across ministries and the need for standardized data to enable effective implementation. Ananya's thoughtful moderation and insightful questions helped steer the conversation towards practical solutions for integrating digital twins into India's infrastructure planning and execution.

Panellist 1: **A. S. Kiran Kumar**, Member, Space Commission, Government of India

AS Kiran Kumar brought a wealth of expertise to the session, articulating the importance of a structured Digital Twin Strategy for India's infrastructure development. He stressed the need for a **comprehensive government policy to accelerate the adoption of digital technologies like BIM and Digital Twins, which can revolutionize the way infrastructure is designed, built, and maintained.** Drawing from his extensive experience, Kiran emphasized that leveraging technology effectively is crucial for achieving India's infrastructure goals, especially as the country moves toward its centenary of independence. His insights on institutional readiness and policy frameworks were key in shaping the discussion around the future of digital infrastructure in India.

Panellist 2: **Yashasvi Mund**, Deputy Secretary, Department for Promotion of Industry and Internal Trade, PM Gati Shakti

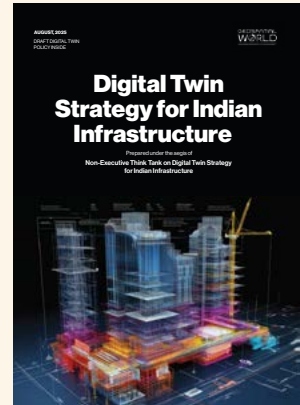
Yasasvi Mund's contribution to the session was instrumental in highlighting the intersection of policy and technological innovation in India's infrastructure sector. Drawing attention to the significant role of digital infrastructure in enabling smarter, more efficient planning, she emphasized the necessity for clear, actionable policies to support the integration of tools like Digital Twins into national frameworks. **Yasasvi stressed the importance of a collaborative approach among various ministries to ensure a unified strategy, underscoring the role of standardization and open data platforms in driving seamless infrastructure development.**

Panellist 3: **Vaibhav Dange**, Former Advisor, National Highways Authority of India, Ministry of Road Transport & Highways, Government of India

Vaibhav Dange's insights during the session were pivotal in bridging the gap between technology adoption and practical implementation in India's infrastructure sector. He emphasized the transformative potential of Digital Twin technologies, particularly in the context of improving the quality of Detailed Project Reports (DPRs) and enhancing the coordination between various stakeholders. Vaibhav highlighted how integrating **digital platforms can streamline the approval processes and reduce delays in infrastructure projects by ensuring real-time data availability and standardized design protocols.**

REPORT LAUNCH

Launch of the *Digital Twin Strategy for Indian Infrastructure* Report at AEC Forum 2025



AEC Forum 2025 marked a significant milestone in India's infrastructure digitisation journey with the official launch of the Digital Twin Strategy for Indian Infrastructure report. Unveiled during the forum, the report reflects a multi-year, industry-led effort to define a strategic, policy-oriented roadmap for mainstreaming Digital Twin technologies across India's infrastructure lifecycle from planning and design to construction, operations, and long-term asset management.

The report has been developed by Geospatial World, under the aegis of the Non-Executive Think Tank on Digital Twin Strategy for Indian Infrastructure (2021–2025). The Think Tank brings together senior leaders and experts from across the AEC value chain, including government and public policy agencies, infrastructure owners, construction firms, technology providers, system integrators, academia, and civil society. Operating on a voluntary, non-commercial basis, the Think Tank has focused on advancing policy and strategic advocacy to unlock the full potential of Digital Twins for India's infrastructure ambitions.

Positioned against India's long-term development vision, including Viksit Bharat 2047, PM Gati Shakti, and the National Infrastructure Pipeline, the report addresses the structural challenges facing the sector such as fragmented planning, project delays, cost overruns, and sustainability risks and demonstrates how Digital Twins, enabled by the convergence of geospatial technologies, BIM, IoT, and analytics, can serve as a unifying decision-support framework. It introduces maturity models, global best practices, sector-specific use cases, and a proposed outline for a national Digital Twin policy tailored to India's governance and institutional context.

The launch of this report at AEC Forum 2025 reinforced the forum's role as a thought leadership platform shaping the future of the built environment. By placing Digital Twins at the centre of infrastructure transformation, the report offers policymakers, asset owners, and industry stakeholders a clear value proposition, improved project predictability, enhanced lifecycle performance, climate resilience, and data-driven governance. As discussions at the forum highlighted, the report is not merely a technology vision document, but a strategic blueprint for building intelligent, integrated, and sustainable infrastructure systems at national scale.



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Report**



Transforming Road & Highway Infrastructure Through Digitalization



CHRISTIAN SCHLOSSER



TITAS ROY



VIVEK JAISWAL



HITESH KAUSHIK



PRAVEEN TIWARI

Presentation: Christian Schlosser, Head - Digital Transformation Infrastructure, German Federal Ministry of Transport

In his keynote presentation, Christian Schlosser emphasized the importance of a holistic and cohesive approach in driving the digital transformation of the construction sector. **He highlighted that a shift in mindset across all stakeholders, project owners, contractors, and consultants is essential to achieve sustainable, resilient infrastructure.** Christian underscored that this collective effort, paired with the right skills and technology, will ensure long-term success and elevate the industry's standards.

Moderator: Titas Roy, Industry Manager – Infrastructure, Geospatial World

As the moderator of the panel, Titas provided a valuable insight into the crucial intersection of policy, technology, and workforce development in the construction industry. He emphasized that while innovation, such as the use of geospatial technology and digital modeling, is essential, the real challenge lies in aligning these advancements with effective policies and a skilled workforce. **Titas stressed the need for a holistic, collaborative approach among all stakeholders' project owners, contractors, and consultants to drive sustainable, resilient infrastructure development.** By fostering a culture of continuous learning and adaptation.

Panellist 1: Vivek Jaiswal, Chief General Manager, National Highways Authority of India

Vivek Jaiswal highlighted the pressing need for timely project completion and enhanced quality control in India's roads and highways sector. He shared how the National Highways Authority of India (NHAI) is embracing cutting-edge solutions like 5D Information Management Platforms and Highway Information Modeling (HIM) to streamline project execution and ensure quality, particularly focusing on compaction and terrain modeling through geospatial technologies. Vivek also discussed the role of AI in improving construction processes and stressed that **while technology adoption is vital, it must be paired with proper skill development to ensure its effective implementation in real-world scenarios**

Panellist 2: Hitesh Kaushik, Vice President, COWI

Hitesh Kaushik stressed the importance of shifting the industry mindset to foster a holistic approach towards infrastructure development. **He emphasized that successful implementation of cutting-edge technology, effective policy frameworks, and skilled workforce development must all go hand-in-hand to drive progress.** Hitesh pointed out that stakeholders ranging from project owners to contractors and consultants must take collective ownership and ensure continuous skill enhancement across all levels. He concluded by emphasizing the critical role of resilience in infrastructure, underscoring the need for long-lasting, sustainable projects that can withstand future challenges.

Panellist 3: Praveen Tiwari, Director - Strategy & International Affairs, Construction Industry Development Council

Praveen highlighted the critical role of policy frameworks in aligning the construction industry with technological advancements and global standards. He stressed that while **policy revisions should be continuous to match the rapid pace of change, the challenge lies in making these changes mandatory to ensure real transformation.** Praveen also pointed out the importance of certification and professional standards in the workforce, citing the example of professional engineers and skill testing requirements. He called for greater collaboration and a more unified approach to overcome industry barriers and achieve the ambitious national goals, stressing that a strategic and integrated effort will be essential to elevate India's construction sector to global standards.

IN CONVERSATION

Modernising Railway & Metro Network through Integrated Digitalization



ANKUR VYAS



GV SREERAMAM

Moderator: Ankur Vyas, Industry Manager - AEC and Infrastructure, Geospatial World

As the moderator of this session, Ankur Vyas skillfully facilitated a fireside chat on the modernization of India's railway and metro networks through integrated digitalization. He set the stage by highlighting the critical role of geospatial technologies, BIM, and digital twins in driving resilience and sustainability across infrastructure projects. **Ankur emphasized the need for a gradual, step-by-step approach, starting with pilot projects to demonstrate the effectiveness of these innovations before scaling up across India's vast transportation network.** His moderation reinforced the importance of collaboration across stakeholders to achieve the vision of a digitally advanced infrastructure ecosystem.

Panellist: GV Sreeramam, Chief Executive Officer, NeoGeoinfo Technologies

GV Sreeramam shared valuable perspectives on the transformative impact of geospatial technologies and AI-driven digital twins in modernizing India's railways and metro systems. He provided real-world examples of how these technologies are already being leveraged from the design and alignment phases in challenging terrains, such as the Rishikesh-Karnprayag project, to the creation of 3D models and digital twins for metro corridors in Hyderabad. He stressed that integrating BIM, digital twins, and predictive analytics throughout the project lifecycle from planning to asset management is essential for long-term sustainability. **He also envisioned an AI-based digital twin ecosystem as a key driver for India's railway modernization by 2030, offering a model for other developing nations to emulate.**

Advancing Resilient Airport Infrastructure through Digital Transformation



Oaishik Bhattacharya



RAHUL KHANNA



SWATI GARG



GAURAV SINGH



PRATEEP BASU



NEHA BAGRECHA

Moderator: **Oaishik Bhattacharya**, Associate Director – GKI, Geospatial World

As the moderator of the panel, Oaishik provided valuable insights into the digital transformation of airport infrastructure, emphasizing the importance of a unified technological ecosystem. He highlighted that while predictive maintenance, disaster preparedness, and data integration are key to enhancing operational resilience, the real challenge is ensuring these advancements are seamlessly adopted across all levels of airport management. **Oaishik stressed that a holistic approach is crucial, where all stakeholders' operators, regulators, and tech providers collaborate to create a truly integrated system.**

Panellist 1: **Rahul Khanna**, Head of Airport Design & Master Planning, Lucknow International Airport

Rahul Khanna brought a unique perspective on the intersection of sustainability, operational excellence, and digital transformation in airport design and management. He shared his experiences working on India's first net-zero emissions airport at NOA, underscoring the importance of aligning sustainability goals with practical, regional capabilities. **Rahul emphasized that the adoption of Building Information Modeling (BIM) was key to ensuring seamless collaboration among multiple stakeholders, providing a single source of truth for data across the project lifecycle.**

Panellist 2: **Swati Garg**, Head - Aviation India, Ramboll

Drawing from her extensive experience with India's first net-zero emissions airport at NOA, Swati highlighted the significance of integrating sustainability goals into the early planning stages of large-scale projects. She discussed the challenges and opportunities of aligning global practices with local regulations, and how digital tools like Building Information Modeling (BIM) played a crucial role in bridging these gaps. Swati also emphasized the importance of a **collaborative approach among stakeholders to achieve long-term sustainability, cost efficiency, and future-proofing in airport development.**

Panellist 3: **Gaurav Singh**, CEO, Strategy Digital Labs, Chief Consultant - Pinkerton

Gaurav shared insights on the critical role of digitalization in modern airport infrastructure, emphasizing the integration of BIM for efficient design, construction, and operation. He stressed the importance of an interconnected platform for all stakeholders, improving data sharing and real-time decision-making. Additionally, **Gaurav highlighted the necessity of predictive maintenance and enhanced disaster preparedness to ensure long-term operational resilience in airports.**

Panellist 4: **Prateep Basu**, Chief Executive Officer, SatSure

Prateep discussed the transformative role of satellite intelligence and earth observation data in airport infrastructure, particularly in aeronautical data management and predictive maintenance. He emphasized how **space-based data can enhance site selection, environmental monitoring, and airspace management.** Prateep also pointed out the significant potential of GIS and remote sensing technologies to optimize flight procedures and reduce operational costs for airlines and airports.

Panellist 4: **Neha Bagrecha**, Head – Design, Adani Airport

Neha highlighted the importance of integrating digital tools for airport operations, focusing on predictive maintenance, disaster management, and real-time data sharing. She emphasized the need for seamless collaboration between stakeholders, advocating for a unified platform that brings together operators, regulators, and other key players. **Neha also stressed the significance of improving passenger experience through technology and minimizing operational friction at airports.**

Optimizing Water Infrastructure Networks through Geospatial & Digital Solutions



N ASHOK BABU



TITAS ROY



SANJAY RANA



ABHAY KIMMATKAR

Keynote Address: **N Ashok Babu**, Director, National Water Mission, Ministry of Jal Shakti, GOI

N Ashok Babu, Director NWM in his keynote address outlined the government's strategic initiatives to ensure water security in India. He highlighted the significant role of research and development, particularly through IITs, NITs, and other premier institutions, in driving water management solutions. He highlighted the importance of comprehensive subsurface intelligence and real-time data in building a robust digital backbone for water infrastructure. He also touched on the Bureau of Water Use Efficiency's efforts to enhance water use across sectors, emphasizing the need for a people-driven movement to protect water resources. **His address underscored the convergence of scientific knowledge, technological advancements, and public engagement in achieving a water-secure future for India.**

Moderator: **Titans Roy**, Industry Manager – Infrastructure, Geospatial World

Titans, as the moderator, skillfully navigated the session on digital technologies in water management, guiding dynamic discussions on cutting-edge solutions for India's water infrastructure challenges. His moderation focused on how AI, IoT, and digital twins could drive innovation in water management, emphasizing the need for better data integration and smart infrastructure planning. Titans also shared his insights on the critical role of geospatial and subsurface data in creating comprehensive water management systems.

Panellist 1: **Sanjay Rana**, Managing Director, PARSAN Overseas

Dr. Sanjay Rana, during the panel discussion, emphasized the importance of comprehensive subsurface intelligence for effective water infrastructure management. As an expert in geophysics, he highlighted that a digital backbone for water networks can only be built when subsurface data, such as the condition of dams, pipelines, and aquifers, is accurately mapped and integrated. Dr. Rana stressed that real-time monitoring tools and geospatial platforms are essential for detecting issues like seepage or leakage in water systems. In addition to his technical insights, he underscored the need for quality data and clear standards to ensure the integrity of geospatial projects, sharing his experience from the Delhi Geospatial Mapping Project. His expertise in transforming water management through digital twins and IoT technology positioned him as a key voice in driving forward sustainable and efficient water use practices.

Panellist 2: **Abhay Kimmatkar**, Managing Director, CS Tech Ai

Dr. Abhay Kimmatkar provided valuable insights into the transformative role of Artificial Intelligence (AI) and IoT technology in modernizing water management systems. He emphasized that while AI is often seen as a "promise," it is increasingly being implemented as a practical solution in the sector. Dr. Kimmatkar discussed several AI-driven applications, including flood monitoring systems, predictive flood analysis, and reducing non-revenue water (NRW). He also shared his company's involvement in a major river-linking project in Maharashtra, where AI is being used to design infrastructure and optimize water flow. **His focus on data-driven decision-making and digital twins to manage water networks highlighted the potential for smarter, more efficient water resource management.** Dr. Kimmatkar's vision aligns with the growing demand for predictive maintenance and real-time monitoring in ensuring sustainable water use across India.

Deep Dive Sessions



Roads & Highways



Railways & Metros



Ports and Water Infrastructure



Airport, Buildings and Campuses

Roads & Highways

SESSION 1

Streamlining Land Acquisition Processes for Highway Projects with Geospatial and Digital Solutions

Presentation By



Ravindra Kumar

Chief Scientist
CSIR- Central Road
Research Institute



Sanjay Pathak

Director (Aerial
Service), Garuda UAV



Tirthankar Mondal

Vice President
Simplex Infrastructure



Prashant Alatgi

Designated Partner,
Prashant Advanced
Survey LLP



Kumari Pritee

Assistant Professor
IIM Sambalpur

Key Highlights

- **Geospatial Technologies in Land Acquisition:** The integration of advanced geospatial tools like drones, mobile radar, and aerial sensors significantly enhances the accuracy (5-10 cm) and efficiency of land surveys, improving the overall land acquisition process for infrastructure projects.
- **Transition to Digital Land Records:** The shift from paper-based to digital land record management through GIS platforms is streamlining land acquisition, allowing faster data processing and reducing the manual errors associated with traditional methods.
- **Resolution of Ownership Disputes:** Digitizing land records, particularly through programs like DRMP, helps reduce ownership disputes by creating a transparent and unified record system. This is crucial for accelerating the compensation and acquisition processes.
- **Precision in Land Mapping:** Drones and aerial surveys provide high-resolution data that accurately maps land parcels, ensuring that only the necessary portions are acquired. This helps in minimizing disputes over compensation for landowners with large parcels.
- **Government Efforts for Digital Land Records:** The implementation of government programs like the Digital Record of Rights (DRMP) is a key step in the modernization of land record systems. These initiatives aim to provide a comprehensive and digitized land ownership database, ensuring long-term efficiency in land management.
- **Future Potential of AI/ML in Land Management:** While AI and machine learning are not fully utilized yet, their integration into land record systems could automate processes, improve accuracy, and help resolve land disputes faster as more data becomes digitized.

Roads & Highways

SESSION 2

BIM, Digital Twin, AI/ML for Sustainable Highway Planning and Design

Presentation By



Rohith M
Solution Architect
Bentley



Guillaume Joubert
Senior Manager
Business Transportation
Strategy, Autodesk



Abhiram Supekar
Group Manager
Walter P Moore

Key Highlights

- **Seamless Survey-to-Design Data Integration:** LiDAR, drone, and vehicle-mounted survey data from land acquisition flows directly into BIM workflows for highway, drainage, bridge, and tunnel design, eliminating data silos and reducing man-hours by 25% through multi-discipline collaboration on unified platforms, as demonstrated in complex smart city road networks.
- **Cloud Collaboration Overcoming Desktop Limitations:** Cloud-based common data environments (CDEs) federate 50+ CAD formats for real-time clash detection, design validation against regional standards, and drawing production, saving thousands of hours while enabling remote access on tablets for faster QA/QC cycles.
- **Digital Twins Spanning Full Project Lifecycle:** 3D/4D models evolve from planning simulations to construction VDC (virtual design & construction) and O&M with IoT sensor integration for real-time asset performance monitoring, threshold alerts, and predictive maintenance, ensuring data reuse from conceptual design to decommissioning.
- **AI/ML Automating Design Optimization:** Natural language AI copilots generate optimized site grading, automated regional-standard drawings, and parametric elements (e.g., bridge barriers) with 80% accurate real-time ML simulations; outcome-based BIM reverses traditional workflows to prioritize carbon footprint, cost, biodiversity, and land use from planning stage.
- **Digital Delivery Reducing Construction Risks:** Transition from 2D PDFs to 3D model-based legal documents with LOD standards (100-500) enables machine guidance, precise quantity takeoffs, clash-free designs, reduced RFIs/change orders, and shorter construction durations, as seen in state DOT roadmaps targeting full digital twins by 2030.

Roads & Highways

SESSION 3

Integrated Digital Solutions for Highways Asset Management and Road Safety

Presentation By



Furqan Qureshi

YCE/Assistant
Director, National
Rural Infrastructure
Development Agency



Sachin Joshi

Vice President - O&M
Highways
Concession One



Jitendra Wadhvani

Chief General Manager,
Intercontinental
Consultants and
Technocrats

Key Highlights

- **Aging Infrastructure Data Gaps:** Pre-digital-era bridges, flyovers, and pavements (built 10+ years ago) suffer from absent digitized baselines, necessitating labour-intensive manual inspections amid surging traffic loads and climatic deterioration, countered by IRC-mandated Automatic Road Condition Analysers (ARCA) delivering precise IRI (>3.0 m/km penalty thresholds), rut depths (>15mm), and distress mapping (structural vs. superficial cracks), complemented by quarterly drone LiDAR for right-of-way encroachment differentials and IoT strain gauges on bridge bearings/expansion joints, achieving 30-50% lifecycle cost savings through preventive overlays versus full-depth reactive reconstructions across 8,000km BOT concessions.
- **Inadequate Funding & Agency Delays:** Shortfalls inflate lifecycle costs with poor coordination, countered by GIS geotagging for sign reflectivity/lighting lux inventory and mobile apps/digital platforms for real-time compliance, achieving performance standards across 8,000km roads via control room monitoring.
- **Road Safety Crisis (10% Global Fatalities):** India bears 10%+ global fatalities (4.4L accidents/1.68L deaths annually; 55% crashes on 5% NH/SH network; 73% speeding, 61% vulnerable road users), tackled by MoRTH's nationwide ATMS rollout (1km CCTV grids, 10km ANPR enforcement, 20km VAS displays) with video incident detection triggering <5min response for breakdowns/counter flow, e-challan integration via vahan/parivahan portals, and IRAD electronic crash databases across 36 states/UTs, yielding 19% fatal reductions (Delhi-wide), 34% Outer Ring Road drops, Signature Bridge 81 accidents (2019-20), and Bengaluru MEISR highways 18850 (2023-24).
- **Black Spot Rectification Bottlenecks:** 13,795 sites identified with slow human-led interventions, accelerated by AI-driven intervention selection and BIM collaborative workflows incorporating land/utilities/ES factors, enabling 4,777 long-term fixes and rapid 500m-2km stretch implementations.
- **Traffic Enforcement & Incident Response:** Counterflow/breakdowns go undetected without real-time oversight, resolved by ATMS (every 1km surveillance, 10km enforcement, 20km speed displays) integrated with e-challan/vahan, yielding 19% fatal accident drops in Delhi, 34% Outer Ring Road reduction, and Bangalore highways from 188 to 50 accidents (2023-2024).

Roads & Highways

SESSION 4

Innovations in High-Altitude Road, Tunnel & Bridge Construction

Presentation By



Sirivarsha Kodali

Team Leader Tunnel
Systems, WSP



Roshan Purohit

Regional Manager
Civil Engineering &
Construction Division-
SAARC Region, Trimble



Debashish Roy

AVP Middle East & India
Operations, Pinnacle
Infotech

Key Highlights

- **Challenges of High-Altitude Construction:** High-altitude road and tunnel projects face extreme weather, limited working windows, thin air, and rigid terrain. These conditions significantly impact the performance of electromechanical systems, requiring altitude-specific engineering solutions and careful planning from the earliest project stages.
- **Altitude-Specific System Design Requirements:** Ventilation systems, transformers, electrical equipment, and SCADA systems behave differently above 1,000 meters due to reduced air density and temperature fluctuations. Ensuring proper insulation, voltage regulation, cooling efficiency, and mechanical stress resistance is critical to avoid equipment failure and premature aging.
- **Need for Early Multi-Disciplinary Coordination:** The session highlighted frequent project delays and redesigns caused by siloed working between civil, electrical, mechanical, and technology teams. Early collaboration and joint model development were identified as essential to avoid space constraints, rework, and additional costs in tunnel and high-altitude infrastructure projects.
- **Role of BIM, Digital Twins & Digitalization:** Digital design platforms such as BIM models and digital twins enable detailed clash detection, real-time monitoring, and accurate equipment placement. Digitalization also supports maintenance planning, emergency modelling, and enhances coordination across disciplines, improving efficiency across the full asset lifecycle.
- **UAV & Remote Inspection Technologies:** Drone-based inspections (UAVs) and infrared thermal scanning significantly reduce manual inspection time especially in inaccessible cable tunnels and legacy structures helping detect structural defects, thermal anomalies, and aging issues with greater accuracy.
- **Machine-Control Technology for Precision Construction:** Advanced machine-control systems allow construction equipment to directly use digital models for grading, alignment, and excavation. This shift from manual, stake-based processes to automated machine-guided operations improves precision, reduces errors, enhances productivity, and ensures that construction aligns closely with design intent.

Railways & Metro

SESSION 1

Harnessing AI and Digital Twins for Predictive Asset Management in Rail Systems



Keynote Address: **Shobhan Chaudhary**, Advisor R&D (S&T), Delhi Metro Rail Corporation Federal Ministry of Transport

During his keynote at AEC Forum 2025, Shri Shobhan Chaudhary, Advisor R&D (S&T), Delhi Metro Rail Corporation, highlighted how AI and Digital Twin technologies are reshaping predictive asset management in rail systems. He emphasized real-time infrastructure visibility through integrated BIM, IoT, and geospatial platforms, enabling proactive maintenance and zero-disruption operations. The address also showcased AI-driven analytics and drone-based inspections as key enablers for improving reliability, safety, and lifecycle performance across metro and rail networks.



Nancy Singh

Drone Instructor, Fore
Institute of Drone Technology



Mangal Dev

Head - Green Energy Mobility
South Asia, Hitachi Rail India



Tanveer Goyal

Director - Business
Development, Rail Analysis

Key Highlights

- **Establishing Intelligent Digital Twins for Real-Time Infrastructure Visibility:** The session underscored how creating dynamic, data-rich Digital Twins integrating BIM, IoT, SCADA, and GIS layers enables continuous condition monitoring, real-time anomaly detection, and simulation of operational scenarios to support proactive decision-making.
- **AI-Powered Predictive Analytics to Enable Zero-Disruption Operations:** Speakers highlighted the role of AI/ML in analysing sensor streams (vibration, temperature, traction, imagery) to forecast component degradation, calculate Remaining Useful Life (RUL), and generate risk-prioritized maintenance actions that significantly reduce unplanned downtime.
- **Drone Technologies Accelerating Inspection Cycles & Workforce Safety:** The discussion showcased how drone-based monitoring is transforming track, structure, and rolling stock inspections rapidly detecting cracks, corrosion, fastener failures, and performing coach-roof cleaning, while minimizing human exposure and shortening inspection timelines.
- **Unified IoT Geospatial Operational Platforms Driving Collaborative Planning:** A major theme was the integration of multi-source data into a single operational environment, supporting Rail Collaborative Decision Making (R-CDM) and enhancing coordination between infrastructure managers, metro operators, terminals, and logistics partners.
- **Enhancing Reliability, Lifecycle Value & Sustainability Through Prediction:** The session outlined how predictive asset management boosts MTBF, improves service reliability, reduces material waste, and extends asset life delivering measurable benefits across high-speed, metro, and freight systems while supporting safer maintenance practices.
- **Future-Ready Rail Ecosystem Supported by Market Momentum & Technology Adoption:** Insights from Rail Analysis India highlighted increasing industry readiness driven by expanding metro networks, high-speed corridors, supply-chain evolution, and global technology partnerships positioning India for rapid adoption of Digital Twins, AI, and automated inspection technologies.

Railways & Metro

SESSION 2

Optimizing Rail Network Efficiency with Geospatial Data and Digital Twin

Presentation By



Qazi Mairaj Ahmad
ADG IRITM
Indian Railways



Alok Shankar Pandey
Group General Manager
(IT), Dedicated Freight
Corridor Corporation Ltd.

Key Highlights

- **Geospatial Digital Twins the backbone for corridor-level visibility:** Integration of GIS, BIM and live operational feeds into a corridor-scale Digital Twin provides a single authoritative view of track geometry, assets, traffic flows and hazards enabling real-time monitoring and “simulate-before-execute” scenario analysis for long freight and high-speed corridors.
- **Location intelligence for capacity optimisation and congestion management:** Advanced location-aware analytics (dynamic path optimisation, genetic/ant-colony heuristics, and reinforcement-learning schedulers) can dynamically re-route trains, re-prioritise freight paths and adjust timetables to squeeze extra usable capacity from existing corridors. Global implementations show measurable delay reductions when such algorithms are integrated with control systems.
- **DFCCIL's operational scale and IT leadership accelerate freight-centric digitalisation:** DFCCIL's focus on dedicated freight corridor automation, large-scale telemetry and next-gen control layers makes it a natural pilot environment for geo-digital twins that optimise long-haul train paths, crew logistics and energy use across linear assets. (DFCCIL's IT leadership and publications underline this operational intent.)
- **Standards & interoperability are mission-critical adopt railML, OGC & common APIs:** To achieve cross-system fusion (legacy signalling/EAM + modern GIS + cloud twins), the sector must implement open data schemas and APIs (railML, OGC standards and API-first geospatial services) to avoid data silos and enable plug-and-play analytics across stakeholders. Recent industry moves (ERA railML collaboration) accelerate this standardisation path.
- **Policy alignment Digital Twins & geospatial intelligence must map to India's National Rail Plan & PM-Gati-Shakti goals:** Scaling twin and geospatial programs should be explicitly aligned to India's National Rail Plan (NRP 2030) and multi-modal connectivity initiatives (PM Gati-Shakti) so investments deliver modal-shift, higher freight share and national capacity targets while attracting public funding and regulatory support.
- **Practical roadmap:** prioritise corridor pilots, data quality, cybersecurity and skills: Speakers recommended a pragmatic sequence, choose 1–2 high-impact corridors for an operational twin pilot, enforce edge data contracts and logging to assure data quality, segregate networks and RBAC for cyber safety, and invest in centre-of-excellence partnerships for workforce upskilling and customised models.

Railways & Metro

SESSION 3

BIM & 4IR for Streamlined and Coordinated Metro, Semi-speed, High-speed Project Planning

Presentation By



Rashmi Bharty
Chief Manager
KEC International



Praveen Sharma
Chief Executive Officer
The BIM Engineers



Guillaume Joubert
Senior Manager
Business Transportation
Strategy, Autodesk

Key Highlights

- **BIM as the single source of truth across design, construction, handover:** BIM centralizes design, clash detection, schedule and cost information so multidisciplinary teams operate from one authoritative model reducing rework, shortening approval cycles, and enabling smoother handover to operations and FM.
- **4D construction sequencing + AR/VR for risk mitigation:** Linking BIM models to project schedules (4D) and using AR/VR walkthroughs allows stakeholders to validate staging, access, safety and constructability long before site works begin cutting site rework and improving safety in congested urban corridors. Global project evidence shows these practices reduce delays and rework materially.
- **Digital Twins + IoT + AI close the loop from project delivery to predictive O&M:** Creating an as-built BIM that becomes the basis for a Digital Twin (fed by IoT sensors) supports predictive maintenance, performance monitoring, and lifecycle optimization turning one-off capital projects into continuously managed, resilient assets. Academic and industry frameworks recommend using ISO/IFC/ISO-19650 aligned information management to make this interoperable and sustainable.
- **Interoperability & standards are non-negotiable:** Cross-agency delivery and multi-vendor toolchains demand common information protocols (ISO 19650 for information management, IFC for BIM exchange, OGC/CityGML or LandInfra/InfraGML for geospatial integration, railML for operational data). Early standardisation prevents data-silos and reduces conversion overhead during design and during the handover to operations.
- **Governance, land & approvals: digital mandates speed approvals and increase transparency:** Digital workflows (CDEs, PMIS dashboards, geo-mapped land/utility records) enable parallelized clearance processes, more transparent land acquisition workflows, and auditable decision trails a practical route to faster CRS/CMRS/ environmental approvals and fewer sequential bottlenecks. Aligning these with national programmes like India's National Rail Plan and PM GatiShakti ensures funding, policy backing and multimodal integration.

Railways & Metro

SESSION 4

Transforming Metro Construction with Digital Twins and Smart Automation

Presentation By



Dr Sanjay Kumar

Director – Systems,
Kochi Metro Rail
Corporation



Seikh Samim

Deputy Chief Architect
Delhi Metro Rail
Corporation

Key Highlights

- **Digital Twins for Metro Lifecycle Visibility:** Delhi Metro's BIM-based digital twins provide end-to-end progress tracking, cost control, and asset management across 394 km/289 stations, enabling clash-free designs, 8-10% bid savings, and future revamps after 30-50 years through integrated workflows from design to O&M.
- **Smart Automation in Construction Execution:** Robotic surveying, automated tunnel boring, and AI-driven quality checks accelerate metro delivery while enhancing safety, as demonstrated in DMRC's Noida-Greater Noida and Kochi Metro's CBTC signalling with real-time SCADA monitoring for precise train control and reduced headways.
- **Overcoming Adoption Challenges:** Skill gaps, procurement delays, and vendor readiness hinder tech uptake, addressed through DMRC's LEED platinum stations via BIM implementation and KMRL's phased AI pilots (crew scheduling from 13 hours to 2 hours), building internal capacity for smart urban mobility.
- **Government Initiatives Alignment:** Metro expansions leverage smart city programs for integrated urban transit, with Kochi Metro's Urbalis-400 CBTC, AI surveillance, and PIS apps setting benchmarks in sustainable operations, while DMRC's digital twins support Viksit Bharat goals for efficient mass transit.

Airport, Building and Campus

SESSION 1

Digital Solutions for Sustainable Airport Infrastructure Development

Presentation By



Gaurav Kumar Chawla

Founder and Chief Executive
Officer, GKC Consultants



Ashish Dhawan

Industry Head – Infra,
Esri India



Srilata Ramkumar

Director, Design, E&A Design
Consultant



Sudesna Biswas

Head Hydraulics And
Hydrology, Edrc, TIIC, L&T

Key Highlights

- **Flood Prediction & Impact Analysis with Living Atlas:** Integration of IMD rainfall APIs and digital elevation data identifies accumulation points and flood-prone areas at airports in real-time, enabling authorities to prioritize response and reduce operational disruptions during heavy rainfall, as demonstrated for Mumbai airport.
- **Digital Twin for End-to-End Airport Management:** 3D models combining Revit/Civil 3D files with drone, satellite, and IoT sensor data allow real-time visualization and analytics of assets inside and outside buildings, optimizing decision-making for arrivals, departures, security, and passenger flow at San Francisco airport.
- **GIS & BIM Enabling Resilient Infrastructure:** Geospatial and BIM platforms facilitate master planning, approvals, design, construction, and operations by integrating multi-stakeholder data, ensuring informed decision-making, compliance with environmental codes, and efficient project management across airport lifecycle.
- **Smart Airport Operations via Digitalization:** AR/VR, face recognition, smart trolleys, and IoT-enabled facilities (e.g., occupancy-aware washrooms, waste management) streamline passenger experience, asset management, and operational readiness, exemplified in Indian smart airports and international benchmarks like Changi and Helsinki.
- **Storm water Management through Integrated Digital Models:** Sewer GEMS, Civil 3D, QGIS, and DEM-based geospatial analysis optimize airport drainage networks, outfall integration, and ponding systems for flood prevention, groundwater recharge, and sustainable storm water solutions, applied across Mumbai, Delhi, and Bhogapuram airports.

Airport, Building and Campus

SESSION 2

Resilient Airport Operations: Digital Twins for Real-Time Monitoring & Maintenance

Presentation By



Aradhana Rawat

Senior Architect
Noida International Airport



Vinod P

Chief Executive Officer
Geocentroid



Naman Patwari

Head – Research and Development
Pinnacle Infotech

Key Highlights

- **Integrated Real-Time Monitoring for Airport Systems:** Leveraging Digital Twin technology, the session highlighted how real-time data from systems like HVAC, lighting, and passenger flow can be integrated using 3D models and IoT sensors to continuously monitor, predict, and optimize airport operations for improved efficiency and sustainability.
 - **Digital Twins Enhancing Passenger Experience:** NOA International Airport's approach combines Indian hospitality with Swiss efficiency. Digital Twins enable dynamic adjustment of passenger flow and terminal services, helping anticipate bottlenecks and ensure smooth operations and enhanced passenger experience.
 - **Comprehensive Asset Visualization and Predictive Maintenance:** Virtual Twin models, integrated with Service and Sensor Twins, provide detailed asset visibility, enabling predictive maintenance, better energy management, and optimized operational performance while reducing risks and costs.
 - **Digital Twin as a Decision-Making Platform:** By integrating GIS, BIM, and BMS data, Digital Twins create a unified platform for real-time monitoring, fault detection, predictive maintenance, and scenario planning to support informed decision-making.
 - **Airport Expansion and Renovation Efficiency:** The integration of 3D BIM, GIS, and IoT allows airports to simulate expansion and renovation scenarios through Virtual Twins, optimizing design, capacity planning, and construction alignment while minimizing operational disruptions.
 - **Smart Compliance and Risk Management:** Digital Twins simplify compliance tracking and audit preparation by providing centralized, one-click access to operational data, reducing manual effort and strengthening risk management processes.
 - **Space and Revenue Optimization through Digital Twins:** Virtual Twins enable accurate visualization of space usage, supporting lease management, identification of underutilized areas, and revenue optimization. Passenger flow and occupancy data further help optimize high-traffic zones.
 - **Predictive Maintenance in Real Time:** Integrated asset management within Digital Twins allows maintenance teams to identify and resolve issues such as leaks using real-time data, improving response times and reducing downtime.
- AI and Machine Learning Integration for Smarter Airports:** The session emphasized how AI/ML enhances Digital Twin capabilities through predictive analytics, enabling smarter operations, improved sustainability, and a more adaptive airport infrastructure.

Airport, Building and Campus

SESSION 3

Innovation in Building Design using Integrated BIM Solutions

Presentation By



Steve Butler

Senior Industry
Strategist – MEP, Autodesk



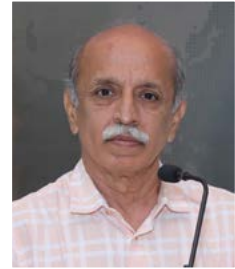
Sunil Joshi

Founder and CEO
DGTRA Consultancy



Raghunath Kadri

Business Head
Clove Build



BP Karamchandani

Founder and CEO
MvDad

Key Highlights

- **Scan-to-BIM Reality Capture Efficiency:** Cloud-based point cloud platforms convert large scan datasets into native BIM elements (walls, columns, and ducts), accelerating renovation projects and improving MEP coordination while reducing clashes in existing structures.
- **Total Carbon Analysis for Net Zero Compliance:** Cloud tools enable embodied and operational carbon simulations using energy engines and material databases, offering dashboards to identify carbon hotspots, thermal comfort, and loads for sustainable, compliant design decisions.
- **AI-Driven MEP Automation and Layout Optimization:** Open APIs and scripting automate MEP sizing and routing based on performance and cost criteria, rapidly generating near-construction documents and enabling faster exploration of multiple design options.
- **Modular Off-Site Prefabrication Productivity Gains:** BIM-to-manufacturing workflows automate precast and rebar production, reducing factory labour. Off-site MEP spool fabrication minimizes on-site delays, improving safety, material control, and project timelines.
- **Natural Language AI Co-Pilot for Structural Design:** Conversational AI assistants support structural analysis, code checks, and force calculations, allowing teams to focus on rapid design exploration rather than manual modelling.
- **Digital Twins for Lifecycle Performance Monitoring:** BIM connected with IoT enables real-time performance monitoring, anomaly detection, and O&M integration, maintaining design intent and operational efficiency throughout the building lifecycle.
- **Organizational BIM Transformation Framework:** A clear BIM strategy aligned with culture, cost, and cloud standards (ISO 19650) creates reusable data environments, reduces errors, and supports data-driven workflows from design to operations.

Airport, Building and Campus

FIRESIDE CHAT

Enabling sustainable infrastructure through data driven and performance oriented design approaches



Titas Roy

Industry Manager – Infrastructure,
Geospatial World



Sanjay Seth

Vice President & CEO
GRIHA Council



Naveen Kumar

Joint Director
Doit&C Government of Rajasthan

Presentation on

3D Jaipur City by

Key Highlights

Sanjay Seth, VP & CEO of GRIHA Council, in his conversation with Titas Roy, emphasized using data as the backbone for sustainable infrastructure, from buildings to highways and ports via real-time measurement and performance ratings. His insights from programs like Decarbonizing Habitat show how cities and industries can achieve tangible results like optimized resources and carbon reductions.

- **Measure Everything to Manage Effectively:** Adopt GRIHA's "what gets measured gets managed" principle to evaluate energy, water, waste, and transport in real-time. Jaipur-like cities can turn projects into "urban living labs" for mid-course corrections, as seen in ABB's Nila Mangala plant where groundwater levels rose from 63m to 27m through site-specific water optimizations.
- **Scale Ratings Beyond Buildings for Broader Impact:** Extend tools like GRIHA to highways (launched last year with Hon'ble Minister, Ministry of Road Transport and highways, Shri Nitin Gadkari's support), ports, metros (e.g., Bangalore stations), and warehouses (upcoming for CONCOR's Dadri site). Other cities gain carbon-efficient infrastructure by integrating sustainability from design to operations, avoiding overdesign and locking in long-term performance.
- **Leverage Data for Cost Savings and Incentives:** Use performance data to optimize designs, cut emissions, and reduce O&M costs debunking the "green costs more" myth. Lessons include policy nudges like extra Floor Area Ratio (FAR) for 5-star GRIHA ratings, boosting developer profits while empowering consumers to demand efficient products, as in India's star-labelling success.
- **Combine Tech and Policy for Proactive Decisions:** Integrate digital twins, IoT, and AI with rating systems for predictive insights, supported by government push (e.g., Smart Cities framework). Cities should build capacities for accurate data input, foster ecosystem collaboration, and demand green from end-users to drive market shifts toward Viksit Bharat by 2047.
- **Act Now to Avoid Costly Retrofits:** Embed sustainability in tenders and designs today, as buildings lock in for 40-50 years. AEC communities can lead by measuring like personal health metrics track, diagnose, and improve for measurable outcomes like water positivity and net-zero goals by 2070.

Airport, Building and Campus

SESSION 4

Optimizing Building & Campus Infrastructure with IoT and Advanced Technologies

Presentation By



Ashish Jain

Partner
AEON



Pratap Sanap

Head- Research and
Innovation
Neilsoft

Key Highlights

- **Proven Energy Efficiency Gains:** Real-time IoT integration delivered 9-10% HVAC energy savings by linking occupancy, temperature, and access data to predictive controls, enabling occupancy-driven adjustments across multi-building portfolios.
- **Transformed Maintenance Operations:** Automated anomaly detection reduced response times to 2 minutes, with digital twins triggering intelligent ticketing, SOP access, root cause analysis, and inventory validation for full asset lifecycle management.
- **Precision Daylighting & Lighting Optimization:** Early-stage simulations achieved 100% daylight penetration and 70% lighting power reduction, optimizing facades, glazing, and controls to meet advanced sustainability certifications.
- **Operational Performance Leadership:** Wireless sensor networks drove EPI from 89 to 75 kWh/m²/year, with 42% solar offset, comprehensive emissions tracking, and innovative cooling strategies maintaining 27°C comfort.
- **Scalable Enterprise Integration:** Cloud-based twins unified BMS/DCS data across facilities and plants, providing 3D visualization, process recipe management, and analytics for strategic decision-making.
- **Net-Zero Project Execution Model:** Comprehensive modelling validated 30MW solar sufficiency for 300+ luxury buildings, integrating load forecasting, micro grid design, and multi-disciplinary BIM coordination.

Port & Water Infrastructure

SESSION 1

Leveraging Automation and Digital Solutions for Optimised Port Operations

Presentation By



Shirish Chandra R Shah

Consultant
Jawaharlal Nehru Port Authority



Arnab Banerjee

Manager - Infrastructure BIM
Pinnacle Infotech



Nitin Jaiswal

Architect Urban Planner- Associate
General Manager, APSEZ, Adani Group

Key Highlights

- **Yard Efficiency via Digital Twins:** Digital replicas simulate complex yard movements (vessel-to-yard, gate-to-rail) for optimal stacking/retrieval, reducing congestion beyond gates proven to boost throughput where manual planning fails.
- **Gate Automation with OCR/RFID:** Real-time container/vehicle identification eliminates paper documents, slashing wait times and jams, integrated with PCS 1X for paperless berthing, as implemented in major Indian ports.
- **AI-Driven Berth Scheduling Cuts Waits by 30%:** AI-driven scheduling and VTMS optimize vessel arrivals/dock allocations, Mundra Port case shows dynamic planning cuts delays, accommodating ultra-large vessels up to 24,000 TEU.
- **BIM 4D/5D Mitigates Marine Construction Risks:** Tidal windows and dredging managed via simulations (Synchro/Navisworks), enabling clash-free utilities, quantity take-offs, and progress monitoring against drone/point cloud scans for mega ports.
- **Semi-Automated Hubs Scale Transshipment Capacity:** India's first semi-auto berths (e.g., Vizhinjam) use Navis TOS for crane/ITV coordination with safety zones; handled 8.4 lakh TEU initially, expanding to exim via rail/road links.
- **Policy-Aligned Green Transition Roadmap:** Sagarmala/SAGAR policies drive PCS, blockchain BoL, hydrogen vehicles, and carbon-neutral goals, inland waterways target 500MMT, supported by drone surveillance and predictive IoT maintenance

Port & Water Infrastructure

SESSION 2

Building Resilient Ports: Sagarmala, Multimodal Connectivity, and Digital Innovation



Keynote Address: Dr. Arvind Bhisikar, Executive Director IT, Indian Port Association

In his keynote address, Dr. Arvind Bhisikar, Executive Director (IT), Indian Ports Association, outlined India's Maritime Digital Transformation Roadmap under PM Gati Shakti, focused on creating an integrated, outcome-driven national maritime digital ecosystem. He highlighted Sagarmala Setu as a core platform enabling seamless data exchange across ports, Customs, and security agencies to reduce vessel turnaround time and improve cargo efficiency. **The address emphasized AI-led port automation, global compliance frameworks, and strong cybersecurity and governance partnerships as key enablers for a secure, efficient, and future-ready maritime sector.**

Presentation By



Shashank Yadav

Associate Director- Ports
and Marine, AECOM



Vikash Kumar Chauhan

Subject Matter Expert,
MoPS&W

Key Highlights

- **Sagarmala Policy Framework Driving Transformation:** Government's flagship program focuses four pillars port modernization, connectivity, coastal communities, industrialization with 100% UT funding/50% state support, accelerating project approvals via Sagarmala 2.0 for logistics cost reduction and GDP growth.
- **Multimodal Connectivity Closing Infrastructure Gaps:** PM Gati Shakti geospatial dashboards coordinate real-time ministry collaboration (Ennore-Chennai corridor model), 298 road/rail projects enhance hinterland links, improving Logistics Performance Index while integrating Great Nicobar as strategic transshipment hub.
- **Digital Technology Enabling Smart Port Operations:** AI forecasting and digital twins target zero accidents through predictive planning, real-time monitoring via MIS/Sagarmanta portals optimizes vessel turnaround, cargo efficiency, and renewable energy adoption for sustainable operations.
- **Human Capital & Economic Multipliers in Focus:** Coastal skill development (7K trained, 3K placed) builds seafarer workforce, Ro-Pax ferries (Mumbai-Mandwa, Goa) cut travel times dramatically, while port-led industrialization catalyses jobs and regional growth through public-private partnerships.
- **Global Competitiveness Roadmap to 2047:** Shipbuilding/ownership ambitions position India as maritime leader; fiscal incentives and streamlined PPPs scale coastal cargo/inland waterways, with digitalization unifying resilient infrastructure for trade dominance and economic self-reliance.
- **Innovation Showcase:** Adaptive Infrastructure Solutions: Jogighopa's floating pontoon terminal demonstrates resilient design for extreme river conditions (Brahmaputra fluctuations), proving technology-driven adaptability integrates seamlessly with Sagarmala's connectivity pillar for inland maritime expansion.

Port & Water Infrastructure

SESSION 3

Integrating BIM and Digital Twin for Water Infrastructure Planning & Maintenance

Presentation By



Roi Otero

Water Industry Strategy
Manager, Autodesk



Amritanshu Kumar

Market Development
Director Asia Water, Bentley



Suneet Manjavkar

Industry Head - Water &
Climate, Esri India



Lionel Gommery

Head of O&M - Nagpur
Concession, Veolia India Pvt
Ltd

Key Highlights

- **Digital Transformation Imperative for Water Security:** India's water paradox simultaneous floods, droughts, and 40%+ non-revenue water was positioned as a systemic risk, driving the need for BIM-led digital transformation to improve resilience, efficiency, and lifecycle performance of water infrastructure under growing climate and urban pressures.
- **BIM as Process, Digital Twin as Outcome:** Speakers emphasized BIM as an information-driven process rather than a tool, with digital twins emerging as its operational output enabling integrated planning, design, construction, and maintenance through common data environments, collaborative workflows, and lifecycle continuity.
- **Operational Digital Twins Delivering Ground-Level Impact:** The Nagpur 24/7 water PPP showcased how real-time hydraulic modelling, GIS integration, and cloud-based data platforms support pressure management, NRW reduction, and proactive maintenance, even within complex brownfield networks and legacy infrastructure constraints.
- **Integrated Data Ecosystems Breaking Utility Silos:** The session highlighted the convergence of BIM, GIS, SCADA, IoT, financial, and customer data into secure, interoperable platforms enabling real-time analysis, regulatory compliance, and informed decision-making while addressing cybersecurity and data governance challenges.
- **Technology-Enabled Efficiency Across the Water Lifecycle:** Advanced simulation, automation, and AI-driven analytics were presented as key enablers for optimizing asset performance, energy consumption, and service reliability shifting utilities from reactive operations to predictive and scenario-based management.
- **Roadmap to Outcome-Based, AI-Augmented Water Management:** Looking ahead, the discussions outlined a transition toward outcome-driven digital twins powered by AI and open ecosystems supporting predictive insights, workforce productivity, and sustainable service delivery aligned with India's SDGs and national urban water missions.

Port & Water Infrastructure

SESSION 4

Enhancing Water Network Efficiency with GeoAI & Predictive Analytics

Presentation By



Erik Green

Asset Management- Program Manager
Renewable Water Resources



Dr Shailendra Singh Solanki

Senior Vice President – Infra
EcoFirst

Key Highlights

- **Geospatial Platforms as Foundational Enablers for Water Sector Reforms:** The session reinforced GIS as a core digital public infrastructure for urban water utilities supporting asset inventory, service coverage mapping, and lifecycle management in line with AMRUT 2.0 and Smart Cities objectives for data-driven planning and transparent service delivery.
- **Integrated Digital Workflows Supporting O&M and Service Reliability:** Speakers demonstrated how GIS-integrated CMMS and SCADA systems enable automated work orders, asset criticality assessment, and prioritized maintenance strengthening utility preparedness for uninterrupted water and wastewater services to critical facilities and high-density urban zones.
- **Risk-Based Capital Investment Planning for Aging Infrastructure:** With large-scale CAPEX commitments under urban renewal and capacity augmentation programs, GIS-enabled asset hierarchies and risk assessment frameworks were highlighted as effective tools for evidence-based capital investment planning, optimizing expenditure across treatment plants, pumping systems, and network assets.
- **AI-Enabled Digital Twins Advancing Predictive Water Management:** The discussions outlined the transition from conventional hydraulic modelling to AI-driven digital twins integrating GIS, IoT sensors, SCADA, and analytics to support leakage detection, demand forecasting, pressure management, and reduction of non-revenue water in alignment with Jal Jeevan Mission outcomes.
- **Addressing Indian Urban Water Challenges Through Policy-Led Digital Adoption:** The session acknowledged systemic challenges including high NRW (~38%), incomplete asset records in brownfield networks, and fragmented DPR-to-O&M workflows, emphasizing the need for baseline audits, network digitization, smart metering, workforce upskilling, and policy-driven adoption aligned with SDG 6 and SDG 11.
- **Roadmap to Smart, Water-Sensitive Cities:** The session concluded with a phased implementation pathway digitize assets in GIS, integrate real-time data streams, deploy analytics dashboards for decision support, and institutionalize proactive response teams positioning geospatial intelligence and AI as key enablers for resilient, sustainable, and citizen-centric urban water management.

Program Agenda

Day One - 21st August, Thursday

Topic
Registration
Opening Plenary – Safe, Sustainable and Resilient Infrastructure through Digitalization
Plenary II – Geospatial + BIM + Digital Twins: Enabling Connected Infrastructure Systems
Plenary III – Digital Twin Strategy: Policy, Institutional Readiness and Standardisation
Plenary IV – Roads and Highways
Plenary V – Railways and Metro
Plenary VI – Airports
Plenary VII – Ports and Water Infrastructure
Special Conversation – Connected Digital Platforms for Infrastructure Lifecycle Planning

Day Two - 22nd August, Friday

Hall A	Hall B	Hall C	Hall D
Road & Highway	Railway & Metro	Port & Water Infrastructure	Airport, Building & Campus
Streamlining Land Acquisition Processes for Highway Projects with Geospatial and Digital Solutions	Integrating Real-Time Data, AI & Predictive Analytics for enhanced safety and better asset management	Leveraging Automation and Digital Solutions for Optimised Port Operations	Digital Solutions for Sustainable Airport Infrastructure Development
Role of Digital Solutions in Asset Management of Road and Highways	Optimizing Rail Network Efficiency with Geospatial Data and Digital Twin	Building Resilient Ports: Sagarmala, Multimodal Connectivity, and Digital Innovation	Resilient Airport Operations: Digital Twins for Real-Time Monitoring & Maintenance
Boosting Road Safety with AI and Real-Time Data	BIM & 4IR for streamlined and coordinated Metro Project Planning	Integrating BIM and Digital Twin for Water Infrastructure Planning & Maintenance	Modular Construction & Prefabrication: The Digital Advantage in Campus & Building Projects
Fireside Chat			
Innovations in High-Altitude Road Construction: Overcoming Terrain and Weather Challenges	Transforming Metro construction with Digital Twins and Automation Techniques	Enhancing Water Network Efficiency with GeoAI & Predictive Analytics	Optimizing Building & Campus Infrastructure with IoT and Advanced Technologies

Tea/Coffee Break Sponsor



Findings Conclusion and Way Forward

The AEC Forum 2025 highlighted transformative technologies and strategies across critical infrastructure domains such as Roads & Highways, Rail & Metro, Ports, Water Infrastructure, Airports, and Buildings & Campuses. Experts showcased how advanced tools like GIS, BIM, Digital Twin, IoT, AI, AR/VR, and 4IR technologies are reshaping infrastructure development, promoting sustainability & resilience, and ensuring operational efficiency. Below are the findings, way forward, and conclusion from the Forum.

Findings

Roads & Highways

- **GIS and Spatial Analytics:** Facilitates route optimization, traffic management, and environmental planning, improving efficiency and safety.
- **Advanced Surveying Tools:** Drones, LiDAR, and 3D scanning enhance accuracy, shorten construction timelines, and improve on-site safety.
- **BIM Integration:** Combining BIM with geospatial data enables predictive maintenance and detailed project planning, especially for complex terrains.
- **Lifecycle Management:** Reality capture and satellite imagery support proactive maintenance and extend infrastructure lifespan.

Railways & Metros

- **Digital Twin & AI:** Enables real-time monitoring, predictive maintenance, and operational optimization.
- **Geospatial and BIM Solutions:** Critical for underground metro projects and railway infrastructure, improving safety, risk management, and efficiency.
- **Intelligent Transportation Systems (ITS):** IoT-enabled monitoring systems and advanced sensors enhance operational reliability and asset longevity.
- **Smart Passenger Flow & Predictive Maintenance:** Real-time data analytics optimize scheduling, reduce delays, and improve station and track management.

Ports

- **Digital Twin for Yard & Berth Management:** Simulates yard operations, vessel berthing, and container flows to improve throughput and reduce congestion.
- **AI & Automation in Operations:** OCR/Rfid gate automation, AI-driven scheduling, and VTMS optimize vessel turnaround, safety, and efficiency.
- **BIM 4D/5D for Construction & Risk Management:** Simulations assist in dredging, tidal management, and clash-free marine construction, minimizing delays and cost overruns.
- **Policy-Aligned Green Transition:** Sagarmala initiatives integrate digitalization, renewable energy, and predictive IoT maintenance for sustainable operations.

Water Infrastructure

- **GIS & GeoAI for Network Efficiency:** Geospatial platforms and AI analytics support leak detection, demand forecasting, and NRW reduction.
- **BIM & Hydraulic Modelling:** Integrated BIM and hydraulic simulations enable predictive maintenance, optimized energy use, and sustainable resource management.
- **Integrated Data Ecosystems:** SCADA, IoT, financial, and customer data converge into unified platforms for decision-making and regulatory compliance.
- **Digital Twins for Predictive Operations:** Real-time monitoring, scenario analysis, and AI-driven insights improve service reliability and resilience.

Airports

- **Digital Twin & Real-Time Monitoring:** Integrated platforms monitor airport systems, passenger flow, and terminal operations for optimized performance.
- **GIS & Flood/Storm water Management:** Geospatial analysis with IMD rainfall APIs and DEMs enables flood prediction, drainage optimization, and sustainable storm water solutions.
- **Smart Operations:** IoT-enabled facilities, AR/VR applications, smart trolleys, and facial recognition enhance operational efficiency and passenger experience.
- **Predictive Maintenance & Asset Optimization:** Service and Sensor Twins support predictive maintenance, energy efficiency, and effective space utilization.
- **AI & Machine Learning Integration:** AI/ML augments Digital Twins to forecast operational disruptions, improve sustainability, and optimize airport assets.

Buildings & Campuses

- **Scan-to-BIM & Reality Capture:** Cloud-based point cloud processing accelerates renovations, improves MEP coordination, and reduces clashes.
- **Carbon Analysis & Net Zero Compliance:** Platforms simulate operational and embodied carbon, thermal comfort, and loads to ensure sustainable building designs.
- **AI-Driven MEP & Structural Optimization:** AI automates sizing, routing, and code compliance checks, accelerating design decisions and scenario exploration.
- **Digital Twin for Lifecycle Monitoring:** IoT-connected BIM models enable real-time performance tracking and anomaly detection.
- **Energy Efficiency & IoT Integration:** Real-time monitoring of HVAC, lighting, and occupancy-driven systems results in significant energy savings and operational efficiency.

Way Forward

Embracing Integrated Technologies

- **Collaborative Systems:** Integrating GIS, BIM, Digital Twin, IoT, AI, and AR/VR across sectors can provide a unified view of infrastructure, improving precision, sustainability, and efficiency.
- **Interoperability & Standardization:** Platforms enabling seamless data exchange across stakeholders will improve decision-making, planning, and operational outcomes.

Promoting Sustainability

- **Green Infrastructure:** Digital Twins, 5D BIM, AI, and renewable integration ensure eco-friendly designs, resource optimization, and reduced environmental impact.
- **Lifecycle Management:** Adopting a lifecycle approach from planning to maintenance enhances durability, operational efficiency, and long-term cost-effectiveness.

Building Resilience

- **Disaster Preparedness:** Using geospatial and real-time analytics in planning ensures better response to floods, storms, and other disruptions.
- **Predictive Maintenance:** Proactive asset monitoring with AI and sensor-driven insights reduces failures, downtime, and operational risks.

Enhancing Human Capital

- **Upskilling Workforce:** Training engineers, architects, planners, and managers in BIM, GIS, Digital Twins, AI, and IoT is critical.
- **Cross-Disciplinary Collaboration:** Collaboration between civil engineering, data science, environmental, and IT specialists fosters innovation and operational excellence.

Policy and Investment

- **Strategic Funding:** Governments and private sectors should prioritize investments in digital solutions to unlock long-term economic and societal benefits.
- **Regulatory Frameworks:** Developing standards for technology adoption will accelerate implementation, encourage innovation, and ensure sustainable practices.

Conclusion

The AEC Forum 2025 emphasized that emerging technologies like GIS, BIM, Digital Twins, AI, IoT, and AR/VR are critical for building resilient, sustainable, and efficient infrastructure. Across sectors from roads and railways to ports, water networks, airports, and buildings, digitalization enhances operational performance, reduces environmental impact, and enables proactive lifecycle management.

The way forward requires integrating advanced technologies across sectors, fostering workforce upskilling, and aligning policies and investments to promote innovation. By adopting a collaborative, data-driven, and sustainability-focused approach, India's infrastructure development can anticipate future challenges, improve citizen services, and establish global benchmarks for smart, resilient, and adaptive infrastructure systems.

AEC Excellence Awards : Acknowledging Those Who Build Beyond Limits

The AEC Forum Excellence Awards honour visionary leaders and trailblazing organizations that are redefining the landscape of architecture, engineering, and construction. These awards celebrate ground-breaking innovations, bold problem-solving, and transformative solutions that address critical industry challenges. By recognizing achievements that inspire progress and set new standards of excellence, the awards highlight contributions that create lasting societal impact and shape the future of the built environment.

Application Excellence Awards

This award category recognizes user organizations pioneering innovative utilization of geospatial technologies and digital platforms to enhance efficiency, sustainability and user experience in infrastructure projects.



Digital Twin Innovator of the Year

Orange City Water Private Limited



Application in Road and Highway Infrastructure

National Rural Infrastructure Development Agency



Application in Airport Infrastructure

Adani Group



Application in Inland Waterways Infrastructure

AECOM



Application in Water Infrastructure

Jal Jeevan Mission, Maharashtra Jeevan Pradhikaran & CS TECH Ai



Application in Railway and Metro Infrastructure

Dedicated Freight Corridor Corporation of India Limited and Larsen & Toubro



Innovation in 4IR Technologies

SatSure



Innovation in Spatial Computing and Analytics

Kumari Pritee (IIM Sambalpur) & Rahul Dev Garg (IIT Roorkee)



Innovation in Geospatial and BIM Integration

Clove IT Solutions Private Limited



Innovation in Project Management

DGTRA Consultancy Private Limited

Community Voices



Raghunath Kadri, Business Head, Clove IT Solutions

The Geospatial World AEC Forum 2025 has been extremely fantastic. We learned about numerous new problems that we could solve in India and connected with a diverse range of participants and industry leaders. Overall, it was a fantastic experience. Thank you so much for putting this together.



Dr. Ravindra Kumar, Lead Specialist in Transportation Planning and Environment Research, CSIR-CRRI

It was a wonderful experience at the AEC Forum 2025. As you know, our digital economy is growing in India, so it is the right time to organize these functions. It is a good opportunity to integrate different types of transport, like road, railways, and airports. The way this was organized really integrates the older transport systems while looking forward to the economy of the Indian transport system. The digital economy and digital infrastructure play a key role in accelerating India's growth. In the coming Viksit Bharat 2047, we hope to achieve this.



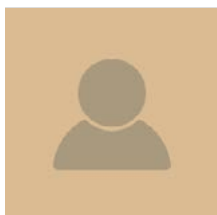
Abhiram Supekar, Group Head at Transportation, Walter P. Moore

It's been a great speaking opportunity for me in the deep dive session for the Roads session. Furthermore, there were great sessions on BIM workflow and AI as well. I hope that it was helpful from my end. For me, it was a great experience sharing my thoughts and our workflow in BIM and AI.



Avinash Singh, Assistant Manager, Delhi Metro Rail Corporation

In two days, we learned about the use of digitisation in the metro as well as in the railway network. Most of the discussion and presentations given by experts are very informative, and these insights will greatly help us in our work.



Pradip Kumar Nath, Dy. Manager, Kolkata Port Trust

This event is very interesting and exciting, as almost everything is a new subject for me. Our port sector is lagging in this type of digitalization, and I hope this digitalization effect will be the future of our port, not only for our port, but for our country as well. This event has made me understand a lot about my sector, and I thank Geospatial World and the AEC Forum for that.





Sudesna Biswas, Head – Hydraulics and Hydrology, Larsen & Toubro

It was excellent to be amongst the other industry leaders and representatives of different parts of the industry, as the consultants, the contractors, and the government side as well. There was a presentation from the army as well. All of this together was a very holistic experience that I had with the different technology platforms that they are using for various phases of the project. As for me, it was very enriching, and I look forward to more such experiences from the AEC Forum and Geospatial World.



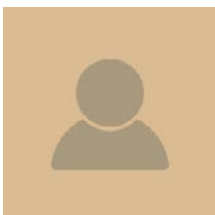
Abhra Kumar, Integrated Design Limited

The conference arrangement is very good, and we are here looking for BIM consulting companies and projects that are currently present in India. Gladly, we've found them, so it's been a great experience overall at the AEC Forum 2025.



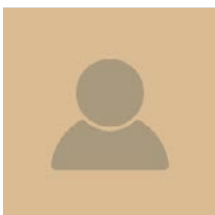
Erik Green, Asset Management- Program Manager, Renewable Water Resources

It's been a truly remarkable experience at the AEC Forum 2025. It has been enlightening to see how India is progressing in the industries of both water infrastructure and the other components within this network. I think it's been insightful to see where the sector is developing and where there's room to grow both internationally and domestically.



S. L. Bhairwa, Superintendent Engineer at Municipal Corporation of Delhi

The sessions at the AEC Forum were extremely useful. A lot of material has been gathered at the event, making us updated with the latest technologies in our sector. All the speakers were very good, and a lot of sectors were covered in the two days. I would like to thank Geospatial World and the AEC forum for such kind of conferences and wish that they keep organizing such workshops from time to time.



Saugata Bhattacharya, Assistant Project Manager at Integrated Design Limited

In AEC forum we witnessed that the government is trying to build in our BIM industry, which was earlier lagging behind the rest. The first day was an eye-opener for us, as we got to know that India is working on digitalisation in the background. We want to get ourselves involved in the process as things are now going on. I hope that as an industry, we will try together to make digital India more successful. And many thanks to the AEC Forum and Geospatial World for bringing this conference to life and getting us all involved.





Tirthankar Mandal, Vice President, Simplex Infrastructures Limited

My experience at this AEC Forum has been very successful and fruitful because it provided a lot of opportunities to me, the speakers, as well as the audience, to engage and interact. There were a few things, especially in the digital realm, that provided good support for us to improve ourselves.



Tushar D. Kulkarni, BIM Manager – Design, AFCONS

It's a great experience at the AEC Forum 2025. We come to know the latest developments in the market, and how people are using technology to improve their planning and designing, as well as O&M-related aspects. Overall, it was a very enriching experience. I always make sure to never miss this forum. It's always great to be here.



Shashank Yadav, Associate Director – Ports and Marine, AECOM

I sincerely thank the entire Geospatial World team for honouring me with the Excellence Award. It is truly a privilege to be recognized among such esteemed peers in the industry. This recognition serves as a great motivation to continue contributing meaningfully to the sector, and I look forward to many more opportunities to collaborate and grow together.



Dr. Kumari Pritee, Assistant Professor, IIM Sambhalpur

I truly appreciate the kind gesture and the wonderful recognition through the Excellence Award. It was an honour to be part of the event, and I am grateful to Geospatial World and the AEC Forum team for acknowledging my work and contributions. Looking forward to continued engagement and future collaborations with Geospatial World.



Praveen Tiwari, Director – Strategy & International Affairs, Construction Industry Development Council (CIDC)

It was truly an Honour to be part of the AEC Forum 2025 as a speaker. The forum provided an excellent platform to exchange knowledge, deliberate on emerging challenges, and explore opportunities shaping the AEC industry. The diversity of participants and the depth of discussions made the experience enriching and insightful. I appreciate the meticulous efforts of the AEC Forum team in curating such a meaningful dialogue and look forward to continued association in the future."



Shirish Chandra R Shah, Consultant, Jawaharlal Nehru Port Authority

It was a great event and efforts put up by AEC Forum team members. I convey my warm regards to all. Once again thanks for considering me as a speaker for the event. Port vertical is a big way ahead and will add huge value to nation.



Social Buzz



Noida International Airport
61,481 followers
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We are pleased to share that our colleague, **ARADHNA RAWAT**, Senior Architect, represented Noida International Airport as a speaker in the panel discussion on "Resilient Airport Operations: Digital Twins for Real-Time Monitoring & Maintenance", at the **AEC Forum 2025** in New Delhi.

She highlighted how digital technologies are reshaping airport infrastructure and offered a glimpse into how these innovations are being integrated at **NI Airport**, contributing to smarter and more sustainable infrastructure.

Thanks to the **#AECForum2025** for organising this informative session.



Shashank Yadav · 2nd
Senior Project Manager | Airport Director at AEC2025
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Backed to be part of the **AEC Forum 2025** as a speaker at **Ty Vientia** on 21-22 Aug 2025! 🇱🇵
Looking forward to sharing insights on the future of Ports & Water Infrastructure, and exchanging ideas with industry leaders who are driving this transformation.
The forum will be a great platform to discuss how digital solutions, automation, and resilient planning are reshaping the maritime and water sectors.

See you there! **#AECForum2025** **#Maritime** **#WaterInfrastructure** **#Innovation**



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Shaping the Future of Ports & Water Infrastructure
The maritime and water sectors are undergoing a technology revolution — and the **AEC Forum 2025** is bringing the experts to the stage.

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• Optimized Port Operations through Automation & Digital Solutions
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Head directly from industry leaders driving change, explore real-time insights, and gain insights you can apply to your projects
If you're working in infrastructure engineering, maritime operations management, this is your chance to connect, learn, and be a part of transformation.

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Mohit Bhatnagar · 2nd
Senior Project Manager | Airport Director at AEC2025
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Looking forward to meeting at Infrastructure users at **AEC Forum 2025**
Varun Thomson Boyle · 2nd
Senior Project Manager | Airport Director at AEC2025
4mo ·

Catch them live on August 21 & 22 in New Delhi as they share cutting-edge insights on digital transformation in infrastructure.
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Meet us at **AEC Forum 2025**



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We are delighted to share that **Dr. Abhay Kimmati**, ICH AI, will represent us at **AEC Forum 2025** in New Delhi.

As part of Plenary VII - Optimising Water Infrastructure Digital Solutions, he will speak on how high-accuracy operational analytics are redefining water network efficiency.

Learn more about the event: <https://india.in/gbvnVdm>
Discover our water solutions: <https://india.in/gssaQy6>

AEC Forum 2025 **#Geospatial** **#BIM** **#DigitalTwin** **#WaterInfrastructure** **#ViksitBharat** **#CSTECHAI**



AEC FORUM
2025



CSTEC
2025

PLENARY SESSION
OPTIMISING WATER INFRASTRUCTURE NETWORKS
Through Geospatial & Digital Solutions

Thu 21st Aug, 2025 | Venue: Vientia, New Delhi



DR. ABHAY



Tapan Mozumdar · 2nd
Executive ES&P/Zero Advisor | 36 Yrs Project Management Exp.
4mo ·



is happened about a month back.



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Tapan Mozumdar, Senior Vice President of the **Global Network for Zero**, explores the key challenges and opportunities presented by digitalization in the construction sector at **AEC Forum 2025**.

He highlights why interoperability in BIM models, integration of IoT and real-time data into Digital Twins, and life-cycle digitalization are essential for large-scale adoption.

Through examples from India's rapid infrastructure growth, he stresses the importance of designing climate-resilient, sustainable, and safe projects that meet ISO standards and global benchmarks.

#NetZero **#DigitalTransformation** **#Infrastructure** **#BIM** **#DigitalTwin** **#Sustainability** **#AECForum2025**

Monarch Surveyors & Engineering Consultant... · 2nd
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Just week, at **AEC Forum 2025** (Aug 21-22, New Delhi). Focused on building resilient, data-driven infrastructure for a **#ViksitBharat**. Key themes that stood out:

- Digital-first delivery: Strong momentum for BIM + Digital Twins across planning, design, build, and O&M.
- Interoperability: Emphasis on standards, CDEs, and geospatial layers to enable collaboration across agencies.
- Risk & resilience: Greater focus on quantifying infrastructure risk to inform financing and compliance.
- Sector traction: Highways using LiDAR/BIM dashboards; Rail/Metro exploring predictive analytics; Airports simulating cross & emergency scenarios; Water utilities leaning on Geospatial for leakage/O&M.
- Ecosystem growth: Indian and global tech players accelerating adoption, cost-effective platforms.

If you attended, what was your biggest takeaway?
#AECForum2025 **#DigitalTwin** **#BIM** **#Geospatial** **#InfraTech** **#SustainableInfrastructure**

Varun Thomson Boyle · 2nd
Tech Consulting Leader at Bentley Systems India
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Meet us at AEC Forum 2025
21-22 August 2025 | New Delhi

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the country's infrastructure scenario moves ahead at a rapid pace, we are joining technology-driven conversations to the table.

Geospatial World's #AECForum2025 held in Vientia, New Delhi, our speakers shone the light on three critical domains:

Highways & Highways – engineering digital delivery processes at scale – **Debasish Roy, AVP Middle East & India Operations and Head of Infrastructure**

Ports – driving digital transformation of O&M with **#DigitalTwin** – **Naman Dwar, Head of Automation**

Water & Water Infrastructure – integrating MEP & BIM strategies for coastal assets **Debasish Roy, AVP Middle East & India Operations and Head of Infrastructure**

Smart Infrastructure – automating operations, we showcased the digital blueprint for **#ViksitBharat** with our **#DigitalConstruction** solutions.

With the glimpses from the event!

Monarch Surveyors & Engineering Consultant... · 2nd
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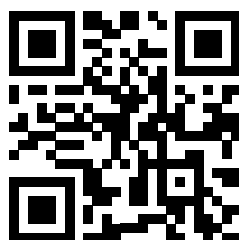
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