

TRANSFORMING INFRASTRUCTURE: AI'S ROLE IN BUILDING VIKSIT BHARAT

SUBHASH SETHI
CHAIRMAN
SPML INFRA LIMITED



"The integration of Artificial Intelligence into infrastructure development is driving significant improvements in design, resource management, and sustainability. SPML Infra Limited is leading this transformation, utilizing AI to deliver smarter, more resilient infrastructure projects that support India's path towards becoming a developed nation by 2047."

Artificial intelligence is finding its way into all facets of our lives. AI technology has made significant strides in different fields, also enhancing the planning and execution of infrastructure projects. This transformative approach leverages advanced algorithms to optimize design processes, improve project management, and facilitate predictive maintenance. By analyzing vast amounts of data, AI systems can generate more efficient and sustainable infrastructure plans with a long term perspective with efficient resource utilization and environmental consideration.

SPML Infra Limited executes water projects and AI-powered tools have revolutionized the implementation with engineering design, scheduling, resource allocation, and risk assessment. The AI integration has reduced delays and cost overruns, which has been a challenge in large infrastructure projects. We are looking ahead that technology will evolve further to develop AI-driven infrastructure planning tools specifically tailored for Indian environment.

AI is also helping with asset management, it is used to track assets, manage inventory, provide notifications on upcoming maintenance and make proactive repair/replacement decisions. Through data analysis and pattern recognition, AI can identify anomalies flagging potential threats in real-time, enabling proactive maintenance scheduling and minimizing downtime. AI tools can assist in generating 3D models of the project layouts and assets, aiding in spatial planning and optimizing space utilization. In the event of an emergency, AI can provide real-time instructions to workers on recommended protocols and provide emergency contact information and status updates.

The AI enabled sensors can easily analyze energy consumption and energy-efficiency strategies can be formulated to provide optimization eliminating wasteful use. Real-time monitoring and feedback mechanisms further enhance energy management efforts, allowing for adjustments in the changing conditions. As AI technology continues to evolve, its integration and impact is particularly important for India to build robust and resilient infrastructure that will accelerate India's progress towards its vision of a developed nation by 2047, under the 'Viksit Bharat' initiative. ■