# BIM
UNLOCKED

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The US AEC industry is witnessing a lot of changes, particularly with the help of Building Information Modeling (BIM). New trends, including the incorporation of Artificial Intelligence (AI) and Machine Learning (ML), real-time project tracking powered by digital twin, and the move to cloud-based BIM, are disrupting the model.

AI/ML IN BIM
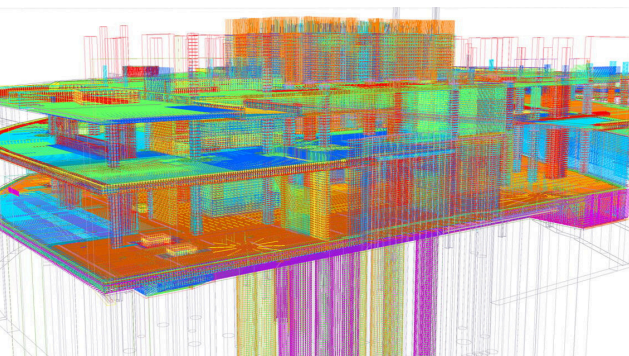
AI and ML amalgamation with BIM is making project planning and implementation much more efficient, along with a good amount of accuracy. Using AI algorithms to analyse huge data sets can help to identify potential risks, minimise scheduling, and allocate resources more efficiently.

Case Study : One Nine Elms, London

The One Nine Elms project in London successfully demonstrates the integration of BIM with other technologies. BIM was used to design the ground floor and three-storey basement of this 85-story mixed-use residential tower. SOLVE Structural Design BIM cloud collaboration enabled all stakeholders, MEP, construction, and design teams to have easy access to the building information from the very beginning of the project. The use of virtual simulations allowed testers to virtually test the building before it was deployed, enabling them to carry out tests with efficiency and accuracy.

DIGITAL TWIN MONITORING

>>> **Digital Twin** (virtual representations of real-world objects) are revolutionizing time-tracking management for construction work. These virtual and real replicas, called digital twins, simulate the real world, allowing stakeholders to track progress, predict maintenance, and run optimization scenarios across the lifecycle of a building.

Case Study : The Shard, London

Digital twin technology was used to blend the structural aspects with the architectural elements of one of the iconic skyscrapers, The Shard of London. This virtual representation allowed the building performance to be actively monitored and fine-tuned for solidity and energy efficiency, which guaranteed that the building was working optimally after construction.

BIM IN THE CLOUD

The adoption of cloud-based BIM platforms is facilitating real-time collaboration among project teams, regardless of their physical locations. These solutions enable simultaneous access to updated models, reducing errors and ensuring that all stakeholders are aligned throughout the project lifecycle.

Case Study : Wood Wharf Development, London

The Wood Wharf development project in London implemented 3D Repo's cloud-based BIM platform to enhance collaboration among stakeholders. This approach enabled design coordination and federation of large 3D models via modern web browsers, streamlining communication and decision-making processes.
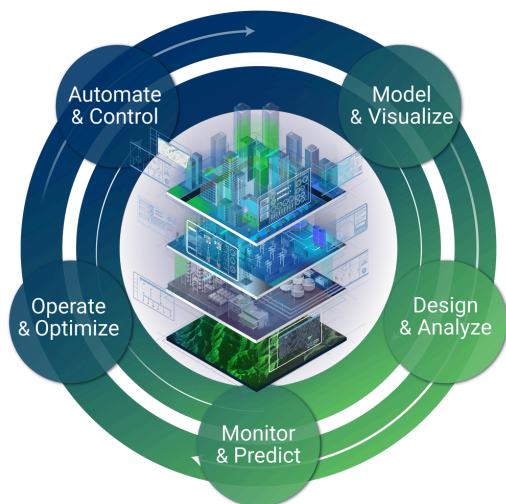
BIM IN ACTION

Several high-profile projects have demonstrated the successful application of BIM technologies

- **One World Trade Center — New York, United States:**

  BIM proved essential in the reconstruction of One World Trade Centre, combining an environment-aware design that enabled architects to visualise a resilient structure built to withstand even the harshest conditions. BIM managed plenty of data and ensured all the required safety and design standards from the beginning to the end

- **Manitoba Hydro Spillway Replacement, Canada:**

  This project utilised Tekla Structures to model and coordinate its design, winning the TEKLA 2012 North American BIM Award for "Best Concrete Project." It was the first hydroelectric project to have steel, concrete, and rebar fully detailed using Tekla Structures.

- **Optus Stadium, Perth, Australia:**

  A highly agile application of BIM on this project delivered the stadium ahead of schedule, demonstrating the time efficiencies that can be achieved through BIM.

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