USING AI IN CONSTRUCTION, WITH TECHNOLOGIES LIKE MACHINE LEARNING AND NATURAL LANGUAGE PROCESSING, COULD BE KEY TO SOLVING THE INDUSTRY'S URGENT CHALLENGES.

AI in construction planning helps the industry solve its biggest challenges by providing real-time access to essential data to complete projects safely, efficiently, and on time.

Using AI and machine learning, teams of all sizes can predict onsite safety and quality risks, provide accurate bids and

hazards are unparalleled, helping save significant time and substantially reduce overhead. Many organizations are already using AI in construction planning for project control, budget estimations, scheduling, and onsite management.

No one sets out to overspend, but the reality is that most big projects go over budget, despite having competent teams in place. This is usually due to unanticipated circumstances such as changes to the initial scope, unreliable time estimates, communication disparities, design flaws, administrative glitches, and unforeseen conditions. Simply put, there's a lot of room for human error with so many moving parts and different stakeholders. Making accurate cost and time estimates on large projects is virtually impossible without adequate data insights.

To this end, some companies have started using artificial neural networks (ANNs) to predict things like cost overruns. ANNs are subfelds of AI that are modeled after the human brain. In construction, these ANNs use historical data to envision realistic timelines for future projects based on aspects like project size, contract type, and the competence level of managers. AI can also give staff access to real-life training material remotely to uplevel their skills in real time. This reduces new resource onboarding time and allows large teams to collaborate efficiently, expedite project delivery, and meet budget requirements.

BIM to the Rescue

When older employees and superintendents retire or leave organizations, legacy information is often lost. AI can be a collaborative resource for a new generation of workers to leverage data that's been uploaded to the cloud. Building information modeling (BIM) data is organized in a way that makes it particularly useful for AI in construction, and the more structured information a machine has access to, the more intelligent it becomes. AI can also strengthen BIM by detecting clashes, analyzing models thoroughly, and recognizing potential areas of failure.

BIM has already had a significant impact on AEC projects' cost and time management. AI-assisted BIM has the potential to save organizations millions of dollars when considering the scale of large construction projects. Drawing on datasets from past projects, AI has the power to suggest scheduling efficiencies and flag potential safety risks.

4. Build maintenance and supply chain forecasts. Sensors can be added to systems to monitor and collect data about their operations to perform demand forecasting and predictive

Right now, roughly 55% of the world's population lives in urban areas, and that number is expected to climb toward 70% by 2050. The global population is projected to grow 25% in that time, driving a critical need for infrastructure investment.