# MCX

Leveraging Artificial Intelligence to Build Sustainably and Save Money

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Constructing a sophisticated and complicated building is often challenging. It has been compared to navigating a maze where there is an obstacle, dead end, or hurdle around every corner. Budget constraints, clashing design documents, tight schedules, and workforce management are just a few of the many challenges faced by project teams. Now add the growing pressure of minimizing environmental impacts of buildings.

The role of an architect when envisioning and planning a building cannot be overestimated. Beyond simply drawing beautiful pictures and creating intricate renderings of the buildings before ground is broken on the projects, architects manage stakeholder expectations and wrestle with design revisions, all while attempting to weave cost-effective sustainability components into the documents based on the demand of their clients. All this occurs under the looming shadow of tight deadlines and accelerated project schedules. Unfortunately, architects' sustainability efforts often fall short during the construction process due to the unpredictability of owner funding, materials costs, and labor costs that necessitate budget cuts or value engineering efforts that impact the original design intent.

General contractors typically face their own set of challenges when it pertains to building sustainably. Many in the construction industry acknowledge its cautious adoption of new technologies and processes, so conventional construction practices often clash with stricter sustainability standards dictated by clients and policy. Even facility managers struggle
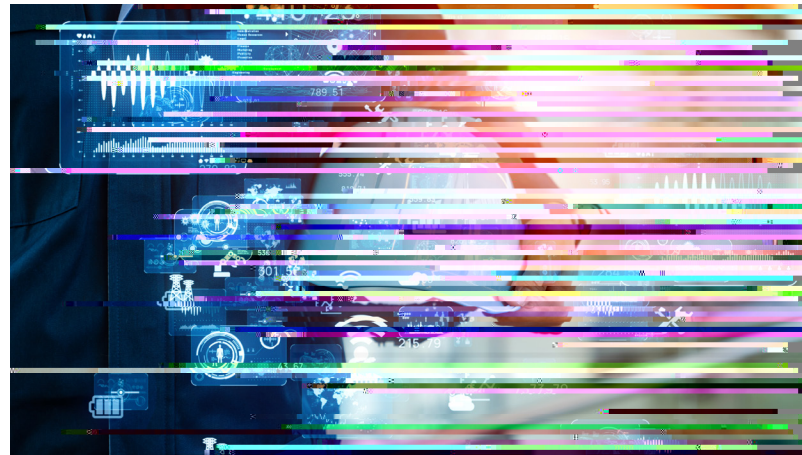
to keep up with modern building management systems driven by powerful computers and data, making the daily management of buildings more complicated and precise than ever before.

In the rapidly changing built world, the use of data and new technologies are promising to revolutionize the way buildings are designed and built. Specifically, artificial intelligence (AI) is showing incredible potential and could be a game changer by helping to streamline design, planning, and construction processes and ultimately delivering cost savings for real estate developers and owners.

DESIGN

Sustainable design continues to evolve to address the carbon footprint of buildings. Embodied carbon refers to the emissions associated with constructing buildings and can make up 85%

About the Author

Steven Burke is the senior director of sustainability at Suffolk Construction. He has guided green building certifications on projects of many different types and sizes, including k-12 schools, higher education facilities, mid-rise and high-rise residential, commercial interiors, retail interiors, and commercial office buildings.

About the Article

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