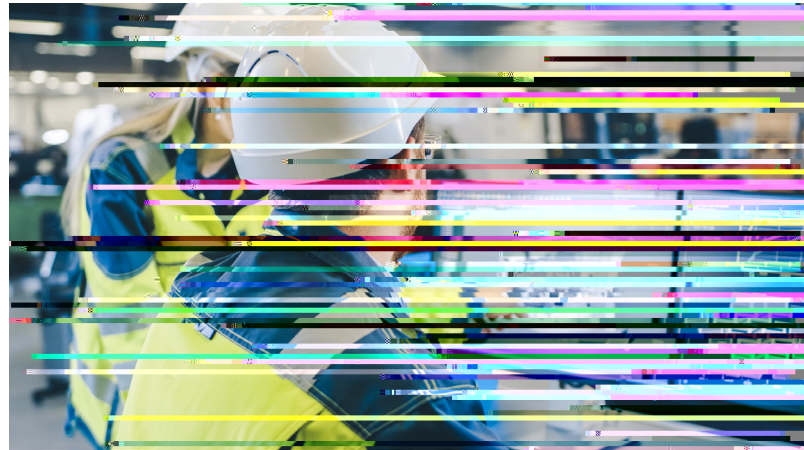




Written by: Zach Mortice, Architectural Journalist, Redshift by Autodesk



building-performance metrics, generate floor plans from simple programmatic and spatial inputs, and reorganize floor plans dynamically as walls and partitions are moved — essentially automating mundane, omnipresent design tasks. AI engineers are working on integrating natural language text-based interfaces, like ChatGPT, in AI architecture tools like these. AI-assisted floor-plate

generation is a species of parametric design, which is long-established in architecture to generate endless formal variations.

But with greater AI computing power, architects and designers are incorporating generative design. M



Applied in the early stages of planning and design, Forma performs real-time analyses across key density and environmental qualities such as sunlight hours, daylight potential, wind, operational energy, and microclimate, without users requiring deep technical expertise. These machine learning and AI-powered environmental analyses can be used from day one of the design process to help meet business and sustainability targets. For instance, Forma's wind modeling reveals how buildings channel wind, using computational fluid dynamics to refine designs for human comfort.

### 3.

ConXtech, a Bay Area-based modular-construction company, is using AI to gain control of one of the most unpredictable sy,

a map- and menu-based interface in a web browser; highly detailed floor plans, 3D views, and Revit files are generated for each design.

## 7.

Cove.tool is an automated building performance design app cofounded by building scientist and architect Sandeep Ahuja. It uses machine learning to analyze how building designs can improve their energy and carbon consumption, daylighting levels, cost structures, and more, altering variables like building orientation and materiality and gauging the results. It can perform cost optimizations for a variety of criteria and rank results according to different quality standards, from code minimum to voluntary rating system accolades. In its level of granular detail, Cove.tool is essentially a preconstruction digital twin, integrating with machine learning algorithms that can incrementally refine a building's performance.

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Given how new AI is in the architecture field, it's difficult

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## About the Author

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