

Artificial intelligence attracting design firms' interest

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Artificial intelligence (AI) will become a collaborative tool for design firms this year, according to a 2024 design forecast by global architecture, design and planning firm Gensler. In Portland, at least three design firms – Gensler, ZGF Architects and Mackenzie – are already using AI for utilitarian functions.

Gensler, for example, is applying the technology in its operations, design, and storytelling.

“At Gensler, it’s inspiring to witness how our talented designers harness the power of technology to transform our processes, delivery and human experience,” Kyle Martin, regional design technology lead and senior associate at Gensler’s Portland office, stated in an email. “We are witnessing artificial intelligence becoming a spark for design inspiration, an opportunity for enhanced design exploration, and a catalyst for conversation around delivering design solutions that challenge the status quo.”

This year, Gensler plans to combine human creativity with AI. Designers will use it to redefine the design and innovation process, enabling faster iterations, new insights and immediate responses, Martin stated.

Buildings and spaces designed with the help of AI will be more



Jonah Hawk, a ZGF computational design specialist, works on some script at his desk. The architecture firm has found AI helpful for utilitarian functions, he said. (courtesy of ZGF Architects)

sustainable, better performing and more responsive to individual needs and preferences, according to Gensler. AI can assist designs of buildings and spaces that not only meet basic needs but exceed expectations, Martin said. It enables designers to accelerate and explore new solutions from concept to reality by providing rapid design simulation, insights around local climate conditions, and the ability to measure building performance and the comfort of human experience, he added.

“Artificial intelligence enables opportunities for significant impact across various aspects of our business and the workplace experience of our clients,” Martin stated. “By harnessing AI’s capabilities, we are

bringing value to our operations and to the design solutions we craft for our clients across industries.”

With AI, Gensler is seeing tremendous benefits in both its design practice and operations, Martin said. The firm is experimenting with AI as a way of gleaning inspiration to help unlock creative blocks, provide agility through the design process, and push ideas to the next level through new methods of exploration.

“We aren’t looking to AI to create our designs, (but) rather bringing together human ingenuity and the compute power of these technologies to create value for our clients,” Martin stated.

Meanwhile, ZGF Architects uses AI in more of a utilitarian way than



Josh McDowell, a Mackenzie principal and a member of its AI task force, said the firm is working with a San Francisco Bay Area company to develop a road map for use of AI. (courtesy of Mackenzie)

for primary design. The firm is an early experimenter and cautious adopter of AI, computational design specialist Jonah Hawk said.

ZGF explored main visual generative AI tools such as Midjourney, OpenAI programs such as DALL·E and DALL·E 3; and Stable Diffusion, a text-to-image model from Stability AI.

“Rather than subscribing to all these various tools, we have developed our own tools internally,” Hawk said. “We use Stable Diffusion AI and the OpenAI to kind of build our own little versions of some of these various tools out there.”

Josh McDowell, a Mackenzie principal and a member of its AI task force, said the firm is working with a San Francisco Bay Area company to develop a road map for use of AI. (courtesy of Mackenzie)

AI is very helpful for its utility but not yet for its creativity, Hawk said, adding

that the complexity of an architecture project is beyond AI right now.

Within ZGF’s development arm, the firm uses AI to check code, learn new things about coding, or learn how to build out a particular function when writing software. ZGF has a tool in Revit called “Ziggy,” a ZGF character that will answer questions about any PDF document that is fed to it. The firm is currently testing its accuracy.

ZGF also has an AI tool that will describe photos to people who are visually impaired in a way they can understand better than from a standard web browser reading it aloud.

In some cases, AI gets ZGF 80 percent of the way to an end goal but it is still a probability model, Hawk said. The team still reviews and finishes the work.

AI has been life-changing, said Hawk, who now uses it instead of Google for some tasks. ZGF has the locked-down team version of

ChatGPT, which is well-versed in software development and amateur level of code, he said.

There is a misunderstanding that AI is going to replace architects, Hawk said. The complexity of an architecture project is beyond that of a language model such as ChatGPT, he explained.

For Mackenzie, use of AI is also more utilitarian until the firm gets a better understanding of options, Mackenzie principal Josh McDowell stated in an email.

“While architecture, engineering and construction (AEC) firms may be slower to adopting some innovative technologies such as AI, it is Mackenzie’s priority to invest in the future for our clients and partners,” McDowell stated.

Mackenzie has engaged YegaTech Consulting, a San Francisco Bay Area company. It’s a multidisciplinary group of scientists and technologists with backgrounds in AEC, AI, data science and engineering, according to its website. YegaTech will help Mackenzie develop a customized strategic road map and framework for the firm’s AI initiatives. YegaTech is helping Mackenzie operationalize AI, find AI opportunities that provide the firm with market differentiation, create an AI strategy, and define an AI governance framework, according to McDowell.

Mackenzie also has a cross-disciplinary AI task force. A senior leader from each of the firm’s fields – structural engineering, civil engineering, architecture, land use planning, etc. – is a member of the task force.