Architecture Spotlight News Featured Stories

Architects explore new frontiers with AI

Few industries remain untouched by the potential of artificial intelligence. But in architecture, a field that has traditionally centred humanity's creativity and discretion, the impacts portend immense opportunity. The most established firms are already investing heavily in it. Here is a list of the most important efforts so far.

As artificial intelligence transforms industries worldwide, architects are among those pioneering new uses for the technology.

Nowhere is this transformation unfolding with more ambition and invitation of debate than at the renowned London firm Zaha Hadid Architects.

During a talk last spring that spread across the global architectural community, ZHA Principal Patrik Schumacher delved into the nuanced realities and complex questions surrounding AI's growing role in his practice.

As head of one of the world's leading exponents of daring, fluid formal expression, he sees in AI not constraint but liberation. The studio has embraced the use of AI image generators like DALL-E 2 and Midjourney for design inspiration.

According to a report published in Dezeen, Schumacher stated that "most" of their projects now incorporate some form of AI image generation during the initial ideation and design phases.

He showcased a plethora of AI-generated images portraying imaginary ZHA buildings, all created using prompts such as "Zaha Hadid" paired with descriptive attributes like "aerial view" or "high quality."

With an [internal AI research group](#), ZHA can select the most promising images (approximately 10-15%) to move forward into 3D modelling.

Schumacher believes that AI has already empowered both the team and clients by generating new and innovative ideas and advocates against heavy regulation that would hinder progress and impede potential advancements in the field.

The AI-generated images revealed ZHA's signature style, featuring stunning designs that could potentially be used for future projects in Neom. Additionally, ZHA is also utilizing [Stable Diffusion](#) technology in their work.

Architects are increasingly using AI tools

A growing number of prominent design practices are now tapping artificial intelligence to accelerate their workflows as AI is expanding architectural possibilities, automating drudge work, and helping make more informed design decisions.

It enables architects to identify patterns that can inform efficient and environmentally friendly design decisions, and reduce overall project costs, which means projects could be breaking ground in greater numbers in the future. Whether augmenting ideation or automating rote tasks, Architects see no replacement but empowerment - machinery sparking more human thought towards smarter, shared sustainability.

- At London-based [Foster + Partners](#), over 40 researchers delve into generative design through the firm's [AI research team called Previz](#). Their "[Masque](#)" tool automates early floor planning to free up creative brainpower.
- Elsewhere, the computationally-focused [Aspirations lab](#) of Skidmore, Owings & Merrill deploys A.I. across sustainability analyzing and prefabrication.
- Meanwhile, the energy-conscious [Deep Green Data Center](#) in Norway shows how machine learning can minimize ecological impact at a massive scale.
- A.E.C. leader [Arup](#) is collaborating with academics like [Carlo Ratti Associati](#) to render sprawling cultural complexes with optimized daylight and airflow. and are

using AI in their work at the [Fuzhou Strait Culture and Arts Centre in China](#). The AI helps optimize the design, considering factors like daylight and energy use.

- Smaller outfits lend A.I. to their ambitions: At [Dutch firm MX3D](#), algorithms birth intricate bridges cooperatively with [Autodesk on a design tool called Dreamcatcher](#) that uses generative design AI.
- Through a homegrown [tool called Mesa](#) application, Denmark's [Henning Larsen Architects](#) iterates innovative massing propositions for academic facilities.
- [Zwarts & Jansma Architects](#) developed an [AI plugin for Grasshopper called Project Discover](#) to automate early design phases. It can generate layouts, massing models and facades.
- Other firms like [BIG](#), [UNStudio](#), [MAD Architects](#), and [Morphosis](#) have also published research on using AI in architecture and urban design. Check the links to find out more