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# Building Smarter, Stronger, and More Sustainable Commercial Interiors

**A**s architects, we are standing at a turning point where artificial intelligence is no longer just a technological tool; it is becoming a design partner. One of the most prominent architectural trends is likely to be the continued evolution of parametric design, bolstered by the rapid advancements in artificial intelligence (AI). The fascination with parametric architecture has not waned, and with AI-driven tools, architects now enjoy unprecedented freedom to explore bold, innovative designs.

**Commercial Interiors:** In commercial interiors, AI has the power to reframe how we conceptualize, plan, and execute projects, pushing us toward smarter, stronger, and more sustainable outcomes. The integration of AI is not about replacing creativity, but about augmenting it with precision, foresight, and efficiency.

When we think of commercial interiors, the starting point is almost always space planning. Traditionally, this process is both time-intensive and iterative. With AI, we can now generate multiple layout options instantly, tailored to function, usage, and movement patterns. This accelerates ideation and ensures that efficiency is built into the design from the very beginning. AI-driven data analysis adds another dimension. It studies occupancy, circulation, and even behavioural patterns, allowing

us to design with greater empathy for user comfort, acoustics, lighting, and zoning. The result is not just a well-planned space, but an environment that truly responds to the people who use it.

**Beyond Design Ideation:** AI has tremendous potential in project execution. Commercial interiors are service-heavy: data cabling, HVAC systems, electrical wiring, and more coexist in complex interdependencies. AI can streamline this coordination by detecting clashes early, much like BIM has done in architecture. Automated clash reports ensure inefficiencies are resolved before construction begins, saving both time and resources. Material optimization is another crucial area, where AI can recommend efficient material usage, helping to bring down costs while also supporting sustainability goals.

**Potential:** Previously, architectural tools often limited visualization and creative expression. However, AI has transformed this landscape, empowering architects to push boundaries in form, functionality, and aesthetics. With AI, architects can experiment with better forms, refined operations, and intricate design solutions that were once constrained by traditional methods.

For example, AI tools now enable the generation of multiple design options almost instantaneously. When an architect inputs a prompt, the AI provides a diverse array of





visualizations, offering a broader spectrum of choices for clients. This capability enriches the design process, allowing architects to focus more on refining and materializing their concepts.

One of the most exciting applications of AI is in energy management. With real-time data on lighting, HVAC loads, and occupancy, AI can predict energy requirements and optimise resource use dynamically. This makes workplaces more sustainable, not just in design intent, but in daily operation. As sensor-based systems become more prevalent, AI can help commercial interiors evolve into living, adaptive spaces that reduce waste while enhancing comfort.

**Challenges:** However, the integration of AI is not without challenges. Data privacy and ethical use are immediate concerns. Over-reliance on machine-generated solutions

can also risk diluting creativity, leading to designs that feel repetitive or disconnected from cultural and contextual nuances. For me, this is where the line must be drawn. AI can provide logic, but the narrative, emotion, and storytelling must come from us. Without human insight, architecture loses its essence.

**Looking Ahead:** I see architects transforming from sole creators into curators. AI will provide platforms, options, and efficiencies, but it is our responsibility to filter, contextualize, and elevate these into meaningful spaces. Collaboration, too, will be reshaped as AI will allow architects, contractors, and clients to work with real-time updates, reducing errors, improving transparency, and streamlining decision-making. This will not only save time but will also foster trust across the ecosystem.

Inclusivity is another domain where AI can make a difference. By referencing accessibility codes and minimising human error, AI can help us design spaces that are more equitable and usable for people with diverse needs. This is where technology aligns with the ethics of architecture, ensuring that innovation serves everyone.

Ultimately, the promise of AI in commercial interiors lies in balance. It will give us efficiency, precision, and sustainability, but it cannot replace intuition, cultural sensitivity, and storytelling. The future, as I see it, is one of co-creation, where AI handles the logic of space, and architects bring the emotion and meaning. Together, we can shape commercial interiors that are not only smarter and stronger, but also deeply human.

**AI's Assisting Role:** Architects will face the challenge of applying meaningful restraints—whether for energy efficiency, sustainability, or aesthetic harmony. While AI assists in generating ideas, the architect's role will be to channel these possibilities into cohesive, purposeful designs that align with both functional and environmental considerations.

In terms of facades, materials, and perforation techniques, AI facilitates the exploration of various configurations. Yet, despite the abundance of options AI provides, the ultimate responsibility of selecting and refining the best design rests with the architect. This balance, between leveraging AI-generated possibilities and maintaining human judgment, will define the architectural practice in the near future.

In essence, there will be a collaborative relationship between architects and AI, where technology serves as a powerful enabler, and architects remain the ultimate decision-makers in shaping the built environment.

