AEC Industry Predictions for 2024

Technological Innovations: "What major technological advancements or innovations do you foresee occurring in your industry in 2024, and how do you plan to adapt or lead in these areas?"

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Bio: For over 10 years Alexa Wolford-Romanek has maintained a leadership role in the Architecture, Engineering, and Construction (AEC) industry. The goal of this role has been to create brand awareness of emerging technology for the AEC industry. Alexa was part of Seasons 1 and 2 of the Office Spaces TV Show, which aired on Lifetime TV and Fox Business. The focus of these two seasons was how to create well-designed office spaces using 3D modeling and virtual reality. Alexa was recently featured in Entrepreneur Magazine for her newest venture AI Vending LLC. Alexa is currently working as the marketing director for Spatial Construx.

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In 2024 we will see the merging of different technologies moving the industry toward true digital representations of the designed and built structures. Since the 1980s, different digital technologies have been developed that impacted the AEC industry. Many of these technologies were integrated into our industry based on forces that had affected the industry but did not originate directly from it. For example, through economic turndowns like the 1980's Savings Loan Crisis- Adoption of Computer-Aided Design (CAD), 2000-2001 Dot-Com Bust- Beginning of Building Information Modeling (BIM), 2008-2010 Banking Housing Crisis- Adoption of BIM Systems. These times have forced the industry to do more with less. While we have claimed to be digital for over 20 years, the new demands by owners for true digital As-Built for facility management, the need for more accurate renovation/restoration documents using point cloud technologies, and the declining interest in the next generation of taking positions in the AEC industry (robots replacing/supplementing human activities). This means the industry must come to terms with the savings available through technology and finally become proficient in digital tools.

Data will remain the focus for success for 2024. How is data being used? What is its visibility in the AEC industry? These are pivotal questions to ask ourselves as we enter 2024. Data will be able to be expressed in a powerful visual fashion, with the help of some of the newest technological advancements like Artificial Intelligence (AI) and Spatial Computing. Steve Jones, senior director of industry insights at Dodge Construction Network, states, "As the digital transformation of the design and construction industry continues, companies with universal access to their documents will be better poised for success." Expect to see a 30% increase in the use of cloud-based analytics for real-time data processing and enhancing decision-making efficiency.

AI will increase productivity in gathering and organizing data. AI can be leveraged to improve and expedite the design process for the architect by generating initial Revit Models with data. Now, the architect can spend less time initially creating 3D models with more variations to show the owner. The advancements in AI make it easier for the architect to create Revit models with all the data. Tools like Skema help with this by having an AI-powered conceptual design environment that generates highly detailed and fully integrated Revit models. Charlie Cichetti, co-founder and CEO of Skema, says, "Integrating generative AI into architecture isn't about creating a building in one-click, it's about creating in one-click the 60% of the building that is more drudgery than design." By the end of 2024, expect machine learning algorithms to reduce architectural design time by up to 25%, streamlining the conceptualization phase and freeing internal resources for higher-value design aspects.

Spatial computing will reshape the way we look at data. Tim Cook, CEO of Apple, states, "Spatial computing seamlessly blends digital content with the physical world while allowing users to stay present and connected to others." Spatial computing will provide an opportunity to leverage data efficiently, using different technologies to view on the newest augmented reality and virtual reality devices. Some examples of these devices are Meta Quest 3, Apple Vision Pro, Microsoft HoloLens 2, and Magic Leap 2. I foresee a minimum of 20% enhancement in the accuracy of augmented reality models in construction sites this year, leading to more precise and safer construction, and higher performance commissioning results.

Spatial Construx will lead in these technological advancements by connecting all these tools to provide valuable products to the AEC Industry. Spatial Construx is set to unveil an Autodesk Revit plugin at the end of Q1 2024. This plugin seamlessly transforms the architect's Revit model into a visually compelling format that eliminates the need for the end-user (client) to access Revit. This revolutionary approach simplifies the sharing and viewing of Revit models, providing clients with an intuitive solution for rapidly viewing their 3D model with all the Building Information Modeling data. With this enhanced visualization, obtaining approval becomes more straightforward, minimizing change orders. Get ready for an exciting year with groundbreaking innovation and progress!