Rising Technology Trends in the AEC Industry

6 min read

Along with new and innovative technologies, business changes quickly, and the AEC industry is no exception.

Key Takeaways

- **Cloud Technology for Project Management:** Cloud technology, the practice of sharing and storing information on remote databases that are accessible from anywhere with an internet connection has revolutionized…
- **Outsourcing Via Cloud Computing:** AEC firms are increasingly using outsourcing to mitigate risk and save money, time, office space, and other resources…
- **Evaluating the ROI of Technology and AEC Industry Trends in Your Business:** When investing in new tech and tools, it's important to keep track of how well they're working for your business and its bottom line. No matter how impressive new technologies might seem, they aren't worth the investment unless you stand to see a return…

Whether you're an early adopter of new tech or prefer to wait to incorporate time-tested solutions into your operations, the following trends are on the rise and will likely streamline, ease, and enhance your way of doing business in the near future.

7 Rising Technology Trends in the AEC (Architecture, Engineering, And Construction) Industry

1. Building Information Modeling

AEC firms are adopting building information modeling (BIM)

Many firms are using a three-dimensional, model-based design process called Building Information Modeling (BIM). BIM simplifies the design process by assisting with the creation of architectural plans to design buildings that are increasingly energy efficient while also being able to project, analyze, and optimize the energy performance of the lighting, ventilation, heating, and cooling of buildings before the plans are even finalized.

In addition to streamlining the planning and design process, BIM also helps to increase sustainability by reducing the carbon footprint of new buildings from the earliest steps of the AEC process.

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2. Cloud Technology for Project Management

Cloud technology, the practice of sharing and storing information on remote databases that are accessible from anywhere with an internet connection has revolutionized the way all businesses operate. Cloud computing has made remote work possible and enabled businesses to tap into worldwide talent pools.

Cloud computing can also help to facilitate an improved workflow with better project management tools that allow for quick communication, collaboration, task delegation and tracking, and a centralized, up-to-date database to ease the burden of maintaining regulatory compliance.

Many AEC firms are adopting cloud-based, collaborative project management tools to improve the workflow throughout every step of the process – from planning to project completion.

3. Virtual Reality and Augmented Reality

AEC firms are increasingly pairing virtual reality and augmented reality tools with computer-aided design to eliminate the challenge of asking clients to imagine what a design will look like in the real world by actually enabling them to experience designs through augmented reality (AR) and/or virtual reality (VR) systems. With these technologies, clients can "walk through" a completed project before the design has even been approved.

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4. Outsourcing Via Cloud Computing

Cloud computing has also simplified outsourcing non-core functions of your business to third-party providers. As a result, AEC firms are increasingly using outsourcing to mitigate risk and save money, time, office space, and other resources by nixing in-house departments handling things like marketing, IT, human resources, legal, and bookkeeping and accounting.

Without outsourcing, your firm can access top talent in these fields without footing the overhead cost of hiring top talent at a full-time, fully-loaded labor cost.

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In an AEC firm, your labor dollars should be paying for the top architects, engineers, contractors, and equipment that represent active revenue streams for your firm.

5. Drone Use

The use of drones and their various technologies and capabilities by AEC firms has also been on the rise. While each drone's abilities vary, they can be highly useful in gathering information. For example:

- Image and video-capable drones can be used for tracking changes and surveying with an aerial view of a job site.
- These images can also be used as effective marketing tools.
- The information drones gather can also be paired with a building information modeling system and used to create three-dimensional models of job sites.
- Drones are an efficient way to track and document project progress.
- They can be used to aid in the performance of routine safety inspections.
- Drones are also an effective way for security personnel to readily monitor a large area. They can be used to help prevent incidents by showing the site locations and helping to identify potential hazards.

Before purchasing a drone for your AEC firm's use, be sure to check your local regulations to make sure the area where you plan to fly the drone is not restricted.

6. Digital Documents

Compared to some of the other items on this list, the ability to scan and store documents electronically is not new, but businesses in many industries, including the AEC industry, have been slow to adopt electronic document storage and sharing. Electronic documents and e-sign capabilities, however, can have an enormously positive impact on your operations. Not only does it reduce the space needed for storing physical documents, but it also expedites several processes.

Electronic documents are readily searchable which saves time sorting through filing cabinets and searching for misplaced documents. When paired with cloud collaboration and project management tools, electronic documents simplify approval processes and make it easy for everyone who is involved in a project to quickly access all of the information and documents related to any given project.

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7. Risk Analysis and Management Software

In the AEC industry, every job and new client expose your firm to potential risks. Shifting project scopes, multiple people involved, and miscommunication are just a few of the complexities involved in AEC projects that can result in issues and potential losses for your business.

There are, however, software tools available that are specifically designed to analyze, mitigate, and manage risks in the AEC industry. This software uses advanced algorithms to run complex simulations and projections to analyze countless project scenarios through operation, construction, building maintenance, fire safety, structural integrity, air quality, and other concerns.

These tools can help you better identify potential risks, calculate the probability those risks will impact your business, and assist with the development of management and mitigation strategies for each individual project.

Evaluating the ROI of Technology and AEC Industry Trends in Your Business

When investing in new tech and tools, it's important to keep track of how well they're working for your business and its bottom line. No matter how impressive new technologies might seem, they aren't worth the investment unless you stand to see a return. With a properly established back office, you can more effectively collect data and identify and track the metrics that will help you determine how your new tech tools are impacting your company's profit. At the end of the day, a streamlined workflow is only better if also translates to improved cash flow, increased revenue, reduced costs, or all three.