

THE FOUR TRENDS DRIVING COLLABORATION IN THE AEC INDUSTRY



HOW DO YOU ENSURE YOU ARE MAXIMIZING YOUR INVESTMENT IN BIM?

START WITH UNDERSTANDING FOUR TRENDS AFFECTING THE AEC INDUSTRY

TREND 1

The AEC industry is ready for Connected BIM

Historically, focus has been on the “M” of BIM (modeling), we’re now seeing a rapid shift to focus on the “I” (information). This focus on information and the increasing ability to share it more easily is enabling project teams to work together in ways never before possible.

Cloud-enabled, interconnected BIM process, or “Connected BIM,” is beginning to displace “interoperable CAD” as the platform for managing and optimizing design to construction. The project is at the center from the start, not the individual files and applications. Technology is enabling teams to become more connected and have access to a wealth of information from anywhere.

The cloud for instance connects data, systems, projects, and teams, so that everything and everyone can be in constant communication, with instant access to the latest files, designs and project activity. In the ‘always on’ era of connection, project collaboration can occur in real-time and international teams can ‘follow the sun’, with a part of the project team always working.

“Using Autodesk® BIM 360® Design to collaborate with teams anywhere we are seeing productivity increases of up to 25% on cloud-based BIM projects.”

Anthony Woodsford, Associate/BIM Manager, Corstorphine + Wright

One single source of truth for data across the project lifecycle

Deep analytics to inform decision making and planning for future projects

Real-time, multi-discipline collaboration across geo-dispersed teams

Access to project data anytime; anywhere; on any device

Accelerated computational power to support simulation and visualization (AR/VR)

What is Connected BIM?

1

TREND 2

Project delivery has become more collaborative

Collaborative project delivery types such as Design-Build, Joint Ventures, Integrated Project Delivery (IPD), Public-Private Partnerships (PPP), and Teaming Agreements are gaining traction. Beyond the design phase, building product supply chains are more likely to be international, and potentially global.²

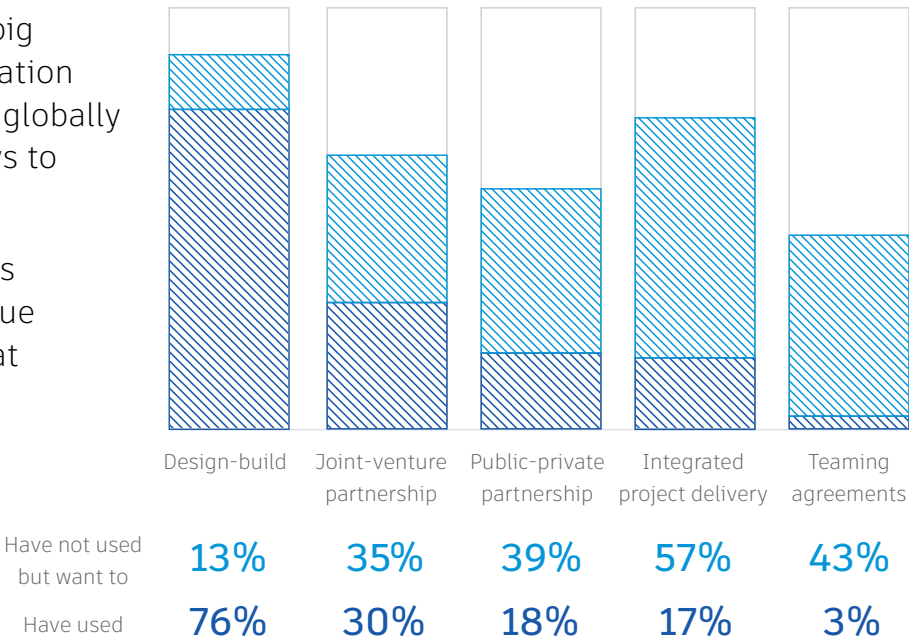
Project delivery is becoming increasingly collaborative, leading to a need for new ways of working together. Design and construction firms are pursuing alternative teaming arrangements such as joint-venture partnerships, end-users are testing ‘big room’ approaches that require co-location and shared server requirements, and globally distributed teams are looking for ways to communicate more efficiently.

As collaborative project delivery types become standard practice and continue to evolve, so must the technology that supports these teams.

“Collaboration in BIM 360 Design gave us a **90% cost reduction and 20% time savings** on the Brown University New Engineering Research Center (IPD) project.”

Paul McGilly, BuroHappold

Experience with and desire to use collaborative project delivery models^{3*}



TREND 3

Cloud-based collaboration is enabling BIM processes and the desire for connectivity

Collaboration in BIM is about more than information. It includes the people who comprise project teams and their need to work in a shared space in real-time, so that decisions, updates and communications are simultaneously and instantly applied, flagged, and tracked.

Reflecting a trend towards a more integrated approach to design and construction, the industry is prioritizing the development of collaborative processes with external parties and investing in communications infrastructure. Using the right cloud solution means workflows are integrated across the project lifecycle of planning, design, construction and operation. Because data is stored in the cloud, barriers to communication are removed so project collaboration can occur anytime and from any location – helping to minimize downtime and reduce rework.

“Seamless information sharing between joint ventures and project partners is the future of doing business. BIM 360 Design gives us that future, today”

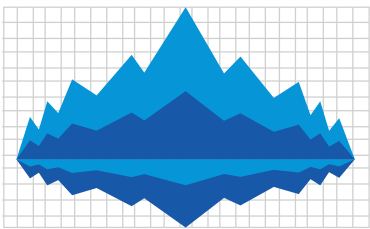
Leo Gonzales, Newman Architects

Cloud collaboration⁴



68%

of architects and engineers consider cloud-based and connected technologies to be critical



60%

of architects and engineers are aware of performance analyses in the cloud, and nearly two thirds (64%) of those who are aware are currently using it

TREND 4

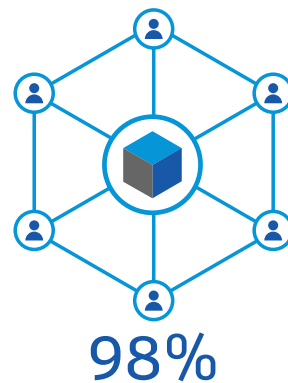
The cloud is ready

The cloud has become the biggest game-changer in collaboration practices in our time. By 2020, Gartner expects cloud services market revenue to hit \$260.2 billion worldwide. The International Data Corporation says that companies will spend a staggering \$2 trillion on enterprise digital transformation. According to a recent SmartMarket report⁵, 98% of respondents stated they use some type of cloud-based collaboration solution on their BIM projects. The AEC industry is embracing the benefits of cloud technology and the use of collaboration and data management solutions. The cloud has become ubiquitous in all aspects of our lives. It's second nature for us to be in constant communication, and to have constant access to information and data from wherever we are. Cloud solutions enable us to work from wherever inspiration strikes us.

“Whether I’m five feet from somebody or 2,000 miles away, the interaction is the same. We are able come up with more design, weed out issues, and continue forward (with the design).”

Corey Ochsner, Fentress Architects

Adoption of cloud-based collaboration in building design projects⁶



respondents report using some type of a cloud-based collaboration solution on their BIM projects

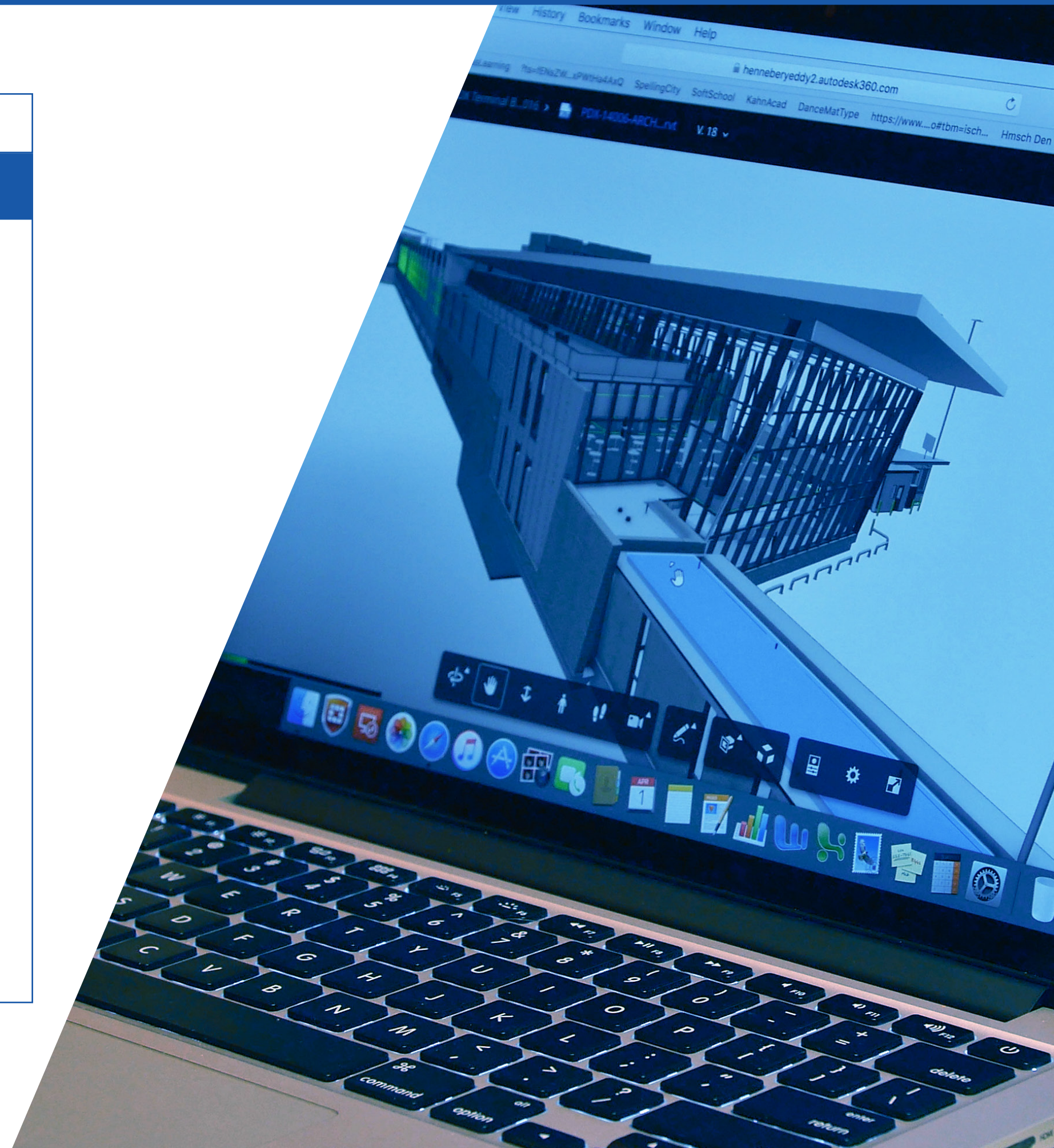


are using a cloud-based collaboration system



82%

of those who made a significant investment in collaboration solutions cited a positive ROI



How connectivity, collaboration, and cloud impact design professionals

The four trends are clear to the AEC industry, but the impact on the way design professionals carry out their work and take advantage of these trends is still evolving.

Collaborative design models need a different work style. No longer are professionals tied to a workstation, studio or desk. Untethered by technologies that enable access to data and information from anywhere, more AEC teams are working together remotely, whether from multiple offices of the same firm, home, or the local coffee shop. Not requiring teams to be located in the same physical space can help bring together integrated project teams, incorporating all the disciplines needed for the building design process. However, virtual teams need a centralized collaboration solution to work most effectively in a way that includes remote contributors.

Leaders in the AEC industry are embracing cloud technologies which make remote data management processes possible. The modern design environment centers on real-time information that can be shared, tracked and archived in the cloud - everything, from 3D model data to project communications (emails, live chats, annotations). It is essential that team members can access this information anywhere, on any device. Collaboration needs to occur between the building owner and every project team member: architecture firm, engineering contractor, and all other stakeholders.

Every member must be able to contribute in a design-agnostic, shared workspace, wherever they are based. This opens up the opportunity for collaborative teams to include specialist partners from anywhere in the world. Anywhere, anytime access means teams can reduce the need to value-engineer elements out at a later stage, because data frictions are identified earlier on, and the team can collaborate on a mutually approved solution earlier in the design process. By enabling these practices, collaboration solutions which are accessible from anywhere facilitate cost savings.

[9 benefits of seamless design collaboration](#)

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Learn more about the Autodesk solution for seamless design collaboration

Talk to sales

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AUTODESK® BIM 360® DESIGN

BIM 360 Design enables design collaboration and data management across the project lifecycle. It allows teams to securely co-author a Revit model within one firm or across multiple firms and control the exchange of data. Streamline deliverable coordination, visualize changes, track project progress, and manage issues to help improve project outcomes.

BIM 360 Design trial

TRY NOW >

AUTODESK® BIM 360® DOCS

BIM 360 Docs is a cloud-based document management solution that provides teams with the ability to find, publish, manage, review and approve project information on a common data platform with unlimited storage. With anytime, anywhere access to the latest information, teams can reduce errors, make informed decisions, and improve project outcomes.

BIM 360 Docs trial

TRY NOW >

- 1. CONNECTED BIM FOR BUILDING DESIGN, AUTODESK, 2018
- 2. IMPROVING BUILDING INDUSTRY RESULTS THROUGH INTEGRATED PROJECT DELIVERY AND BUILDING INFORMATION MODELING, AUTODESK, 2008
- 3. LEADING THE FUTURE OF BUILDING: CONNECTING TEAMS, DODGE DATA & ANALYTICS, SMARTMARKET BRIEF, 2018
- 4. LEADING THE FUTURE OF BUILDING: CONNECTING DESIGN INSIGHT, DODGE DATA & ANALYTICS, SMARTMARKET BRIEF, 2018
- 5. LEADING THE FUTURE OF BUILDING: CONNECTING TEAMS, DODGE DATA & ANALYTICS, SMARTMARKET BRIEF, 2018
- 6. LEADING THE FUTURE OF BUILDING: CONNECTING TEAMS, DODGE DATA & ANALYTICS, SMARTMARKET BRIEF, 2018

- * DATA IN BAR GRAPHS IN THIS EBOOK IS ILLUSTRATIVE OF RESULTS FROM "DODGE DATA & ANALYTICS" SMARTMAKRET BRIEF THAT SURVEYED US ARCHITECTS, ENGINEERS, GENERAL CONTRACTORS AND TRADE CONTRACTORS, AND BIM AND/OR IT MANAGERS TO DETERMINE THE EXTENT AND VALUE OF THEIR USE OF CLOUD-BASED COLLABORATION SOLUTIONS FOR BIM