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Managing Today's Hybrid CAD Office

Being an expert in one CAD environment isn't enough anymore, you must understand the other options as well.

I vividly remember sitting in a Parametric Technologies office in 1995 where we were told that there simply wouldn't be any more 2D CAD by the year 2000 — yet I still see 2D CAD everywhere. In 2005 I remember being at Autodesk University and hearing that by 2010 everything in the AEC industry would be in BIM — yet today most industry analysts say that BIM market penetration is about 40%. And, again sitting at Autodesk University, in 2015 we were all told that everything would be on the cloud by 2020 and that desktop CAD applications would be a thing of the past. And, like 2D and BIM before it, that hasn't happened either.

We now find ourselves presiding over a hybrid CAD environment of 2D and 3D applications scattered over desktop machines and web-based cloud applications. What a mess! In this edition of the CAD

Manager's Newsletter, I'll share some of the better strategies I've used and how to deal with this messy situation. Here goes.



Image source: SergeyNivens/stock.adobe.com.

How Did We Get Here?

Why did the hybrid CAD environment happen in the first place? From my industry experience, it started because 3D was harder and more expensive to implement than the software companies led us to believe. Turns out that teaching people to abandon their familiar AutoCAD or MicroStation software to learn something totally new required hard work on user's parts and a lot of training, implementation, and support from CAD managers — not to mention the hardware costs and schedule impacts. It just wasn't that simple.

How about BIM? Much the same argument as generic 3D before it, BIM required not just new hardware and software but a huge change in mindset and workflow management. BIM isn't that simple either.

And, the Cloud? Cloud tools can have lots of IT implementation issues and the costs associated with many named user cloud-based tools are now becoming much more expensive than we were led to believe.

Old tools still work. In many cases, companies became so good with their old 2D tools that a move to 3D wasn't justifiable. Small architectural firms have found the same to be true for BIM.

Long story short — change is hard, new software is expensive to implement, and traditional tools such as 2D and 3D desktop applications still get the work done just fine in many cases. The reality is that software change happens far more slowly than the industry pundits and software companies would have us believe.

What Does It All Mean?

Here's where we have to draw some educated conclusions on what the current hybrid CAD office environment means for CAD managers. This is not an all-inclusive list by any means, but it does represent the main rules of business that have given us the hybrid CAD office in the first place:

Work dictates tools. If you need to do 2D production drawings, you'll most likely use an inexpensive 2D application rather than an expensive BIM application because it is the cheapest, best tool for the job.

Workforce also dictates tools. If your company has 90 AutoCAD users and 15 Revit users, you're not going to be 100% BIM any time soon because your ability to train staff will be the limiting factor.

IT, increasingly, dictates cloud tools. Cloud-based tools eat up bandwidth on networks and require extensive security configurations to setup. In some cases, cloud tools and storage are even expressly forbidden by security sensitive clients. Even if you wanted to go 100% cloud, you're limited by the realities of IT.

Return on Investment (ROI) dictates change. If going to BIM gets your projects done twice as fast at half the cost, then you'll go BIM right away because the financial returns are there. Conversely, if your company has been designing single family homes for 20 years using a highly optimized 2D CAD environment, there's little financial return to change to BIM.

Project completion and schedules overrule everything. You may want to be fully 3D, BIM, or cloud-based, but if doing so delays projects or generates errors, you can bet you'll be right back to using your old tools.

Your challenge as a CAD manager is to understand these rules and manage the tools at your disposal to get the best project flows and lowest costs. Let's see how.

How should you best to tackle this multi-tech environment? Answer these next few questions to help solidify your next steps. [Read more](#) »

Tools and Resources

VIRTUAL EVENT: Autodesk University

October 5 – 15, 2021

The AU 2021 Session Catalog is now available. Explore 350+ sessions by industry, topic, product, and more. To add sessions to your schedule, sign in with the same email address you used to register for AU 2021. [Register online](#)

Vectorworks 2022 Released

Vectorworks recently released Vectorworks 2022, including its Vectorworks Architect, Landmark, Spotlight, Fundamentals, Braceworks, ConnectCAD, and Vision. The company also released newly rebranded Vectorworks Design Suite (formerly Vectorworks Designer) that offers updated Vectorworks Fundamentals, Architect, Landmark, and Spotlight and brings the suite of software under one interface.

[Find out more](#)

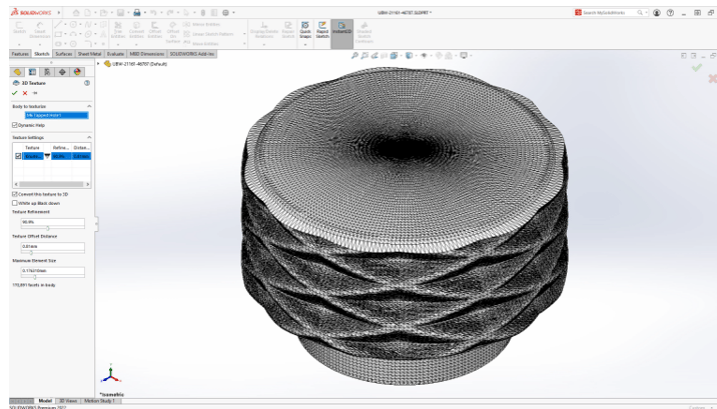
Community Resources: Graphisoft

Graphisoft recently launched its online Graphisoft Community, merging Archicad Talk and the English-language Help Center into a searchable resource. The platform offers support and search functions, and feedback from peer users and Graphisoft experts. Multi-language support will be rolled out on an ongoing basis. Current users of Archicad Talk are encouraged to migrate their accounts to the new Community portal and their previous activities and content will move with them. [Read more](#) » ▼▼▼



SOLIDWORKS 2022 Released

Dassault Systèmes introduced SOLIDWORKS 2022, the latest release of its portfolio of 3D design and engineering applications. According to the company, SOLIDWORKS 2022 delivers hundreds of new user-driven enhancements that accelerate innovation and streamline and speed up the product development process from concept to manufacturing. New workflows, new features and performance improvements are inspired by the SOLIDWORKS community of users. SOLIDWORKS 2022 helps users leverage the collaboration capabilities of Dassault Systèmes' 3DEXPERIENCE platform. [Find out more](#) » ▼▼▼



Infrastructure Awards

Bentley Systems recently announced the finalists for the 2021 Going Digital Awards in Infrastructure. The company's annual awards program honors the work of Bentley software users advancing infrastructure design, construction, and operations throughout the world. Sixteen independent jury panels selected the 57 finalists from nearly 300 nominations submitted by more than 230 organizations from 45 countries encompassing 19 categories. Hear from the people behind these infrastructure projects as they tell their stories of leveraging digital advancements to achieve unprecedented outcomes! Watch the Going Digital Awards in Infrastructure finalists on November 1, 8, 15, and 22. [Register online](#) »

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What's New at Cadalyst.com



Herrera on Hardware:

The Evolving Role of the Mobile Workstation, Part 2

It comes down to physics — a desktop can always outperform a mobile workstation. Cadalyst hardware expert, Alex Herrera, looks under the hood of both to break down the pros and cons of each form factor.

By Alex Herrera [Read more](#) »

GIS & BIM: Capabilities Expand and Merge, Part 1

These once distinct fields find common ground with more integration and collaboration among AEC professionals. By Andrew G. Roe [Read more](#) »

Viewpoint: Multi Jet Fusion Technology Sparks a New Era in Futuristic Audio

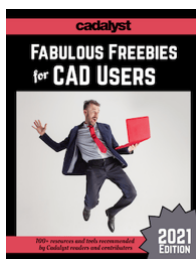
The central component of Syng's revolutionary Cell Alpha speaker is made possible by HP 3D printing technology and production partner Forecast 3D. By Jon Wayne [Read more](#) »



Implementing Generative Design for AEC

Cadalyst and Z by HP joined forces to write this white paper on generative design for AEC. Find out how you can get your design firm bought into this technology, what hardware you require, and how to secure funding for any upgrades you may need.

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Cadalyst's Fab Freebies for CAD Users 2021

Why buy it if you can get it for free!

The editors of Cadalyst, with help from our contributing editors and readers who are in the CAD trenches day in and day out, have updated everyone's favorite guide to helpful tools and resources that don't cost a cent. The latest edition of the "Fabulous Freebies for CAD Users" guide has something for everyone, including unit converters, file and text utilities, PDF converters, BIM tools, CAD management tools, and more!

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About the Author

Robert Green performs CAD programming and consulting globally and serves as Director of Implementation for Bricsys. He is the author of *Expert CAD Management: The Complete Guide*. Reach him via his [web site](#).

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