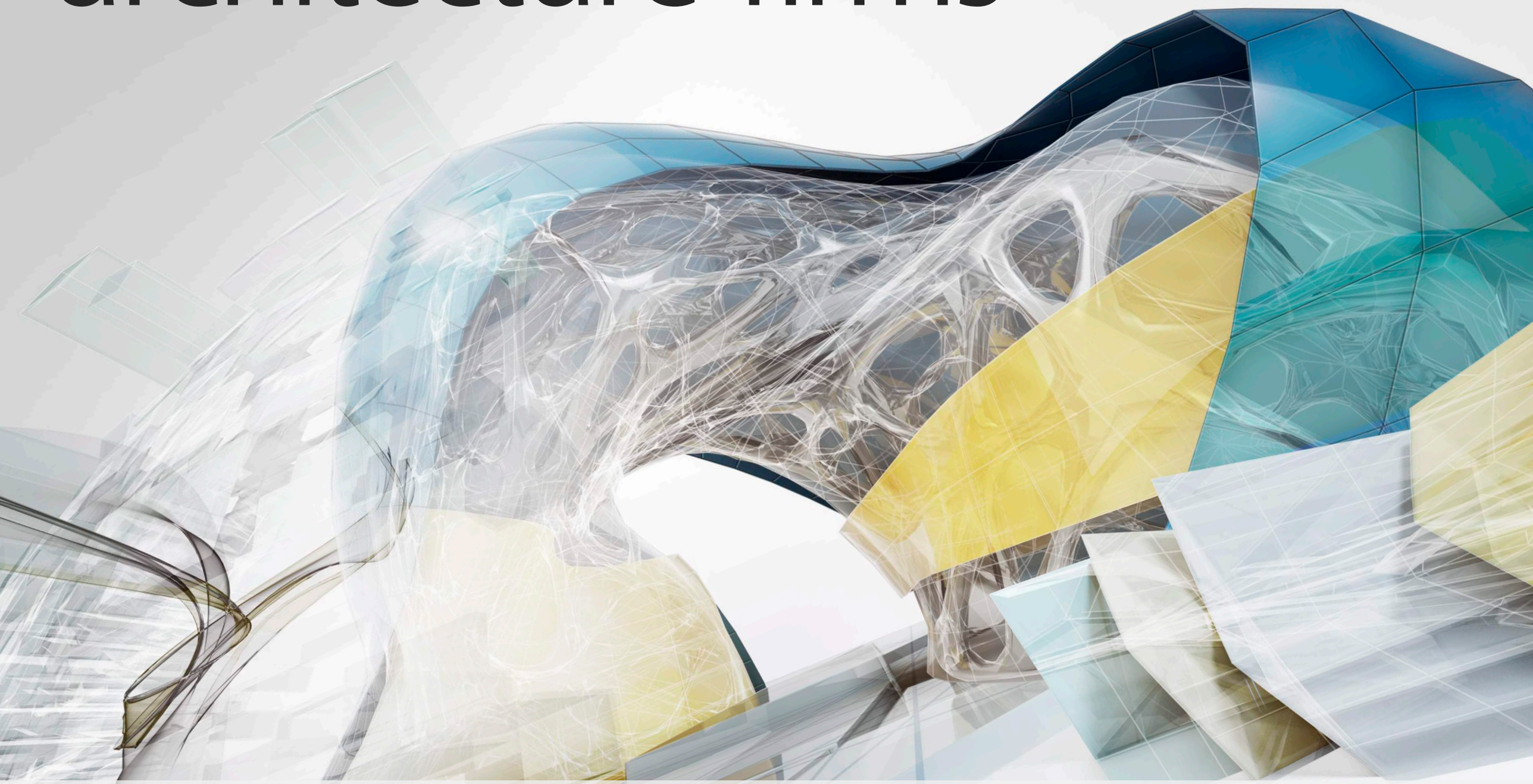
Useful tips for small architecture firms



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IN THIS ISSUE

Five reasons why you're BIM ready

by Kate Morrical

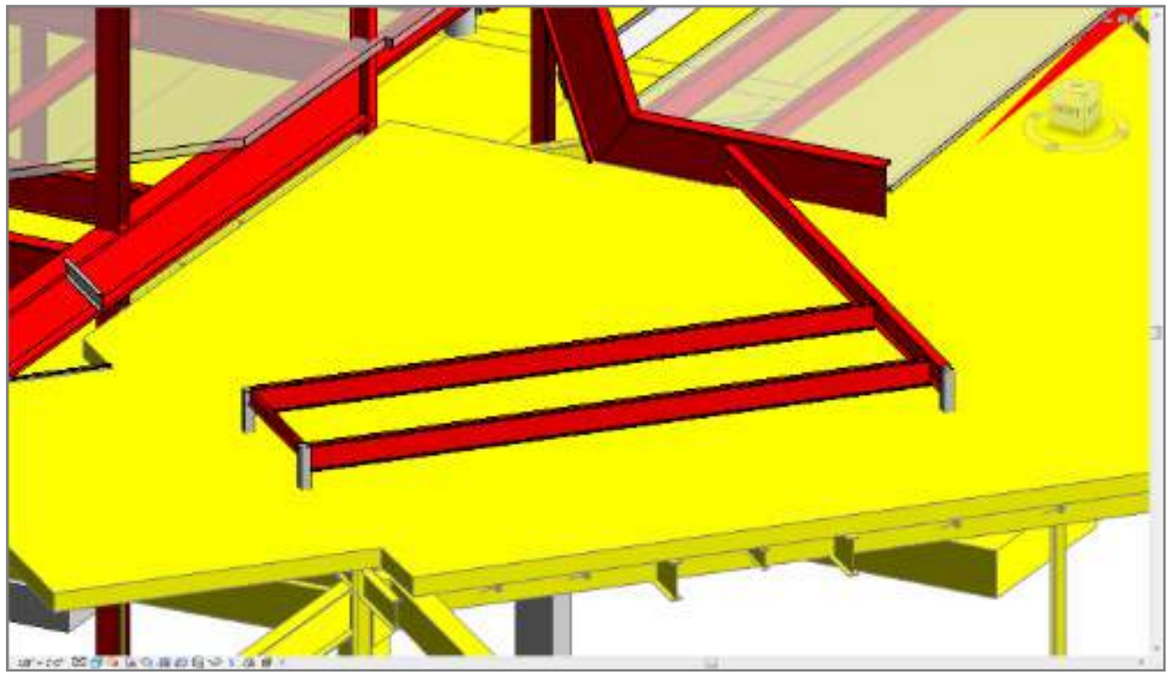
Think you have good excuses for not trying Building Information Modeling (BIM) yet? I've heard them all: "It's too hard." "It's too expensive." "I don't need it." But those are just excuses, not reasons. In fact, I bet you're more ready than you think you are. Here are five reasons why.

1. You already think in BIM

You might not know it, but you already use BIM—at least the "building information" part. When you're designing a building, you don't think in 2D lines. You think in real-world objects—walls, windows, doors, floors. You know how they fit together, what their relationships should be, what elements support other elements. And you know what? BIM does, too. Because BIM is object-based, everything in your model "knows" what it is. Walls act like walls, doors act like doors. They're not just collections of lines. This means that you can manipulate them in ways that relate to their real-world behavior, and that flow logically from your design workflow.

2. BIM improves coordination

In any building industry—architecture, engineering, construction—you need to be able to understand what's going on in three dimensions. If you move a wall in a plan, you need to know what that does to your elevations. If you change the size of your floor beams, you need to know how that affects your sections. BIM helps you manage that, with live sections and elevations that instantly reflect changes in other views. Yes, you might still have to chase a change through a few different views, but you'll immediately be able to see the changes—and that will save you time down the road.



As an example, a few weeks ago I was adding dunnage framing to the roof of a mall. I finished the plan, then checked it in 3D. Turns out there was another level of steel immediately above my framing (not visible in the original plan), and it was interfering with the dunnage posts. The 3D coordination meant we could fix it during design—if we'd been working in 2D, we might not have found this until we got into the field.

3. BIM takes care of the details

In addition to the live section coordination, BIM also helps you with the housekeeping tasks for keeping a drawing set tidy. Need to change a detail number? No problem: Just change it on the sheet, and every reference is automatically updated. Same if you need to change a sheet number or update a drawing list. (Imagine, no more coordinating sheet indexes!) What if you need to change the scale of a plan or detail? Again, no problem! Simply choose your scale from the list, and all your annotations (notes, dimensions, fill patterns) will automatically adjust to the correct size.

4. BIM is good for business

BIM is not new technology anymore. In fact, Revit software has more than ten years' worth of history (although I'm not sure you'd recognize the earliest versions compared to today's software). As its adoption grows, you're probably getting more and more requests for BIM from your clients. Imagine if your response could be, "Oh, sure, I model in 3D all the time." Do you think they'd be impressed?

And it's not just about documentation. Having your building modeled in 3D provides an instant source for visualizations of the finished product. You can work with the in-product views, or use other software or services to create presentation-quality graphics straight from your model.

The building industry is becoming increasingly technology-driven, and BIM will help you keep up with it.

5. BIM is an investment worth making

Make no mistake: Transitioning to a BIM workflow is an investment, both in terms of time and money. Yes, there's a learning curve. Yes, you will probably spend more time on your model at first than you're used to. Yes, it costs more than the 2D CAD program you're using now. But how much is your time worth?

When you divide the cost of software by the number of hours you save with it over the course of a year, you may find that what initially seems like an expensive purchase is actually an excellent value. Especially after your initial purchase, you can probably pay for the software maintenance/subscription with just a few hours of billable time per year. This requires a bit of long-term thinking because you will have to spend time learning before you can save time working, but don't forget the other ways you save time. Every coordination issue you solve in design is one that you won't get a call from the field about later. For more tips on CAD management, visit my friend Robert Green's website.

Keeping up with the latest technology, impressing your clients with models and images, and all the advantages of a 3D workflow—in the end, BIM is an investment worth making.

Originally published on Line//Shape//Space, a blog from Autodesk dedicated to helping designers and drafters succeed in their small businesses.

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Kate Morrical is the Digital Design Manager for Robert Silman Associates, a structural engineering firm with offices in New York, Washington, DC, and Boston.

Getting clients, colleagues, and management to adopt BIM technology

by Kate Morrical

If you're reading this, chances are you're already convinced of the benefits that BIM can bring to your workflow and your business. But you don't work in a vacuum—you have clients and consultants, colleagues, and management that need to be persuaded, too. No matter how good your technical skills are, you won't get a successful BIM technology transition plan without buy-in from all groups.

1. Your clients and consultants

These days, if you're considering BIM, your clients are probably on board already. They may have even made the initial request for BIM. For your consultants, simply put the expectation out there: "We're using Revit on this project, and we request that you will, too." Then decide if it's a deal breaker. If your usual MEP engineer isn't ready to move to 3D, can you work with him or her anyway? Can the owner? Or is it time to find a BIM-ready firm?

If you can get the whole team signed up for BIM, remember that with great technology comes great responsibility—for communication. Have a BIM kickoff meeting, schedule regular check-ins with the people actually working on the models, and don't be afraid to pick up the phone if you have questions.

And if your clients or consultants aren't using BIM, don't let that stop you. If it makes sense for the project and your discipline, go ahead with your 3D model. You can always export 2D CAD files and PDFs to share with the rest of the team.

2. Your team

How many BIM rock stars do you have at your firm? If it's just you, it may be time to recruit some more—whether by training internally or hiring externally. Start a list with your colleagues of your favorite BIM blogs and discussion groups. Consider starting an in-house Revit group. Watch Autodesk University classes. Show off the things you learn back at the office, and if you're excited about a new feature, don't try to hide it! Enthusiasm is contagious, and the more people you have on your side, the more backers you'll have when you take your case for BIM to management. Speaking of which…

3. Your management

Getting management on board with a BIM plan is crucial—and tricky. Managers probably aren't day-to-day BIM users, so they're not as aware of the practical issues as the regular modelers. But they're also in charge of the budget, so they see the time and money adding up.

I'll say it outright: You'll never convince everybody. Some people can see only the costs of BIM, not the benefits. And yes, they often have data from less-than-successful projects to back them up. So instead of focusing on ROI—which, for your first few BIM projects, is often not high—you can present lessons learned from previous projects, and outline the steps you plan to take to avoid those issues in the future.

Above all, keep up the communication. Hold regular internal status meetings to share challenges and successes on active projects. Invite your managers to your internal Revit meetings so they can see specifically what issues your group is tackling. Share articles on the best practices for BIM, and explain how they do (or don't) apply to your workflow. Find inspiring "success with BIM" case studies and share those, too.

With persistence and a little luck, you may be able to turn your biggest skeptics into your biggest supporters.

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Look before you leap

Six tips to ease your transition into BIM

by Kate Morrical

By now, you've heard more than you could have imagined about the possibilities of BIM. You might even be convinced of the benefits: intelligent models, auto-generating floor plans and sections, and better collaboration with clients. But how do you actually get started?

BIM is complex—a giant sea of potential. And if you leap in without proper preparation, you could drown in the details. Instead, with a little thought and planning, you can chart a course that will carry you safely across the BIM ocean. (Too many water metaphors?) Here are six tips to help ease your transition into BIM.

Choose your timing

There's always a good reason to put off making your transition. But if you wait for the perfect time, you'll be waiting forever. That said, there are some factors that can affect the timing of your implementation.

1. Look for a pilot project

Do you have a client that wants to move to BIM? Is there a new project starting that looks like a good candidate for BIM? My favorites for those are new steel-frame buildings—not renovations—with a consistent column grid and regular floor plans. (Depending on your focus, you may have several projects that would be a good fit…or none, in which case you'll have to set your own criteria.)

2. Look at your schedule

The learning curve for BIM software can take up a little extra time on your first few projects. Do you have some projects wrapping up soon that will free up a bit of time in your day? Is December usually a slow month, or January? Is your local reseller offering a training class that you have time to attend?

3. Look at your budget

BIM doesn't always require an initial cash outlay. Many programs offer free 30-day trials, and some, like Autodesk AutoCAD Revit LT Suite, are now available on a pay-as-you-go basis with Desktop Subscription. Will you need any new hardware to support BIM software? Thinking about the learning curve, can you afford to absorb some non-billable time?

From 2D to 3D

What about the technical side? You've spent your entire career creating 2D drawings. The total leap into a fully articulated 3D model might be a little overwhelming. By implementing one feature of BIM at a time, you can explore the possibilities without sacrificing too much time or sanity.

1. First, floor plans

I call this approach "2.5D." You'll need some 3D information, such as levels, in your model, and you'll use those to place walls and columns. Floor elements will be placed flat on a level, just as if you were creating a 2D CAD plan. Even if you don't have full 3D capabilities, you will still be able to take advantage of 3D grids, intelligent tagging of elements, and smart dimensions. (Note: If you use this method, continue to send CAD files—exported from BIM—to your clients and consultants. You can't use a 2.5D model for 3D coordination.)

2. Next, add schedules

Schedules are one of my favorite BIM features because they draw on the information in the model. All the data that you used to enter into tables by hand—such as size and reinforcement for footings, walls, beams, and floors—can now be extracted directly from the model and put on a sheet.

3. Next, cut sections

You'll notice that I didn't say draw sections. When you're modeling in 3D, you can cut a section, and the geometry will already be there. Of course, this level does require that you've accurately modeled your elements in plan and elevation—true 3D instead of the 2.5D of step 1. Getting to a fully developed model is often more work up front than a 2D drawing, but it pays off in coordination and a real understanding of element interactions.

Next…?

Floor plans, schedules, and sections, as powerful as they are, represent only the beginning of BIM. I haven't even touched on integration with analytical models, clash detection, or photo-realistic renderings. All that and more is out there—you just have to set sail.

For more tips on transitioning to BIM, check out Ensure Success in Your Transition to BIM.

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Kate Morrical

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Rent or own?

Six reasons why renting software makes sense from an IT perspective

by Brian Benton

Every company needs software. Our options for obtaining that software used to be very simple: Buy it. But today we have more options available to us. Many software developers are offering rental plans for their products. Autodesk, Adobe, and Microsoft all have pay-as-you-go plans.

Adobe has gone so far as to end perpetual licenses. A perpetual license means you own the right to use the software, perpetually. That's great because it's yours. You can use it whenever you want to and for as long as your hardware will allow it. But when your version of that software is no longer getting the job done, you have to purchase a new perpetual license of the latest version. That's how it used to work, and we were okay with it.

A rental license plan can offer a different way to get the tools you need. At first it may seem like a bad idea to keep paying in order to continue using your software. For your company, that may be correct. But in this article, we offer six reasons why renting software instead of buying it may be the best solution for your company's IT needs.

1. Much smaller upfront cost

Purchasing software has a large upfront cost. It could be a large investment of company capital to get the software your employees need. Renting the software means removing that sizable upfront cost. You now have smaller, more manageable payments on a regular schedule.

2. Simple ROI determination

One of the issues in purchasing a perpetual license is that the high cost and undetermined length of use makes it difficult to know what that investment is going to cost you. You know the price you paid for the software, but you don't know how long you will use it until the next update. It could be one year, or it could be five. The longer you wait, the less it costs.

But the longer you wait to update, the more issues you have with outdated software. What if your licensing needs change? If you add employees, you have to purchase more licenses. If you lose employees, you now have an unused inventory of software. You can no longer pay for the software because the employee is no longer there. You can't bill out their time because there is no time to bill. You can't get your money back. You can't resell the software, either.

3. Short-term commitment

Buying a perpetual license means you commit your money to that license forever. A rental plan means you commit only for the time you need to use the software. There is no risk in having software sitting there. When you are done with it, you stop paying for it.

4. Fills temporary software needs

Have an intern? Have a project that has special software needs? Rent the software you need while you need it. When the project is over, so is the rental plan.

5. Versatile installation options

Traditionally with perpetual software, the license is tied to the machine, but with rental, it's typically tied to the user. In other words, perpetual licensing plans often allow you to install the software only on one machine, maybe two depending on the licensing agreements.

Rental plans often increase the number of computers on which you can install the software. That allows for users to work at their desktop, on their laptop, and on their home workstation. It also allows for the user to work in multiple offices or in a field trailer on the job site. Microsoft's Office 360 allows for installation on five machines and on either Windows or on Mac OS. Perpetual licenses may not have that option.

6. Flexible-use cases

Because of the nature of rental plans, they are often more flexible in how you can use them. They also offer constant upgrades, so you will always be up to date. Typically, they also offer additional services such as cloud storage or customer support options.

In some cases, perpetual licensing is a better fit. Long-term needs are often better met through that type of licensing plan. Meanwhile, temporary needs, flexible installation needs, or a lack of funds for upfront purchasing might mean that a rental plan is a better fit for you.

Originally published on Line//Shape//Space, a blog from Autodesk dedicated to helping designers and drafters succeed in their small businesses.

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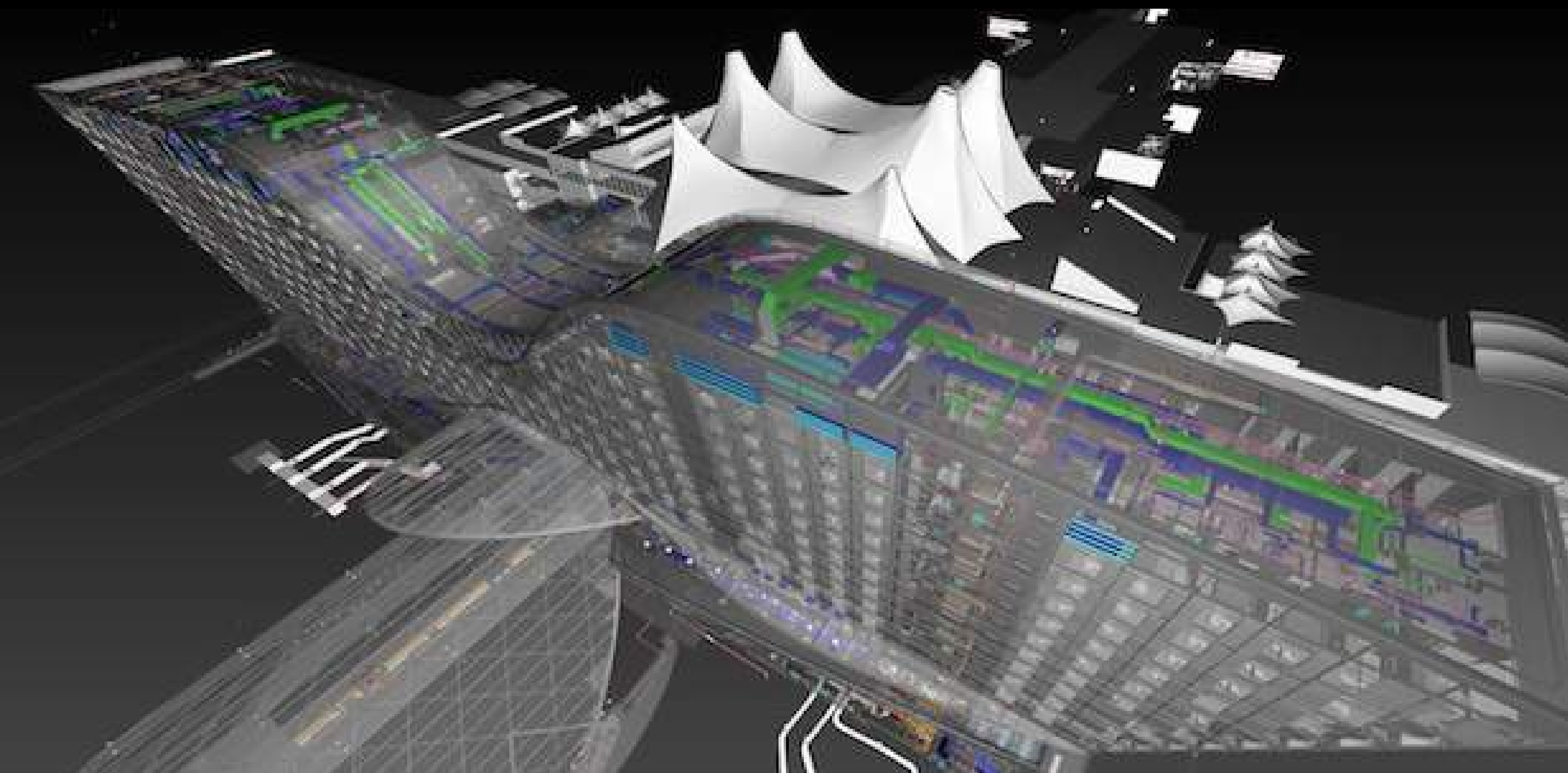
Brian Benton has 20 years of experience in CAD-based design and project management. He is an inductee into the Autodesk Expert Elite program, prolific AUGI Writer, Cadalyst magazine Tip Patroller (and contributor), published author, creator of AutoCAD training videos, and IT director/chief engineering technician for Q. Grady Minor & Associates, P.A.

SMALL-BUSINESS SUCCESS STORY:

How flexibility and diversity pushed Iron Horse to award-winning profits

By Matt Ball



Iron Horse Architects is a small Denver-based woman-owned business that has risen above the recession, winning work and raising profits in trying times.

Thanks to revenue growth that ramped from $211,774 in 2009 to more than $1.8 million in 2011, the company was recently honored by the Denver Business Journal as its 2012 Fastest-Growing Private Company among small businesses, and its principal, Virginia McAllister, was named the U.S. Small Business Administration's Colorado Small Business Person of the Year for 2013, while also vying for the national award.

Notable recent work at the firm has included the Denver Union Station renovation project, additions to Concourses A and C at Denver International Airport, and a mixed-use development called The Landmark in Greenwood Village. The firm's diversity of work ranges from federal, transportation, aviation and science, and technology laboratory projects.

Secrets to success

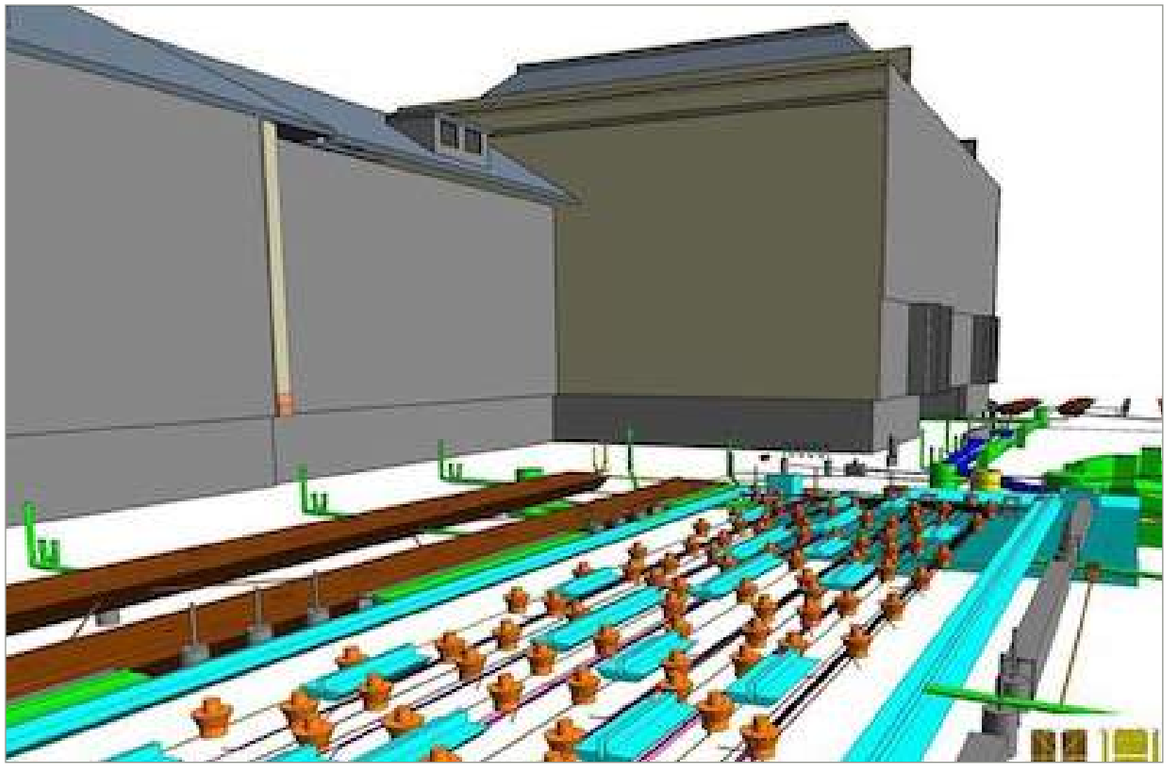
"A large part of our success comes from our small size," McAllister says. "We can change much more quickly than larger firms and can implement decisions much more quickly. The business started with high-rise, multifamily, urban infill projects, and when the recession hit and the bottom dropped out on our entire industry, we started focusing on public-sector projects."

Staying current on software has been another key factor for success through the recession.

"Autodesk did pretty much everything that it could to help people stay current, with free classes and letting people use the software for free if they were unemployed," McAllister says. "A real challenge in our industry is that if you weren't using Revit and its associated programs during the recession and are looking for work now, you're three years behind the curve."

Matching more experienced people who have had difficulty learning the new tools and yet are experienced in management and realizing projects with great architecture has also been a core strength. The company mandates Revit classes for all employees so they understand the technology in a fundamental way.

"One of the key factors is that we hired two young people who have only worked in 3D; they've never taken out the ink pens and drawn on Mylar on a drafting board," McAllister says. "They bring this in-depth knowledge of how to draw in Revit, and we combine them with senior architects to define our processes, controls, and drawing standards."



Iron Horse has been committed to BIM for a long time. This approach has set the company apart, and continues to set it apart as they do BIM even if a project doesn't require it.

"Most projects today are in 3D, but they're not BIM because they aren't intelligent or informed models; they are just 3D buildings used to create 2D documents," McAllister says. "Until clients are willing to pay the extra costs of viewing the models with data, it's going to stay that way, and they need to know why they are paying extra for it. We see the benefit in substantially more coordinated work where our team is so much more efficient."

Rules to live by

Among the seven business rules and lessons that McAllister lives by are:

1. Cash flow is king

In order to borrow money, you have to borrow money. As you ramp up for larger and larger projects, you need to borrow money, put it into an account, and pay it back. If you don't have a history of borrowing money, even if you have perfect credit, banks won't lend you the money without a history of paying increasing debts.

2. Analyze everything

Every decision is made from a cash-flow perspective. Be conservative, anticipating payment on projects four months from the project start rather than within 30 days.

3. Always do what you say you're going to do

4. If you make a mistake, fix it

5. Deliver on time

6. Do quality work

7. Be an excellent team member

Treat others how you want to be treated.

In terms of the company's recent financial success, McAllister credits some tenacity in winning the Denver Union Station project, where she spent two years marketing her firm's capabilities. This was the first substantial project at the bottom of the recession, and that led to further transit work thanks to longstanding good relationships.

"A large part of our success is having great relationships with our clients and business partners and maintaining those relationships, because you never know who you're going to work with in the future," McAllister says.

Get going

Starting a firm is a daunting challenge. McAllister says that she had to prove herself all over again, even though she had worked on some very large projects with her prior firm.

"Even though you have 15 years of experience doing amazing projects, people want proven competencies," she says. "It's the rare firm that doesn't start at zero and build itself up."

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Matt Ball is a Denver-based writer, editor, and tinkerer with a passion for the efficiencies gained through digital technologies.