

# BIM Transition in a Small Firm

Contributed by Lance Kirby

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## SUMMARY

Small firms need not shy away from implementing building information modeling (BIM) in their practices. Preparation, planning, and training can lead to a smooth implementation of, and transition to, BIM.

## BIM IS FOR SMALL FIRMS, TOO

BIM has exploded onto the scene as an exciting new methodology for building design and documentation. As an implementation consultant for Autodesk, I sometimes hear the flip side: the questions about potential disruptions, costs, or delays associated with new software and workflow transition. In a small firm, these worries magnify—there is no sister office to take up the slack during training, no IT group to handle the minutiae of implementation, no wiggle room to maneuver if things go wrong.

Don't worry. With just a small amount of preparation and planning, introducing BIM into a small firm can be swift, painless, and highly effective. Just as every project, architect, and firm is unique, every transition to BIM is unique.

## PREPARING FOR BIM

Adopting a BIM solution is more than just a technology or process change; it's a culture change, too. How the firm acquires projects, the workflow between team members and consultants, project deliverables—they're all affected. Management, therefore, should involve the entire team in the decision, making everyone stakeholders in the transition and preparing them for the changes ahead. Large and medium-size practices have the luxury of moving teams to BIM one by one, but smaller firms must commit their entire team to this endeavor, so everyone must be on board.

The partners should decide how to proceed as they chart the direction of the firm, holding to the core principles that make their business successful. If team cohesiveness is paramount, have everyone develop the BIM plan together. If the relationship with the client is vital, have the head(s) of the firm explain what the office is planning and how that will improve the quality of the client's product.

Associates and drafters must agree with workflow changes as well. Being a part of the earlier discussions, these users will understand what's at stake and their roles in the cultural shift. Unlike their large-office counterparts, the production staff in small offices can't transfer to other studios. Any change in the office needs their input.

## PLANNING FOR CHANGE

"How will the staff respond to this conversion?" "Will we need to upgrade our hardware for this new program?" "Where will we find the time to do these things?" It's important to address uncertainties like these in a well-thought-out implementation plan. A formal implementation strategy is an essential component of any successful BIM deployment and must go well beyond a simple training and rollout schedule. It should address head-on the workflow and organizational changes inherent to BIM.

For a small firm, moving to BIM requires careful planning, faithful execution of the plan, and a way to measure its successes and failures. Implementation planning requires knowledge of the short-term project schedule. The conversion project should be integral to the operation of the office's schedule and not a separate event. Inventing or re-creating a previous design solely to test the new knowledge and procedures may seem ideal for measurement. However, it places the project in a vacuum and jeopardizes the firm's timetable to produce billable hours. Stick with a real project typical of your portfolio—so there's only a single dimension of learning.

Every team member must be committed to being a resource and not an obstacle to success. Not every employee is going to agree with the decision to go through this process. Small firms have much more at stake when a team member is not positive about the change. Unfortunately, this is a cultural problem and not a technical one and should be addressed before the conversion begins.

## AN IMPLEMENTATION CHECKLIST

Many smaller firms lack a dedicated computer-assisted design (CAD) manager or network

administrator. Switching to BIM doesn't necessarily require that one be hired or designated. However, the firm does need a person who recognizes that there will be a new system. Some offices assume that this part-time technician should shoulder most of the conversion burden by handling the upgrades and training. The best option for this IT staff is to coordinate the upgrades with a reseller, outsource the training, and be trained as a typical user.

Smaller offices don't always have the budget for aggressive hardware upgrades. With new software, the workstations and server may need to be improved. Workstations should range close to the specifications the solution provider recommends. This may require that older machines be replaced. Unlike workstations, the network should be upgraded when performance becomes an issue. Be proactive for CPUs and reactive for networks.

Though BIM does require new software, some older software packages might be candidates for retirement because the new BIM solution includes their capabilities. For example, firms may find they no longer need stand-alone applications for 3D modeling, rendering, and cost-estimating packages. On the other hand, applications such as databases and presentation tools may take on more importance based on new opportunities with the BIM software.

### **ROLLING OUT THE NEW SYSTEM**

A bigger consideration than the commitment to hardware and software is the time needed to move the team to the new system. Many firms, large and small, struggle with working this conversion into their process. How can the team train, develop techniques, and complete the project on time?

The loss of billable hours during system rollout is always a concern, particularly for smaller firms with shorter project timelines. Training on a new system is essential, however, and sometimes the delays in a project schedule are unavoidable. In some situations, this may be an opportunity for the architect to share with the client the benefits of the new system (fully coordinated documentation set, photo-realistic renderings at minimal cost, and so on), and the client may be amenable to adjusting the schedule. If tensions arise, everyone needs to remember that training time is an investment, and the productivity paybacks of BIM will quickly offset the short-term loss of some billable hours.

The specter of schedule delays and loss of billable hours may tempt a firm to rely on self-paced tutorials and weekly lunch-and-learns. Avoid this trap. Training is a leading indicator of a successful transition to BIM, and a small office committed to the

smoothest possible conversion to BIM will outsource its training to a professional consultant.

As mentioned earlier, the best strategy for BIM implementation is to train the team with an actual project as a pilot. Many firms choose to train and then proceed with the project; others begin the training and the pilot simultaneously. Both are valid approaches, and both are usually more successful than self-paced training coupled with project work.

Smaller firms, having more generalists and fewer specialists, will find it easier to plan the course content and develop the training schedule because everyone should receive similar training and usage of the new software. It's also a good idea to have management involved in the training to understand the day-to-day scheduling of their team members as well as the capabilities (and thus the opportunities) that BIM brings to their business.

### **POST-IMPLEMENTATION ASSESSMENT**

At the end of the pilot, time is needed to evaluate how the new process worked so that adjustments can be made. That's why selecting a pilot project similar to previous projects is a great choice—it gives your team a jump-start on the schedule (partially offsetting training delays) and can also be used for comparison. BIM eliminates the need for a prolonged document review process (typical of 2D CAD), so plan to use some of this time to calculate the effectiveness of your BIM implementation.

Evaluate the entire process based on criteria predetermined in the planning stage. Where were the gains and losses? What should be changed, and what should be capitalized on? For instance, where can the time saved in document coordination be reallocated?

After evaluating the conversion, it's important to develop a long-term strategy for success. As the team develops techniques geared to the firm's work and builds its confidence in the software, reevaluate current projects and judge future work for potential gains and additional services. Small firms have the luxury of making nimble decisions that can make them more competitive with larger companies—giving them the edge they need to stay afloat in an ever-changing marketplace.

### **ABOUT THE CONTRIBUTOR**

Lance Kirby earned a bachelor's degree in architecture from Mississippi State University. He has worked for firms ranging in size from 2 to 1,000 employees. He is currently a consultant for Autodesk Inc., where he specializes in BIM implementation.

This article was originally published in *SPP Journal*, a publication of AIA Small Project Practitioners.

## RESOURCES

### More Best Practices

The following AIA Best Practices provide additional information related to this topic:

- 10.04.02 Getting Started with BIM
- 10.04.03 How BIM Changes Architectural Practices
- 10.04.04 BIM Creates Change and Opportunity

### For More Information on This Topic

See also “Virtual Design and Construction: New Opportunities for Leadership” by James R. Bedrick, AIA, *The Architect’s Handbook of Professional Practice, Update 2006*, page 33.



See also the 14th edition of the *Handbook*, which can be ordered from the AIA Bookstore by calling 800-242-3837 (option 4) or by email at [bookstore@aia.org](mailto:bookstore@aia.org).



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### Key Terms

- Practice
- Information management
- Project management automation
- Building information modeling