

Introducing BIM into a Small-Firm Work Environment

With the right preparation and planning, introducing building information modeling (BIM) into a small firm can be swift, painless, and highly effective. This white paper provides implementation “best practices” that will enable smaller firms to quickly reap the benefits of BIM.

There’s been an explosion of interest and excitement around BIM. But that excitement is sometimes tempered with concerns regarding potential disruptions, costs, or delays associated with a software and workflow transition. In a small firm these worries are magnified – 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.

But with the right preparation and planning, introducing BIM into a small firm can be swift, painless, and highly effective. Just as every project, every architect, and every firm is unique, their transition to BIM will be unique. Never the less, here are some implementation “best practices” applicable to any small firm; best practices that will smooth the transition, enabling smaller firms to quickly reap the benefits of BIM.

Getting Ready for BIM

Moving to a BIM solution such as the Revit® family of software applications is more than just a technology or process change. It’s a culture change as well. How projects are acquired, the workflow between team members and consultants, project deliverables -- they’re all affected. Therefore, management should involve the entire team in the decision to go to BIM, making everyone stakeholders in the transition and preparing them for the changes ahead. Large and medium-sized practitioners have the luxury of moving teams to BIM one by one, but smaller firms must commit their entire team to this endeavor and so everyone should be “on board.”

The partners should decide how to proceed as they chart the direction of the firm. They shouldn’t stray from the core principles that make their business successful. If cohesiveness of their team 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. Whatever change happens 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 & rollout schedule. It should address head-on the deeper issues such as the workflow and organizational changes inherent to BIM.

For a small firm, moving to BIM requires careful planning, faithful execution of this plan, and a way to measure its successes and failures. Implementation planning requires knowledge of the short-term project schedule. The software training and conversion project should be integral to operation of the office’s schedule and not a separate event. Inventing or recreating a previous design solely for the purpose of testing 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 – one that’s typical of your portfolio so there’s only a single dimension of learning.

Every team member must be committed to being a resource, not an obstacle to success. Small firms have much more at stake when a team member is not positive about the change. Every employee may not agree with the decision to move to BIM. If so, their concerns regarding the transition should be addressed before the conversion begins – allaying their worries and minimizing potential disruptions.

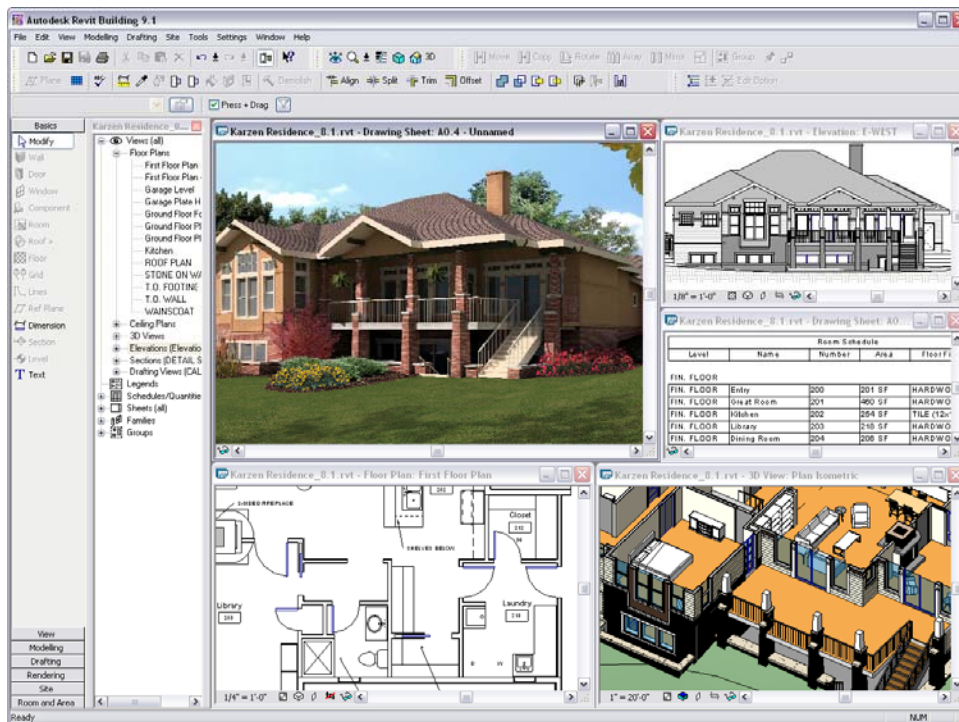


Figure 1:

Adhering to some key implementation “best practices” will enable smaller firms to quickly reap the benefits of BIM on Revit projects, such as the one shown here.

Implementation Checklist

Many smaller firms don’t have a dedicated CAD manager or network administrator. Switching to BIM doesn’t require that one be hired or designated, but it does need a person to spearhead the implementation of the new system. Some offices make the assumption that this resource should take most of the conversion burden by shouldering

the upgrades and training. A better approach is for this person 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 upgrades in hardware. With new software, the workstations and server may need to be improved. Workstations should range close to the recommended specifications set forth by the solution provider. 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.

Rollout

A bigger commitment than 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 so for smaller firms with shorter project timelines. But training on a new system is essential and sometimes the delays in a project schedule are unavoidable. In some situations, this may be an opportunity for the architect to communicate the benefits of the new system to the client (fully coordinated documentation set, photo-realistic renderings at minimal cost, and so forth) 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 spectrum of schedule delays and loss of billable hours may tempt a firm into believing that a few hours of self-paced tutorials will suffice for training. Be aware that training is a leading indicator of a successful transition to BIM - so if a small office is committed to the smoothest possible conversion to BIM, they'll set aside the time needed for formal training.

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, while others begin the training and the pilot simultaneously. Both approaches are valid, and both are more successful than unstructured, spurts of self-led training squeezed in-between project work.

Smaller firms, having more generalists and less specialists, will find it easier to plan the course content and develop the training schedule, since 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 therefore the opportunities) BIM brings to their business.

Post Implementation and Beyond

At the end of the pilot, time should be set aside 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 smart choice – it gives your team a jump start on the schedule (partially offsetting training delays), and can also be used for comparison purposes. BIM minimizes the need for a prolonged document review process (typical of 2D CAD), so plan on using some of this time to calculate the effectiveness of your BIM implementation.

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

After evaluating the conversion process, it's important to develop a long-term strategy for success. As the team starts to develop techniques geared to a firm's work and as their confidence in the software increases, reevaluate current projects and judge future projects to capitalize on the potential gains and additional services these capabilities offer.

Conclusion

BIM is a proven approach for building design and firms of any size, large or small, can quickly reap the benefits of a BIM solution. In fact, smaller firms transitioning to BIM may actually have an advantage over their larger counterparts, particularly if they adhere to the best practices outlined above. Their size gives them agility to move quickly to BIM, and the luxury of making nimble decisions once they're there – enhancing their ability to compete with larger companies and giving them an edge to stay ahead in an ever changing marketplace.

About Revit

The Revit platform is Autodesk's purpose-built solution for building information modeling. Applications such as Revit® Architecture, Revit® Structure, and Revit® MEP software products built on the Revit platform are complete, discipline-specific building design and documentation systems supporting all phases of design and construction documentation. From conceptual studies through the most detailed construction drawings and schedules, applications built on Revit help provide immediate competitive advantage, better coordination and quality, and can contribute to higher profitability for architects and the rest of the building team.

At the heart of the Revit platform is the Revit parametric change engine, which automatically coordinates changes made anywhere — in model views or drawing sheets, schedules, sections, plans... you name it.

For more information about building information modeling please visit us at <http://www.autodesk.com/bim>. For more information about Autodesk Revit and the discipline-specific applications built on Revit please visit us at <http://www.autodesk.com/revit>.

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