BIM for Small Projects II

Questions and Answers

Q: What programs do you use for energy modeling? Are you working with engineers on modeling energy also? [Erin Hoffer]
A: REM design and starting to dabble with Graphisoft's EcoDesigner. [Jared Banks]

Q: What software was used for this storage facility model? [Nathan Maune]
A: Yes, I see the original design model from Revit Architecture being the source, that will be fed into other BIM applications that are specific to owner to manage their spaces and operations as needed. [Brian Skripac]

Q: Ed, have you progressed to include keynote numbers in details and sections? [Shane David]

Q: Does the bathroom plan meets ADA-2010 requirements? [Suresh Shah]

Q: Why did they tear the project down? [Nicholas Forbes]

Q: I'm finding that generally, clients/prospective clients are expecting 3d representation as a part of my service. So, it seems to be becoming more "baseline" than something that I can sell as added value. What is the experience of your speakers? Do they "sell" BIM capabilities to clients? Also, do any of them have consultants (structural, MEP, etc.) that are also BIM capable? [Stacey Clear]
A: I agree. It is quickly becoming a baseline. I like to refer to it as the SketchUp effect. More and more people know about it, perhaps have a teenager who plays with it, etc. I think this is very prevalent in the residential market. We have been staying a step ahead by also starting to provide walk-through models, movies, select detailed rendering throughout the design process. But it is a constant process. On residential work, none of our consultants use BIM. [Jared Banks]
A: We very much promote our BIM expertise to current and prospective clients. I think the more knowledge and experience you have brings a much higher value to clients as this can expand the service offerings you can bring them and provide a much broader level of collaboration throughout the entire design and construction process. [Brian Skripac]

Q: When you generate the model, do you insert all elements information then review the model and then convert to 2D-plan as shown here? [Suresh Shah]
A: There is no converting to 2D. We build the model, add information in 2D or 3D as required and then save/cut views that are represented in 2D. All the information is always live and connected to the model throughout the life of the project. All the 2D views you see are actually 3D models. [Jared Banks]
A: I agree with Jared's comments above…you build the model then cut sections/plans. These views are live representation of the model, and then you add the additional information as needed to tell the story. [Brian Skripac]

Q: Ed, how about solid void for your non-horizontal reveals? [Stacey Clear]

Q: I am seeking to connect Graphisoft ArchiCAD users utilizing BIM Server. Does AIA TAP maintain a database of TAP members wanting to share resources and collaborate on projects, be it solo practitioners or multi-nationals? [Michael Scarmack]
A: To the best of my knowledge there is no current resource to accomplish this. [Brian Skripac]

Q: What do you mean by "Revit not backward compatible? [Suresh Shah]
A: With Revit, communication of the current version of the software amongst the entire design team is critical since you cannot save back to a previous version like one would do with AutoCAD or other technologies. [Brian Skripac]

Q: Has your use of BIM been used by the contractors? [Thomas Downer]
A: Slowly we are getting contractors in the residential market to see the value of BIM. But it's a slow battle. [Jared Banks]
A: Yes, we have been sharing the BIM with contractors but it is maybe only on 25% of our projects, mostly the larger ones in our office. [Brian Skripac]

Q: What prompted Jared to start with ArchiCAD? Has he tried other CAD systems? [John Ahern]
A: Prior to ArchiCAD, I used AutoCAD and Vectorworks. I joined a firm that used ArchiCAD in 2006, liked the program, then had the opportunity to keep using the program at SALA Architects. [Jared Banks]

Q: What's the foundation system on 'the farm' project? [Paul Brown]
A: It's a frost protected shallow footing. [Jared Banks]

Q: For residential projects using of BIM is not necessary - it will cost more and spend more time for nothing - BIM is good for complex projects such as hospital where you have too many systems and check for clashes of two elements - in residential project not many system and not clashes any system [Suresh Shah]
A: Completely wrong. Hopefully the webinar showed this. [Jared Banks]

Q: Jared, you commented about knowing when to stop modeling. I find it helpful to sketch out a mock cartoon set before beginning the model. This helps me understand the amount of 2D dwgs needed. I would be interested in your approach to this issue. [Ed Garbee]
A: That's a good solution. My standard ArchiCAD template (that I developed) has sheets set up with typical views. So as I build the model plans, sections, elevations are automatically generated and placed on sheets. This means that by the time SD is complete I have a good cartoon set. Once the plans are set, I'll often also create all my interior elevations and place them on sheets. Even if I delete many later, it gives me a good sense of the spaces and future needs. As far as when to stop modeling, in some ways I never stop. Perhaps the question is really what to model or not model. Typically if you are going to see something in more than one view, you want to model it. Whether that view is a plan, section, schedule, etc. This is why details are still 2D. They might be based on a 3d underlay, but most of the information on a typical detail only shows up once for that detail (though the info might be copy and pasted for another similar detail). [Jared Banks]

Q: What format was Jared's model exported to? [K.C. Surich]
A: I exported the model as both a .3ds and a .skp for the timber framer. The walk-through models were through BIMx, an add-on to ArchiCAD. [Jared Banks]

Q: Ed, Have you posted your request for the angled reveals Online to Autodesk or AUGI or other Blogs? [John Ahern]

Q: Are any of the speakers getting requests for materials takeoffs from builders or clients?   Are they providing that service? Do any clients want to pay for the extra work required to get accurate takeoffs? [Stacey Clear]
A: Beyond what I shared in the webinar, no. But I see this changing. I have a few opportunities coming up that would lead to much more material takeoffs. [Jared Banks]

A: We have not had that request yet. I think the hard thing with some projects is still to get all parties to agree to a certain level of development for the project. This can also be difficult when the construction team who would benefit the most from this type of information is not on the project at the beginning like in a traditional Design-Bid-Build scenario. If all parties don't agree to that criteria, material take-off numbers be become highly inaccurate. I'm sure as the market continues to grow this will change and defining the appropriate LOD will become standard practice for design firms (as we are trying to do in our office) and owners will become more savvy as they work to understand how they can reuse this information during the O&M phases of their facilities. [Brian Skripac]

Q: to confirm: ArchiCAD allows multiple users to be editing the same drawings simultaneously? [Stacey Clear]
A: Yes. ArchiCAD can handle multiple users editing at the same time via Teamwork 2. [Jared Banks]

Q: Is the BIM modeling cost to the Home Owner? [Suresh Shah]
A: No cost to the home owner. I'd say more expensive not to use it. [Jared Banks]

Q: Jared, was that BIMx you were using to share the model with your clients? And were your section and elevation cut lines set up in the model or added in 2D? [Rob Harrison]
A: Yes. BIMx. The section and elevation cut lines were set up in the model. Probably a few added 2D lines, but very very minimal. [Jared Banks]

Q: Is the site topo for Jared Banks' real or is it an academic exercise? There is nothing in the background.
A: On the farm it was imaginary, pulled from images. on the 2nd project i had a site survey, but ignored trees because they didn't add value/weren't necessary for furthering the design. [Jared Banks]

Q: What program is this speaker working with? [Chris Glaspie]

Q: What program are the solar studies graphic created in? [D. Blake Wagner]
A: The solar studies where generated by taking the Revit Architecture model out to Ecotect. Radiance was the analysis engine that calculated the specific date and time information, and Ecotect was used to illustrate that generated data. [Brian Skripac]

Q: Brian, what software is your firm using to produce all your drawings and presentations? [John Ahern]
A: All the images were developed directly in Revit Architecture, Ecotect Analysis and Autodesk Simulation CFD Advanced. [Brian Skripac]

Q: Do you compare energy usage if window/wall ratio increase per option B? [Suresh Shah]
A: Even thought the window to wall ratios were different the exercise illustrated who properly oriented your building and thinking through the appropriate window placements can have a significant impact on the building energy consumption and lifecycle costs. [Brian Skripac]

Q: Can you show basic structure in BIM projects or are specific MEP BIM programs required? [Leslie Schneeberger]
A: Very easy to show basic structure and MEP, if you have enough info to model them accurately. [Jared Banks]
A: Yes very easy. Revit Architecture has many of the same tools that Revit Structure has which allows us to model a major structural elements and systems in the case that our engineers are not working in a BIM environment. On the downside Revit Architecture does not have the same type of tools for MEP and would require that specific software to model those systems. [Brian Skripac]

Q: Why did you choose your BIM application over the others in the market? Functionality, cost, user base, etc? [James Gaspar]
A: We had originally used Revit on a project in 2000 prior to its acquisition by Autodesk. The full project functionality was not there at that time and we leveraged AutoCAD heavily on the project as we were doing for all of our project at that time. As the industry progressed we followed the tool and adopted it in 2005 as we felt we were ready to revisit BIM. We were comfortable in the Autodesk environment and felt that is was the application that was picking up steam in the industry and becoming the lead application. [Brian Skripac]

Q: Brian, what program was used for the air-flow modeling on slide #87? [Aric Abblitt]
A: Autodesk Simulation CFD Advanced. [Brian Skripac]

Q: Jared: Which ArchiCAD tool are you using for deriving quantities? The schedule tool? Others? [Paul Adams]
A: interactive schedules [Jared Banks]

Q: What kinds of studies have been done to correlate tested energy scenarios with real-word performance? [Enoch Sears]
A: Great question, unfortunately, we have not done much in this but I know that tools like Autodesk's Green Building studio is working to allow user to add real world utility bills to compare building performance. We've actually done testing in our office spaces as it relates to comparing the illuminance value that were generated in our simulation software against what real world reading were taken throughout our space, which was a successful study. [Brian Skripac]

Q: Affordability was not addressed. [Richard Speer]
A: Changing your process will cost money. It needs to be planned out as it relates to technology, hardware and most importantly people. As the I think and the industry continues to grow this change will become a cost of doing business as BIM deliverables will become the expectation on all project. I can't say when this will be but I think it will happen in the future. [Brian Skripac]

Q: Jared, how did he give a model to the client that they could walk around inside on their own. [Randall Lewis]
A: ArchiCAD add-on called BIMx. Could have also exported to SketchUp, though that wouldn't have been as good. [Jared Banks]

Q: Brian, does BIM modeling cost extra or is it a part of design cost? [Suresh Shah]
A: Basic services to deliver what is still a traditional set of documents which is the current norm do not cost extra. Revit has become our tool that has replaced AutoCAD in the design and documentation process. One thing we have found is that Revit and BIM processes will more easily allow you to do many things that may be outside of your typically project deliverables and we all need to be aware that those are the items that should be seen as additional services for our profession. [Brian Skripac]

Q: Have you found that it better to present 'sketchy' images, plans, etc. vs. more photorealistic images to clients; especially as plans are developed and moved along. [Chuck Bennet]
A: Better to do non-photorealistic images, in my humble opinion. [Jared Banks]
A: I think there is a place for both and you need to understand what is appropriate at that specific stage of the project and for that particular client. [Brian Skripac]

Q: Brian, of the 40+ employees, how many are architects, and how many architects are sitting using the

software to produce your designs and documents? [John Ahern]

A: All of our architectural and interior design staff use Revit Architecture to design an document project. This includes a couple of our Project Designers, and all of our Project architects, Project Associates, Interior Designers. Most of our teams are small and integrated. We don't have anybody in our office who is sitting there producing documents; this is just how our firm has always been structured, not necessarily and impact of BIM. [Brian Skripac]

Q: Brian, How much extra time is involved in doing the wind, ventilation and CO studies? [Doug Graybeal]

A: Our engineers did the analysis, I would say probably 2-4 hours in Autodesk Simulation CFD Advanced. The majority of the time was setting up the model to be used export and utilized correctly. I would also keep in mind this was a fairly high level study and more detailed analysis could take longer. [Brian Skripac]

Q: Can they talk about the approach to developing library parts/components? [Luis Huertas]

Q: Are clients asking for and/or using the info in the model? [Thomas Downer]

A: Some are asking, but not many. I see the rapidly changing in the future. Owners are seeing the value of BIM and what it can do for them post occupancy which will provide a significant impact. Architects who understand their needs will be able to use this understanding as a significant competitive advantage to deliver projects. [Brian Skripac]

Q: Why do you think BIM took long time to be used in design firms, about 7-10 years & still many architects not switched to BIM? [Mohammed Badr]

A: It's not 7-10 years. It's almost 30 (ArchiCAD first started doing virtual construction/BIM in 1982). I think it boils down to FUD: fear, uncertainty, doubt. BIM changes everything –production, firm organization, individual usefulness. Many people don't want to reinvent how their companies run. It is a huge power shift. [Jared Banks]

A: Change is difficult, and BIM is a big change. If considering the shift to BIM, you should read Randy Deutsch's book BIM and Integrated Design: Strategies for Architectural Practice. [Brian Skripac]

Q: Ed, how did you start, training, etc. [William Mayfield]

Q: What is the ideal experience level of a project manager with BIM - minimum years of experience in general? i.e. intern versus 25 year architect, etc. [Debra Coleman]

Q: Any recommendations on how to compare REVIT and ArchiCAD for small projects? [Kenneth Graham]

A: Talk to experts, not resellers. In an ideal world, take the time to try both. [Jared Banks]

A: Test them out and see what best fits your design process. Understand what technologies your key design consultants are using and what expectations you clients may have. You will be the best decision maker after doing your research. [Brian Skripac]

Q: What software if any was used in generating the CFD diagram showing air flow through the building and CO2 level in the building? [Geokser Lee]

A: Autodesk Simulation CFD Advanced. [Brian Skripac]

Q: Can any of the presenter's comment on the "learning curve" issues associated with BIM software? [Joseph Scopino]

A: Vicious. You'll learn it fast if you don't try to make one program act like another. Instead know that any one BIM program can do something very similar to any other program. Also you need to own the learning process. You won't truly learn a BIM software if you don't fully invest in it. You can have great teachers, but you need

to put in a lot of energy and effort. While learning a BIM platform, you're job becomes not just being an architect, but also a fulltime student. Many people in our industry don't take the act of production seriously. To really learn BIM, you need to respect and honor production. [Jared Banks]

A: The learning curve can be steep, but a commitment to the implementation from the beginning and BIM leadership in your firm is a must to make sure the learning curve is not an extreme burden on your organization. [Brian Skripac]

Q: **This can obviously result in more informed design decisions, client & builder communication, etc. Is BIM adding to downward fee pressure in the market? (expected to do more for same fee) [Stacey Clear]**
A: I don't think it is adding to it, but providing a way to deal with the lowering fees and shortening timelines. [Brian Skripac]

Q: **I've used DataCAD for 3D design (now known as BIM) since 1995. Why do the three speakers think consultants have been reluctant to move to BIM? [Curt Juergens]**

Q: **Would you please provide the internet site for energy modeling program by Rivet? [Suresh Shah]**
A: I was using Autodesk Green Building Studio - http://usa.autodesk.com/green-building-studio/. There was also a discussion about Autodesk's Project Vasari - http://labs.autodesk.com/utilities/vasari/. [Brian Skripac]

Q: **Approximately, how much of the architectural profession is using BIM- best guess is OK. [Penny Mavrikis]**
A: Low. 30% or less? That's just a wide gut guess. More are using the right programs, but not really doing BIM. [Jared Banks]
A: There is some good information on this in the McGraw Hill Construction Smart Market reports - http://www.bim.construction.com/ the information is not completely up to date as they were conducted over the last few years, but the data is extremely useful. [Brian Skripac]

Q: **BIM can be compared to a doctor using an MRI, but his patient's insurance company pays for the service. If we 'charge for BIM, the client will not want to pay Extra. [John Ahern]**
A: I've heard some great advice about this. There's a firm that uses BIM (can't remember which one). They charge extra for clients who DON'T want them to use BIM. I am in that camp. [Jared Banks]

Q: **For Brian - Does your firm manage/update the model to an as-built status (and into facilities management)? Are clients willing to pay for this cost? [Brad Gaubatz]**
A: Yes, we manage the model through construction and update it as changes occur regardless of it use by the owner as a BIM during post occupancy. As suggested we will still need to produce as-builts and that model is the source to do this. Again since this is part of our process and required deliverable it is included in our fee. [Brian Skripac]

Q: **Jared mentioned constructing templates as a way to streamline workflow & direct to his desired outcome for drawings - any other tips on how to do BIM as efficiently as possible? [Stacey Clear]**
A: Templates are critical. Both from a making drawings pretty perspective and for speed of modeling. In the end modeling is a means, not an end. Learn when to stop modeling/what to model or not to model. Don't try to do everything on your first BIM project. Baby steps are critical. [Jared Banks]

Q: **I've watched some of the BIMStorm webcasts this past year.   They make a point that with the evolving collaboration tools, any BIM/ 3D CAD program (within a few years) can be part of the BIM workflow.   Does anyone have a familiarity with ONUMA, or Tekla's BIM platform, and a perspective on whether or not BIM is less about the tool and more about the process?[Joe Manganelli]**
A: BIM is all about the process. [Jared Banks]

A: There are many technologies that apply to a BIM process. It is about gathering information, and using the right technology for the right task. [Brian Skripac]

Q: Going forward how do we get the consultants on board with BIM [Gary O'Leary]
A: Start working with consultants that use BIM and stop using those that don't. Let consultants know that they will start losing work if they don't evolve. Same goes with other architect partners. [Jared Banks]