

Guidelines – What Can You Do Now

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Sharing is good; we all learned that in kindergarten

Many architects and engineers are sharing their BIM projects, it is only a matter of time before they all do. Owners are starting to require sharing. General contractors are creating agreements with subcontractors on the sharing of their BIM projects. Sharing quickly lead to discussion on Guidelines and Standards (object and assembly naming, modeling techniques, object creation standards, sheet layout, and on and on). This is a critical and very important area for discussions and results, this is a great topic for spending an inordinate amount of time.

Background

My company, Archsoft, created and then licensed to Autodesk the product known as AutoCAD AEC Architectural. When Autodesk first released the product I had been working on layering guidelines for the first release. These guidelines did not make it into the product, and within a few months everyone was coming up with their own architectural CAD layering guidelines, the mess had started. Yes, you can blame me for some of the mess. Several years later, when the mess of everyone creating their own layering guidelines was a real problem the AIA stepped in to help. The AIA Committee investigation and discussions were long and wide. At that time my company, ASG, had created an integrated suite of CAD applications and layering names were critical for the sharing of CAD information from one application to the other. We had a four node naming system that was very sophisticated, after many months of discussions the AIA committee decided on a system based upon the ASG system. This was not an easy process, first because almost everyone has an opinion on what is best and secondly because every software vendor could not comply with the recommendations. For example if one vendor can only have numbers in the naming convention, but numbers alone results in a poor solution, do you set your standards to meet the lowest possible options? The AIA decided to go with a good solution, but there were some unhappy vendors. The AIA guidelines were good, but unfortunately by the time the guidelines were published it was difficult to undo the mess that resulted from thousands of companies creating their own guidelines.

In the late 80's Autodesk had over 500 third party developers creating applications sitting on top of AutoCAD. Each one was following their own rules and the result was that it was almost impossible to share drawings without a lot of additional work. David Kalish, one of the founders of Autodesk, and I

decided to have a meeting at the AEC show to see if the developers were interested in coming up with development guidelines. We thought a few developers might show up... the room overflowed with hundreds of people. Autodesk continued to expand upon this first meeting, eventually the discussions included other vendors and Autodesk passed control to the IAI which has continued to expand throughout the world as a driving force in bringing interoperability to CAD related technologies. The IFC's (Industry Foundation Classifications) are being created by a subcommittee of the IAI. They are working on data naming conventions and the sharing of graphics and data between various vendors applications with the goal of being able to create a project with one vendors BIM application and then share that project with another vendors application without the loss of graphics, data and parametrics. They have a monumental task, perhaps an impossible task.

While the IAI is working on their approach more and more players are entering the game. NIBS (National Institute of Building Science) has created the Building Smart Alliance to bring together professionals, associations, government entities, building product manufacturers, educators and others. Governments and agencies throughout the world are coming up with guidelines. States are now getting into the discussion on BIM guidelines. These government/agency guidelines tend to be vendor neutral as it is usually not allowed for a government agency to demand directly the use of a specific vendor's product. This requirement takes what is "tremendously difficult" into the "almost impossible" category. This has resulted in other groups forming to create guidelines for specific vendor applications. (At this point you might want to reread my article ["Good News - You are Part of a New Era, Bad News – You are Part of a new Era"](#)). I contribute to one of these volunteer groups, in several months very little has been accomplished, not because of desire, but because it is a massive and very difficult undertaking.

Over time, certainly several years, guidelines and standards will exist, the question is what do you do right now?

What To Do Right Now?

If you are interested in being part of these discussions join one of the organizations, or at least follow their work.

If you need immediate guidelines for your work there are guidelines available: SMARTBIM, Autodesk, and other vendors have published guidelines for file naming and object modeling. IAI and NIBS have published guidelines.

If you just want to work and wait for the committees to come up with the final guidelines and standards there are a few actions you should take:

1. Be Consistent - Make sure you are consistent with your work. If you are inserting a specific electric drinking fountain do not end up with a project that contains ten different versions of the

one unique product. Make sure all similar walls use the same assembly, and the definitions are the same for all walls; “gyp bd”, “gyp. Bd”., “gypsum board”, “gyp”, and 5/8, 5/8” are not all the same to a database.

2. Use Good Objects - Create good graphical objects, or download good objects. Make sure the data fields are filled in, it is this data that will save you in the future. BIM is “object oriented software” which means that when you insert an object or assembly into the project the software knows and tracks by the uniqueness of the object/assembly. If you insert a “door” and attach no data then every door is the same, but if you add data to describe the door, and perhaps eventually make this a manufacturer specific door with a model number and defining specifications then the BIM project will contain a vast amount of important information. If everyone using BIM had good graphical objects, entered complete data and modeled accurately many of the reasons for guidelines and standards are reduced.

The most important actions you can take today are to make sure your designers have simple guidelines to insure consistency and completeness. I am certain that software developers will provide the tools in the future to take the information that is in the BIM projects and manipulate the data to present the data as needed, but this will not work if the BIM project is poorly done. If you call your drinking fountain “EDF22” and another architect calls it “Fountain” and you are both consistent, and an owner wants to know how many drinking fountains they have (I know they probably do not care about drinking fountains) all they need is software that says look for both names and add the totals together.

Conclusion

When we were testing SMARTBIM QTO we ran many architects BIM projects through our software. The software creates a complete quantity take off of everything in the project. It is then very easy to find how the architects named objects and assemblies. Many projects had not followed the two simple steps above. This means that these projects have little value for the manipulation of data, which is the long term value of BIM for both the designers and the owners. These projects were done to create paper documents, that is not good.