**Profession: Architect**

**How does your work require you to use 3D modeling tools?**

3D software isn’t necessarily a requirement but it speeds up the design process by allowing for models that can be visualized and adjusted easily (good replacement for cardboard models). 3D models can also be transformed into 2D construction documents for contractors and images for clients.

**What part of your speciﬁc 3D modeling program do you ﬁnd the most useful (and what programs do you use)? What features are absolutely essential to your work?**

I have used SketchUp and Revit which is common among architects (owned by Autodesk who made AutoCAD). Many architecture students are now using Rhino.

It’s useful that objects have structural properties integrated into their forms. For example, if I create a door it will know its own dimensions, weight, location, etc. It also then gets added to a list so I can use it again. The most useful part is the ability to understand and visualize forms. Being able to spatialize designs and to view rotations and angles in 3D space is very helpful.

Accuracy is essential in designs. Keeping parallel planes parallel, keeping curved surfaces curved, aligning points and lines, etc. The ability of lines, points, and objects to learn information about themselves and where they belong helps this.

**Which parts of your platform do you ﬁnd yourself using the least? Which aspects are typically forgotten or unutilized?**

It’s hard to know what I don’t use but it is frustrating at least having to know exactly where points lie in space. If I draw a bridge on paper you’ll know what it is regardless of where it’s at in space. The important part is how everything relates to everything else.

**If you could change anything about your current platform, what might that be?**

This probably isn’t really what you’re looking for but being able to draw and form things with my bare hands would be so cool (leap motion style).

**Which problem or problems do you ﬁnd yourself solving over and over again in your current platform, either in the same or different ways?**

When I used AutoCAD (not 3D) my favorite commands were copy and mirror. Some sort of scripting or the ability to run a series of commands repeatedly would be useful.

**What would you say the greatest source of error in your work is, currently? How does your program work to contribute to or alleviate these problems?**

We typically don’t spend time enough time cutting cross-sections of buildings to understand in detail what is going on. This causes us to end up with things we think will work or go together but don’t actually. If a computer algorithm were to solve some of these problems however it should ultimately be up to the designer whether or not changes should actually be made.

**The next set of questions asks users to reason through a hypothetical problem in the language of their current modeling platform.**

**Imagine for a moment that you’re working on a project where it’s important for two different geometries to maintain some size and shape relative to one another, irrespective of resizing or relocation. How would you go about expressing this in your model? Be as general or speciﬁc as you like.**

I would make them both part of the same object in order to move/scale them together. It’s not a solution but it’s close to what you’re asking.

**Now imagine that you’ve drawn a shape in your program, and you want to ensure that it tessellates. How would you go about checking this quality?**

I would use array commands to duplicate an object repeatedly and set what edge or angle to copy over.

**Finally, let’s say that you’ve just ﬁnished modeling a huge project with hundreds of thousands of points and polygons, when you realize that a large set of edges in the model, which are supposed to be coplanar, are not.**

**What do you do next?**

First reaction is to undo it and do it right. Most definitely don’t continue. Don’t really know how else to go about changing it.