What You Should (and Shouldn't) Expect SketchUp to Do

Have you ever been to a hardware store and noticed the multitool gizmos on the racks next to the checkout stands? Aidan once saw one that was a combination screwdriver, pliers, saw, tape measure, and (he swears) hammer. This tool was probably great in a pinch, but we can't imagine it did any of its jobs very well.

SketchUp, however, is a specialist that does one thing really well: building 3D models. Here's a list of things (all model-building related) that you can do with SketchUp:

- **Start a model in lots of ways:** With SketchUp, you can begin a model in whatever way makes sense for what you're building:
  - *From scratch:* As Chapter 2 explains, you can start with a completely blank slate on which to model anything you want.
  - *From a photograph:* Have a photo of the thing you want to build? Chapter 8 explains how to use that photo as a starting point.
  - *With another computer file:* In addition to photos, you can import AutoCAD files and other specialized files, such as 3DS, DEM, IFC, and COLLADA. (If you need those specialized options, you already know what those file types do.)
  - *From a geo-location snapshot:* In SketchUp, it's easy to grab a geo-location snapshot (a small chunk of the planet, basically) from Google Earth. Chapter 8 explains how to grab this snapshot and use it as a site for your model.
- **Work loose or work tight:** Your models can be super-sketchy or absolutely precise. SketchUp is just like paper in that way; the amount of detail you add is entirely up to you.
- **Build something real or make something up:** *What* you build with SketchUp really isn't the issue. You work with only lines and shapes — or in SketchUp, *edges* and *faces*. How you arrange them is your business. SketchUp isn't intended for making buildings any more than it is for creating other things. It's just a tool for drawing in 3D.
- **Share your models:** After you make something you want to show off, you can print your model, create an image file, animate a walkthrough, export the model to another 3D format, or upload your model to the 3D Warehouse (a giant, online repository of SketchUp models). Part 4 helps you start sharing in all these ways.

What *can't* SketchUp do? A few things, actually — but that's okay. SketchUp was designed from the outset to be the friendliest, fastest, and most useful modeler available — and that's it, really. Fantastic programs are available that do the things in the following list, and SketchUp can exchange files with most of them:

- **Photorealistic rendering:** Most 3D modelers have their own, built-in photo renderers, but creating model views that look like photographs is a pretty specialized undertaking. SketchUp has

always focused on *nonphotorealistic rendering (NPR)* instead. NPR (as it's known) is essentially technology that makes things look hand-drawn — sort of the opposite of photorealism.

- **Animation:** A few paragraphs ago, we mention that SketchUp can export animated walkthroughs, but that's a different thing. The movies that you can make with SketchUp involve moving your "camera" around your model. True animation software lets you move things around *inside* your model. SketchUp doesn't do that, but the Pro version enables you to export to programs that do.

IS THIS MODEL A TOASTER OR A BUNGALOW?

SketchUp models are made from two basic kinds of *geometry:* edges (straight lines) and *faces* (2D surfaces bound by edges). That's it. When you use SketchUp to draw a bunch of edges and faces in the shape of a staircase, all SketchUp knows is how many edges and faces it has to keep track of, and where they all go. There's no such thing as a *stair* in SketchUp — just edges and faces.

That said, SketchUp's *dynamic components* are preprogrammed objects that know what they are. A dynamic staircase, for example, is smart enough to know that it should add or subtract steps when you make it bigger or smaller. What's that mean for you? For starters, SketchUp is easier to pick up than it's ever been. Chapter 5 goes on and on about dynamic components.

With the exception of dynamic components, things in SketchUp have no idea what they're supposed to represent. Coming to this realization has the tendency to freak out some people. If you want a model of something, you have to make it out of edges and faces. The thing to remember is that SketchUp enables you to model *anything*, not just buildings, so its tools are designed to manipulate geometry. That's good news, believe it or not, because you're not restricted in any way. You can model anything you can imagine.

Taking the Ten-Minute SketchUp Tour

In this tour, you find out where everything is in the SketchUp interface — like the way you look around a new place before you decide where you'll put your sofa, bed, and desk. When you start modeling, you'll know where to look for the tools and commands you need.

As shown in Figure 1-2, SketchUp has seven main parts:

- **Modeling window:** See the big area in the middle of your computer screen? That's your modeling window. You build your model here, and your modeling window *always* shows a 3D view of your model, even if you're looking at it from the top or side.
- **Menu bar:** If you've used a computer in the last 30 years, the menu bar is nothing new. Each menu contains a long list of options, commands, tools, settings, and other goodies that pertain to just about everything you do in SketchUp. We introduce you to the commands on these menus throughout this book, and you can look up what any one of them does using this book's index.
- **Toolbars:** Click a toolbar button to activate a tool or command. SketchUp has a few toolbars, but only one is visible when you launch SketchUp the first time: the Getting Started toolbar. See the upcoming section, "Customizing the toolbar" for details about finding other toolbar options.
- **Dialog boxes and panels:** You'll find traditional dialog boxes that enable you to select an option and then disappear when you're done. The Open dialog box and Save dialog box are both good examples. On Windows, SketchUp 2016 and later has a tray of panels that help you work with components, colors, styles, and more. By default, the tray appears on the right side of the interface. You start with a default tray that contains the panels beginners use most often. To customize the tray, choose Window ⇒ Manage Trays and use the Manage Trays dialog box to reconfigure what you do (or don't) see here. On a Mac, the tools for components, colors, styles, and so on look like dialog boxes, but you can stack them like trays and keep these dialog boxes open for as long as you need them.
- **Status bar:** You can consider this your SketchUp dashboard. The status bar contains contextual information you use while you model. Most of the time, you check here to see what options may be available for whatever you're doing. *Modifier keys* (keyboard strokes that you use in combination with certain tools to perform additional functions), step-by-step instructions, and general information about what you're doing all show up in one place: right here.
- **Measurements box:** You use this box all the time as you model in SketchUp. Depending on what you're doing, this box displays information about what you're modeling or enables you to specify a precise length, angle, or other measurement. Chapters 2 and 3 help you understand all that this little unassuming box can do.
- **Context menus:** Context-clicking things in your modeling window usually causes a context menu of commands and options to open. These are always relevant to whatever you context-click (and whatever you're doing at the time), so the contents of each context menu are different. On a Windows computer, you context-click by clicking the right mouse button. On a Mac, you hold down the ⌘ button while you click.

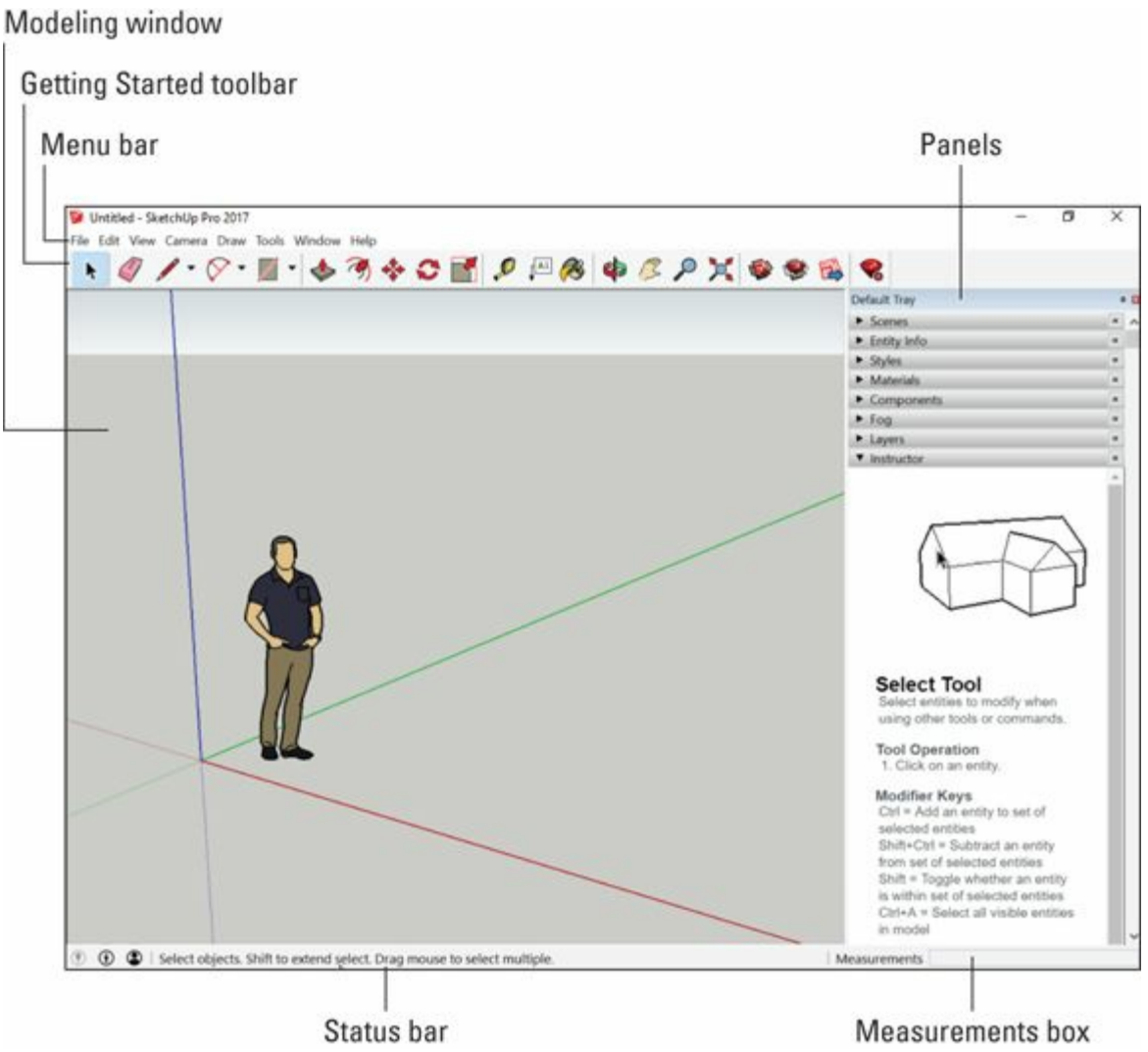

FIGURE 1-2: All SketchUp's parts.

REMEMBER Although the following items aren't part of the SketchUp user interface (as all the stuff in the preceding list is), they're a critical part of modeling in SketchUp:

- **A mouse with a scroll wheel:** You usually find a left button (the one you use all the time), a right button (the one that opens the context menus), and a center *scroll wheel* that you both roll back and forth and click down like a button. A mouse with a scroll wheel will improve your SketchUp experience more than any single other thing you can buy. The Mac's Magic Mouse enables you to scroll not with a wheel, but by moving your finger forward or back along the top of the mouse. However, without a scroll wheel that you can hold down to orbit, modeling the Mac with a Magic Mouse is much less efficient than adding a scroll-wheel mouse to your Mac setup.

- **A keyboard:** This sounds silly, but some people have tried to use SketchUp without one; it's just not possible. So many things you need to do all the time (such as make copies) involve your keyboard, so you'd better have one handy if you plan to use SketchUp.

Customizing the toolbar

The Getting Started toolbar contains a small subset of the tools that you can use in SketchUp. The thinking (which we agree with, incidentally) is that seeing all the tools right away tends to overwhelm new users, so having a limited selection helps people.

TIP To access more tools (through toolbars, anyway — you can always access everything through the menus), you do different things depending on which operating system you use:

- **Windows:** Choose View ⇒ Toolbars. The mother lode! In the Toolbars dialog box, we recommend selecting the Large Tool Set check box to start. Then, you can add toolbars as you need them (and as you figure out what the tools do).
- **Mac:** Choose View ⇒ Tool Palettes ⇒ Large Tool Set. To add even more tools, right-click the Getting Started toolbar (the one right above your modeling window) and choose Customize Toolbar. Now drag whatever tools you want onto your toolbar and click the Done button.

Checking out some special tools

Most graphics programs have a ton of little controller boxes, and SketchUp is no exception. Here are the ones that we think deserve special attention:

- **Preferences:** Whereas the Model Info dialog box (see the next bullet point) contains settings for the SketchUp file you have open right now, the Preferences dialog box has controls for how SketchUp behaves — *no matter what* file you have open. Pay particular attention to the Shortcuts panel, where you can set up keyboard shortcuts for any tool or command in the program.

  To set your preferences, select Window ⇒ Preferences (Windows) or SketchUp ⇒ Preferences (Mac).

  

  TIP Some changes to the Preferences settings don't take effect until you open another file or restart SketchUp altogether, so don't worry if you can't see a difference right away.

  For a fairly comprehensive list of what every preferences option does, see this SketchUp Help Center article: http://help.sketchup.com/en/article/3000137.

- **Model Info:** This dialog box is, to quote the Bard, the mother of all dialog boxes. It has controls for everything under the sun; you should definitely open it and take your time going through it.

Chances are, the next time you can't find the setting you're looking for, it's in Model Info. To open this dialog box, choose Window ⇒ Model Info.

- **Entity Info:** This little guy is small, but it shows information about *entities* — edges, faces, groups, components, and lots of other things — in your model. On Windows, you find Entity Info in the default tray and can toggle it open or closed by clicking its arrow. On a Mac, choose Window ⇒ Entity Info.
- **Instructor:** The Instructor does only one thing: It shows you how to use whatever tool happens to be activated. While you're learning how to use SketchUp, keep the Instructor open. You can also open it anytime by clicking its right-pointing arrow in the default tray or, on a Mac, choose Window ⇒ Instructor.