Project Collaboration

It's quite ironic that the last bonus chapter of this book contains information that many of you will need to get your first Autodesk® Revit® Architecture project off the ground. That is, how do you work on a project when multiple people need to be in the model? Revit is only one model, right?

▶ **Enabling and utilizing worksharing**

▶ **Working in the Revit shared environment**

Enabling and Utilizing Worksharing

You may be surprised, but the answer to the question posed in the chapter introduction and the procedure itself aren't as difficult as some make them out to be. I have seen many explanations on the subject of project collaboration that are far-reaching and convoluted, causing an air of uneasiness. Collaboration isn't as horrible as it sounds, and this chapter will explain project collaboration in the simplest terms possible.

N O T E Metric users should not type in *mm* or other metric abbreviations when entering amounts suggested in the exercises. Revit will not accept such abbreviations. Simply enter the number provided within the parentheses.

First we'll establish exactly what you're trying to accomplish and how to go about doing it. The backbone of project collaboration is the functionality of *worksharing*.

The concept of worksharing in Revit, broken into its simplest form, is this:

1. Go to your project directory to open the model.

2. Find a file called the *central model*, make sure Create Local is selected, and click Open.

This process saves a linked copy to your `C:\` drive under `My Documents`. Now you and your co-workers can all access the same model at the same time. What a productive way to get a job out the door! (See Figure BC8.1.)
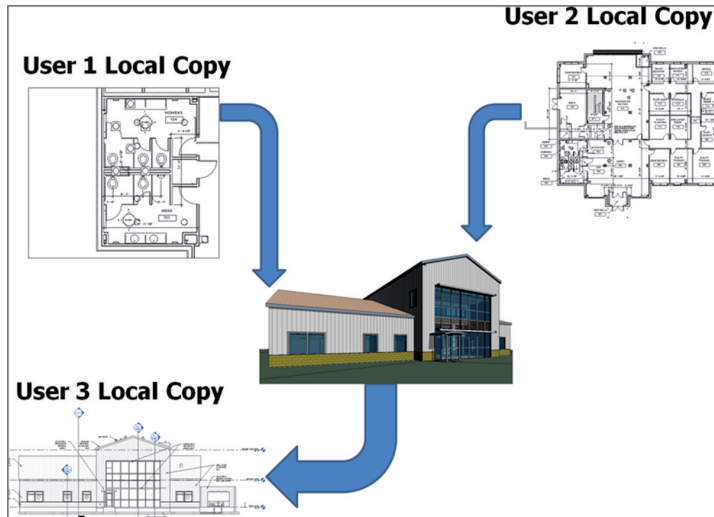
FIGURE BC8.1: The basic file-sharing configuration

So that's the concept of worksharing. It's now time to drill down and see how to activate this network of linked files. As mentioned earlier, Revit has a function called *worksets*. The worksets are the backbone of this entire concept.

Enabling Worksets

The worksets function in Revit influences your model and the way you go about working more than anything you can do. Using worksets is a mode you literally have to enter into.

Essentially, worksets are a way to divide your model. After you activate worksharing, every element in your model has a workset with which it's associated. Levels and grids are on their own workset, and everything else in the model is automatically assigned Workset1. This *assignment* is in the form of a parameter that you can see in the Properties dialog. You can change that parameter if necessary.

Why would you want to change it? Good question. Here's an example. Say you're modifying an interior partition and your co-worker (who is working on a local model) tries to edit that same wall. Your co-worker will be denied access to the wall. But nothing is stopping your co-worker from working on another wall in the same area, one to which you intended to make the same modifications. This could get messy fast. To avoid this situation, you can add all your interior partitions to a workset called Interior Partitions and *lock* everybody else out of any item you've placed in this workset.

Now that's the way to work!

Obviously, this process isn't without its rules, quirks, and parts that need further explanation. To get started, go to the book's web page at www.sybex.com/go/revit2017ner. From there, you can browse to the Chapter BC8 folder and find the NER-BC8.rvt file.

To enable worksets and start the worksharing process, follow these steps:

1. Open the NER-BC8.rvt file.

2. On the Collaborate tab, click the Worksets button on the Worksets panel, as shown in Figure BC8.2. Note that the Worksharing button is also on the status bar at the bottom of the Revit window.
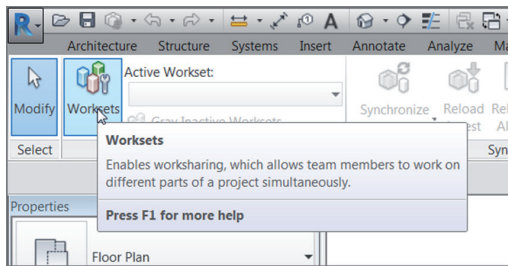
FIGURE BC8.2: Clicking the Worksets button

3. A Worksharing dialog welcomes you to the point of no return. Accept the default values (Shared Levels And Grids and Workset1), as shown in Figure BC8.3, and click OK.
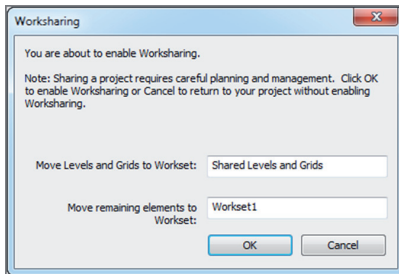

FIGURE BC8.3: The Worksharing dialog

NOTE Turning on worksets is a one-time activation process. You don't have to do this every time you want to work on the project.

4. The next dialog is named Worksets, as shown in Figure BC8.4. Your two worksets are presented in a spreadsheet format that says they're both editable and you own them. Congratulations. There is plenty to explain here.
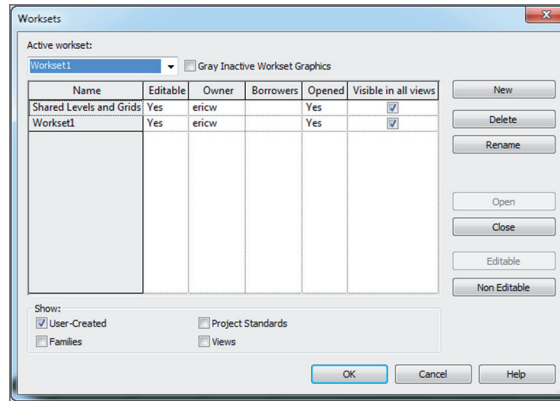
FIGURE BC8.4: The Worksets dialog

▶ Active Workset indicates the workset in which any new item will be either drawn or inserted (sort of like the current *layer* in Autodesk® AutoCAD®). There is also a Gray Inactive Workset Graphics check box. When selected, it shades items that aren't in the current workset.

▶ The Show area at the bottom of the Worksets dialog lets you add specific families, project standards, and views to the workset list (see Figure BC8.4).

5. Click OK to get back to the model.

N O T E   You can turn on additional items in the Show category. But unless there is a compelling reason to do so, *don't*—especially if this is the first project your team is taking on in Revit. Try to keep your worksets as simple and painless as possible. Just because you *can* assume ultimate control over your users doesn't mean you *have* to.

Now that you've activated the worksets and saved the model, it's time to create the central model. This will always be the next step in the process.

Creating a Central Model

Creating the central model is generally a one-time deal. You create it immediately after you enable your worksets. The individual who creates the central model needs to be your best Revit user. If not and if this procedure is done incorrectly, you'll have struggles for the entire life of the project.

OK, best Revit user, follow this procedure to learn how to create the central model:

1. Click the Application button, and choose Save As ➢ Project, as shown in Figure BC8.5.
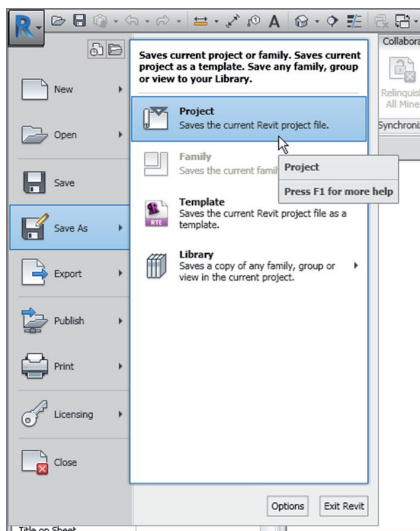

FIGURE BC8.5: Saving the project using Save As

2. In the Save As dialog, click the Options button in the lower-right corner.

3. In the File Save Options dialog, change Maximum Backups to **1** (see Figure BC8.6).

NOTE Notice that the Worksharing area isn't active. This is because you're saving the file for the first time after activating worksharing. You have no choice but to make this the central model.
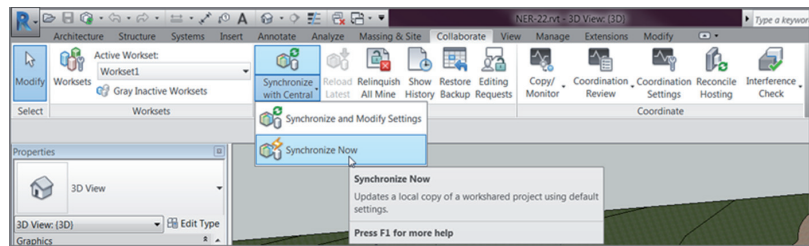
4. Click OK.
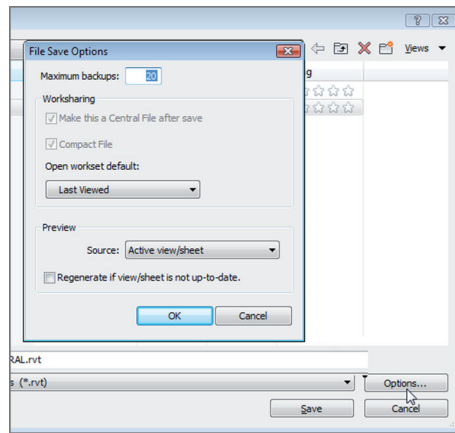
**F I G U R E   B C 8 . 6 :**   Modifying the settings before you save the file

5. Call the file **NER-CENTRAL.rvt**.

6. Click Save.

7. On the Collaborate tab, choose Synchronize With Central ➢ Synchronize Now, as shown in Figure BC8.7. Doing so saves any changes made.

F I G U R E   B C 8 . 7 :   Choosing Synchronize Now

8. On the Worksets panel in the Collaborate tab, click the Worksets button.

9. Change both worksets by choosing No in the Editable column (see Figure BC8.8).

10. Click OK. (Don't worry—I'll explain what all this means in a moment.)

11. Click the Synchronize Now button.
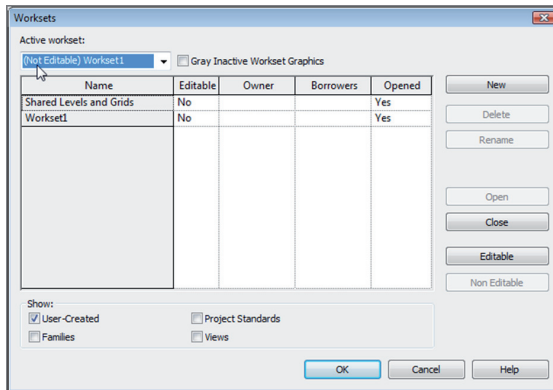
FIGURE BC8.8: Releasing the worksets by clicking No for Editable

You made these worksets not editable because, when you're working in the central file, you always want to leave it without editable worksets. That way, users don't have access to these worksets in their local models.

The next task you need to tackle in the creation of a central model is how to make a new workset and move some components onto it. In this procedure, you'll create a Site workset and move the topography and the site components to it. Follow these steps:

1. Click the Worksets button on the Collaborate tab.

2. In the Worksets dialog, click the New button, as shown in Figure BC8.9.
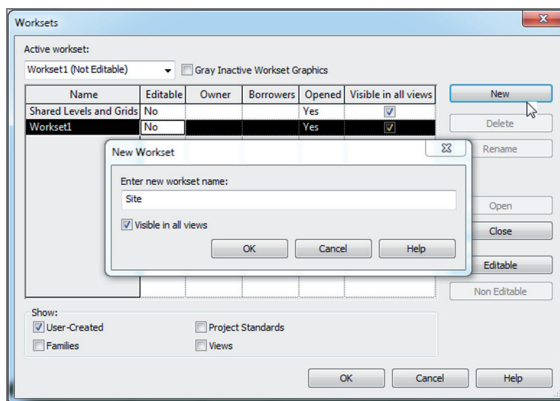
FIGURE BC8.9: Creating a new workset

3. In the New Workset dialog, call this workset **Site**, and then click OK.

4. Make sure Site has Yes in the Editable row.

5. Click OK.

6. Go to the default 3D view.

7. Select the toposurface.

8. In the Properties dialog, find the Identity Data category, locate the Workset row, and change the workset to Site.

9. Select the rest of the site components, including the split surfaces, the tree, and the shrubs.

10. Put these items in the Site workset.

11. On the Collaborate tab, click the Synchronize Now button.

12. On the Collaborate tab, click the Worksets button.

13. Make all worksets not editable, as shown in Figure BC8.10, and then click OK.

14. Click the Synchronize Now button.
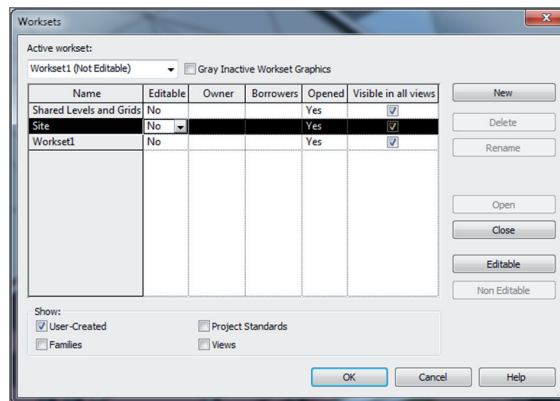
F I G U R E   B C 8 . 1 0 :   Making all worksets not editable

N O T E   You make sure all the worksets aren't editable because, in the central model, everything needs to be turned off. Look at the central model as a *hub* that serves as a conduit for passing data as your team collaborates on the project.

Next you'll create your local model. Luckily, you've done all the difficult work. Setting up the central file is the hardest part of the worksharing process, and

it's usually done by the BIM manager or at least the BIM lead on the project. The act of creating a local file is as simple as issuing a Save As.

Creating a Local File

With the central model in place, you're ready for the rest of your team to have at it. Although I keep mentioning how easy most of this stuff is, there is one danger to look out for. Please, never open the central model and stay in it, if you don't want to be thrashed by your co-workers. When you're in the process of creating a local model, you select the central model and choose the Create New Local option. If you don't make sure this check box is selected, guess what? You're sitting in the central model. If this occurs, nobody has access to synchronize with the central model. Shame on you.

This section of the chapter will guide you through the process of creating a local model. Follow these steps:

1. Close out of the central model. You'll never go back into it again.

2. In the Recent Files screen, click the Open button under the Files heading.

3. Browse to your NER_CENTRAL file.

4. Select it, but don't open it yet.

5. At the bottom of the dialog is a Create New Local check box. Make sure it's selected (see Figure BC8.11).
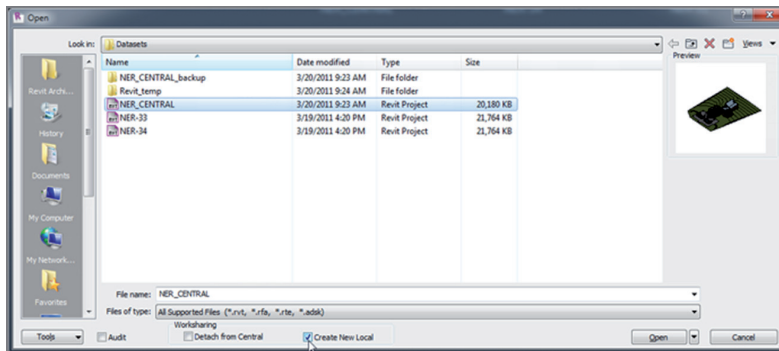
FIGURE BC8.11: Creating a new local model

6. Click Open.

Congratulations! You're the proud owner of a new Revit file that knows your name and everything.

Yes, it knows your name. You see, when you create the local model, it's yours to keep. This file resides in your personal documents folder on your `C:\` drive, with your username. Not only does your local model keep a live link back to the central model, but it also knows to whom it belongs. Revit does this for a good reason: this file represents you within the team.

Working in the Revit Shared Environment

With the local model saved, you're free to work away. As you'll recall, you created the central model with three worksets: Shared Levels And Grids, Workset1, and Site. You, as a local user, can begin working. As you start editing the model, however, Revit makes a note that you're borrowing a workset. Revit also notes that you physically own the item you're editing.

Borrowing? Let's stop and look at what this means. In Revit worksharing, you can be either a borrower of a workset or an owner of a workset. If you're a borrower, the rest of the design team can make modifications to elements in the workset but not to the specific element on which you're working.

The objective of the next exercise is to make a modification to the site and investigate what happens in the Worksets dialog. Follow these steps:

1. Go to the default 3D view.

2. Delete one of the shrubs. (Remember, you put the shrubs on the Site workset.)

3. On the Collaborate tab, click the Worksets button.

4. In the Worksets dialog, notice that you're now borrowing the Site workset, as shown in Figure BC8.12. Click OK.
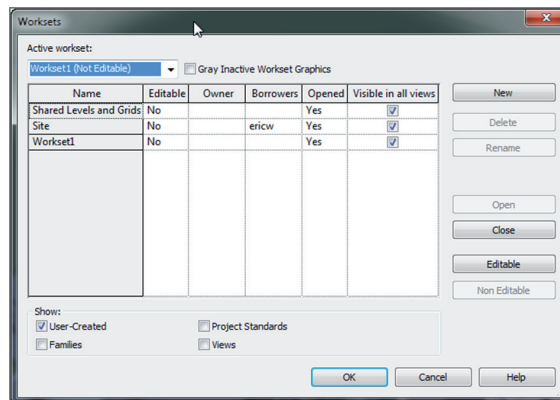

FIGURE BC8.12: Borrowing a workset

Because there is no good way to have you go through this exercise, you can take your hand off the mouse and read for a few paragraphs. If you're at work and have another willing participant, have them create their own local model, and ask them to start making edits to the model.

The Site workset still says No for Editable. This means that if Cassidy begins working on the shrubs right next to the one you just deleted, she can do so. You don't own the workset—you're just borrowing it. If you change the shrub to a tree (or make any modifications whatsoever to the shrub), Cassidy can't make any edits to the new tree. When she tries to edit the tree, she gets the error shown in Figure BC8.13. She can then place a request that Eric will see at the bottom of his screen.
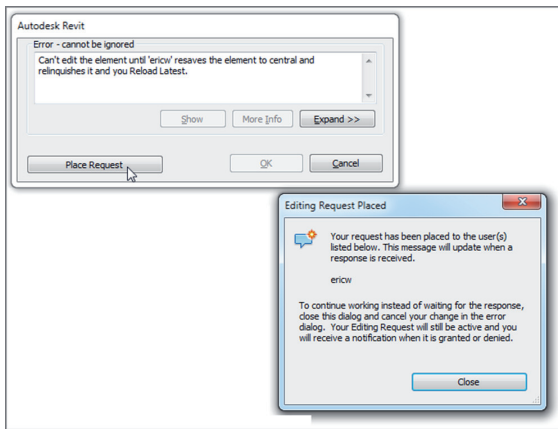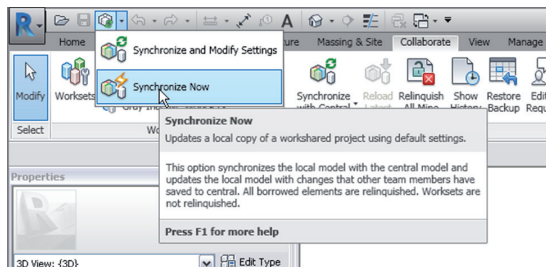

FIGURE BC8.13: Eric is modifying the element.

GET IN SYNC

After you've created the local model, you can see what others are doing, as well as publish what you're doing for the other users. To do so, click the Synchronize Now button on the Quick Access toolbar: you and your users are now in sync.
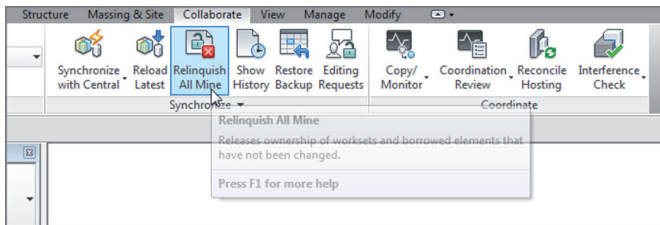
After the request is placed, Eric sees it pop up at the bottom of the screen, as shown in Figure BC8.14.
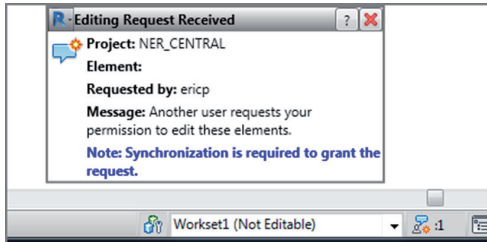
F I G U R E   B C 8 . 1 4 :   Please release me.

When you see that someone is begging you to release an item, you get to do the right thing and grant the request. You do this by clicking the Relinquish All Mine button on the Collaborate tab, as shown in Figure BC8.15.

F I G U R E   B C 8 . 1 5 :   The Relinquish All Mine button

See? You *can* all get along! (Until you pull the next move.) Suppose you don't want anybody else on the team to modify anything in the entire Site workset. There are times when this will occur. To learn how to do this, follow these steps:

1. On the Collaborate tab, click the Worksets button.

2. In the Site workset, select Yes in the Editable field, as shown in Figure BC8.16. Although Cassidy is a borrower, you can still take over the workset.
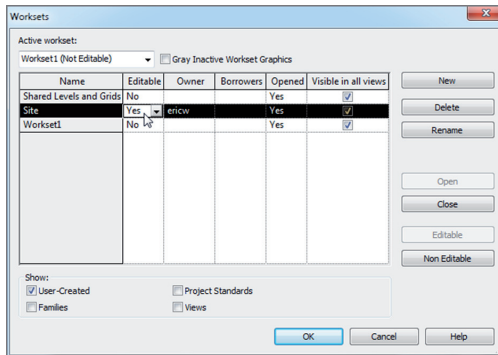
3. Click OK.

FIGURE BC8.16: Occupying the entire workset

N O T E   If Cassidy is in the middle of an active edit on any items in the workset, you can't take over. You have to place an editing request to her. See? You should have given her the shrub when she asked for it earlier!

Eric a.k.a. Cassidy

If Eric decides to not relinquish an item to Cassidy and then decides to close his model and go on vacation (ignoring repeated warnings), you have a situation, don't you? His office door is locked, and you don't know his password. What you can do in these trying times is click the Options button at the bottom of the Application menu. Then select the General tab, and change the username to the offender's name. You can now open Eric's local file and relinquish the worksets, as shown here:
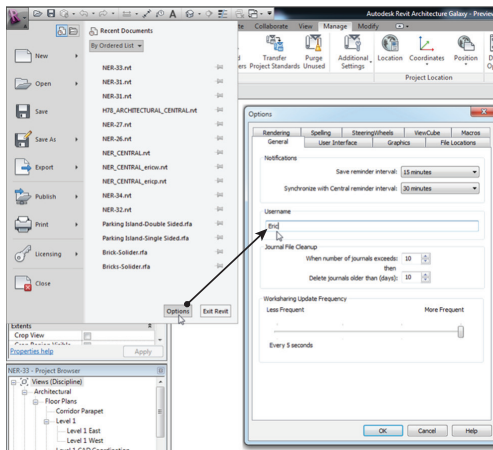
And so the workday goes in an environment of sharing and getting along. Speaking of environment, suppose you could not care less about the site. There is a good chance that you don't even want to see it. Well, you're in luck. Because you have worksets enabled, you can make it so that Revit doesn't even load the site into your local model.

Loading or Not Loading a Workset

I'm making a big deal out of a simple task only because it can speed up your performance—nothing can bog down a Revit model more than a huge site complete with landscaping and maybe an image.

Switching the Opened status to No in a workset forces Revit not to load the workset into your model. If you make an edit that has an influence on the site, don't worry: Revit will take care of that in the central model.

To turn off the site, follow this procedure:

1. Click the Worksets button on the Collaborate tab.

2. In the Site workset, change the Opened status to No, as shown in Figure BC8.17.
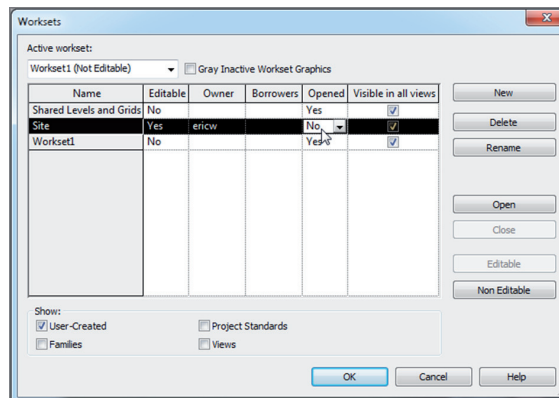
FIGURE BC8.17: Changing the Opened status to No

3. Click OK. Notice something missing?

Having the ability to turn off large portions of a model can be a tremendous advantage as you move forward in Revit. You need to exercise caution, however. You could easily deceive yourself into thinking that some portions of the model haven't been created yet.

Detaching from Central

You can also detach a model from central. This is sometimes useful when things run amok—and they will, from time to time. Detaching from central allows you to strip a model of all its owners and borrowers. You can then save back over the top of the existing central model so that everyone can get back to enjoying their Revit experience.

Let's look at some maintenance procedures:

1. Synchronize with Central, and close out of any model you may be in currently.

2. In Revit, click the Open button.

3. Browse to the central model.

4. Instead of selecting Create New Local, click Detach From Central, as shown in Figure BC8.18.
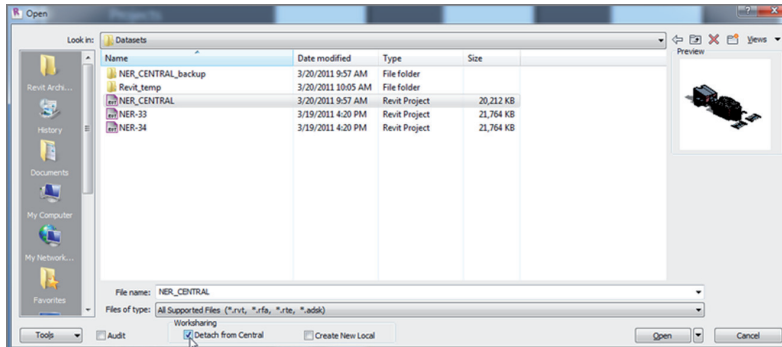
FIGURE BC8.18: Detaching from Central

5. Click Open.

6. You can turn off all file sharing and put the model back into a single-user state. In this instance, however, click Detach And Preserve Worksets, as shown in Figure BC8.19.

7. On the Quick Access toolbar, click the Save button.

8. Revit doesn't know what to save the file as, so it gives you the choice. Click the Options button in the lower-right corner.
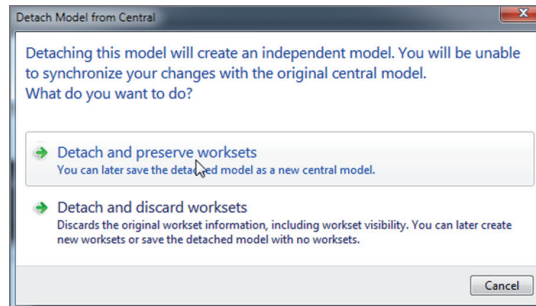
FIGURE BC8.19: Preserving the worksets

9. Make This A Central File After Save is selected and grayed out. This is what you want to see.

10. Click OK.

11. Save right over the top of NER_CENTRAL.rvt.

12. You've just safely saved the day.

13. Tell *all* users that they need to make new local models.

MAKE IT A HABIT!

Every time you close your local file, you should make a new one the next time you go into the model. Look at your local model as a disposable one-time-use kind of thing. Don't keep reopening the same local file or it will start causing difficulties. You'll find that your local model becomes incompatible with the central model. Worse yet, sometimes if you synchronize an old local model, you run the risk of reverting the central model to an earlier version. When you create a new local, Revit will warn you that you're about to overwrite the existing local file. This is fine, and you should do so.

Here we are at the end of the bonus chapters! As I mentioned at the beginning, this book is meant to serve as a step-by-step tutorial as well as a desk reference. There are also classroom-style datasets and training materials on the book's web page. As always, please feel free to contact me directly at ewing@csos.com.

Are You Experienced?

Now you can...

✔ **activate worksharing in a Revit project**

✔ **create a central file**

✔ **create a local file**

✔ **manipulate worksets**