

**AUTODESK® REVIT® 2017
FOR ARCHITECTURE**

NO EXPERIENCE REQUIRED

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Eric Wing



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*To my offspring,
Cassidy and Jacob.
Thanks for waiting
patiently on the
weekends as I
work away.*

ACKNOWLEDGMENTS

Before I ever even pondered writing a technical book such as this one, I was the guy who bought them and studied them from the front to the back. This specific page, however, I always thought was somewhat superfluous . . . bordering on self-indulgent. As I sit here now, after finishing 14 chapters (and 8 online bonus chapters), I can categorically say that the 750-word allotment only scratches the surface of the list of people close to me who have been tremendously inconvenienced by my unavailability and, conversely, by my temperament during the rare occasions when I was available. Of course, topping this list are my wife, Jennifer, and the kids, Cassidy and Jacob. You guys always come through for me, and there is no way I could have written a single chapter without your support; and yes, you get to go to Disney World again like the last 10 years!

Also, I'd like to thank Grandma, Baci, and Dziadziu for constantly watching and being with the kids.

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ABOUT THE AUTHOR

Eric Wing lives in Syracuse, New York, with his family. He is the BIM services manager for C&S Companies, which is a full-service engineering/architectural firm headquartered in Syracuse. Eric's degree is in construction engineering; he earned it from Delhi University. In addition to writing this book, Eric has written *Autodesk® Revit® Architecture: No Experience Required 2010* through *2017* and *Revit Structure Fundamentals 2010*, and he co-wrote *Mastering Revit Structure 2009*. Eric also authors Revit, AutoCAD, and Navisworks videos for Lynda.com. Eric is an adjunct professor at Syracuse University. In addition to his writing, Eric is a globally recognized speaker, consultant, and trainer.

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INTRODUCTION

Why do you need a big, thick technical book? Well, it's true that the best way to learn is to just do it. But do you ever just *do* it and not fully *get* it? Books can serve either as the basis for learning or as supplements for your learning. No one book will teach you everything you need to know about a specific application, but you may never learn everything you need to know about an application without a book. When written appropriately, the book you purchase is there to start you off using good practices. If you have already begun, the book serves as a desktop reference. And last, a book can serve as confirmation that you're approaching an application in the correct manner.

The Autodesk® Revit® Architecture tool is no exception. Although this application has proven to be easy to learn and easy to get a feel for, it's still a deep, sometimes complicated application with many procedures that require step-by-step instructions to fully understand. And to be honest, some of these features just don't work in the real world.

This book has been written by an author who is "in the trenches" using Revit Architecture, Revit Structure, and Revit MEP simultaneously every day. So, yes, you could figure out all this information on your own, but sometimes it's nice to let someone else figure it out for you and pass that knowledge along to you in the form of a book.

Instead of lengthy paragraphs of text that ultimately lead to nontangible information, this book addresses each subject in a step-by-step approach with more than 1,000 pictures and screenshots to make sure you're on track.

Also, this book also uses an actual project and relates to real-world scenarios. As you're following the step-by-step procedures in the book, you'll be encouraged to try many techniques on your own and also to embellish the procedure to fit your own needs. If you would rather stick to the instructions, this book allows you to do so as well. The book's project uses a five-story office building with a link (corridor) to a three-story multiuse building. The book's website provides the model (plus additional families) you'll need for each chapter so that you can open the book, jump to your chapter of interest, and learn something! In addition, this book is flexible enough that you can substitute your own project if you don't want to follow the book's examples.

Although it has over 700 pages, this book doesn't waste time and space with examples of other people's triumphs but is designed for you to open it to any random page and learn something.

Who Should Read This Book

Autodesk® Revit® 2017 for Architecture: No Experience Required. Does that mean that if you've used Revit, you won't find this book advanced enough? No. This book is designed for anyone who wants to learn more about Revit Architecture. The book is also intended for architects, architectural designers, and anyone who is using a CAD-based platform to produce architectural-based drawings.

What You Need

BIM can be tough on hardware. This book recommends that you have 8 GB of RAM with a 4 GHz processor. You should also be running at least 1 GB for your graphics. If you're under these specifications (within reason), in some cases you'll be fine. Just realize, however, that when your model is loaded, your system may start slowing down and crashing.

All Revit applications are intended to run on a PC-based system. Windows 10 is recommended.

FREE AUTODESK SOFTWARE FOR STUDENTS AND EDUCATORS

The Autodesk Education Community is an online resource with more than five million members that enables educators and students to download—for free (see website for terms and conditions)—the same software used by professionals worldwide. You can also access additional tools and materials to help you design, visualize, and simulate ideas. Connect with other learners to stay current with the latest industry trends and get the most out of your designs. Get started today at www.autodesk.com/joinedu.

What Is Covered in This Book

Autodesk® Revit® 2017 for Architecture: No Experience Required covers the full gamut of using the software and is organized as follows:

Chapter 1: The Autodesk Revit World This chapter introduces you to the Revit Architecture 2017 interface and jumps right into modeling your first building.

Chapter 2: Creating a Model This chapter begins with placing walls, doors, and windows. It's designed to point you in the right directions in terms of using reference planes and all-around best practices.

Chapter 3: Creating Views This chapter shows you how to navigate the Revit Project Browser and create new views of the model. Also, you'll learn how to create specific views such as elevations, sections, callouts, plans, and, our favorite, 3D perspectives.

Chapter 4: Working with the Autodesk Revit Tools In this chapter, you'll learn how to use the everyday drafting tools needed in any modeling application. You'll become familiar with such actions as trim, array, move, and copy. Although it seems remedial, this is one of the most important chapters of the book. It gets you on your way to the "Revit feel."

Chapter 5: Dimensioning and Annotating In this chapter, you'll learn how to annotate your model. This includes adding and setting up dimensions, adding and setting up text, and using dimensions to physically adjust objects in your model.

Chapter 6: Floors Yes! Just floors. In this chapter, you'll learn how to place a floor. You'll also learn how to add materials to a floor and how to pitch a floor to a drain.

Chapter 7: Roofs In this chapter, we'll discuss the ins and outs of placing roofs. You'll learn how to model flat roofs, sloping roofs, pitched roofs, and roof dormers. In addition, you'll learn how to pitch roof insulation to roof drains.

Chapter 8: Structural Items In this chapter, you'll delve into the structural module of Revit Architecture. The topics we'll cover include placing structural framing, placing structural foundations, and creating structural views.

Chapter 9: Ceilings and Interiors This chapter focuses predominately on interior design. Placing and modifying ceilings will be covered as well as adding specific materials to portions of walls and floors. You'll also learn how to create soffits.

Chapter 10: Stairs, Ramps, and Railings This chapter focuses on the creation of circulation items. You'll learn how to create a simple U-shaped multistory staircase to start; then you'll move on to creating a custom winding staircase. From there, you'll learn how to create a custom wood railing. You'll add ramps to the model in this chapter, as well.

Chapter 11: Detailing In this chapter, you'll learn how to draft in Revit. The procedures allow you to draft over the top of a Revit-generated section or create your own drafting view independent of the model. You'll also learn how to import CAD to use as a detail.

Chapter 12: Creating Specific Views and Match Lines In this chapter, you'll learn how to take advantage of the multitude of views you can create and how to control the visibility graphics of those views to create plans such as furniture and dimensional plans.

Chapter 13: Creating Sheets and Printing This chapter explores how to produce construction documents using Revit. The procedures include creating a new drawing sheet, adding views to a sheet, creating a title block and a cover sheet, and plotting these documents.

Chapter 14: Creating Rooms and Area Plans The focus of this chapter is creating rooms and areas. The procedures lead you through the placement of rooms, and you'll learn how to set the properties of those rooms. This chapter also discusses how to create room separators and how to create gross area plans. This chapter also guides you through the creation of a color-fill floor plan.

Bonus Chapter 1: Advanced Wall Topics This chapter focuses specifically on the creation of compound walls. By using the Edit Assembly dialog, you'll learn how to add materials, split walls, and add sweeps and reveals such as parapet caps, brick ledges, and brick reveals. Creating stacked walls is also addressed.

Bonus Chapter 2: Creating Families This chapter focuses on the topic of creating families. The procedures start with a simple wall-sweep family and then move on to creating a door family with an arched header. You'll also learn how to create an in-place family.

Bonus Chapter 3: Site and Topography In this chapter, you'll learn how to place a topographical surface into your model. You'll see how to control point-by-point elevations in your site. Splitting and then creating subregions to create swales and berms will be covered. You'll also learn how to utilize an imported CAD site plan and place a toposurface over the top of the CAD lines. Finally, you'll explore rotating your project to true north.

Bonus Chapter 4: Rendering and Presentation In this chapter, you'll learn how to use the Revit rendering tools built into the Revit GUI. This chapter also shows you how to create walkthroughs as well as solar studies.

Bonus Chapter 5: Schedules and Tags In this chapter, you'll start bringing BIM into your model. This chapter focuses on adding schedules and adding annotation tags to specific objects and materials in your model. Most important, in this chapter you'll learn how your model is parameter driven and how these parameters influence the annotations.

Bonus Chapter 6: Importing and Coordinating Models This chapter focuses on the ins and outs (pun intended) of importing and exporting CAD formats

as well as linking Revit Structure models. The procedures include configuring CAD layering settings as well as linking and importing AutoCAD for plans and sections. You'll also learn how to link Revit Structure and perform a Copy/Monitor operation as well as use Revit interference detection.

Bonus Chapter 7: Phasing and Design Options This chapter explains how to create an existing floor plan and then moves through demolition into new construction. You'll also learn how to create alternates using design options.

Bonus Chapter 8: Project Collaboration In this chapter, you'll learn how to use Revit in a multiuser environment. The procedures in the chapter will lead you through activating worksharing and then creating a central model. You'll move to creating local user files as well as saving to the central model and placing requests to relinquish.

Included with the book are Revit Architecture project files that follow along with the instructions. Each chapter has one or more actual Revit models that have been completed up to the point of the instruction in that specific chapter—or even that specific section of the chapter—to allow you to jump in at any moment. Also included with the book are custom families that accompany the lessons as well as additional families and projects that you can download as a bonus. You can download the accompanying files at www.sybex.com/go/revit2017ner.

Contacting the Author

As you're reading along, please feel free to contact me at ewing@cscos.com or ewing@syr.edu and I will be glad to answer any question you have. In addition, if you would like me to come speak or train at your firm, feel free to give me a shout. You can visit my company's website at www.cscos.com.

Sybex strives to keep you supplied with the latest tools and information you need for your work. Please check the website at www.sybex.com/go/revit2017ner, where I'll post additional content and updates that supplement this book if the need arises.

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