

Autodesk Official Training Guide
Essentials

**Autodesk®
Revit®**

Structure 2010

Learning **Autodesk® Revit®** Structure 2010

Hands-on exercises demonstrate the concepts of building information modeling and the tools for parametric design, analysis, and documentation.

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Introduction

Welcome to the *Learning Autodesk Revit Structure 2010* Autodesk Official Training Guide, a training guide for use in Authorized Training Center (ATC) locations, corporate training settings, and other classroom settings.

Although this guide is designed for instructor-led courses, you can also use it for self-paced learning. The guide encourages self-learning through the use of the Autodesk Revit Structure 2010 Help system.

This introduction covers the following topics:

- Course objectives
- Prerequisites
- Using this guide
- CD contents
- Completing the exercises
- Installing the exercise data files from the CD
- Imperial and metric datasets
- Notes, tips, and warnings
- Feedback

This guide is complementary to the software documentation. For detailed explanations of features and functionality, refer to the Help in the software.

Course Objectives

After completing this guide, you will be able to:

- Describe building information modeling methodology and its benefits.
- Use different parts of the Revit Structure user interface and work with different types of structural elements and families.
- Use the different views listed in the Project Browser, control the visibility and graphical representation of objects in a structural model, and work with elevation, section, and 3D views.
- Set up a project and transfer standards between projects, add and modify levels in a structural model, and create and modify grids.
- Work with structural columns and structural walls.
- Add floor framing using beams, work with beams and beam systems, add and edit structural steel moment and braced frames, and work with concrete beams.
- Add floors in structural models, create a roof, and add structural framing to the roof for support.
- Add foundations to a structural model.
- Create stairs and various types of ramps.
- Add dimensions and spot dimension symbols, work with text and tags, create a legend with notes, annotation symbols, and legend components, and work with different types of schedules.
- Work with detail views, add 3D and 2D reinforcement elements and detail components to concrete detail views, and work with drafting views and CAD details.
- Work with sheets and titleblocks, print sheets, and export Revit Structure content to CAD formats.

Prerequisites

This guide is designed for new users of Revit Structure.

It is recommended that you have a working knowledge of:

- Basic structural engineering and design skills.
- Microsoft® Windows® 2000, Microsoft® Windows® XP, or Microsoft® Windows® Vista.

Using This Guide

The lessons are independent of each other. However, it is recommended that you complete the lessons in the order that they are presented unless you are familiar with the concepts and functionality described in those lessons.

Each chapter contains:

- **Lessons**
Usually two or more lessons in each chapter.
- **Exercises**
Practical, real-world examples for you to practice using the functionality you have just learned. Each exercise contains step-by-step procedures and graphics to help you complete the exercise successfully.

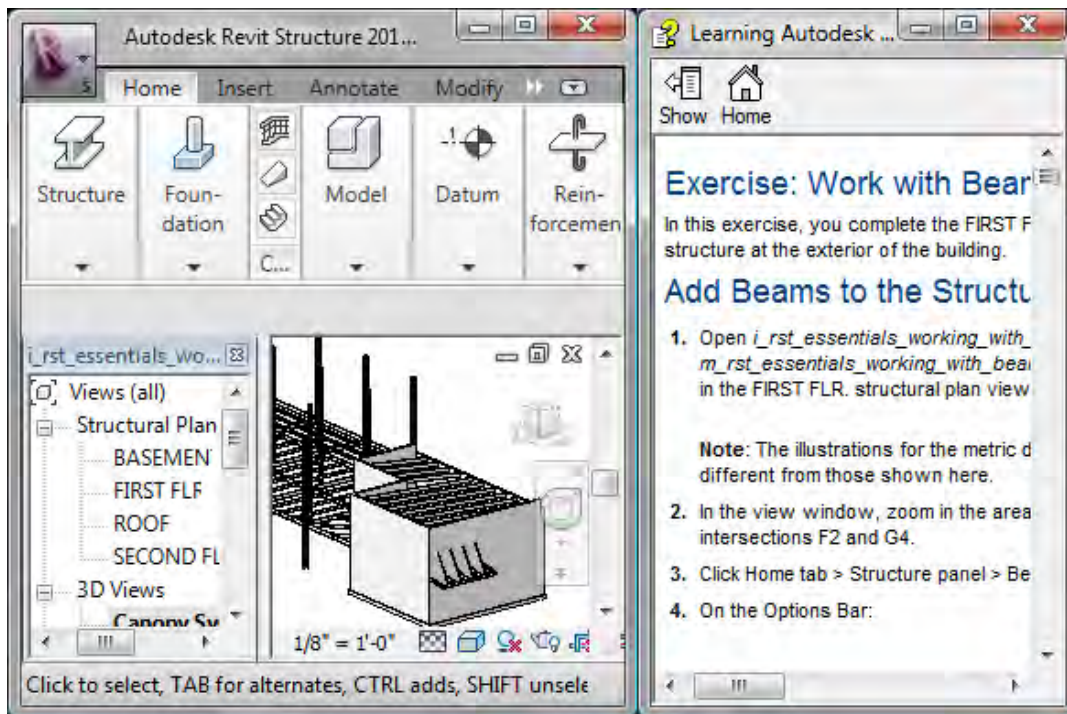
CD Contents

The CD attached to the back cover of this book contains all the data and drawings you need to complete the exercises in this guide.

Completing the Exercises

You can complete the exercise in two ways: using the book or on screen.

- **Using the book**
Follow the step-by-step exercises in the book.
- **On screen**
Click the Learning Autodesk Revit Structure 2010 AOTG icon on your desktop, installed from the CD, and follow the step-by-step exercises on screen. The on screen exercises are the same as those in the book. The onscreen version has the advantage that you can concentrate on the screen without having to glance down at your book.



After launching the onscreen exercises, you might need to alter the size of your application window to align both windows.

Installing the Exercise Data Files from the CD

To install the data files for the exercises:

1. Insert the CD.
2. When the setup wizard begins, follow the instructions on screen to install the data.
3. If the wizard does not start automatically, browse to the root directory of the CD and double-click *Setup.exe*.

Unless you specify a different folder, the exercise files are installed in the following folder:

C:\Autodesk Learning\Autodesk Revit Structure 2010\Learning

After you install the data from the CD, this folder contains all the files necessary to complete each exercise in this guide.

Imperial and Metric Datasets

In exercises that specify units of measurement, alternative files are provided as shown in the following example:

- Open *i_export_ifc.rvt* (imperial) or *m_export_ifc.rvt* (metric).

In the exercise steps, the imperial value is followed by the metric value in parentheses as shown in the following example:

- For Length, enter **13'2" (4038 mm)**.

For exercises with no specific units of measurement, files are provided as shown in the following example:

- Open *c_boundary_conditions.rvt* (common).

In the exercise steps, the unitless value is specified as shown in the following example:

- For Length, enter **400**.

Notes, Tips, and Warnings

Throughout this guide, notes, tips, and warnings are called out for special attention.



Notes contain guidelines, constraints, and other explanatory information.



Tips provide information to enhance your productivity.



Warnings provide information about actions that might result in the loss of data, system failures, or other serious consequences.

Feedback

We always welcome feedback on Autodesk Official Training Guides. After completing this guide, if you have suggestions for improvements or if you want to report an error in the book or on the CD, please send your comments to learningtools@autodesk.com.