Table of Contents

Dedication iii
Preface xix

Chapter 1: Introduction to Autodesk Revit 2025 for Architecture

Introduction 1-2
Autodesk Revit as a Building Information Modeler 1-2
Basic Concepts and Principles 1-3
    Understanding the Parametric Building Modeling Technology 1-4
    Terms Used in Autodesk Revit 1-4
    Creating a Building Model using Parametric Building Elements 1-6
    Visibility/Graphics Overrides, Scale, and Detail Level 1-7
    Extracting the Project Information 1-8
    Creating an Architectural Drawing Set 1-8
    Creating an Unusual Building Geometry 1-8
    Flexibility of Creating Special Elements 1-8
    Creating Structural Layouts 1-9
    Working on Large Projects 1-9
    Working in Large Teams and Coordinating with Consultants 1-9
Starting Autodesk Revit 2025 Enhanced 1-9
User Interface 1-12
    Invoking Tools 1-13
    Title Bar 1-13
    Ribbon 1-13
    Status Bar 1-17
    View Control Bar 1-17
    Options Bar 1-17
    Type Selector 1-17
    Drawing Area 1-18
    Project Browser 1-18
    Keyboard Accelerators 1-19
    Properties Palette 1-19
Dialog Boxes 1-19
Multiple Document Environment 1-20
Interoperability of Autodesk Revit 1-21
Building Information Modeling and Autodesk Revit 1-22
Autodesk Revit 2025 Help 1-22
    Using the Revit 2025 Help 1-23
Worksharing Using Revit Server 1-23
Autodesk Construction Cloud 1-25
Self-Evaluation Test 1-25

Chapter 2: Starting an Architectural Project

Introduction 2-2
Starting a New Architectural Project 2-2
Project Units 2-4
- Angle Unit 2-4
- Area Unit 2-4
- Length Unit 2-5
- Mass Density Unit 2-6
- Slope Unit 2-6
- Speed Unit 2-6
- Time Unit 2-6
- Volume Unit 2-6
- Currency Unit 2-6

Snaps Tool 2-7
- Dimension Snaps Area 2-8
- Object Snaps Area 2-8
- Temporary Overrides Area 2-9

Saving a Project 2-9
- Saving the Project File 2-9
- Using the Save Tool 2-11

Configuring Global Settings 2-12
- General Tab 2-12
- User Interface Tab 2-14
- Graphics Tab 2-16
- Hardware Tab 2-16
- File Locations Tab 2-17
- Rendering Tab 2-17
- Check Spelling Tab 2-18
- SteeringWheels Tab 2-18
- ViewCube Tab 2-20
- Macros and Cloud Model Tab 2-21

Closing a Project 2-22
Exiting Revit 2-22
Opening an Existing Project 2-22
- Opening an Existing Project Using the Open Tool 2-22

Model Display Tools 2-26
- Using the Zoom Tools 2-26
- Using the Orient Options 2-28
- Navigation Tools 2-28
- Other Display Options 2-32

Tutorial 1 2-33
Tutorial 2 2-37
Self-Evaluation Test 2-40
Review Questions 2-41
Exercise 1 2-42
Exercise 2 2-43
Exercise 3 2-43

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Chapter 3: Placing Architectural Walls

Introduction 3-2
Creating a Building Project 3-2
    Sequence of Creating a Building Model 3-2
    Understanding Wall Types 3-3
    Creating Architectural Walls 3-4
Creating Slanted Walls 3-18
Creating Tapered Walls 3-18
Working With Stacked Walls 3-19
    Creating a Stacked Wall 3-19
Adding Interior Walls 3-19
Adding Wall Sweeps and Reveals 3-22
    Wall Sweeps 3-22
    Wall Reveals 3-24
Tutorial 1 3-27
Tutorial 2 3-33
Tutorial 3 3-39
Tutorial 4 3-45
Tutorial 5 3-50
Self-Evaluation Test 3-59
Review Questions 3-60
Exercise 1 3-61
Exercise 2 3-61
Exercise 3 3-62
Exercise 4 3-63

Chapter 4: Using Basic Building Components-I

Introduction 4-2
Adding Doors in a Building Model 4-2
    Adding Doors 4-2
    Understanding Door Properties 4-3
    Adding a Door to a Wall 4-8
    Adding a Door to a Slanted Wall 4-10
Adding Windows to a Building Model 4-10
    Adding Windows 4-10
    Understanding Window Properties 4-12
    Adding a Window to a Wall 4-14
    Adding a Window to a Slanted Wall 4-16
    Adding a Window to a Tapered Wall 4-16
Doors and Windows as Wall Openings 4-16
Openings in the Wall 4-16
Tutorial 1 4-17
Tutorial 2 4-28
Self-Evaluation Test 4-34
Review Questions 4-35

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Exercise 1 4-36
Exercise 2 4-37
Exercise 3 4-38
Exercise 4 4-39

Chapter 5: Using the Editing Tools

Introduction 5-2
Creating a Selection Set 5-2
Selecting Multiple Elements 5-2
Isolating Elements Using the Selection Box 5-3
Selecting Elements Using the Advanced Tools 5-3
Restoring the Selection 5-4
Using the Filter tool 5-5
Moving and Copying Elements 5-7
Moving the Elements by Changing the Temporary Dimensions 5-7
Moving the Elements by Dragging 5-7
Moving the Elements by Dragging the End-Joint Components 5-8
Moving the Elements by Selecting and Dragging 5-8
Using the Move Tool 5-9
Using the Copy Tool 5-10
Trimming and Extending Elements 5-10
Using the Trim/Extend to Corner Tool 5-11
Using the Trim/Extend Single Element Tool 5-12
Using the Trim/Extend Multiple Elements Tool 5-13
Cutting and Pasting Elements 5-14
Cutting Elements 5-14
Copying Elements to the Clipboard 5-14
Pasting Elements from the Clipboard 5-14
Rotating Elements 5-15
Mirroring Elements 5-17
Mirroring Elements using the Mirror - Pick Axis Tool 5-17
Mirroring Elements using the Mirror - Draw Axis Tool 5-18
Creating an Offset 5-19
Creating an Array of Elements 5-21
Linear 5-21
Radial 5-23
Matching Elements 5-25
Aligning Elements and Working with Constraints 5-25
Deleting Elements 5-26
Splitting Elements 5-27
Splitting with Gap 5-28
Splitting Faces 5-28
Creating Parts 5-29
Resizing Created Parts 5-30
Changing the Material of Created Parts 5-30
Dividing Parts 5-30

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Grouping Elements 5-31
Creating Groups by Selecting Elements in Project Views 5-32
Creating Groups Using the Group Editor 5-32
Creating a Detail Group 5-33
Creating Model and Attached Detail Groups 5-33
Placing Groups 5-34
Swapping Groups 5-35
Modifying Groups 5-35
Excluding Elements from a Group 5-36
Saving and Loading Groups 5-36
Converting Groups into Linked Models 5-37
Deleting Groups 5-38
Creating Similar Elements 5-38
Pinning and Unpinning Elements 5-39
Scaling Elements 5-39
Using Diagnostic Tools 5-40
Measuring Distance between References and Along an Element 5-40
Selecting Elements Using the Element ID 5-41
Assemblies 5-42
Creating Assemblies 5-42
Editing Assemblies 5-42
Creating Assembly Views and Sheets 5-43
Tutorial 1 5-43
Tutorial 2 5-49
Tutorial 3 5-55
Self-Evaluation Test 5-64
Review Questions 5-65
Exercise 1 5-66
Exercise 2 5-66
Exercise 3 5-67
Exercise 4 5-68
Exercise 5 5-69

Chapter 6: Working with Datum Plane and Creating Standard Views

Introduction 6-2
Working with Levels 6-2
Understanding Level Properties 6-3
Adding Levels 6-6
Modifying Level Parameters 6-8
Hiding Elements in a View 6-10
Controlling the Visibility of Levels 6-10
Working with Grids 6-11
Creating Grids 6-11
Modifying Grids 6-16
Grid Properties 6-17
Customizing the Grid Display 6-20
Controlling the Visibility of Grids 6-21

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Reference Planes 6-22
Work Planes 6-22
Setting a Work Plane 6-22
Controlling the Visibility of Work Planes 6-23
Working with Project Views 6-24
Viewing a Building Model 6-24
Visibility/Graphic Overrides of an Element 6-25
Visibility/Graphic Overrides of an Element Category 6-26
Making Elements Transparent 6-27
Using the Temporary Hide/Isolate Tool 6-28
Plan Views 6-29
Elevation Views 6-30
Section Views 6-33
Using the Scope Box Tool 6-38
Tutorial 1 6-40
Tutorial 2 6-48
Tutorial 3 6-55
Self-Evaluation Test 6-60
Review Questions 6-60
Exercise 1 6-61
Exercise 2 6-62
Exercise 3 6-63

Chapter 7: Using Basic Building Components-II

Introduction 7-2
Creating Architectural Floors 7-2
Sketching the Floor Boundary 7-4
Creating Roofs 7-7
Creating Roofs by Footprint 7-7
Creating Roofs by Extrusion 7-9
Modifying Roof Properties and Editing Shapes 7-13
Shape Editing Tools for Floors 7-17
Modify Sub Elements 7-17
Add Point 7-18
Add Split Line 7-18
Pick Supports 7-19
Reset Shape 7-19
Creating Ceilings 7-19
Creating an Automatic Ceiling 7-19
Sketching a Ceiling 7-20
Using the Pick Walls Method 7-21
Modifying a Ceiling 7-21
Rooms 7-24
Adding Rooms 7-24
Calculating Room Volumes 7-27
Cutting Openings in a Wall, Floor, Roof, and Ceiling 7-28

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Joining Walls with Other Elements 7-30
Using the Attach Top/Base and Detach Top/ Base Tools 7-31
Tutorial 1 7-32
Tutorial 2 7-37
Tutorial 3 7-46
Self-Evaluation Test 7-50
Review Questions 7-51
Exercise 1 7-52
Exercise 2 7-52
Exercise 3 7-53

Chapter 8: Using Basic Building Components-III

Introduction 8-2
Using Components in a Project 8-2
Adding Components 8-2
Adding Stairs 8-6
Run Tool 8-6
Landing Tool 8-10
Support Tool 8-12
Modifying Stairs Properties 8-14
Adding Railings 8-17
Adding Railings by Sketching the Path 8-17
Adding Railings by Placing on Stair/Ramp 8-18
Modifying Railing Properties 8-18
Modifying Railing Joints 8-19
Adding Ramps 8-20
Using Curtain Systems in a Project 8-21
Creating a Curtain Wall Using the Wall: Architectural Tool 8-22
Creating a Curtain Wall by Picking Lines 8-23
Creating a Curtain System on a Face 8-24
Adding Curtain Grids 8-25
Modifying Curtain System Panels 8-26
Adding Doors and Awnings to a Curtain System 8-27
Adding Mullions 8-27
Copying Elements from One Level to Another 8-28
Using the Pasting Tools 8-28
Tutorial 1 8-29
Tutorial 2 8-37
Tutorial 3 8-41
Tutorial 4 8-50
Self-Evaluation Test 8-56
Review Questions 8-57
Exercise 1 8-58
Exercise 2 8-60

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Chapter 9: Adding Site Features

Introduction 9-2
Working with Site Features 9-2
- Creating a Toposolid 9-3
- Modifying Toposolid and Sub-Element 9-3
- Creating Subdivision 9-7
- Simplifying Toposolids New 9-7
- Excavating Toposolids New 9-8
- Grading Toposolid 9-8
- Creating Topography from Imported Data 9-9

Setting the Contour Display 9-10
Adding Property Lines 9-10
- Sketching Property Lines 9-11
- Creating Property Lines Using Distances and Bearings 9-11

Adding Site Components 9-13
Adding Parking Components 9-15
Adding Labels to Contours 9-15
Tutorial 1 9-16
Self-Evaluation Test 9-31
Review Questions 9-31
Exercise 1 9-32
Exercise 2 9-33

Chapter 10: Using Massing and Family Tools

Introduction 10-2
Understanding Massing Concepts 10-2
Creating the Massing Geometry 10-3
- Creating a Massing Geometry in the Family Editor 10-4
- Editing a Massing Geometry in the Family Editor 10-11
- Creating Cuts in a Massing Geometry by Using the Family Editor 10-12
- Placing the Massing Geometry in a Project 10-14
- Creating the In-Place Mass in a Project 10-15

Massing in Conceptual Design Environment 10-16
- Interface of the Conceptual Design Environment 10-16
- Creating Masses in Conceptual Design Environment 10-17

Creating Building Elements from the Massing Geometry Using Building Maker Tools 10-22
- Creating Walls by Selecting Faces 10-22
- Creating Floors by Selecting Faces 10-23
- Creating Roofs by Selecting Faces 10-23
- Creating Curtain Systems by Selecting Faces 10-24
- Controlling the Visibility of a Massing Geometry 10-25
- Adding other Building Elements 10-25

Creating Families 10-26
- Creating In-Place Families 10-27
- Creating Families Using Standard Family Templates 10-27

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Tutorial 1 10-36
Tutorial 2 10-52
Self-Evaluation Test 10-66
Review Questions 10-67
Exercise 1 10-68
Exercise 2 10-70

Chapter 11: Adding Annotations and Dimensions

Introduction 11-2
Adding Tags 11-2
- Tagging Elements by Category 11-3
- Tagging All Elements in a View 11-6
- Tagging Treads or Risers 11-8
- Tagging with Multiple Leaders 11-8

Room Tags 11-9
- Room Separation 11-9
- Tagging Rooms 11-11

Keynotes 11-12
- Loading Keynote File 11-12
- Placing Keynotes 11-13
- Adding Keynote Legends 11-15

Adding Symbols 11-15
Adding Dimensions 11-16
- Types of Dimensions 11-17
- Dimensioning Terminology 11-18
- Adding Permanent Dimensions 11-20
- Adding Alternate Dimension Units 11-23
- Baseline and Ordinate Dimensions 11-25
- Editing Dimensions 11-26
- Controlling the Display of Tick Marks and Dimension Arrows 11-27
- Creating Linear Wall Dimensions Automatically 11-28
- Adding Spot Dimensions 11-29
- Placing a Spot Dimension 11-29
- Modifying Spot Dimension Properties 11-30
- Converting Temporary Dimensions to Permanent Dimensions 11-30

Tutorial 1 11-32
Self-Evaluation Test 11-42
Review Questions 11-42
Exercise 1 11-43
Exercise 2 11-44

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Exercise 3 11-45
Exercise 4 11-46

Chapter 12: Creating Project Details and Schedules

Project Detailing in Autodesk Revit 12-2
Creating Details in a Project 12-2
Callout View 12-3
Displaying the Callout View 12-4
Modifying Callout View Properties 12-5
Adding Details to the Callout View 12-7
Crop Regions 12-8
Model Crop Region 12-8
Annotation Crop Region 12-8
Creating Drafted Details 12-14
Creating a Drafting View 12-14
Drafting a Detail 12-15
Line Style Settings 12-15
Using Line Weights 12-16
Using Line Patterns 12-17
Adding Text Notes 12-18
Creating Text Notes 12-19
Editing Text Notes 12-20
Creating a Model Text 12-22
Revision Clouds 12-24
Creating the Revision Cloud 12-24
Adding a Revision Tag 12-25
Using Schedules in a Project 12-27
Generating a Schedule 12-27
Exporting Schedule to Excel Sheet 12-32
Creating a Legend View 12-33
Tutorial 1 12-34
Tutorial 2 12-45
Tutorial 3 12-49
Self-Evaluation Test 12-55
Review Questions 12-56
Exercise 1 12-57
Exercise 2 12-58
Exercise 3 12-59

Chapter 13: Creating and Plotting Sheets

Introduction 13-2
Creating Drawing Sheets 13-2
Adding a Drawing Sheet to a Project 13-3
Adding Views to a Drawing Sheet 13-6
Modifying View Properties 13-7
Panning the Viewports Added to the Sheet 13-9
Replacing a View in the Viewport 13-9

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Adding Schedules to a Drawing Sheet 13-10
Modifying a Building Model in a Drawing Sheet 13-12
Creating Guide Grids 13-12
Duplicating Dependent Views 13-13
Creating Dependent Views 13-13
Adding Matchline to Dependent Views 13-15
Adding View Reference 13-16
Printing in Autodesk Revit 13-16
Printing Drawing Sheets and Project Views 13-17
Selecting and Modifying the Printer Settings 13-18
Using the Print Setup Dialog Box 13-21
Previewing the Print Setup 13-23
Tutorial 1 13-24
Self-Evaluation Test 13-29
Review Questions 13-29
Exercise 1 13-30
Exercise 2 13-32
Exercise 3 13-32

Chapter 14: Creating 3D Views

Introduction 14-2
Three-Dimensional (3D) Views 14-2
Generating Orthographic View 14-3
Dynamically Viewing Models Using Navigation Tools 14-4
Using the Orient Tool 14-12
Generating Perspective Views 14-13
Fly Mode for View 14-17
Locking and Unlocking 3D Views 14-18
Using the Section Box 14-18
Tutorial 1 14-20
Tutorial 2 14-24
Self-Evaluation Test 14-28
Review Questions 14-29
Exercise 1 14-30
Exercise 2 14-31
Exercise 3 14-32
Exercise 4 14-33
Exercise 5 14-34

Chapter 15: Rendering Views and Creating Walkthroughs

Rendering in Revit 15-2
Rendering Workflow 15-2
Introduction to Materials 15-5
Applying Lights 15-17
Using Decals and Entourages 15-19
Rendering Settings 15-23
Creating a Walkthrough 15-28

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Creating the Walkthrough Path 15-28
Editing and Playing the Walkthrough 15-29
Recording a Walkthrough 15-32
Autodesk | Rendering 15-33
Rendering in Cloud 15-34
Accessing Render Gallery 15-35
Rendering in Enscape Enhanced 15-35
Advantages of Enscape 15-36
Starting Enscape Rendering 15-36
Navigating in Enscape 15-37
Creating Views using Enscape 15-37
Rendering Images using Enscape 15-38
Placing Components using Enscape Asset Library 15-40
Changing the Day time in Enscape 15-41
Exporting Enscape Project 15-41
Making a Video of the Project 15-42
Tutorial 1 15-44
Tutorial 2 15-59
Self-Evaluation Test 15-65
Review Questions 15-66
Exercise 1 15-67
Exercise 2 15-67
Exercise 3 15-68

CHAPTER/PROJECT AVAILABLE FOR FREE DOWNLOAD

In this textbook, one chapter and a student project have been given for free download. You can download them from our website: *www.cadcim.com*. To download the chapter/student project, follow the given path: *Textbooks > Civil/BIM/GIS > Revit Architecture > Exploring Autodesk Revit 2025 for Architecture > Chapters for Free Download* and then click on the name of the chapter to download in the PDF format.

Chapter 16: Using Advanced Features

Introduction 16-2
Creating Structural Components 16-2
Creating Structural Walls 16-3
Creating Structural Columns 16-5
Adding Structural Beams and Braces 16-8
Cutting Openings in Beams, Braces, and Columns 16-9
Generating Multiple Design Options 16-9
Generating Design Options for a Project 16-10
Presenting Design Options 16-11
Using Area Analysis Tools 16-12
Area Schemes 16-12
Area Plans 16-13
Area Schedules 16-15
Color Schemes 16-16

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com

Creating Color Schemes 16-17
Modifying Color Scheme 16-20
Masking Regions 16-21
Adding Masking Regions to a Project 16-22
Adding Masking Region to a Detail Family 16-22
Adding Masking Regions to a Model Family 16-23
Creating Displaced View 16-23
Using Project Phasing Tools 16-24
Understanding Phasing Concepts 16-24
Linking Building Models and Sharing Coordinates 16-26
Linking or Importing Models 16-27
Linking Revit Models 16-29
Nested Linked Models 16-30
Converting Linked Models to Groups - Binding Links 16-32
Managing Links 16-34
Worksharing Concepts 16-36
Worksharing Using Workset Tools 16-37
Process of Worksharing 16-37
Saving Methodology in Worksharing 16-43
Element Ownership Concepts 16-43
Purging Unused Element Families 16-44
Transferring Project Standards 16-45
Organizing the Project Browser 16-46
Generating Shadows 16-46
Autodesk Revit Solar Studies 16-47
Generating Still Solar Study 16-47
Creating an Animated Solar Study 16-50
Point Cloud 16-53
Inserting a Point Cloud File 16-53
Point Cloud Visibility 16-54
Using Point Cloud File in a Project 16-54
Revit Interoperability 16-54
Interoperability with Autodesk 3ds Max 16-54
Interoperability with Trimble SketchUp 16-55
Publishing Tips in Revit 2025 16-57
Route Analysis 16-58
Creating a Travel Path 16-58
Modifying Properties of the Path 16-59
Setting the Travel Path 16-60
Tutorial 1 16-61
Tutorial 2 16-71
Self-Evaluation Test 16-81
Review Questions 16-81
Exercise 1 16-82
Exercise 2 16-85

Student Project- City Mall **SP-1**
Index **I-1**

Evaluation Copy. Do not reproduce. For information visit www.cadcim.com