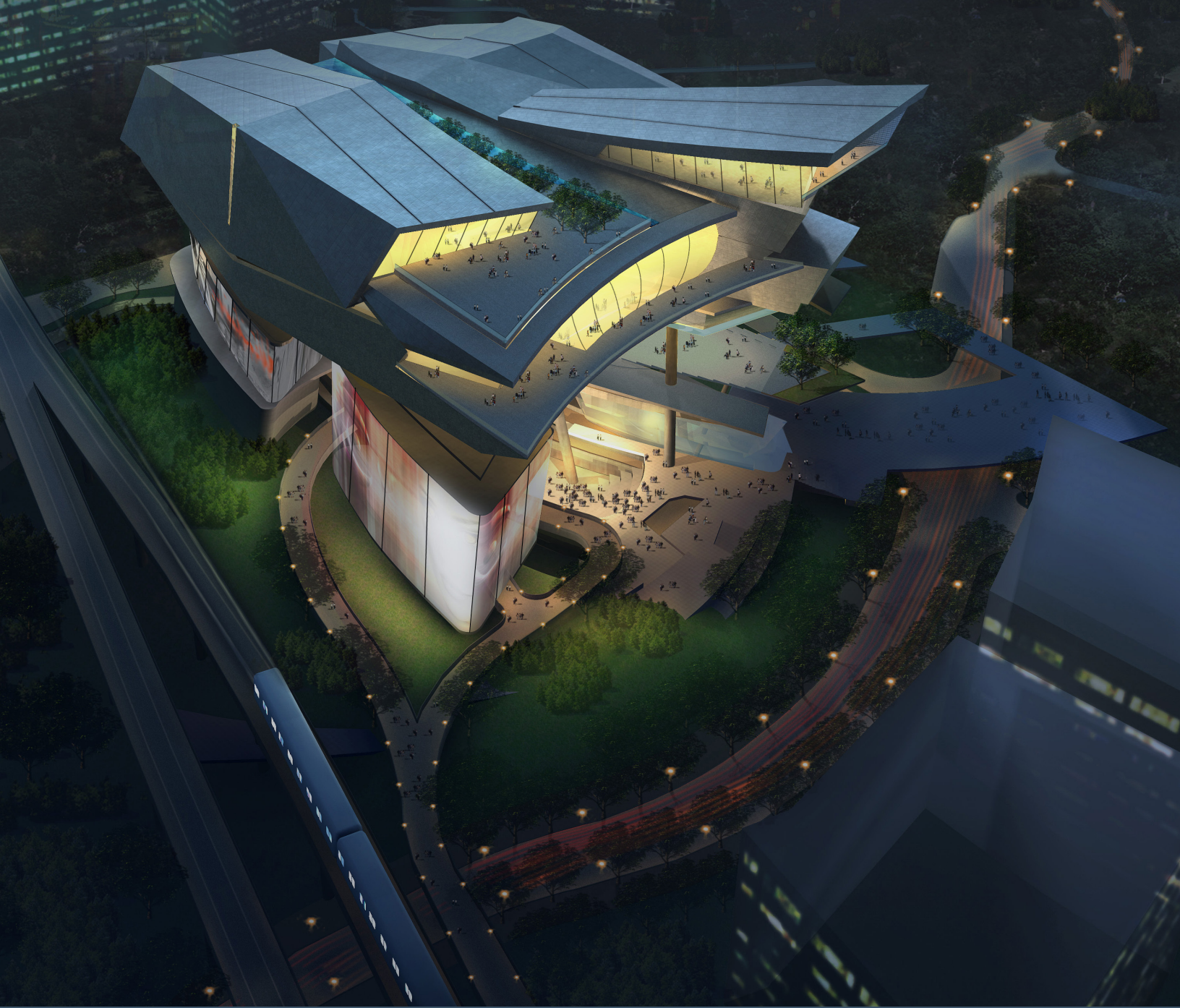


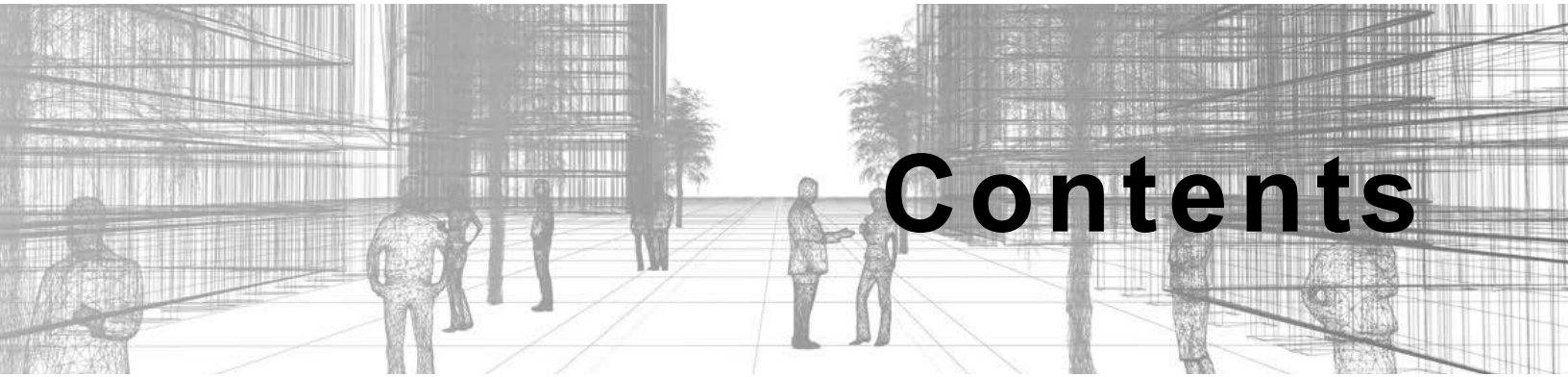
Autodesk®

Revit® 2020 Architecture Fundamentals



Visit the following websites to learn more about this book:





Contents

Preface	ix
In this Guide	xiii
Practice Files	xvii

Introduction to BIM and Autodesk Revit

Chapter 1: Introduction to BIM and Autodesk Revit	1-1
1.1 BIM and Autodesk Revit	1-2
Workflow and BIM	1-3
Revit Terms	1-4
Revit and Construction Documents	1-5
1.2 Overview of the Interface	1-6
1.3 Starting Projects	1-21
Opening Projects	1-22
Starting New Projects	1-24
Saving Projects	1-25
1.4 Viewing Commands	1-28
Zooming and Panning	1-28
Viewing in 3D	1-30
Visual Styles	1-34
Practice 1a Open and Review a Project	1-36
Chapter Review Questions	1-43
Command Summary	1-46
Chapter 2: Basic Sketching and Modify Tools	2-1
2.1 Using General Sketching Tools	2-2
Draw Tools	2-2
Drawing Aids	2-5
Reference Planes	2-8

2.2 Editing Elements	2-10
Selecting Multiple Elements	2-13
Filtering Selection Sets	2-14
Practice 2a Sketch and Edit Elements	2-17
2.3 Working with Basic Modify Tools	2-22
Moving and Copying Elements	2-22
Rotating Elements	2-24
Mirroring Elements	2-26
Creating Linear and Radial Arrays	2-27
Practice 2b Work with Basic Modify Tools	2-30
2.4 Working with Additional Modify Tools	2-37
Aligning Elements	2-37
Splitting Linear Elements	2-38
Trimming and Extending	2-39
Offsetting Elements	2-41
Practice 2c Work with Additional Modify Tools	2-43
Chapter Review Questions	2-47
Command Summary	2-51
Chapter 3: Starting Architectural Projects	3-1
3.1 Linking and Importing CAD Files	3-2
3.2 Linking in Revit Models	3-6
Practice 3a Link CAD and Revit Files	3-8
3.3 Setting Up Levels	3-12
Modifying Levels	3-14
Creating Plan Views	3-16
Practice 3b Set Up Levels	3-19
3.4 Creating Structural Grids	3-23
Modifying Grid Lines	3-24
3.5 Adding Columns	3-25
Loading Columns	3-27
Modifying Columns	3-28
Practice 3c Add Structural Grids and Columns	3-29
Chapter Review Questions	3-33
Command Summary	3-35

Design Development Phase

Chapter 4: Modeling Walls	4-1
4.1 Modeling Walls	4-2
4.2 Modifying Walls	4-5
Wall Joins.....	4-6
Editing Wall Profiles	4-7
Wall Openings.....	4-9
Practice 4a Model the Exterior Shell	4-11
Practice 4b Add Interior Walls	4-15
4.3 Adding Room Elements	4-21
Add Room Separation Lines	4-23
Practice 4c Add Room Elements	4-24
Practice 4d (Optional) Model Additional Walls	4-28
Chapter Review Questions	4-34
Command Summary	4-37
Chapter 5: Working with Doors and Windows	5-1
5.1 Inserting Doors and Windows	5-2
Practice 5a Insert Doors and Windows	5-6
5.2 Loading Door and Window Types from the Library	5-12
5.3 Creating Additional Door and Window Sizes	5-15
Practice 5b Load and Create Door Types	5-16
Chapter Review Questions	5-20
Command Summary	5-22
Chapter 6: Working with Curtain Walls	6-1
6.1 Creating Curtain Walls	6-2
Creating Storefronts.....	6-4
6.2 Adding Curtain Grids	6-6
Modifying Curtain Grids.....	6-7
Practice 6a Work with Curtain Walls	6-9
6.3 Working with Curtain Wall Panels	6-13
Creating a Curtain Wall Panel.....	6-16
6.4 Attaching Mullions to Curtain Grids	6-18
Modifying Mullions.....	6-19

Practice 6b Add Mullions and Panels to Curtain Walls	6-20
Chapter Review Questions	6-26
Command Summary	6-28
Chapter 7: Working with Views	7-1
7.1 Modifying the View Display	7-2
View Properties	7-2
Hiding and Overriding Graphics	7-7
Using View Templates	7-12
7.2 Duplicating Views	7-14
Duplication Types.....	7-14
Practice 7a Duplicate Views and Set the View Display.....	7-17
7.3 Adding Callout Views	7-21
Working with Crop Regions.....	7-23
Plan Regions.....	7-24
Practice 7b Add Callout Views.....	7-27
7.4 Creating Elevations and Sections	7-34
Elevations.....	7-35
Sections	7-36
Modifying Elevations and Sections	7-37
3D Section Views	7-41
Practice 7c Create Elevations and Sections.....	7-45
Chapter Review Questions.....	7-52
Command Summary	7-56
Chapter 8: Adding Components.....	8-1
8.1 Adding Components.....	8-2
Loading Components	8-3
8.2 Modifying Components	8-5
Working with Host Elements	8-5
Purging Unused Elements	8-6
Practice 8a Add Components	8-7
Chapter Review Questions.....	8-13
Command Summary	8-15
Chapter 9: Modeling Floors	9-1
9.1 Modeling Floors	9-2
Modifying Floors.....	9-5
Joining Geometry	9-7
Practice 9a Model Floors	9-8

9.2 Creating Shaft Openings	9-16
9.3 Creating Sloped Floors.....	9-17
Creating Multiple Slopes for Drainage	9-18
Practice 9b Create Shaft Openings and Sloped Floors	9-20
Chapter Review Questions.....	9-24
Command Summary	9-25
Chapter 10: Modeling Ceilings	10-1
10.1 Modeling Ceilings	10-2
Sketching Ceilings.....	10-4
Modifying Ceiling Grids	10-5
10.2 Adding Ceiling Fixtures.....	10-6
Practice 10a Model Ceilings and Add Ceiling Fixtures.....	10-9
10.3 Creating Ceiling Soffits	10-12
Practice 10b Create Ceiling Soffits.....	10-14
Chapter Review Questions.....	10-20
Command Summary	10-22
Chapter 11: Modeling Roofs	11-1
11.1 Modeling Roofs	11-2
11.2 Creating Roofs by Footprint	11-3
Attaching Walls to Roofs	11-5
Practice 11a Create Roofs by Footprint.....	11-7
11.3 Establishing Work Planes	11-13
11.4 Creating Roofs by Extrusion.....	11-16
Joining Roofs	11-18
Practice 11b Create Roofs by Extrusion.....	11-20
Chapter Review Questions.....	11-23
Command Summary	11-25
Chapter 12: Modeling Stairs, Railings, and Ramps.....	12-1
12.1 Creating Component Stairs.....	12-2
Creating Runs	12-3
Creating Other Types of Runs	12-6
Creating Landings.....	12-9
Adding Supports.....	12-10
Practice 12a Create Component Stairs	12-11
12.2 Modifying Component Stairs	12-18
Multistory Stairs.....	12-21

Practice 12b Modify Component Stairs	12-23
12.3 Working with Railings	12-30
Modifying Railings	12-32
Practice 12c Work with Railings	12-34
12.4 Creating Ramps	12-40
Practice 12d Create Ramps	12-42
Chapter Review Questions	12-45
Command Summary	12-48

Construction Documents Phase

Chapter 13: Creating Construction Documents	13-1
13.1 Setting Up Sheets	13-2
Sheet (Title Block) Properties	13-4
13.2 Placing and Modifying Views on Sheets	13-5
Practice 13a Create Construction Documents	13-12
13.3 Printing Sheets	13-18
Printing Options.....	13-18
Chapter Review Questions	13-22
Command Summary	13-24
Chapter 14: Annotating Construction Documents	14-1
14.1 Working with Dimensions	14-2
Modifying Dimensions	14-5
Setting Constraints.....	14-8
Practice 14a Work with Dimensions	14-13
14.2 Working With Text	14-17
Editing Text	14-20
Spell Checking	14-24
Creating Text Types.....	14-24
Practice 14b Work with Text	14-26
14.3 Adding Detail Lines and Symbols	14-33
Using Symbols	14-34
Practice 14c Add Detail Lines and Symbols	14-35
14.4 Creating Legends	14-38
Practice 14d Create Legends	14-41
Chapter Review Questions	14-43
Command Summary	14-45

Chapter 15: Adding Tags and Schedules	15-1
15.1 Adding Tags	15-2
Tagging in 3D Views	15-8
Practice 15a Add Tags	15-11
15.2 Working with Schedules	15-18
Modifying Schedules	15-19
Modifying a Schedule on a Sheet	15-22
Practice 15b Work with Schedules	15-23
Chapter Review Questions	15-28
Command Summary	15-29
Chapter 16: Creating Details	16-1
16.1 Setting Up Detail Views	16-2
Referencing a Drafting View	16-4
Saving Drafting Views	16-5
16.2 Adding Detail Components	16-8
Detail Components.....	16-8
Repeating Details.....	16-10
16.3 Annotating Details	16-12
Creating Filled Regions	16-12
Adding Detail Tags.....	16-15
Practice 16a Create a Detail Based on a Section Callout	16-17
Practice 16b Create a Detail in a Detail View	16-23
Chapter Review Questions	16-27
Command Summary	16-29
Appendix A: Introduction to Worksets	A-1
A.1 Introduction to Worksets	A-2
Saving Workset- Related Files	A-4
Command Summary	A-7
Appendix B: Additional Tools	B-1
B.1 Reusing Selection Sets	B-2
B.2 Editing Wall Joins	B-5
B.3 Wall Sweeps and Reveals	B-7
B.4 Creating Curtain Wall Types with Automatic Grids	B-10
B.5 Enhancing Views	B-13
Splitting Faces.....	B-14
Applying Materials.....	B-15
Editing Plan and Section Profiles	B-18

B.6	Creating Dormers	B-19
B.7	Working with Guide Grids on Sheets	B-22
B.8	Revision Tracking	B-24
	Issuing Revisions	B-28
B.9	Route Analysis	B-29
B.10	Annotating Dependent Views	B-32
	Annotating Views	B-33
B.11	Importing and Exporting Schedules	B-36
B.12	Creating Building Component Schedules	B-38
	Schedule Properties	B-47
B.13	Creating a Repeating Detail	B-48
B.14	Keynoting and Keynote Legends	B-50
	Keynote Legends	B-53
	Command Summary	B-56
	Appendix C: Certification Exam Objectives	C-1
	Index	Index-1