

UNIT 1

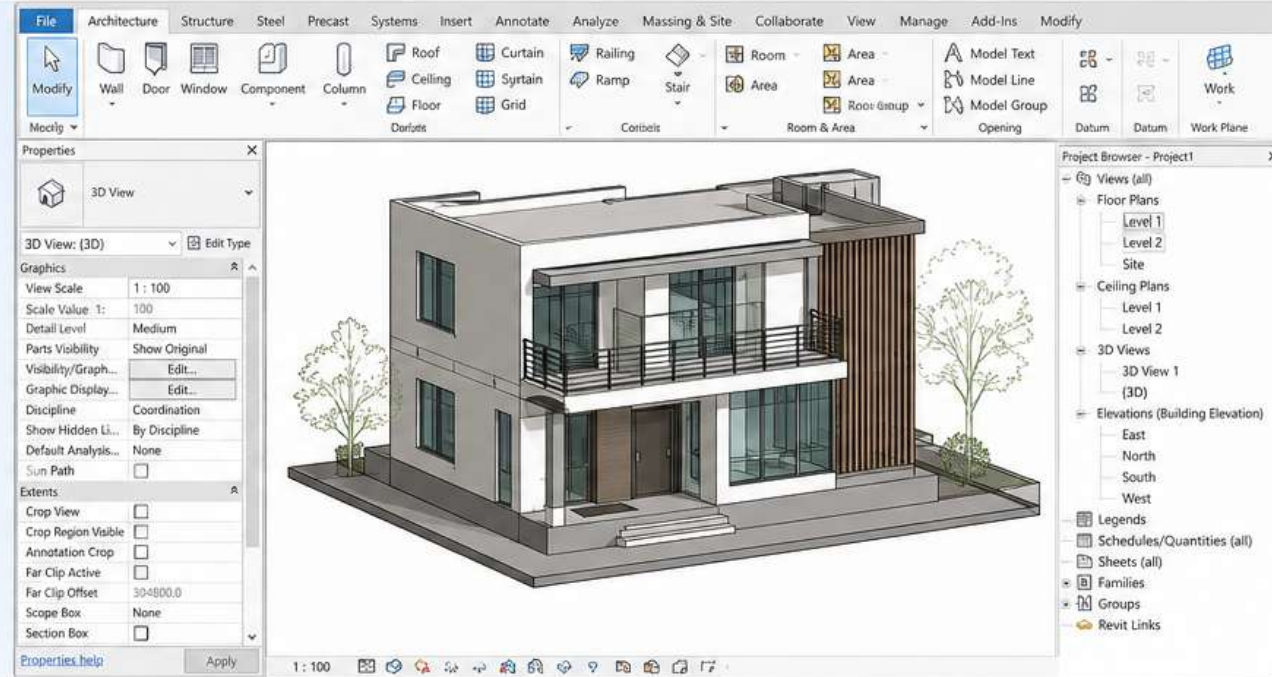
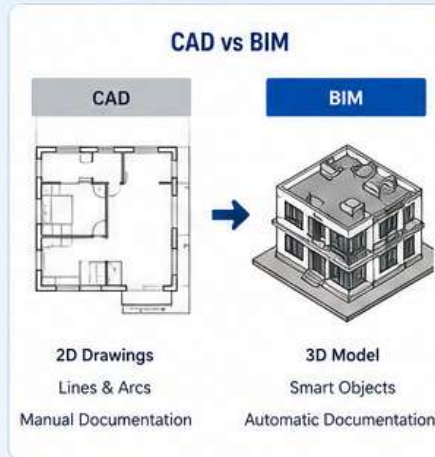
INTRODUCTION TO BIM & REVIT

Learn the fundamentals of BIM and get familiar with Autodesk Revit interface.



WHAT YOU WILL LEARN

In this unit, you will understand the concept of BIM and how Revit works. You will get familiar with the Revit interface and essential tools used in modeling and documentation.



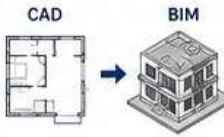
TOPICS COVERED

1 WHAT IS BIM?



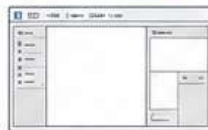
- Building Information Modeling
- Intelligent 3D Model
- Collaboration & Information

2 CAD vs BIM



- 2D vs 3D Modeling
- Data Rich vs Data Poor
- Coordination & Consistency

3 REVIT USER INTERFACE



- Ribbon
- Quick Access Toolbar
- View Control Bar
- Status Bar

4 PROJECT BROWSER



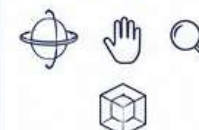
- Views
- Sheets
- Families
- Schedules

5 PROPERTIES PALETTE



- Element Properties
- Type Properties
- Edit Type
- Instance vs Type

6 NAVIGATION TOOLS



- Orbit
- Pan
- Zoom
- 3D View Cube

7 KEYBOARD SHORTCUTS



- Essential Shortcuts
- Save Time
- Increase Productivity

LEARNING OUTCOME

- Understand BIM concept and its benefits.
- Navigate Revit interface confidently.
- Use essential tools efficiently.
- Build a strong foundation for Revit modeling.



TIP: Practice navigating the Revit interface daily to become more comfortable and productive.



NEXT UNIT:



Project Setup

Learn how to start a new project, set units, levels, grids and views.



UNIT 2

PROJECT SETUP

Learn how to start a new project and set up the fundamental elements that define your Revit model.



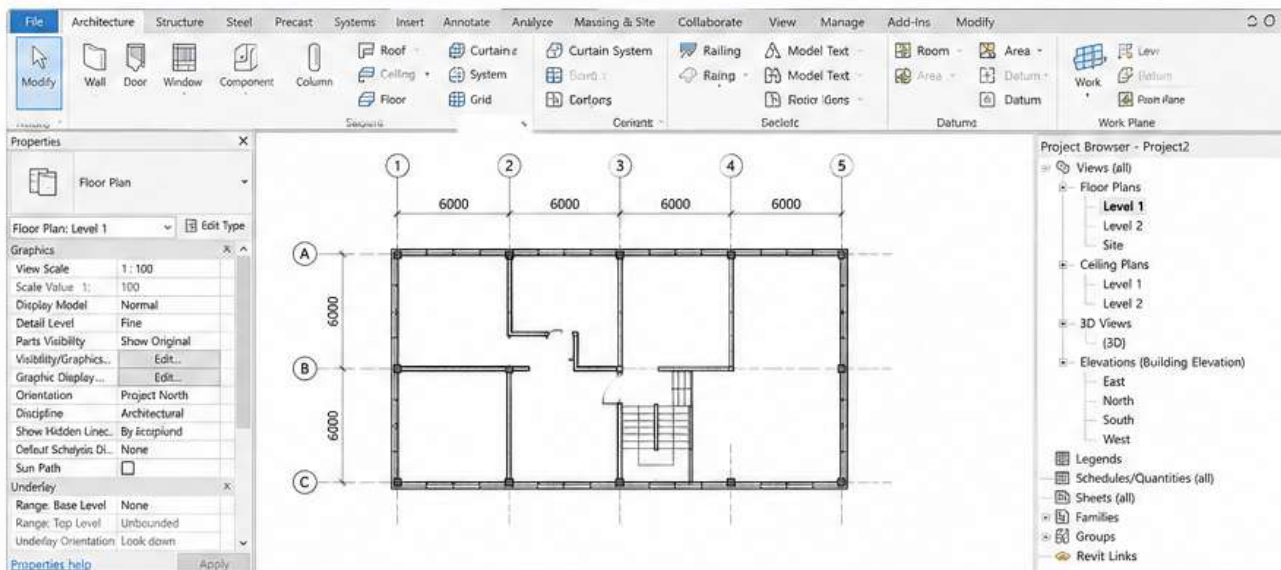
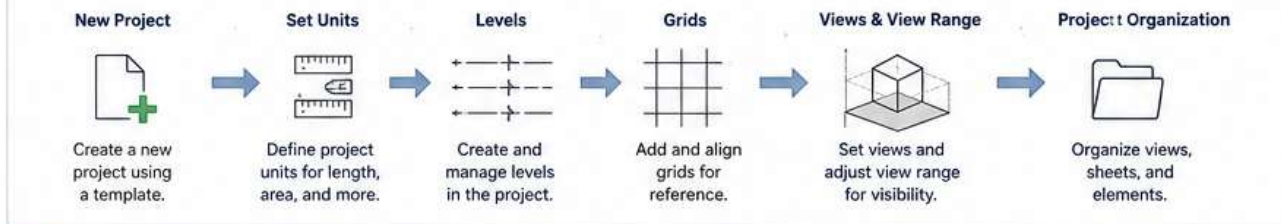
OVERVIEW

In this unit, you will learn how to create a new project and configure its basic settings. You will set up levels, grids, project units, views, view range, and organize your project for efficient modeling and documentation.

WHY PROJECT SETUP IS IMPORTANT?

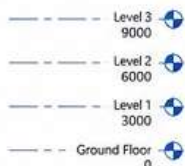
- Ensures accuracy and consistency
- Follows standards and best practices
- Saves time in modeling and documentation
- Prepares the model for collaboration and future use

PROJECT SETUP WORKFLOW

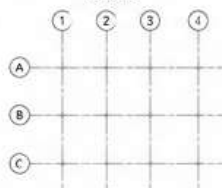


ELEMENTS YOU WILL SET UP

LEVELS



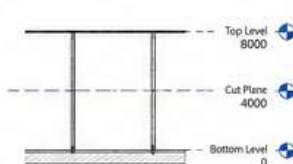
GRIDS



PROJECT UNITS



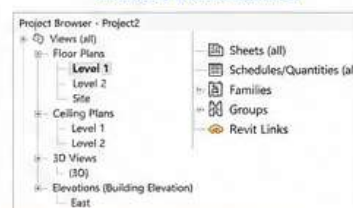
VIEW RANGE



VIEWS



PROJECT ORGANIZATION



KEY TOPICS

1 NEW PROJECT



- Start a new project
- Understanding project settings

2 TEMPLATES



- Choose the right template for your project

3 LEVELS



- Create, rename, and edit levels
- Level properties

4 GRIDS



- Create grids
- Modify, rename and align grids

5 PROJECT UNITS



- Set units for length, area, volume, angle, etc.

6 VIEWS



- Create and manage project views
- View types

7 VIEW RANGE



- Control visibility in views
- Cut Plane settings

8 PROJECT ORGANIZATION



- Organize views, sheets, schedules
- Project browser management



TIP: Always set your project units, levels, and grids correctly at the beginning to avoid issues later.



NEXT UNIT:



Unit 3: Basic Architectural Modeling

Learn how to model basic architectural elements in Revit.

UNIT 3

BASIC ARCHITECTURAL MODELING

Learn how to create the fundamental architectural building elements in Revit.



AUTODESK
REVIT®



OVERVIEW

In this unit, you will learn how to create and modify the basic architectural elements that form the building model. These elements are the foundation of any architectural project in Revit.

ELEMENTS YOU WILL LEARN

- ✓ Walls
- ✓ Doors
- ✓ Windows
- ✓ Floors
- ✓ Roofs
- ✓ Ceilings
- ✓ Curtain Walls

BASIC ARCHITECTURAL ELEMENTS

WALLS



Create and modify walls with different types, heights, and properties.

DOORS



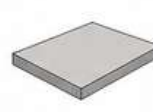
Add doors to walls and customize type, size and placement.

WINDOWS



Insert windows in walls and adjust type, size and sill height.

FLOORS



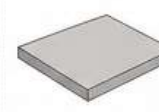
Create floor slabs for different levels and floor types.

ROOFS



Create roofs by defining slope, overhang and profile.

CEILINGS



Add ceilings to define interior top boundaries at each level.

CURTAIN WALLS



Create curtain walls for modern facades and glass buildings.

EXAMPLE MODEL (3D VIEW)

ROOFS

Sloped and flat roofs with proper slope and overhang.

WALLS

Basic and compound walls with correct height and offsets.

DOORS

Doors with frames and correct placement.

CEILINGS

Ceilings at different levels to define interior spaces.

WINDOWS

Windows with sill height and proper alignment.

FLOORS

Floor slabs with proper thickness and level.

CURTAIN WALLS

Curtain walls for architectural appeal and natural light.

KEY TOPICS COVERED

1 WALLS



- Wall types and properties
- Wall placement
- Edit wall height, offset, profile

2 DOORS



- Load and place doors
- Door types and sizes
- Edit and align doors

3 WINDOWS



- Load and place windows
- Window types and sizes
- Sill height and settings

4 FLOORS



- Create floor by level
- Floor types and thickness
- Edit floor shape and edges

5 ROOFS



- Roof by footprint
- Roof by extrude
- Edit slope and overhang

6 CEILINGS



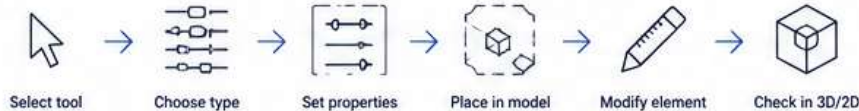
- Ceiling by level
- Ceiling types and height
- Edit ceiling boundaries

7 CURTAIN WALLS



- Create curtain walls
- Grid and mullion settings
- Curtain wall types

WORKFLOW SUMMARY



MODEL EXAMPLES (2D PLAN & 3D VIEW)



LEARNING OUTCOMES

- ✓ Create and modify basic architectural elements in Revit.
- ✓ Understand parameters and properties of each element.
- ✓ Build a basic architectural model accurately.
- ✓ Prepare the model for advanced modeling and documentation.



TIP: Use the properties palette and temporary dimensions while placing elements to maintain accuracy.



NEXT
UNIT:



Unit 4: Advanced Building Components
Learn about stairs, railings, ramps, shafts, openings, columns and more.

UNIT 4

ADVANCED BUILDING COMPONENTS

Learn how to create and edit advanced architectural building components in Revit.



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OVERVIEW

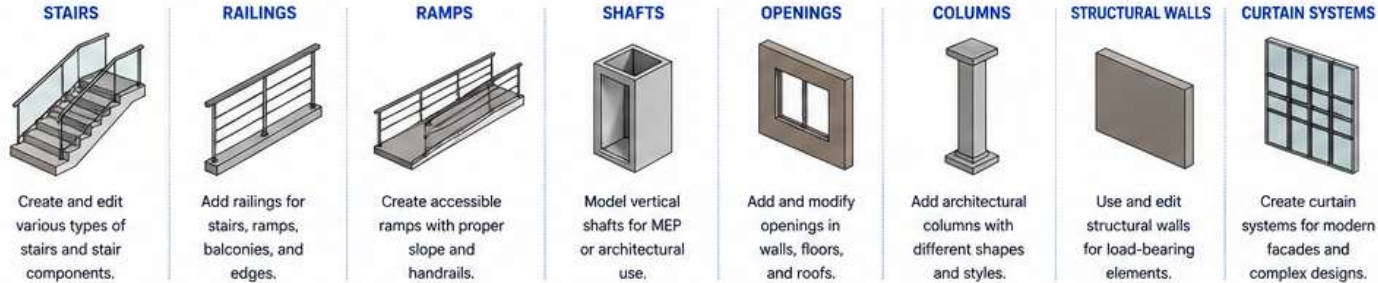
This unit focuses on advanced architectural components used to complete a building model. You will learn to create, modify, and manage elements such as stairs, railings, ramps, shafts, openings, columns, structural walls, and curtain systems.

YOU WILL LEARN

- ✓ Stairs
- ✓ Railings
- ✓ Ramps
- ✓ Shafts
- ✓ Openings
- ✓ Columns
- ✓ Structural Walls
- ✓ Curtain Systems



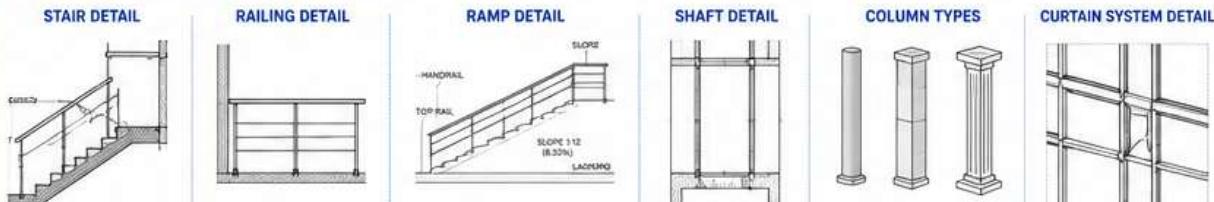
ADVANCED BUILDING COMPONENTS



EXAMPLE MODEL (3D VIEW)



COMPONENT EXAMPLES (DETAILED)



TOOLS & COMMANDS USED



LEARNING OUTCOMES

- ✓ Create and modify advanced building components in Revit.
- ✓ Apply stairs, railings, ramps, shafts, columns and curtain systems in projects.
- ✓ Maintain model accuracy and coordination.
- ✓ Improve building functionality and realistic modeling.

KEY TOPICS COVERED

- 1 STAIRS**
 - Stair types (By Component, By Sketch)
 - Edit treads, risers, landings
 - Railings and supports
- 2 RAILINGS**
 - Railing types and placement
 - Top rail, hand rail, balusters
 - Edit railing path and offset
- 3 RAMPS**
 - Ramp by sketch or by path
 - Slope, run, and landing
 - Handrails for ramps
- 4 SHAFTS**
 - Shaft types and properties
 - Edit size and height
 - Opening and visibility
- 5 OPENINGS**
 - Wall, floor, roof openings
 - Edit shape and size
 - Visibility in views
- 6 COLUMNS**
 - Column types (Architectural)
 - Base and top constraints
 - Move, copy and align
- 7 STRUCTURAL WALLS**
 - Load-bearing walls
 - Wall joins and cleanup
 - Edit structure and layers
- 8 CURTAIN SYSTEMS**
 - Curtain grid and mullions
 - Panels and patterns
 - Edit profiles and types



TIP: Use reference planes and aligned levels while creating components to maintain accuracy and consistency in your model.



NEXT
UNIT:



Unit 5: Families & Components

Learn how to work with families, create custom families and manage components in Revit.

UNIT 5

FAMILIES & COMPONENTS

Learn how to work with families, create custom families, and manage components in Revit.



OVERVIEW

In this unit, you will understand how families work in Revit and how to load, place, edit, and create custom families. You will also learn about family parameters, types, and components to build intelligent and flexible models.

YOU WILL LEARN

✓ Loadable Families



✓ System Families



✓ Components



✓ Creating Custom Families



✓ Family Parameters



✓ Family Types



✓ Family Editing



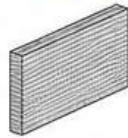
TYPES OF FAMILIES

LOADABLE FAMILIES



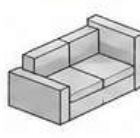
Families that can be loaded into projects from external files.

SYSTEM FAMILIES



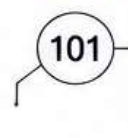
Built-in families that are created within the project environment.

IN-PLACE FAMILIES



Created and used within a specific project only.

ANNOTATION FAMILIES



2D symbols and annotation elements used in views.

DETAIL COMPONENTS



Used in detail views for small or repetitive detailing.

MODEL GROUPS



Grouped elements saved for reuse in the project.

FAMILY WORKFLOW



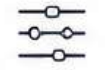
1. LOAD / CREATE
Load existing family or create a new family.



2. PLACE
Place the family in the model.



3. EDIT TYPE / PARAMETERS
Edit type properties and set parameters.



4. MODIFY
Modify dimensions, constraints, and connections.



5. SAVE & LOAD
Save the family and load it into the project.

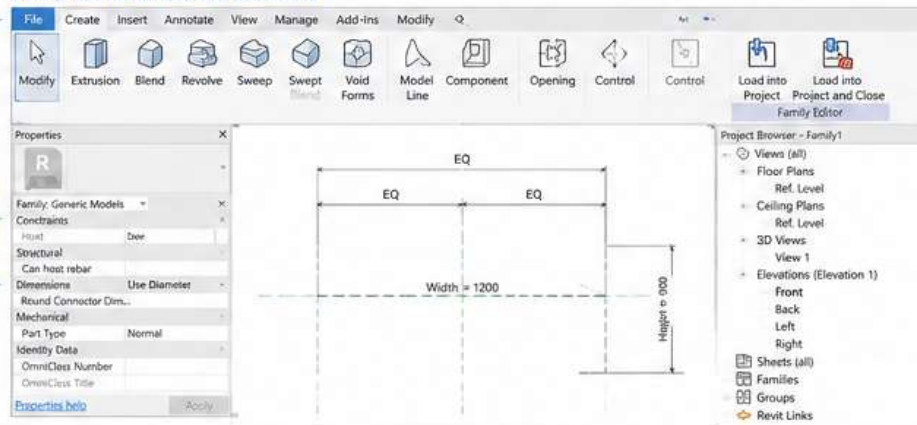


6. USE
Use the family in multiple views and projects.

FAMILY EDITOR INTERFACE OVERVIEW

RIBBON
Tools to create and modify family elements.

PROPERTIES PALETTE
Set and manage family parameters, constraints, and properties.



DRAWING AREA
Create family geometry using reference planes and dimensions.

PROJECT BROWSER
Manage views, reference planes, families, and categories.

FAMILY PARAMETERS

Parameter Type	Description	Example
Type Parameter	Same for all instances of that type	Width, Height, Material
Instance Parameter	Can vary for each instance	Comments, Mark, Cost
Built-in Parameter	System defined parameters	OmniClass Number, Fire Rating
Shared Parameter	Created and used across families	Manufacturer, Model

EXAMPLE: CUSTOM DOOR FAMILY

1. NEW FAMILY



Choose Door template.

2. CREATE GEOMETRY



Draw door frame and panel using extrusion.

3. ADD PARAMETERS



Add width, height, material parameters.

4. SET TYPES



Create different types and sizes.

5. LOAD INTO PROJECT



Load the family into the project.

6. PLACE & USE



Place and use the family in multiple views.

KEY TOPICS COVERED

1. LOADABLE FAMILIES



- Load families from library
- Place and edit in model
- Manage family types

2. SYSTEM FAMILIES



- Walls, Floors, Roofs
- Stairs, Railings, Levels
- Edit type properties

3. COMPONENTS



- Model and detail components
- Reusable in families
- Improve model accuracy

4. CREATING CUSTOM FAMILIES



- New family templates
- Reference planes & dimensions
- Constraints and geometry

5. FAMILY PARAMETERS



- Add and manage parameters
- Instance vs Type parameters
- Shared parameters

6. FAMILY TYPES



- Create multiple types
- Duplicate and rename types
- Type catalogs

7. FAMILY EDITING



- Edit family in Family Editor
- Modify geometry and constraints
- Save and reload

LEARNING OUTCOMES

- ✓ Understand family types and their uses in Revit.
- ✓ Create and edit custom families with parameters.
- ✓ Manage family types for flexibility and efficiency.
- ✓ Build a library of reusable families.
- ✓ Improve model quality and consistency.



TIP: Always use reference planes, parameters, and constraints while creating families to ensure flexibility and accuracy.



NEXT UNIT:



Unit 6: Rooms & Documentation

Learn how to create rooms, area plans, schedules, legends, and organize project documentation.

UNIT 6

ROOMS & DOCUMENTATION

Learn how to create rooms, calculate areas, and generate schedules and legends for accurate documentation in Revit.



OVERVIEW

In this unit, you will learn how to define rooms, calculate areas, apply color schemes, create schedules, legends, and keynotes to produce professional and information-rich documentation in Revit.

YOU WILL LEARN

- ✓ Rooms
- ✓ Room Tags
- ✓ Area Plans
- ✓ Area Calculation
- ✓ Color Schemes
- ✓ Schedules
- ✓ Legends
- ✓ Keynotes

WHAT YOU WILL ACHIEVE

ROOMS	ROOM TAGS	AREA PLANS	AREA CALCULATION	COLOR SCHEMES	SCHEDULES	LEGENDS	KEYNOTES
Define and manage rooms with proper boundaries.	Annotate rooms with numbers and names.	Create area plans for documentation and analysis.	Calculate areas for rooms and spaces accurately.	Apply color schemes to improve visual communication.	Create schedules for rooms, areas, and more.	Add legends for symbols and abbreviations.	Use keynotes for notes and callouts in drawings.

EXAMPLE: ROOM PLAN

ROOMS

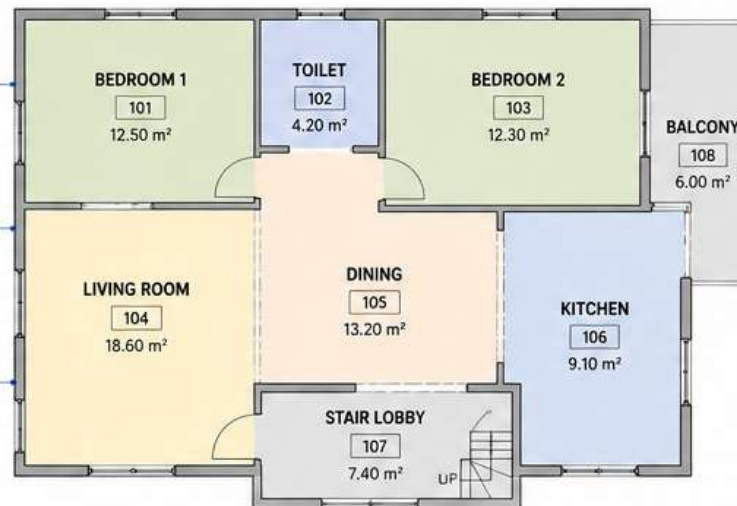
Rooms are created within closed boundaries.

ROOM TAGS

Tags display room number, name and area.

AREA PLANS

Area plan shows net areas with boundaries.



AREA CALCULATION

Room areas are calculated automatically.

COLOR SCHEMES
Different colors help to distinguish spaces easily.

COLOR SCHEME EXAMPLE



ROOM SCHEDULE EXAMPLE

Number	Name	Area (m²)	Level
101	Bedroom 1	12.50	Level 1
102	Toilet	4.20	Level 1
103	Bedroom 2	12.30	Level 1
104	Living Room	18.60	Level 1
105	Dining	13.20	Level 1
106	Kitchen	9.10	Level 1
107	Stair Lobby	7.40	Level 1
108	Balcony	6.00	Level 1
Grand total: 8		83.30 m²	

AREA PLAN EXAMPLE (LEVEL 1)



LEGEND EXAMPLE

	ROOM TAG
	DOOR TAG
	WINDOW TAG
	LEVEL TAG
	SECTION TAG
	REVISION CLOUD

KEYNOTE EXAMPLE

	Ceramic Tile Flooring
	Glass Railing
	False Ceiling
	Wall Painting

KEY TOPICS COVERED

- ROOMS**
 - Place and edit rooms
 - Room separation lines
 - Room bounding elements
- ROOM TAGS**
 - Add room tags
 - Edit tag families
 - Customize tag content
- AREA PLANS**
 - Create area plans
 - Area boundary settings
 - Display area schemes
- AREA CALCULATION**
 - Compute room areas
 - Gross vs Net areas
 - Area by level
- COLOR SCHEMES**
 - Create color schemes
 - Apply to rooms/areas
 - Edit and duplicate schemes
- SCHEDULES**
 - Room schedule
 - Area schedule
 - Edit, sort, filter, format
- LEGENDS**
 - Create legends
 - Add symbols & text
 - Place on sheets
- KEYNOTES**
 - Create keynote legend
 - Add keynotes in views
 - Manage keynote tags

LEARNING OUTCOMES

- ✓ Create and manage rooms effectively.
- ✓ Calculate areas and generate area plans.
- ✓ Apply color schemes for better visualization.
- ✓ Create schedules, legends, and keynotes.
- ✓ Produce accurate and professional documentation.



TIP: Use Room Bounding elements and Separation Lines to get accurate room areas.



NEXT UNIT:



Unit 7: Annotation & Detailing

Learn how to annotate your model with dimensions, texts, tags, and detail components.

UNIT 7

ANNOTATION & DETAILING

Learn how to create clear annotations and construction details to communicate design intent effectively in Revit.



OVERVIEW

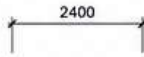
In this unit, you will learn how to annotate your model using dimensions, text, tags, and detail elements. You will also create detailed construction drawings using detail lines, components, filled regions, revision clouds, and symbols to produce professional and coordination-ready drawings.

YOU WILL LEARN

- ✓ Dimensions
- ✓ Text
- ✓ Tags
- ✓ Detail Lines
- ✓ Detail Components
- ✓ Filled Regions
- ✓ Revision Clouds
- ✓ Symbols

ANNOTATION ELEMENTS

DIMENSIONS



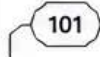
Add dimensions to measure and define model elements.

TEXT



Add notes, titles, and general text to communicate information.

TAGS



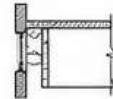
Tag elements to identify and schedule them in drawings.

DETAIL LINES



Create lines and patterns for detailed annotation.

DETAIL COMPONENTS



Add reusable 2D components for consistent detailing.

FILLED REGIONS



Highlight areas with patterns, materials, or colors.

REVISION CLOUDS



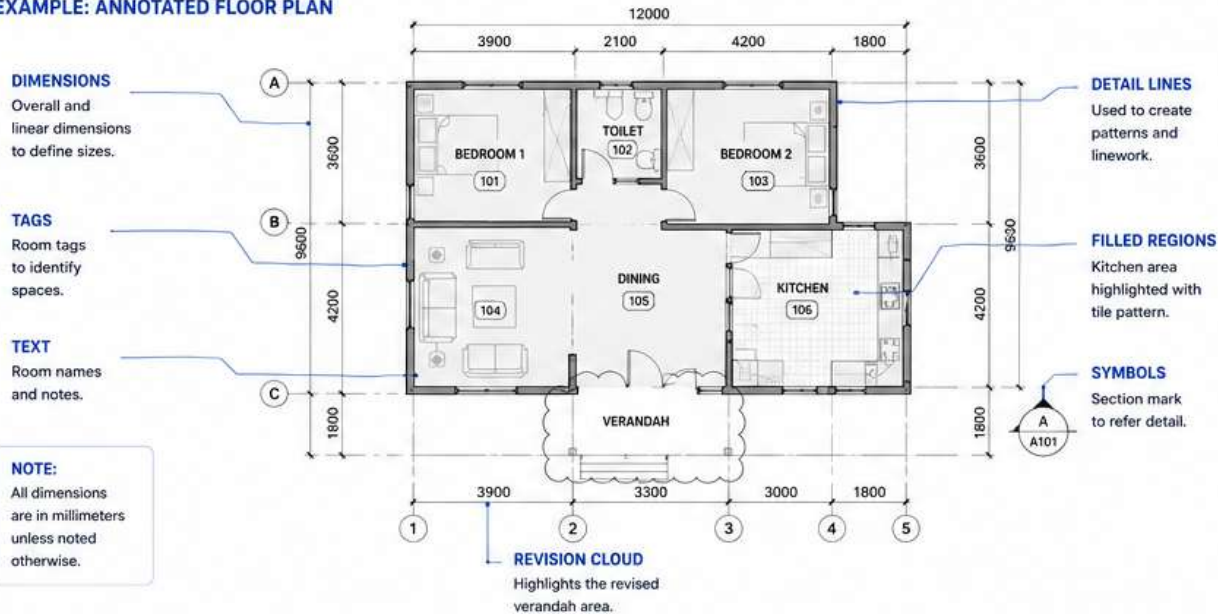
Highlight changes and revisions in drawings.

SYMBOLS



Add symbols for north points, levels, section marks, etc.

EXAMPLE: ANNOTATED FLOOR PLAN



KEY TOPICS COVERED

1 DIMENSIONS



- Aligned, Linear, Angular
- Radial, Diameter, Arc Length
- Spot Elevation

2 TEXT



- Text types and properties
- Text sizes and styles
- Text alignment

3 TAGS



- Tag categories
- Create and edit tags
- Leader and tag orientation

4 DETAIL LINES



- Line styles and weights
- Model lines vs Detail lines
- Create patterns and hatches

5 DETAIL COMPONENTS



- Load detail components
- Place in views
- Edit and customize

6 FILLED REGIONS



- Solid fill and patterns
- Material based fills
- Foreground / Background

7 REVISION CLOUDS



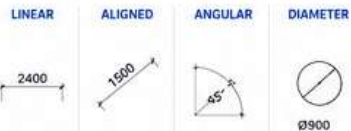
- Create revision clouds
- Revision cloud properties
- Track changes effectively

8 SYMBOLS

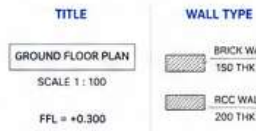


- North Point, Level, Section
- Detail Callout, Elevation
- Manage symbol visibility

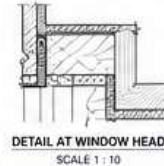
DIMENSION EXAMPLES



TEXT EXAMPLE



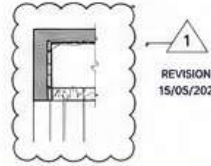
DETAIL COMPONENT EXAMPLE



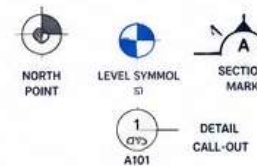
FILLED REGION EXAMPLE



REVISION CLOUD EXAMPLE



SYMBOLS EXAMPLES



LEARNING OUTCOMES

- ✓ Add clear and accurate annotations to your drawings.
- ✓ Create detailed construction drawings.
- ✓ Use detail components and symbols effectively.
- ✓ Highlight revisions and track changes.
- ✓ Produce professional, documentation-ready sheets.



TIP: Use View Templates to maintain consistent annotation styles across all sheets.



NEXT UNIT:



Unit 8: Sheets, Views & Printing

Learn how to create sheets, place views, and print or export your drawings.

UNIT 8

SHEETS, VIEWS & PRINTING

Learn how to create sheets, organize views, and produce professional drawings for presentation and documentation in Revit.



OVERVIEW

In this unit, you will learn how to create sheets, place views, add title blocks, sections, elevations, and callouts. You will also learn about view templates and understand printing and exporting your drawings in Revit.

YOU WILL LEARN

- ✓ Sheets
- ✓ Viewports
- ✓ Title Blocks
- ✓ View Templates
- ✓ Sections
- ✓ Elevations
- ✓ Callouts
- ✓ Printing & PDF Export

KEY CONCEPTS

SHEETS Organize drawings on sheets using title blocks.	VIEWPORTS Place and manage model views on sheets.	TITLE BLOCKS Use title blocks to add project and sheet information.	VIEW TEMPLATES Apply view templates for consistency across views.	SECTIONS Create building sections to show internal details.	ELEVATIONS Create building elevations for exterior views.	CALLOUTS Use callouts to enlarge and highlight specific areas.	PRINTING / EXPORT Print or export sheets to PDF for sharing and documentation.
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EXAMPLE: SHEET LAYOUT

FLOOR PLAN VIEW

SECTION VIEW

TITLE BLOCK

ELEVATION VIEW

DETAIL CALLOUT

Roof Level +7.50
First Floor +3.90
Ground Floor ±0.00

PROJECT NAME
Residential Project

CLIENT
Mr. ABC

CONSULTANT
AKV Engineering Services

No. Description Date

SHEET NAME
FLOOR PLAN, SECTION & ELEVATION

SHEET NO.
A101

SCALE
As indicated

DATE
10-05-2024

DRAWN BY
AKV

CHECKED BY
AKV

KEY TOPICS COVERED

- 1 SHEETS**
 - Create new sheets
 - Duplicate and rename sheets
 - Sheet properties
- 2 VIEWPORTS**
 - Place views on sheets
 - Crop and scale views
 - Align and arrange views
- 3 TITLE BLOCKS**
 - Load and edit title blocks
 - Add project information
 - Manage sheet parameters
- 4 VIEW TEMPLATES**
 - Create view templates
 - Apply to multiple views
 - Manage visibility settings
- 5 SECTIONS**
 - Building sections
 - Section box
 - Section tags
- 6 ELEVATIONS**
 - Building elevations
 - Elevation tags
 - Reference planes
- 7 CALLOUTS**
 - Detail callouts
 - Crop regions
 - Detail views
- 8 PRINTING & PDF EXPORT**
 - Print setup
 - PDF export settings
 - Export sheets to PDF

VIEW TEMPLATES EXAMPLE

Floor Plan Template	
Scale	1 : 100
Detail Level	Medium
Parts Visibility	Show Original
Discipline	Architectural
Wall Join Display	Clean all wall joins
Line Weights	By View

Elevation Template	
Scale	1 : 100
Detail Level	Fine
Parts Visibility	Show Original
Discipline	Architectural
Depth Clipping	No clip
Line Weights	By View

TITLE BLOCK EXAMPLE

PROJECT NAME	
DRAWN BY	CHECKED BY
AKV	AKV
SCALE	1:100 (AS INDICATED)
SHEET NO.	A101

SECTION EXAMPLE



ELEVATION EXAMPLE



LEARNING OUTCOMES

- ✓ Create and organize sheets effectively.
- ✓ Manage views, viewports, and title blocks.
- ✓ Use view templates for consistency.
- ✓ Create sections, elevations, and callouts.
- ✓ Print and export professional drawing sets.



TIP: Use consistent scales and view templates to maintain a professional and coordinated set of drawings.



NEXT
UNIT:



Unit 9: Residential House Project

Apply your skills by creating a complete 2-Storey residential house project from start to finish.

UNIT 9

RESIDENTIAL HOUSE PROJECT

Apply your skills by creating a complete 2-Storey residential house project from start to finish in Revit.



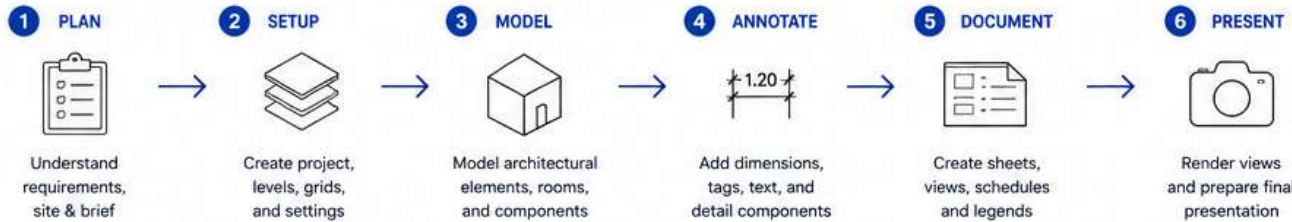
OVERVIEW

In this unit, you will work on a complete 2-Storey residential house project. You will go through all stages of the project including setup, modeling, annotation, sheets, and presentation to deliver a professional Revit project.

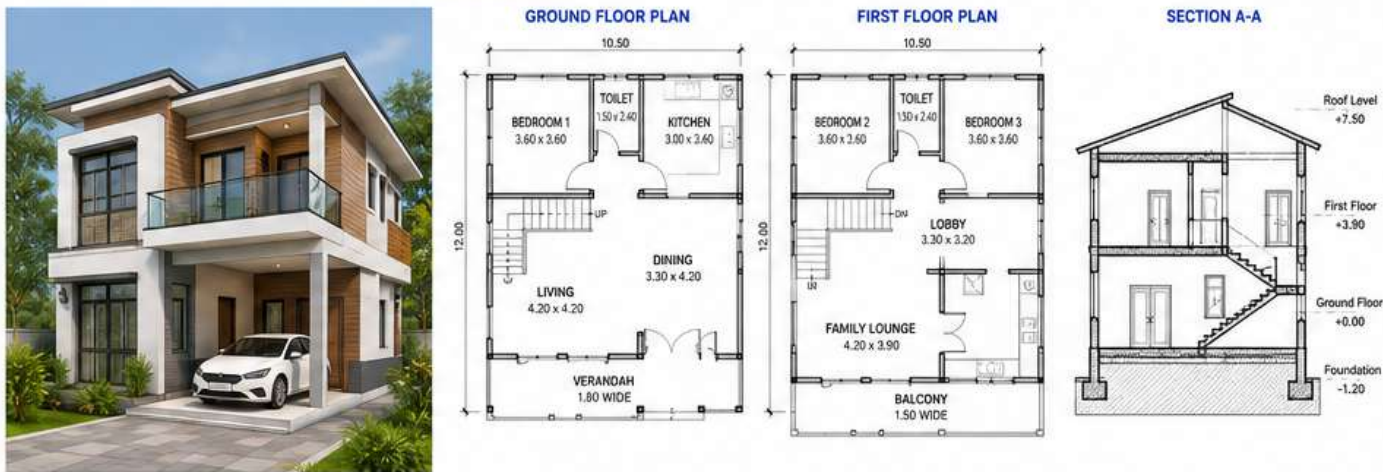
YOU WILL LEARN

- ✓ Project Planning
- ✓ Model Development
- ✓ Architectural Elements
- ✓ Doors, Windows & Stairs
- ✓ Rooms & Areas
- ✓ Annotations & Detailing
- ✓ Sheets & Views
- ✓ Schedules & Quantities
- ✓ Rendering & Presentation
- ✓ Project Documentation

PROJECT WORKFLOW



PROJECT OVERVIEW – 2-STOREY RESIDENTIAL HOUSE



KEY TOPICS COVERED

- 1 PROJECT PLANNING**
 - Understand client brief
 - Site & requirement analysis
- 2 PROJECT SETUP**
 - Create new project
 - Set units, levels, grids
 - Project organization
- 3 MODEL DEVELOPMENT**
 - Walls, floors, roofs
 - Doors, windows, components
 - Stairs, railings, balconies
- 4 ROOMS & AREAS**
 - Create rooms
 - Calculate areas
 - Room & area tags
- 5 ANNOTATION & DETAILING**
 - Dimensions, levels, tags
 - Detail components
 - Section & elevation tags
- 6 SHEETS & VIEWS**
 - Create sheets and viewports
 - Title blocks
 - Organize drawing sets
- 7 SCHEDULES & QUANTITIES**
 - Door/Window schedules
 - Room/Area schedules
 - Material takeoff
- 8 PRESENTATION & DOCUMENTATION**
 - 3D views and walkthroughs
 - Rendering
 - Final documentation & export

3D VIEW (EXTERIOR)



3D VIEW (INTERIOR)



ELEVATION (FRONT)



DOOR SCHEDULE (EXAMPLE)

Mark	Width	Height	Type	Count
D1	900	2100	Single Flush Door	06
D2	750	2100	Toilet Door	03
D3	1200	2100	Double Door	01
D4	1500	2100	Sliding Door	02
Total				12

ROOM SCHEDULE (EXAMPLE)

Name	Level	Area (m²)
Living	Ground Floor	22.20
Dining	Ground Floor	13.90
Kitchen	Ground Floor	10.80
Bedroom 1	Ground Floor	13.00
Bedroom 2	First Floor	13.00
Bedroom 3	First Floor	13.00
Family Lounge	First Floor	16.40
Total Area		102.30 m²



TIP: Work in a structured manner and use view templates, filters and sheet organization for professional output.



NEXT UNIT: >>

Unit 10: Advanced Topics & Collaboration

Learn advanced topics like worksharing, linking models, and project coordination.

UNIT 10

ADVANCED TOPICS & COLLABORATION

Learn advanced Revit tools, worksharing, coordination, and project management to deliver high-quality, coordinated BIM projects.



OVERVIEW

In this unit, you will learn advanced Revit tools and workflows including worksharing, linking, coordination, phasing, design options, and visualization. You will also explore BIM collaboration and model management to efficiently deliver coordinated and high-quality projects.

YOU WILL LEARN

- ✓ Worksharing
- ✓ Model Linking
- ✓ Coordination & Clash Detection
- ✓ Design Options
- ✓ Phasing
- ✓ Schedules & Quantities
- ✓ Visualization & Rendering
- ✓ BIM Collaboration
- ✓ Project Standards & Management
- ✓ Export & Interoperability

KEY CONCEPTS COVERED

WORKSHARING



Collaborate on the same model with multiple users.

LINKING & COORDINATION



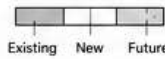
Link models (RVT, CAD, IFC) and coordinate between disciplines.

DESIGN OPTIONS



Create, compare and manage design alternatives.

PHASING



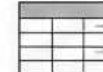
Plan construction sequences and manage phases.

VISUALIZATION



Create high-quality renderings, walkthroughs and 3D presentations.

SCHEDULES & DATA



Create advanced schedules and extract meaningful data.

BIM COLLABORATION



Manage models, coordinate with teams and improve project delivery.

PROJECT WORKFLOW – COLLABORATIVE BIM PROCESS

1 PLAN



Define scope, team, standards and BEP.

2 MODEL



Create central model and work on sub-models.

3 COORDINATE



Link models and perform clash detection.

4 ANALYZE



Review issues, analyze & resolve clashes.

5 DOCUMENT



Generate drawings, schedules & quantities.

6 DELIVER



Issue coordinated model and project deliverables.

EXAMPLE: COORDINATED BUILDING MODEL

ARCHITECTURAL MODEL



STRUCTURAL MODEL



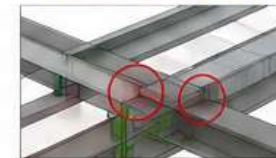
MEP MODEL



COORDINATED MODEL



CLASH DETECTION EXAMPLE



Clash Found

Resolve and Re-check

DESIGN OPTIONS EXAMPLE

OPTION 1



Compare areas, cost and performance

OPTION 2



Compare areas, cost and performance

PHASING EXAMPLE

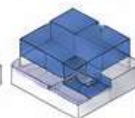
EXISTING



NEW CONSTRUCTION



FUTURE



Existing New Future

SCHEDULE EXAMPLE

Room Name	Level	Area (m ²)	Finish	Count
Living Room	Ground Floor	25.60	Tiles	1
Kitchen	Ground Floor	12.30	Tiles	1
Bedroom 1	First Floor	16.20	Wood	1
Bedroom 2	First Floor	13.80	Wood	1
Toilet	First Floor	5.10	Tiles	2
Total Area		72.00	-	6

RENDERED VIEW EXAMPLE



SHEET / DRAWING EXAMPLE



TIP: Establish a clear BIM Execution Plan (BEP) and follow standards for smooth collaboration and quality delivery.



NEXT
UNIT:



Congratulations!

You have completed the Autodesk Revit Complete Course.

KEY TOPICS COVERED

1 WORKSHARING



- Central vs Local models
- Worksets & Permissions
- Synchronize & Reload

2 MODEL LINKING



- Link Revit, CAD, IFC models
- Manage coordinates
- Link visibility settings

3 COORDINATION & CLASH DETECTION



- Clash Detective
- Clash reports
- Issue management

4 DESIGN OPTIONS



- Create design options
- Option sets
- Compare & manage options

5 PHASING



- Create phases
- Phase filters & overrides
- Demolition & new construction

6 SCHEDULES & QUANTITIES



- Advanced schedules
- Calculated values
- Material takeoff

7 VISUALIZATION & RENDERING



- Realistic rendering
- Walkthroughs & animations
- Presentation sheets

8 BIM COLLABORATION



- BIM 360 / ACC collaboration
- Model coordination
- Project communication

LEARNING OUTCOMES

- ✓ Collaborate effectively using worksharing.
- ✓ Link and coordinate models across disciplines.
- ✓ Detect and resolve clashes efficiently.
- ✓ Manage design options and construction phases.
- ✓ Create advanced schedules and quantities.
- ✓ Produce high-quality visualizations.
- ✓ Deliver coordinated and professional BIM projects.

UNIT 11

RENDERING & VISUALIZATION

Learn how to create photorealistic renders, walkthroughs, animations, and compelling visual presentations in Revit.



OVERVIEW

In this unit, you will learn how to create realistic renders, apply materials and lighting, set up cameras, and produce walkthroughs and animations. You will also explore exporting your visual content for presentations and client communication.

YOU WILL LEARN

- ✓ Materials
- ✓ Lighting
- ✓ Cameras
- ✓ Render Settings
- ✓ Visual Styles
- ✓ Walkthroughs
- ✓ Animation
- ✓ Export & Output



KEY CONCEPTS COVERED

MATERIALS



Apply and edit materials to enhance realism.

LIGHTING



Use natural and artificial lighting for better output.

CAMERAS



Create camera views with the right angle, height and focal length.

RENDER SETTINGS



Adjust quality, resolution, and render settings.

VISUAL STYLES



Control edges, shadows, lines, and surface appearance.

WALKTHROUGHS



Create walkthroughs and animations for better presentation.

EXPORT & OUTPUT



Export images, videos and panoramas for presentations.

RENDERING WORKFLOW IN REVIT



RENDERING EXAMPLES

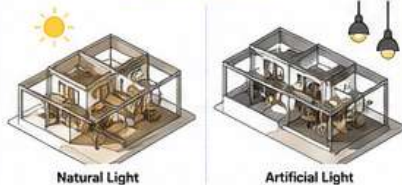


MATERIALS EXAMPLE



Use realistic materials to improve the look of your model.

LIGHTING EXAMPLE

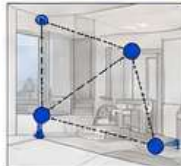


Natural Light

Artificial Light

Balance natural and artificial lighting for a realistic scene.

CAMERA VIEW EXAMPLE



CAMERA SETTINGS

- Height
- Angle
- Focal Length
- Perspective

Place cameras at the right position for the best view.

WALKTHROUGH EXAMPLE



Create smooth walkthroughs to present your project.

OUTPUT EXAMPLE



Export in multiple formats for presentations and clients.

KEY TOPICS COVERED

1 MATERIALS



- Apply materials
- Edit material properties
- Use render appearances

2 LIGHTING



- Sun settings
- Artificial lights
- Shadows and intensity

3 CAMERAS



- Create camera views
- Adjust height & angle
- Depth of field

4 RENDER SETTINGS



- Quality settings
- Resolution
- Background & exposure

5 VISUAL STYLES



- Realistic
- Hidden Line
- Consistent Colors

6 WALKTHROUGHS & ANIMATION



- Create walkthroughs
- Animation paths
- Adjust speed & effects

7 EXPORT & OUTPUT



- Export images
- Export videos
- Export panoramas

LEARNING OUTCOMES

- ✓ Create photorealistic renders in Revit.
- ✓ Apply materials and lighting effectively.
- ✓ Set up cameras and view compositions.
- ✓ Create walkthroughs and animations.
- ✓ Export high-quality images and videos.
- ✓ Produce professional visual presentations.



TIP: Use good materials, lighting and camera angles to make your renders look realistic and appealing.



NEXT UNIT:



Unit 12: Family Creation & Customization

Learn how to create, edit and manage custom families and parametric components in Revit.

UNIT 12

BIM COORDINATION & PROJECT DELIVERY

Learn how to coordinate multi-disciplinary models, detect clashes, manage project information, and deliver coordinated BIM projects.



OVERVIEW

In this unit, you will learn how to coordinate architectural, structural, MEP models, detect and resolve clashes, manage project data, create sheets and reports, and deliver a coordinated BIM model ready for construction and client handover.

YOU WILL LEARN

- ✓ BIM Coordination
- ✓ Model Linking
- ✓ Clash Detection
- ✓ Clash Management
- ✓ Sheets & View Management
- ✓ Quantities & Schedules
- ✓ Project Standards
- ✓ Documentation & Reports
- ✓ Project Delivery

KEY CONCEPTS COVERED

MODEL COORDINATION



Combine multiple discipline models into a single coordinated model.

CLASH DETECTION



Identify interferences between building elements from different models.

CLASH RESOLUTION



Review clash results, assign tasks, and resolve issues systematically.

INFORMATION MANAGEMENT



Organize data, use parameters, and maintain accurate project information.

SHEETS & DOCUMENTATION



Create sheets, legends, viewports, and annotation for construction documentation.

QUANTITIES & SCHEDULES



Extract quantities and create schedules for material takeoff and project tracking.

PROJECT DELIVERY

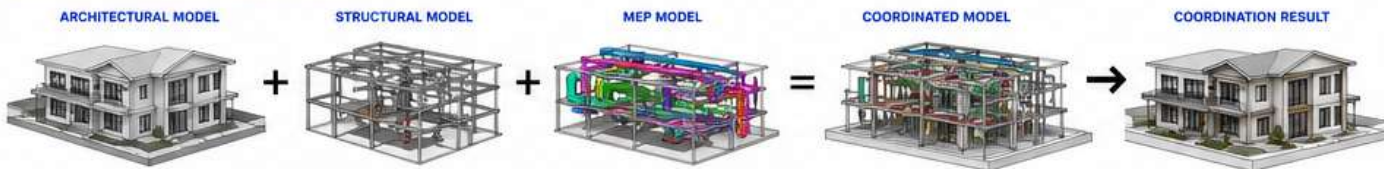


Deliver coordinated models, documents, and data for construction.

BIM COORDINATION WORKFLOW

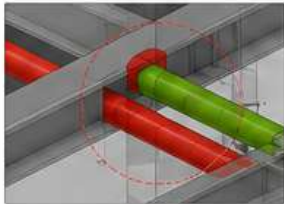


EXAMPLE: MULTI-DISCIPLINE COORDINATION



CLASH DETECTION EXAMPLE

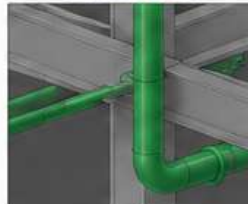
CLASH VIEW



CLASH INFORMATION

Clash Name	Pipe vs Beam
Status	New
Discipline 1	MEP
Element 1	Pipe (ID: 125678)
Discipline 2	Structure
Element 2	Beam (ID: 254789)
Clash Type	Hard Clash
Distance	-75 mm
Priority	High

CLASH RESOLUTION



CLASH REPORT SUMMARY



SHEET & DOCUMENTATION EXAMPLE



SCHEDULE EXAMPLE

< Door Schedule >					
Mark	Width	Height	Type	Level	Count
D1	900	2100	Single-Flush	Ground Floor	05
D2	1200	2100	Double-Flush	Ground Floor	02
D3	900	2100	Single-Flush	First Floor	04
D4	1200	2100	Double-Flush	First Floor	02
Total					13

QUANTITY TAKEOFF EXAMPLE

< Wall Material Takeoff >		
Material	Volume (m³)	Area (m²)
Brick Wall	52.60	175.30
Concrete Wall	38.20	127.40
Gypsum Wall	11.60	98.60
Total	102.60	401.30

PROJECT INFORMATION

- Project Base Point
- Survey Point
- Shared Coordinates
- Project Units
- Worksets
- Parameters

DELIVERABLES

- Coordinated BIM Model (RVT)
- Sheets & Drawings (PDF / DWG)
- Schedules & Quantities (Excel / PDF)
- Clash Report (PDF / BCF)
- Project Handover & Documentation

KEY TOPICS COVERED

- BIM COORDINATION**
 - Coordination model setup
 - Discipline model integration
 - Worksharing & collaboration
- MODEL LINKING**
 - Link Revit models
 - Manage link visibility
 - Coordinate & publish
- CLASH DETECTION**
 - Clash settings
 - Run clash tests
 - Review results
- CLASH MANAGEMENT**
 - Assign & track issues
 - Status & comments
 - Clash resolution workflow
- SHEETS & VIEW MANAGEMENT**
 - Create sheets & viewports
 - Legends, tags & annotation
 - Sheet organization
- QUANTITIES & SCHEDULES**
 - Material takeoff
 - Schedules & parameters
 - Export to Excel
- PROJECT STANDARDS**
 - Project information
 - Families & template
 - Naming conventions
- DOCUMENTATION & REPORTS**
 - Clash reports
 - Model reports
 - Project documentation
- PROJECT DELIVERY**
 - Final model coordination
 - Document set preparation
 - Client handover

LEARNING OUTCOMES

- ✓ Coordinate multi-disciplinary BIM models effectively.
- ✓ Detect, manage, and resolve clashes.
- ✓ Create accurate sheets, schedules and quantities.
- ✓ Maintain project information and standards.
- ✓ Deliver coordinated models and documentation for construction.



TIP: Good coordination saves time, reduces cost, and improves quality on site.



NEXT UNIT: >>

You've completed all 12 units! Keep practicing and apply your skills on real projects to become an expert Revit professional.