

# BimSrv Academy

## Revit Architecture

### Professional BIM Modelling & Documentation

## SELF-PACED COURSE WORKBOOK + REFERENCE MANUAL

Learner Name: \_\_\_\_\_

Revit Version: 2024 | Course Template: BA\_2024\_AR.rte

Learning Platform: BimSrv Academy Learning Management System (BA LMS)

Use Part I alongside the video lessons to complete project activities, checks, milestones and reflections. Use Part II as a practical reference whenever you need to review a Revit concept or workflow without replaying a video.

## PART I — COURSE WORKBOOK

### How to Use This Book

- Watch a short lesson segment in the BA LMS.
- Pause the video and reproduce the demonstrated workflow in Revit.
- Record important dimensions, settings, observations and corrections in this workbook.
- Check the model in a second appropriate view rather than relying on one view only.
- Save the active working model regularly and create milestone copies only at identified checkpoints.
- Complete formal quizzes in the BA LMS. Workbook questions are for practice, reflection and project checking.

*Course practice: Keep the supplied folder names and organisation unchanged unless a lesson specifically instructs you to do otherwise. This makes it easier to locate resources, working models, milestones, exports and submissions throughout the self-paced course.*

- ☐ I am not working directly inside the ZIP file
- ☐ 02\_Project 01\01\_Working Model is available
- ☐ BA\_2024\_AR.rte is available
- ☐ 01\_Course Resources is available
- ☐ Extracted course folder saved in a permanent location
- ☐ ZIP file completely extracted
- ☐ Course folder ZIP downloaded from the BA LMS

### Before You Continue

Save the active Project 01 Revit model in 02\_Project 01\01\_Working Model. Save identified milestone copies in 02\_Project 01\02\_My Milestones. Place PDF and DWG outputs in their respective folders under 02\_Project 01\03\_Exports. Use the same folder-management principle for Project 02 and the Capstone Project.

### Step 6 — Save Your Working Model in the Correct Folder

The approved course template is located under 01\_Course Resources\01\_Template\BA\_2024\_AR.rte. Keep the supplied master template unchanged. When instructed to begin a project, browse to this template and use it to create a new Revit project.

### Step 5 — Locate the Course Template

After extraction, confirm that the top-level course folders are available: 01\_Course Resources, 02\_Project 01, 03\_Project 02, 04\_Capstone Project and 05\_My Notes.

### Step 4 — Check the Extracted Folders

**IMPORTANT — Do not open and work on Revit files directly from inside the ZIP file. The complete ZIP must be extracted first.**

In Windows File Explorer, right-click the downloaded ZIP file and select Extract All.... Browse to the permanent course location and select Extract. Allow Windows to extract the complete folder structure.

### Step 3 — Extract the Complete ZIP File

Choose a permanent location for the course rather than working from the Downloads folder. A suitable example is: C:\BimSrv Academy\Revit Architecture\

### Step 2 — Choose a Permanent Course Location

Open the relevant course resources area in the BA LMS and download the supplied BimSrv Academy Revit Architecture course-folder ZIP file to your computer.

### Step 1 — Download the Course Folder ZIP

BimSrv Academy provides a pre-organised ZIP file containing the standard folder structure for your course work. You do not need to create all of the course folders manually. Download the ZIP file from the BA LMS and extract it before beginning the practical project work.

## Setting Up Your Course Folders from the Supplied ZIP File

### Your Course Folder Structure

```
C:\BimSrv Academy\Revit Architecture\  
01_Course Resources\01_Template\BA_2024_AR.rte  
01_Course Resources\02_Training Workbook  
01_Course Resources\03_Presentations  
01_Course Resources\04_Project Briefs  
01_Course Resources\05_Checklists  
01_Course Resources\06_Assignments  
01_Course Resources\07_Reference Files  
01_Course Resources\08_Additional Families  
01_Course Resources\09_Instructor Milestones  
02_Project 01\01_Working Model  
02_Project 01\02_My Milestones  
02_Project 01\03_Exports\PDF  
02_Project 01\03_Exports\DWG  
02_Project 01\04_Submission  
03_Project 02\...  
04_Capstone Project\...  
05_My Notes
```

**Project scope note: Both Project 01 and Project 02 include Revit Architecture and prescribed RCC structural modelling. The course teaches BIM authoring and coordination, not structural engineering design, analysis or member sizing.**

### Course Template Principle

- BA\_2024\_AR.rte is the approved starting template for the course.
- Required wall and floor types are provided or developed through the lessons as prescribed.
- Project location, levels and the building model are created by the learner.
- View Templates are taught as a professional control method; they are not preloaded as completed teaching shortcuts.
- The course delivery focuses on RVT, PDF and DWG where required; IFC export is not part of this course.

## SECTION 01 — BIM & REVIT FOUNDATIONS

### SECTION PURPOSE / OUTCOME

Understand BIM thinking, the Revit project database and the logic of coordinated model information.

### Learning Objectives

#### Revit Tip — Dimensions Can Drive the Model

In Revit, dimensions are not only drawing annotations. Temporary dimensions can be edited while modelling to move walls and resize spaces. When entering a value, you can type an appropriately formatted metric or imperial dimension. Revit interprets the unit input, so you do not need to manually convert every dimension before modelling. In Project 01, you will deliberately use imperial dimensional input to develop Bedroom #1, Bedroom Suite #1 and the subsequent plan.

- Explain BIM as geometry plus information and relationships.
- Distinguish model elements from view representation.
- Recognise Category → Family → Type → Instance.
- Apply the Build → Check → Correct → Continue quality loop.

### Workbook Activities / Project Tasks

- ☐ Write BIM in your own words and identify three properties carried by a Revit wall.
- ☐ Compare hiding an element in one view with deleting it from the model.
- ☐ Use a door to identify Category, Family, Type and Instance.
- ☐ Locate BA\_2024\_AR.rte and write the correct project-start sequence.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Treating BIM as only 3D modelling.
- Confusing a view-display issue with a model error.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.

- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

## BA LMS

Complete the Section 01 knowledge check in the BA LMS after you can explain the concepts without relying on command memorisation.

## What I Can Now Do

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## My Notes / Questions

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## SECTION 02 — PROJECT 01 — TWO-FLOOR RESIDENTIAL HOUSE

**Workbook alignment:** This section follows the current Master Course Structure. Practical modelling begins with Project Setup, followed by Bedroom #1 and dimension-driven modelling, Bedroom Suite #1, Living / Dining, Bedroom Suite #2, Kitchen, Entry / Stair Hall, openings, RCC stair, First Floor, double-height conditions, floors and the glazed Stair Hall roof.

### Architectural Brief / Programme

- Project 01 is a two-floor residential house developed from scratch. Learners are not given a completed floor plan to trace.
- Ground Floor: a central Living / Dining Room with two bedroom suites positioned on either side.
- Bedroom Suite #1 comprises Bedroom #1, Dressing #1 and Bath #1.
- Bedroom Suite #2 comprises Bedroom #2, Dressing #2 and Bath #2.
- The Ground Floor also includes a Kitchen and an Entry and Stair Hall.
- Bath and Dressing are integral parts of each bedroom suite.

### Revit Architecture + RCC Structure Scope

- The glazed roof over the Stair Hall is modelled as part of the architectural building-envelope/roof workflow and checked against the stair, upper-floor opening, supporting walls and surrounding construction.
- Wall panelling is developed at prescribed locations using an appropriate Revit modelling/detailing method and coordinated with materials, openings and interior elevations.
- Ceiling light fixtures are modelled and coordinated as part of the architectural ceiling/RCP workflow. Electrical circuiting, load calculations and electrical-system design are outside the Project 01 scope.
- Project 01 also includes architectural ceilings with light fixtures, selected wall panelling and a glazed roof over the Stair Hall.
- The project includes both the architectural model and the prescribed RCC structural model.
- RCC modelling includes the appropriate columns, beams, slabs, foundations/footings and RCC staircase required by the course project.
- The learner models the prescribed structural system in Revit; structural analysis, structural engineering design and member sizing are outside the course scope.

### Recommended Modelling Progression

- Begin practical modelling with Bedroom #1 as the first room. Use walls and temporary dimensions to demonstrate that Revit dimensions can drive and resize model geometry.
- Demonstrate explicit dimensional input in either metric or imperial units without requiring manual conversion. For the prescribed Project 01 exercise, Bedroom Suite #1 and the subsequent plan are developed using imperial dimensional input while the project retains its prescribed display-unit settings.
- Extend Bedroom #1 into Dressing #1 and Bath #1, then continue the dimension-driven workflow into the Living / Dining Room and the remainder of the Ground Floor.
- Project setup: BA\_2024\_AR.rte → save project → geographical location → levels.
- Develop the central Living / Dining Room.
- Develop Bedroom Suite #1: Bedroom #1 → Dressing #1 → Bath #1.
- Use Mirror where appropriate to establish the opposite-side Bedroom Suite #2, then modify it to the prescribed project dimensions and conditions.

- Develop the Kitchen and Entry / Stair Hall.
- Add doors and windows, then check the Ground Floor in plan and 3D.
- Develop the First Floor in accordance with the course brief and coordinate the open/double-height conditions.
- Develop prescribed wall-panelling conditions and coordinate them with openings, materials and interior elevations.
- Place and coordinate ceiling light fixtures as architectural RCP content.
- Create the prescribed ceilings and develop the Reflected Ceiling Plans.
- Model the glazed roof over the Stair Hall and check it in plan, section and 3D.
- Develop the RCC structural model and coordinate it with the architectural model.
- Check architecture and RCC structure in plan, section and 3D before continuing.

## Learning Objectives

- Develop a residential architectural BIM model from a programme rather than tracing a completed plan.
- Use constraints, dimensions, Mirror and Split Element in real project conditions.
- Understand bedroom-suite planning relationships and central Living / Dining organisation.
- Model and coordinate a prescribed RCC structural system.
- Use the Build → Check → Correct → Continue workflow.

## Project Checkpoint

- Bedroom #1 and Bedroom Suite #1 demonstrate controlled dimension-driven modelling using the prescribed imperial dimensional input.
- The learner can resize model geometry by editing temporary dimensions and can enter valid metric or imperial values when required.
- Ground Floor architectural programme is complete and correctly related.
- First Floor conditions required by the course are complete.
- RCC columns, beams, slabs, foundations/footings and stair conditions are modelled as prescribed.
- Architecture and RCC structure have been cross-checked in plan, section and 3D.
- Prescribed wall panelling is complete and coordinated with openings and finishes.
- Ceilings and ceiling light fixtures are complete and checked in RCP/section.
- Glazed Stair Hall roof is complete and coordinated.
- Save the Project 01 milestone and complete the relevant BA LMS assessment.

# SECTION 03 — PROJECT 01 — DEVELOPING THE ARCHITECTURAL BIM MODEL

## SECTION PURPOSE / OUTCOME

Convert the stable base model into a meaningful architectural BIM model with constructions, materials and components.

## Learning Objectives

- Develop 230 mm external and 115 mm internal wall constructions.
- Create project materials through real building assemblies.
- Develop floor build-ups while retaining openings.
- Use loadable component families in Living, Dining, Kitchen and other prescribed spaces.

- Check model development in plan, section and 3D.

## Workbook Activities / Project Tasks

- ☐ Duplicate and rename wall/floor types before modification.
- ☐ Verify material graphics and compound layer thicknesses.
- ☐ Place prescribed furniture and kitchen components without redesigning the project.
- ☐ Check that type changes have not altered unintended instances.

## Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

## Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

## Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

## Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

## BA LMS

Complete the Section 03 knowledge check in the BA LMS after the developed model has been reviewed.

## What I Can Now Do

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## My Notes / Questions

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## SECTION 04 — PROJECT 01 — CEILINGS, LIGHTING, WALL PANELLING & INTERIOR DEVELOPMENT

### SECTION PURPOSE / OUTCOME

Develop ceilings, finishes and selected interior conditions while maintaining model discipline.

### Learning Objectives

- Create ceiling plans and ceiling types where required.
- Apply finish information through appropriate model elements/materials.
- Coordinate ceiling heights with walls, openings and room conditions.
- Avoid unnecessary modelling detail.

### Workbook Activities / Project Tasks

- ☐ Create prescribed ceilings and check them in RCP and section. Place and coordinate the prescribed ceiling light fixtures as part of the architectural RCP workflow.
- ☐ Record key ceiling heights, light-fixture locations, wall-panelling conditions and finish types.
- ☐ Identify one condition where 2D documentation is preferable to excessive 3D modelling.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Complete the Section 04 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 05 — PROJECT 01 — ROOMS & BIM INFORMATION

### SECTION PURPOSE / OUTCOME

Use rooms and parameters to turn the architectural model into organised BIM information.

### Learning Objectives

- Place and enclose rooms correctly.
- Apply room names and numbers consistently.
- Understand room-bounding behaviour.
- Use model information as a basis for schedules and QA.

### Workbook Activities / Project Tasks

- ☐ Place rooms on both floors and resolve unplaced/not enclosed conditions.
- ☐ Check room names, numbers and areas.
- ☐ Record any boundary issue and how it was corrected.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 05 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 06 — PROJECT 01 — VIEWS, VISIBILITY & GRAPHICS

### SECTION PURPOSE / OUTCOME

Create controlled plans, RCPs, elevations, sections and 3D views for production and checking.

### Learning Objectives

- Understand View Range, Crop Region and Section Box.
- Distinguish model errors from view-display errors.
- Use view duplication appropriately.
- Introduce View Templates where a repeated view standard is required.

### Workbook Activities / Project Tasks

- ☐ Create and name prescribed working/documentation views.
- ☐ Use View Range to diagnose a plan-display issue.
- ☐ Use a Section Box to inspect a local 3D condition.
- ☐ Apply or create a View Template only when the workflow requires consistent view settings.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Changing model geometry to solve a visibility problem.
- Using uncontrolled duplicate views.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 06 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 07 — PROJECT 01 — ARCHITECTURAL ANNOTATION & DOCUMENTATION

### SECTION PURPOSE / OUTCOME

Annotate the model with coordinated dimensions, tags, notes, callouts and references.

### Learning Objectives

- Dimension stable model geometry.
- Use tags for model data rather than duplicating information as text.
- Use text notes only for explanatory information.
- Create callouts where enlarged information is required.

### Workbook Activities / Project Tasks

- ☐ Annotate a plan without over-dimensioning.
- ☐ Tag doors/rooms using model data.
- ☐ Create a prescribed callout and verify its reference.
- ☐ Review annotation overlap and readability.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Complete the Section 07 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 08 — PROJECT 01 — ARCHITECTURAL DETAILS & CONSTRUCTION INFORMATION

### SECTION PURPOSE / OUTCOME

Develop selected construction conditions at larger scales using model-based and 2D detail information appropriately.

### Learning Objectives

- Identify conditions that genuinely require enlarged details.
- Use model-based details for actual project locations.
- Use Drafting Views for model-independent standard details.
- Supplement model geometry with Detail Components, Filled Regions and dimensions where appropriate.

### Workbook Activities / Project Tasks

- ☐ Create the prescribed wall/floor or window detail.
- ☐ Create one reusable drafting detail where the information is model-independent.
- ☐ Check that local detail information has not unnecessarily increased model complexity.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Complete the Section 08 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 09 — PROJECT 01 — SCHEDULES & BIM DATA EXTRACTION

### SECTION PURPOSE / OUTCOME

Use schedules as live views of model information and as QA tools.

### Learning Objectives

- Create door, window and room schedules.
- Select useful fields, sorting/grouping and formatting.
- Use schedules to expose missing, duplicate or inconsistent information.
- Understand that schedule reliability depends on model/data quality.

### Workbook Activities / Project Tasks

- ☐ Create the prescribed schedules.
- ☐ Identify and correct at least one data inconsistency revealed by a schedule.
- ☐ Record the fields used and why they matter.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Assuming schedules are correct when model data is incomplete.
- Using manual text instead of model fields.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 09 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 10 — PROJECT 01 — SHEETS & DRAWING SET

### SECTION PURPOSE / OUTCOME

Assemble a controlled architectural drawing set and check it page by page.

### Learning Objectives

- Create sheets using the prescribed title block.
- Place views and schedules with controlled scales and titles.
- Organise sheet numbering and naming.
- Perform drawing-set QA before issue.

### Workbook Activities / Project Tasks

- ☐ Create the prescribed sheet set.
- ☐ Place plans, elevations, sections, details and schedules.
- ☐ Check drawing numbers, scales, view titles and annotation consistency.
- ☐ Run the drawing-set QA checklist.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Save the Project 01 documentation milestone and complete the Section 10 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 11 — REVIT FAMILIES THROUGH PROJECT REQUIREMENTS

### SECTION PURPOSE / OUTCOME

Create and test a simple family only when the project has a genuine content requirement.

### Learning Objectives

- Decide whether existing content can be adapted before creating new content.
- Build the family framework with reference planes.
- Add controlled geometry and parameters.
- Load and test the family in the actual project.
- Review family quality and performance.

### Workbook Activities / Project Tasks

- ☐ Identify the prescribed missing component.
- ☐ Create reference planes and constraints before geometry.
- ☐ Test parameter changes.
- ☐ Load into Project 01 and check scale, graphics, host/level behaviour and file size.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Complete the Section 11 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 12 — PROJECT 02 — SIX-FLOOR OFFICE BUILDING

**Workbook alignment:** Project 02 develops a six-floor office building with an approximately 500 m<sup>2</sup> typical floor plate, basement parking, a central core containing toilets, the main staircase and three elevators, an external fire escape with louvered enclosure, and a façade combining curtain wall, stone-finished solid wall and louvered wall. The project also includes the prescribed multi-storey RCC structural model.

### Architectural Brief / Programme

- Project 02 is a six-floor office building with a typical floor plate of approximately 500 m<sup>2</sup>.
- The building includes basement parking.
- The central core contains toilets, the main staircase and three elevators.
- A separate external fire-escape staircase is located along one external face and is enclosed/screened by a louvered wall.
- The external façade combines curtain wall, solid wall with stone finish, and louvered wall.
- Louvered wall treatment is used particularly outside the toilets and the external fire escape.

### Revit Architecture + RCC Structure Scope

- Project 02 includes both the architectural office-building model and its prescribed RCC structural model.
- The RCC workflow develops multi-storey columns, beams, slabs, foundations and structural stair/core conditions appropriate to the course brief, including basement conditions.
- The structural frame is coordinated with the architectural core, floor plates, façade zones, openings and circulation.
- The course teaches Revit structural modelling and BIM coordination; structural analysis, engineering design and member sizing are outside scope.

### Why Project 02 Is Different

- Project 01 establishes the Revit/BIM workflow in a controlled residential project.
- Project 02 applies and extends those skills to a larger commercial building with repetition, vertical circulation, a basement, façade systems and multi-storey RCC structure.
- The project introduces professional model-management decisions rather than simply repeating Project 01 at a larger scale.

### Recommended Modelling Progression

- Establish levels and grids for the six-floor office building and basement.
- Develop the typical office floor plate and central core.
- Model the three-elevator core, toilets and internal staircase.
- Develop the external fire escape and louvered enclosure.
- Develop the façade using curtain wall, stone-finished solid wall and louvered wall zones.
- Develop basement parking and its relationship to the vertical circulation/core.
- Develop the prescribed RCC structural grid and frame.
- Use repetition/grouping/multi-level methods where they genuinely improve control.
- Coordinate architectural and RCC models in plan, section and 3D.

### Project Checkpoint

- Six-floor office building and basement are modelled to the prescribed brief.

- Core contains toilets, internal staircase and three elevators.
- External fire escape and louvered enclosure are coordinated.
- Façade systems are correctly differentiated.
- RCC structure is modelled and coordinated with architecture.
- Save the Project 02 milestone and complete the relevant BA LMS assessment.

## SECTION 13 — PROJECT 02 — REPETITION, GROUPS & MODEL MANAGEMENT

### SECTION PURPOSE / OUTCOME

Manage repeated floors, façade conditions and other genuinely repeated geometry in the six-floor office project while keeping the larger model organised.

### Learning Objectives

- Recognise genuine repetition.
- Use Model Groups where coordinated repetition is appropriate.
- Use arrays for regular repeated patterns.
- Control group edits and avoid unintended propagation.
- Organise views and the Project Browser.

### Workbook Activities / Project Tasks

- ☐ Create the prescribed group and place instances.
- ☐ Edit the group deliberately and observe propagation.
- ☐ Use an array only where spacing is systematic.
- ☐ Rename and organise project views.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

BA LMS

Complete the Section 13 knowledge check in the BA LMS.

What I Can Now Do

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My Notes / Questions

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## SECTION 14 — SITE, TRUE NORTH & BUILDING CONTEXT

### SECTION PURPOSE / OUTCOME

Relate the office building to real-world site orientation and terrain.

### Learning Objectives

- Distinguish Project North from True North.
- Set the prescribed True North relationship without rotating model geometry incorrectly.
- Create the site using the Revit 2024 Toposolid workflow.
- Check building/site relationships in 3D and section.

### Workbook Activities / Project Tasks

- ☐ Set and verify orientation.
- ☐ Create the prescribed Toposolid from supplied points/elevations.
- ☐ Check site elevations and building relationship.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 14 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 15 — LINKED MODELS & MULTIDISCIPLINARY COORDINATION

### SECTION PURPOSE / OUTCOME

Coordinate the architectural and RCC structural models, then use linked consultant models where required without confusing linking with authoring.

### Learning Objectives

- Link external models using the prescribed positioning method.
- Use Manage Links appropriately.
- Control linked-model visibility.
- Review architectural, structural and MEPF relationships.

### Workbook Activities / Project Tasks

- ☐ Link the prescribed consultant model.
- ☐ Check positioning in plan and 3D.
- ☐ Identify at least one coordination condition and record the required action/owner.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Complete the Section 15 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 16 — COORDINATES & SHARED POSITIONING

### SECTION PURPOSE / OUTCOME

Understand Internal Origin, Project Base Point, Survey Point and a controlled shared-coordinate strategy.

### Learning Objectives

- Recognise Revit coordinate references.
- Document the project coordinate source.
- Acquire shared coordinates only from the prescribed source where appropriate.
- Test positioning by reload/relink rather than assuming success.
- Recognise common coordinate errors.

### Workbook Activities / Project Tasks

- ☐ Record the coordinate strategy before changing anything.
- ☐ Apply the prescribed shared-coordinate workflow.
- ☐ Reload/relink and verify position in plan and 3D.
- ☐ Diagnose a prepared coordinate error without arbitrary model movement.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Moving models manually after shared positioning.
- Using Center-to-Center as a final coordination strategy.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Complete the Section 16 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 17 — WORKSHARING & COLLABORATIVE REVIT

### SECTION PURPOSE / OUTCOME

Understand central/local models, worksets, ownership and safe multi-user collaboration.

### Learning Objectives

- Explain central versus local model responsibilities.
- Enable worksharing only when collaboration requires it.
- Create useful worksets rather than excessive worksets.
- Synchronise safely and relinquish appropriately.
- Avoid working directly in the central model.

### Workbook Activities / Project Tasks

- ☐ Review the collaboration diagram.
- ☐ Create only prescribed worksets.
- ☐ Practise Synchronize with Central in the training environment.
- ☐ Record one collaboration risk and its prevention.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Working directly in the central model.
- Creating too many worksets or sharing one local file.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 17 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 18 — PHASING & RENOVATION WORKFLOW

### SECTION PURPOSE / OUTCOME

Represent existing, demolished and new work using Revit phases rather than duplicate disconnected drawings.

### Learning Objectives

- Understand phases and phase filters.
- Assign existing/new/demolished status correctly.
- Create views appropriate to renovation communication.
- Check that phasing is model-driven.

### Workbook Activities / Project Tasks

- ☐ Apply prescribed phases to a training condition.
- ☐ Create Existing and Proposed views.
- ☐ Check demolition representation and phase filters.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 18 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 19 — BIM STANDARDS, NAMING & VIEW TEMPLATES

### SECTION PURPOSE / OUTCOME

Apply consistent project standards to names, views, graphics and information.

### Learning Objectives

- Use disciplined naming for views, sheets, families/types and project files.
- Create View Templates from genuine repeated graphic requirements.
- Understand what a View Template controls and what should remain project-specific.
- Use standards to reduce inconsistency, not to create bureaucracy.

### Workbook Activities / Project Tasks

- ☐ Rename prescribed views using the course convention.
- ☐ Create/apply a View Template to a repeated view class.
- ☐ Audit inconsistent names and correct them.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 19 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 20 — QA/QC & MODEL HEALTH

### SECTION PURPOSE / OUTCOME

Use systematic quality control to find, correct and recheck model and documentation problems.

### Learning Objectives

- Review warnings rather than ignoring them.
- Check constraints, types, rooms, views, links, coordinates and sheets.
- Remove unnecessary test/imported content.
- Use schedules, sections and 3D views as QA tools.
- Recheck after corrections.

### Workbook Activities / Project Tasks

- ☐ Run the model audit checklist.
- ☐ Record warnings reviewed and actions taken.
- ☐ Perform one plan/section/3D cross-check.
- ☐ Confirm that corrections did not create secondary problems.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Ignoring warnings without review.
- Correcting an issue without rechecking connected conditions.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 20 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 21 — PROJECT ISSUE, REVISION & DELIVERY

### SECTION PURPOSE / OUTCOME

Prepare controlled project outputs and revisions for issue.

### Learning Objectives

- Prepare clean RVT, PDF and DWG deliverables where required.
- Use revisions and issue information consistently.
- Review exports rather than assuming successful output.
- Package only required deliverables.

### Workbook Activities / Project Tasks

- ☐ Prepare the prescribed issue set.
- ☐ Review PDF page by page.
- ☐ Review exported DWG where required.
- ☐ Record revision/issue information and complete the delivery checklist.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

### BA LMS

Complete the Section 21 knowledge check in the BA LMS.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 22 — CAPSTONE PROJECT — INDEPENDENT BIM DELIVERY

### SECTION PURPOSE / OUTCOME

Demonstrate independent transfer of the course workflow to a prescribed architectural project.

### Learning Objectives

- Set up the project correctly without relying on a completed model.
- Model with appropriate element types and information.
- Prepare controlled views, schedules, documentation and sheets.
- Complete QA/QC before delivery.
- Prepare required RVT/PDF/DWG outputs.

### Workbook Activities / Project Tasks

- ☐ Follow the capstone brief and create the model independently.
- ☐ Use the workbook checklists rather than waiting for instructor correction.
- ☐ Complete self-assessment before submission.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Submit the capstone evidence through the BA LMS and complete the Section 22 knowledge check.

**What I Can Now Do**

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**My Notes / Questions**

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## SECTION 23 — COURSE COMPLETION & FINAL KNOWLEDGE ASSESSMENT

### SECTION PURPOSE / OUTCOME

Consolidate learning, complete outstanding evidence and demonstrate integrated understanding.

### Learning Objectives

- Confirm lesson, quiz, assignment and capstone completion.
- Review weak areas before the final assessment.
- Demonstrate workflow judgement rather than command-location memorisation.
- Prepare final certification evidence.

### Workbook Activities / Project Tasks

- ☐ Complete the course completion record.
- ☐ Review notes and unresolved questions.
- ☐ Complete the final knowledge assessment in the BA LMS.
- ☐ Write a final reflection on how your BIM/Revit thinking has changed.

### Professional Workflow

- Project Need → Revit Tool → Build → Check → Correct → Continue
- Use the most appropriate second view to verify the result: plan, 3D, elevation, section, schedule or sheet.
- Before changing a type or shared setting, check what other elements/views may be affected.

### Record Your Check

| Item checked                   | Observation / value |
|--------------------------------|---------------------|
| Key dimension / setting / type |                     |
| Correction made, if any        |                     |
| Recheck completed              |                     |

### Common Mistakes / Troubleshooting

- Using a command without first understanding the project requirement.
- Accepting the first visual result without checking model relationships.
- Continuing after an error instead of correcting it at the point it is found.

### Section Checkpoint

- ☐ I completed the required project activities in my own Revit file.
- ☐ I checked the result in more than one appropriate view.
- ☐ I corrected identified errors before moving on.
- ☐ I saved the active working model and created a milestone where required.

**BA LMS**

Complete all required submissions in the BA LMS and confirm certification requirements.

**What I Can Now Do**

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**My Notes / Questions**

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## CAPSTONE PROJECT — LEARNER CHECKLIST

- ☐ Create the project from the prescribed course setup.
- ☐ Build the architectural model without tracing a supplied completed floor plan.
- ☐ Use appropriate element types and BIM information.
- ☐ Prepare controlled views and documentation.
- ☐ Create schedules and sheets.
- ☐ Complete QA/QC before issue.
- ☐ Prepare required RVT/PDF/DWG deliverables as instructed.

### Capstone Self-Assessment

| Area                    | Weight | My Check |
|-------------------------|--------|----------|
| Setup                   | 10     |          |
| Architectural Modelling | 25     |          |
| BIM Information         | 10     |          |
| Views & Graphics        | 10     |          |
| Documentation & Details | 15     |          |
| Schedules               | 10     |          |
| Sheets & Deliverables   | 10     |          |
| QA/QC                   | 10     |          |

### Course Completion Record

- ☐ All required video lessons completed
- ☐ Section quizzes completed in the BA LMS
- ☐ Project 01 completed
- ☐ Project 02 completed
- ☐ Capstone completed
- ☐ Final knowledge assessment completed in the BA LMS
- ☐ Required submissions uploaded

### Final Reflection — What changed in the way I think about BIM and Revit?



## PART II — REVIT ARCHITECTURE REFERENCE MANUAL

Use this part as a quick-reference guide. It does not replace the video lesson. It summarises what a tool or setting controls, where it is used in the course, the recommended BA workflow and the checks to perform.

### A. Course Environment and File Management

**Working model:** Keep one clearly identified active model. Avoid filenames such as final, latest, final2 or latest\_final.

**Milestones:** Create milestone copies only at major checkpoints so earlier stable states can be recovered.

**Supplied resources:** Do not overwrite original course resources; work on copies where appropriate.

### B. Revit Interface and Navigation

**Ribbon:** Commands are grouped by tabs and panels.

**Properties Palette:** Shows properties of the current view or selected element.

**Project Browser:** Access to views, schedules, sheets, families and project organisation.

**View Control Bar:** Controls scale, detail level, visual style and other view-specific display settings.

**Navigation:** Use ViewCube/3D/sections to understand spatial relationships, not only to present the model.

### C. BIM and Revit Core Concepts

**Category:** Broad classification of Revit elements.

**Family:** Group of related Revit elements.

**Type:** Defined variation shared by multiple instances.

**Instance:** An individual placed element.

**Parameter:** Information or control associated with an element, type or project.

**View:** Representation of model/project information, not a separate copy of the building.

### D. BA\_2024\_AR.rte — Course Template

**Purpose:** Provides the approved starting standards and resources for the course.

**Rule:** Start a new project by browsing to the template; do not edit the master template while completing project work.

**View Templates:** Introduced when learners understand why repeated view controls are required.

### E. Starting and Setting Up a Project

**Sequence:** Template → Save project → Units → Geographical location → Levels → Model.

**Levels:** Horizontal datums controlling vertical project organisation.

**Location:** Establish project context before building geometry where prescribed.

## F. Selection and Modify Workflows

**Select carefully:** Confirm exactly which elements are selected before Move, Copy, Mirror, Delete or type changes.

**Mirror:** Use when geometry genuinely repeats around a clear axis.

**Split Element:** Use to divide an element where different types/conditions are required.

**Align / Trim / Extend / Offset:** Use as project geometry requires; verify constraints after modification.

## G. Walls

**Base Constraint:** Level/reference controlling the wall base.

**Top Constraint:** Upper reference controlling wall height.

**Location Line:** Reference used to position the wall relative to its thickness.

**Type safety:** Duplicate → Rename → Modify when creating a new wall construction.

## H. Doors, Windows and Loadable Families

**Host relationship:** Doors/windows depend on host walls.

**Placement:** Use temporary dimensions for prescribed positioning.

**Windows:** Check Sill Height as well as horizontal position.

**Families:** Load only required content and test it in project context.

## I. Floors, Roofs and Ceilings

### Dimension-Driven Modelling and Mixed-Unit Input

Temporary dimensions appear as part of Revit's interactive modelling workflow. Selecting an element such as a wall allows the displayed temporary dimension to be edited, which moves the element and changes the size of the associated space.

A project may display dimensions in one unit system while still accepting explicitly entered values in another supported unit system. Enter the value together with the appropriate unit notation. This is useful when working with information supplied by international consultants, manufacturers or project teams.

Course application: Project 01 deliberately uses imperial dimensional input while developing Bedroom #1, Bedroom Suite #1 and the subsequent residential plan. The objective is to learn how Revit interprets dimensional input and how dimensions can be used to control geometry.

**Wall Panelling:** Use the prescribed modelling/detailing method appropriate to the required information and Level of Detail; coordinate panelling with materials, openings and interior elevations.

**Ceiling Lights:** Place prescribed light fixtures as part of the architectural ceiling/RCP coordination. Electrical design, circuiting and load calculations are outside scope.

**Glazed Stair-Hall Roof:** Use the prescribed roof/glazed-system workflow and verify support, boundaries, slopes where applicable, and relationship to the stair hall in plan, section and 3D.

**Boundaries:** Sketches must form valid closed loops.

**Openings:** Use inner closed loops where a slab/ceiling must contain a real opening.

**Check:** Review in section/3D to verify vertical relationships and thickness.

## J. Stairs and Railings

**Stair setup:** Confirm Base Level, Top Level, width, risers and landing condition.

**RCC stair:** Treat the course stair as a monolithic architectural construction concept.

**Verification:** Use section to check floor connection, landing levels and headroom.

**Railings:** Check path, host/level and relationship to open-to-below edges.

## K. Rooms and BIM Information

**Room:** Spatial information object defined by room-bounding geometry.

**QA:** Resolve Not Enclosed/Not Placed conditions and check names, numbers and areas.

**Data:** Use room information in tags, schedules and QA rather than retyping it manually.

## L. Views, Visibility and View Templates

**View Range:** Controls vertical visibility in plan views.

**Crop Region:** Controls visible view extent.

**Section Box:** Isolates part of a 3D view for inspection.

**View Template:** Reusable control of selected view properties and graphics.

**Diagnostic rule:** If geometry is correct in 3D/section, investigate view controls before remodelling.

## M. Annotation and Documentation

**Dimensions:** Reference stable geometry and avoid over-dimensioning.

**Tags:** Display model data and remain coordinated.

**Text Notes:** Use for explanatory information not better represented by model data.

**Callouts:** Create enlarged views of project conditions where needed.

## N. Details and Drafting

**Model-based detail:** Preferred when the condition belongs to an actual project location.

**Drafting View:** Appropriate for model-independent standard detail information.

**2D supplementation:** Use Detail Components, Filled Regions, Detail Lines and dimensions to avoid over-modelling.

## O. Schedules and BIM Data

**Schedule:** A live tabular view of model/project information.

**QA use:** Schedules can reveal missing marks, duplicates and inconsistent data.

**Reliability:** A schedule is only as reliable as the model information feeding it.

## P. Sheets and Drawing Sets

**Sheets:** Organise views, schedules and issue information.

**QA:** Check sheet number/name, view titles, scales, annotation, schedules and graphic consistency page by page.

**Issue:** Preview exported PDF rather than assuming the sheet set is correct.

## Q. Revit Families

**Framework first:** Use reference planes and constraints before geometry.

**Parameters:** Create only parameters required by the component/project.

**Test:** Load into the project and test scale, graphics, hosting, parameters and file size.

**Performance:** Avoid unnecessary nesting, imported CAD and excessive geometry.

## R. Site and Building Context

**Project North:** Convenient project/documentation orientation.

**True North:** Actual geographic orientation.

**Toposolid:** Revit 2024 site terrain element used for architectural site context.

## S. Linked Models and Shared Coordinates

**Link:** External model referenced without becoming native project geometry.

**Internal Origin:** Fixed internal coordinate origin.

**Project Base Point:** Project positioning reference.

**Survey Point:** Survey/site coordinate reference.

**Shared Coordinates:** Use one documented project strategy and test positioning after reload/relink.

## T. Worksharing and Collaboration

**Central Model:** Shared worksharing model.

**Local Model:** User working copy associated with the central model.

**Workset:** Worksharing grouping used for collaboration and visibility/ownership management.

**Rule:** Do not work directly in central; synchronise and relinquish appropriately.

## U. Phasing and Renovation

**Phases:** Represent project time states such as Existing and New Construction.

**Demolition:** Use element phase status rather than drawing disconnected demolition linework.

**Phase Filters:** Control how phase states display in views.

## V. BIM Standards and Naming

**Naming:** Use clear controlled names for files, views, sheets, types and families.

**Standards:** Support repeatability, QA and team understanding.

**View Templates:** Apply where repeated view settings should remain consistent.

## W. QA/QC and Model Health

**Quality loop:** Build → Check → Correct → Continue.

**Warnings:** Review, understand and resolve important warnings; do not ignore them automatically.

**Cross-check:** Use plan, section, 3D, schedules and sheets together.

**Cleanup:** Remove unnecessary test/imported content before delivery.

## X. Project Delivery — RVT, PDF and DWG

**RVT:** Save the correct final model with required resources and naming.

**PDF:** Export and review page by page.

**DWG:** Export only where required and review the result.

**Scope:** IFC export is not required for this course.

## Y. Troubleshooting Guide

**Element missing in plan:** Check View Range, visibility/graphics, phase, discipline, crop and whether the element exists in the model.

**Wrong wall/door/window everywhere:** Check whether a Type was modified instead of an Instance.

**Stair does not meet floor:** Check Base/Top levels, offsets, risers, landings and slab opening in section.

**Room not enclosed:** Check room-bounding walls/openings and gaps.

**Link misplaced:** Check positioning method and coordinate strategy; do not drag into place arbitrarily.

**Sheet looks wrong:** Check source view scale/crop/template before fixing the sheet with 2D patches.

## Z. Revit / BIM Glossary

**Base Constraint:** Level/reference controlling the base of an element such as a wall.

**Category:** Broad classification of Revit elements.

**Central Model:** Shared worksharing model.

**Crop Region:** Boundary controlling the visible extent of a view.

**Family:** Group of related Revit elements.

**Instance:** Individual placed element.

**Internal Origin:** Fixed internal coordinate origin.

**Level:** Horizontal datum controlling vertical project organisation.

**Link:** External model/file referenced without becoming native project geometry.

**Location Line:** Reference used to position walls relative to their thickness.

**Parameter:** Data or control value associated with an element, type or project.

**Project Base Point:** Project positioning reference.

**Project North:** Convenient project/documentation orientation.

**Room:** Spatial information object defined by room-bounding geometry.

**Schedule:** Tabular view of model/project information.

**Survey Point:** Survey/site coordinate reference.

**Top Constraint:** Upper reference controlling wall height.

**Toposolid:** Revit 2024 site terrain element.

**True North:** Actual geographic north orientation.

**Type:** Defined variation shared by multiple instances.

**View:** Representation of project/model information.

**View Range:** Vertical visibility range for plan views.

**View Template:** Reusable control of selected view properties and graphics.

**Workset:** Worksharing grouping used in collaborative models.

## APPENDIX 1 — MODEL AUDIT CHECKLIST

- ☐ Correct BA template used
- ☐ Correct Revit version
- ☐ Project saved in correct folder
- ☐ Project location established
- ☐ Levels checked
- ☐ Wall types and constraints correct
- ☐ Doors/windows correct
- ☐ Floors and openings correct
- ☐ Stair and railings coordinated
- ☐ Rooms enclosed and numbered
- ☐ Materials/types consistent
- ☐ Views display correctly
- ☐ View Templates used appropriately
- ☐ Schedules reviewed as QA
- ☐ Warnings reviewed
- ☐ Links positioned correctly
- ☐ Coordinates checked where applicable
- ☐ No unnecessary imported/test content
- ☐ Model ready for documentation/issue

## APPENDIX 2 — DRAWING SET QA CHECKLIST

- ☐ Sheet numbers sequential and correct
- ☐ Sheet names correct
- ☐ Title-block information complete
- ☐ Plans at correct scale
- ☐ Elevations/sections at correct scale
- ☐ View titles consistent
- ☐ Dimensions complete and readable
- ☐ Tags complete
- ☐ Notes complete
- ☐ No overlapping annotations
- ☐ Detail references correct
- ☐ Schedules complete and formatted
- ☐ Revisions correct where used
- ☐ Lineweight hierarchy clear
- ☐ No unintended colour/temporary overrides
- ☐ PDF preview checked page by page

## APPENDIX 3 — FINAL SUBMISSION CHECKLIST

- ☐ Final RVT filename correct
- ☐ Final RVT opens without missing critical resources
- ☐ Required PDF set exported and reviewed
- ☐ Required DWGs exported and reviewed
- ☐ No IFC required for this course
- ☐ Submission folder contains only required deliverables
- ☐ Capstone/assignment naming follows brief
- ☐ Final QA checklist completed
- ☐ Learner has retained a milestone/recovery copy before submission