

NICOLAS CATELLIER

FROM CAD TO REVIT

STRATEGIES FOR A SUCCESSFUL TRANSITION

August 14th 2024

ABOUT MYSELF

- Nicolas Catellier, from Quebec City, Canada
- Architect & BIM Specialist
- 2012-2021 / Architect + BIM Manager at Atelier 21
- 2021-... / Founder at BIM Pure
- 2016-2024 – Blog, courses and YouTube at Revit Pure
- Speaker at BILT, Autodesk University, other conferences.



WHAT IS BIM PURE?

- Subscription-based learning platform with 600+ members.
- Consulting for various clients in the AEC industry.
- **Clients:** Architects, pre-fab shops, the wood industry.



ABOUT BIM PURE MEMBERSHIP

- Courses from beginners to advanced, by multiple experts.
- Mix of pre-recorded videos, PDFs and live masterclasses.
- Downloadable files: templates, family collection, scripts and more.



ABOUT BETTER PROS

- Talent solution firm with over 1,000 professionals screened monthly, who are specialists in architecture, engineering, IT, marketing, accounting and more.
- Tailored hiring process that smooths the way for selecting, interviewing, and hiring remote talent on flexible or full-time contracts.
- Dedicated Account Manager, seamless payroll service, and billing by production hours without any placement fee.

I ♥ ARCHITECTURE

→ While I specialize in BIM, my aim is to help create amazing architecture projects in an efficient and productive way.



IGA Boischatel (CLT Structure) with Atelier 21



Centre MGR Laval – with Atelier 21



Place Griffintown – L'OEUF Architects



Quebec City Casino – with Atelier 21

WHAT IS BIM?

- BIM means **Building Information Modeling**.
- Autodesk started pushing BIM in 2002, after acquiring Revit. They needed to distinguish the tool from AutoCAD.
- Since then, BIM has grown way beyond Revit. It encompasses multiple tools, processes, and workflows.
- But Revit is still the first tool that comes to mind when people say BIM.

WHAT ARE THE BENEFITS OF BIM?

- CAD = modify multiple files and views when an element is moved.
- BIM = move an element in 1 view, its position is adjusted everywhere.
- Data-rich modeling = cost estimation, renderings, export models to other tools.
- “Single source of truth”. Maintaining CAD + SketchUp is confusing.



PITFALLS AND CHALLENGES OF BIM

- BIM still requires hard work, focus, technical knowledge, and constant learning.
- BIM benefits can be “oversold” and exaggerated.
- You might not gain time efficiency on the first couple of projects.
- Licenses are expensive.
- BIM language and acronyms can be complex.
- Revit development and updates sometimes feel slow.
- Despite these challenges, BIM is completely worth it!

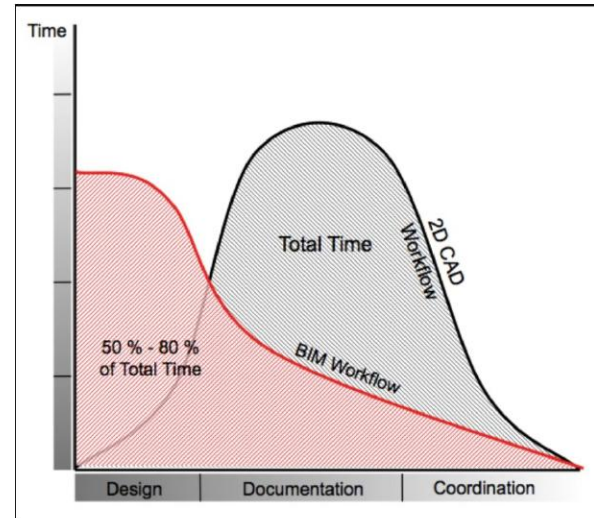


WHAT IS YOUR BIGGEST CHALLENGE IN IMPLEMENTING BIM?

→ Type your answer in the chat.

CAD VS BIM – EACH PHASE

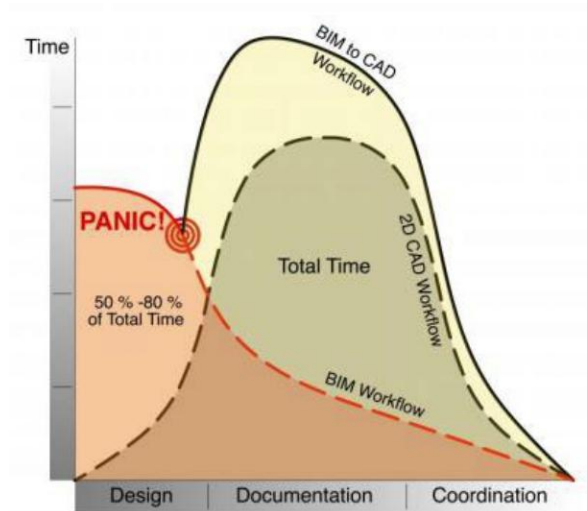
- In BIM, more time is spent at the beginning of a project to create an accurate model.
- However, it then takes less time to document and coordinate documents together.



SOURCE: <http://www.shoegnome.com/2015/12/09/bim-still-bankrupting-firm/>

DON'T PANIC!

- Some firms getting started with BIM panic at the beginning of their first project and get back to CAD.
- Don't do this!



TODAY'S FOCUS: REVIT

→ The biggest and most widely used BIM design authoring tool.



REVIT PRICING

REVIT VS REVIT LT

- Revit LT: \$540/year
- Revit: \$2,910/year
- AEC Collection (Revit + AutoCAD + other tools): \$3,560/year



AUTODESK
Revit LT



AUTODESK
Revit

REVIT VS REVIT LT

- The key difference: a single person can work in the same model in Revit LT.
- In regular Revit, **worksharing** allows multiple users to work at the same time on the same model.
- Less advanced modeling features in Revit LT.
- Limited interoperability and no plugins in Revit LT.
- No MEP and advanced structural tools.
- Overall, Revit LT is ok for very small teams doing very simple projects.

REVIT IN THE CLOUD

- If you want to work with Revit on the cloud, you'll need an extra license.
- **BIM Collaborate Pro** at \$945/year.
- Gives you access to Autodesk Construction Cloud and BIM360.

**SUCCESS STORY –
CAD TO BIM
TRANSITION**

ATELIER 21 ARCHITECTS

- In 2012, I helped Atelier 21 architects transition from CAD to BIM.
- We've helped streamline repetitive commercial projects and become more efficient.



MEDIUM-SIZED ARCHITECTS

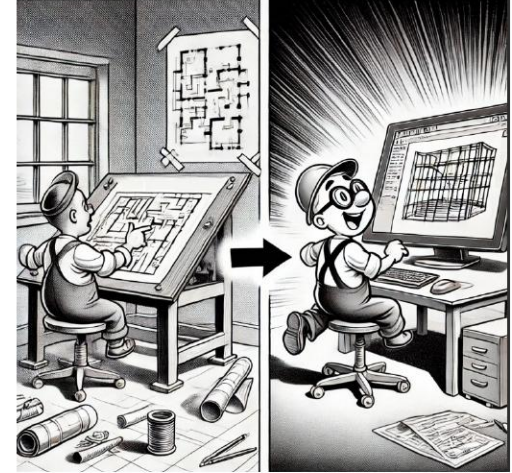
- Example: medium-sized architect firm from Montreal. Specialized in multi-family housing.
- I've helped them transition from CAD to Revit.
- 80%+ of their new projects are made with Revit.
- We've used Revit model + Dynamo for advanced façade work.



TIPS FOR A SMOOTH TRANSITION TO BIM

1- PLAN THE TRANSITION

- Have a plan with a clear goal!
- For example: have 50% of your firm new projects started in Revit in the next 6 months.
- Ensure everyone on the team is backing the plan.
- If one of the partner isn't fully invested, the transition is less likely to succeed.



2- GET PROPER TRAINING

- Ensure all staff is properly trained.
- Training isn't done after “the basics”.
- Leave non-billable time for staff members to train and improve workflows.
- Send team members to conferences.

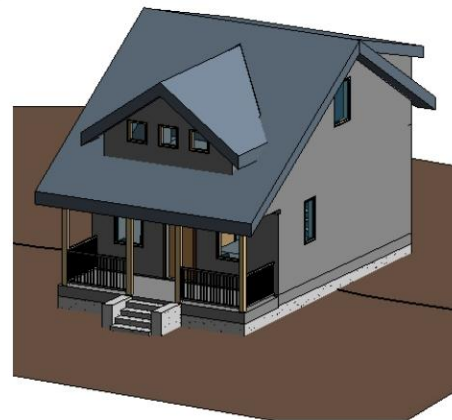


3- UPGRADE COMPUTERS

- Users with old, slow hardware will have a terrible experience with Revit.
- **Graphic card:** you don't need a Quadro card. Revit mostly uses processors and not GPU.
- **SSD:** Pick a solid slate drive with at least 1TB to install Revit.
- **Processor:** Revit is a single-core application. Prioritize fast CPU, 2.5 GHz or higher.
- **RAM:** recommended at least 32 GB, 64 GB for large complex models.
- 2 monitors are a must.
- Don't try to save with a cheap computer. You will lose money with the wasted time.

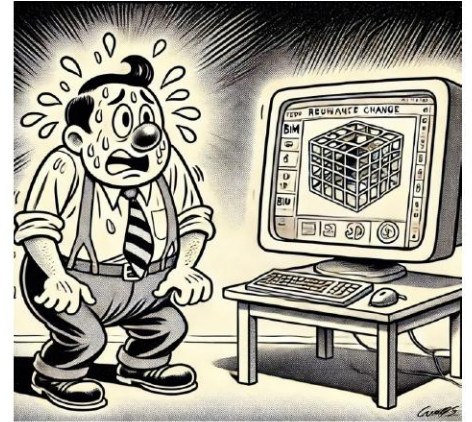
4- PICK A GOOD FIRST PROJECT

- Decide what will be your first BIM/Revit project.
- Project should be relatively simple.
- Pick a team of enthusiastic users that will be working on that project.
- Deadlines shouldn't be too tight.



5- FIGHT RESISTANCE TO CHANGE

- Some experienced CAD users won't be happy with the transition.
- Provide a lot of training to ensure they feel comfortable.
- Get a power-user on board to support them constantly.



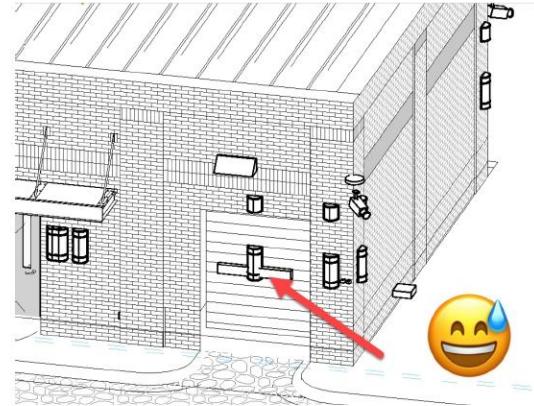
6- GET A BIM CHAMPION ON BOARD

- Get a user who enjoys technology and is great with Revit.
- Assets: contagious enthusiasm, and happy to help solve problems.
- Can already be working at your firm, or can be a new hire.
- Consultants are great to get started, but you need internal people too.
- Sometimes, multiple users can split the task.



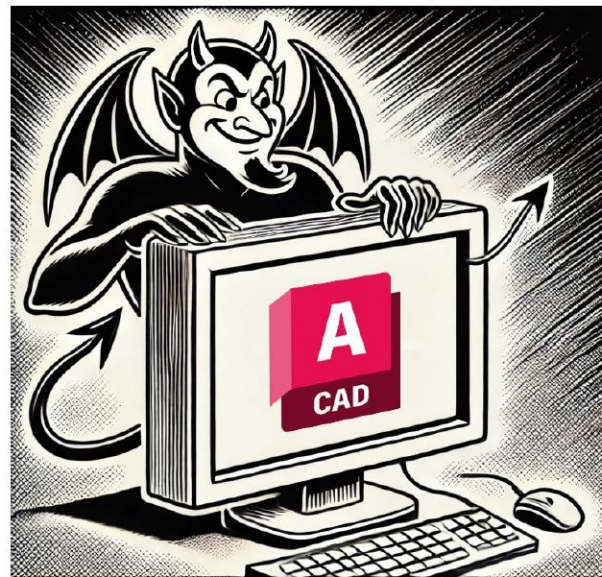
7- WORK IN 3D VIEWS

- Former CAD users often forget to use 3D views. 2D views remind them of CAD.
- Always keep a 3D view nearby to see what you are actually modeling.
- Else, you risk having weird things going on in your model.



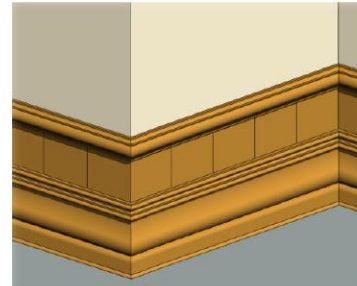
8- DON'T GO BACK TO CAD FOR DETAILING

- Users like to find excuses to get back to their old habits.
- They might say: “I’ll use CAD only for detailing”.
- This isn’t good and slows down the transition.
- Stick to Revit for the entire project.
- It isn’t true CAD is better for details.



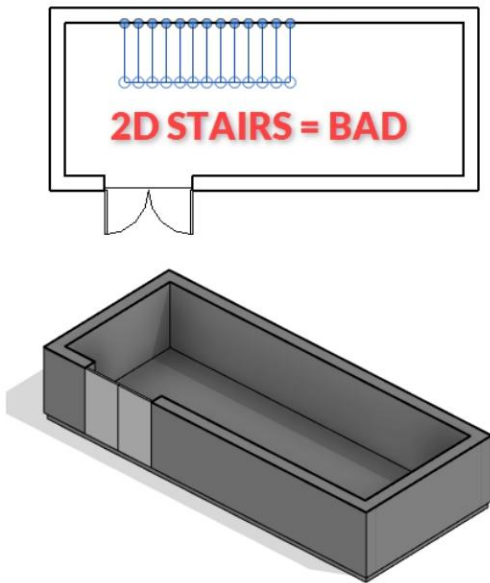
9- DON'T OVERMODEL

- Don't model more than you need.
- New users might get excited and over-model.
- Learn about "LOD" (Level of Development).
- Rule of thumb: don't model things smaller than 100mm (4")



10- DON'T UNDERMODEL

- On the opposite spectrum, users might use 2D workarounds instead of 3D modeling.
- “Oh, this doesn’t need to be modeled, we’ll just use 2D to save time”.
- This never works. You end up causing confusion.
- Always model key elements (doors, stairs, walls, etc).



11- CLEAN YOUR MODEL

- Every Friday, take 15 minutes to clean your model.
- Erase unused views. Purge useless families. Solve warnings.
- A bulky and disorganized model can be frustrating
- You want a clean, smooth, and fast model.



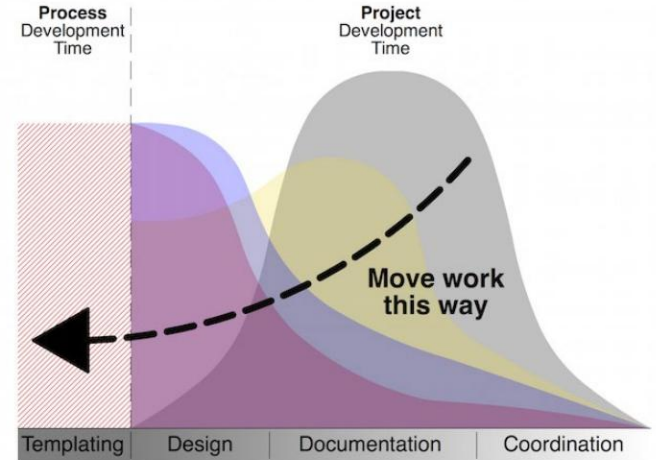
12- DON'T MOVE AND DELETE THINGS BY MISTAKE

- Revit includes a tool called “PIN”.
- Use it to avoid elements being moved by mistake.



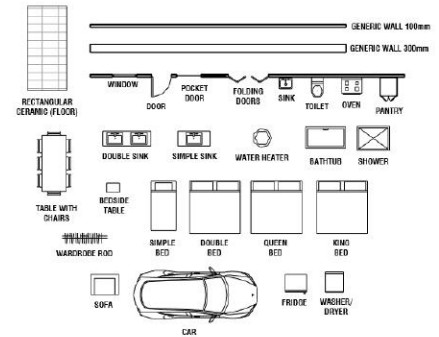
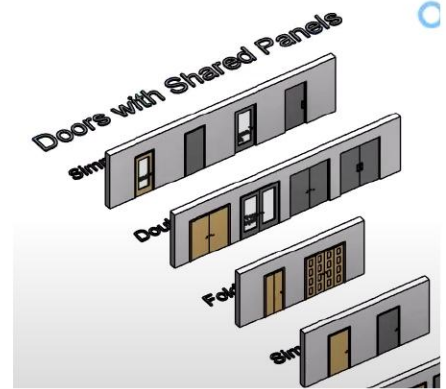
13- DEVELOP A POWERFUL TEMPLATE

- With BIM, a powerful template is crucial.
- Plan non-billable time to work on the template.
- After each project, improve the template.
- You will slowly build a library of content.



14- DEVELOP A LIBRARY OF CONTENT

- In addition to a template, you should develop your library of families and components.
- You can start by buying existing collections, but it's always good to customize elements to your needs.
- WARNING: free internet manufacturers family are bad.



15- CREATE INTERNAL PROTOCOL + TRAINING

- Develop internal standards, naming conventions, and workflows.
- Idea: use Notion (wiki/database) + Loom (quick screen recording) + Snagit (screenshots + gifs) to quickly generate training and documentation.
- Knowledge about how things are done shouldn't stay stuck in someone's head.

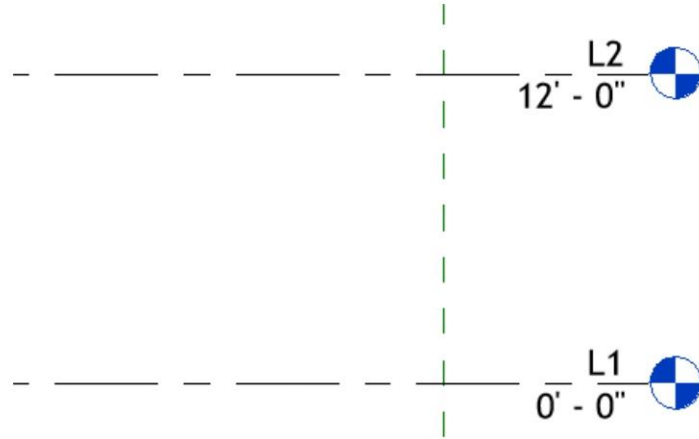
FAILED TRANSITIONS BECAUSE:

- The transition isn't a priority.
- Leadership isn't fully committed to it.
- Lack of training and proper licenses.
- Waiting for the “perfect project” to get started.
- No “BIM Champion”.
- Reverting back to CAD when facing challenges.

TIPS TO GET STARTED IN REVIT

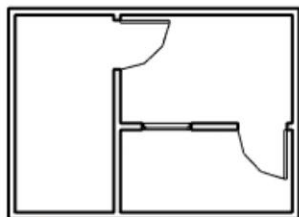
1- START BY SETTING UP LEVELS

→ In Revit, most 3D elements are constrained to **levels**. Set them up to the correct height.

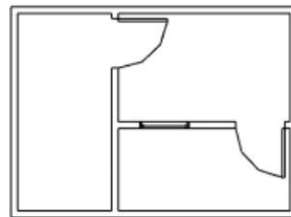


2- UNDERSTAND VISIBILITY

- Revit is “What you see is what you get”.
- What you see on the screen is what will be printed.
- Use the “Thin Lines” tool to reduce all lines to a width of 1 px.



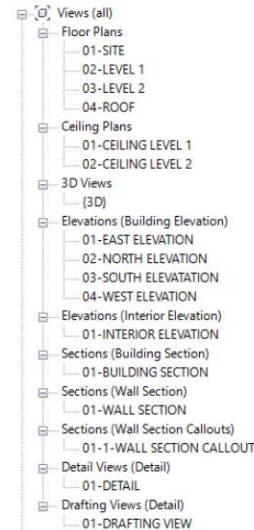
 THIN LINES UNACTIVE



 THIN LINES ACTIVE

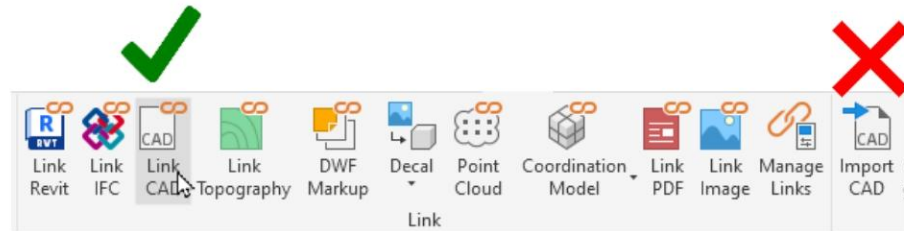
3- KEEP AN ORGANIZED PROJECT BROWSER

- The project browser lists all views, sheets, schedules, legends, families, and more.
- Keep it clean and organized.



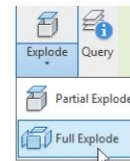
4- NEVER IMPORT CAD: USE LINKS

- The import CAD tool should be avoided at all cost.
- It makes your Revit file bigger.
- Instead, use the Link CAD tool.



5- NEVER EXPLODE CAD!

- Exploding a CAD converts all layers to linestyles.
- Chaos ensues.

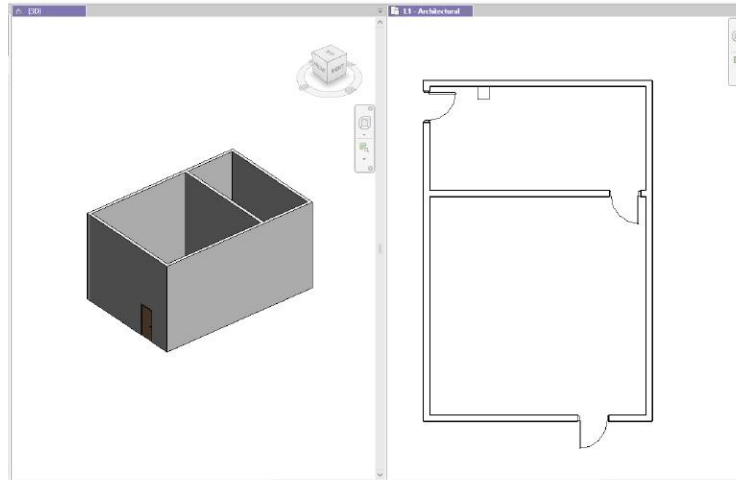


Category	Line Weight	Line Color	Line Pattern
	Projection		
<Room Separation>	1	Black	Solid
<Sketch>	3	Magenta	Solid
<Space Separation>	1	Black	RP-Center
A-DOOR	1	RGB 255-191-127	Solid
A-FLOR	1	RGB 082-000-165	Solid
A-GLAZ	2	RGB 127-191-255	Solid
A-WALL	1	RGB 082-165-124	Solid
Axis of Rotation	6	Blue	RP-Center
G-ANNO-SYMB	1	RGB 127-255-191	Solid
Hidden Lines	1	RGB 000-166-000	RP-Dash
I-WALL	3	Yellow	Solid
Insulation Batting Lines	1	Black	Solid
Lines	1	Black	Solid
Medium Lines	3	Black	Solid
Path of Travel Lines	5	RGB 000-166-000	Solid
RP-1-Blue	1	RGB 000-128-255	Solid
RP-1-Center	1	Black	RP-Center

EXPLODED CAD: A BUNCH OF USELESS LINE STYLES ARE CREATED

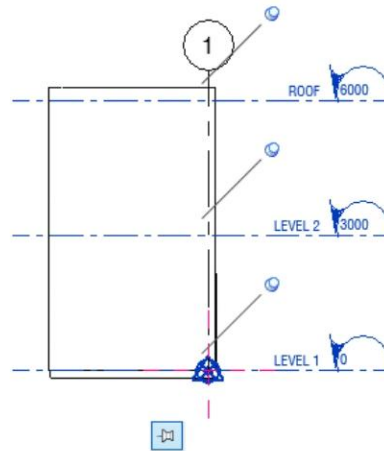
6- WORK WITH BOTH 3D AND 2D VIEWS

→ Keep a 3D view opened so you can see what you are actually modeling.



7- PIN KEY ELEMENTS

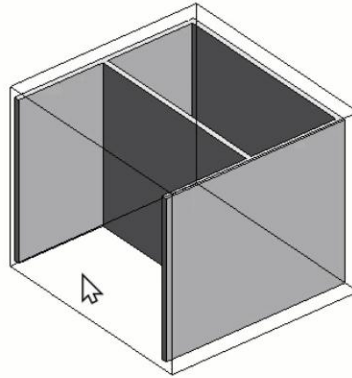
→ Use the PIN tool to protect crucial elements in your model.



USE THE "PIN" TOOL (SHORTCUT: PN)
ON LEVELS AND GRIDS

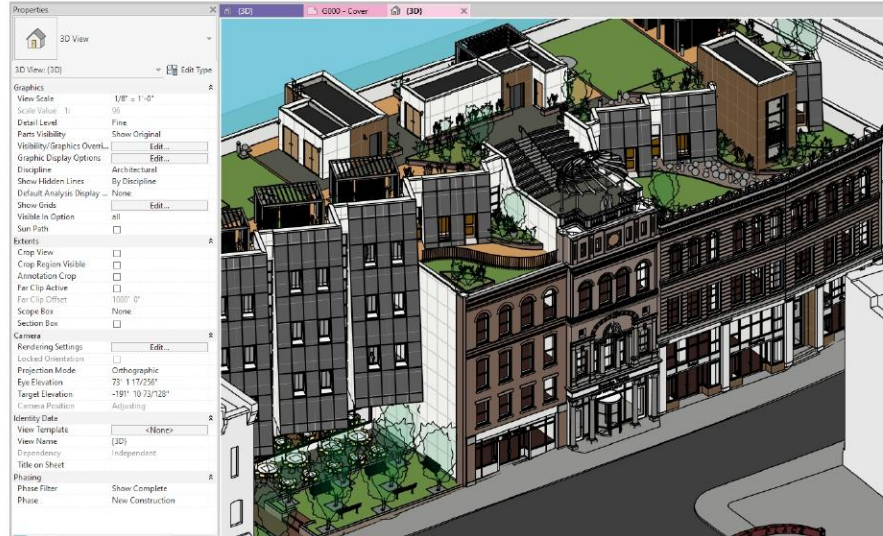
8- USE SECTION BOX

→ The section box tools allows you to quickly cut part of the model in a 3D view.

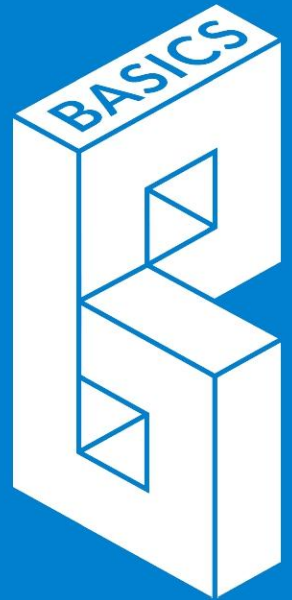


9- EXPLORE THE SAMPLE MODELS

→ Snowdon Towers sample project is worth exploring.

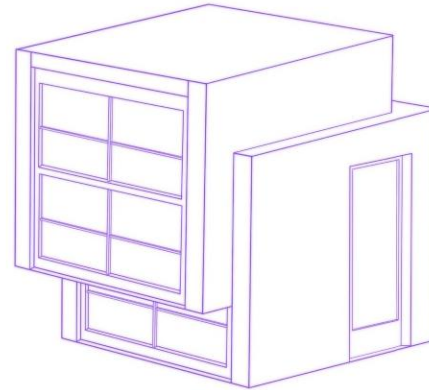


ABOUT THE BASICS COURSE



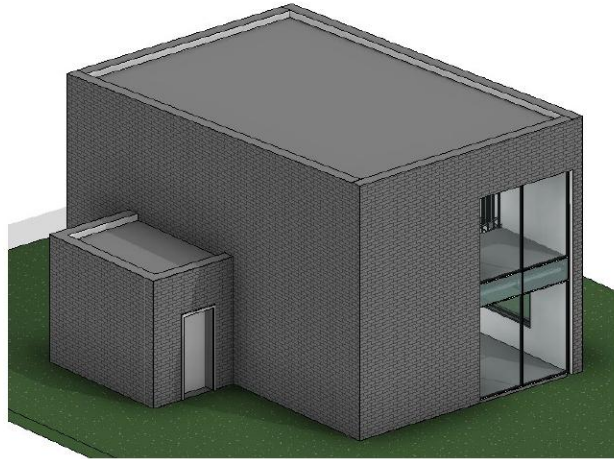
GET STARTED WITH REVIT

- The BASICS course is made to be fun, simple, and efficient.
- Successfully used by thousands of Revit users since 2017.



EXERCISE PROJECT

→ Test what you've learned by modeling a complete Revit project.



SPECIAL PROMOTION

- Get **20% off** on your first year with code **PRO20** at checkout.
- Offer expires on Monday, August 19th.
- <https://bimpure.com>



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