

From Napkin to BIM: Preliminary Design in Autodesk Revit

BD25-2

Matt Jezyk –Product Designer, Autodesk Revit

You just got a building sketch from the principal of your firm. Great! Now it's time to build a BIM.

Learn how to perform preliminary and conceptual design in Revit.

Learn how to create compelling presentations and how to transition to walls, roofs, and floors from the initial design.



About Me

Matthew Jezyk

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- Product Designer for Autodesk Revit (paint target on chest)
- Pre-alpha user of Revit.
- B. Arch from Carnegie Mellon University
- 11 years in the building industry
 - 6 years of architectural experience
 - 5 years in software



Housekeeping

- ▶ Quick show of hands
 - How many are new to Revit?
 - How many designers/architects?
 - How many Principle/Partners in firms?
- ▶ Questions and Answers at the end
- ▶ Class Feedback forms
- ▶ AIA / CES credit!
- ▶ THE MAD LAB – 7:30 tonight!!!



Scope of this Class

- Quick Overview of Revit 7
- Jump into Examples
- Follow along in your handouts



One Last Question and Show of Hands

- How many people have seen the movie “Office Space”?



Ever been in a situation like this?

- ▶ Mmmm, Yeah...
- ▶ Peter, Here's the thing...
- ▶ I'm gonna need you to come in on Saturday...
- ▶ Mmm, Ok...?



A classic scene from the movie "Office Space"



It's sad because it's true

- Do you spend too much time doing last-minute work with quick deadlines?
- Who designs and who drafts?
- Is there repetitive, low value work?
- Is there wasted effort in the early stages?



So what can we do about it?

- Is work thrown away or lost?
- Are there many applications being used?
- How are changes handled?
- Are there better ways to work?



Revit offers a solution

- Revit manages change
- Change happens all through the process
- The earlier your data is in a BIM the easier it is to manage change later on



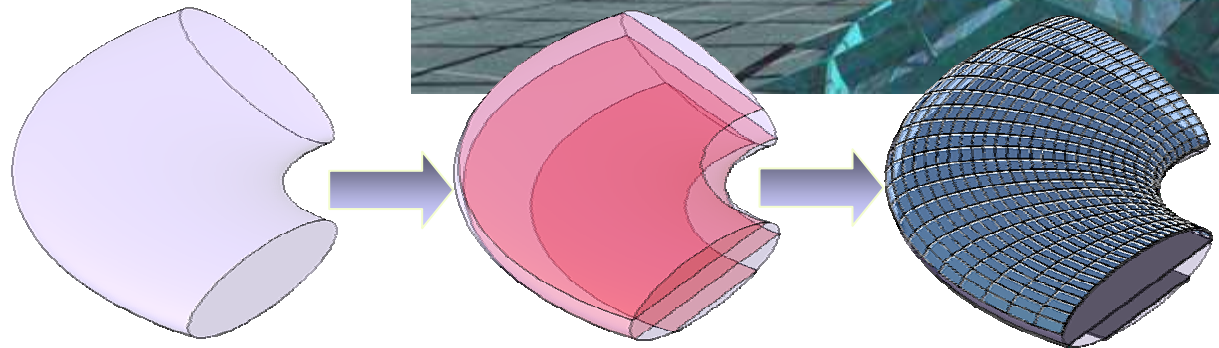
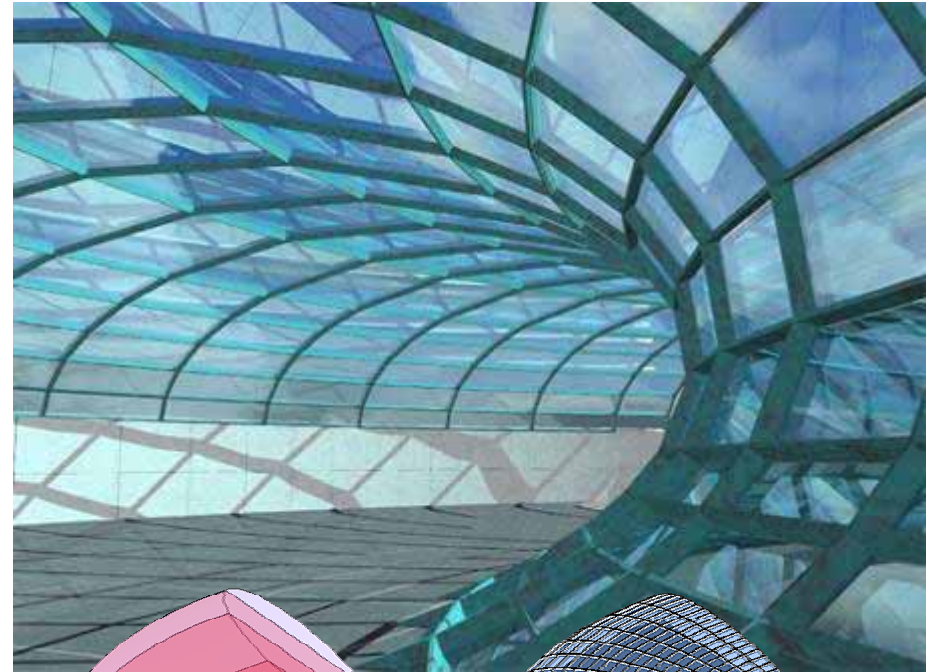
Quick overview of select Revit 7 tools

- ▶ “Building Maker”
 - Conceptual Design tools
 - New Massing
 - New ways to create a building from the concept
- ▶ Presentation Views
 - Powerful new ‘live’ presentation tools
 - No rendering necessary



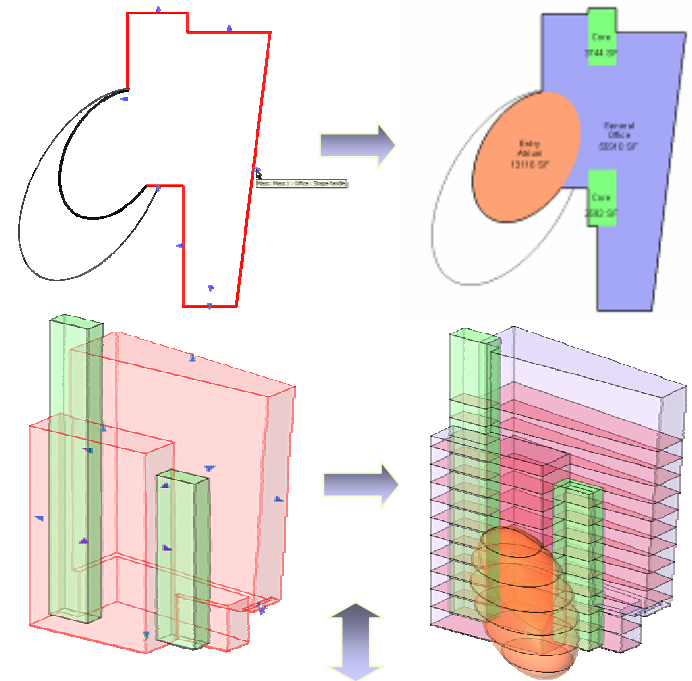
Autodesk Revit Building Maker

- ▶ Better workflow
- ▶ Quickly create forms
- ▶ Easily create complex objects
- ▶ Building elements remain associated



Concept Modeling

- ▶ All new interface for Massing
- ▶ Easily create parametric forms in-place or load from library
- ▶ Validate your design by extracting needed information
- ▶ Create complex building objects from the form

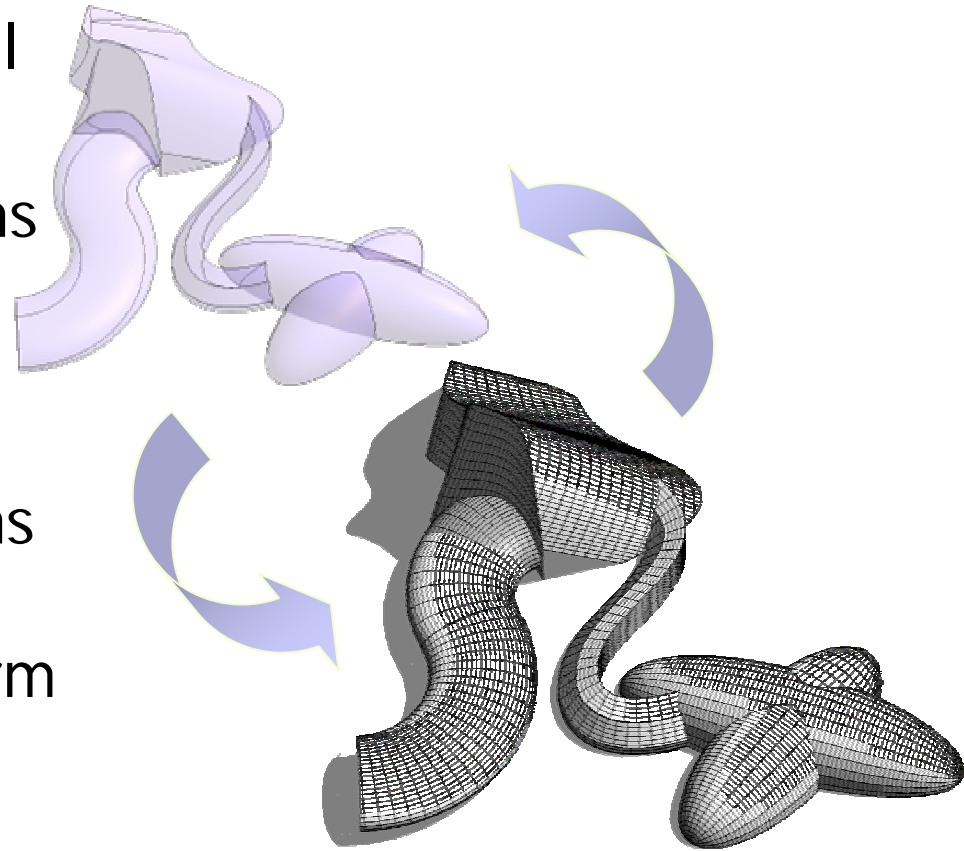


Gross Area Schedule		
Description	Gross Floor Area	Gross Volume
General Office	55910 SF	602892.19 CF
Entry Atrium	13116 SF	130899.67 CF
Core	3744 SF	45134.30 CF
Core	2592 SF	25295.32 CF
Grand total: 4	75362 SF	804221.48 CF

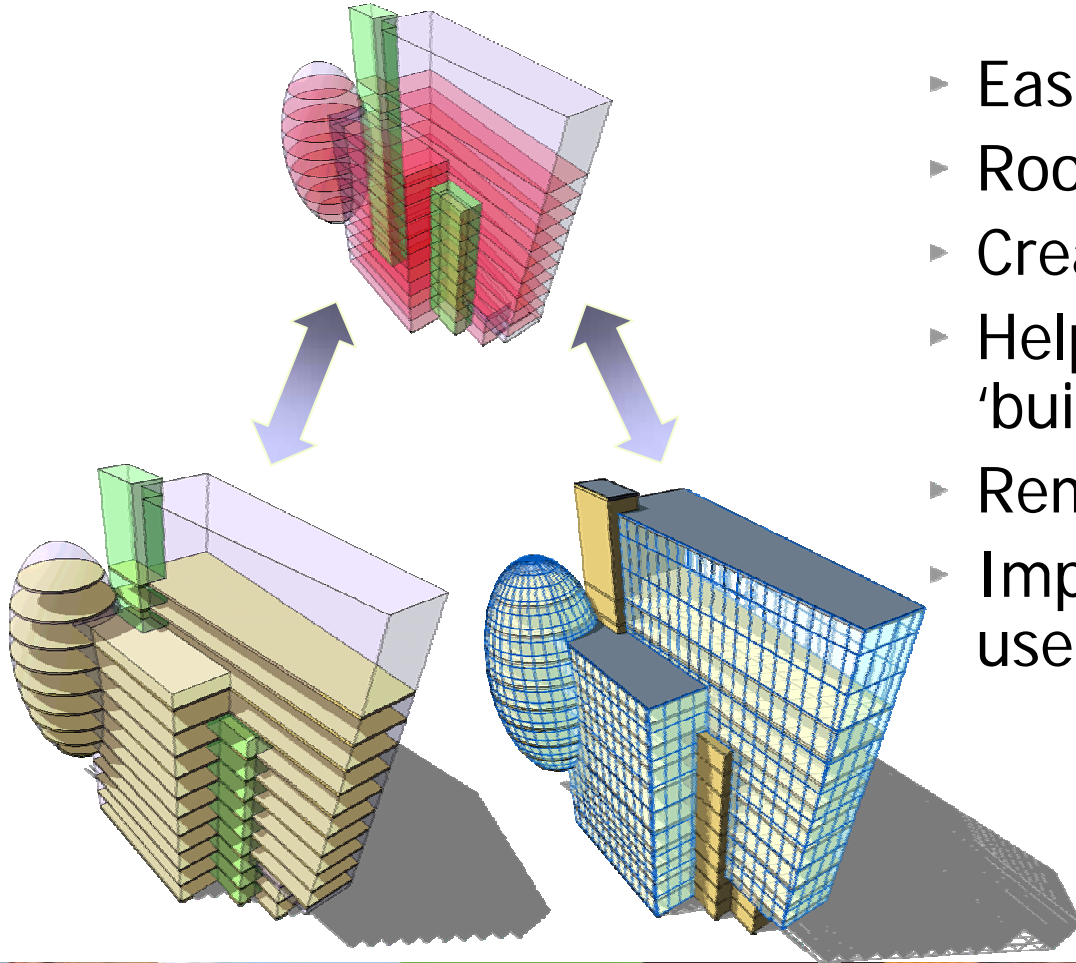


Curtain Systems

- ▶ Easily create building shell
- ▶ Can be of any shape
- ▶ Helps make complex forms 'buildable'
- ▶ Divide surface using new layout rules
- ▶ Easily apply grids, mullions and panels
- ▶ Remains associated to form



Wall, Roof and Floor by Face

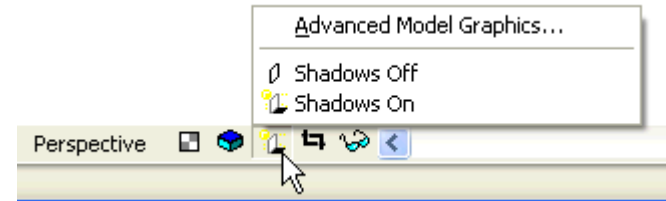


- ▶ Easily create building shell
- ▶ Roofs can be of any shape
- ▶ Created by picking a face
- ▶ Helps make complex forms 'buildable'
- ▶ Remains associated
- ▶ Imported ACIS solids may be used



Presentation Views

- ▶ **Automatic Silhouetting**
 - Graphically compelling drawings
 - Plan, elevation, and 3D views
- ▶ **Vectorial Shadows**
 - Real-time Shadows
 - Eliminates rendering time
 - Plan, elevation, and 3D views



Presentation Views



- ▶ **Sectional Perspectives**
 - Great explaining building to non-spatial clients
 - Use with other presentation features
 - Works in hidden-line/shaded views
- ▶ **Caps on Section Box**
 - Section Box tool creates cut faces for model geometry



Let's be Peter

- ▶ It's Friday
- ▶ Peter just received some sketches from his boss
- ▶ 'Just put it in the computer' he says
- ▶ Make some presentation boards for a Monday meeting
- ▶ Peter would like to NOT waste another weekend in the office.



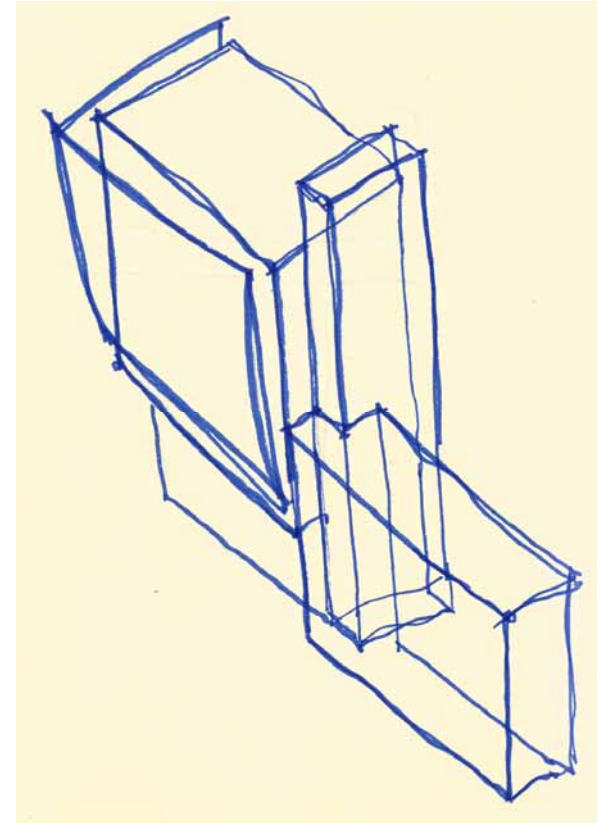
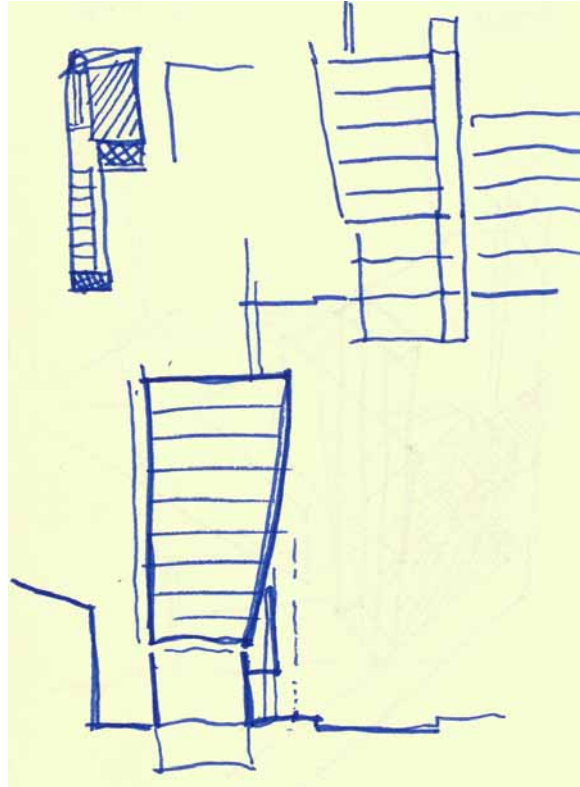
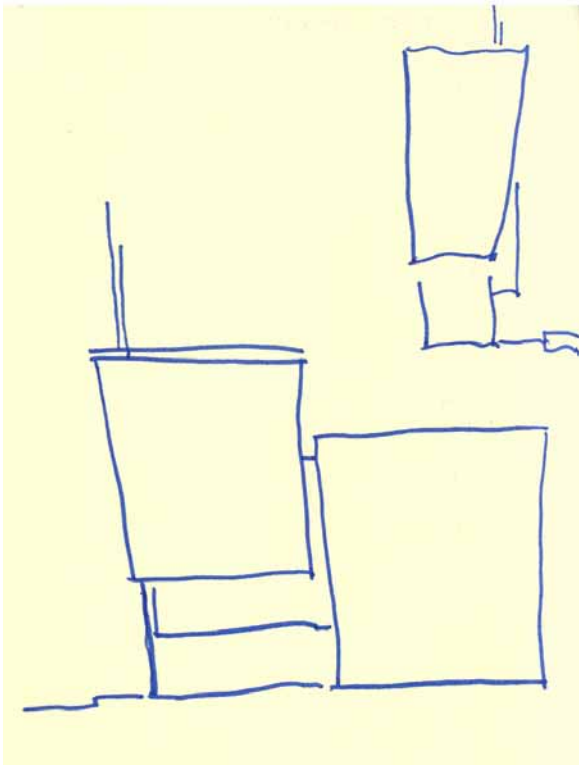
Context



Site Plan



Sketches



Let's do the demo!



Conceptual Design using Building Maker

- All new Massing tools in Revit 7
- Bring in hand sketches
- Make Conceptual Forms easily
- Stretch and tweak the form
- Create Floor Area Faces
- Check against the program



Creating a BIM using Building Maker

- ▶ All new tools in Revit 7
- ▶ Pick faces to make host objects
 - walls, roofs, floors, curtain systems
- ▶ Objects are associated with the Mass
- ▶ Update using Remake
- ▶ Curtain Systems make complex forms buildable

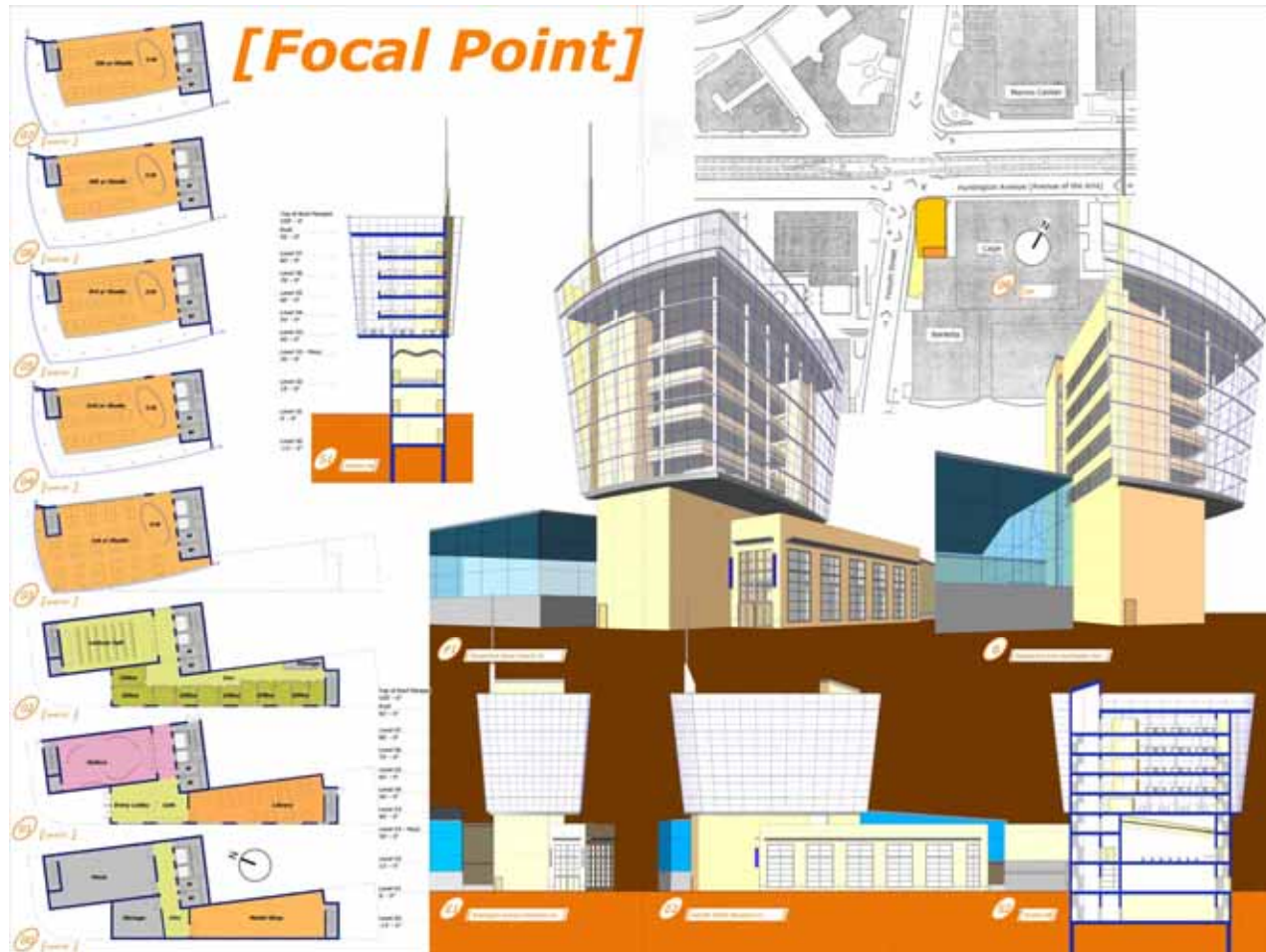


Presentation Views

- Vectorial Shadows
- Silhouette Edges
- Sectional Perspectives
- Section Box Graphics



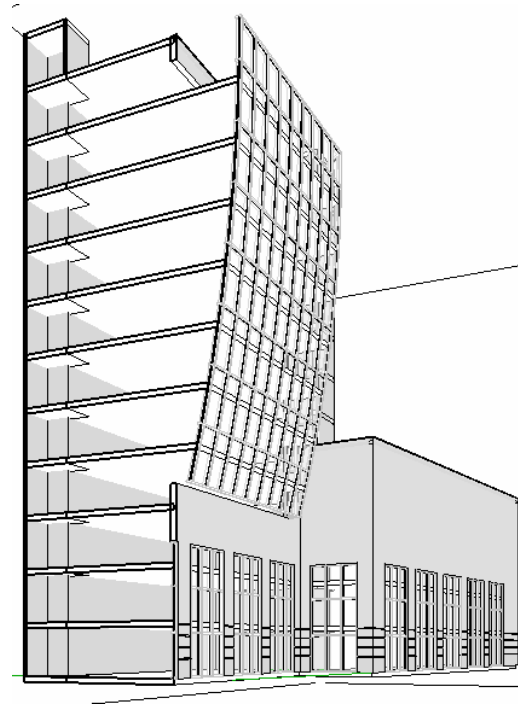
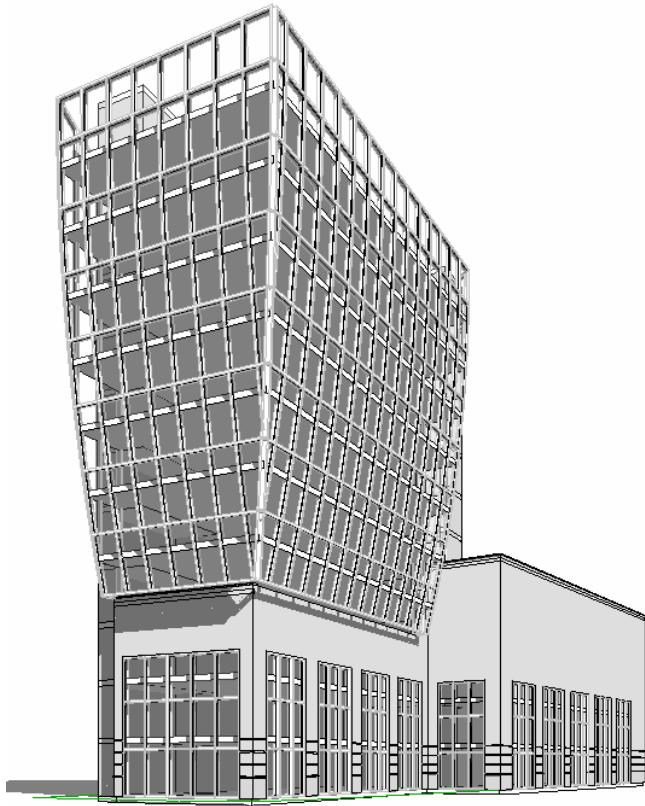
Here is the final presentation



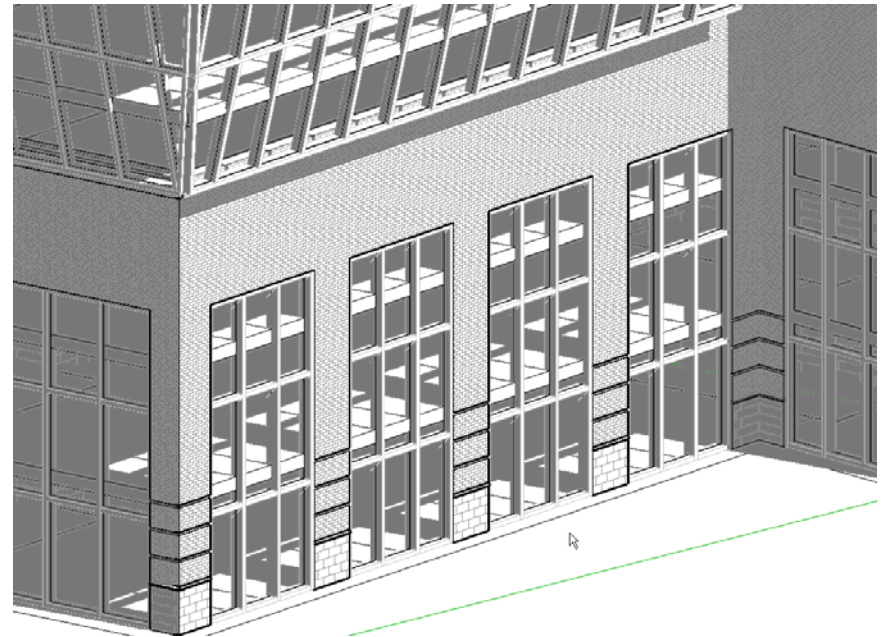
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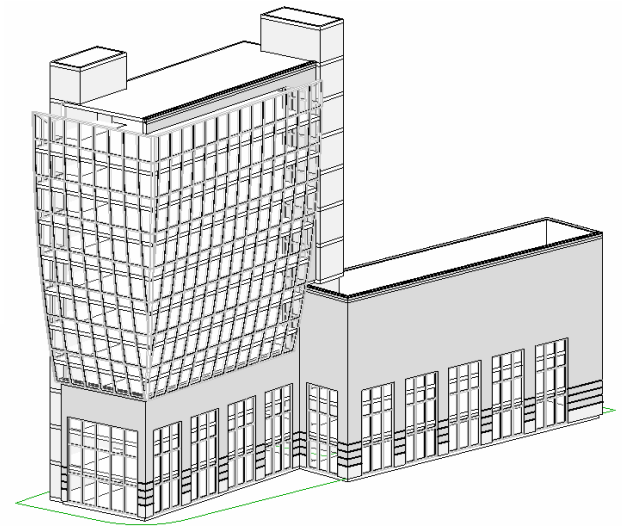
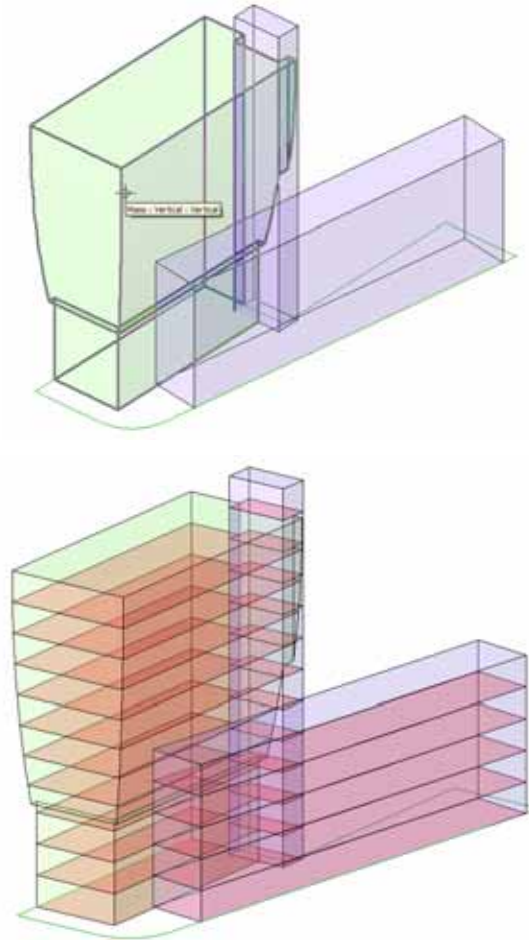
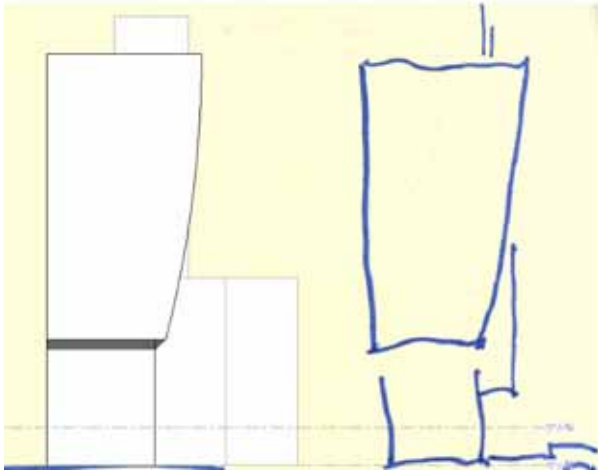
Revit 7 Presentation Views



Revit 7 Presentation Views



Revit 7 Building Maker



Questions???



Thank You

- ▶ Please fill out your Class Feedback forms

