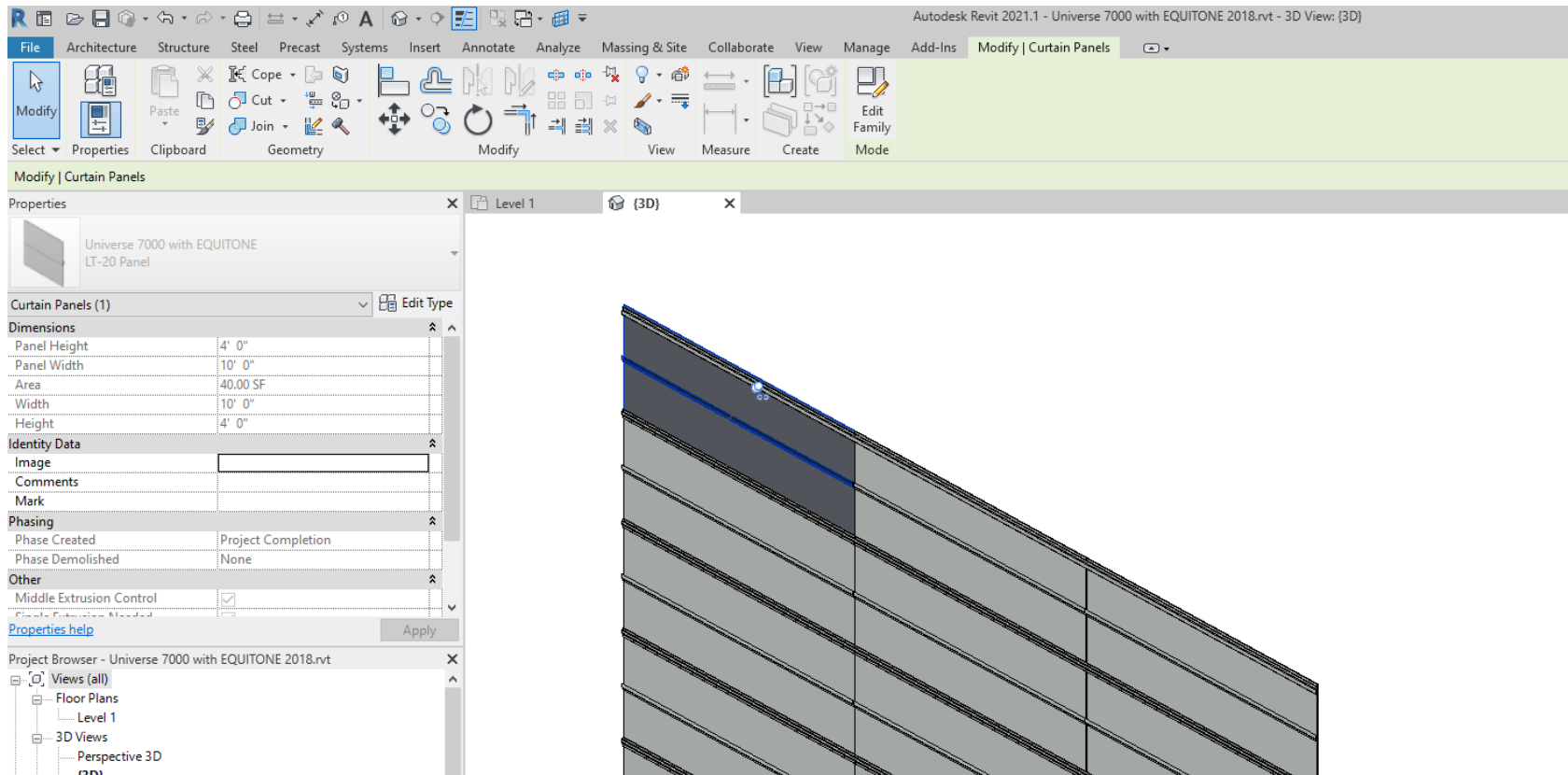
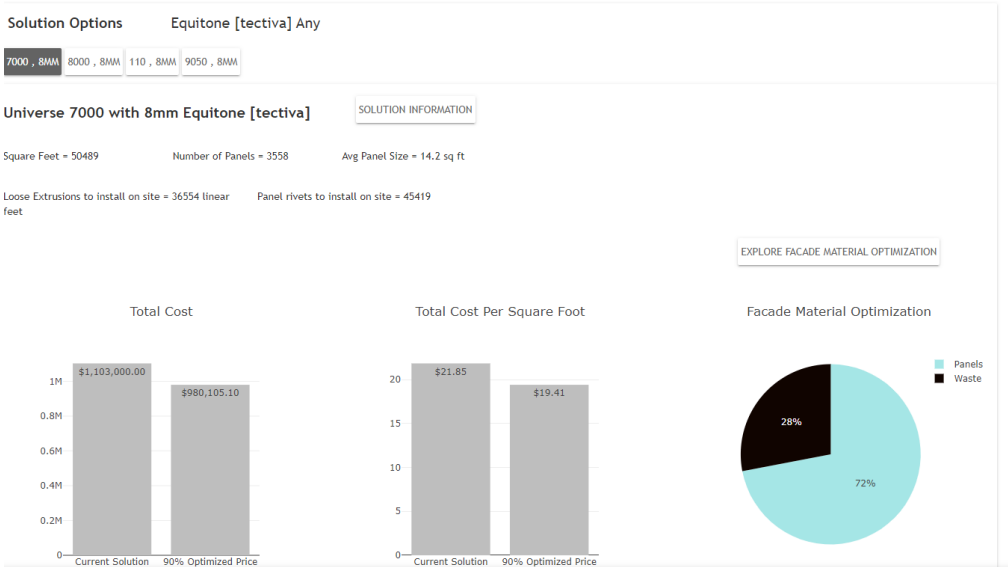
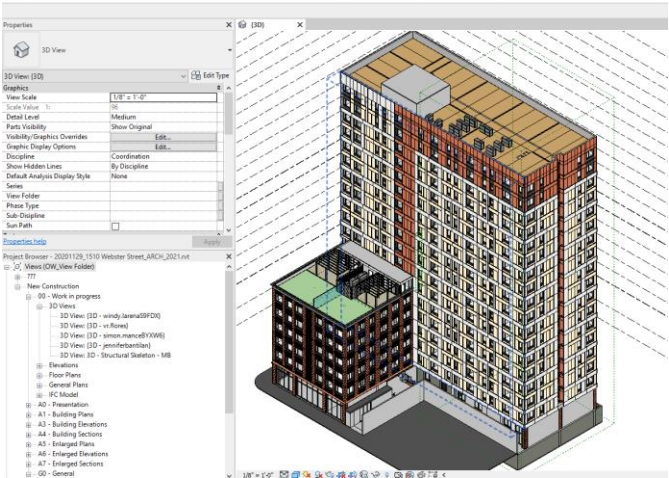


# Universe<sup>®</sup> Revit Modeling Guide



# Overview

This guide is meant to teach you how to efficiently model Universe rainscreen facades in Revit. Different facade designs call for different modeling techniques. By modeling facades in a well-defined way, you can leverage our Universe® design tools that automatically calculate budget pricing and material optimizations.



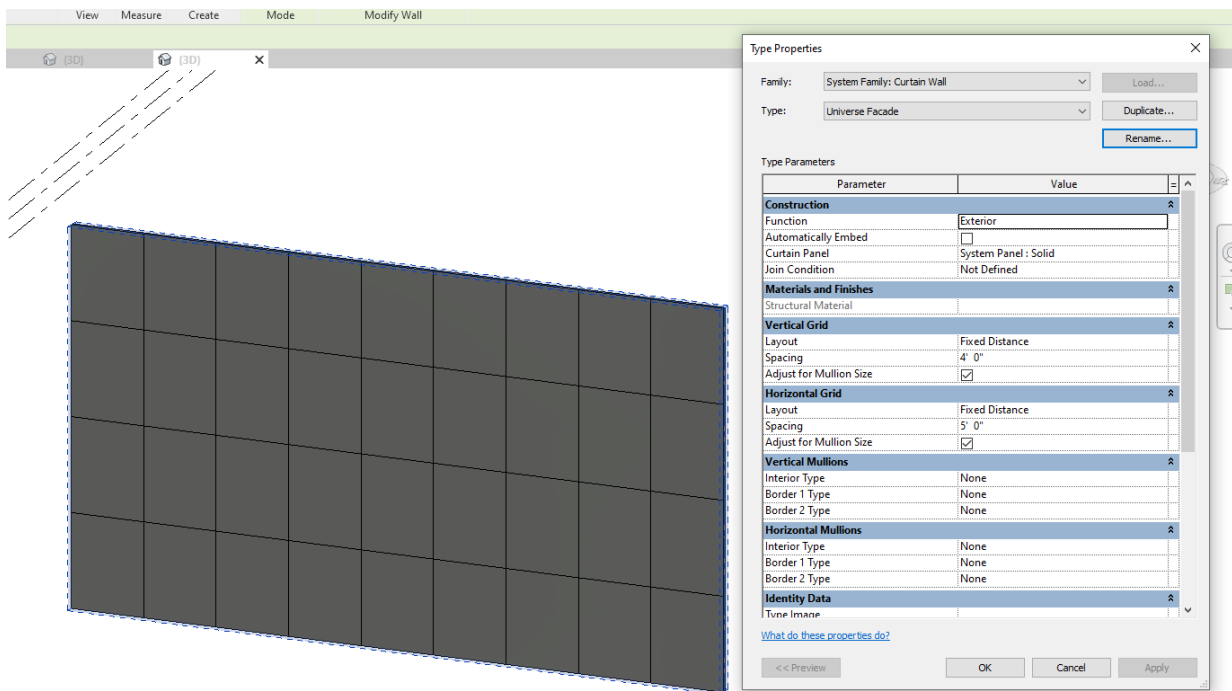
## Modeling Techniques Overview

The most important rule to remember when modeling facades in Revit is to explicitly model each panel. This enables the design, budgeting, bidding, engineering, and fabrication processes all to leverage this core data. We will go over the 3 main modeling techniques:

- 1) Curtain Walls – Standard (Easy)
  - a. Great for grid-based patterns
  - b. Quick iterations
- 2) Basic Wall with Parts (Easy)
  - a. Flexible CAD-style tools to draw panel layout
  - b. Great for any pattern type
- 3) Massing with Curtain Panel Pattern Based (Hard)
  - a. Create running bonds quickly
  - b. Complex parametric patterns
  - c. Steeper learning curve

## Curtain Walls – Standard

Fastest and easiest method. Use this when you want a grid-based facade pattern.



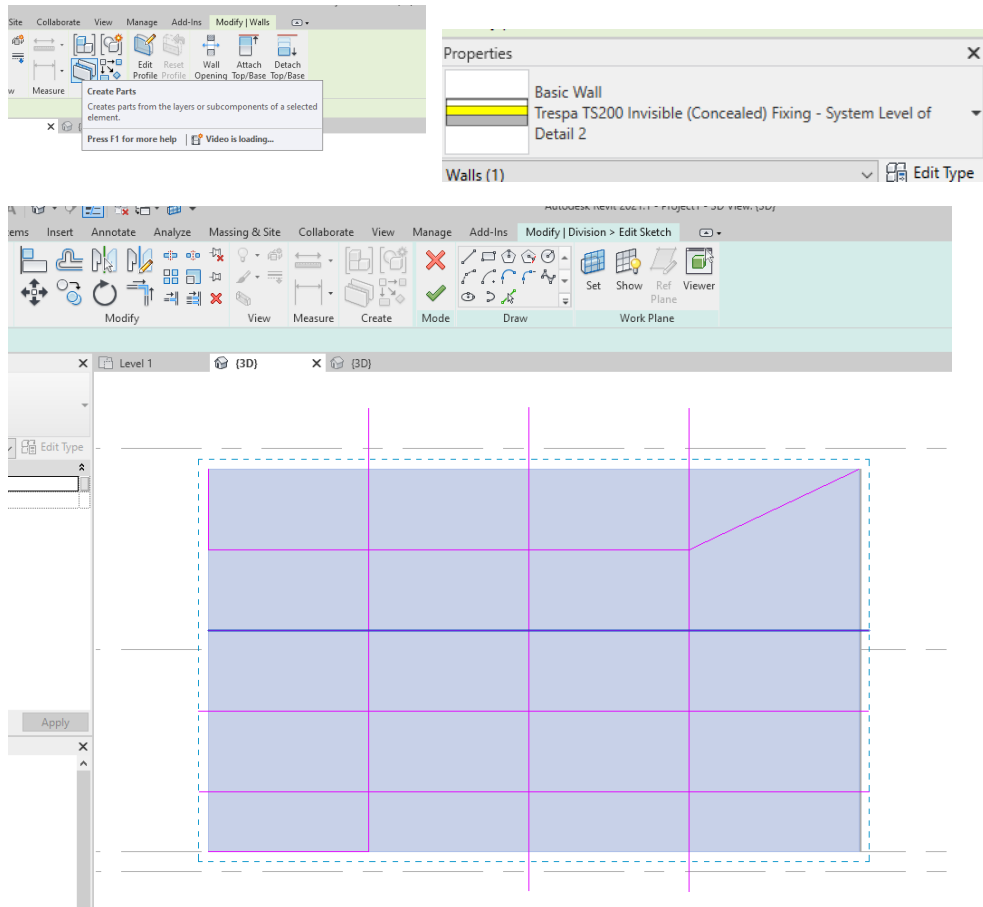
### How to use:

- 1) Draw Curtain Wall. Create new type.
- 2) Choose Curtain Panel Family
  - System panels offer the ability to make non-rectangular panels
  - Can set the material of the panel by clicking on the panel and opening type properties
- 3) Set Panel Width (Vertical Grid)
  - Layout – set to Fixed Distance
  - Spacing – set Width of panels
- 4) Set Panel Height (Horizontal Grid):
  - Layout – set to Fixed Distance
  - Spacing – set Height of panels
- 5) Manually add/remove segments as desired
- 6) Insert windows and doors. Note these must be compliant with curtain walls.

**Tip:** Model the wall structure, insulation, weather barrier, and subframing using a Basic Wall and only model the panels with a Curtain Wall placed along the Basic Wall

## Basic Walls with Parts

Most flexible method and easy to use. Can use standard CAD linework tools to sketch the panel layout, including non-rectangular shapes. Also by using a Basic Wall, you can use your standard windows and doors on the facade.



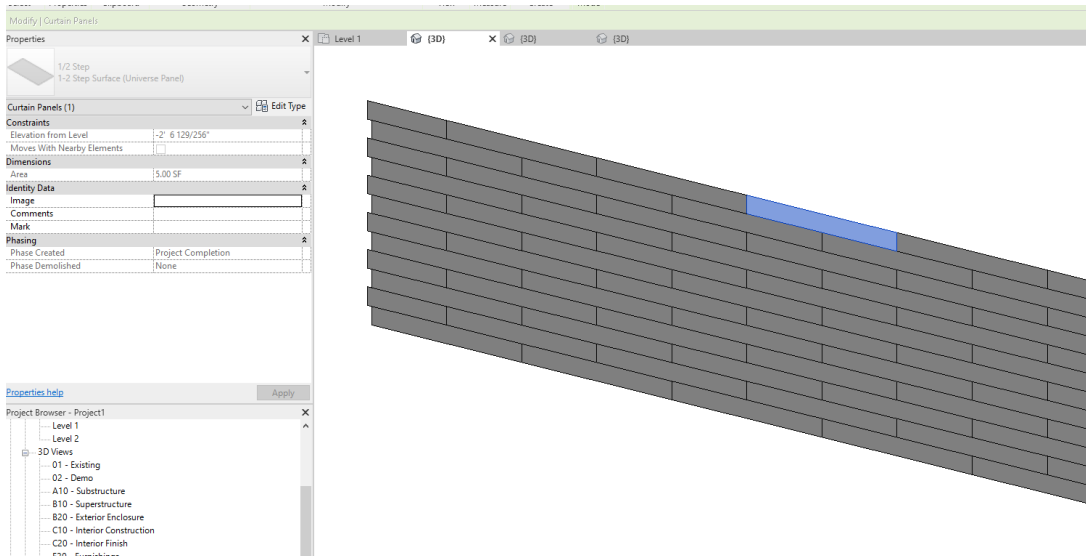
### How to use:

- 1) Draw Basic Wall. Select wall and click Create Parts.
- 2) Click on outer-most layer of Basic Wall and click Divide Parts
- 3) Click Edit Sketch and set workplane to the wall
- 4) Use standard CAD tools to sketch the panel layout and submit changes
  - a. Can import CAD drawings for the layout
- 5) Make sure Parts Visibility is set to Show Parts in your view settings
- 6) Can use the Material of the original wall layer or can over-ride select panels' material
- 7) Place standard windows and doors onto the wall

**Tip:** Make sure the sketch lines go past the boundary of the wall to make sure all panels are recognized

## Massing with Curtain Panel Pattern Based

This is the hardest method to use and learn. It is great for running bond patterns and more generally, parametric facade layouts.



Tip: There are lots of different patterns you can play around with. Watch videos by searching “Revit - Curtain Panel Pattern Based”.

### How to use:

- 1) In your project, click Load Autodesk Family -> Curtain Panel by Pattern -> Select the one you want (eg 1-2 Step Surface as shown)
- 2) Create an in-place mass in the desired location of the wall.
  - a. Click In Place Mass
  - b. Draw line in floor workplace
  - c. Click line and Create Form
- 3) While editing the mass, click on the surface of the wall and click Divide Surface
- 4) In the Object Browser, choose the curtain panel from step 1 (1-2 Step Surface -> Solid)
- 5) Finish Mass
- 6) You can now click on each individual panel and see they are of Category Curtain Panel
- 7) Don't create a Curtain System from this Mass or else it will create its own rectangular panels