AB1356 - Autodesk® Revit® Cloud!

Michael "*Zee*" Zeeveld, Assoc. AIA, ACI
Senior Application Specialist – Southeast Territory

Class summary

- Using only Autodesk Revit software during the schematic design phase of the project enables you to quickly explore design alternatives through iterative design. Tapping into the information-rich models for quantity takeoffs helps to produce more accurate cost estimates, compressing the timeline from design to procurement to construction, virtually eliminating errors and omissions, and reducing the likelihood of RFIs and change orders. With integrated analysis for energy and carbon, you gain design insight where the most important design decisions are made. Perform wind and solar radiation analysis with user-friendly tools. Conduct cloud-based whole building energy analysis with web-based software. Optimize energy efficiency, and work toward carbon neutrality earlier in the design process. With faster, more accurate energy analysis of building design proposals, architects and designers can work with sustainability in mind earlier in the process, plan proactively, and build better.

Key learning objectives

At the end of this lab, you will be able to:

- Explore quick design alternatives through iterative design
- Tap into the information-rich models for quantity takeoffs
- Use integrated analysis for energy and carbon neutrality
- Validate design sustainability earlier in the process

Welcome!

- Glad you are part of the Lab

Housekeeping

- 75 Minute Lab
- Please turn your mobile device to silent mode
- Who is in the audience?
- What do you hope to get out of this class?

Housekeeping

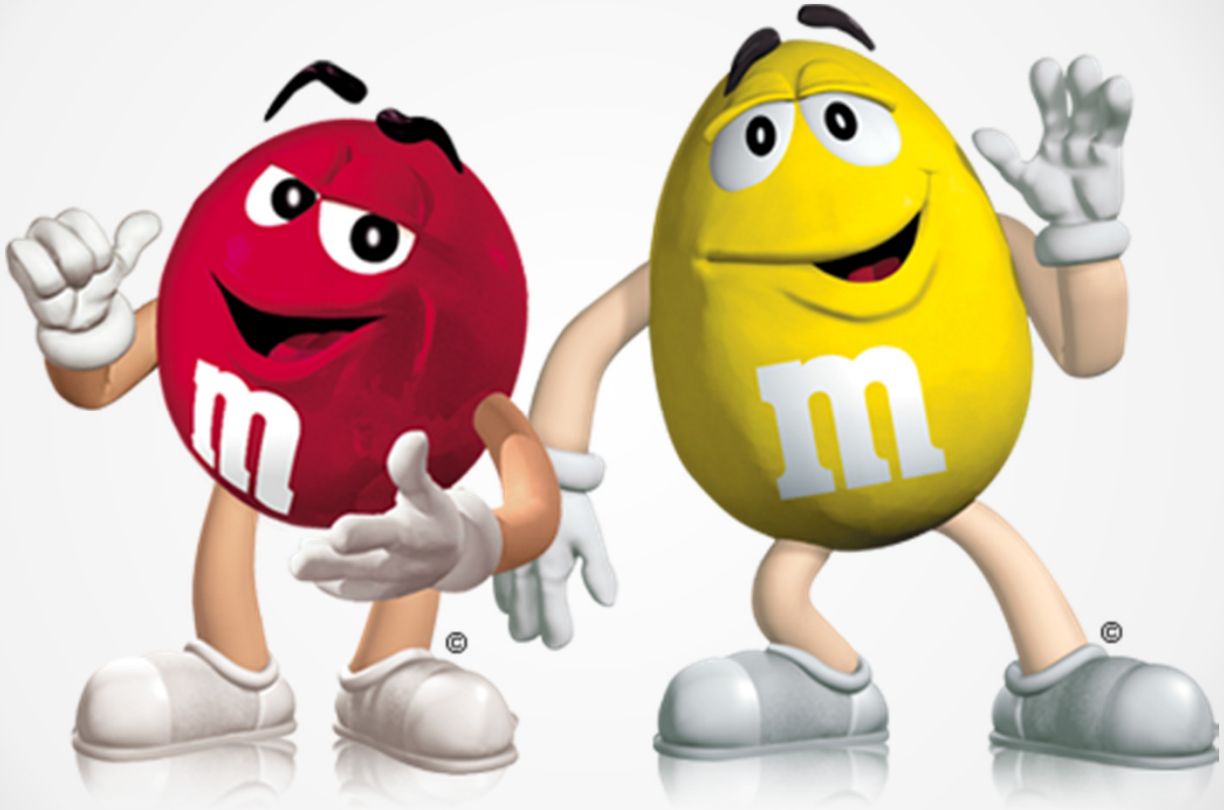
- Cell phones – please switch to silent or vibrate

Speaker Bio
Michael “Zee” Zeeveld, Assoc. AIA , ACI

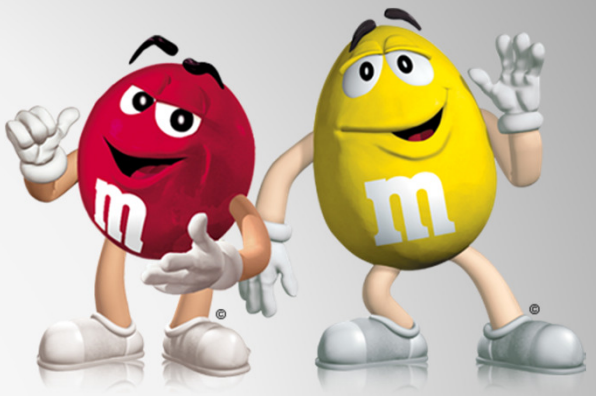
- Senior Application Specialist, Applied Software – Atlanta, GA
- 18 years of AEC Experience
- Autodesk Revit Certified Professional
- Autodesk Consulting Specialization
- Autodesk Structural Specialization
- Autodesk 3ds Max Design Certified Associate
- Speaker at AU 2006, 2010, 2012 and 2013
- Presenter at AUGI CAD Camp and AIA
- Speaker at RTC – Revit Technology Conference 2012
- Certified Autodesk Instructor

Autodesk
Certified Instructor

Lab Assistants – M&M's

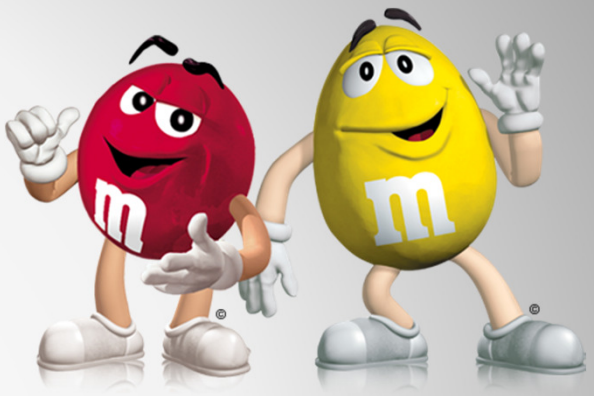


Lab Assistant – Mike Massey



- Senior Application Specialist, Applied Software
- 20+ Years of AEC Experience
- Repeat speaker at AU, RTC and AIA events
- A contributing author for Autodesk Official Training Courseware.
- Autodesk Revit Certified Professional
- Autodesk Revit Implementation Certified Expert
- Autodesk Consultative Methodology Certification
- Autodesk MEP Systems Engineering Specialization Certification
- Autodesk Fabrication Specialization Certification

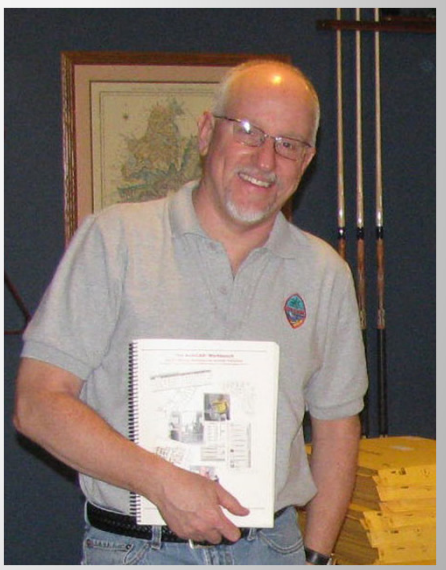
Lab Assistant – Michael Beall



- The “CAD Trainer Guy”
- Family Man
- Autodesk Certified Instructor
- Autodesk Authorized Author
- AU Presenter

- 502.500.2267
- michael.beall@cadtrainerguy.com

CAD Trainer Guy



Topics

- Part I - Schematic Design Phase
- Part 2 – Quantity Takeoffs and Cost Estimates
- Part 3 – Analysis for energy and carbon
- Part 4 – Energy analysis
- *Part 5 – sustainability*

Part 1
Schematic Design Phase

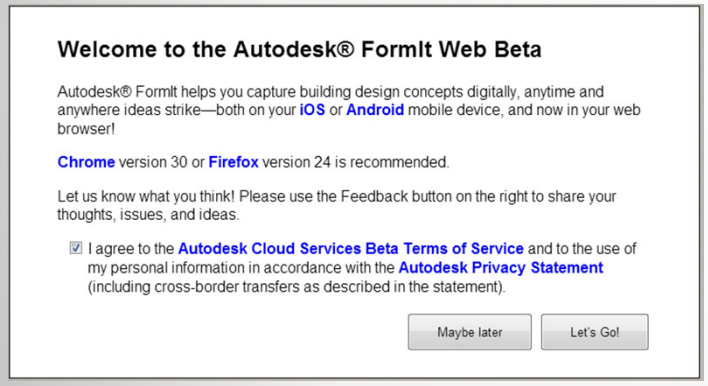
Schematic Design Phase

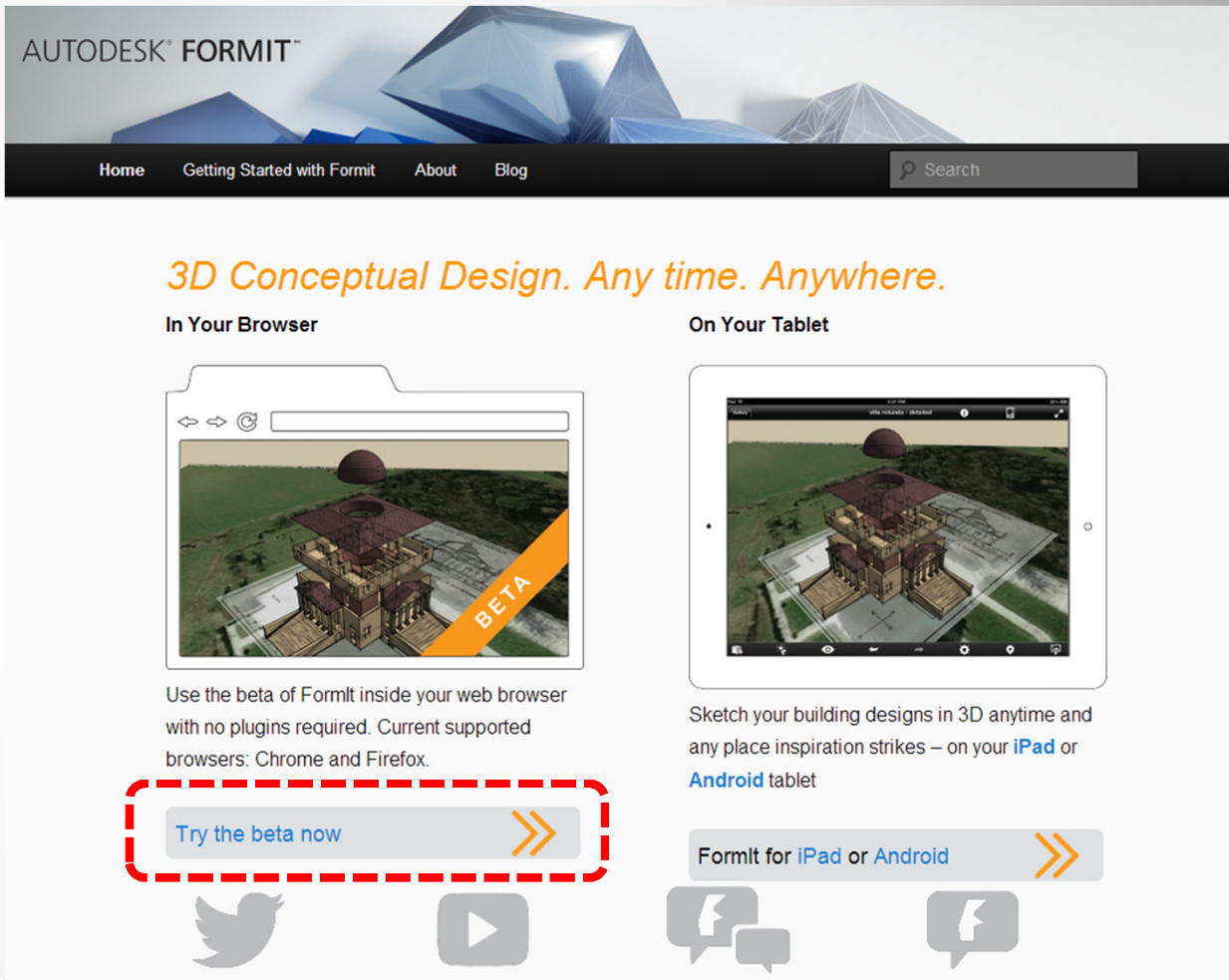
- Using *only* Autodesk Revit software during the **schematic design phase** (tool: Massing) of the project enables you to quickly explore design alternatives through iterative design.

- Massing
  - quickly explore design alternatives through iterative design

Schematic Design Phase

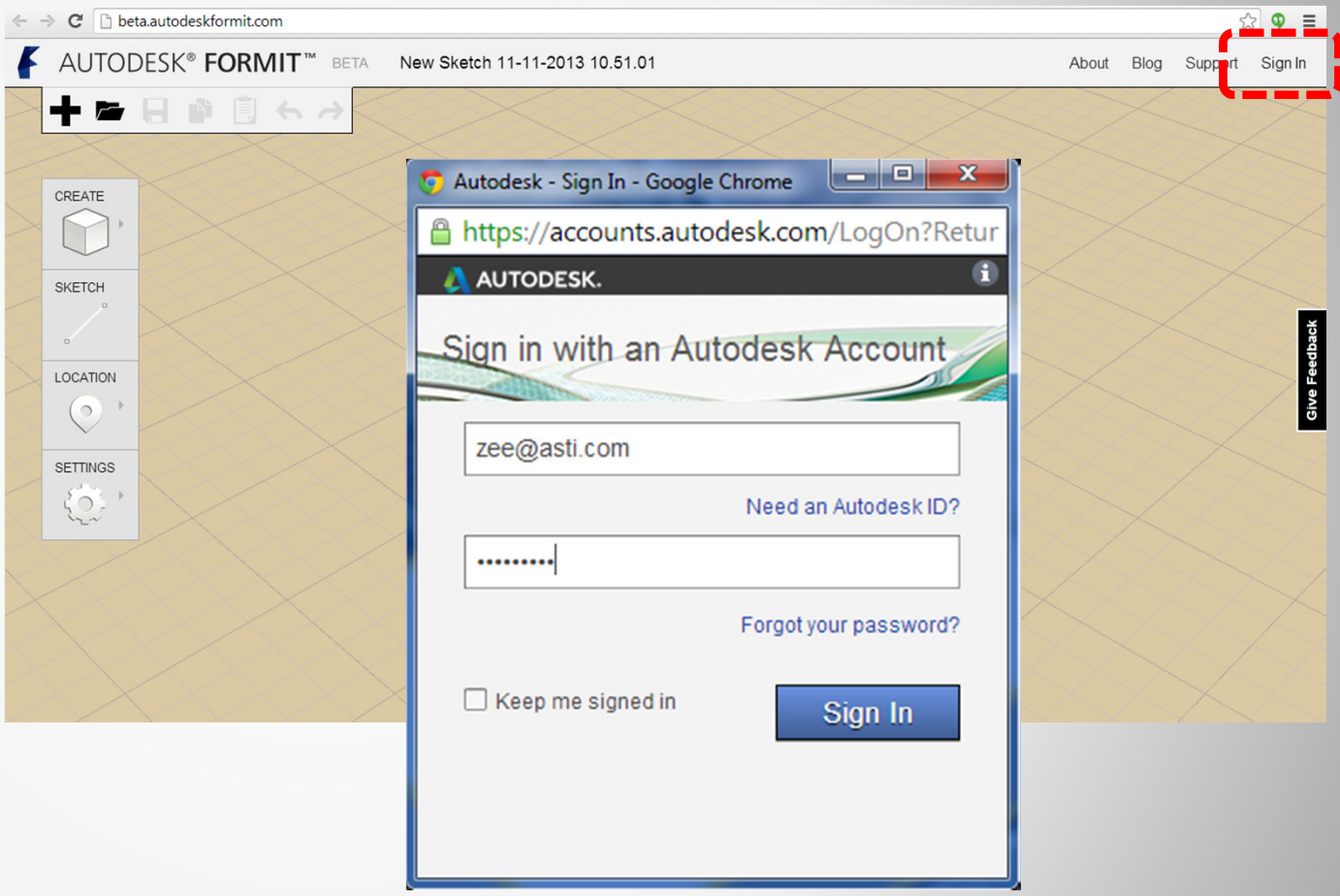
- Google Chrome





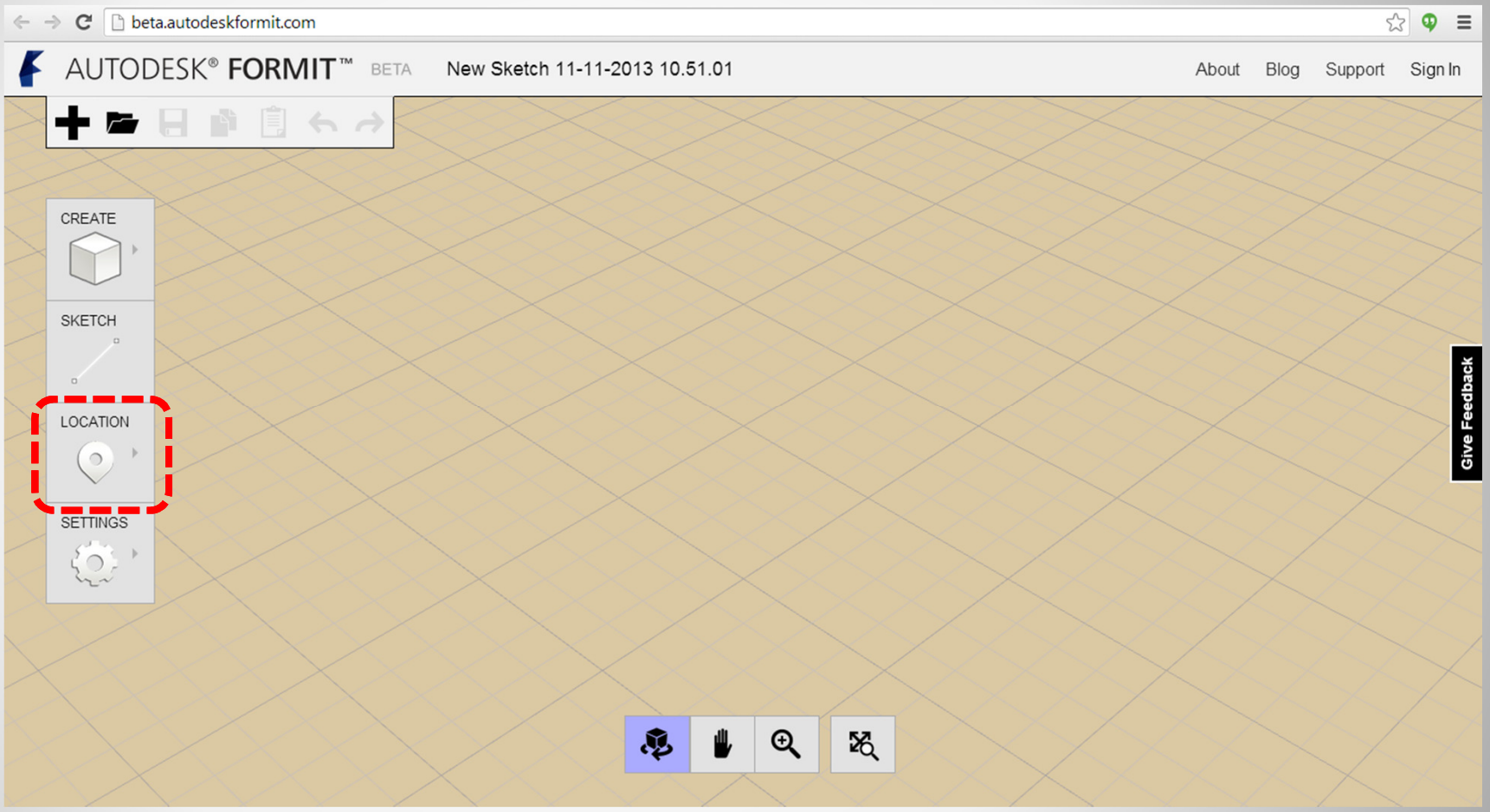
Schematic Design Phase

- zee@asti.com
- AU2013Zee



Schematic Design Phase

-



Schematic Design Phase

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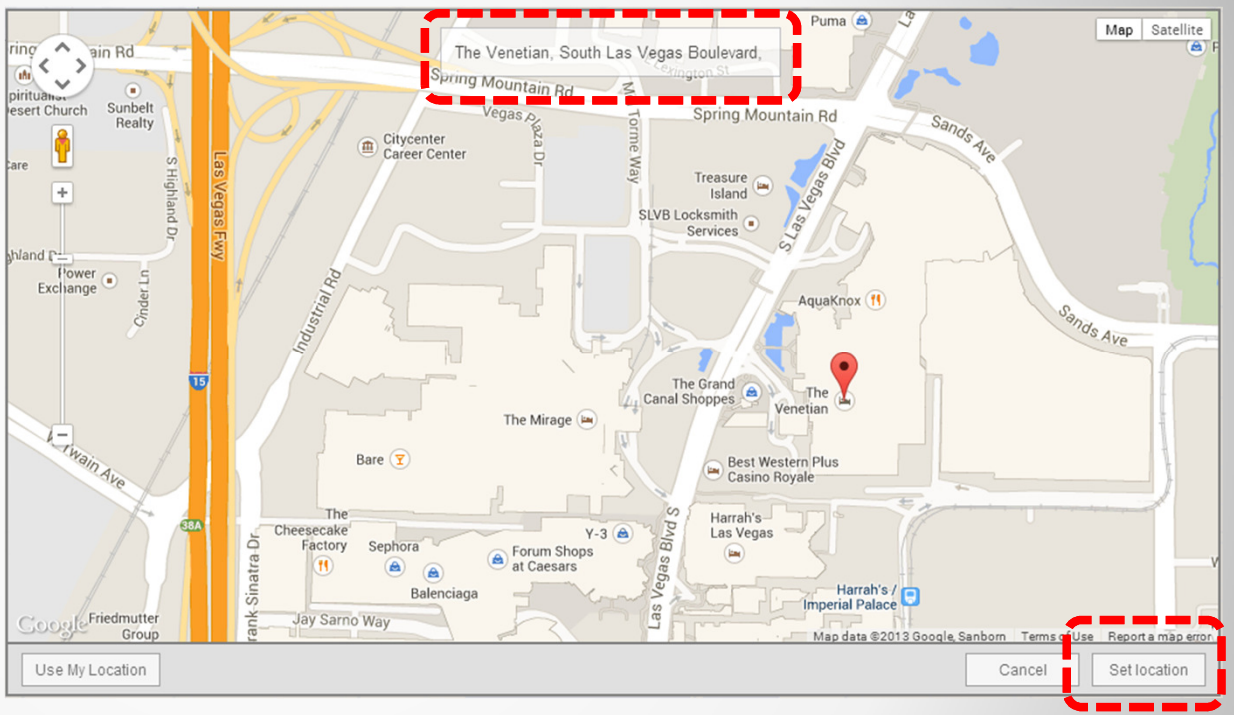
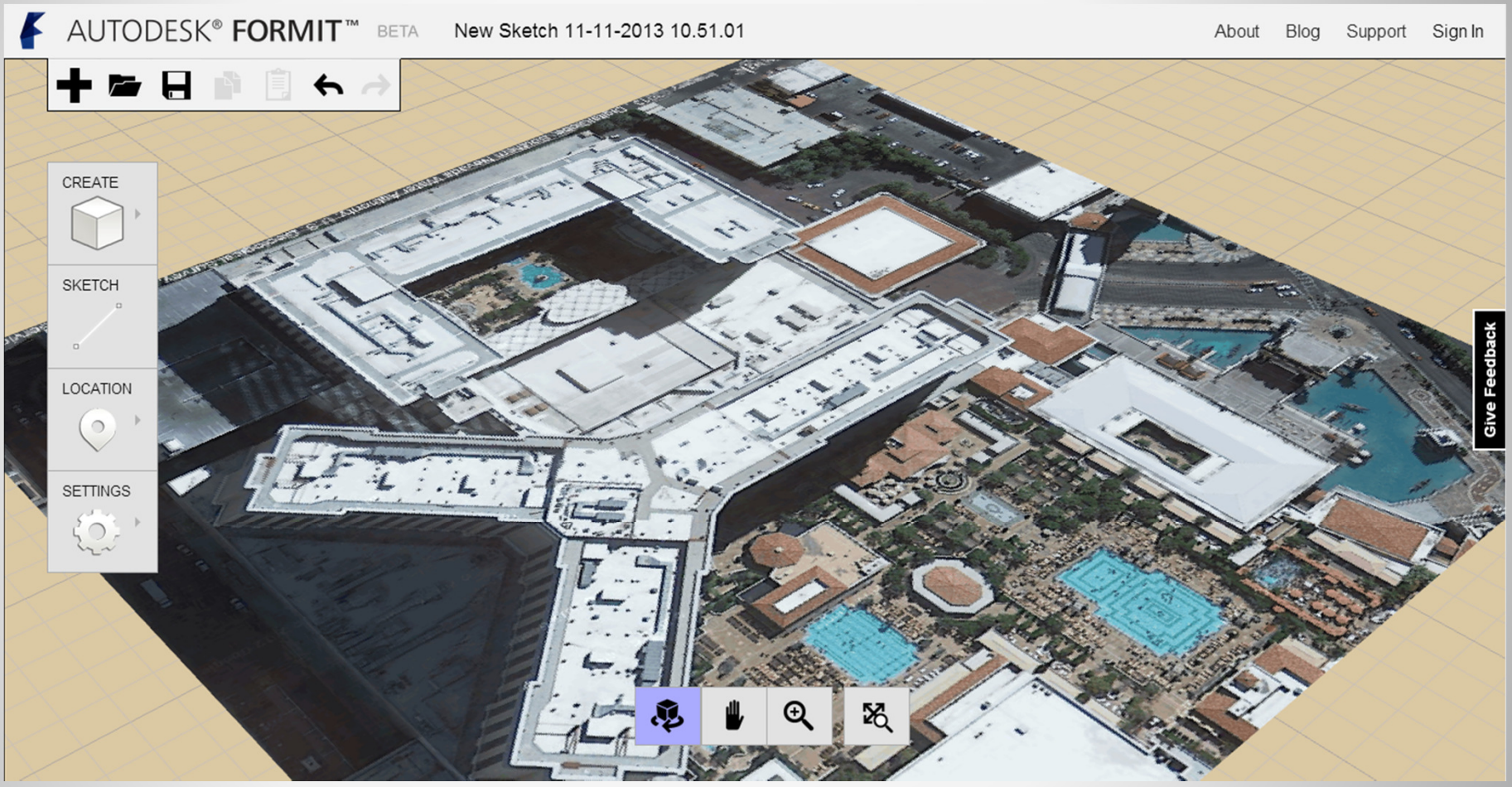
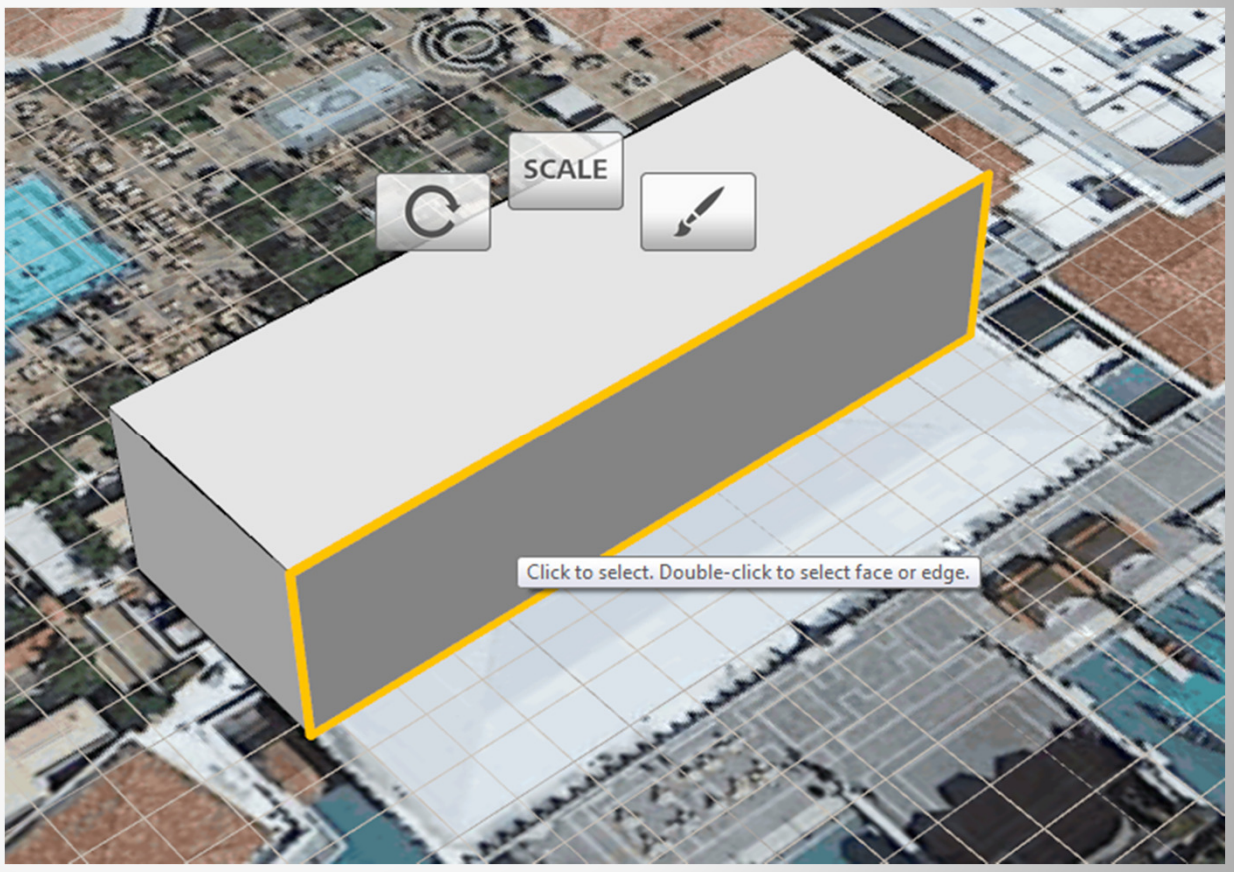


Schematic Design Phase



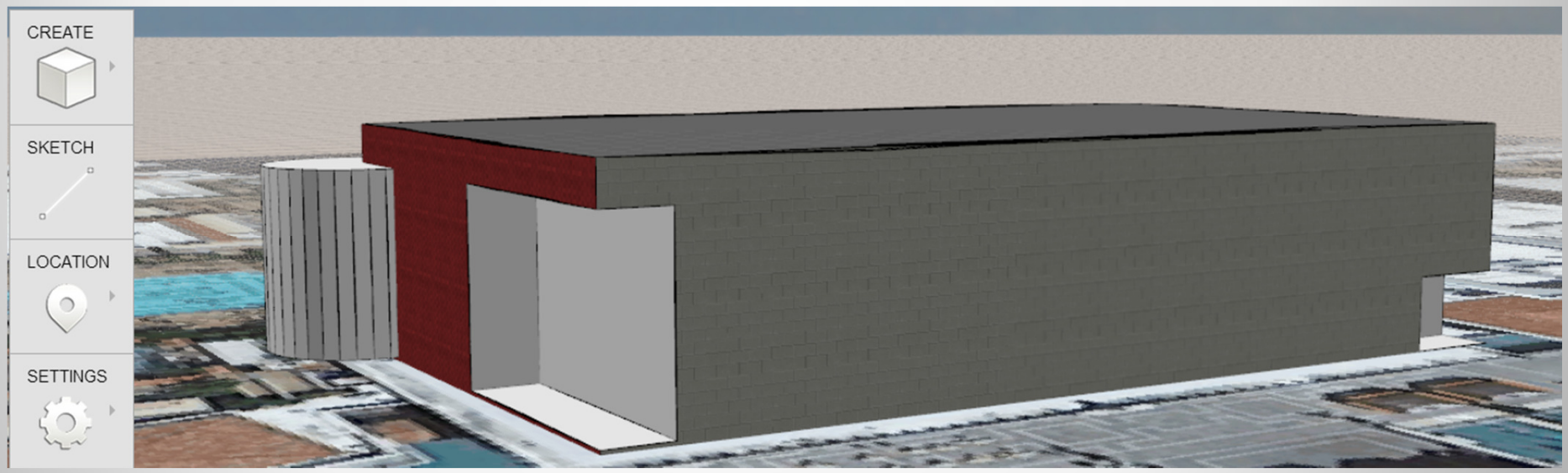
Schematic Design Phase

- Double click a side of the shape to select.
- The side edges will light up yellow.
- Hold down to extrude its side



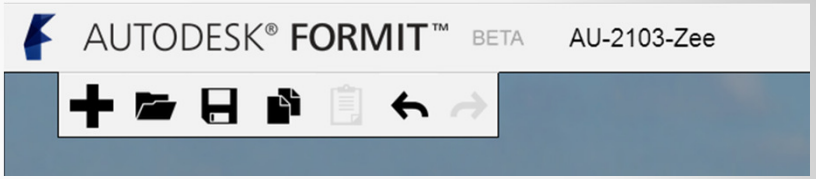
Schematic Design Phase

- Create button
- Select shapes to place



Schematic Design Phase

- Save
- AU-2013- “your initials”
  - *AU-2013-Zee*

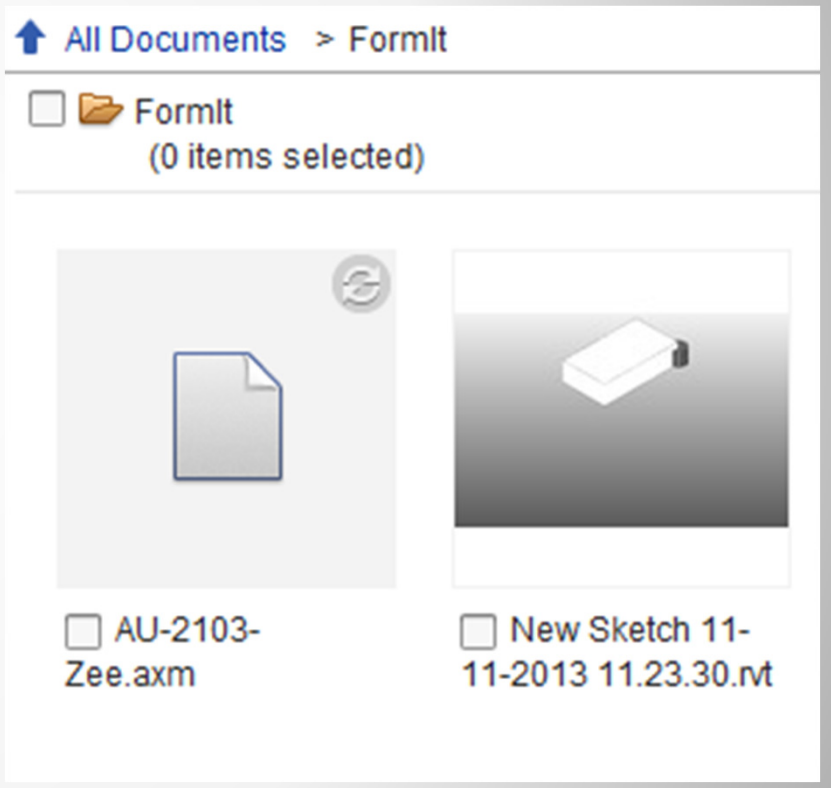


Schematic Design Phase

- Autodesk 360
- *Sign In*
  - *zee@asti.com*
  - *AU2013Zee*

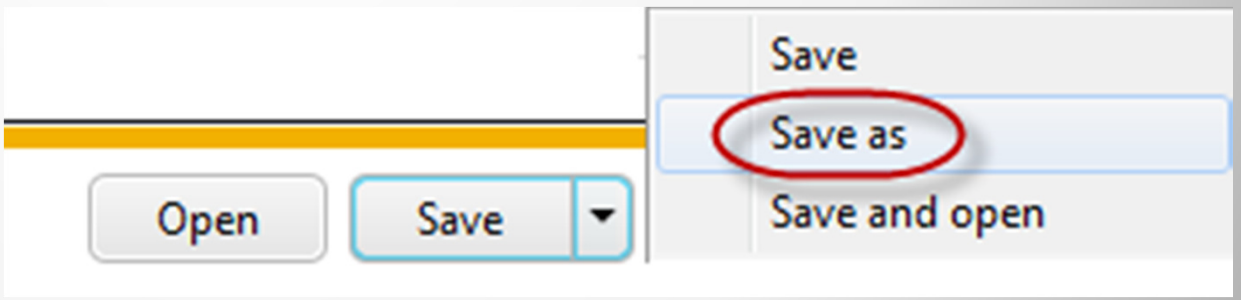
Schematic Design Phase

- Autodesk 360 Documents **automatically** save FormIt files to a Revit RVT



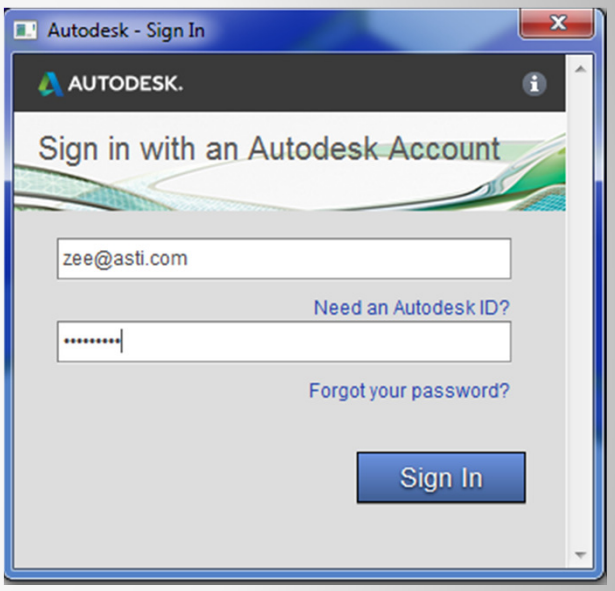
Schematic Design Phase

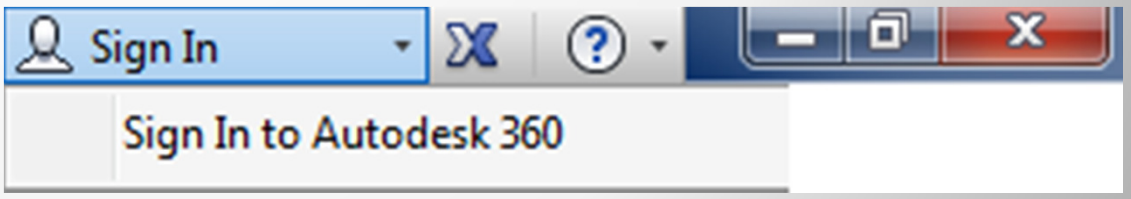
- “Save As” to computer



Schematic Design Phase

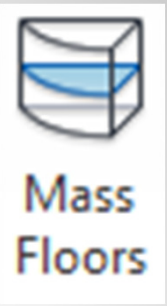
- In Revit…
- *Sign In*
  - *zee@asti.com*
  - *AU2013Zee*

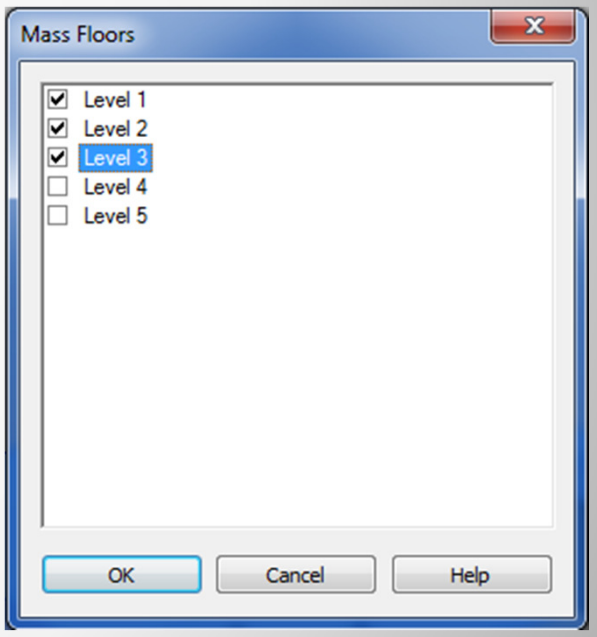




Schematic Design Phase

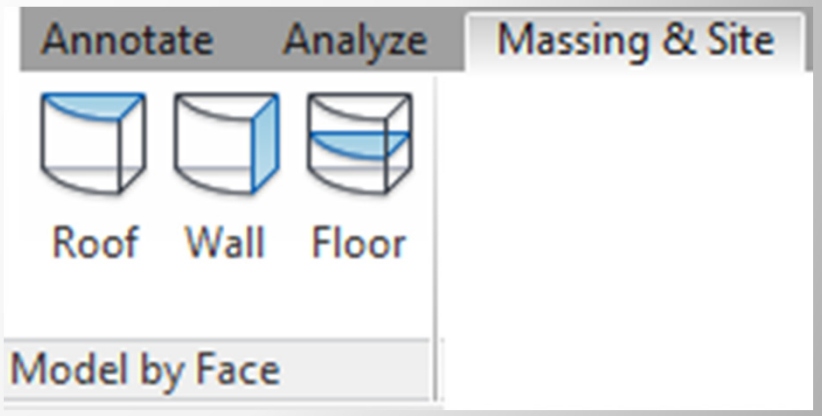
- In Revit…
- Create Mass Floors





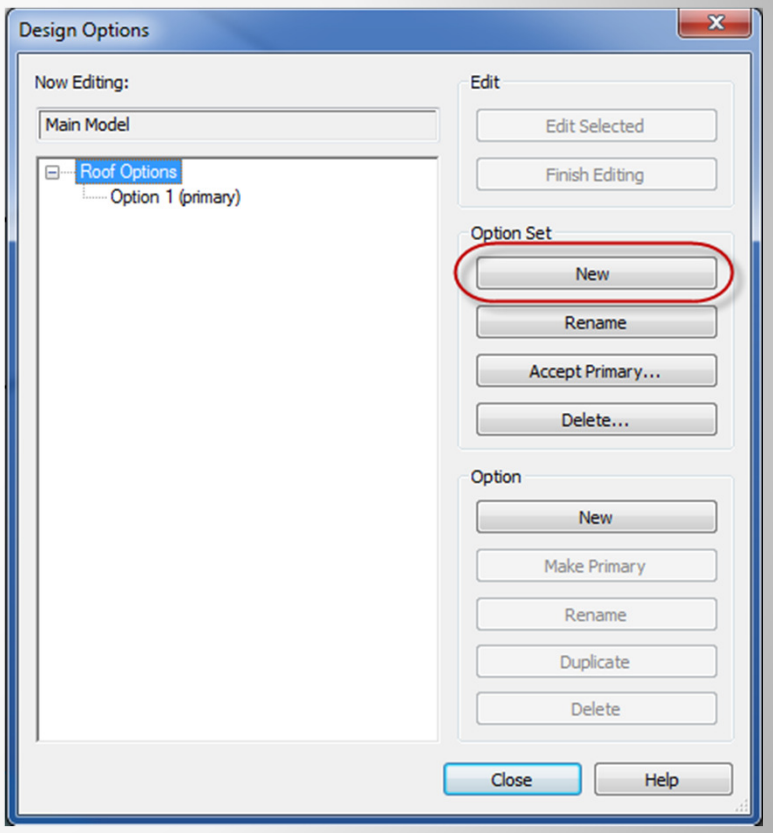
Schematic Design Phase

- In Revit…
- Assign Walls and Roof



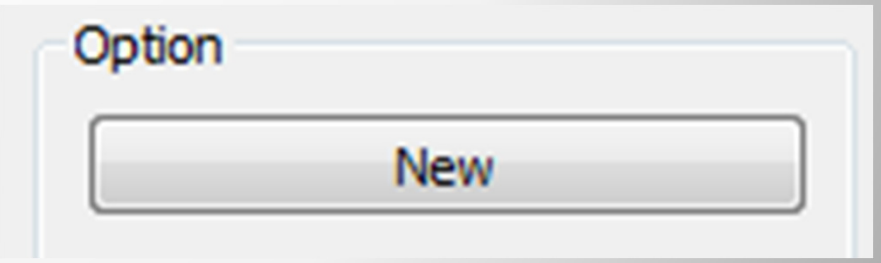
Schematic Design Phase

- Enable Design Options
- Select “New”
- Rename “Option Set 1” to “Roof Options”



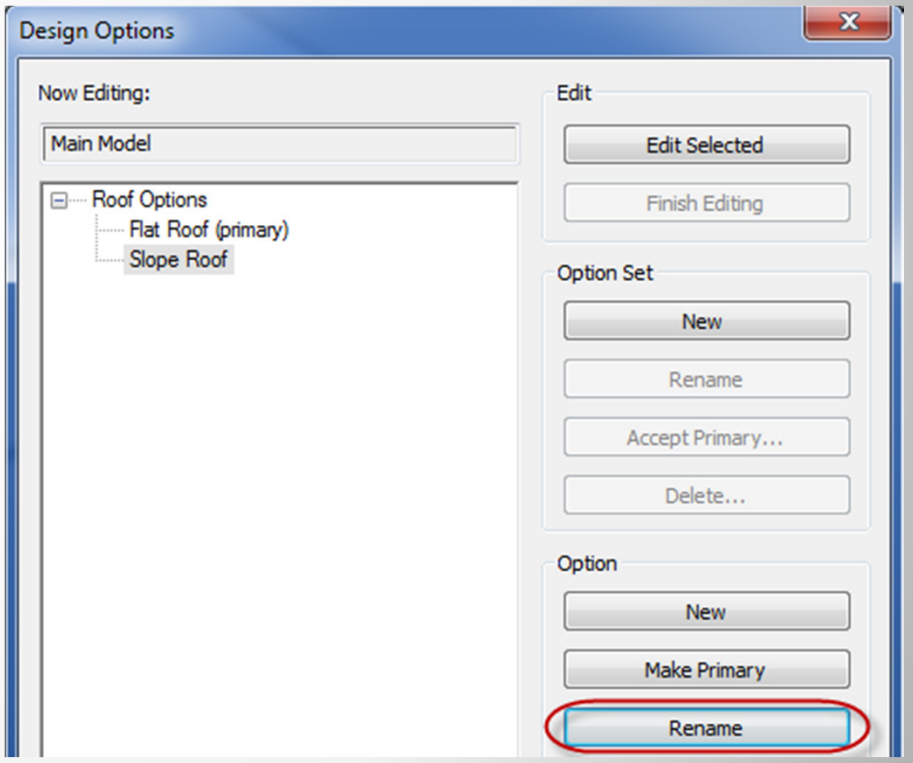
Schematic Design Phase

- Add and additional Option by picking “New” under Options section



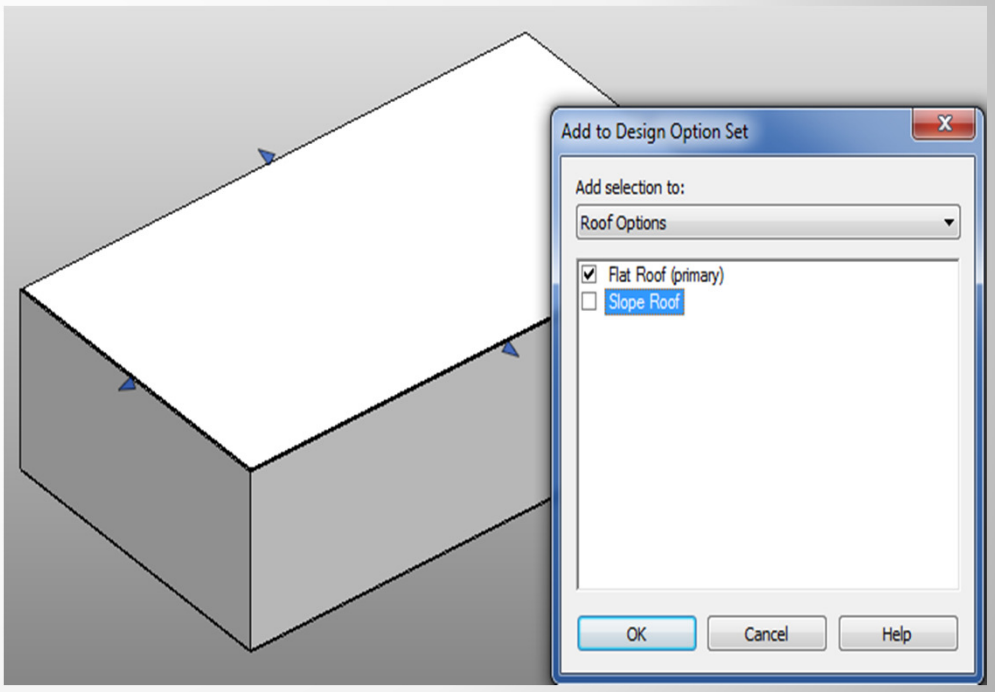
Schematic Design Phase

- Rename the two Options to “Flat Roof” and “Slope Roof”



Schematic Design Phase

- Assign flat roof to the “Flat Roof” Option
- Draw a pitched roof, assign it to the “Slope Roof” Option



Exercise

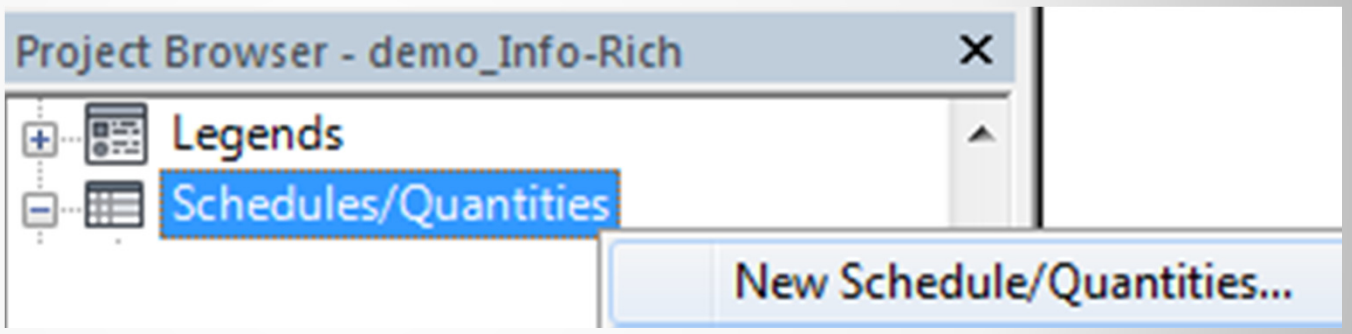
Part 2
Information-Rich

Quantity Takeoffs and Cost Estimates

- Tapping into the information-rich models **for quantity takeoffs** helps to produce more accurate **cost estimates**, compressing the timeline from design to procurement to construction, virtually eliminating errors and omissions, and reducing the likelihood of RFIs and change orders.

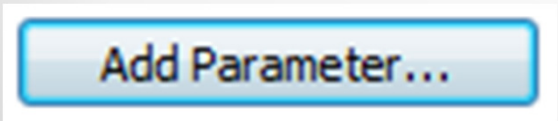
Quantity Takeoffs

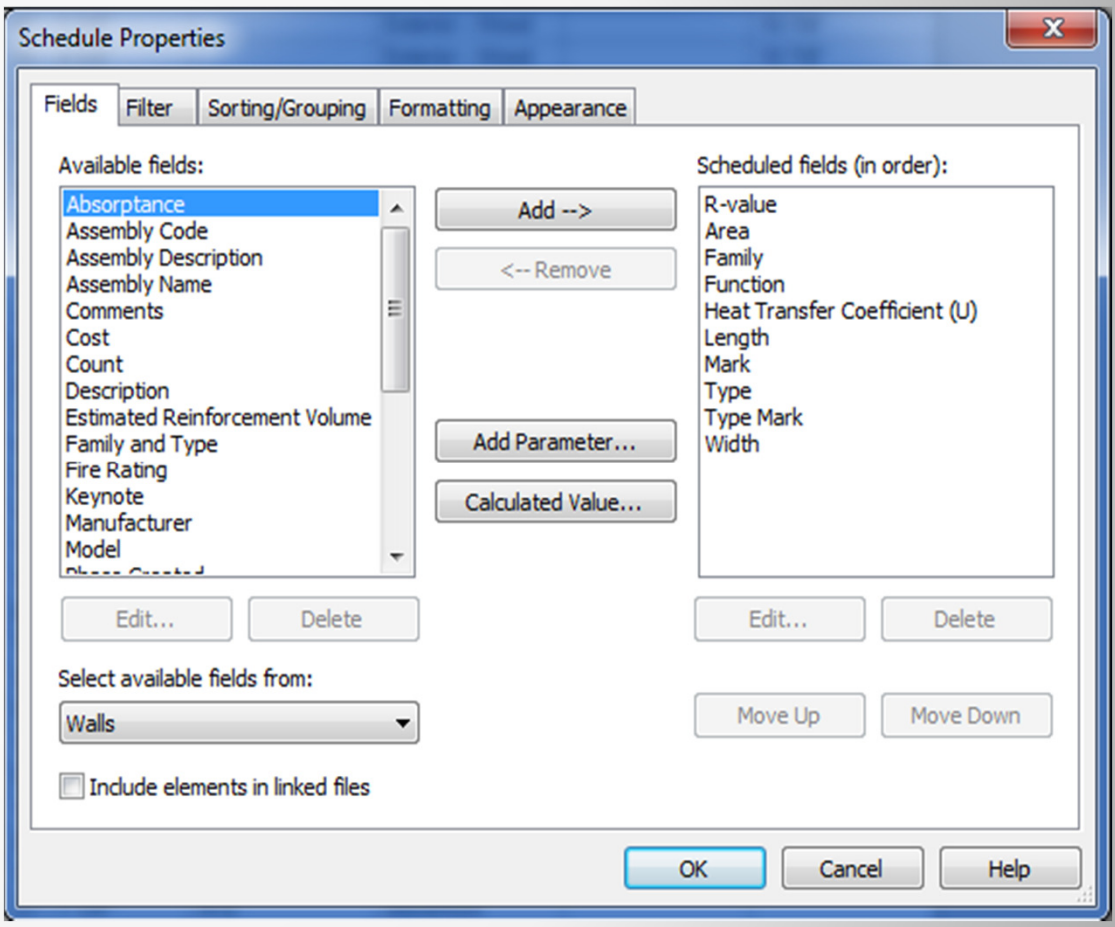
- New Schedule



Quantity Takeoffs

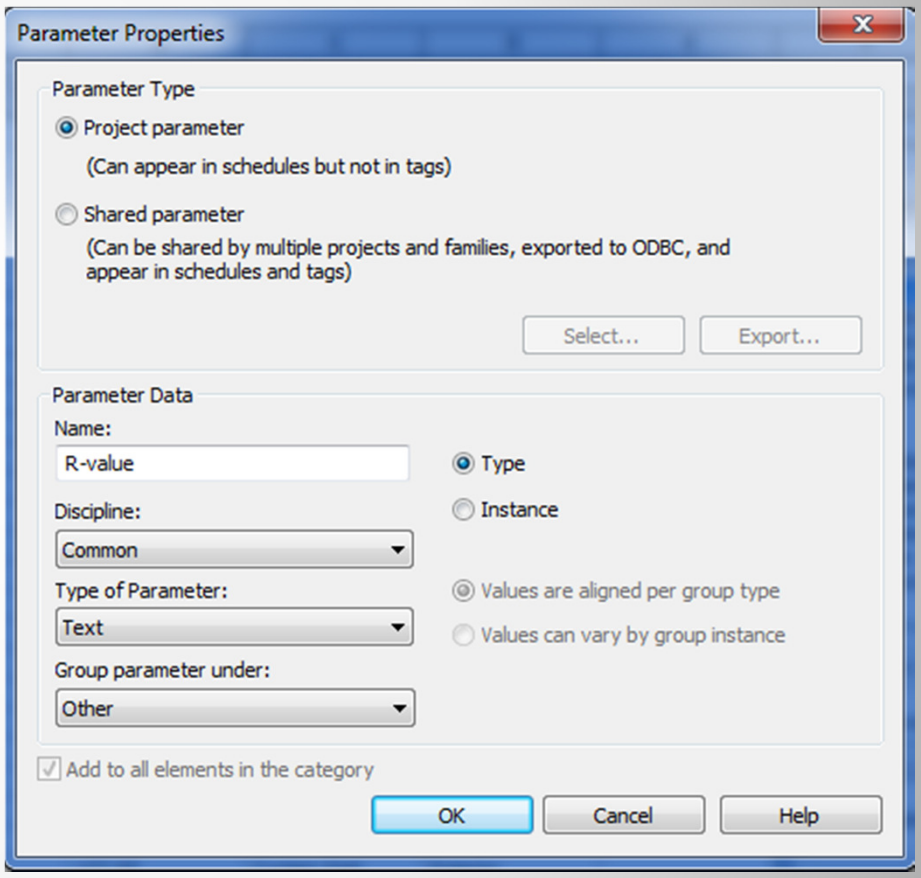
- Assign component level - wall, doors, R-values by creating a parameter.





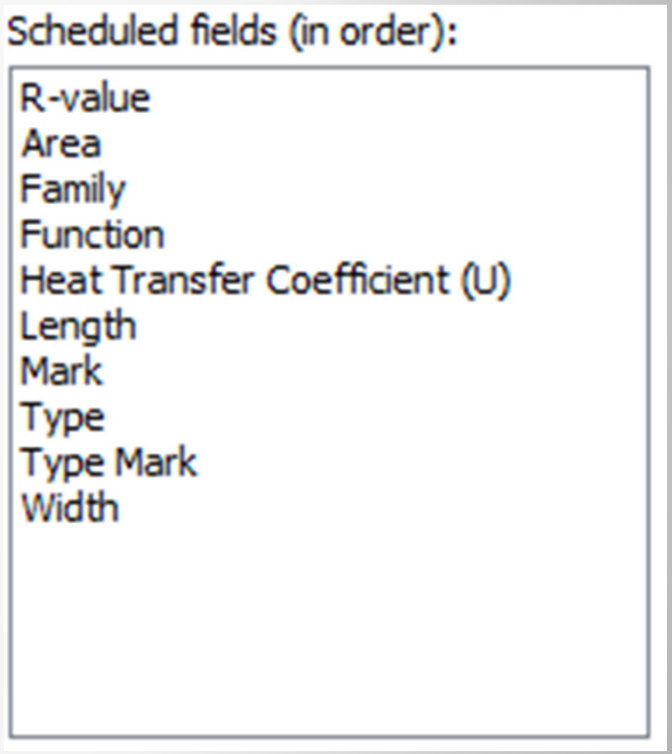
Quantity Takeoffs

- new Parameter “R-value”



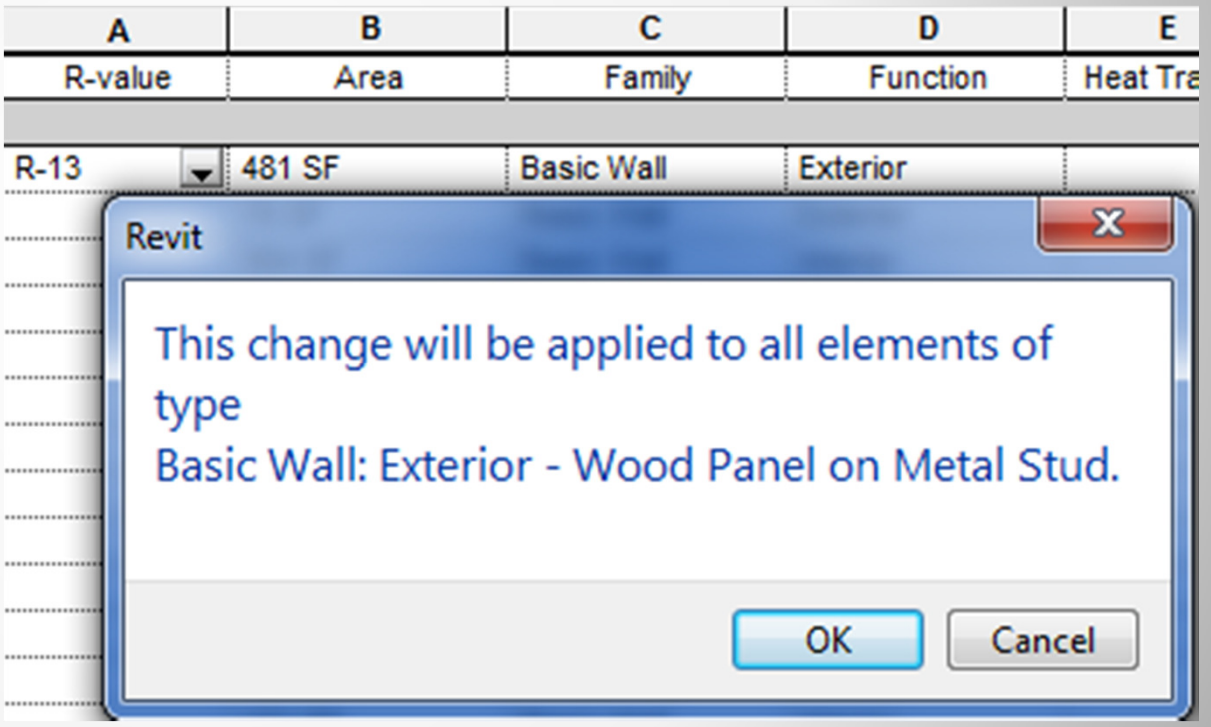
Quantity Takeoffs

- Add additional “Available Fields”



Quantity Takeoffs

- Add additional “Available Fields”



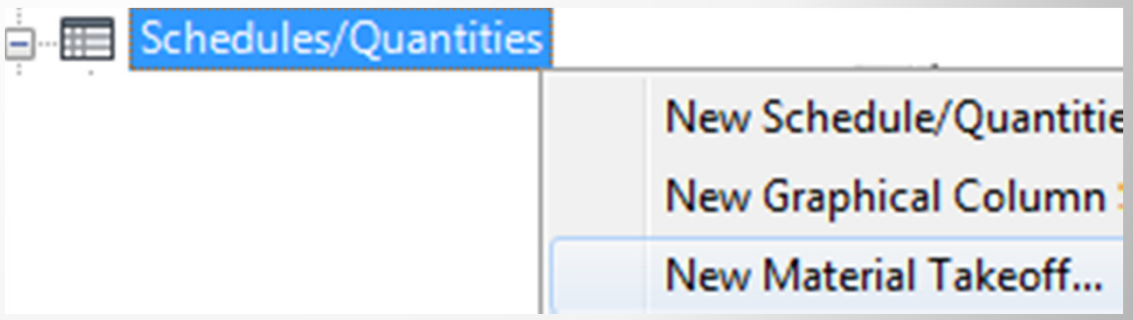
Quantity Takeoffs

- Same wall types now have the “R-13” value.

A	B	C	D
R-value	Area	Family	Function
R-13	481 SF	Basic Wall	Exterior
	78 SF	Basic Wall	Exterior
	264 SF	Basic Wall	Interior
R-13	82 SF	Basic Wall	Exterior
R-13	364 SF	Basic Wall	Exterior
R-13	361 SF	Basic Wall	Exterior
	260 SF	Curtain Wall	Exterior
	231 SF	Basic Wall	Interior
R-13	41 SF	Basic Wall	Exterior
R-13	34 SF	Basic Wall	Exterior

Cost Estimates

- X



Exercise

Part 3
Wind and Solar Analysis

Wind and Solar Analysis

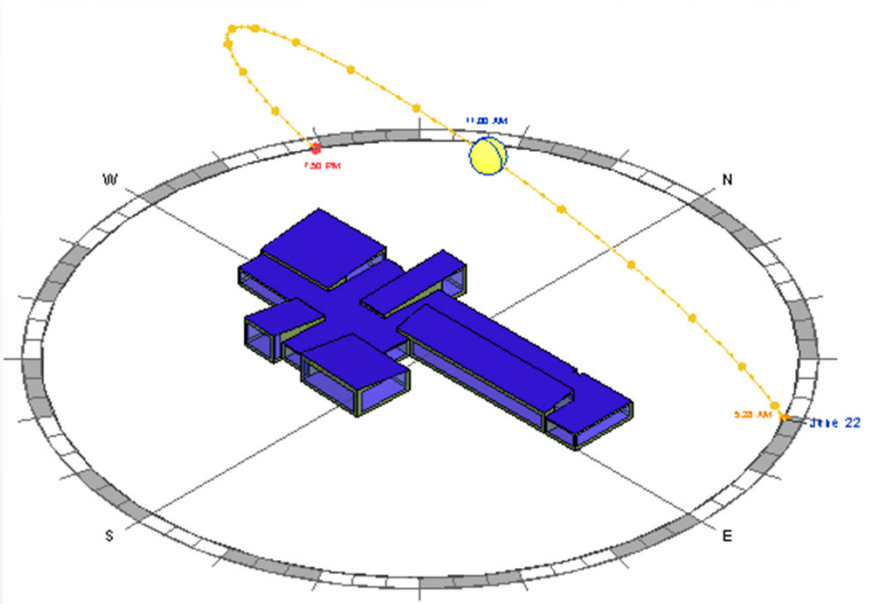
- With integrated analysis for energy and carbon (tool: Energy Analysis), you gain design insight where the most important design decisions are made. Perform **wind and solar radiation analysis** with user-friendly tools.

Exercise

Part 4
Energy Analysis

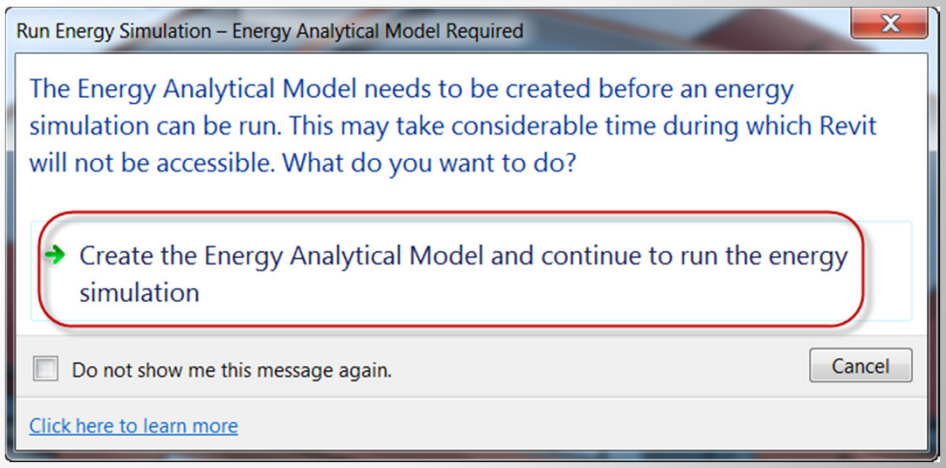
Energy Analysis

- Conduct cloud-based whole building **energy analysis** (tool: Energy Analysis), with web-based software. Optimize energy efficiency, and work toward carbon neutrality earlier in the



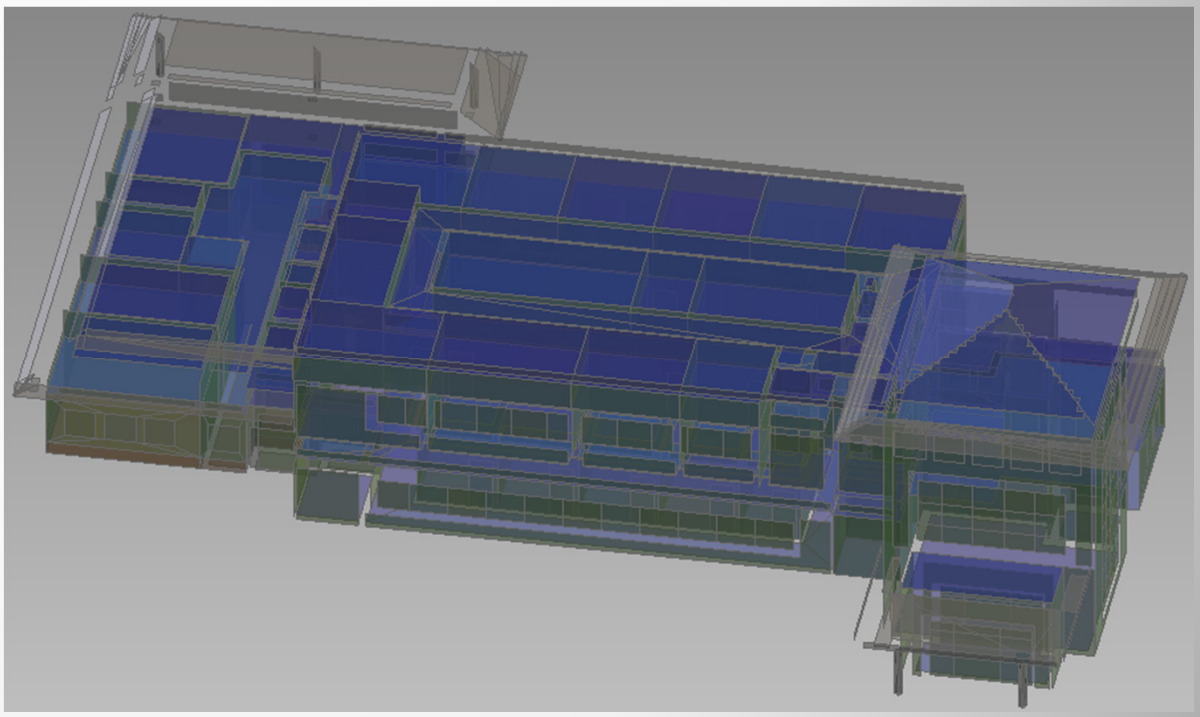
Energy Analysis

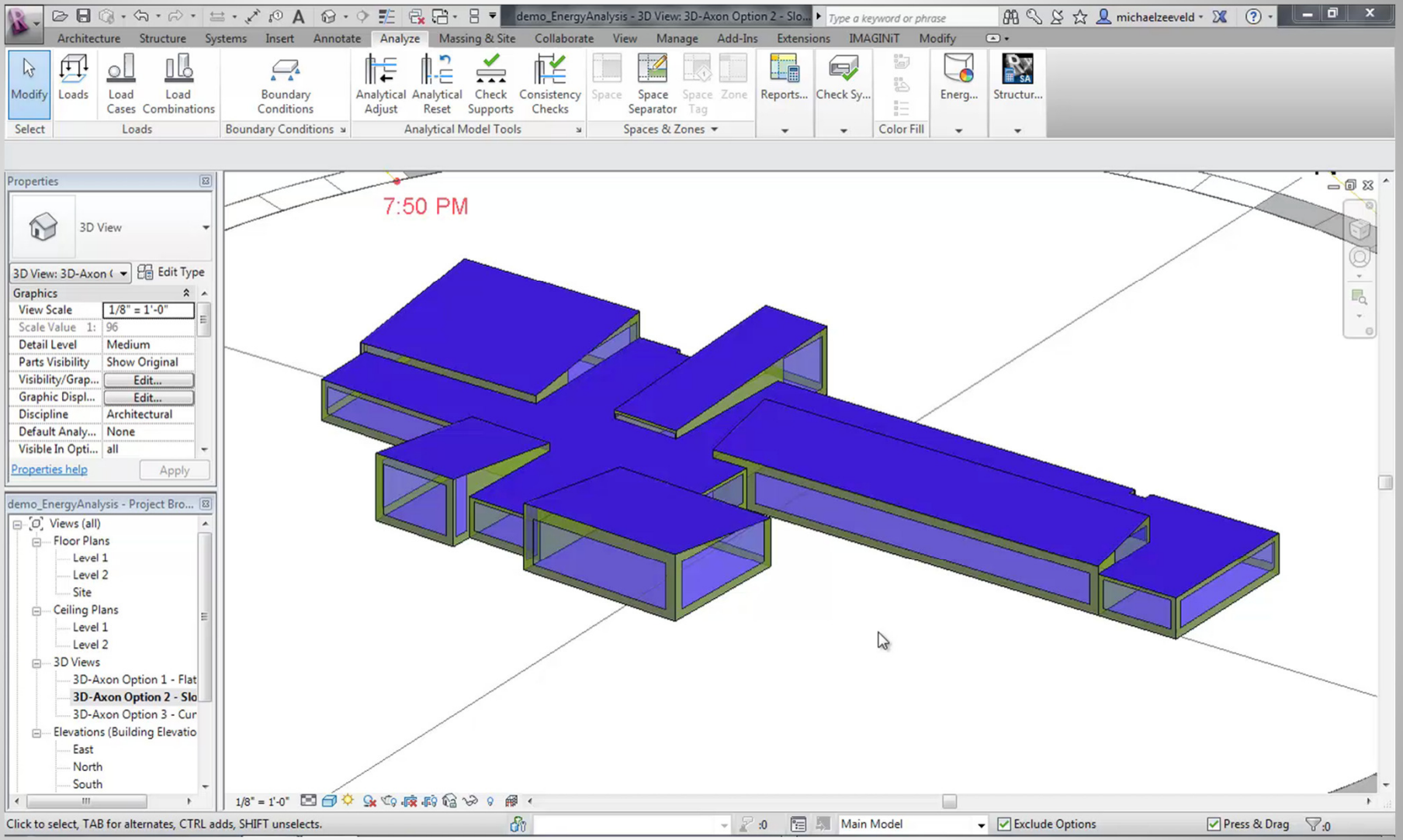
- Works both with and without Revit room / space objects
- Utilizes Revit model data for Energy Analysis directly in varying levels of detail



Energy Analysis

- Energy analysis on a Revit model, not just massing




demo_EnergyAnalysis - 3D View: 3D-Axon Option 2 - Slo...
Type a keyword or phrase
michaelzeeveld
Architecture
Structure
Systems
Insert
Annotate
Analyze
Massing & Site
Collaborate
View
Manage
Add-Ins
Extensions
IMAGINiT
Modify
Modify
Loads
Load Cases
Load Combinations
Boundary Conditions
Analytical Adjust
Analytical Reset
Check Supports
Consistency Checks
Space
Space Separator
Space Tag
Zone
Reports...
Check Sy...
Energ...
Structur...
Select
Loads
Boundary Conditions
Analytical Model Tools
Spaces & Zones
Color Fill
Properties
3D View
3D View: 3D-Axon (
Edit Type
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View Scale
1/8" = 1'-0"
Scale Value 1:
96
Detail Level
Medium
Parts Visibility
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Graphic Displ...
Edit...
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None
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all
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Apply
demo_EnergyAnalysis - Project Bro...
Views (all)
Floor Plans
Level 1
Level 2
Site
Ceiling Plans
Level 1
Level 2
3D Views
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Elevations (Building Elevatio
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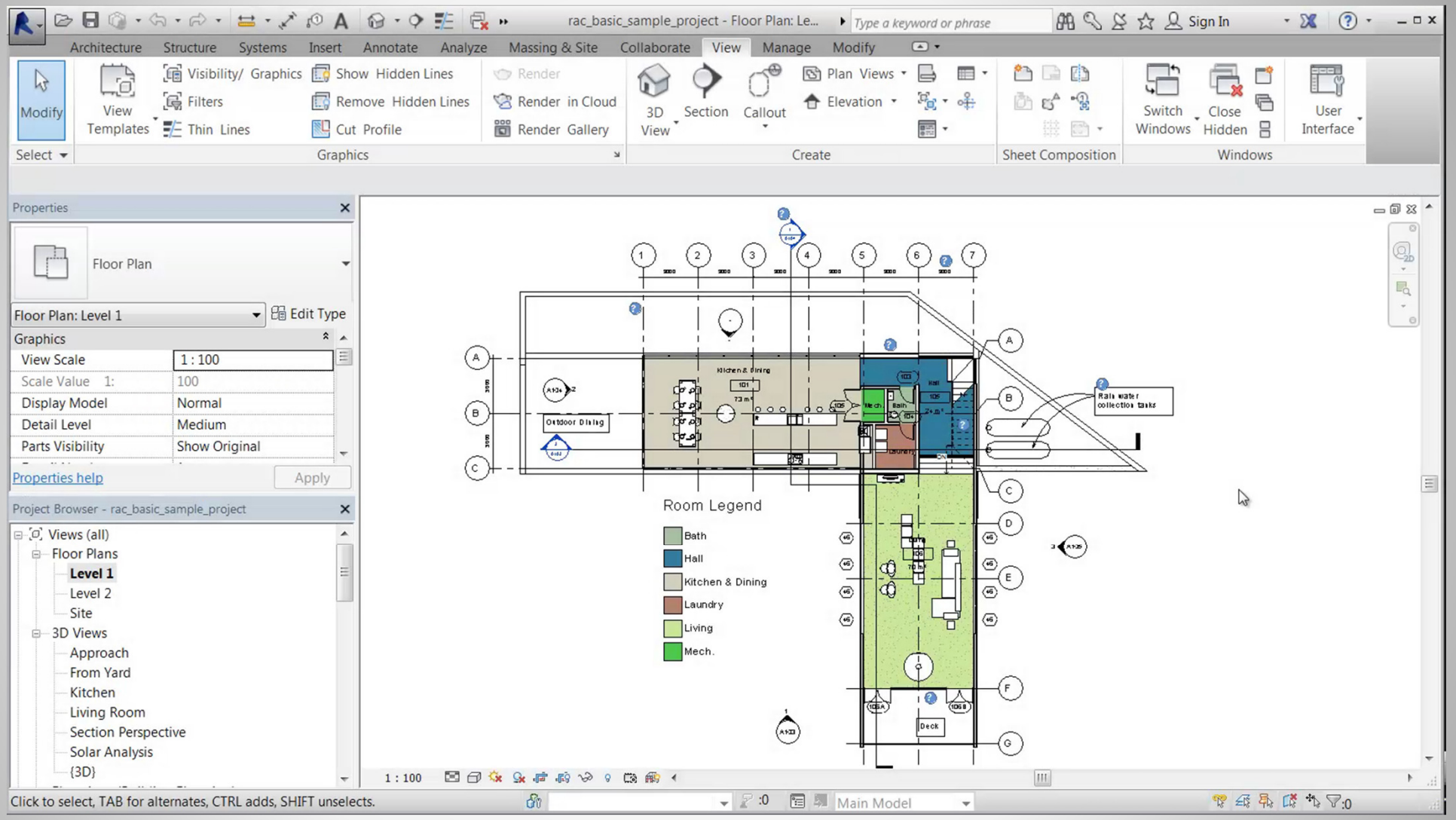
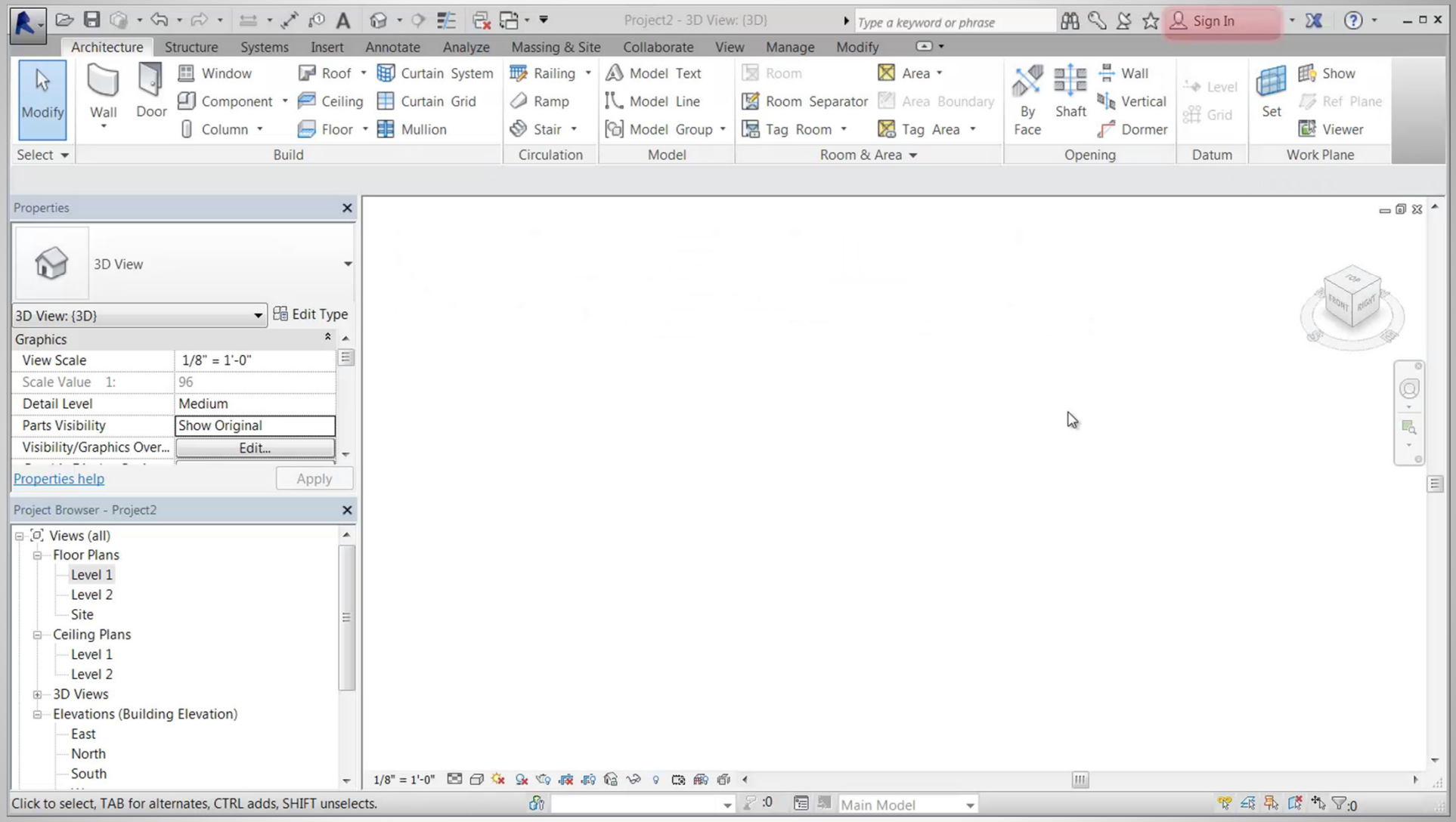
1/8" = 1'-0"
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model
Exclude Options
Press & Drag

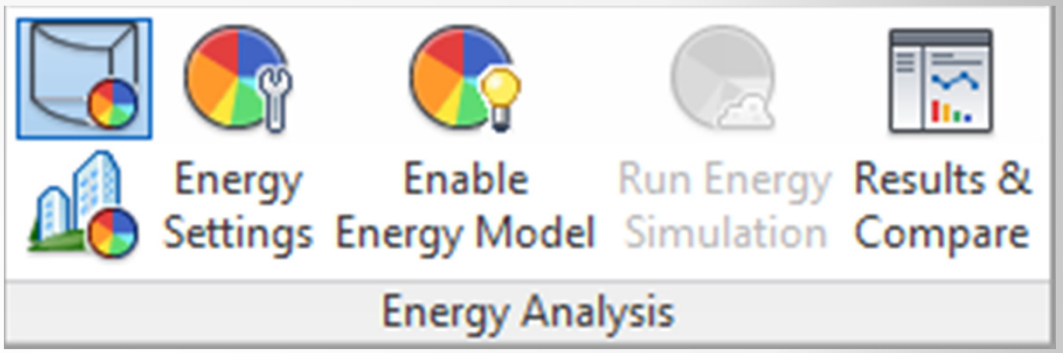

rac_basic_sample_project - Floor Plan: Le...
Type a keyword or phrase
Sign In
Architecture
Structure
Systems
Insert
Annotate
Analyze
Massing & Site
Collaborate
View
Manage
Modify
Modify
View Templates
Visibility/ Graphics
Filters
Thin Lines
Show Hidden Lines
Remove Hidden Lines
Cut Profile
Render
Render in Cloud
Render Gallery
3D View
Section
Callout
Plan Views
Elevation
Switch Windows
Close Hidden
User Interface
Select
Graphics
Create
Sheet Composition
Windows
Properties
Floor Plan
Floor Plan: Level 1
Edit Type
Graphics
View Scale
1 : 100
Scale Value 1:
100
Display Model
Normal
Detail Level
Medium
Parts Visibility
Show Original
Properties help
Apply
Project Browser - rac_basic_sample_project
Views (all)
Floor Plans
Level 1
Level 2
Site
3D Views
Approach
From Yard
Kitchen
Living Room
Section Perspective
Solar Analysis
{3D}
Kitchen & Dining
Outdoor Dining
Rain water collection tanks
Deck
Room Legend
Bath
Hall
Kitchen & Dining
Laundry
Living
Mech.
1 : 100
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model


Project2 - 3D View: {3D}
Type a keyword or phrase
Sign In
Architecture
Structure
Systems
Insert
Annotate
Analyze
Massing & Site
Collaborate
View
Manage
Modify
Modify
Wall
Door
Window
Component
Column
Roof
Ceiling
Floor
Curtain System
Curtain Grid
Mullion
Railing
Ramp
Stair
Model Text
Model Line
Model Group
Room
Room Separator
Tag Room
Area
Area Boundary
Tag Area
By Face
Shaft
Wall
Vertical
Dormer
Level
Grid
Set
Show
Ref Plane
Viewer
Select
Build
Circulation
Model
Room & Area
Opening
Datum
Work Plane
Properties
3D View
3D View: {3D}
Edit Type
Graphics
View Scale
1/8" = 1'-0"
Scale Value 1:
96
Detail Level
Medium
Parts Visibility
Show Original
Visibility/Graphics Over...
Edit...
Properties help
Apply
Project Browser - Project2
Views (all)
Floor Plans
Level 1
Level 2
Site
Ceiling Plans
Level 1
Level 2
3D Views
Elevations (Building Elevation)
East
North
South
1/8" = 1'-0"
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model

Exercise

Energy Analysis

- Mass
- Building



Part 5
Sustainability

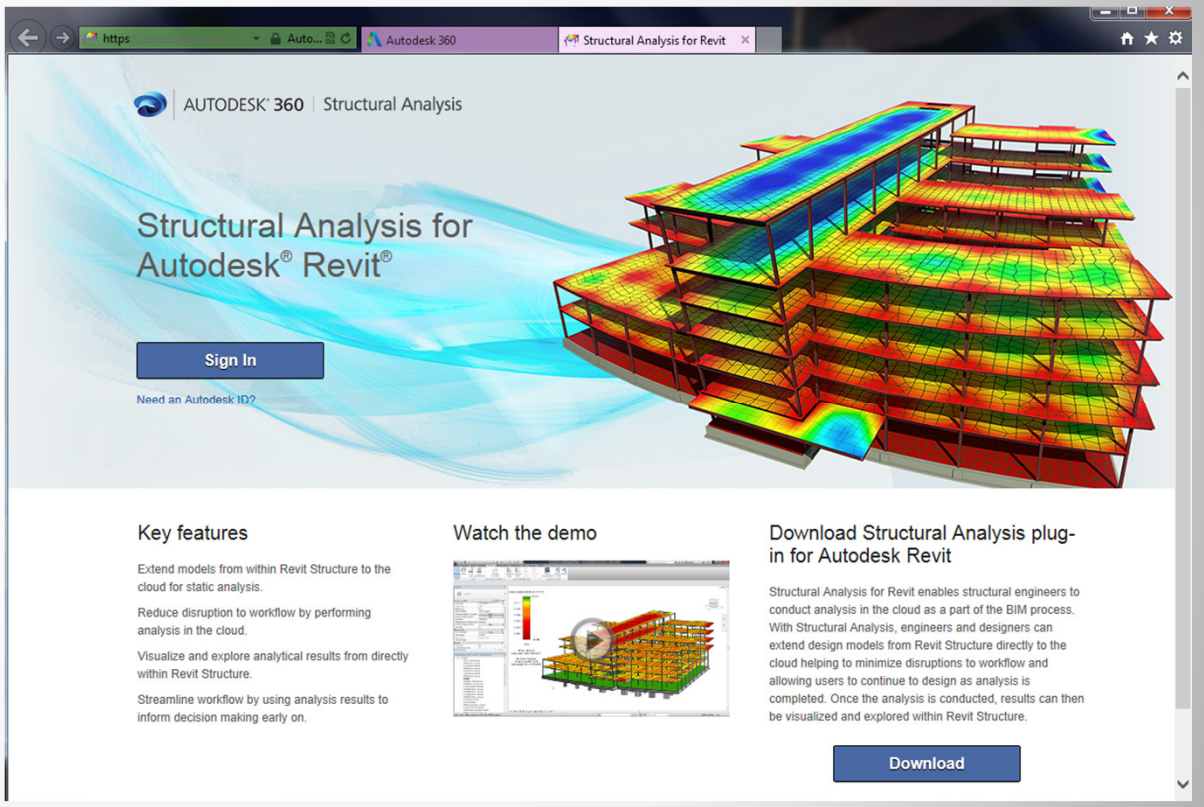
Sustainability

- With faster, more accurate energy analysis of building design proposals, architects and designers can work with **sustainability in mind** (tool: concept?) earlier in the process, ***plan proactively***, and ***build better***. (tool: concept?)

Exercise

Additional Resources

Additional Resources



Additional Resources

Autodesk 360
The Autodesk® 360 mobile app provides a new look and more functionality to view and share data.
Download Mobile App for iOS
Download Mobile App for Android

AutoCAD 360
With AutoCAD® 360, you can view files stored on Autodesk 360, and edit and share DWG files on your smartphone or tablet.
Download Mobile App for iOS
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Summary

- Explored quick design alternatives through iterative design
- Tapped into the information-rich models for quantity takeoffs
- Used integrated analysis for energy and carbon neutrality
- Validated design sustainability earlier in the process

Questions?

Thank you!