AUTODESK UNIVERSITY

Landscape modeling in Revit with Environment tools

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About me

- Landscape Architecture graduate from Technion
- Experience working on different scales and types of Landscape projects
- All done with CAD (and excel and sketchup and Lumion and photoshop and civil…)
- I quit my job to be able to learn Revit
- Currently working at Arch-Intelligence the developer of Environment for Revit
- Teaching Revit for Landscape at ‘Ruppin’ Technological college

Who is it for?

- Landscape Architects working with Revit
- Landscape architects who are interested in Revit
- BIM experts working with Landscape designers
- Anyone looking to design the outdoors within Revit

You found it.

Learning objectives

- Discover the different ways to create **topographies** in Revit
- Learn about designing with **contour lines** using model lines
- See how to model the **hardscapes** with slabs (grading plans)
- Reveal the secret of architectural **walls** for site design in Revit
- Get to know the easiest way to design **planting** in Revit

Why Revit for landscape?

Is Revit the best fit?

The best software for landscape architecture checklist:

High **technical** capabilities

Strong **collaboration** abilities

Discipline appropriate tools

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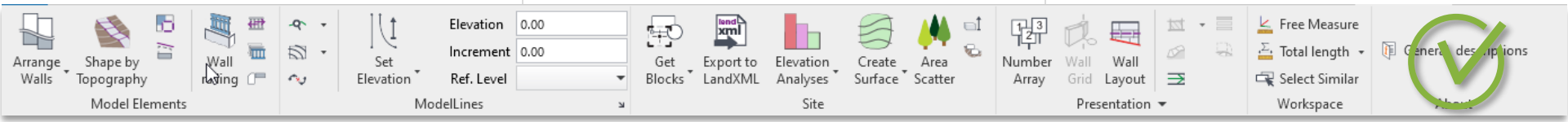
Environment tab in Revit



Environment for Revit

Main goals

- Complete the entire project within Revit
- Flexible, easy, and fun workflows
- Achieve maximum modeling accuracy
- Seamless integration with Revit tools & elements

Streamline the work

Slopes & Gradings

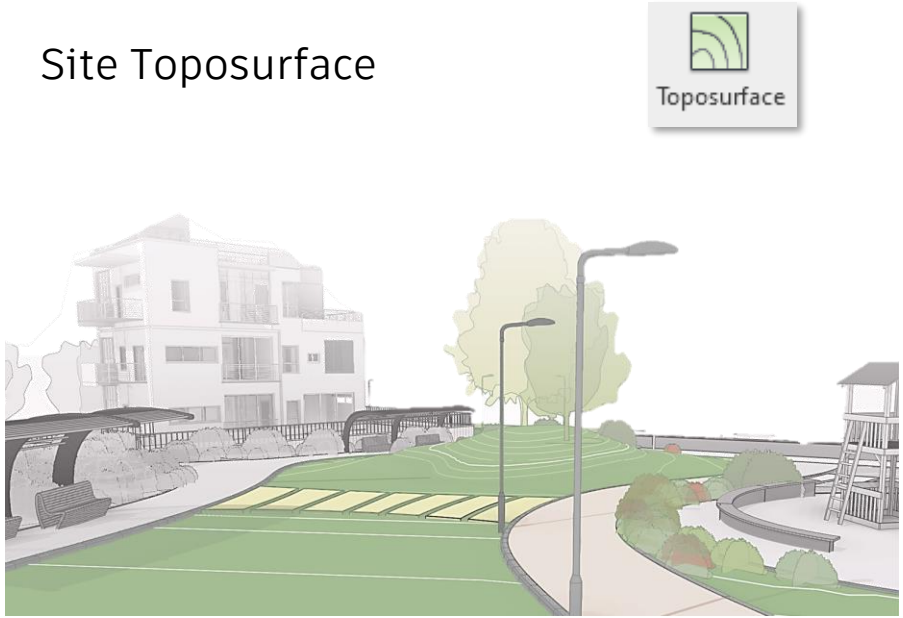
Topographies?

Softscape & Hardscape

Main categories used for graded surfaces in Revit

Topographies

Site Toposurface

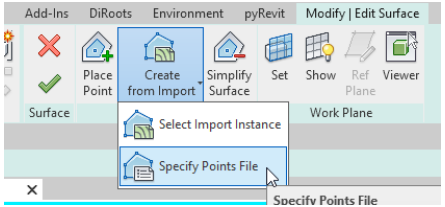


Slabs

Architectural Floors & Roffs

Topography in Revit

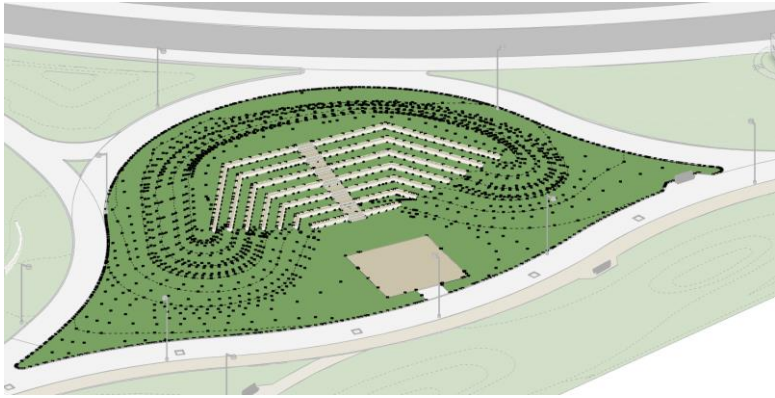
Revit native tools for Grading surfaces



How topo-surfaces behave in Revit?

- Made of Elev. points with X,Y,Z values
- Triangulated connection between points
- Has no thickness or layered materials

	A	B	C
1	Position X	Position Y	Value
2	187463.458	739830.756	26.81
3	187460.83	739850.583	27.41
4	187459.641	739830.251	26.78
5	187458.202	739870.41	28.01
6	187457.021	739929.01	28.82
7	187457.013	739850.077	27.38
8	187455.575	739890.236	28.59
9	187454.386	739869.904	27.99
10	187454.114	739931.536	28.81
11	187452.953	739910.02	28.9
12	187452.319	739916.329	28.91
13	187451.758	739889.731	28.58
14	187449.43	739828.897	26.87
15	187449.137	739909.51	28.94
16	187448.469	739915.926	28.98
17	187447.848	739936.981	28.84
18	187446.803	739848.724	27.48
19	187446.605	739828.523	26.9
20	187444.942	739939.507	28.86
21	187444.175	739868.551	28.08
22	187443.977	739848.35	27.5
23	187443.428	739888.627	28.66



Main issues in modeling process

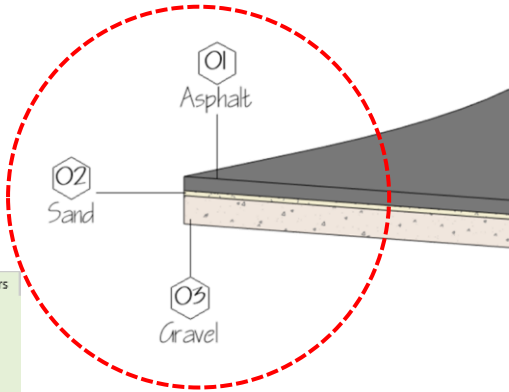
- Out-of-the-box modeling tools require to place each point manually.
- CSV files are lost within Revit's '20 Mile limit'
- No option to design with contour lines

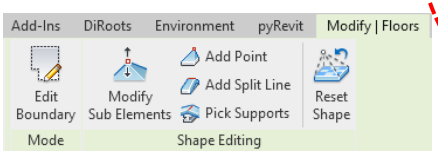
Slabs in Revit

Revit native tools for grading surfaces

What is a “Slab” ?

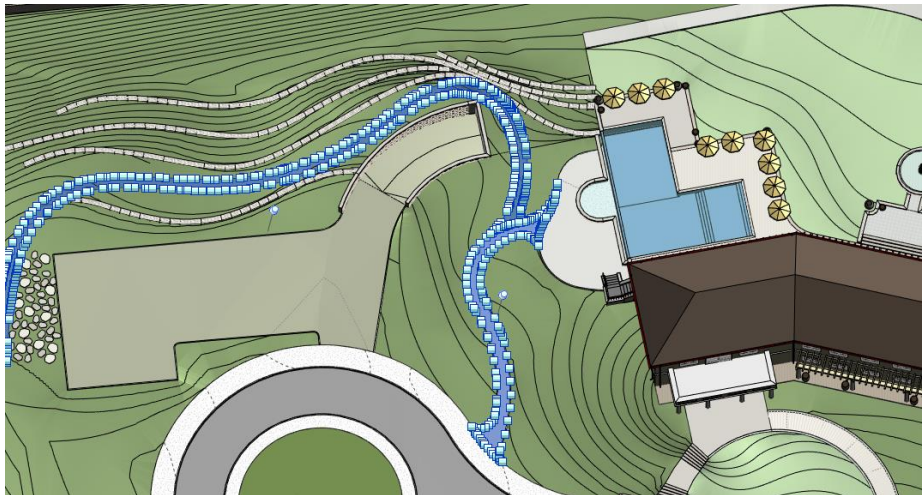
- Floors or Roofs
- Can have different material layers
- Linked to model levels
- Can include a slope or elevation points





Main issues in modeling process

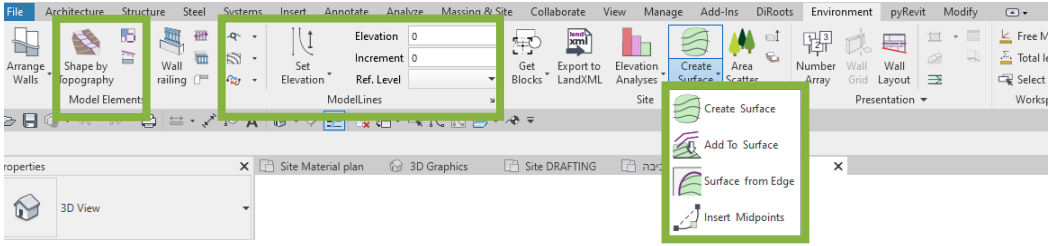
- Out-of-the-box modeling tools require to place each point or split line manually.
- Can’t show contour lines
- Designed to attach to building levels



Environment tools for grading

A verity of tools to fit every situation

- Creating & editing topography
- Shape edit slabs
- Use of contour lines



Environment tools for grading

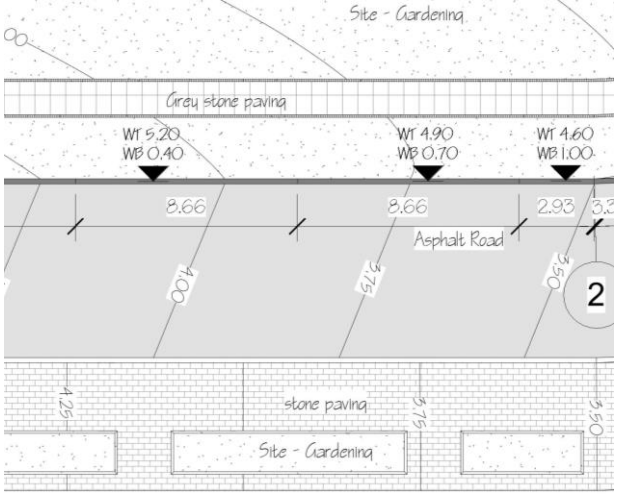
A verity of tools to fit every situation

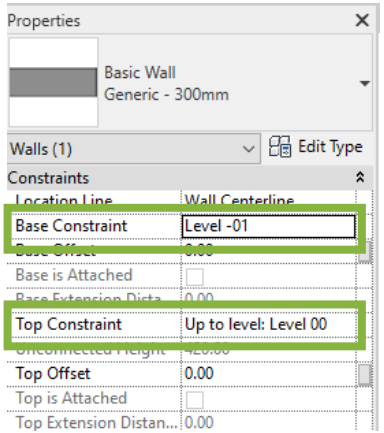
Walls

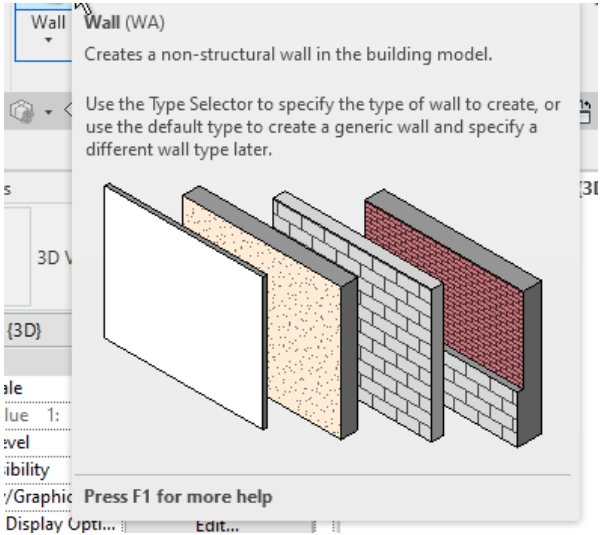
Architectural walls in Revit

Main issues in modeling process

- Top & base attached to a model level
- Model each wall part separately
- Designed to attach to building levels







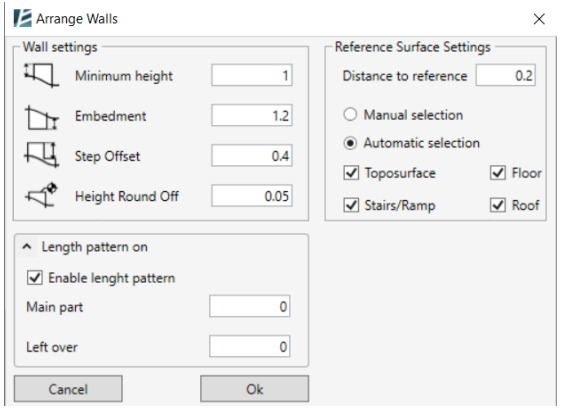
Architectural walls in Revit

In Landscape our ‘Level’ is the terrain

Retaining walls

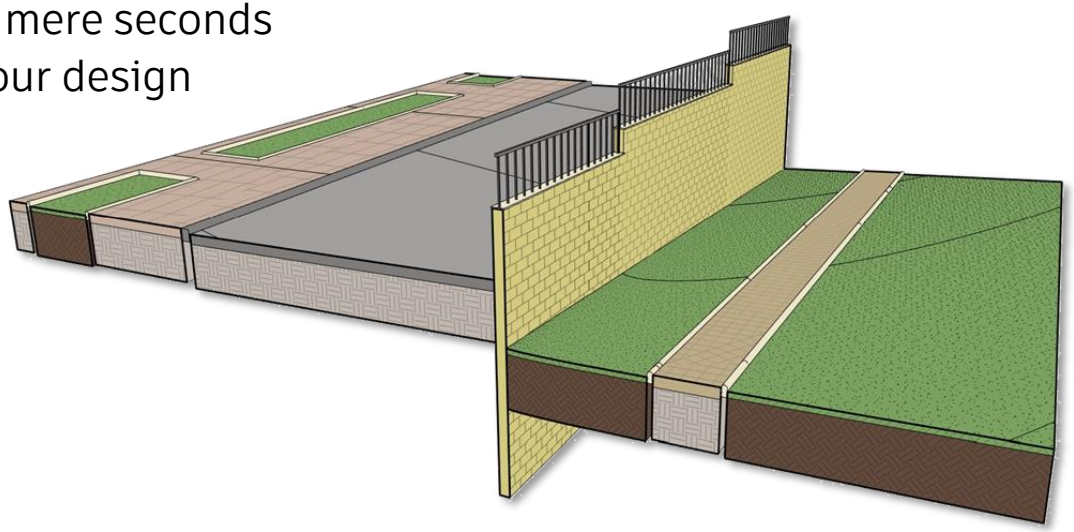
Arrange walls

An advanced algorithm calculates and models retaining walls



Capabilities

- Analyze surface height in both sides of the wall to determine relative wall height for each part
- Set height, length and footing depth parameters
- Automatically model all the walls in mere seconds
- Test different options to optimize your design

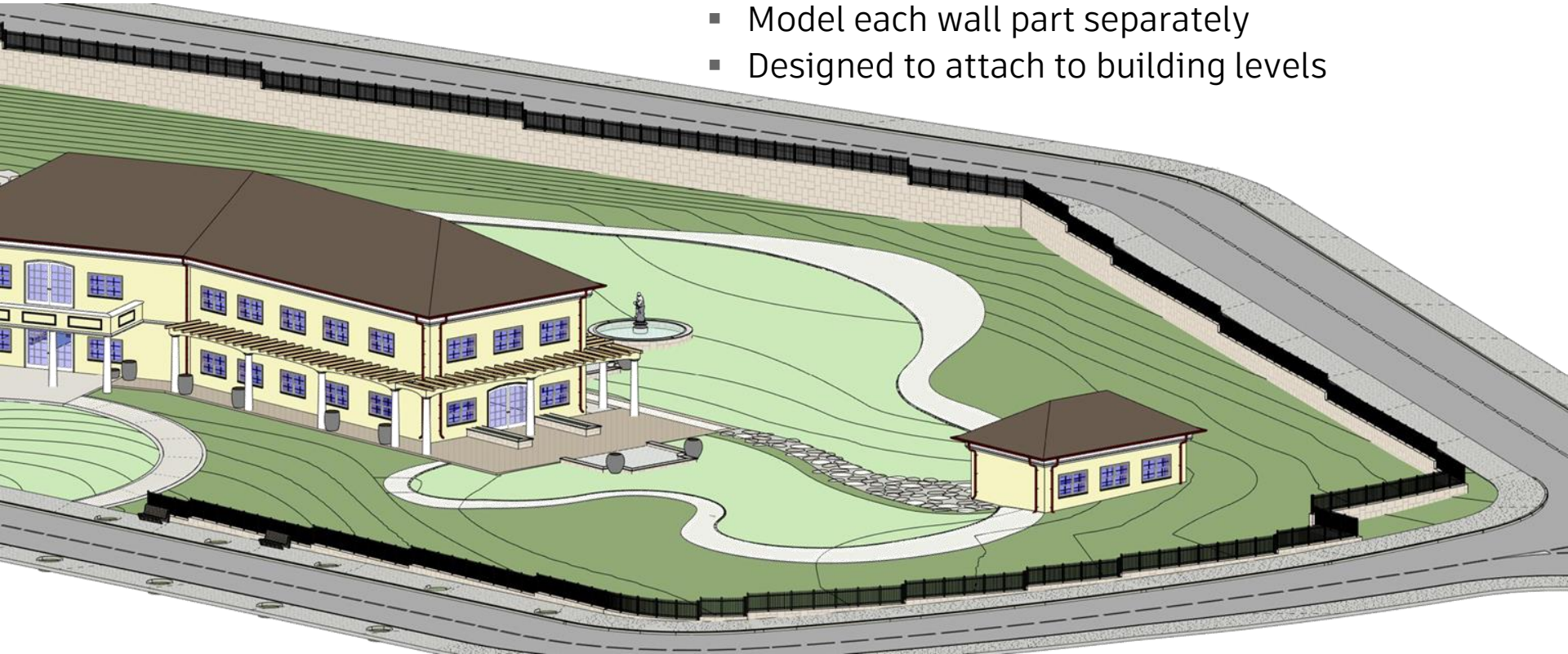


Fences

Wall railing

Main issues in modeling process

- Top & base attached to a model level
- Model each wall part separately
- Designed to attach to building levels

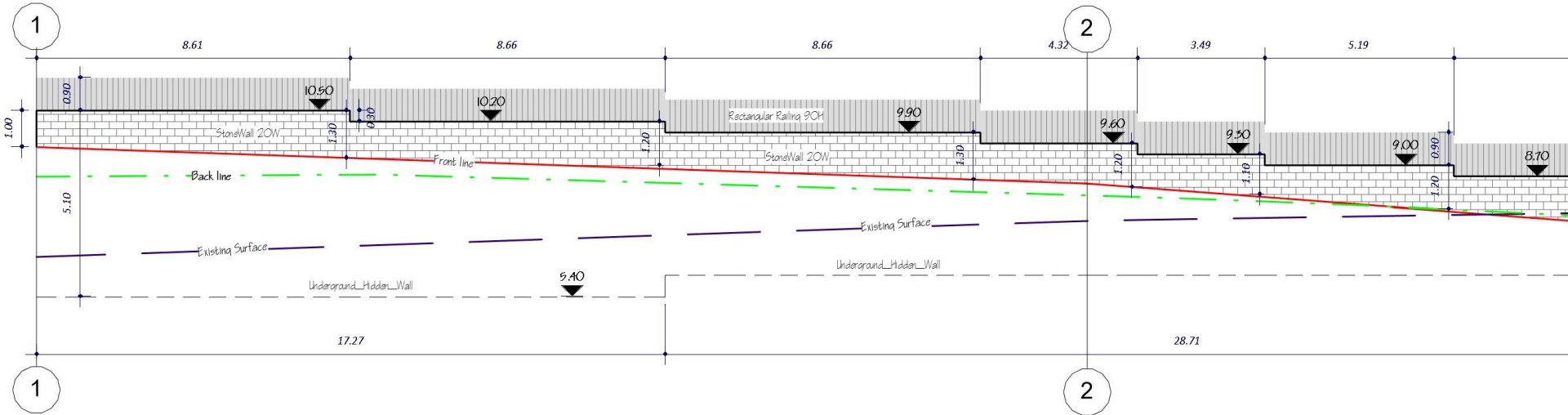


Construction documents

Wall Layout

Capabilities

- Set elevation to model lines
- Create dynamic contour labels to check & change elevation
- Create a surface from model lines
- Snap to model edges to draw a contour line



Planting

Planting plans in Revit

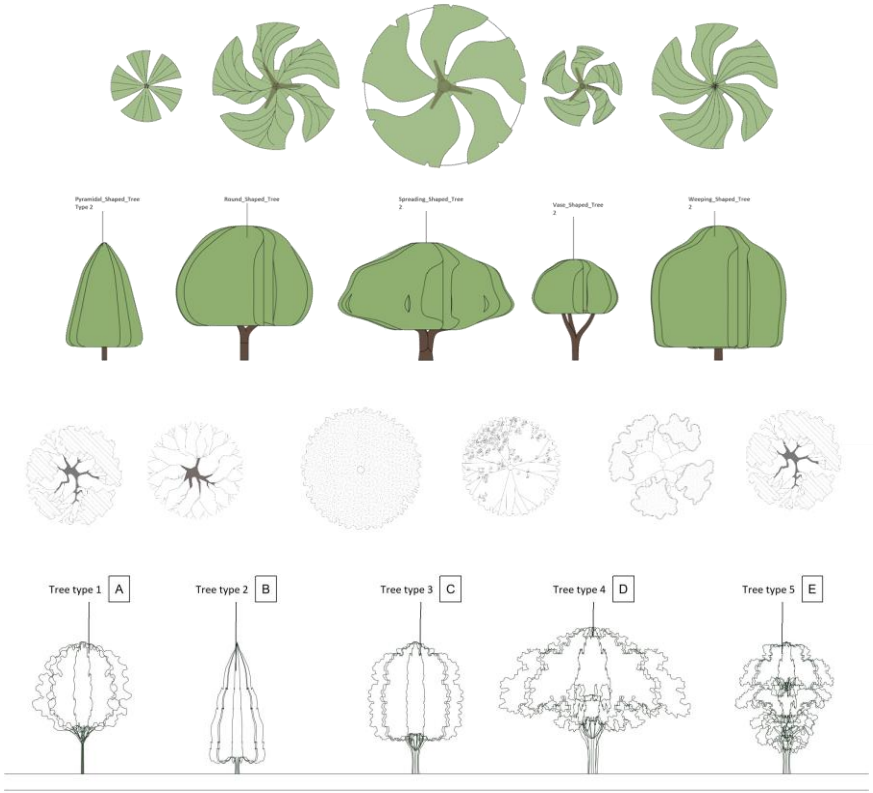
Common questions

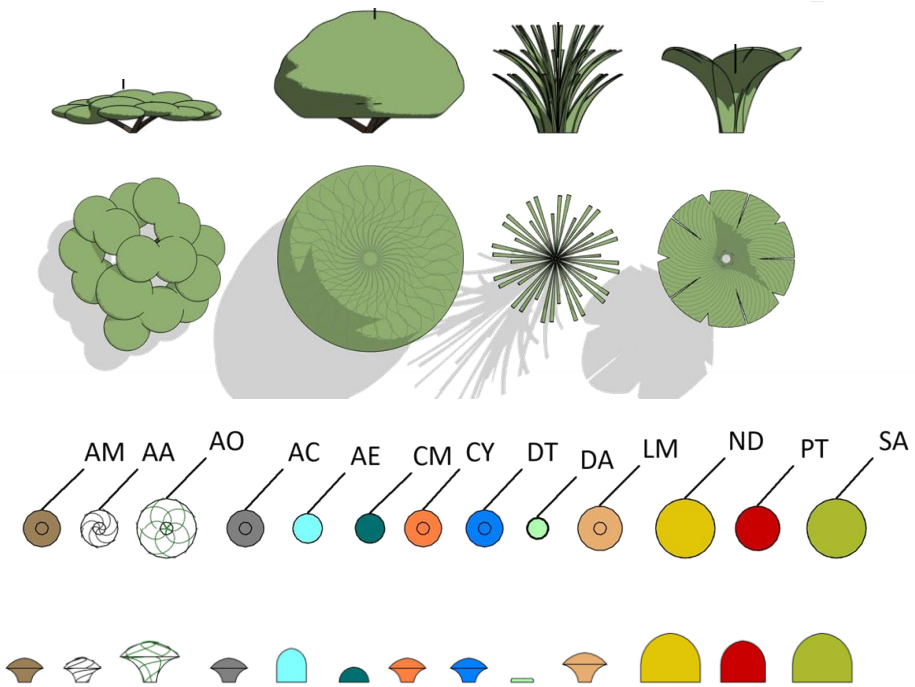
- Methods & Graphics
- Planting libraries

Planting libraries

Custom by local standards

Use Revit families to create different types





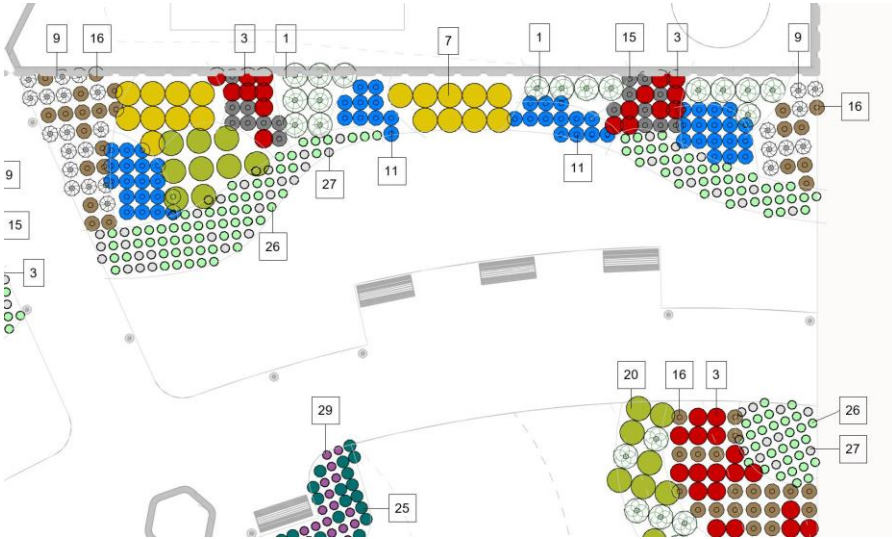
Planting plans

Planting plans in Revit

Common methods

Area plans

Detailed 3D model

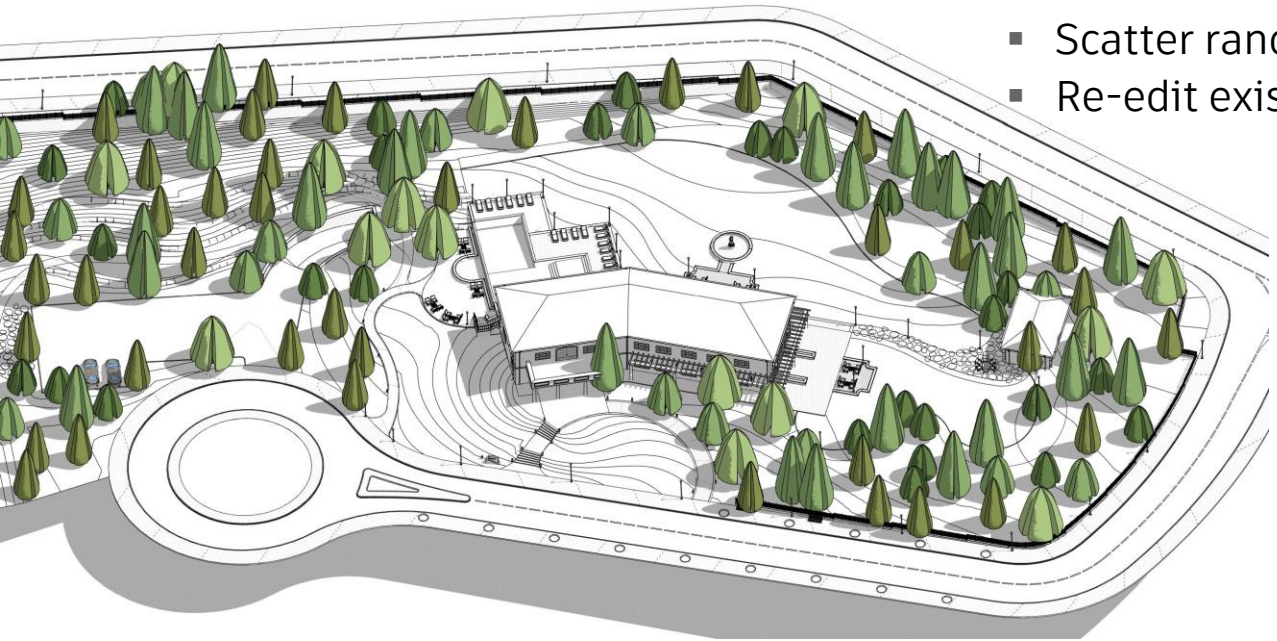


Scatter tools

Scatter area

Use for planting, furniture or any Revit family

- Use many categories as placement areas: Areas, Floors, Roofs, Topographies
- Use linked model for efficient workflow
- Scatter single element or create a mix
- Combine elements into an assembly
- Scatter randomly or by defined grid
- Re-edit existing scatter groups

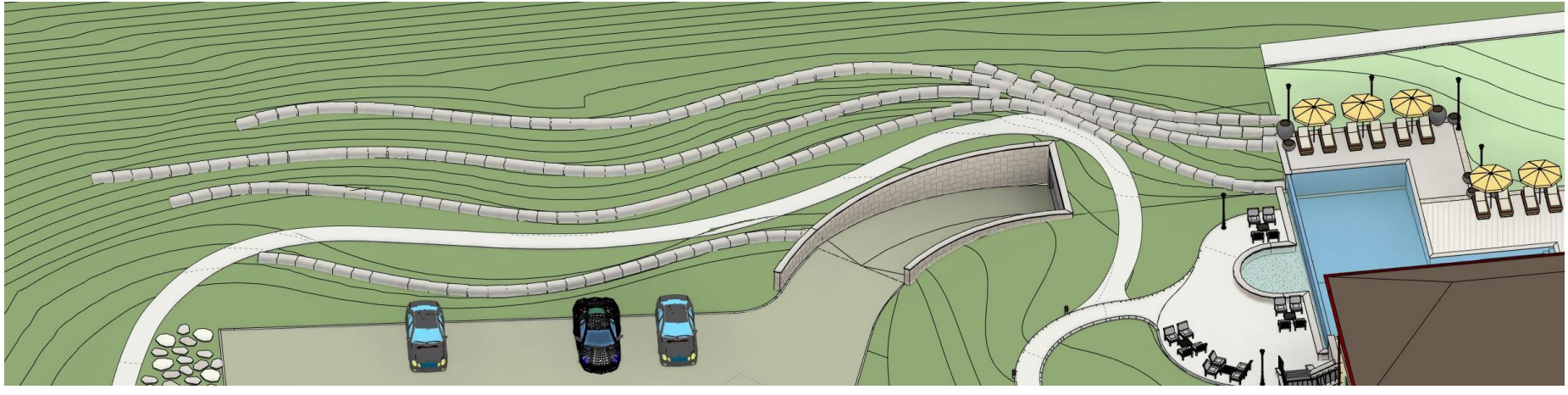


Line scatter

Use for planting, furniture or any Revit family

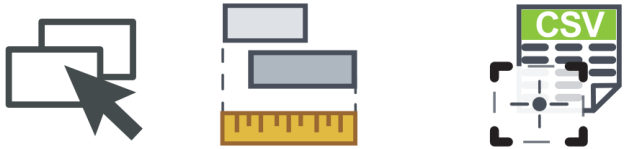
Capabilities

- Create a line or select model edges or lines
- Scatter single element or a mix of elements
- Combine elements into an assembly
- Scatter randomly or by defined angle
- Re-edit existing scatter groups



And much more...

Check out the full toolset of ENVIRONMENT for Revit

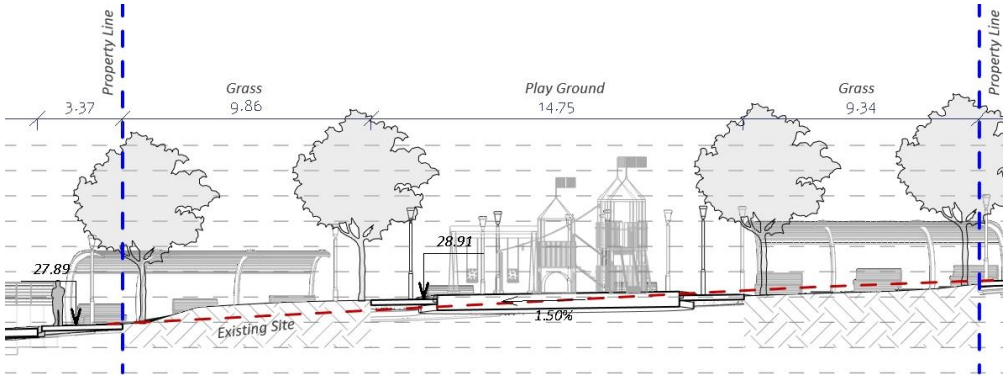


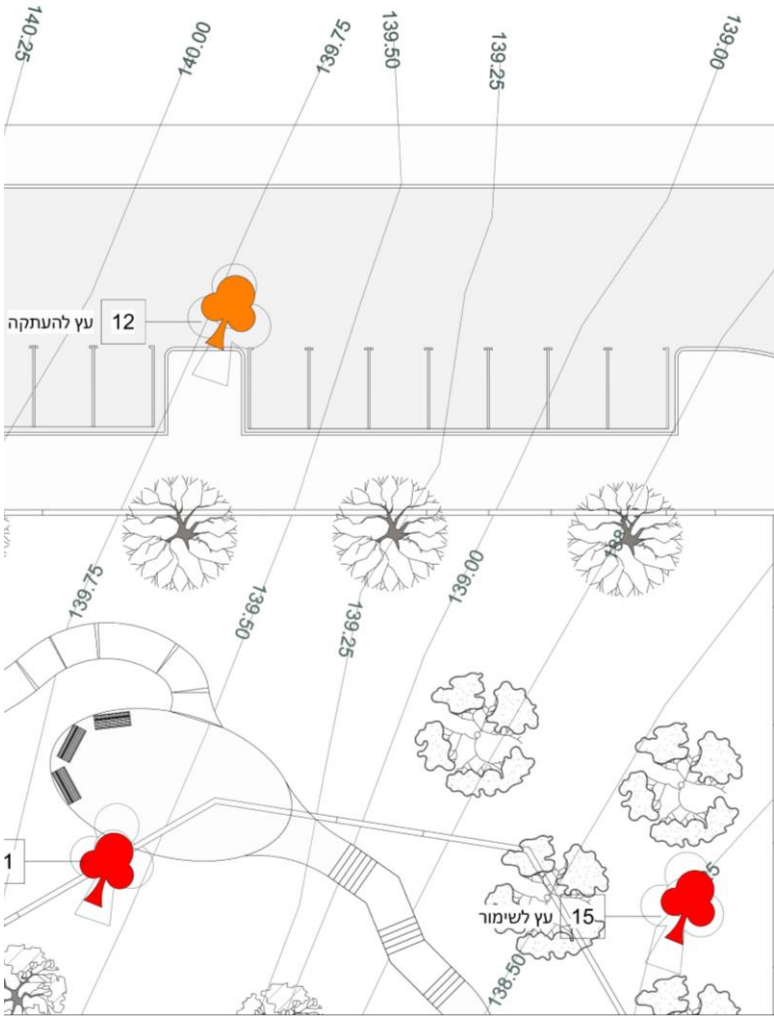
ENVIRONMENT
for REVIT®

CAD collaboration

Use CAD files to collaborate with your project team members without leaving Revit.

Work with real world coordinate system and bypass the ‘20 miles’ Revit restriction. You can also extract CAD blocks and turn them into Revit families with just a few clicks.

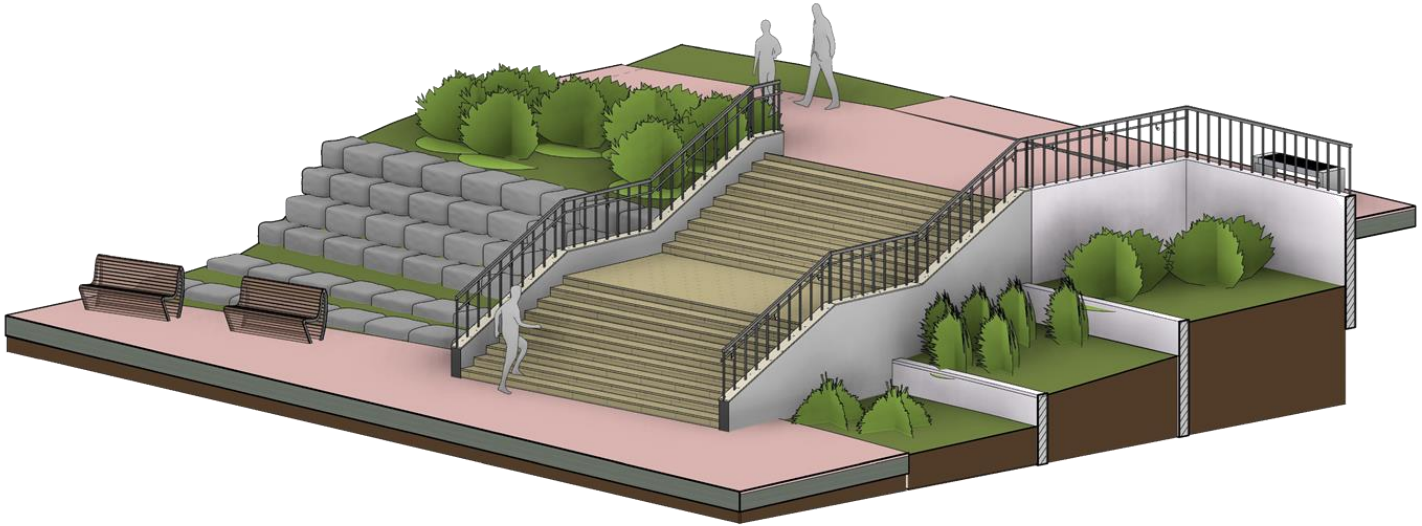




On-demand site elements

Streamline the modeling process by creating fast rockery elements or curb families.

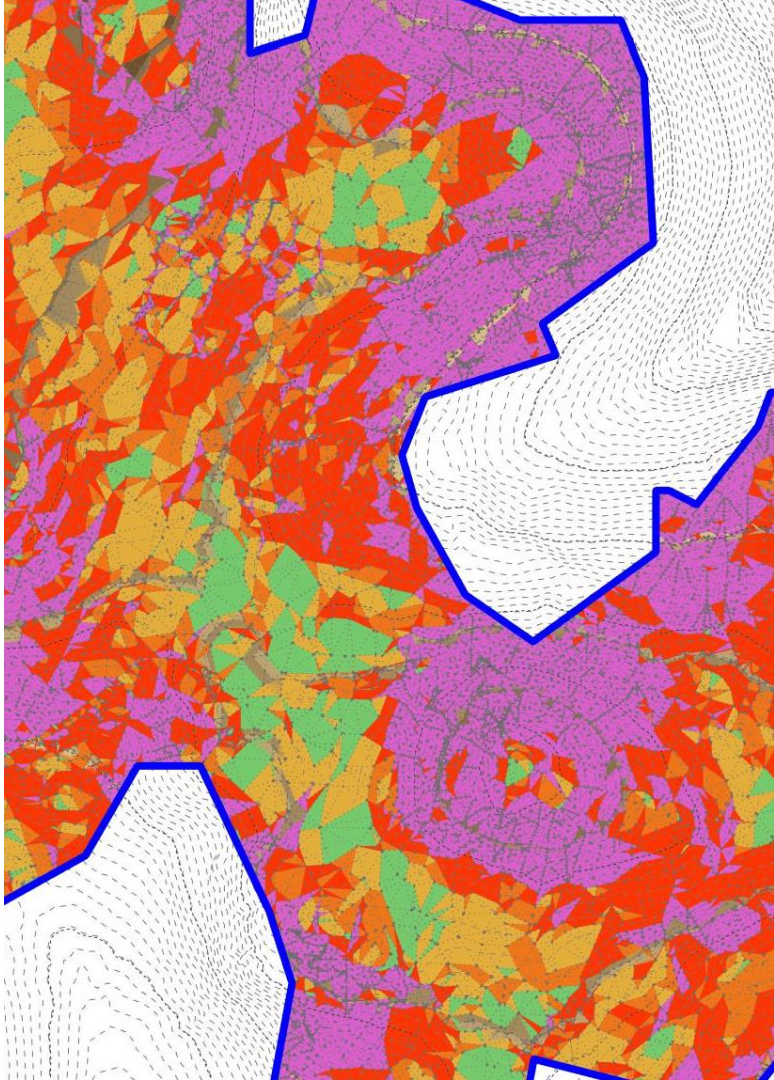
Using Environment tools will not only save you modeling time but provide out of the box families to get you started – curbs, rocks and more…



Advanced site analysis

Create fast and accurate color analysis for slopes and elevations of a terrain

With the comprehensive tools to allow fast legend and extracting schedules and average heights, you can easily understand cut and fill quantities of your project and show expected costs.

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Thank you

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