

# Rhino Tools Manual

## Version 2.1



Rhino Template File	Version	Date
<a href="#">Installation</a>	2.0	08-06-2018
<a href="#">Layers</a>	2.1	12-03-2018
<a href="#">Layout</a>		
<a href="#">Annotation Styles</a>		
Rhino Toolbar		
<a href="#">Installation</a>		
<a href="#">Architecture</a>		
<a href="#">Blocks</a>		
<a href="#">Drawing</a>		
<a href="#">Geometry</a>		
<a href="#">Legacy</a>		
<a href="#">I/O</a>		
<a href="#">Experimental</a>		
Grasshopper Components		
<a href="#">Installation</a>		
<a href="#">Components</a>		
<a href="#">Troubleshooting</a>		

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Prepared By: Tim Williams

# Rhino Tools Manual

## General

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[Table of Contents](#)

### General Requirements

- Always model in inches.
- Always update to the latest version of Rhino.
- Always keep the project near the Rhino origin point.
- Never overwrite the toolbar or template.




## Installation

1. From the PCPA Rhino Toolbar, click **PCPA > Standards > Set Template**

Further instructions can be found [here](#).

*When you open a new Rhino file, the template will be the default.*

 PCPA_Template.3dm	11/2/2018 4:35 PM	PCPA Template File Version 2.1 2018-11-02
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## Layers

Layers have been simplified for readability and speed of navigating.

All objects should fit within this hierarchy.

### Changes since 1.0





















































































- Each root layer has a number in front for proper sorting.
- Root layers have been assigned unique colors.
- Architecture layers combined with Interior and brought to root.
- Annotation and Hatch combined into Drawing layer
- Animation and Lights combined into Render layer

Name	Current	On	Lock	
> 0_ARCHITECTURE	✓			
> 1_SITE				
> 2_ENTOURAGE				
> 3_DESIGN OPTIONS				
> 4_BLOCKS				
> 5_ZONING				
6_CAD IMPORT				
> 7_PROGRAM				
> 8_DRAWING				
> 9_RENDER				

## Layers

## Architecture

- For all objects describing the geometry of the building

▼ 0_ARCHITECTURE					
_Hidden					
_Lines					
Ceiling					INTERIOR_Ceiling_Generic
Door					INTERIOR_Doors_Generic
Facade_Generic					ARCHITECTURE_Facade_Generic
Floor					INTERIOR_Floor_Generic
Furniture					INTERIOR_Furniture_Generic
Glazing_Spandrel					ARCHITECTURE_Glazing_Spandre...
Glazing_Vision					ARCHITECTURE_Glazing_Vision_G...
Hardware					ARCHITECTURE_Hardware_Generic
Millwork					INTERIOR_Millwork_Generic
Mullions					ARCHITECTURE_Mullions_Generic
Railings					ARCHITECTURE_Railings_Generic
Ramp					INTERIOR_Floor_Generic
Roof					ARCHITECTURE_Roof
Stair					INTERIOR_Floor_Generic
Structure_Beam					ARCHITECTURE_Structure
Structure_Column					ARCHITECTURE_Structure
Structure_Slab					ARCHITECTURE_Structure
Wall_Generic					INTERIOR_Wall_Generic

## Layers

## Site

- For landscape and surrounding context

## Entourage

- For people, plants, and vehicles (often blocks)

## Design Options

































































































- For the master blocks that contain all objects describing a design option

## Blocks

- For the geometry of frequently used blocks, and their block instance.

## Zoning

- Geometry describing the zoning requirements

▼ 1_SITE	   
Context Buildings_Generic	    SITE_Context Buildings_Generic
Ground_Curb Lines	    SITE_Ground_Curb Lines
Ground_Natural	    SITE_Ground_Natural
Ground_Sidewalk	    SITE_Ground_Sidewalk
Ground_Soil	    SITE_Ground_Soil
Ground_Street	    SITE_Ground_Street
Water_Generic	    SITE_Water_Generic
▼ 2_ENTOURAGE	   
_Hidden	   
> People	   
> Vegetation	   
Vehicles	   
▼ 3_DESIGN OPTIONS	   
Option 01	   
▼ 4_BLOCKS	   
_Hidden	   
Door_3'X8'	   
Window_3'X8'	   
Window_4'X8'	   
▼ 5_ZONING	   
Property Line	   
Setbacks	   
Sky Exposure Plane	   























































































































## Layers

## CAD Import

- For the layers of imported CAD drawings

## Program













































































- Used for massing models

6_CAD IMPORT					
7_PROGRAM					
Commercial_Dark					PCPA PROGRAM_Commercial_Da...
Commercial_Light					PCPA PROGRAM_Commercial_Li...
Commercial_Medium					PCPA PROGRAM_Commercial_M...
Landscape					PCPA PROGRAM_Landscape
Parking					PCPA PROGRAM_Parking
Program 01_Dark					PCPA PROGRAM_Program 01_Dark
Program 01_Light					PCPA PROGRAM_Program 01_Light
Program 01_Medium					PCPA PROGRAM_Program 01_Me...
Program 02_Dark					PCPA PROGRAM_Program 02_Dark
Program 02_Light					PCPA PROGRAM_Program 02_Light
Program 02_Medium					PCPA PROGRAM_Program 02_Me...
Program 03_Dark					PCPA PROGRAM_Program 03_Dark
Program 03_Light					PCPA PROGRAM_Program 03_Light
Program 03_Medium					PCPA PROGRAM_Program 03_Me...
Public					PCPA PROGRAM_Public
Residential_Dark					PCPA PROGRAM_Residential_Dark
Residential_Light					PCPA PROGRAM_Residential_Light
Residential_Medium					PCPA PROGRAM_Residential_Me...
Retail_Dark					PCPA PROGRAM_Retail_Dark
Retail_Medium					PCPA PROGRAM_Retail_Medium
Roof					PCPA PROGRAM_Roof
Service_Dark					PCPA PROGRAM_Service_Dark
Service_Medium					PCPA PROGRAM_Service_Medium
Soil					PCPA PROGRAM_Soil
Terrace					PCPA PROGRAM_Terrace
Trees					PCPA PROGRAM_Trees
Water					PCPA PROGRAM_Water

## Layers

## Drawing

- For geometry placed on the layouts, or printing from layouts

▼ 8_DRAWING				
_Hidden				
Clipping Plane				
Dimensions				
Hatch				
Layout				
Leaders				
PCP-01				
PCP-02				
PCP-03				
PCP-04				
PCP-05				
PCP-06				
PCP-07				
PCP-08				
PCP-09				
Symbol				
Text				
Viewport				

## Layers





















- Render
- For objects necessary to render

▼ 9_RENDER				
_Hidden				
Camera Path				
Lights				
Target Path				

Layout

In the layout called PCPA\_Layout, there are many paper space annotation objects to help in preparing your drawing.

1. Paper Space Annotation

	ARROW		LEVEL MARKER 1		LEVEL MARKER 2
	SECTION WITH FLAG		DETAIL TAG		WINDOW TAG
			DETAIL TAG 2 TO GO WITH BUBBLE		ROOM TAG
	ELEVATIONS		BENCHMARK		ROOM/DOOR TAG
	SECTION W/O FLAG		BENCHMARK LEFT		REVISION TAG
	FLAG		BENCHMARK RIGHT		PARTITION TYPE
	COL GRID		DWG TITLE VIEW TITLE		MATERIAL TAG

2. Titleblock

5. Scale Bars and Scale Factors

DETAIL SCALE FACTORS		SCALE BARS
1/4" = 1'	1 INCHES ON PAGE 48 INCHES IN MODEL	
1/16" = 1'	1 INCHES ON PAGE 192 INCHES IN MODEL	
1/32" = 1'	1 INCHES ON PAGE 384 INCHES IN MODEL	
1/64" = 1'	1 INCHES ON PAGE 768 INCHES IN MODEL	
1" = 50'	1 INCHES ON PAGE 600 INCHES IN MODEL	

3. North Arrows

4. Annotation Styles

## Annotation Styles

6 PCPA Annotation styles have been placed in the template file.

- PCPA\_08
- PCPA\_10
- PCPA\_12
- PCPA\_14
- PCPA\_18
- PCPA\_Precision

Model space scale has been set to 192 by default.

PCPA\_Precision is for checking model geometry.

\*Beware that model space scale does not affect printed text size.

Current	Annotation Styles
<input checked="" type="radio"/>	PCPA_08
<input type="radio"/>	PCPA_10
<input type="radio"/>	PCPA_12
<input type="radio"/>	PCPA_14
<input type="radio"/>	PCPA_18
<input type="radio"/>	PCPA_Precision

PCPA\_08  
PCPA\_10  
PCPA\_12  
PCPA\_14  
PCPA\_18

## Linetypes

3 PCPA Linetypes have been placed in the template file.

- PCPA\_DashDot
- PCPA\_DashedMedium
- PCPA\_DashedSmall

PCPA_DashDot	— . — . — . —
PCPA_DashedMedium	— — — —
PCPA_DashedSmall	- - - - -




# Toolbar

## Installation

[Table of Contents](#)

1. Ensure only one instance of Rhino currently open.
2. Drag and drop PCPA\_WIP from the following folder into Rhino: [Toolbar path](#)
3. Close Rhino (this saves the toolbar to your Rhino settings).

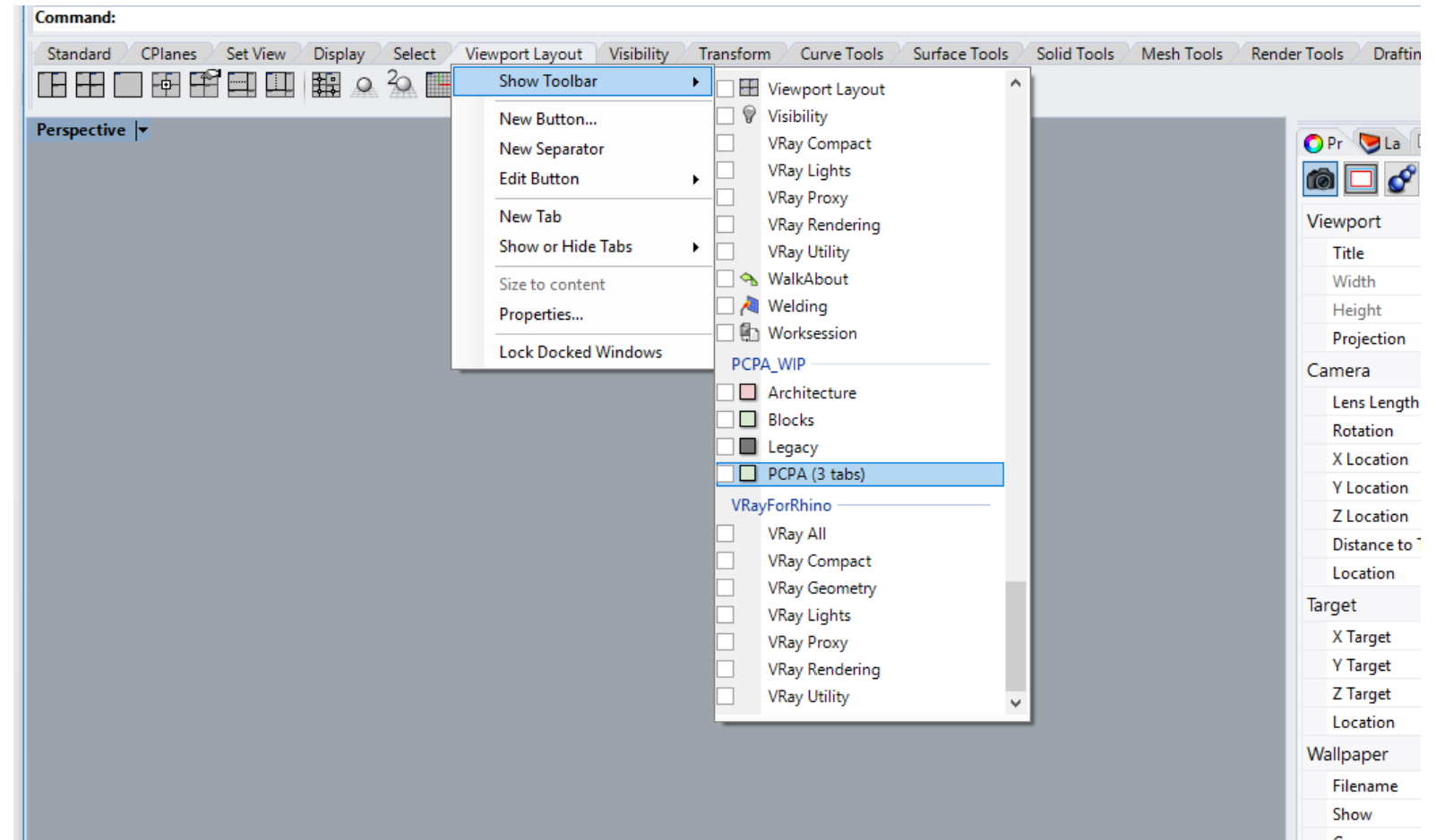
**PCPA** Should appear at the top menu bar of Rhino

Name	Date modified	Type	Size
 PCPA_Toolbar.rui	7/23/2018 1:47 PM	Rhino Toolbars	174 KB



After installing the toolbar, if it does not display immediately, you can show it by right clicking anywhere on the toolbar, then choosing Show Toolbar, then scrolling down to the PCPA and checking that box.

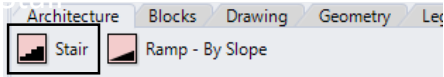
(You do not need to check the other PCPA tabs)



# Toolbar

## Architecture

### Stair



Creates a stair to specified height, along a guide curve. Risers kept below 7", tread is result of the guide curve length.

\*Curved geometry not currently supported.

#### INPUT

1. Select Guide Polyline
2. Width (inches)
3. Height (inches)

#### OUTPUT

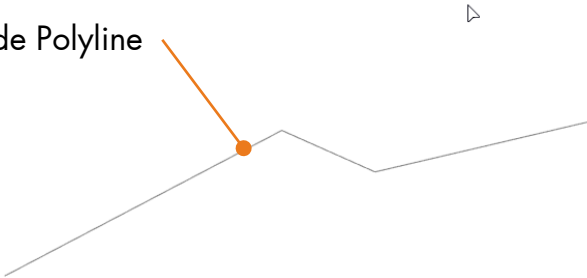
- Stair

INPUT

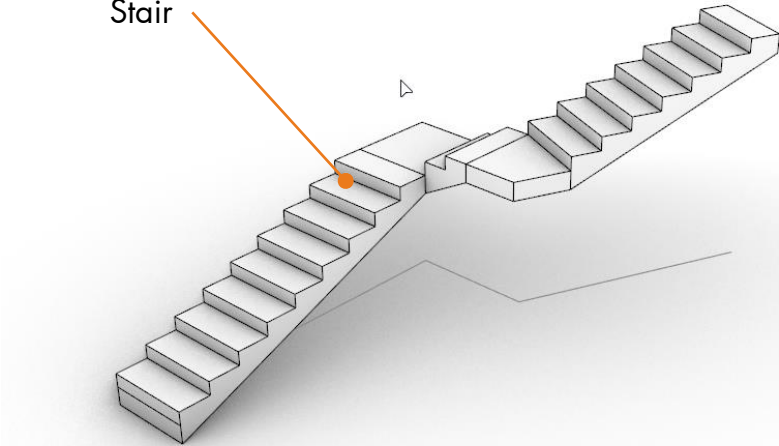
>

OUTPUT

Guide Polyline



Stair

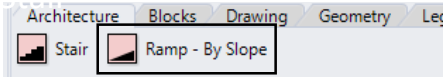


# Toolbar

Architecture

[Table of Contents](#)

## Ramp



Creates a ramp at specified slope, along a guide curve.

Handrail inserted if slope > 5%

- \*Curved geometry not currently supported.
- \*Will currently only insert 1 landing per run.

### INPUT

1. Select Guide Polyline
2. Width (inches)
3. Slope (%)

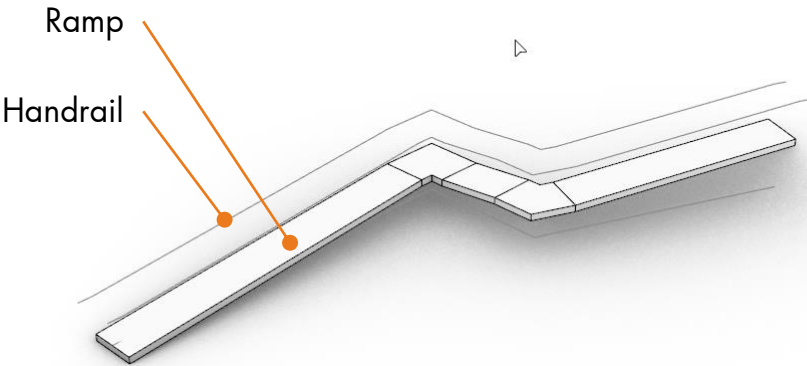
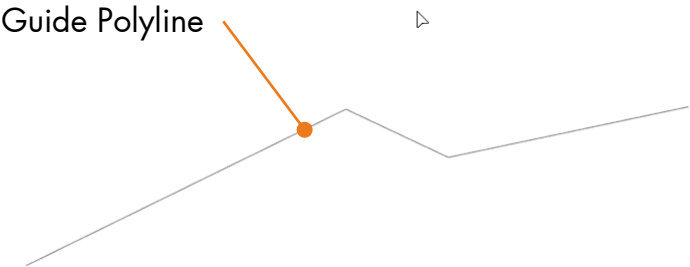
### OUTPUT

- Ramp
- Handrail

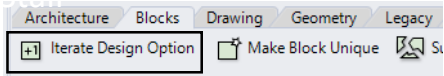
INPUT

>

OUTPUT



Create Design Option



Selected objects will be converted into a block and placed in a new matching layer, under “3\_DESIGN OPTIONS”.

INPUT

- 1. Select Geometry
- 2. Input design option name

OUTPUT

- Block on layer under “3\_DESIGN OPTIONS”

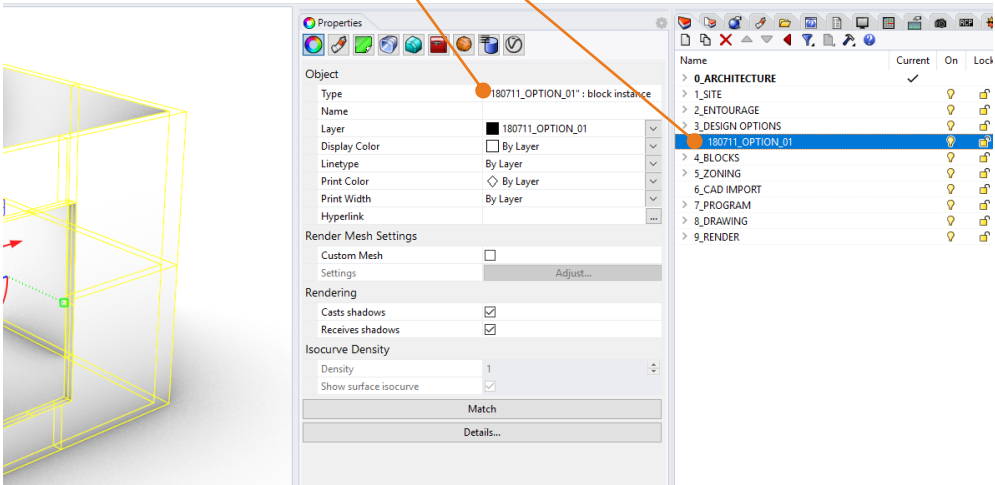
INPUT

>

OUTPUT

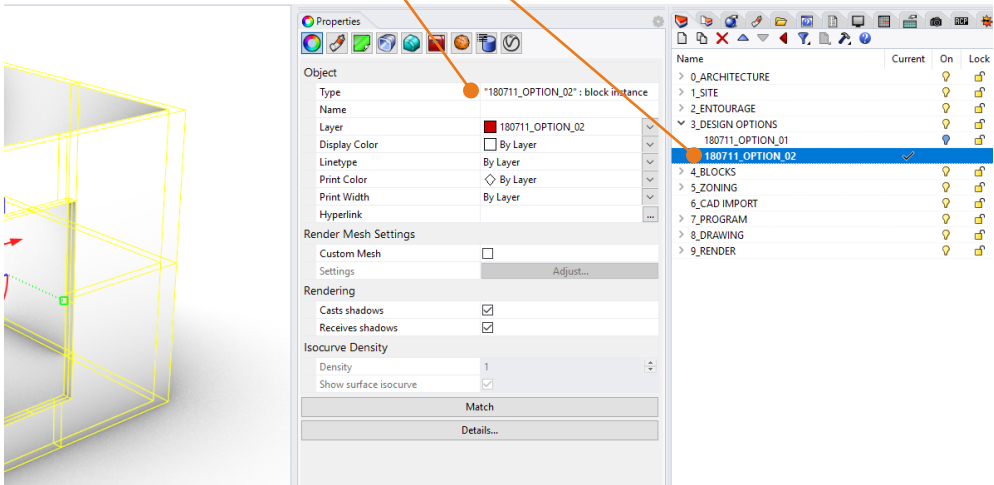
Design Option Layer

Design Option Block

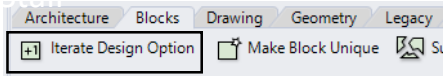


New Design Option Layer

New Design Option Block



### Iterate Design Option



The selected block will be duplicated and renumbered with a new block name.

A new matching layer name will be created and the previous will be turned off.

Supports numbers and letter suffix, separated by "-", "\_", or " ".

#### INPUT

1. Select block
2. Input new blocks name

#### OUTPUT

- Duplicated block, renamed with suffix +1 or update date.
- Duplicated layer with same name

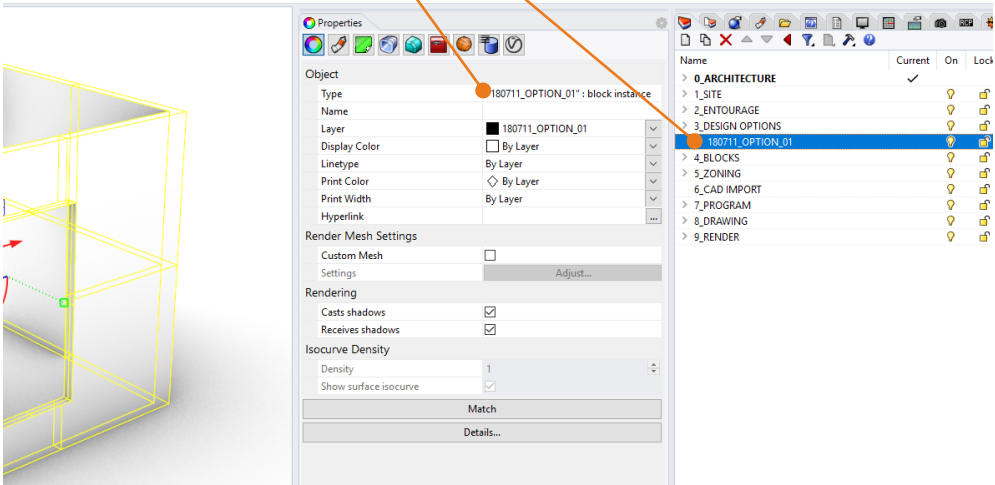
INPUT

>

OUTPUT

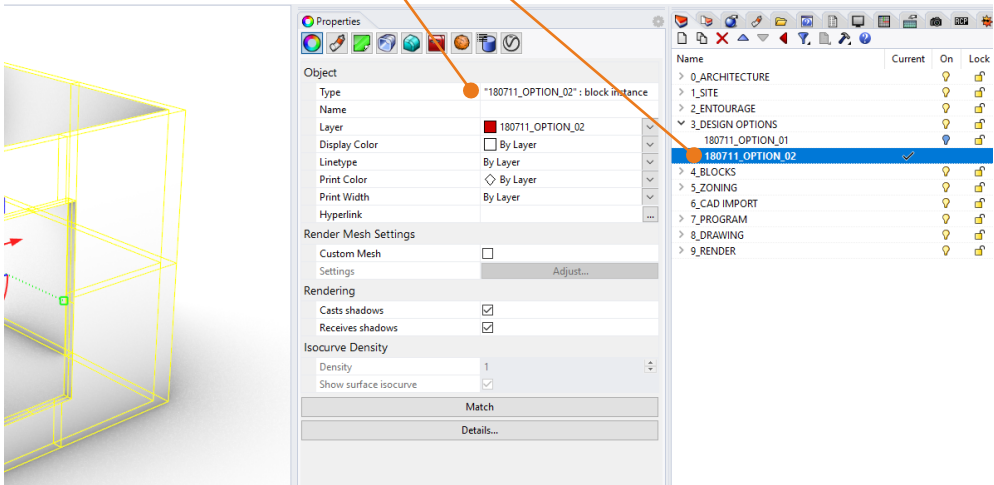
Design Option Layer

Design Option Block

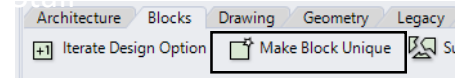


New Design Option Layer

New Design Option Block



## Make Block Unique



Creates a new block definition from an old block. (Keeps the old block in the file, but deletes the instance)

Default name will be either an update date, or the name + 1 (if suffixed with a number)

### INPUT

1. Select block
2. Input new blocks name

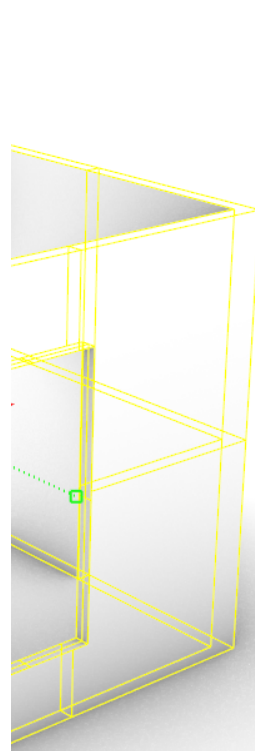
### OUTPUT

- New Block with same geometry and origin pt.

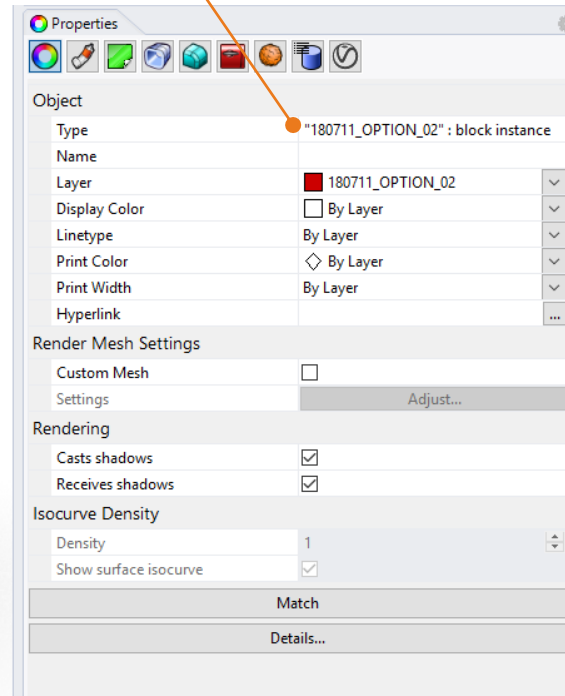
INPUT

&gt;

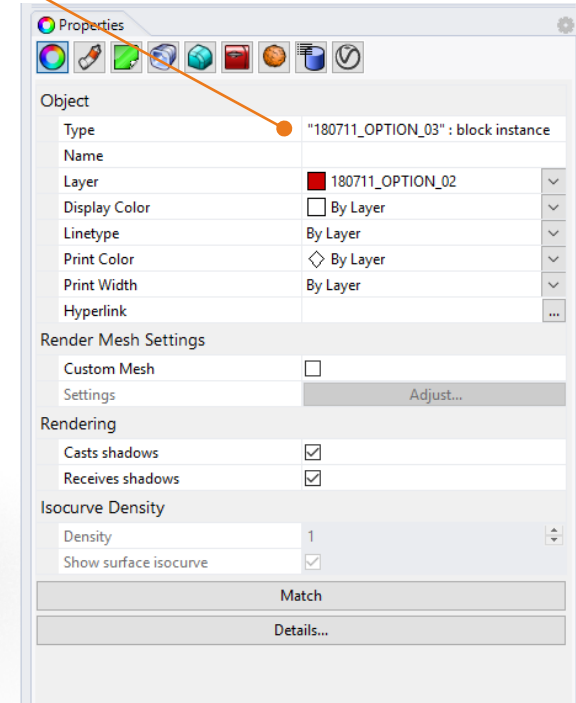
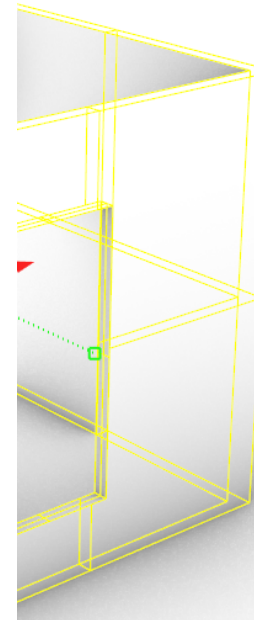
OUTPUT



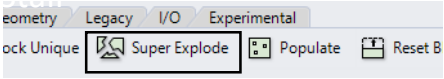
Block



New block (same geometry)



Super Explode



Explodes a block and all blocks within it.

INPUT

- 1. Select block with blocks nested inside.

OUTPUT

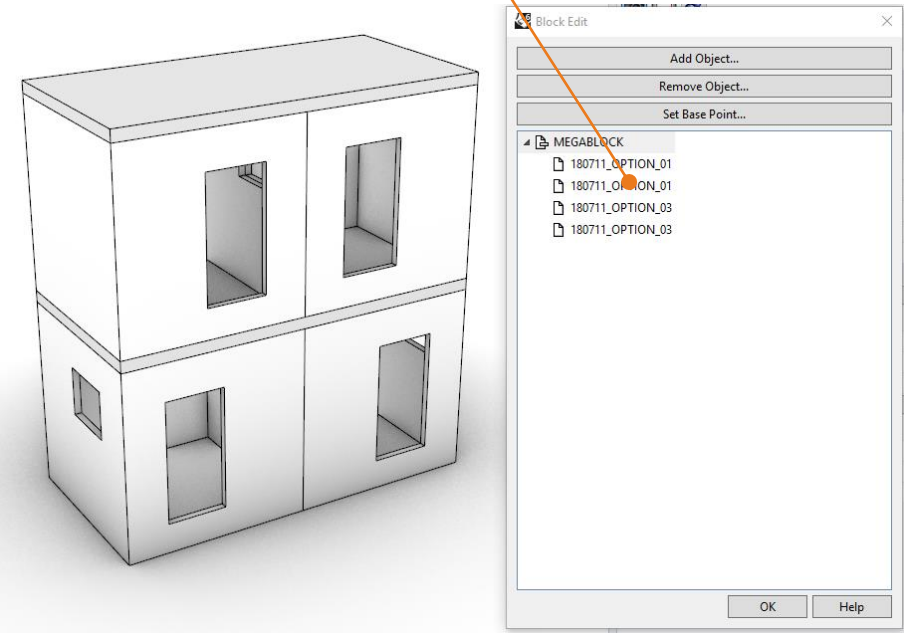
- Geometry inside those blocks.

INPUT

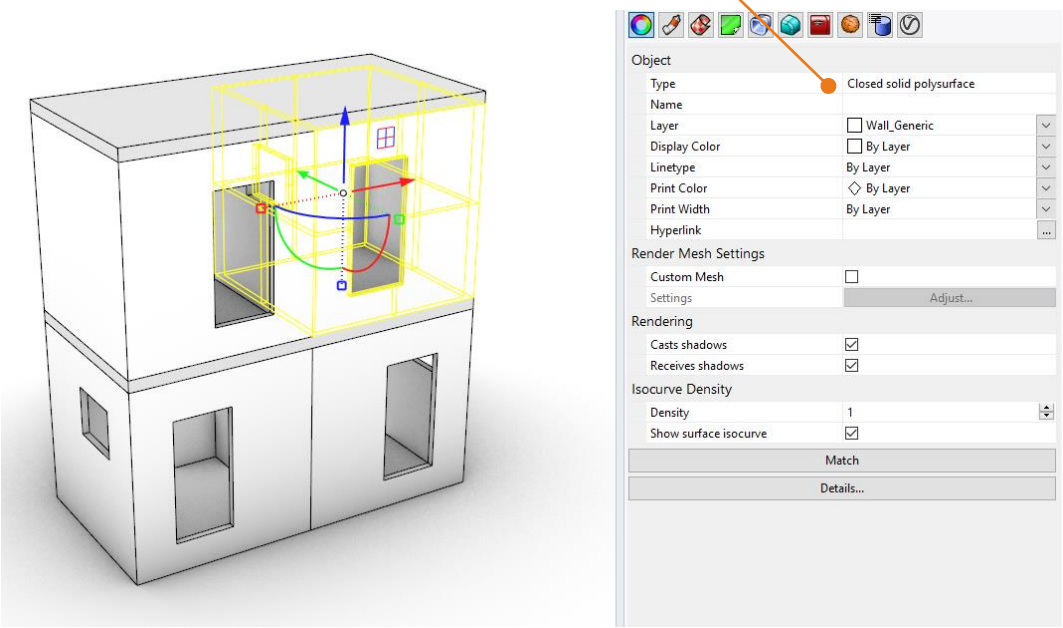
>

OUTPUT

Blocks inside a block



All blocks exploded

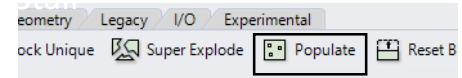


# Toolbar

## Blocks

[Table of Contents](#)

### Populate



Populates a surface with selected population type.

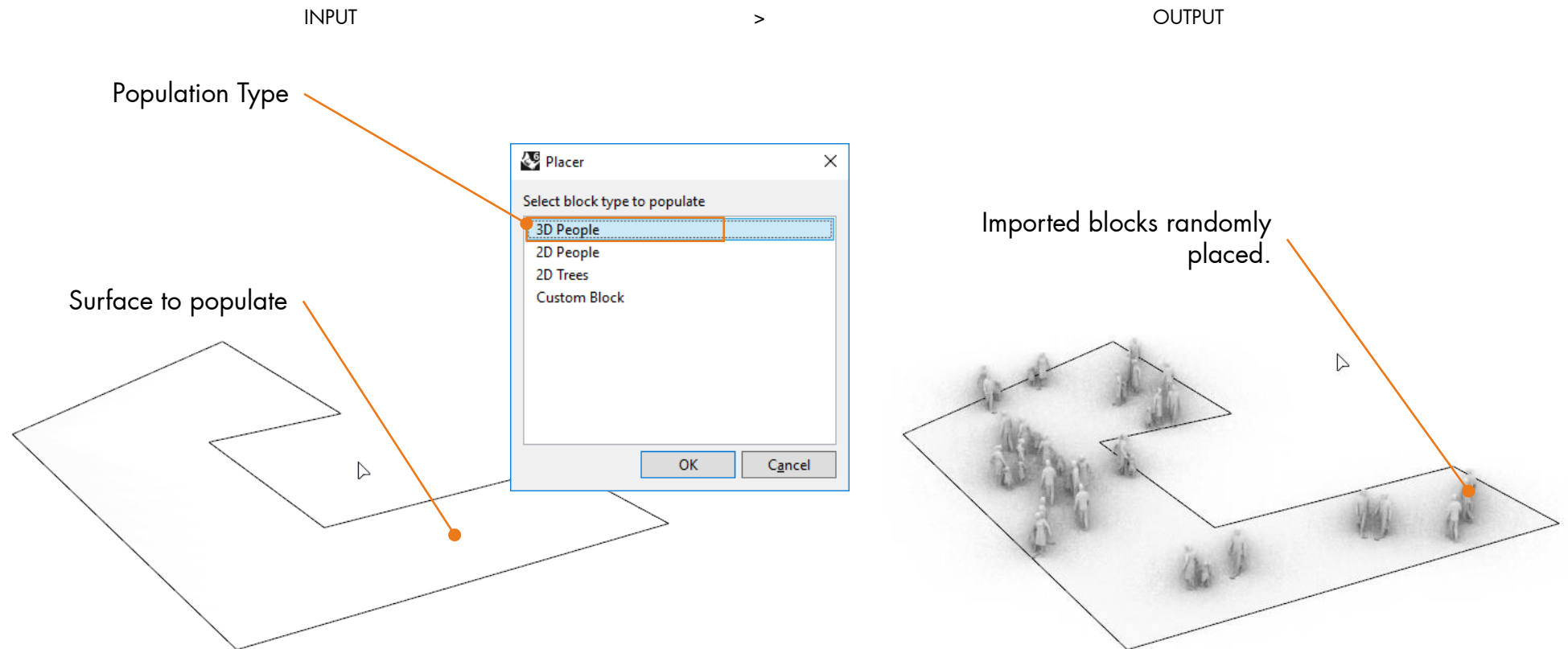
Blocks are imported from the network and randomly placed across the surface.

#### INPUT

1. Select surface
2. Number of objects to place
3. Select Population Type

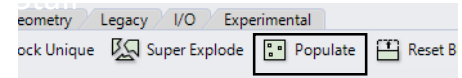
#### OUTPUT

- Blocks randomly placed on the surface.





## Populate



Populates a surface with selected population type.

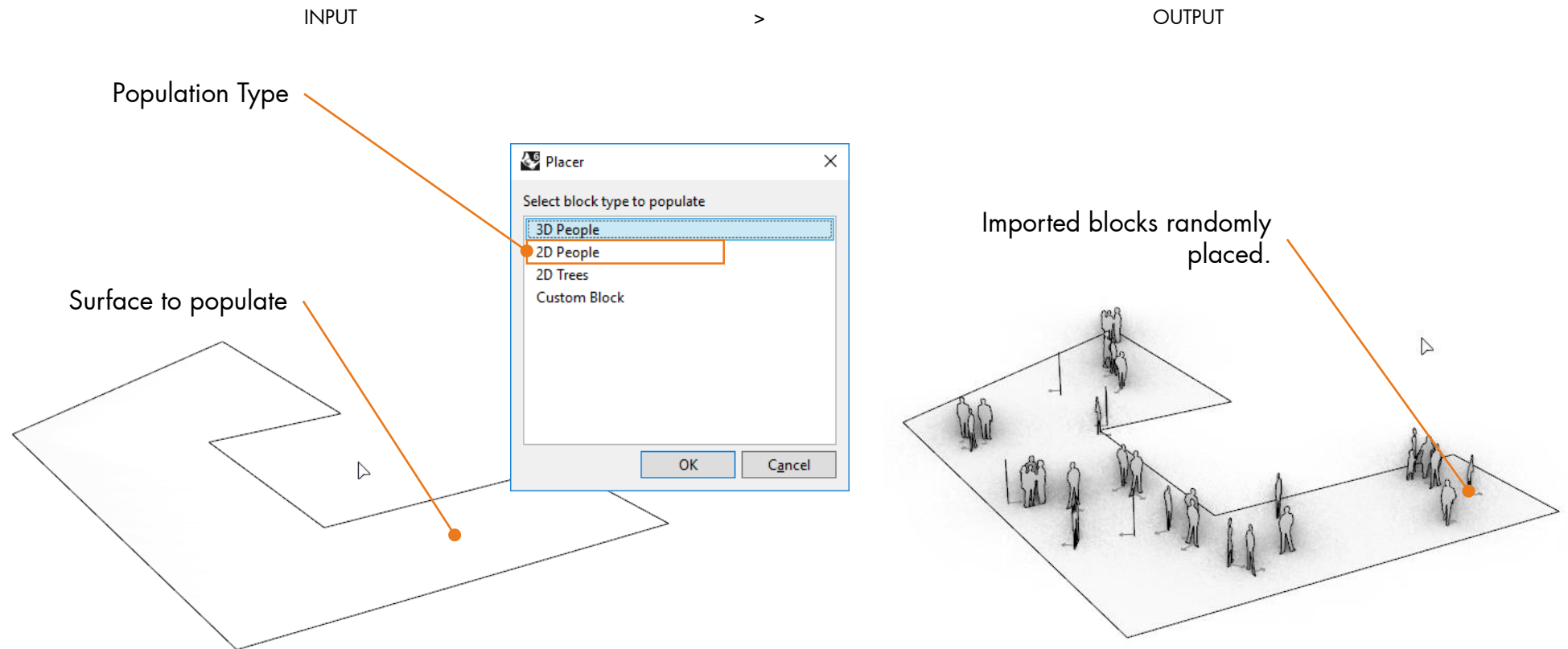
Blocks are imported from the network and randomly placed across the surface.

## INPUT

1. Select surface
2. Number of objects to place
3. Select Population Type

## OUTPUT

- Blocks randomly placed on the surface.

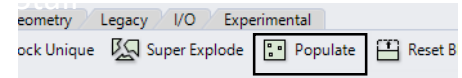


# Toolbar

## Blocks

[Table of Contents](#)

### Populate



Populates a surface with selected population type.

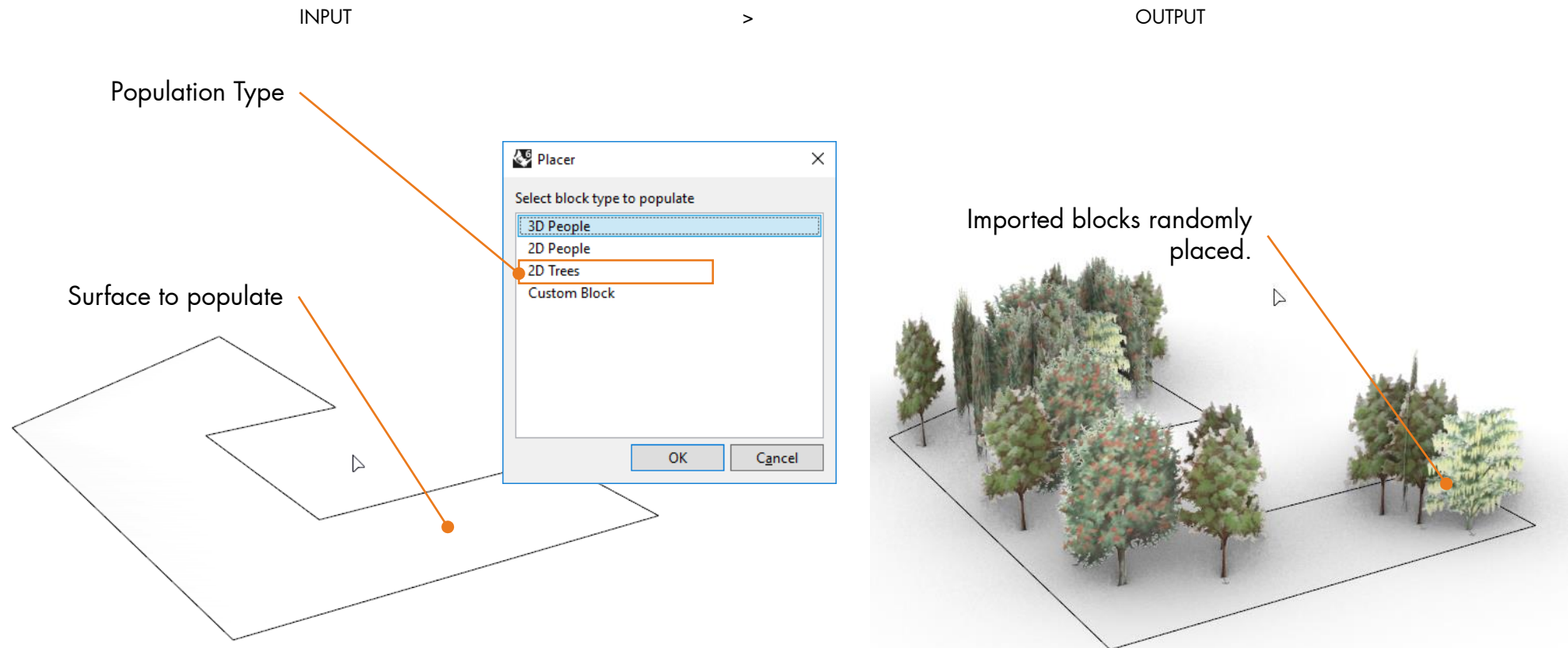
Blocks are imported from the network and randomly placed across the surface.

#### INPUT

1. Select surface
2. Number of objects to place
3. Select Population Type

#### OUTPUT

- Blocks randomly placed on the surface.

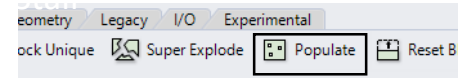


# Toolbar

## Blocks

[Table of Contents](#)

### Populate



Populates a surface with selected population type.

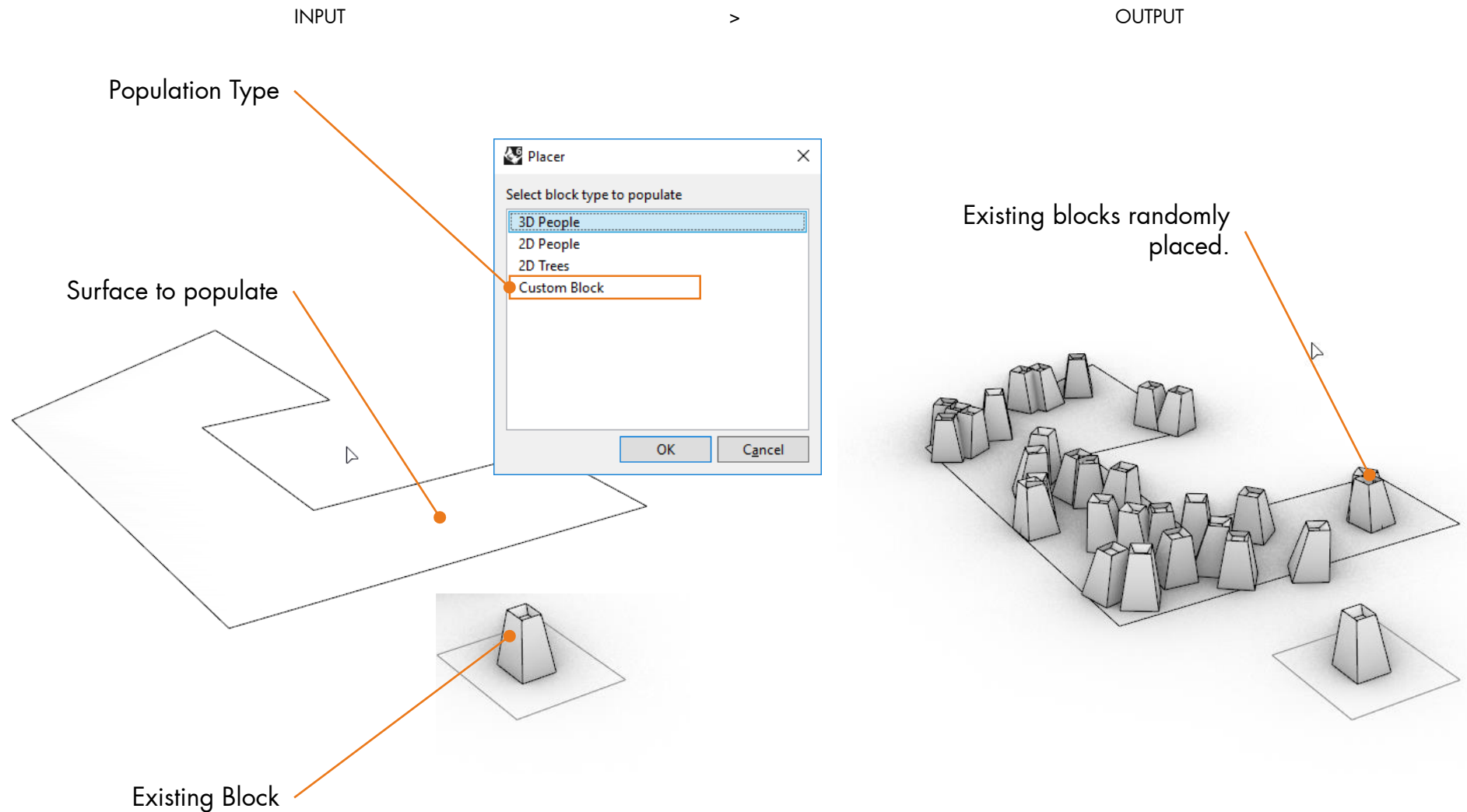
Blocks are imported from the network and randomly placed across the surface.

#### INPUT

1. Select surface
2. Number of objects to place
3. Select Population Type
4. Select Existing Block

#### OUTPUT

- Blocks randomly placed on the surface.

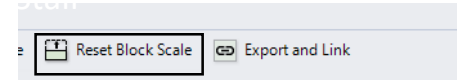


# Toolbar

## Blocks

[Table of Contents](#)

### Reset Block Scale



Returns a block to its original scale, while maintaining origin point.

#### INPUT

1. Select Scaled blocks

#### OUTPUT

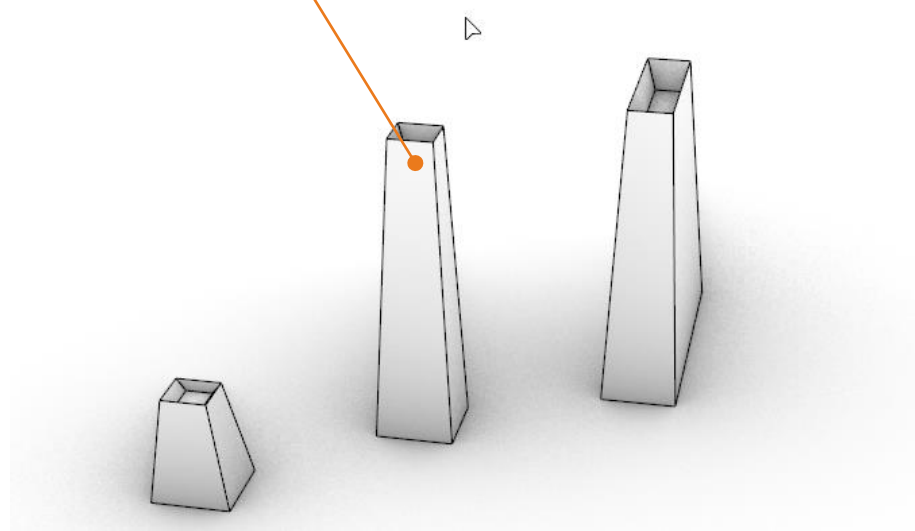
- Blocks at original scale

INPUT

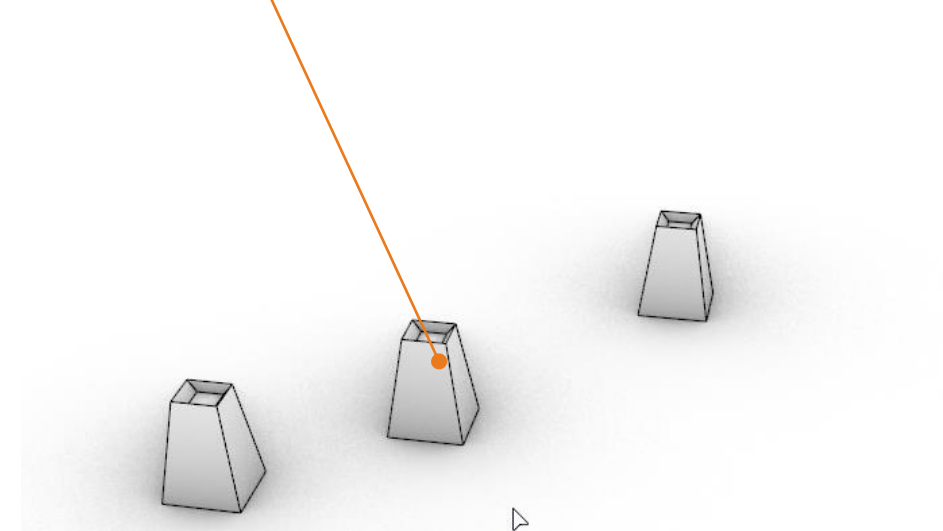
&gt;

OUTPUT

Scaled blocks



Scaled blocks



## Export and Link

Exports a block to another Rhino file, then links it back to the original block.

Useful when a block occurs multiple times in a file, and you want multiple people on this file.

### INPUT

- 1. Select Block

### OUTPUT

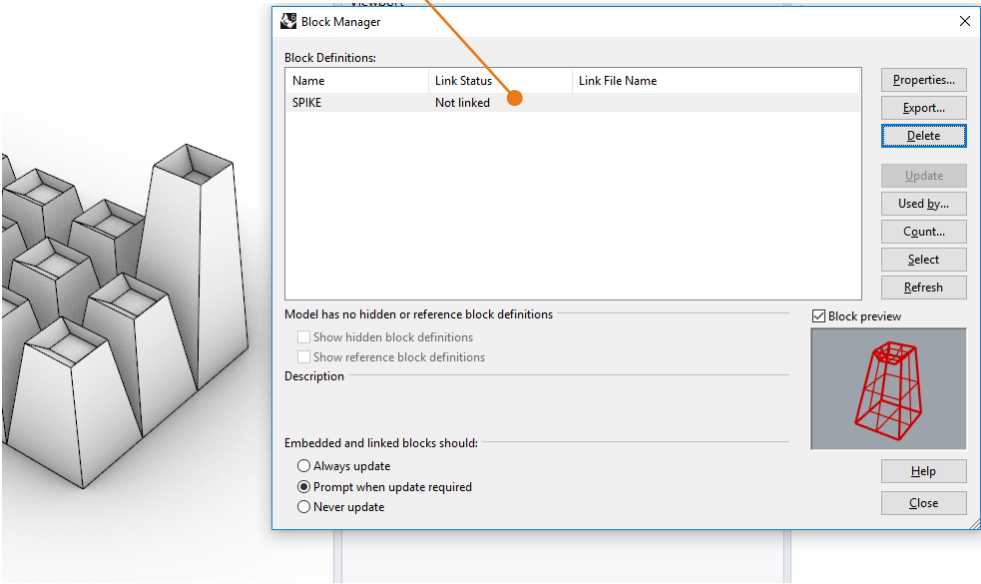
- Linked Block

INPUT

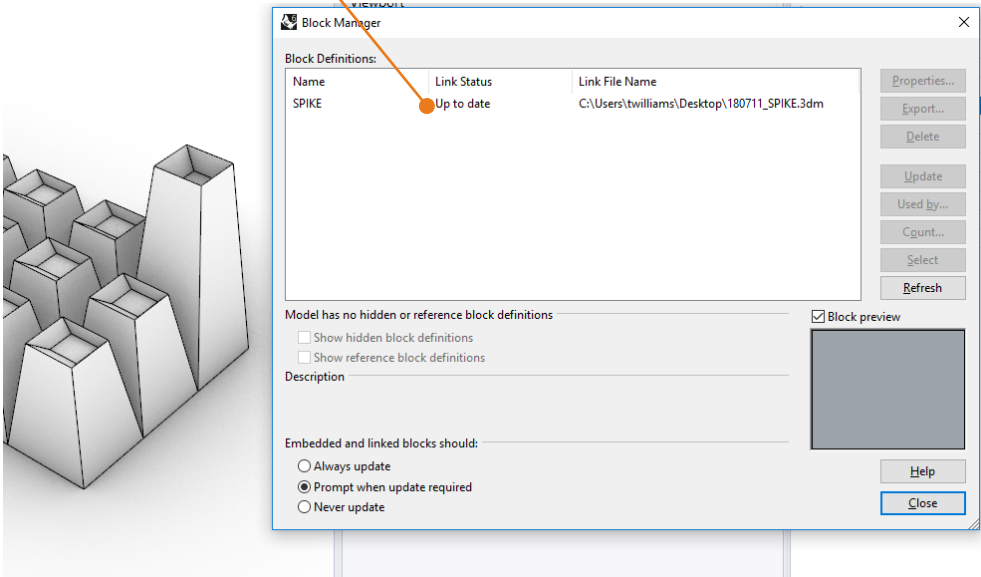
>

OUTPUT

Block within document



Block linked

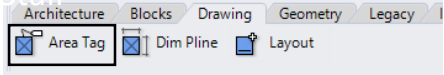


# Toolbar

## Drawing

[Table of Contents](#)

### Area Tag



Adds a text object according to the bounding geometries area at the center of that object.

Text object with appear on layer: "8\_DRAWING::Text"

#### INPUT

1. Select closed planar curves, surfaces, or hatches
2. Number of decimal places
  - 1 = X,XX0
  - 0 = X,XXX
  - 1 = X,XXX.X
  - 2 = X,XXX.XX

#### OUTPUT

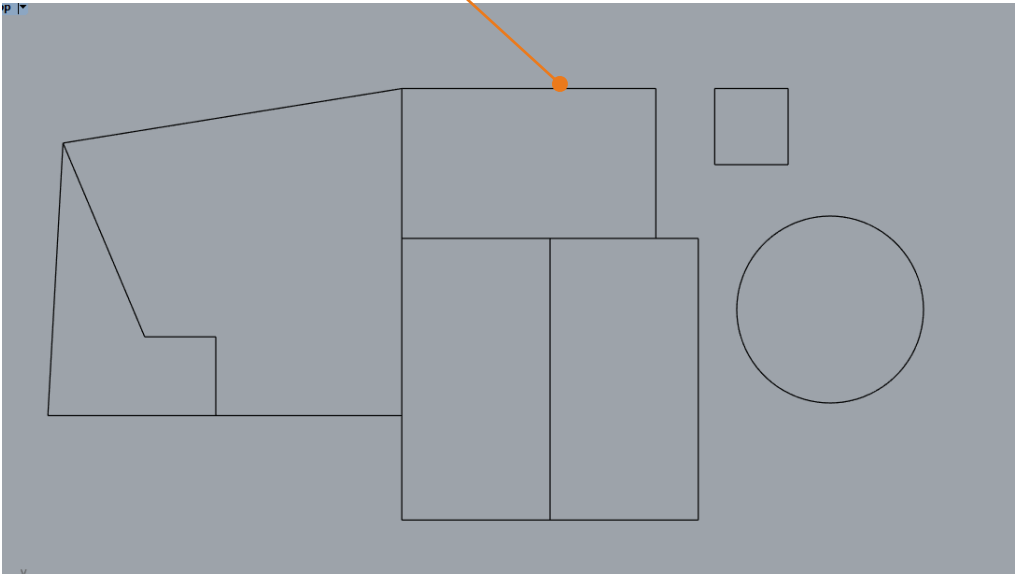
- Text object at center of polyline

INPUT

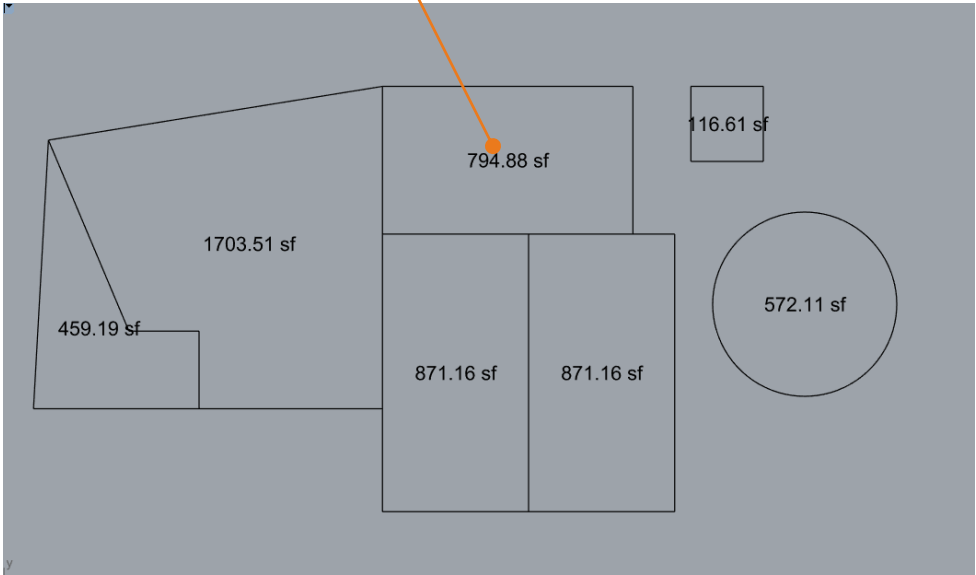
>

OUTPUT

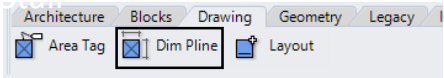
Closed Polylines,  
Hatches, or Surfaces



Text object with Area



## Dimension Polyline



Automatically dimensions  
polyline segments.

Will not dimension arcs or  
NURBs curves.

Dimensions will appear on  
layer:  
"8\_DRAWING::Dimensions"

### INPUT

1. Select Polylines
2. Offset Dimension (inches)

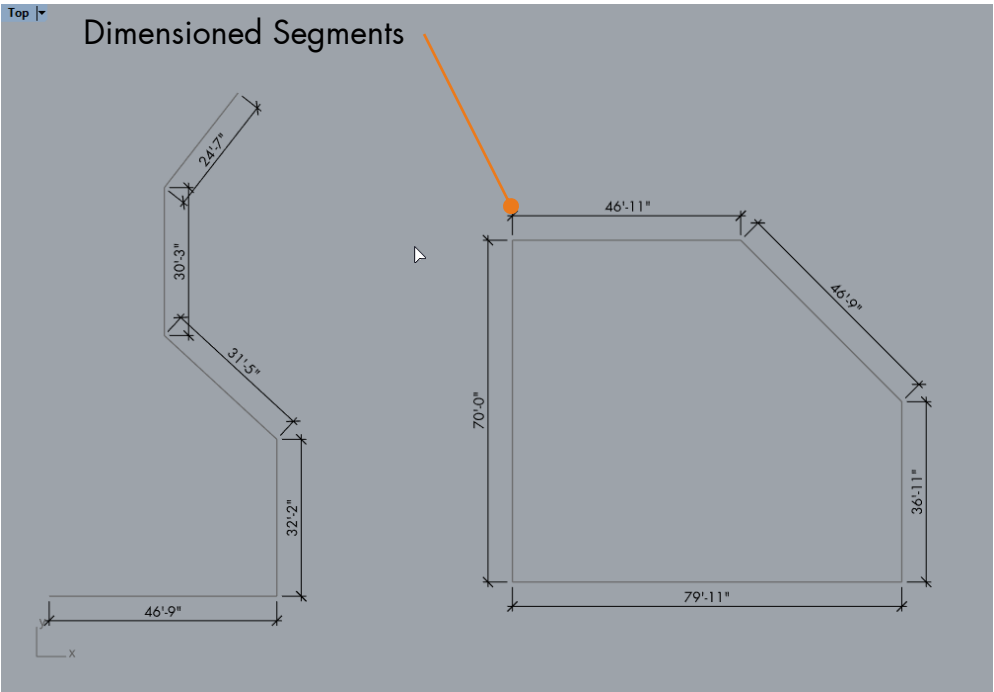
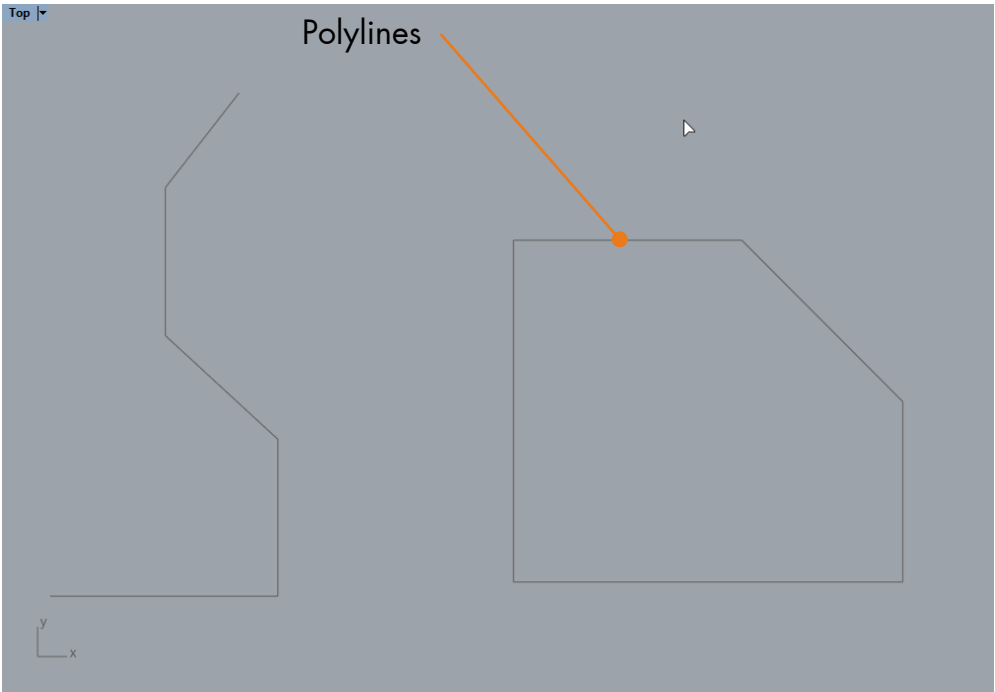
### OUTPUT

- Dimensioned Segments

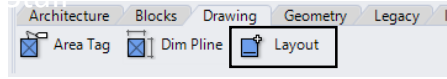
INPUT

>

OUTPUT



## Layout



Adds a new layout to selected standard paper size with a PCPA Presentation Template.

Date is a text field and will update to the current date.

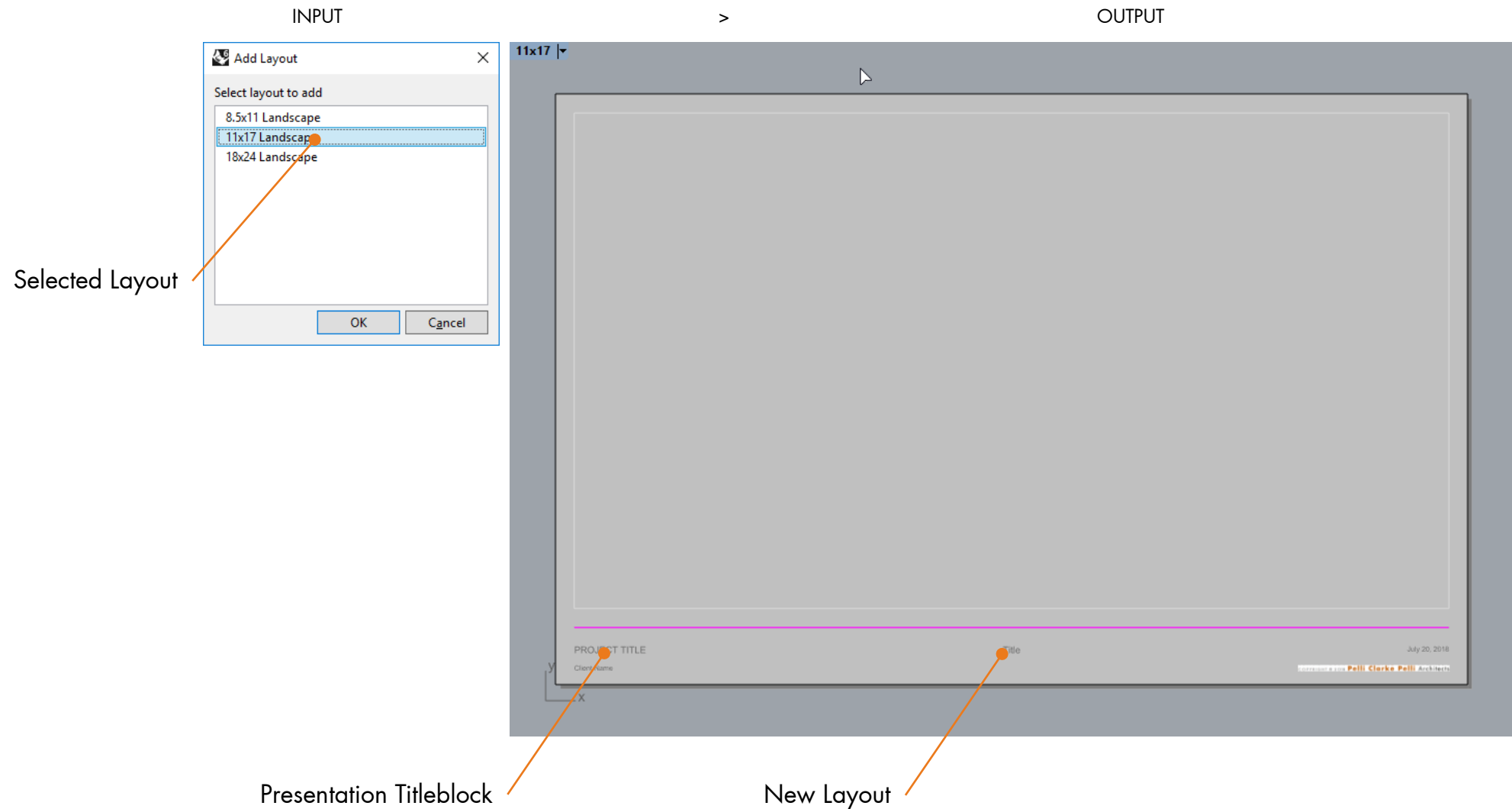
Project Title and Client Name can be parametrically changed through Rhino's 'Document Data' tab.

## INPUT

1. User Selected Layout Size

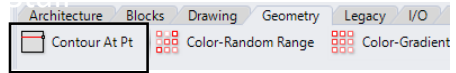
## OUTPUT

- New Layout with titleblock





## Contour at Point



Cuts input geometry at a designated elevation.

Useful for extracting floor plan cut lines.

## INPUT

1. Select objects
2. Get point to cut contour at

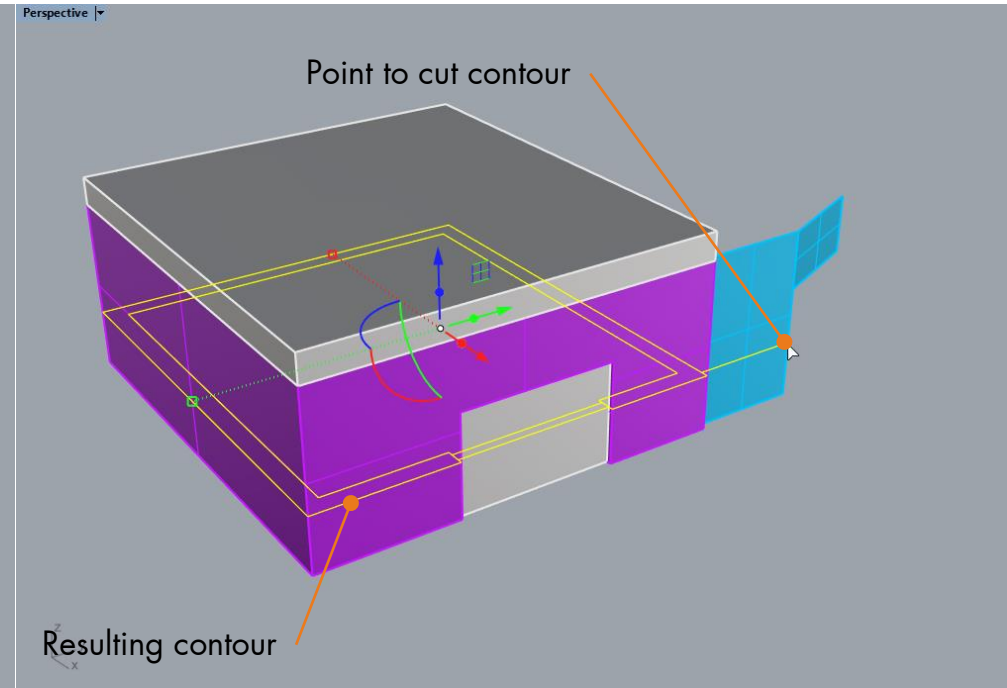
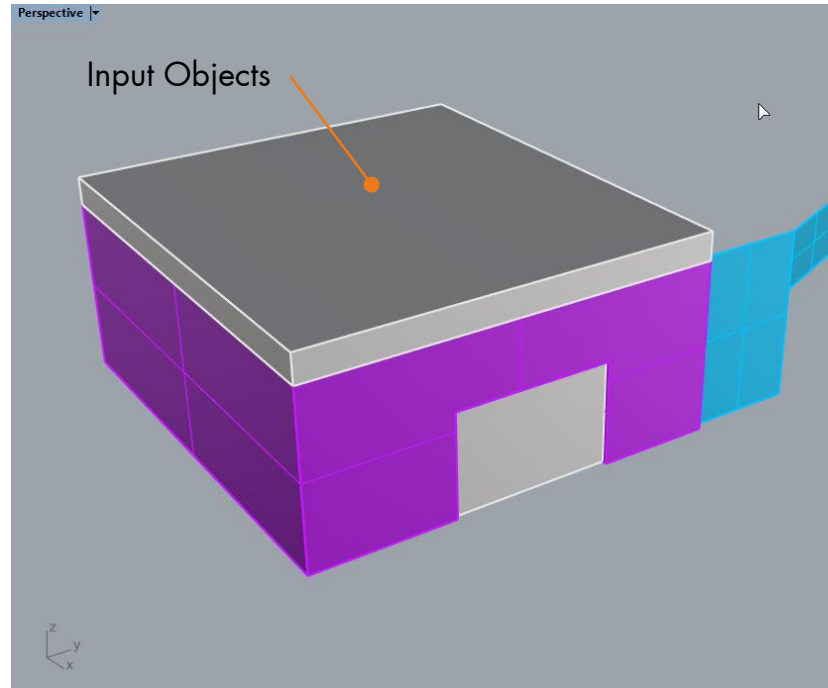
## OUTPUT

- Curves joined and on each original objects layer

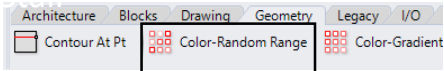
INPUT

&gt;

OUTPUT



## Color – Random Range



Randomly assigns object colors within a specified range.

### INPUT

1. Select objects to color
2. Pick color 1
3. Pick color 2

### OUTPUT

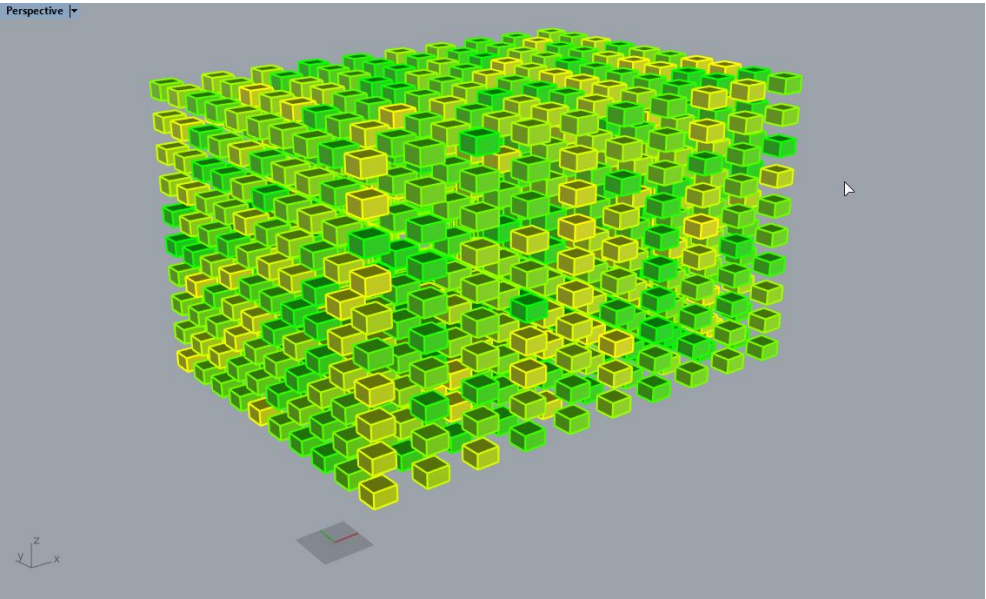
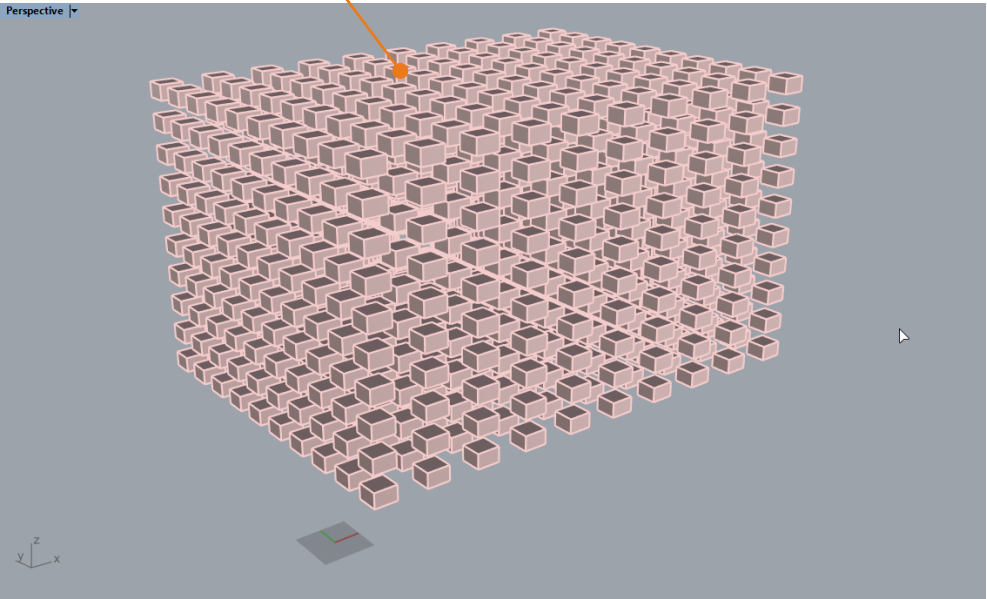
- Colored objects

INPUT

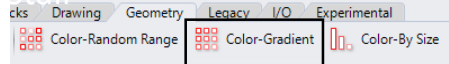
>

OUTPUT

Input Objects



## Color – Gradient



Assigns a gradient of colors to objects based on their distance from two input points and two input colors.

## INPUT

1. Select objects to color
2. Pick point 1
3. Pick color 1
4. Pick point 2
5. Pick color 2

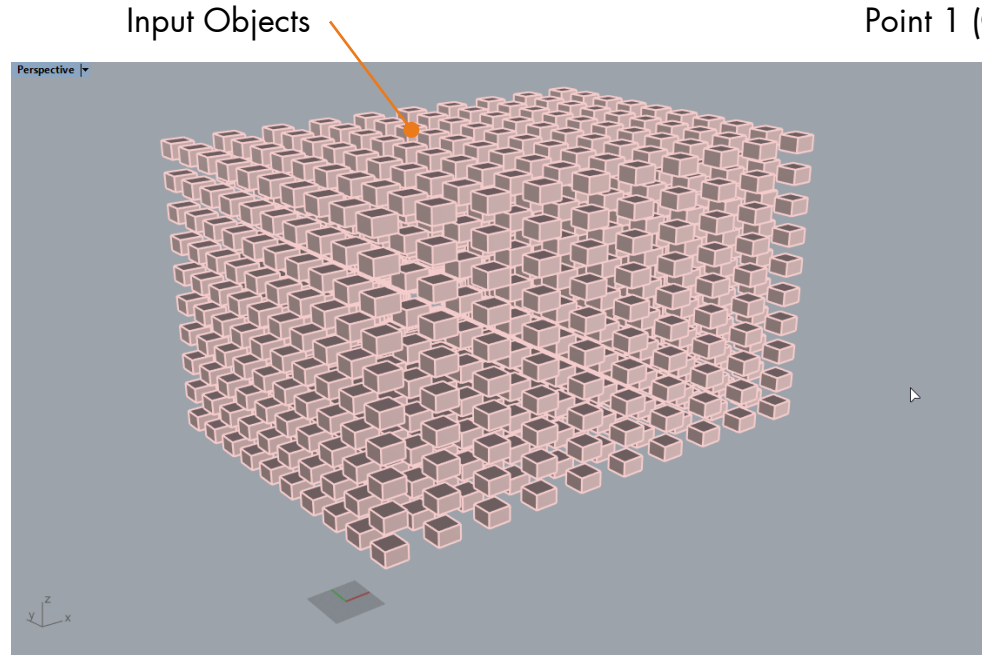
## OUTPUT

- Colored objects

INPUT

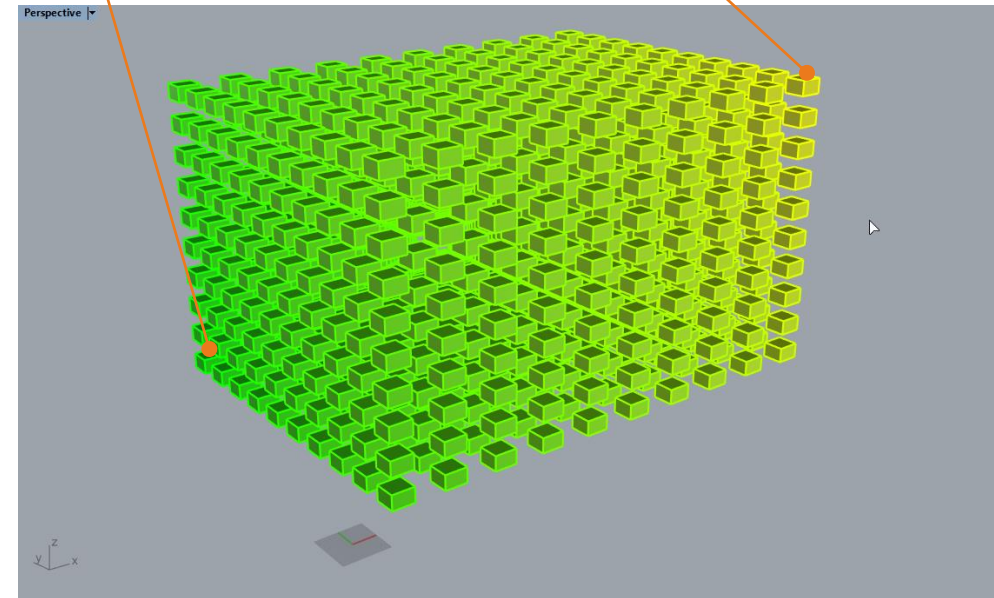
&gt;

OUTPUT



Point 1 (Green)

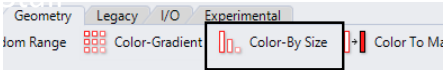
Point 2 (Yellow)



# Toolbar

## Geometry

### Color – By Size



Assigns a gradient of colors to objects based on their length, area, or volume (depending on what type of objects are input).

Accepts curves, surface, hatches, polysurfaces and closed breps.

#### INPUT

- 1. Select objects to color
- 2. Pick color 1 (Smallest)
- 3. Pick color 2 (Largest)

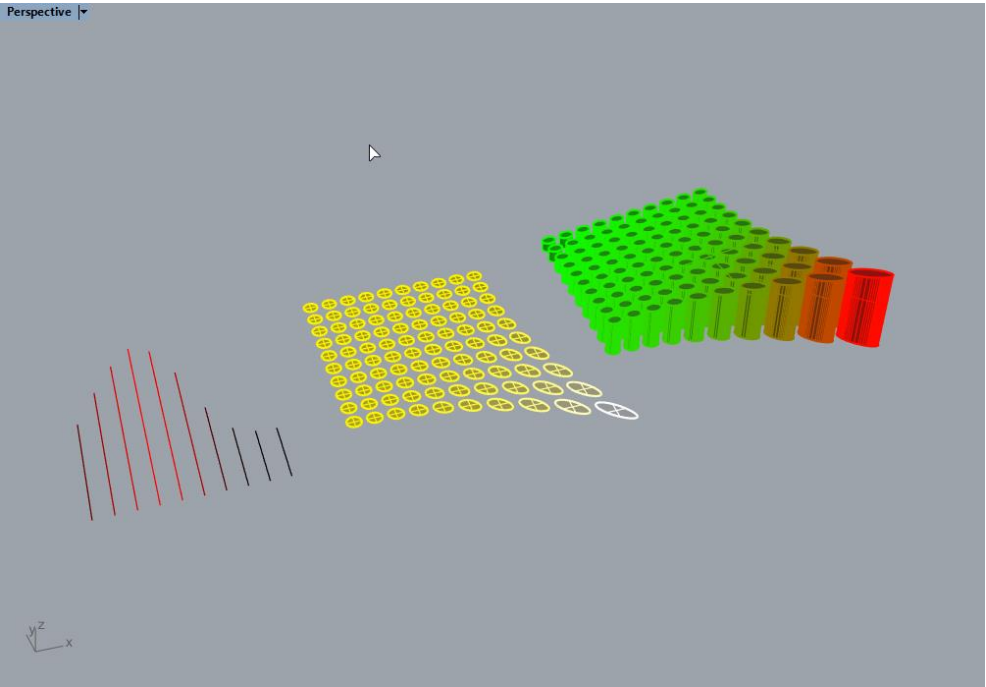
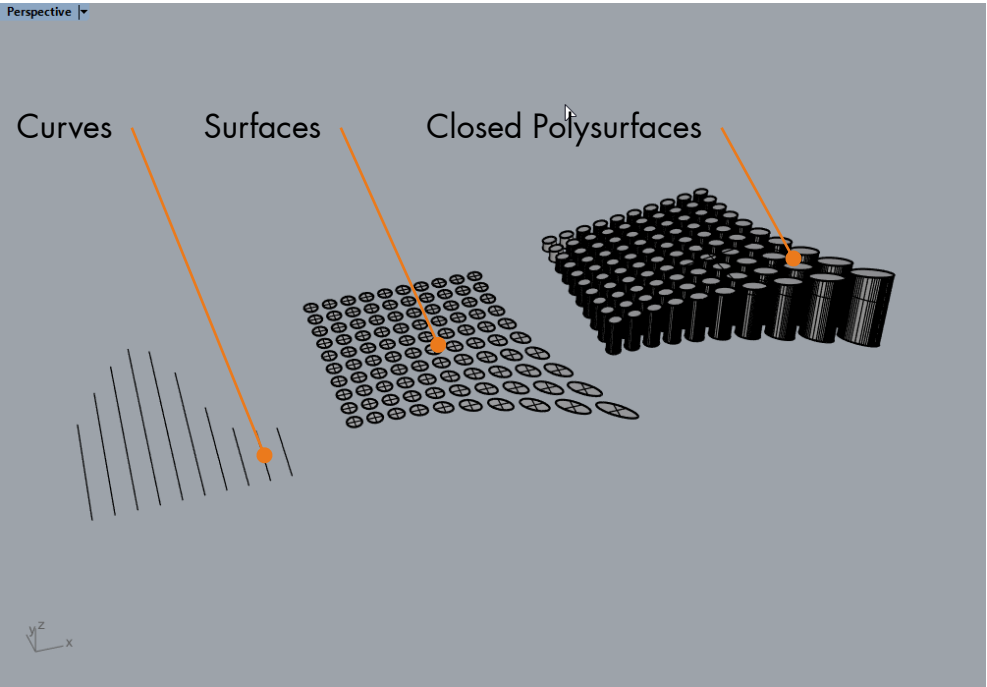
#### OUTPUT

- Colored objects

INPUT

>

OUTPUT



## Color to Material

egacy I/O Experimental  
Color-Gradient Color-By Size **Color To Material**

Sets an objects material to its display color. Creates a new material if one does not already exists.

## INPUT

1. Select objects

## OUTPUT

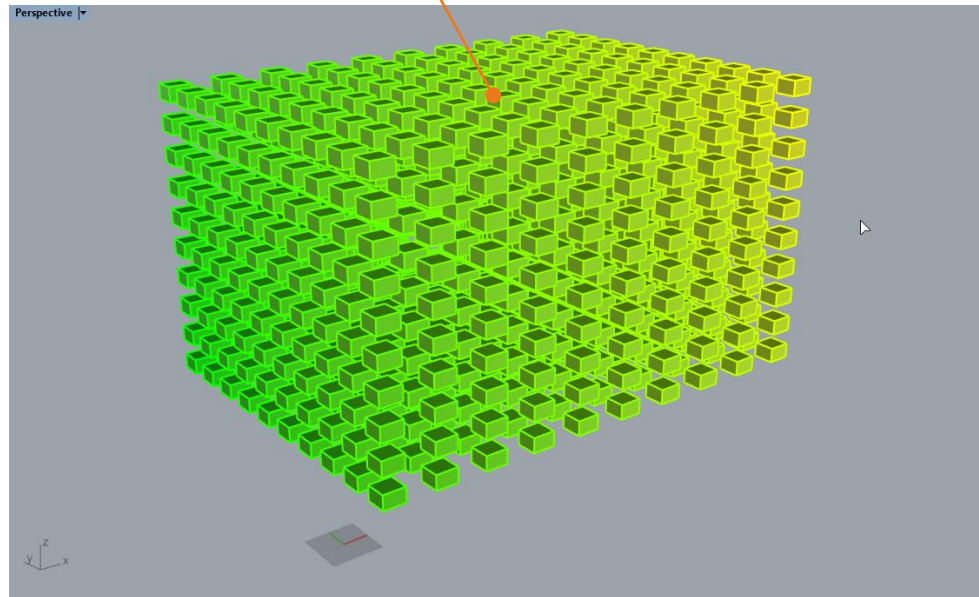
- Objects with colored material

INPUT

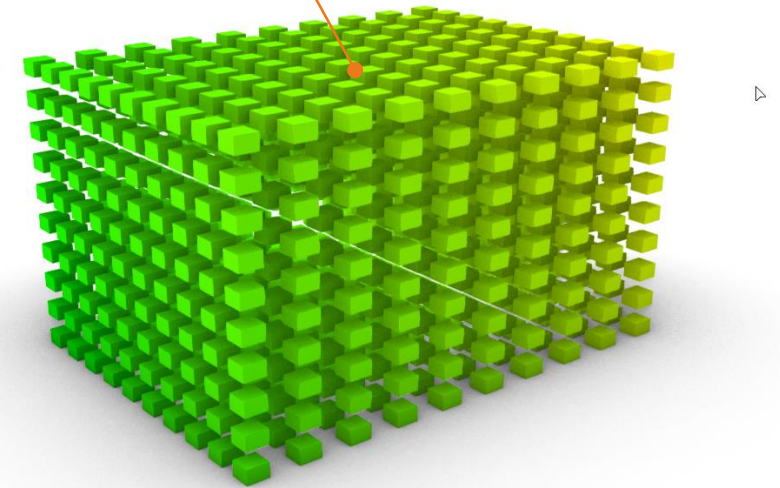
&gt;

OUTPUT

Colored objects



Material matching display color





# Toolbar

Legacy

[Table of Contents](#)



Buttons from the first PCPA Toolbar.

Random Unselect

- Randomly unselects a percentage of selected objects

Clean Boolean

- Macro: Boolean union + Merge all faces

Curve Boolean + Planar

- Macro: Curveboolean + Planar Srf

Various PCPA Display Modes

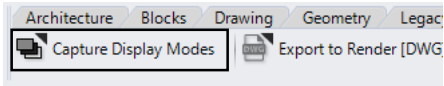
- Changes display mode to one of the standard PCPA displays

INPUT

>

OUTPUT

## Capture Display Modes



Exports a PNG from the active view with the user selected display modes.

PNG name will be appended with the display mode name.

Display modes with PCPA at the front are defaults.

### INPUT


1. Select display modes
2. Output path
3. Image Height (pixels)
4. Image Width (pixels)

### OUTPUT

- PNG for each display mode selected.

INPUT


Select Display Modes to Capture

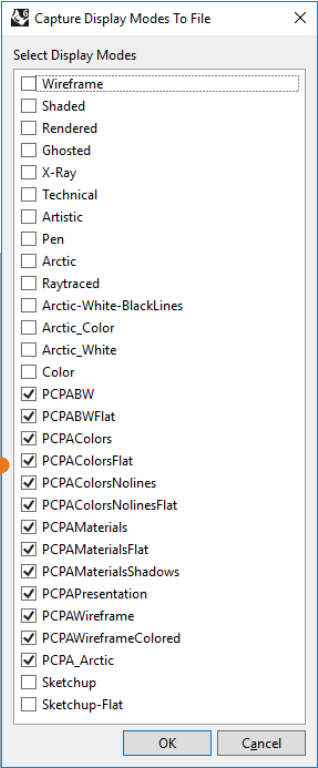


>

OUTPUT

Each display mode exported to PNG file



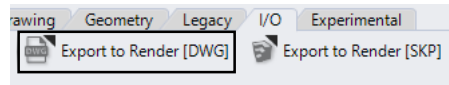


# Toolbar

I/O (Input/Output)

[Table of Contents](#)

## Export to Render [DWG]



Exports selected objects to DWG format with the layer names prefixed with the date and option name.

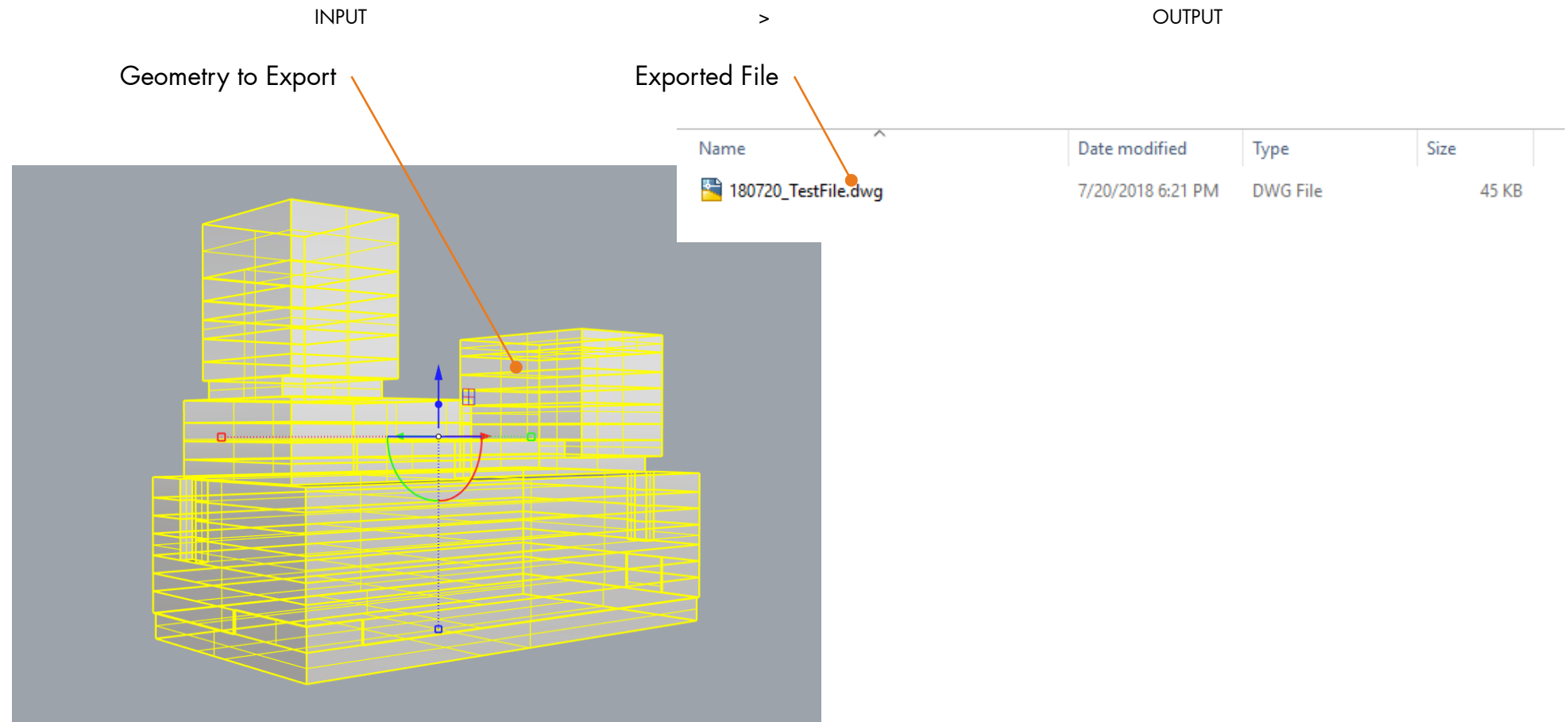
DWG settings automatically applied.

### INPUT

1. Select objects
2. Choose file path

### OUTPUT

- DWG file



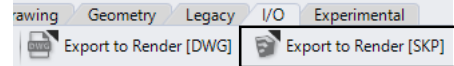


# Toolbar

I/O (Input/Output)

[Table of Contents](#)

## Export to Render [SKP]



Exports selected objects to SKP format with the layer names prefixed with the date and option name.

SKP Files are preferred because they maintain materials, layer names, and proper geometry.

\*If mesh settings not ideal, mesh before export.

### INPUT

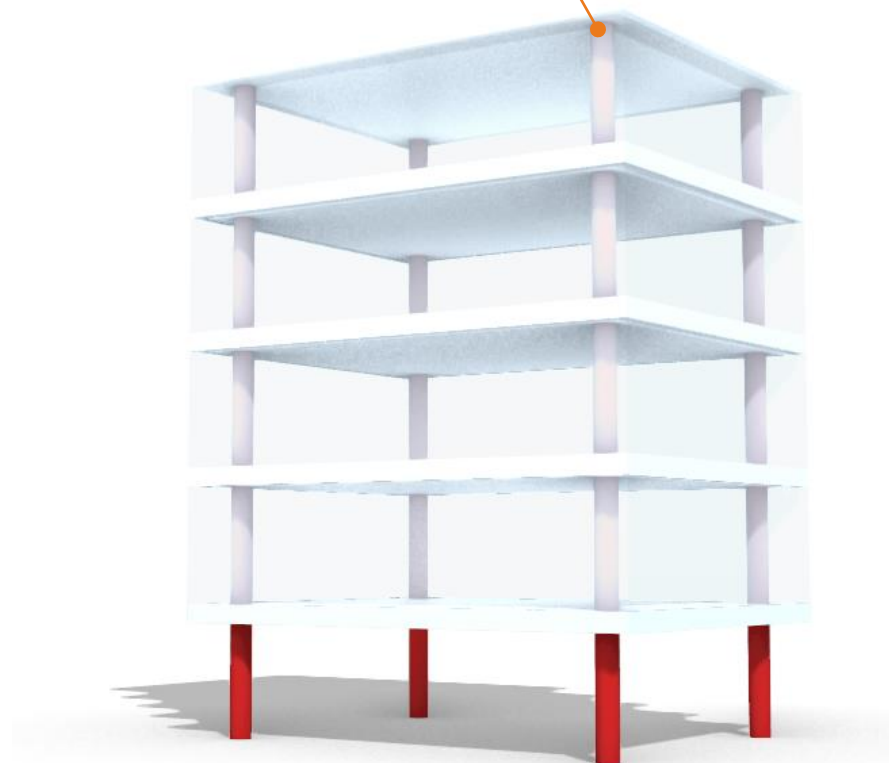
1. Select objects
2. Choose file path

### OUTPUT

- DWG file

INPUT

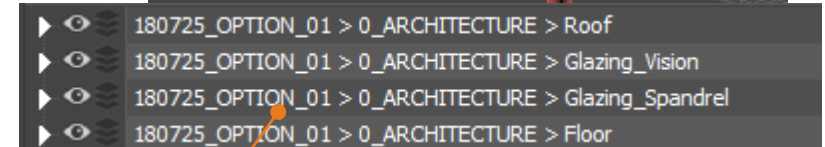
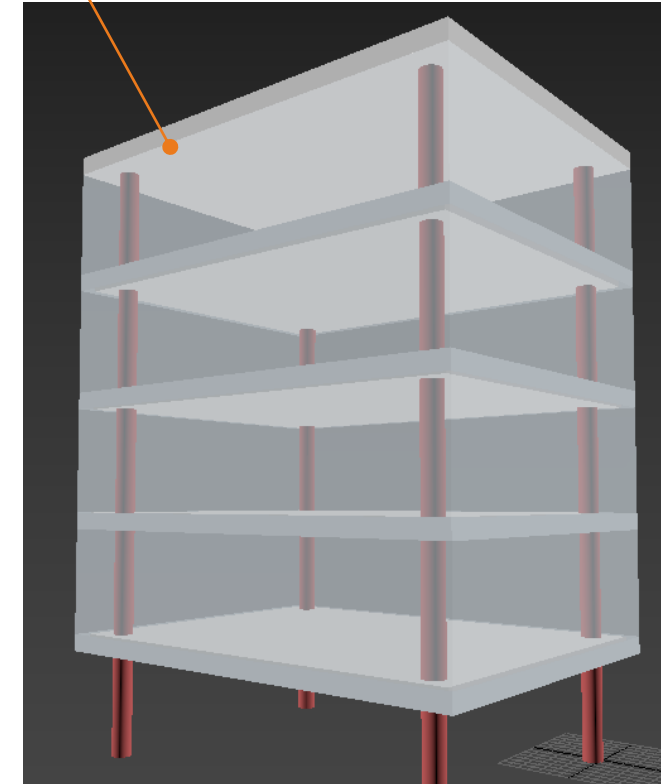
Geometry to export from Rhino



>

OUTPUT

Model in 3ds Max



Properly formatted layer names in 3ds Max  
'Filename > Rhino Layer Names'

# Toolbar

I/O (Input/Output)

[Table of Contents](#)

## Import CAD

Legacy I/O Experimental

r [DWG] Export to Render [SKP] Import CAD

Imports DWG file and nests its layers under a parent layer, named "Date\_Filename\_##"

Empty layers are removed.

All imported blocks come in exploded.

### INPUT

1. Select DWG file

### OUTPUT

- Generated parent layers

INPUT > OUTPUT

Automatically generated parent layer names

Imported Lines

# Toolbar

Experimental

[Table of Contents](#)

## Unfillet

Architecture

Blocks

Drawing

Geometry

Legacy

I/O

Experimental

Unfillet

Rectify

Cut Model

Will remove all arcs from a polyline.

### INPUT

1. Select polyline

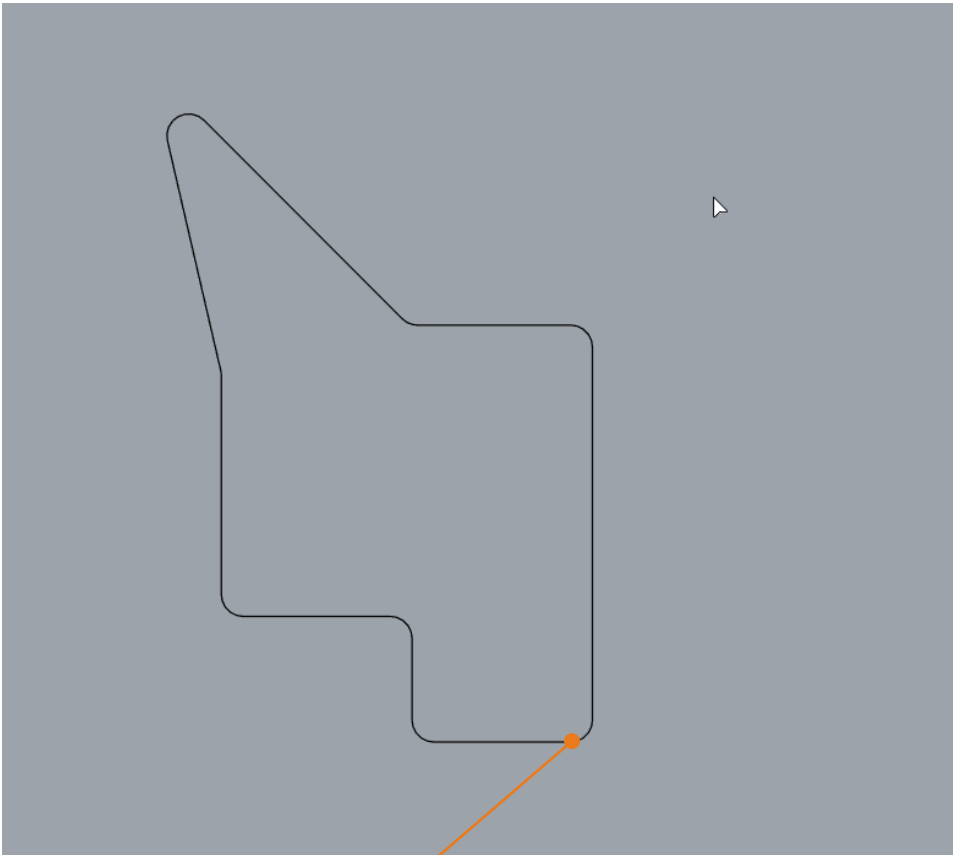
### OUTPUT

- Polyline

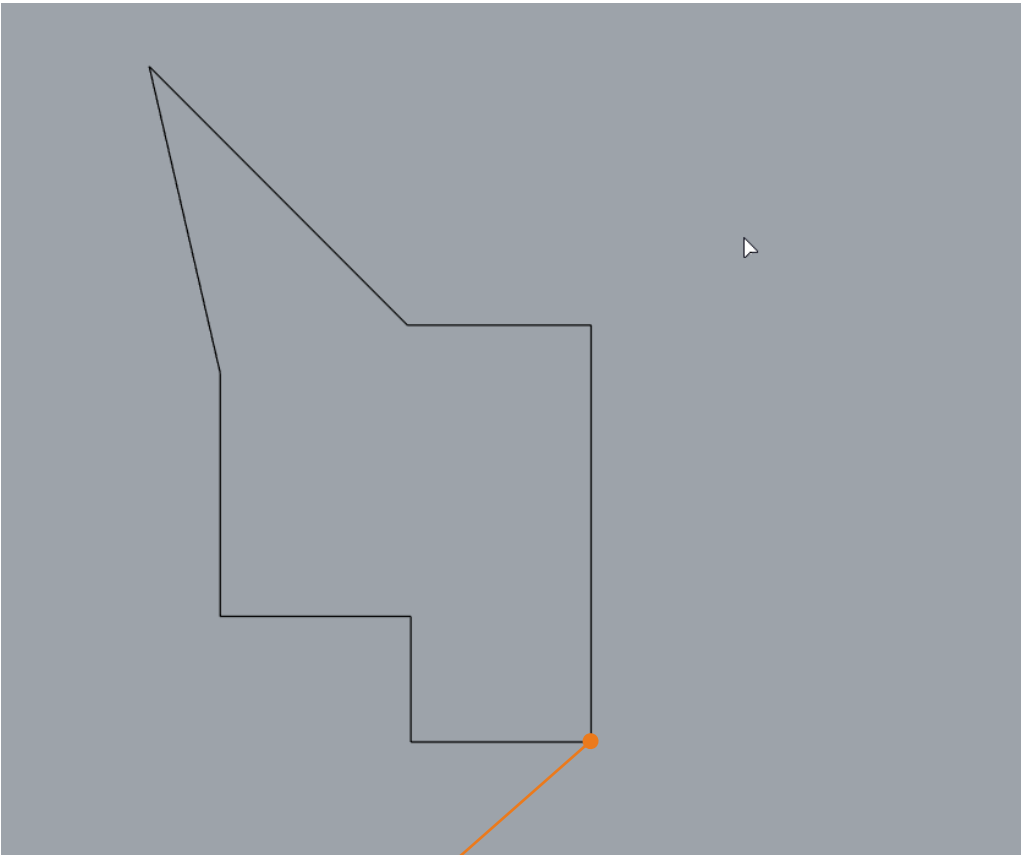
INPUT

>

OUTPUT

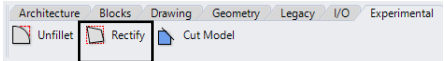


Fillet corners



Arcs removed and lines extended

## Rectify



Rebuilds a polyline according to specified angle and length multiples.

If 0 is input for the multiples, the original angle or length is used.

\*Curves not currently supported.

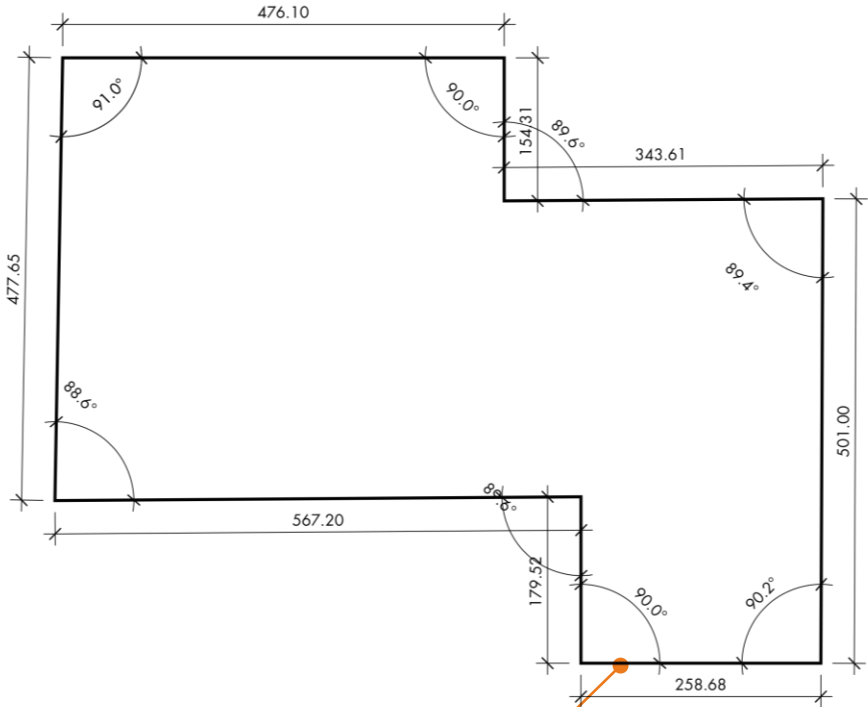
### INPUT

1. Select polyline
2. Input angle multiples
3. Input length multiples

### OUTPUT

- Polyline

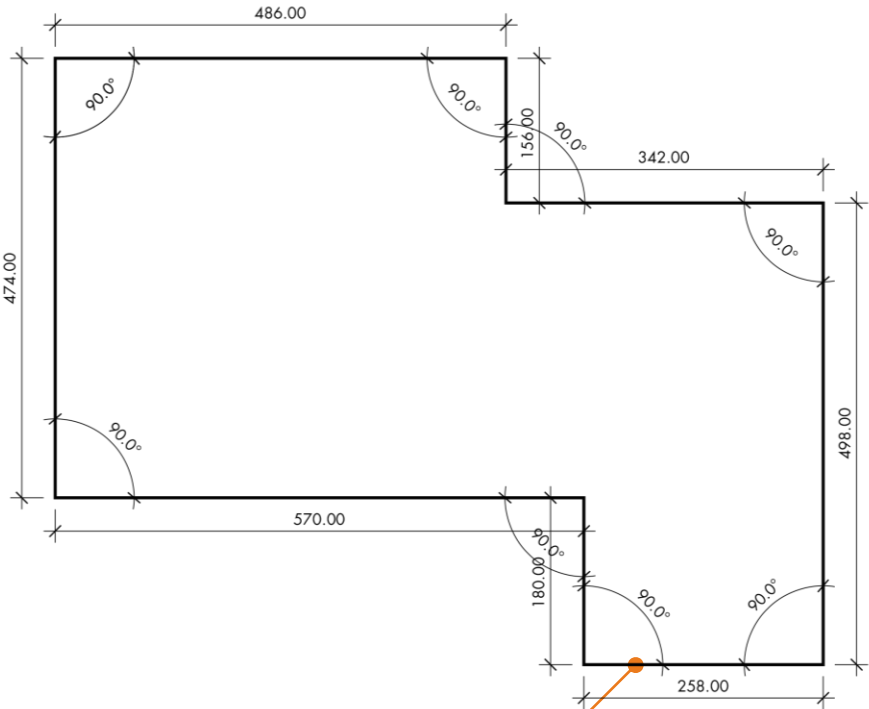
INPUT



Polyline with irregular lengths and angles

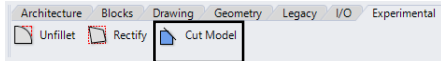
>

OUTPUT



Lengths and angles rounded. In this case 90 degrees and 6 inches.

## Cut Model



Trims a model with a surface.  
Duplicates and hides original geometry.

Creates two groups, one with the remaining geometry, the other with section surfaces created when cutting through solid objects.

Useful for rendering or make2d exports.

## INPUT

1. Select objects to trim
2. Select surface to trim with

## OUTPUT

- Duplicated geometry trimmed by surface plane.

INPUT

Objects to trim

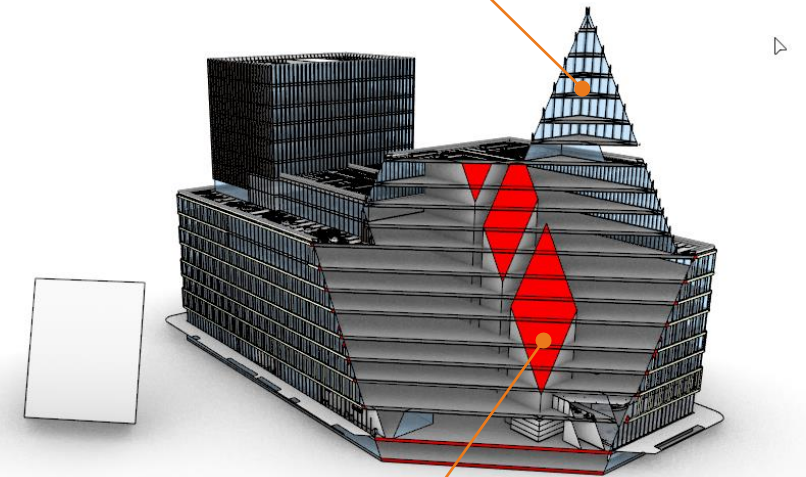


Surface to trim with

&gt;

OUTPUT

Trimmed objects duplicated and grouped



Solid objects will be given a surface at the trim location.



# Toolbar

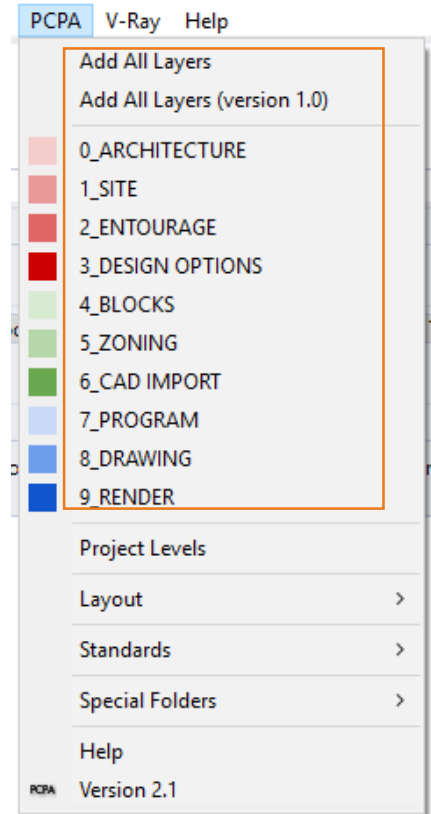
## Dropdown

### Layers

PCPA Standard layers can be added to a drawing by choosing either **Add All Layers** to load all layers, or choosing one of the Root Layers to add just that Root.

For projects still using 1.0 Layer Standards,  
**Add All Layers (version 1.0)** will load all 1.0 layers.

This will also import and assign PCPA materials if not already in the document.



Stores level data within the rhino file. Heights and FTF are formulas, responding to changes.

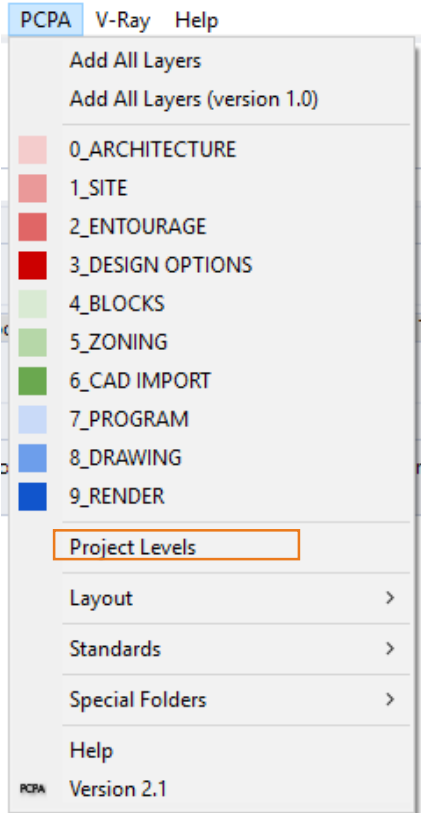
Can enter feet, inches, or decimal.

Can copy paste data to Excel (Edit > Copy)

Can import levels from another Rhino file.  
(File > Import from 3dm)

Can read level data into Grasshopper.

\*This is still experimental and may have errors.

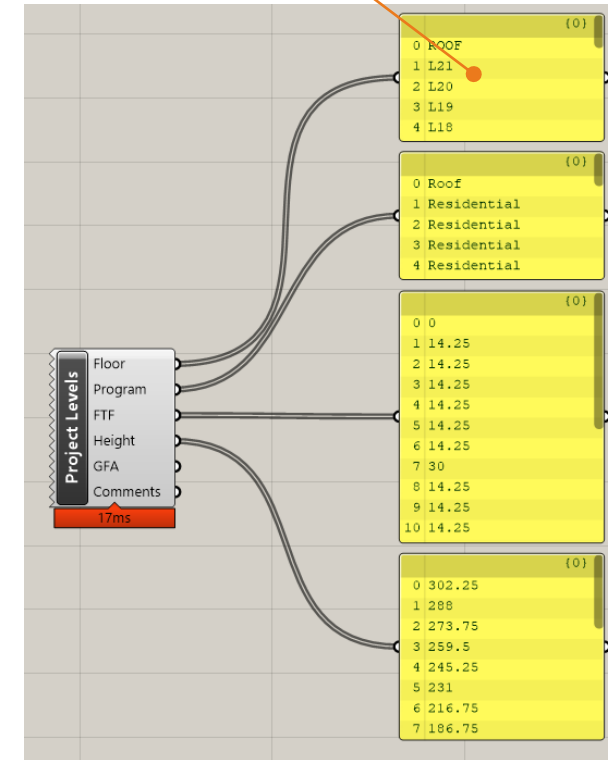


Project Levels

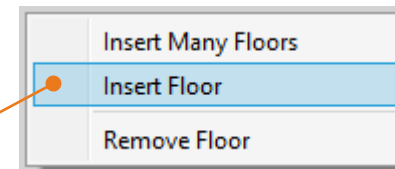
#	Floor	Program	FTF	Height	Area	Comments
21	ROOF	Roof	0	292.25		
20	L21	Residential	14.25	278		
19	L20	Residential	14.25	263.75		
18	L19	Residential	14.25	249.5		
17	L18	Residential	14.25	235.25		
16	L17	Residential	14.25	221		
15	L15	Residential	14.25	206.75		
14	L14	MEP	20	186.75		
13	L13	Residential	14.25	172.5		
12	L12	Residential	14.25	158.25		
11	L11	Residential	14.25	144		
10	L10	Residential	14.25	129.75		
9	L9	Residential	14.25	115.5		Typical
8	L8	Residential	14.25	101.25		
7	L7	Residential	14.25	87		
6	L6	Residential	14.25	72.75		
5	L5	Residential	14.25	58.5		
4	L4	Residential	14.25	44.25		
3	L3	Residential	14.25	30	3000	
2	L2	MEP	10	20		
1	L1	Entrance	0	0		

Cancel OK

Data can be read in Grasshopper



Excel-like interface inside of Rhino



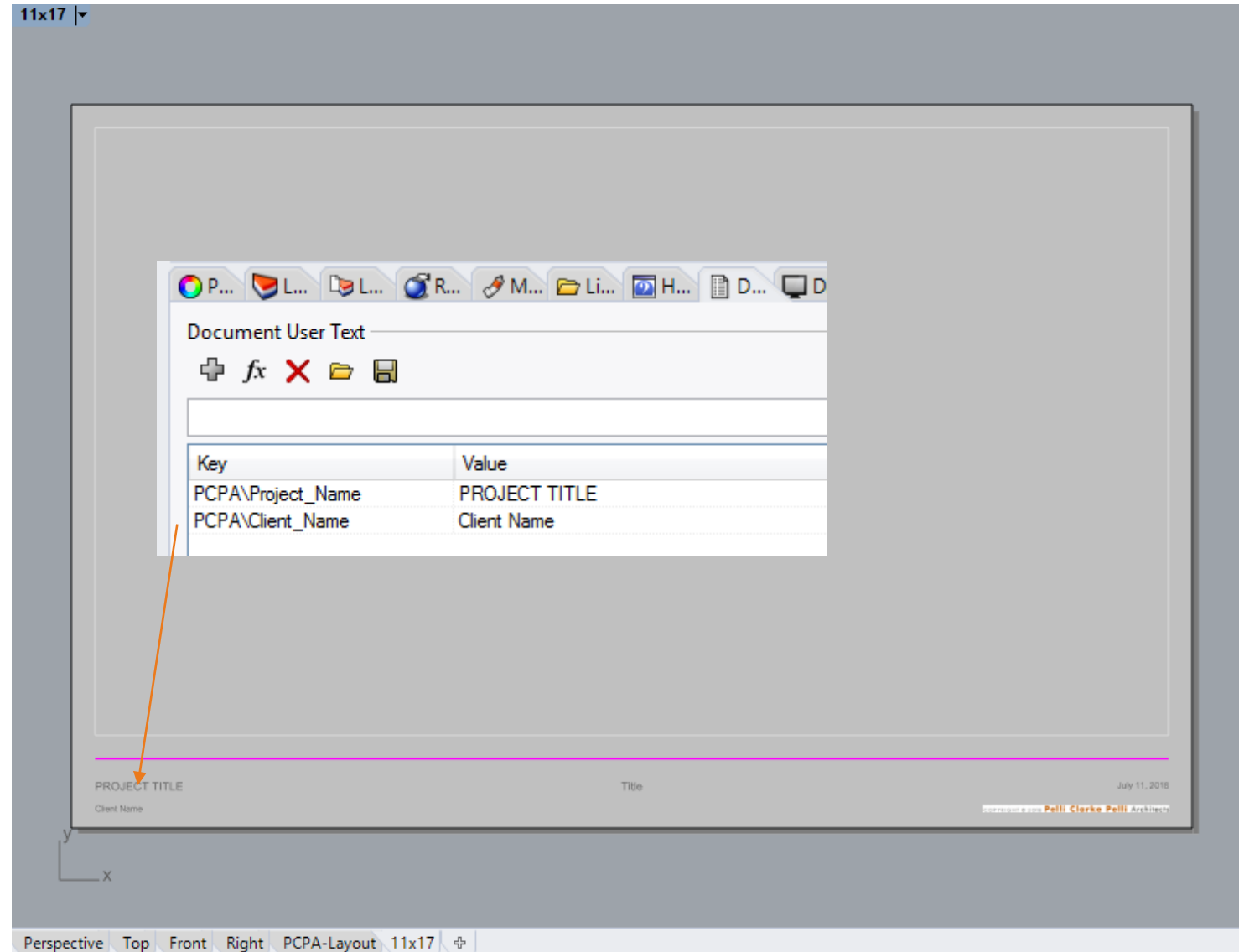
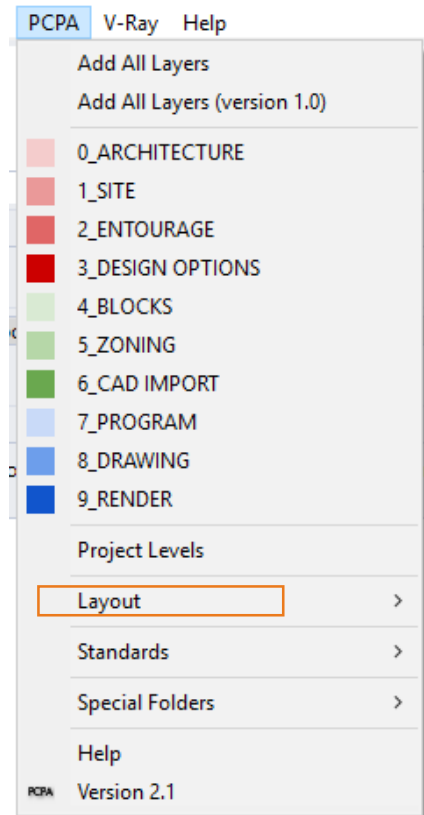
Right click to open the context menu



Adds layout to current file.

Project Name and Client Name reads from Document Data.

Date is text field of the current date and will automatically update.



# Toolbar

## Dropdown

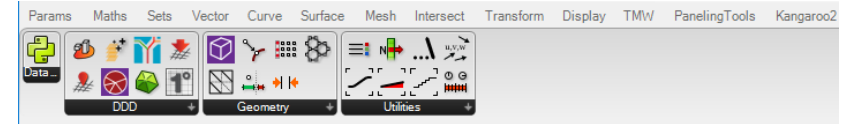
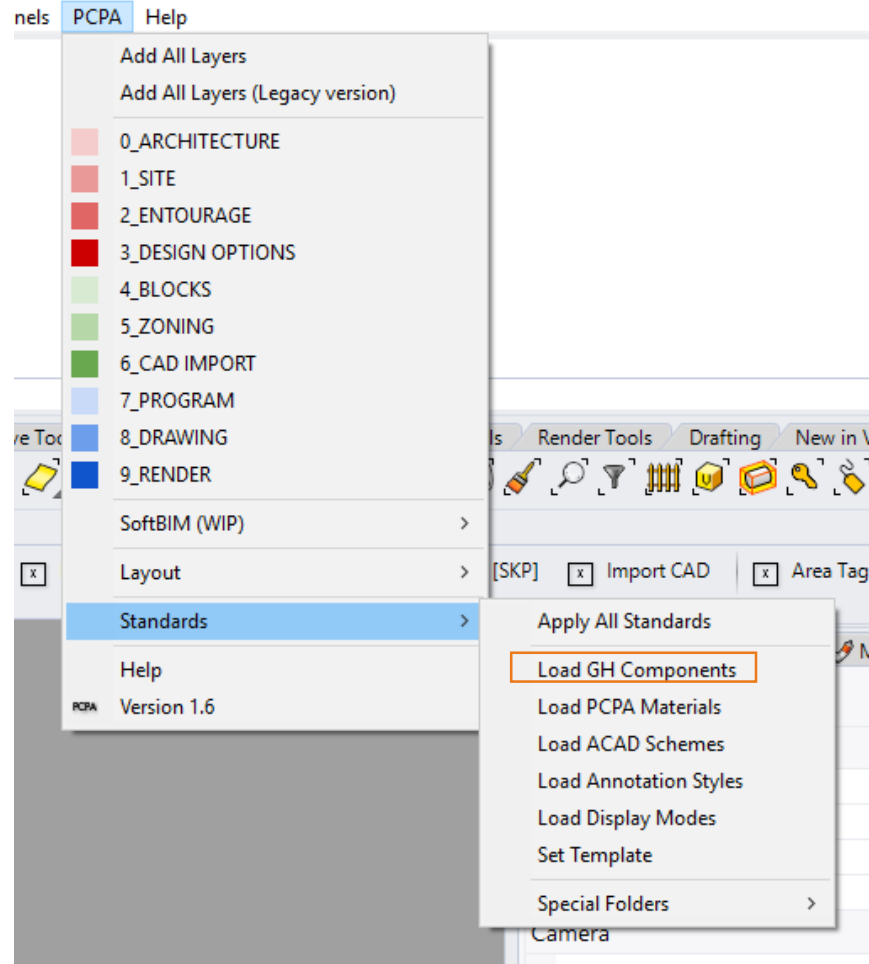
### Load GH Components

Loads all PCPA GH Components and PCPA Standard Set (curated collection of useful GH Plugins)

1. Close all Rhino Sessions.
2. Reopen Rhino
3. From the PCPA Dropdown menu, choose **Load GH Components**
4. Many things will then be imported. Some things may fail or say "Broken". Stay calm.
5. Open Grasshopper

\*Warnings may appear (depends on how many grasshopper plugins you have already installed). This should only happen the first time you run **Load GH Components**

Check out the [GH Installation Troubleshooting](#) if problems persist

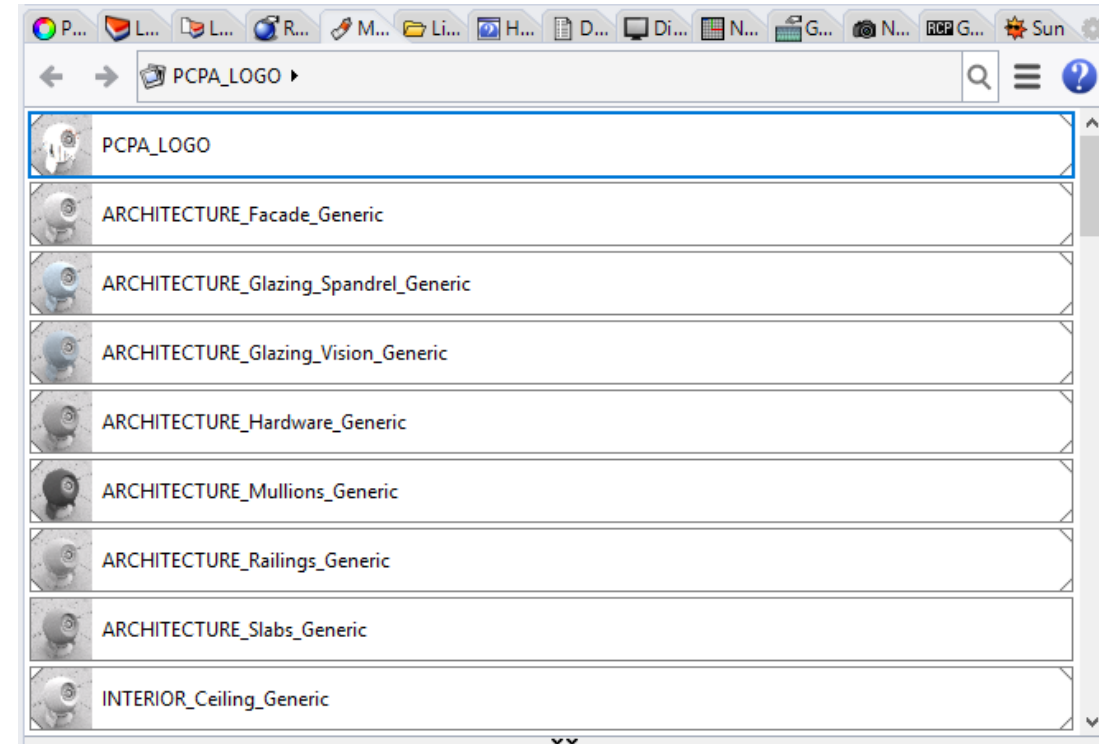
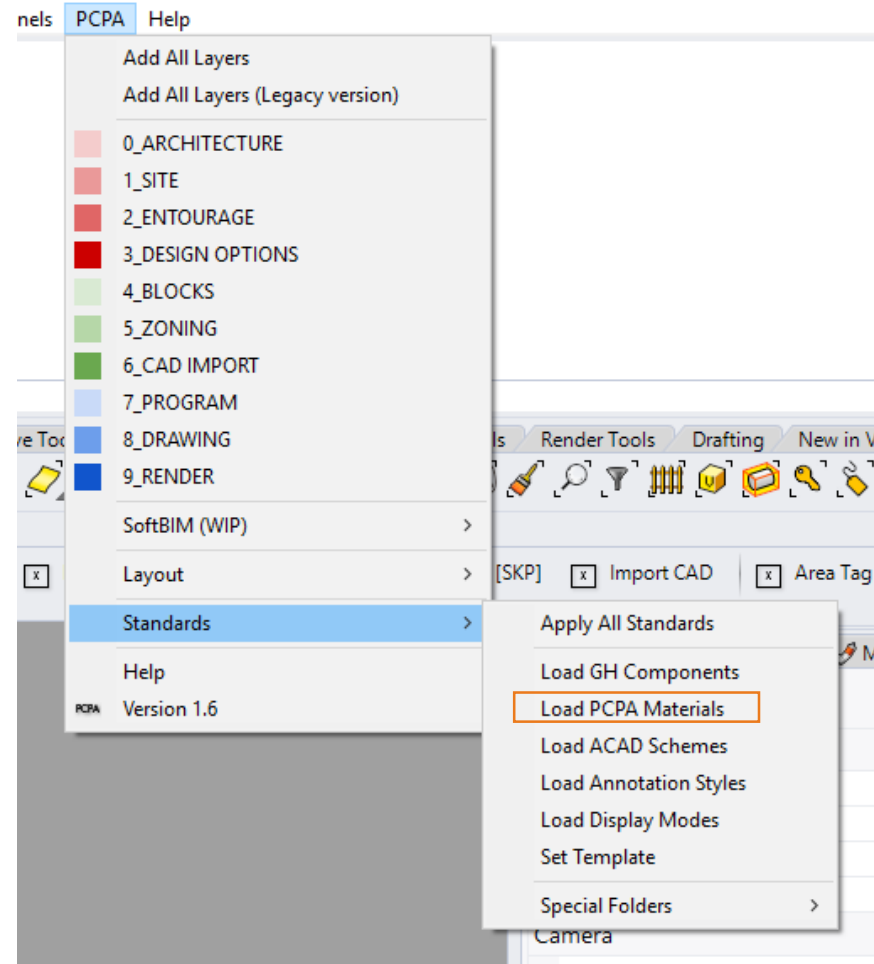


# Toolbar

## Dropdown

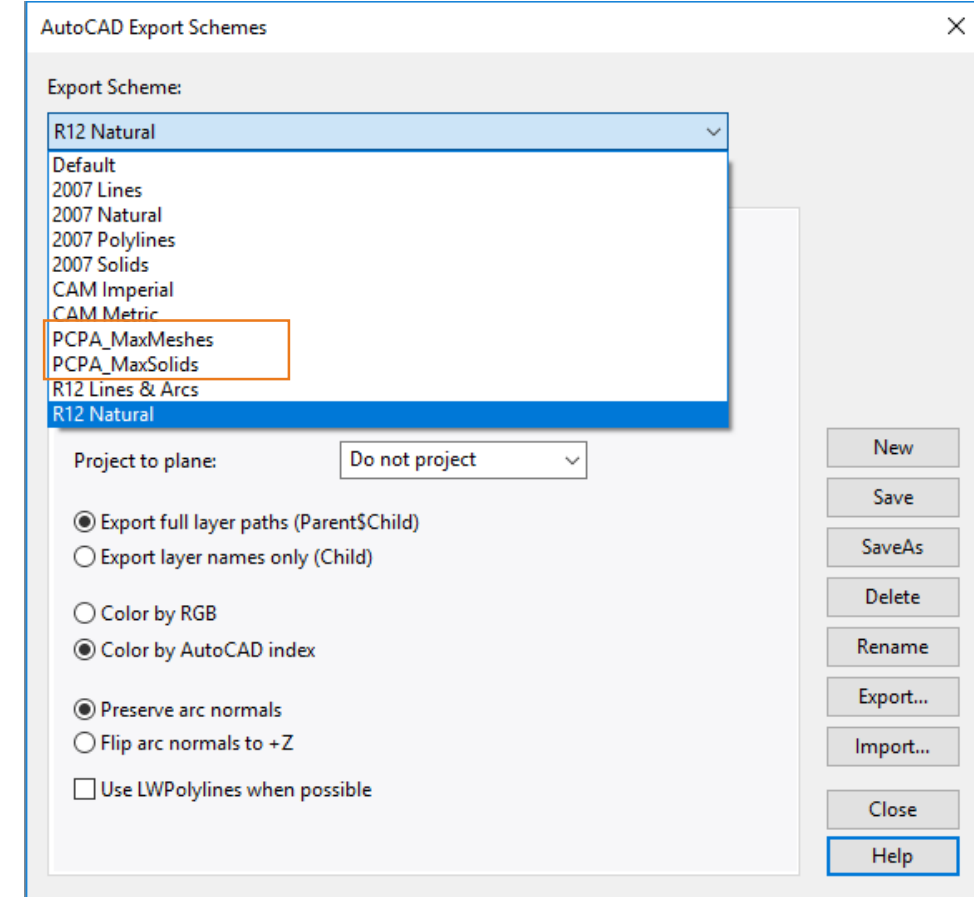
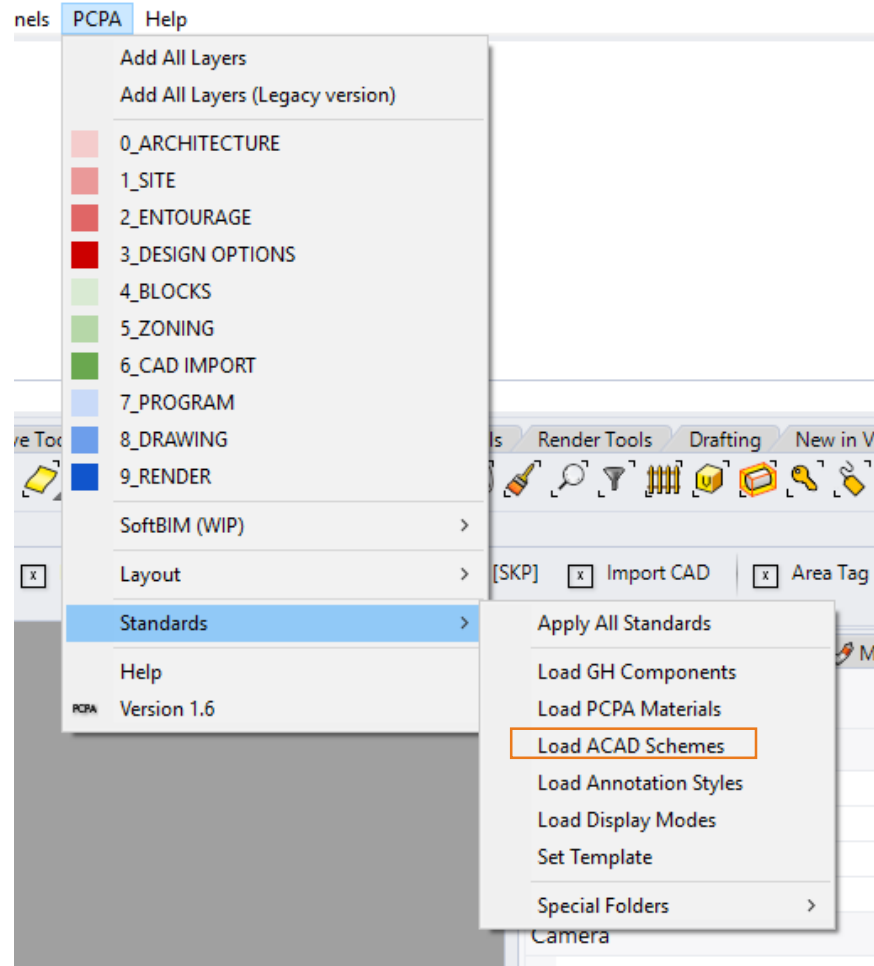
### Load PCPA Materials

Loads all standard PCPA Materials into the current file, if they are not already there.



## Load ACAD Schemes

Loads all ACAD Schemes (used when exporting to DWG).

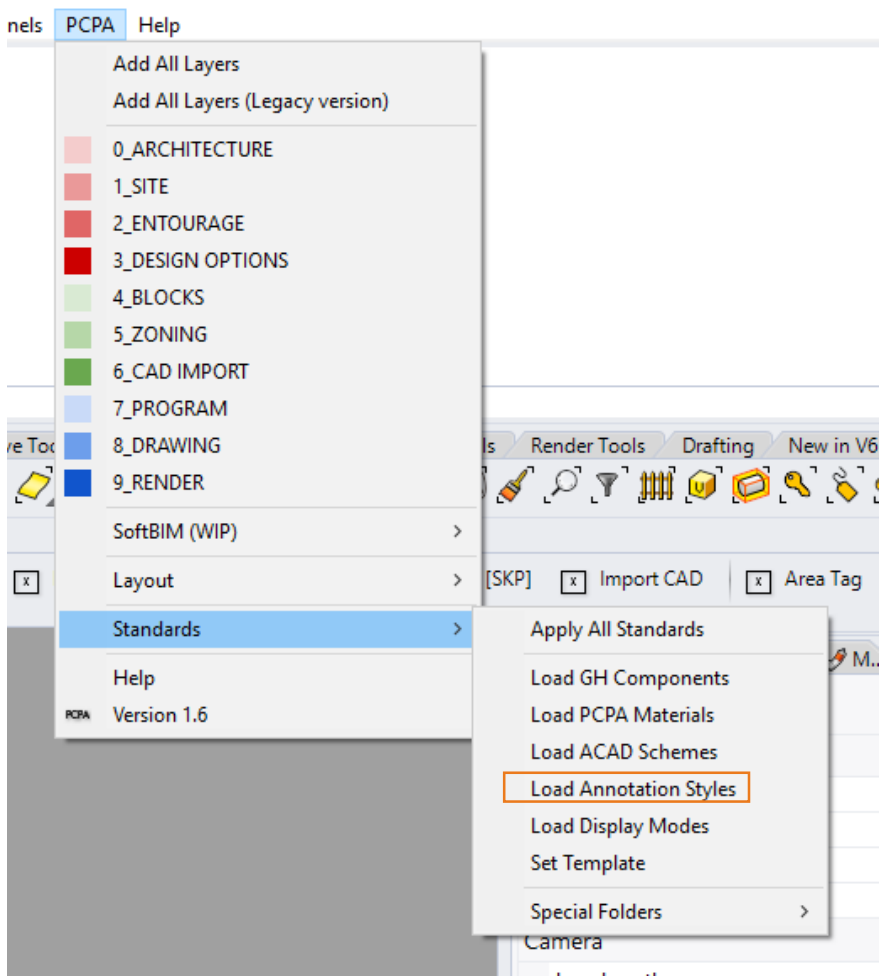


# Toolbar

Dropdown

## Load Annotation Styles

Loads all standard PCPA Annotation Styles into the current file, if they are not already there.



### Document Properties

#### Annotation Styles

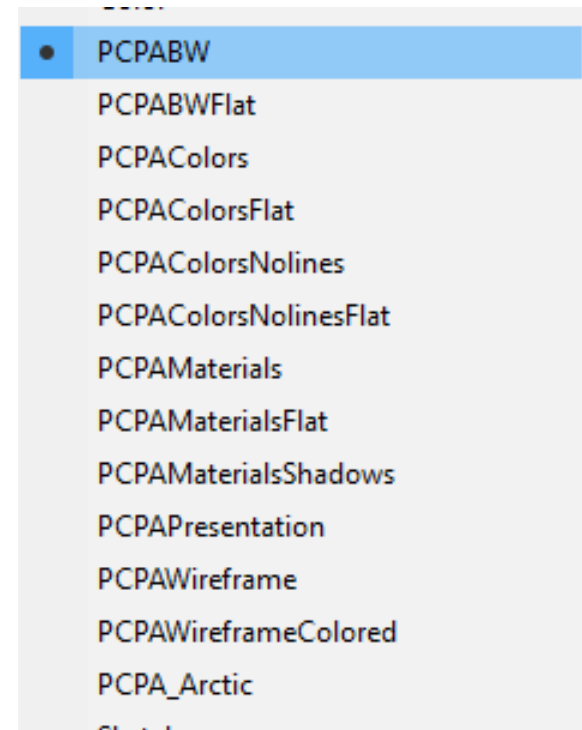
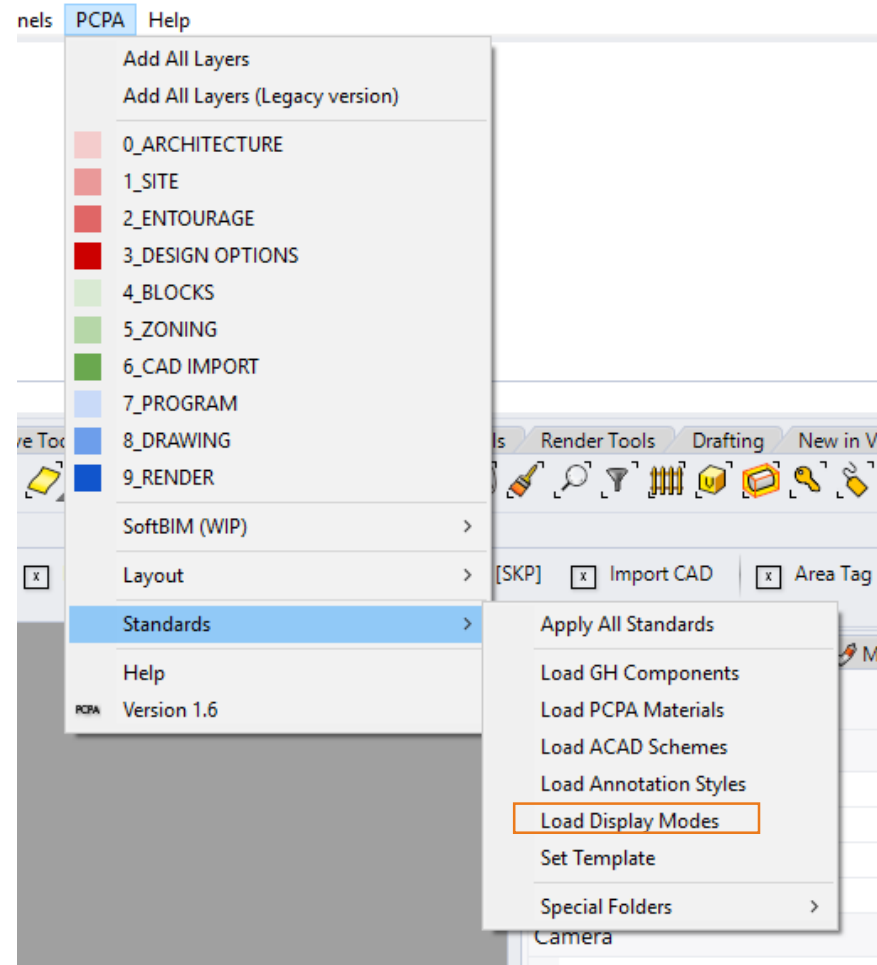
PCPA\_10  
PCPA\_12  
PCPA\_18

Grid  
Hatch

Current	Annotation Styles
<input checked="" type="radio"/>	PCPA_10
<input type="radio"/>	PCPA_12
<input type="radio"/>	PCPA_18

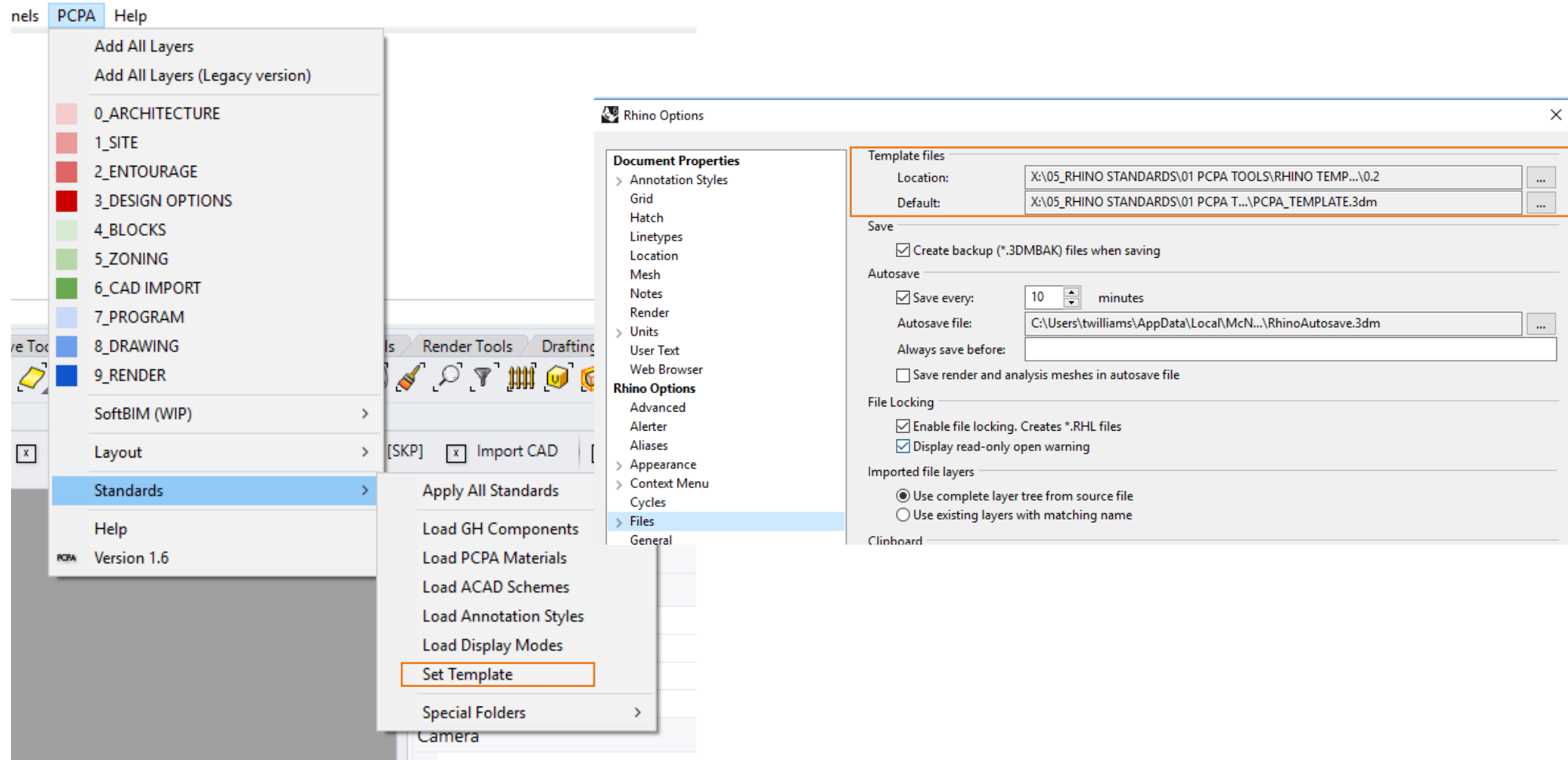
## Load Display Modes

Loads all standard PCPA Display Modes into the current file, if they are not already there.

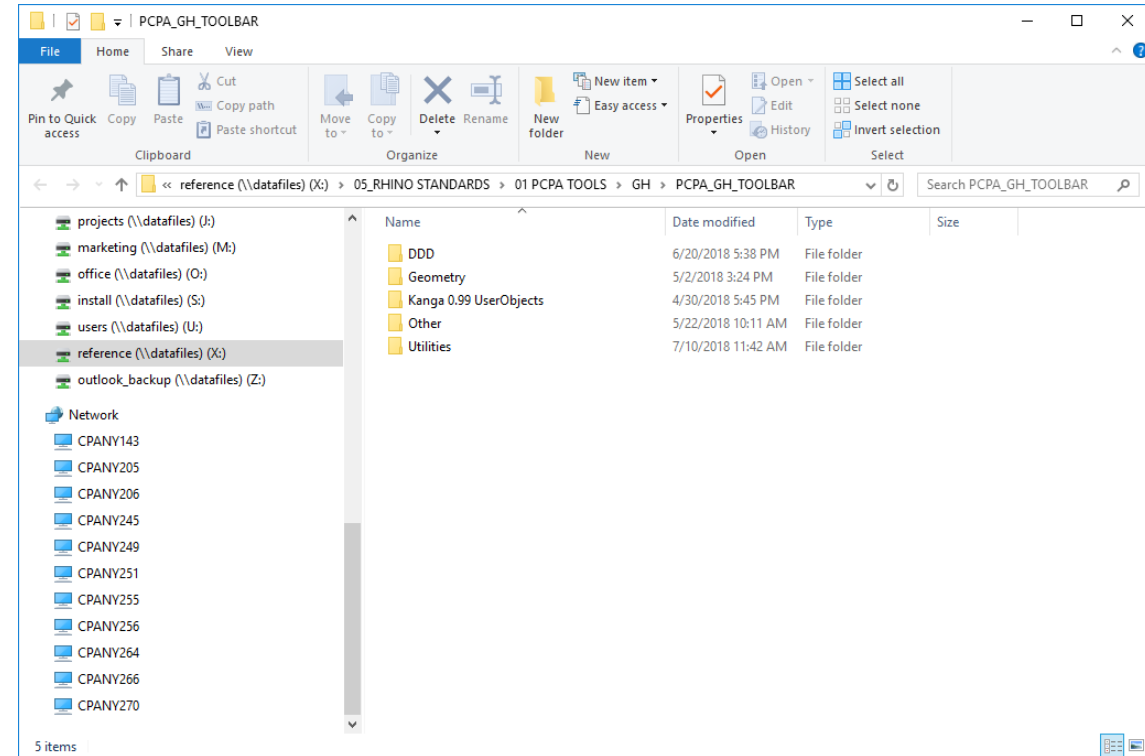
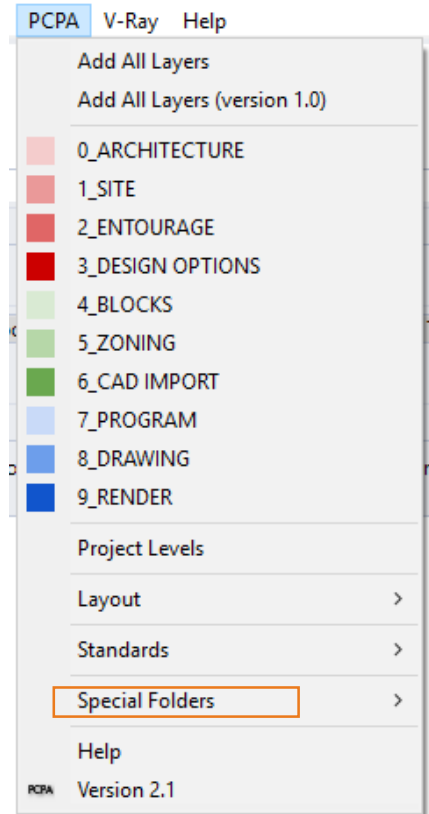


Will set the default template file and folder.

Typically only needs to be run once.



Will launch the folders containing the relative PCPA standard.



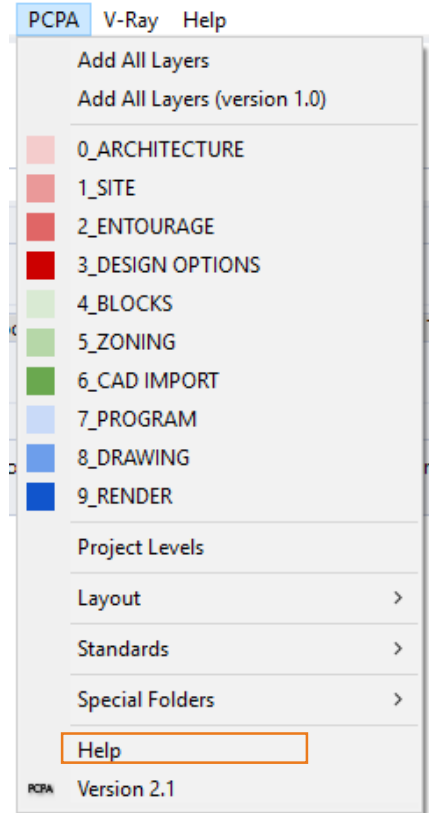


# Toolbar

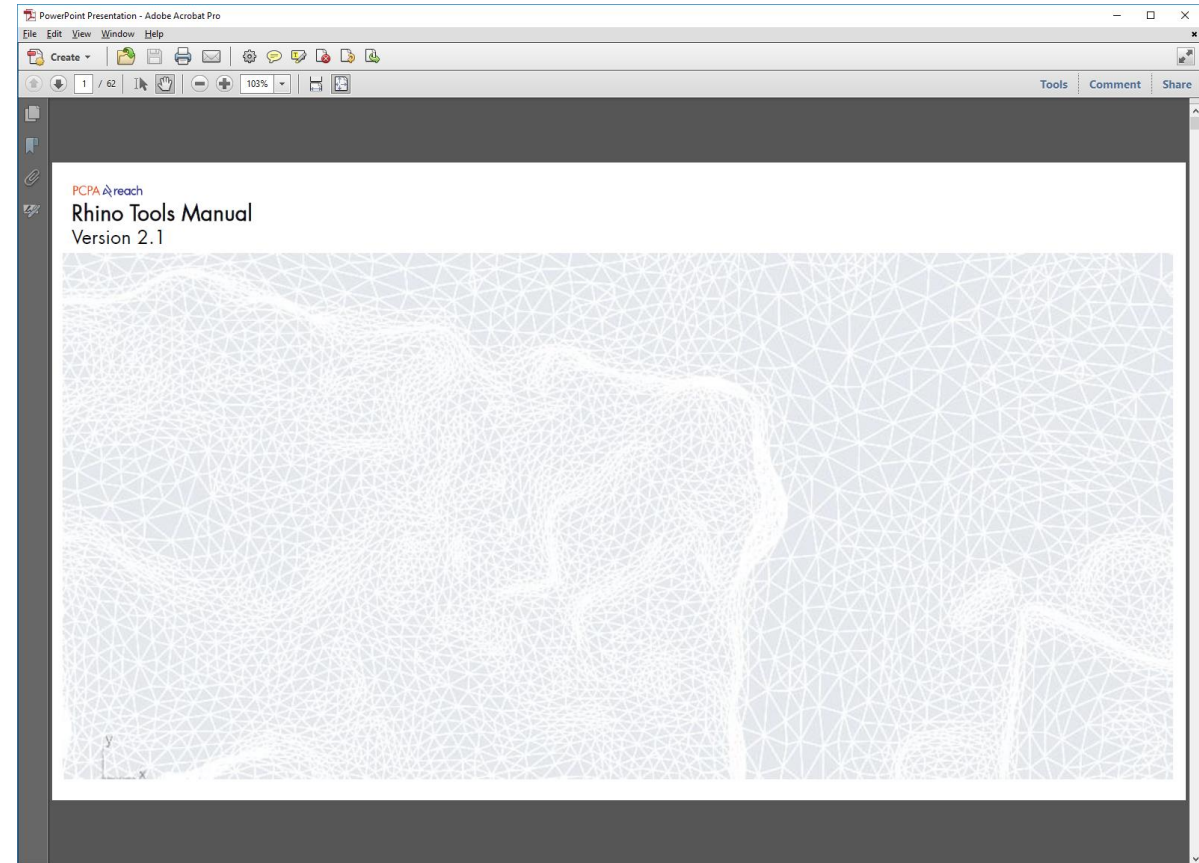
Dropdown

## Help

Launches this Rhino Manual in a pdf viewer.



[Table of Contents](#)



In order to improve the functionality of the toolbar, user input in these functions is dynamically stored in a file on the network.

- Analytics should help us learn:
- Which scripts aren't working
  - Which are popular
  - Which are unpopular
  - Which settings should change

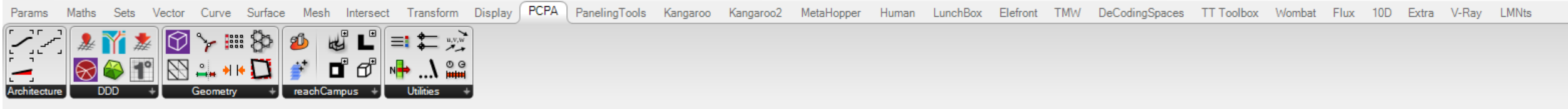
Username are encrypted for anonymity.

Architecture-Stair					
Date	User	Width	Height	Path	Result
2018-08-03_18:33:46.12	wanrsqjwdptgkljcpwqu	42	120	[(84.098803252888047, 508.17035247603781,	TRUE

# Grasshopper

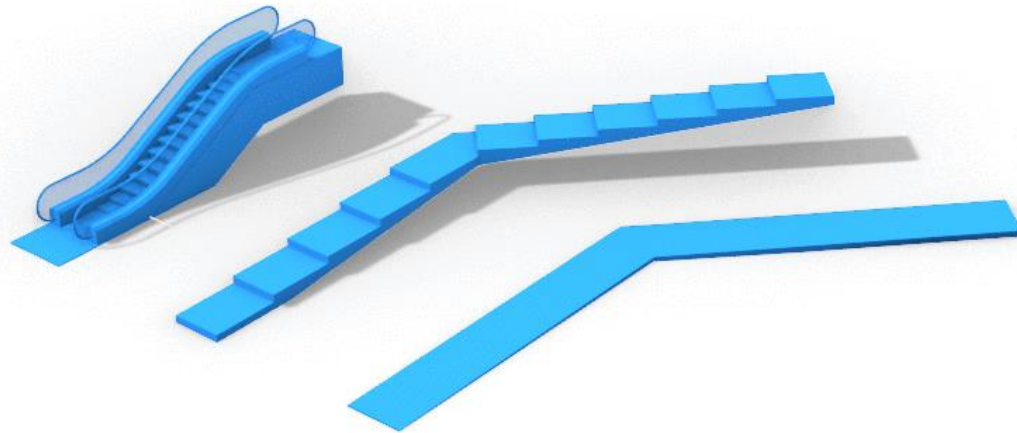
Future Release

[Table of Contents](#)



Current release contains

- Stair
- Ramp
- Escalator
- Get PCPA Layers
- Get Project Levels
- Rectify
- Unit Check
- reachCampus
- Topography and Site Generator
- Frit Pattern
- And many others...



**ERROR: “FAIL---Could not copy...” Warning**

**SOLUTION:** Close all Rhino sessions and follow the [GH installation](#) steps again.

Loaded PCPA DDD GH Components  
Loaded PCPA Geometry GH Components  
Loaded PCPA Kanga 0.99 UserObjects GH Components  
Loaded PCPA Utilities GH Components  
Loaded PCPA Other GH Components  
Loaded PCPA Database GH Components

FAIL-----Could not copy dependencies. You must have grasshopper open. Close and reopen Rhino, then run this again.

**ERROR: “File Conflict Warning” Warning**

**SOLUTION:** Choose the **Delete** button on the left. For each pop-up

**ERROR: “Component ID conflict” Warning**

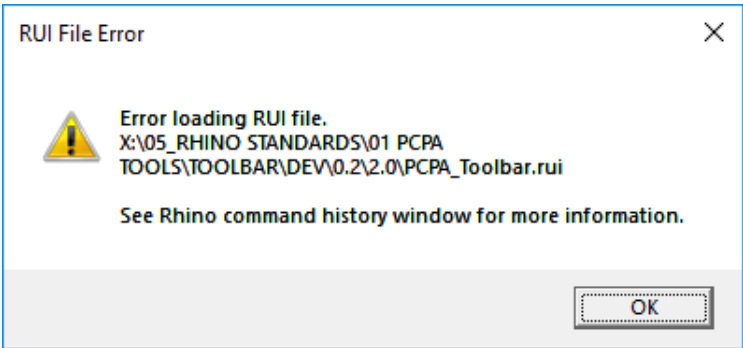
**SOLUTION:** Choose the **Replace All** button.

If this continues to come up when opening Grasshopper,  
paste **%appdata%\Grasshopper\Libraries** into windows explorer. Then delete  
the conflicting file (**00\_PCPA Standard Set** should not be deleted).

**ERROR: “RUI File Error” Warning when Rhino Starts**

**SOLUTION:** Drag and drop the toolbar to install again: [Toolbar path](#)

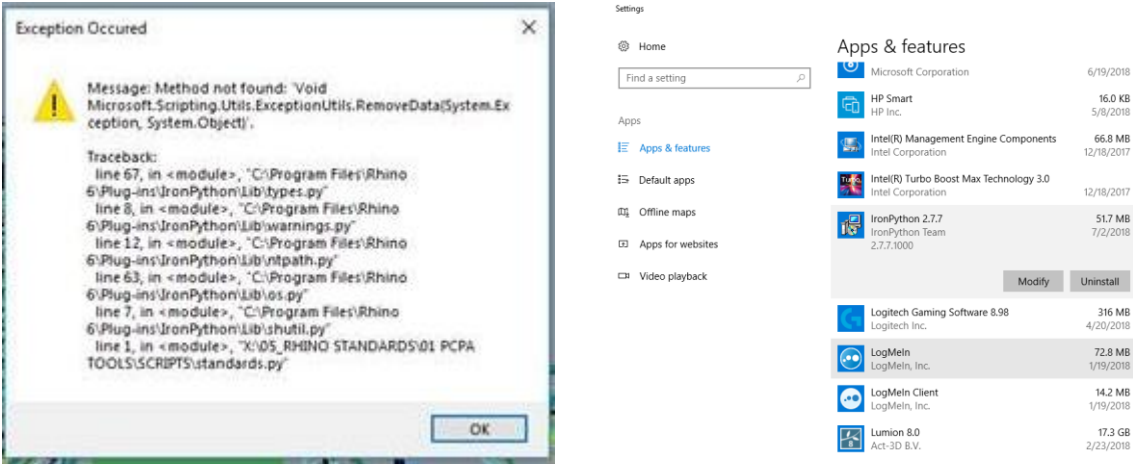
This usually happens when your computer temporarily loses connection to the network when opening Rhino.



**ERROR: “Method Not Found ” Warning**

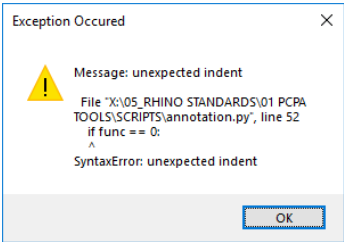
**SOLUTION:** Go to the “Add & Remove Programs page” in Windows Settings. Scroll down and Uninstall “IronPython 2.7.3” . Close and reopen Rhino.

\*This is a conflict caused when Dynamo has been installed. (Latest versions of Dynamo do not need this to run).



**ERROR: “Exception Occured” Warning**

**SOLUTION:** There is a bug in the script. Please send screenshot and description to Tim.



**ERROR: “NVIDIA OpenGL Driver: A TDR has been detected”**

**SOLUTION:** Graphics card cannot process such a large image. Either export as a smaller image or change your NVIDIA settings from default to Dynamic Streaming (as seen [here](#))

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