



Visual® Lighting Plugin
For Autodesk Revit
User Guide

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Solution Overview

Description

The Visual® Lighting Plugin for Autodesk Revit provides a fast, intuitive design solution for creating lighting layouts in complicated Revit projects. More easily navigate projects with Visual's isolation focus workflows to design the spaces you need. Enhanced product selection helps you find and manage the luminaires you need. New automation tools like AutoLayout can reduce your design time by creating layouts with the click of a button. As you conclude your progress in Visual® Lighting, seamlessly return all luminaires, calculation zones, and schedules back to the Revit project to update your file and save your progress. Return to Visual® Lighting again at any time to update your design.

Setup and Startup

Authorization

To run the Visual® Lighting plugin within Revit, you will need to give Revit permission to utilize the plugin and agree to Acuity Brands' Terms and Conditions. Follow the instructions below to download, setup, and run the Visual® Lighting plugin.

1. After downloading the setup file, close any running Revit software before running the installer.
2. Follow the instructions that appear on the installation screen.
3. After installation has been completed, launch Revit.
4. The first time you launch Revit with a new plugin, you will be met with a message alerting you to a new add-in. Select "Always Load" to proceed and dismiss the message for the future.
5. When you launch the plugin inside Revit for the first time, follow the instructions for setting up an SSO account. Create an account using an email address that matches your existing Visual 3D account. If you do not have a Visual 3D account, create one before proceeding.
6. The credentials should persist for a period of time, but if you are ever asked to login again, use the new SSO credentials you just created to proceed.

Startup

To launch the Visual Plugin, first open a project in Revit. A new Acuity Brands tab will appear in the Revit Ribbon Bar. From the Acuity Brands tab, select Design with Visual to launch the plugin.

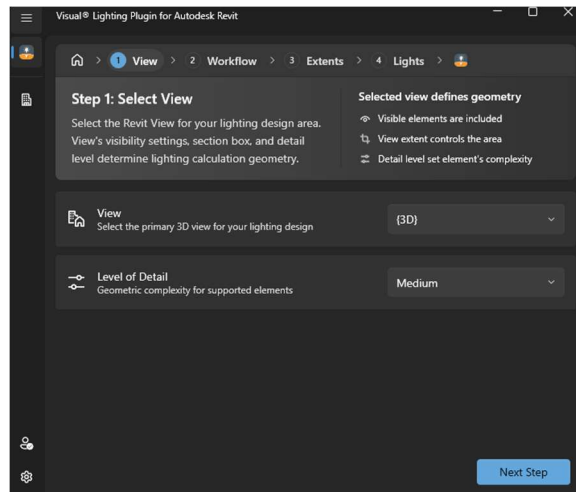


Figure 1. Visual® Lighting Plugin UI

After launching Visual® Lighting a new window will pop up where you can configure the project before loading into Visual. Visual® Lighting will export the project in the current state in Revit. This includes use of the scope box, sectioning, and category visibility. Use the Lighting Design Walkthrough wizard to help configure the project if necessary. (Figure 1) Reducing the scope before exporting to Visual® Lighting can improve performance on larger projects or reduce the complexity while designing. If it is not necessary, you can export the project directly using the Open Visual® button.

Visual® Lighting Interface

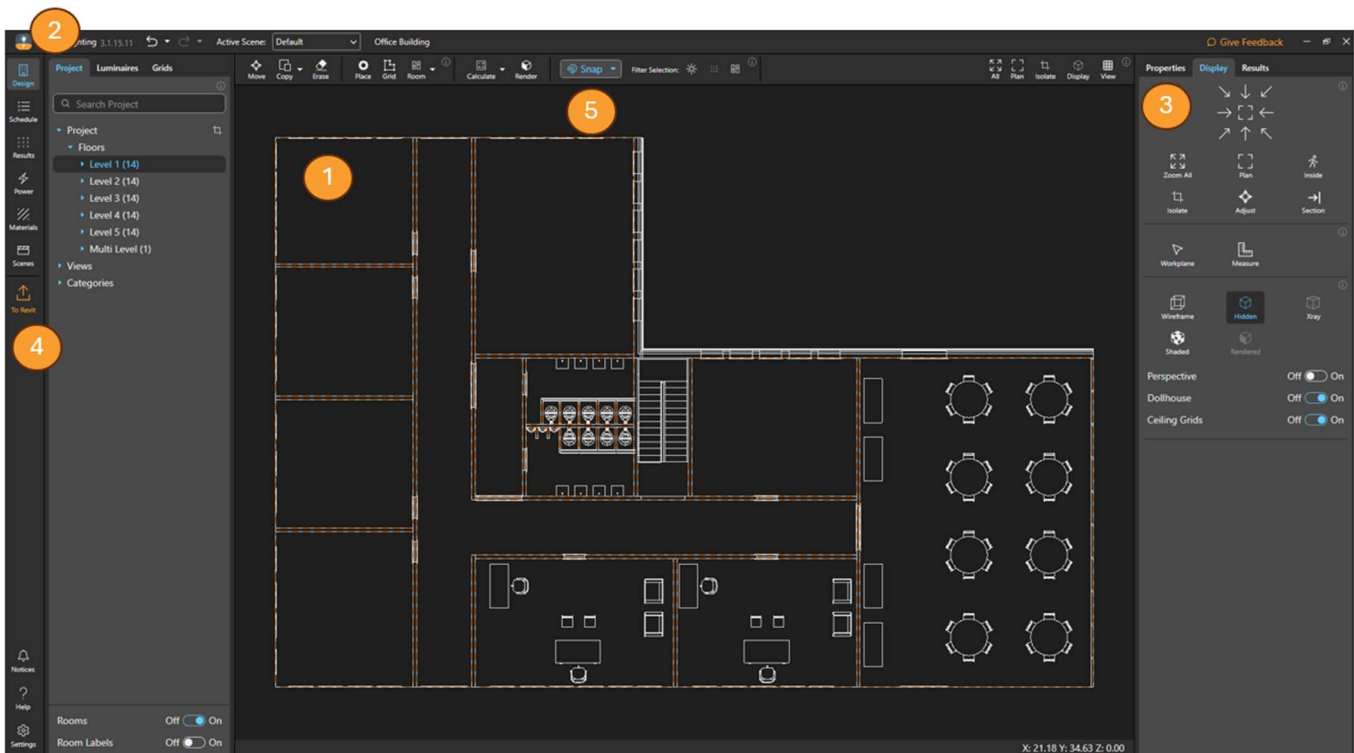


Figure 2. Visual® Lighting Interface

1 – **Design Environment** – Revit projects will load in the matching the last perspective and view of the project in the Revit environment.

2 – The Left Panel contains the **Project Browser**, the **Luminaires** tab, and the **Grids** tab. The **Project Browser** will have a breakdown of each floor and room detected in the Revit project. Categories provide visibility and calculation control over different object categories in the file. Select and place Luminaires from the **Luminaires** tab. Place and manage Calculation Grids from the **Grids** tab.

3 – The Right Panel contains tabs for **Properties**, **Display**, and Calculation **Results**. Select objects with a left click in the design environment to access their **Properties** in the first tab. From the **Display** tab, use the navigation tools to move around the design or create new isolation boundaries, and choose from a range of display modes like Wireframe, Hidden Line, or Shaded mode. From the **Results** tab, view relative calculated results for rooms/floors currently visible in the design environment.

4 – The Main Menu bar on the left provides access to the **Design Environment**, the luminaire **Schedule**, full project **Calculation Results**, auto generated **Power Density** table, **Materials** manager, **Project Info**, and the **Scenes** manager. Use the commands at the bottom to view **Project Settings** or return your work back **To Revit**.

5 – **The Quick Access Toolbar** houses persistent access to basic placement commands for **Luminaires**, **Grids**, and **Rooms**, as well as interactive commands like **Move**, **Copy**, and **Erase**. **Calculate** and **Render** your design. Select the calculation mode using the drop-down menu. Toggle various **Snap** commands for design assistance as well as **Selection Filters**. **Display** and **Navigation** commands are available on the toolbar to assist in situations where their tabs are not active.

Navigating a Project

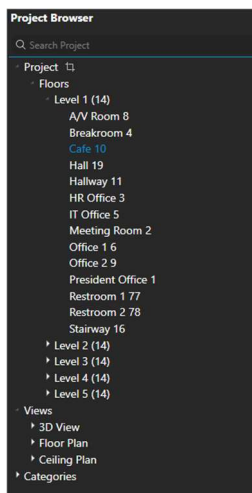


Figure 3. Project Browser

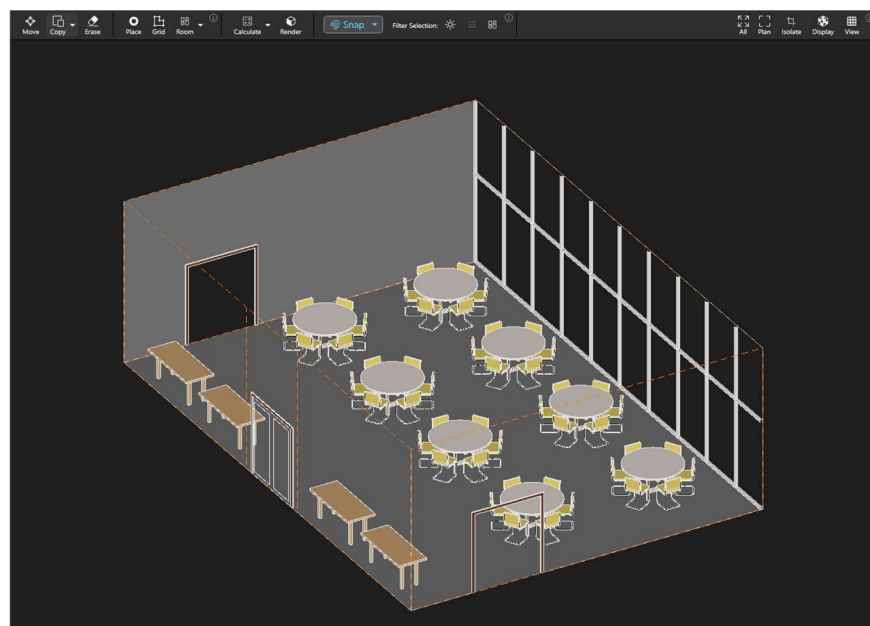


Figure 4. Isolated Room

Project View Structure-NEEDS UPDATING

The project browser will list any rooms and floors detected in the Revit project loaded into Visual® Lighting. Rooms are captured based on *Room Tags or Spaces* that have been placed in the Revit project prior to being loaded in the plugin. With room tags/spaces and floors designated in the Revit project, Visual® Lighting can create isolated views for each of the floors and rooms. Select a Level from the list and the Design Environment will isolate to just that floor. Select a room from the list and an isolated view will be displayed. (Figure 4) New room boundaries and isolation groups can be created using the **Room** command. (Figure 5)

Any Views and Plans saved from Revit will also be available in the Project Browser. Selecting a captured View will convert the project to the correct projection if saved in a Perspective or Ortho mode. To return to a standard Ortho perspective, select the toggle from the Display Tab. (Figure 6)

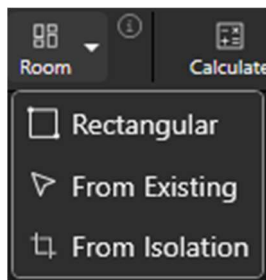


Figure 5. Room Commands

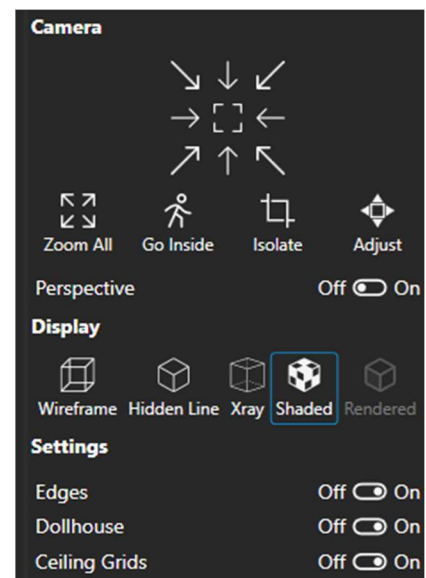


Figure 6. Perspective Toggle (Display Tab)

Custom Isolation, Rooms, and Project Extents

For instances where design boundaries extend beyond existing regions or floors, from the Display tab, the Isolate command can be used to select multiple regions for a specialized view box. Select Isolate, and any region in the drawn selection box will be grouped together in a new temporary isolation view.

To create permanent custom isolations, use the Room command found on the Quick Access Toolbar. Draw a region and specify a height and the new Room will be added to the Project Navigation section, including a new *Visual Regions* section.

To reduce the scope of the project in Visual® Lighting, use the **Edit Project Extents** command. (Figure 7)



Figure 7. Extents Command

At the Project level of the Project Browser, select the Extents icon to enable a controllable View Box to resize the scope of the design. (Figure 8) This change in scope persists while you design until you manually change the

extends again. The **Adjust** command, however, will only temporarily change the scope of your current view, reverting to default when changing views.

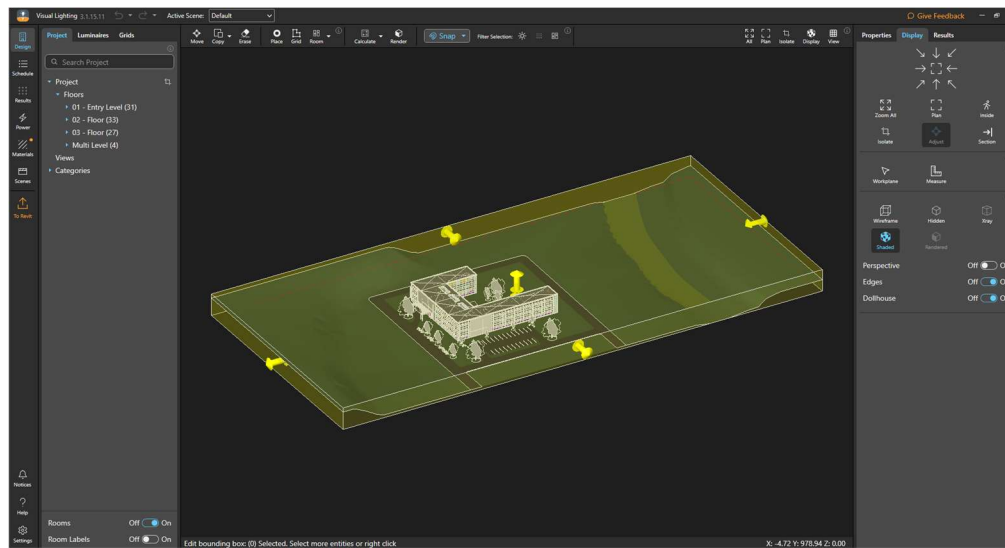


Figure 8. Edit Extents

Display Modes and Camera Controls

From the Display Tab, use the Navigation Cube to select from isometric and elevation views. Use the center box to return to an overhead plan view of the design. The display Settings toggles at the bottom grant additional visibility control over the design. Modify the edge style for better visibility in the design. Turn on/off Dollhouse mode to see through surfaces into a space. Use the Ceiling Grids toggle to change the visibility of Revit Ceiling Grids.

Mouse Commands

The middle mouse button in the design environment will pan around the design. Holding Shift + Middle Mouse button will engage a 3D orbit around the design. Scroll up and down to zoom in and out.

Creating a Schedule

Adding Luminaires

To support different workflows, you can add luminaires to your design in multiple ways. From the Luminaire tab, you can directly search Acuity's library of photometry and add it to your schedule to be placed in the design. (Figure 9)

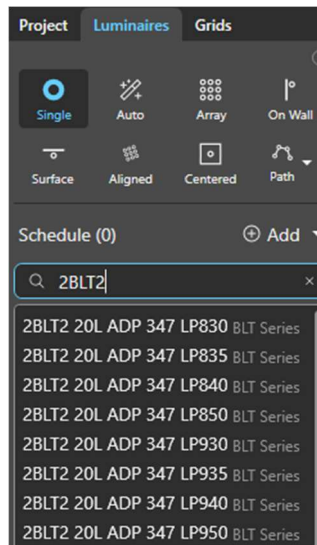


Figure 9. Quick Search

Select the **Add** button to launch the product selection environment. The Product Selection window is divided into 4 sections; **Search**, **Browse**, and **Local**.

Search – Type in product nomenclature to help find a specific series of luminaire options, or use product descriptors to find several products of a similar type (troffer, downlight, linear, etc) Use the filters below the search field to find the luminaire series you need based on product features, application type, mounting information, etc.

Browse – Navigate through the variety of brands under the Acuity banner. Expand Brands into product type, series and available photometry.

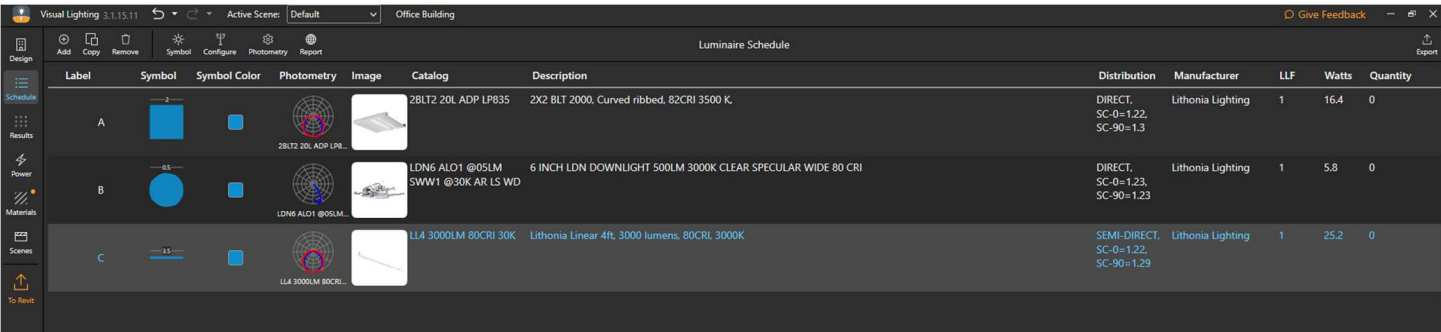
Local – Quickly access IES files stored in local folders. Add any personal folders to the favorites panel. Each folder will have a callout identifying how many IES files are stored in that location.

After selecting the IES file you need, additional information and any available product links will be shown in the right panel. Click **Select** to add the luminaire to your design schedule.

Placeholders

Using the drop-down menu next to the **Add** button, you can select from a list of placeholder models to use in your design. Placeholder models will not have photometry attached but can be placed in the design and later assigned the appropriate photometry from the **Schedule**.

Luminaire Schedule



Label	Symbol	Symbol Color	Photometry	Image	Catalog	Description	Distribution	Manufacturer	LLF	Watts	Quantity
A					2BLT2 20L ADP LP835	2X2 BLT 2000, Curved ribbed, 82CRI 3500 K.	DIRECT, SC-0=1.22, SC-90=1.3	Lithonia Lighting	1	16.4	0
B					LDN6 AL01 @05LM SWW1 @30K AR L5 WD	6 INCH LDN DOWNLIGHT 500LM 3000K CLEAR SPECULAR WIDE 80 CRI	DIRECT, SC-0=1.23, SC-90=1.23	Lithonia Lighting	1	5.8	0
C					LL4 3000LM 80CRI 30K	Lithonia Linear 4ft, 3000 lumens, 80CRI, 3000K	SEMI-DIRECT, SC-0=1.22, SC-90=1.29	Lithonia Lighting	1	25.2	0

Figure 10. Schedule

From the **Main Menu** launch the **Schedule**. (Figure 10) As luminaires are added to your design, they will populate in the schedule. Each luminaire will include a Label, product image (when available), Symbol size and color, Photometric Web preview, Catalog, Description, Distribution, Manufacturer, Light Loss Factor (LLF), Wattage, and Quantity currently placed in the design. Most text fields can be edited to customize the luminaire. *The LLF can even be set to a default value ahead of time in the **Settings** section of the **Main Menu**.*

Select to highlight a row to access the tools in the top toolbar. Copy or Remove luminaires, Edit the product symbol and orientation, or modify the photometry associated with the model.

With the **Symbol** command, you can reshape the volume and shape of the luminaire and reposition the light source associated with the model. Select the components and use the Properties panel on the right to adjust. (Figure 11)

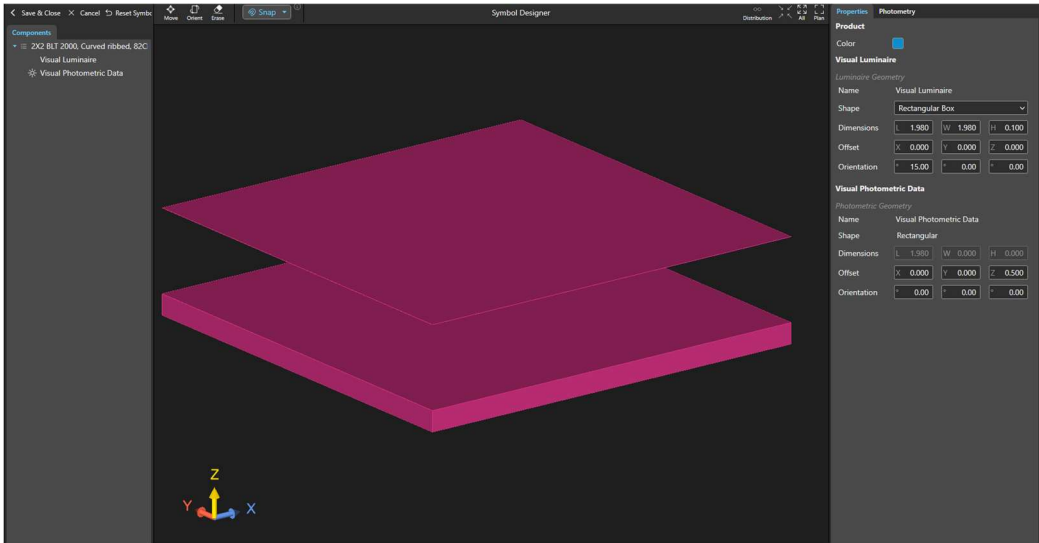


Figure 11. Symbol Editor

The **Photometry** command is used to either replace or add an alternate IES file to the currently selected model. Like Revit luminaires, a single model can hold multiple configurations, supporting multiple assigned IES files. Use the check box next to the IES configuration to make it the active photometric file. (Figure 12).

Visual Lighting 2.115.11

Active Scene: [Default] Office Building

Give Feedback

Design

Schedule

Results

Power

Materials

Scenes

To Result

Add

Copy

Remove

Symbol

Configure

Photometry

Report

Luminaire Schedule

Export

Label	Symbol	Symbol Color	Photometry	Image	Catalog	Description	Distribution	Manufacturer	LLF	Watts	Quantity																					
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<table><thead><tr><th>Photometry</th><th>Catalog</th><th>Description</th><th>Distribution</th><th>Manufacturer</th><th>Lumens</th><th>Wattage</th></tr></thead><tbody><tr><td>☐ </td><td>LDN6 ALO1 @0SLM SWW1 @30K AR LSS WD</td><td>6 INCH LDN DOWNLIGHT 500LM 3000K CLEAR SPECULAR WIDE 80 CRI</td><td>DIRECT, SC-0=1.23, SC-90=1.23</td><td>Lithonia Lighting</td><td>573</td><td>5.8</td></tr><tr><td>☒ </td><td>LDN6 ALO1 @0SLM SWW1 @30K AR LSS WD 90CRI</td><td>6 INCH LDN DOWNLIGHT 500LM 3000K CLEAR SEMI-SPECULAR WIDE 90 CRI</td><td>DIRECT, SC-0=1.23, SC-90=1.23</td><td>Lithonia Lighting</td><td>487</td><td>5.8</td></tr></tbody></table>												Photometry	Catalog	Description	Distribution	Manufacturer	Lumens	Wattage	☐	LDN6 ALO1 @0SLM SWW1 @30K AR LSS WD	6 INCH LDN DOWNLIGHT 500LM 3000K CLEAR SPECULAR WIDE 80 CRI	DIRECT, SC-0=1.23, SC-90=1.23	Lithonia Lighting	573	5.8	☒	LDN6 ALO1 @0SLM SWW1 @30K AR LSS WD 90CRI	6 INCH LDN DOWNLIGHT 500LM 3000K CLEAR SEMI-SPECULAR WIDE 90 CRI	DIRECT, SC-0=1.23, SC-90=1.23	Lithonia Lighting	487	5.8
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Figure 12. Photometry Selection

If luminaires already exist in a Revit project before loading into Visual® Lighting, they will be included in the schedule. However, to ensure that design intent is met within Visual® Lighting, photometry within established Revit luminaires will need to be activated the first time you load into the plugin. Activating an IES file within the model will substitute in a Visual version of the luminaire that matches the size and shape of the luminous volume found in the IES file, ensuring you are designing with the most accurate representation of the luminaire.

The **Configure** command is used for creating pole mounted luminaires for outdoor layouts. Select a from a Preset option to choose the desired configuration. Adjust the Arm Length, Pole Height, and pole visibility. (Figure 13) In the Schedule, pole configurations are captured as an expandable line, accounting for the pole and number of luminaire heads added to the configuration. (Figure 14)

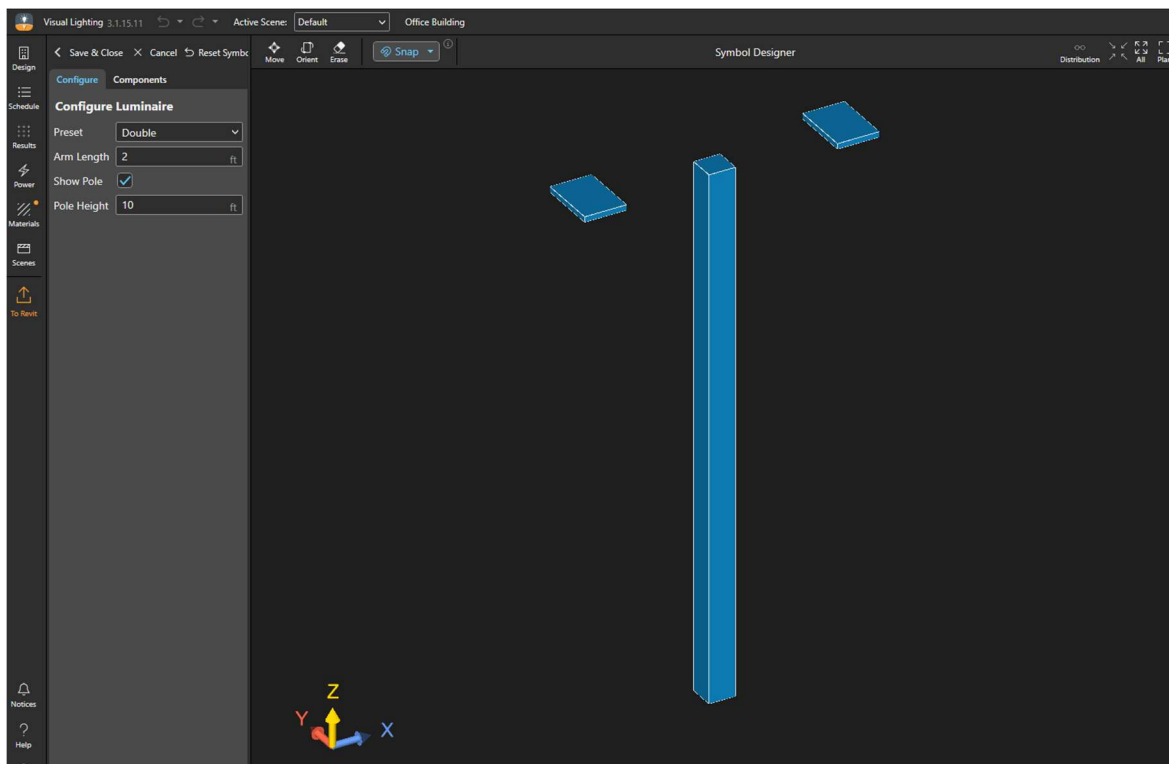


Figure 13. Pole Configuration

Item	Quantity	Unit	Cost
(2) DSX0 LED P1 27K 80CRI T2M	2	Each	66.4
DSX0 LED P1 27K 80CRI T2M	1	Each	33.2
DSX0 LED P1 27K 80CRI T2M	1	Each	33.2

Figure 14. Schedule Listing for Poles

Creating a Layout

Placing Luminaires

Luminaires can be placed using commands on the **Luminaires** tab. Select from the list of placement options to being the command. Within a placement command, choose the desired luminaire from the drop-down menu, and define any placement properties in the panel. Left click to place the luminaire in the design. The options for placement include **Single**, **Auto**, **Array**, **On Wall**, **Surface**, **Aligned**, **Centered**, and **Path**. (Figure 15)

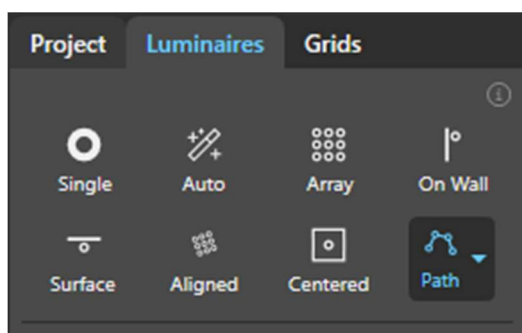


Figure 15. Schedule Listing for Poles

Single – Select and place a luminaire one instance at a time. Use the ceiling options to have the luminaire automatically orient and align with any existing ceiling grids and planes.

Auto – The **AutoLayout** option will create a uniform layout of a selected luminaire, with the intent of hitting a certain design criteria using the Lumen Method for estimates. The AutoLayout command will combine placing luminaires and a calculation zone in one process. After starting the command, choose the desired luminaire and modify its placement properties. Predefine the calculation grid spacing and height and choose a criteria to drive the placement. **Illuminance** will target a specific footcandle level. **Power Density** will limit arrangements by its power usage. **Quantity** will constrain the arrangement to a select number of luminaires. Use the Ceiling drop down to choose whether the AutoLayout should respect an open or gridded ceiling. Like standard arrays, the arrangements can be altered after placement through the properties tab. Arrangements can be set to meet different criteria or target or you can swap product types and update the arrangement to compensate.

Array – Use the **Array** command to create a uniform arrangement of luminaires. Choose to arrange your luminaires by selecting a Type, by quantity or by spacing. Change the positioning of the arrangement within your boundary by choosing an option from the Position dropdown. Arrangements can be modified later by selecting a luminaire and altering the properties.

On Wall – Use the **On Wall** command to place a luminaire onto a selected surface, alongside the side of a luminaire model. After selecting a wall or surface to place a luminaire, the luminaire will be “locked in” to the selected plane. Use the Offset and Height to refine the location of the luminaire on the selected surface.

Surface – Use the **Surface** command to place a luminaire flat against the selected surface.

Aligned – Similar to the Array command, the **Aligned** command will create a uniform arrangement for a selected luminaire, choosing the type and positioning in the properties. When initiating the placement, first choose an angle to orient the arrangement to the desired region.

Centered – Choose two points in a design and place the luminaire in the center of the two locations.

Path – Draw a series of line segments and have a selected luminaire populate at designated intervals along the path. Luminaires can change orientation automatically with the direction of the path or be set to face a single direction. Use the drop-down to change the path placement style from a straight line to an arc or circle.

Adjusting Layouts

Selecting a luminaire or luminaire arrangement will open the Properties Tab. Adjust the orientation or height of luminaire, swap product types, or enable the Orient command for precision repositioning. The Display options at the bottom of the Luminaire tab provide additional control over the luminaires in the design. (Figure 16).

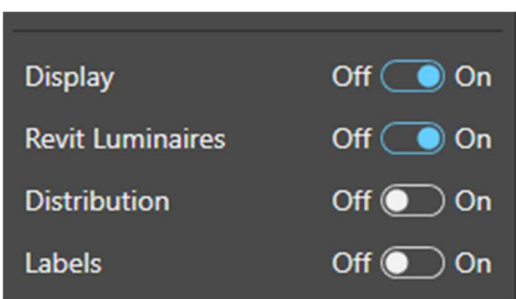


Figure 16. Luminaire Display Options

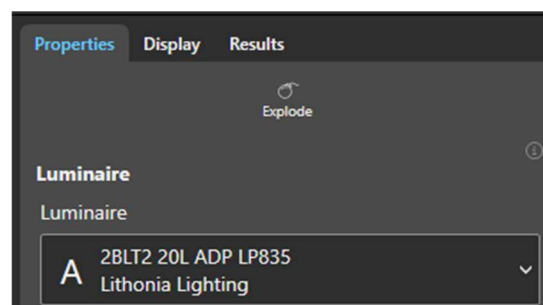


Figure 17. Explode Arrangements

The Display toggle will hide all luminaires in the design. Revit Luminaires can be toggled on/off specifically in the design. Use the Distribution option to view photometric webs in the design. Labels will enable a visualization of the assigned label for each luminaire.

For Arrangements, to make individual changes to luminaires, they must first be Exploded. Select an arrangement and choose the Explode option found in the properties tab. (Figure 17)

To precisely orient a luminaire, use the Orient command found in the luminaire properties. When enabled, manipulate the 3 axis of rotation to modify the luminaires. (Figure 18) Use the command properties for precision control. (Figure 19)

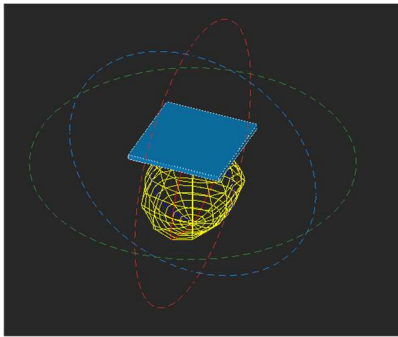


Figure 18. Axis Selection Orientation

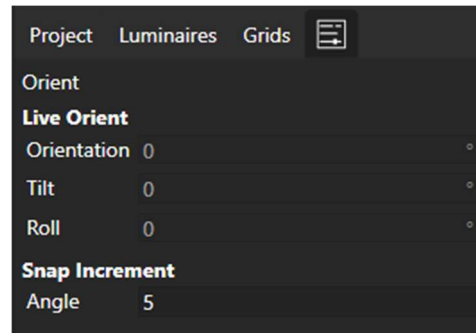


Figure 19. Precision Orientation

Calculating and Viewing Results

Placing Grids

Grids can be placed using commands on the **Grids** tab. Select from the list of placement options to being the command. (Figure 20)

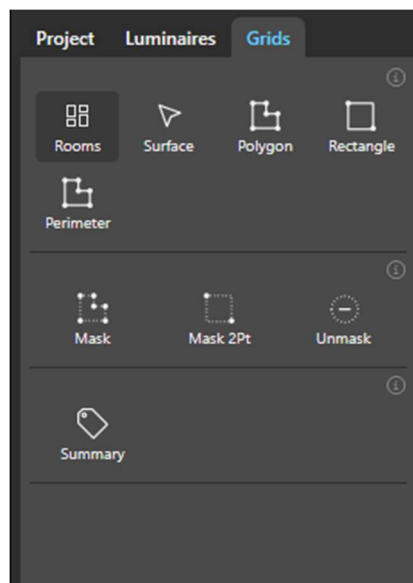


Figure 20. Grids Tab

Use available placement options to create grids in your design.

Begin the **Rooms** – Grid command to select a room boundary in the design and confirm with a right click to place a calculation grid that matches the boundary and settings defined during placement. The name of the Grid will also match the room it is placed in.

The **Surface** command can be used to select a surface and confirm with a right click to place a calculation grid matching the orientation and boundary of a selected geometric surface.

For more customized placement, the **Polygon** and **Rectangle** commands can add specifically sized and shaped grids to the design.

Perimeter grids place a vertical grid along a designated path. Set the height of the zone, expected height of luminaires and density of points. This is ideal for determining trespass results.

Calculating

To begin the calculation process, select the **Calculate** command from the **Quick Access Toolbar**. A dialog box will pop up showing the progress of the calculation command and close when complete. (Figure 21)

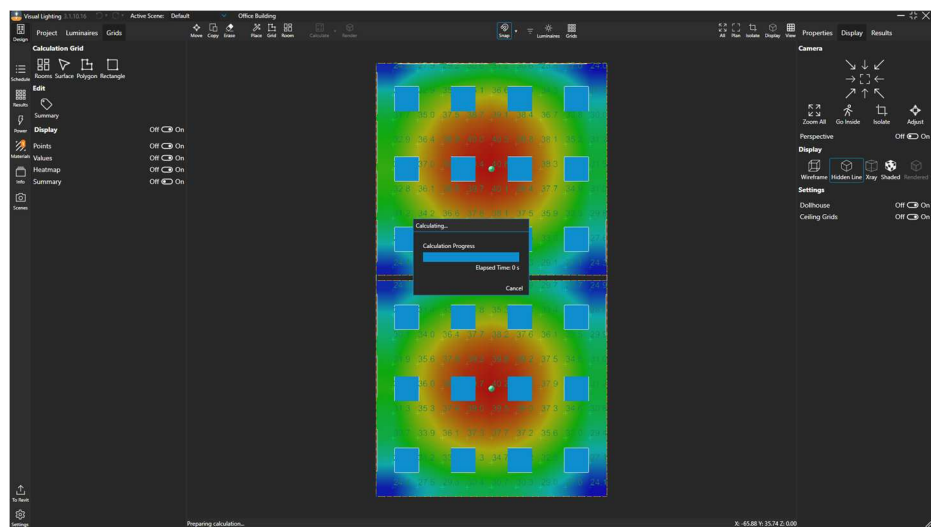


Figure 21. Calculating

After running the calculation command, you can review the quick results on the **Results** tab of the right panel. (Figure 22)

Properties Display Results			
Results			
Grid	Avg (Tar.)	Max	Min
Breakroom 4	32.9 (30) fc	39.8 fc	23.8 fc
HR Office 3	33.3 (30) fc	40.2 fc	24.1 fc
IT Office 5	29.7 (30) fc	36.2 fc	20.3 fc
President Office 1	33.7 (30) fc	40.8 fc	24.0 fc

Figure 22. Quick Results

Calculations can be restricted to the regions currently in isolation, so calculations aren’t run for the entire project because of changes made in a singular location. To perform a localized calc, view any floor or region in isolation and run the **Calculate** command. The process will only run for the area currently in view, while not disrupting any previously calculated or uncalculated areas. To calculate the entire project, return to the Project level of navigation and run the command.

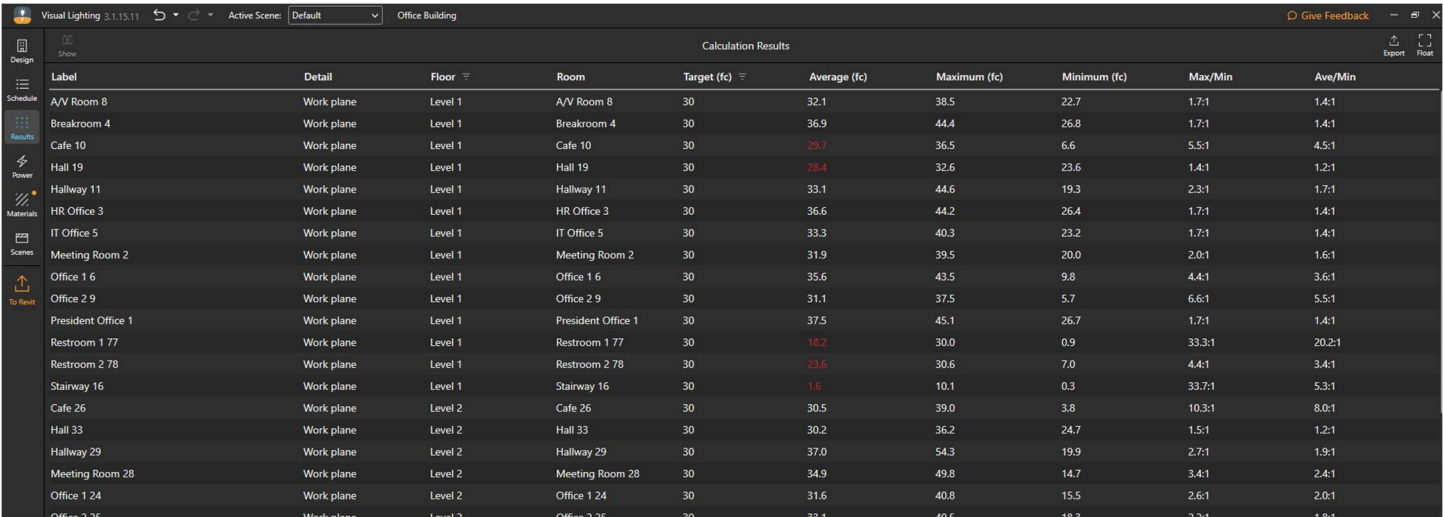
Calculation results will also only “stale” per region as changes are made. Modifying luminaires or arrangements in one room will not disrupt calculations made in a disconnected area.

In the Design Environment, additional **Display** options can be modified on the **Grids** tab. Globally control the visibility of all grids with the Display toggle. Turn off Points and Values or enable a pseudo color heat map overlay on the grids. The Summary option provide a quick output review on each zone, making it easier to quickly recall key values.

Results

After running the **Calculate** command, use the Results tab to display the Average, Max, and Min values for any room or floor currently in the Design Environment. Grids that were assigned a target value will include that value in the Average for comparison, highlighting which rooms may need additional design. (Figure 22)

To review the full project results, select the **Results** section from the **Main Menu**. (Figure 23)



Calculation Results									
Label	Detail	Floor	Room	Target (fc)	Average (fc)	Maximum (fc)	Minimum (fc)	Max/Min	Ave/Min
A/V Room 8	Work plane	Level 1	A/V Room 8	30	32.1	38.5	22.7	1.7:1	1.4:1
Breakroom 4	Work plane	Level 1	Breakroom 4	30	36.9	44.4	26.8	1.7:1	1.4:1
Cafe 10	Work plane	Level 1	Cafe 10	30	29.7	36.5	6.6	5.5:1	4.5:1
Hall 19	Work plane	Level 1	Hall 19	30	28.4	32.6	23.6	1.4:1	1.2:1
Hallway 11	Work plane	Level 1	Hallway 11	30	33.1	44.6	19.3	2.3:1	1.7:1
HR Office 3	Work plane	Level 1	HR Office 3	30	36.6	44.2	26.4	1.7:1	1.4:1
IT Office 5	Work plane	Level 1	IT Office 5	30	33.3	40.3	23.2	1.7:1	1.4:1
Meeting Room 2	Work plane	Level 1	Meeting Room 2	30	31.9	39.5	20.0	2.0:1	1.6:1
Office 1 6	Work plane	Level 1	Office 1 6	30	35.6	43.5	9.8	4.4:1	3.6:1
Office 2 9	Work plane	Level 1	Office 2 9	30	31.1	37.5	5.7	6.6:1	5.5:1
President Office 1	Work plane	Level 1	President Office 1	30	37.5	45.1	26.7	1.7:1	1.4:1
Restroom 1 77	Work plane	Level 1	Restroom 1 77	30	18.2	30.0	0.9	33.3:1	20.2:1
Restroom 2 78	Work plane	Level 1	Restroom 2 78	30	23.6	30.6	7.0	4.4:1	3.4:1
Stairway 16	Work plane	Level 1	Stairway 16	30	1.6	10.1	0.3	33.7:1	5.3:1
Cafe 26	Work plane	Level 2	Cafe 26	30	30.5	39.0	3.8	10.3:1	8.0:1
Hall 33	Work plane	Level 2	Hall 33	30	30.2	36.2	24.7	1.5:1	1.2:1
Hallway 29	Work plane	Level 2	Hallway 29	30	37.0	54.3	19.9	2.7:1	1.9:1
Meeting Room 28	Work plane	Level 2	Meeting Room 28	30	34.9	49.8	14.7	3.4:1	2.4:1
Office 1 24	Work plane	Level 2	Office 1 24	30	31.6	40.8	15.5	2.6:1	2.0:1
Office 2 35	Work plane	Level 2	Office 2 35	30	22.1	40.5	18.2	2.3:1	1.8:1

Figure 23. Project Results

Additional details can be found in the full project **Results**. Values also include a Max/Min and Avg/Min uniformity ratio. Use the **Below Target** filter in the Target column to limit the results to just rooms that fall below the target footcandle level. Select a row and use **Show** to quickly open that room in isolation.

Power Density

From the **Main Menu**, select the **Power** section to open the Power Density table. As luminaires are placed in a design, the power density value is populated automatically in the Power Density table. As luminaires arrangements are modified or types changed, the table will update accordingly. (Figure 24)

Room	Floor	Watts/ft²	Quantity	Area ft²	Total Watts
Private Office 20	Level 2	0.46	9	322.09	147.33
Office 4 21	Level 2	0.45	9	328.63	147.33
Office 3 22	Level 2	0.45	9	328.63	147.33
Private Office 23	Level 2	0.37	9	397.03	147.33
Office 1 24	Level 2	0.31	9	474.36	147.33
Office 2 25	Level 2	0.34	9	429.77	147.33
Cafe 26	Level 2	0.24	21	1,424.72	343.77
Presentation Room 27	Level 2	0.35	9	423.98	147.33
Meeting Room 28	Level 2	0.31	12	639.61	196.44
Hallway 29	Level 2	0.46	27	960.07	441.99
Private Office 34	Level 3	0.46	9	322.09	147.33
HR Office 35	Level 3	0.45	9	328.63	147.33

Figure 24. Power Density

Rendering

Use the **Render** command on the **Quick Access Toolbar** to begin rendering the current Design Environment. A dialog box will launch showing the progress of the process. When it is completed, the Rendered Display mode will be active, showing the newly rendered region. If regions are rendered in isolation, returning to a higher level of the project will display a hybrid render mode, showing which regions have been processed by the renderer and which have not. (Figure 25) An up-to-date calculation is always required before rendering can process. If one has not been run yet, starting the rendering process may initiate a calculation phase first automatically.

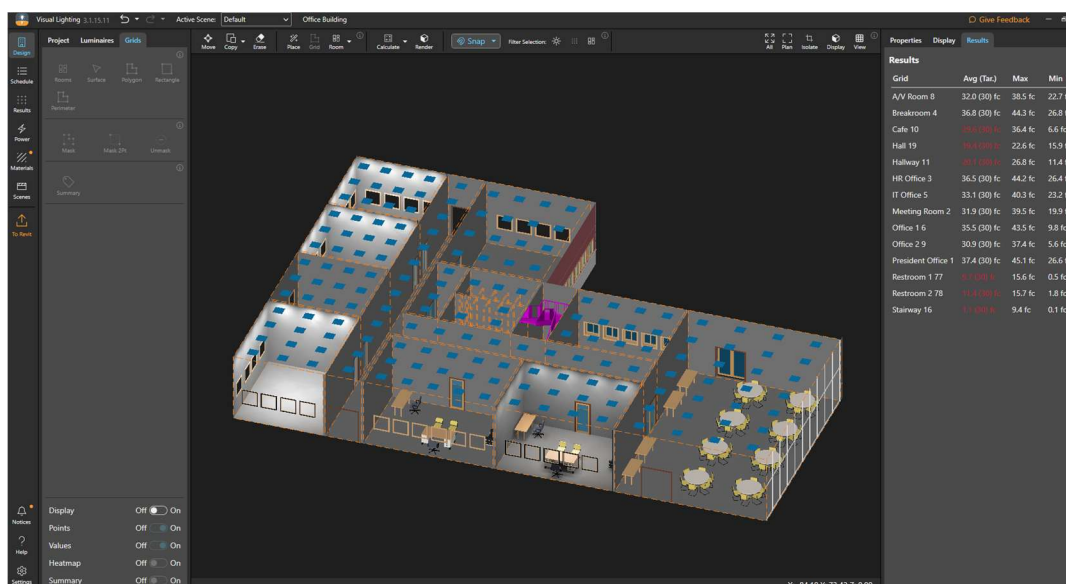


Figure 25. Hybrid Render Display

Scenes

Scenes can be used in Visual® Lighting to generate separate layouts for your general lighting and emergency calculations. From the **Main Menu**, select the **Scenes** option to open the Scenes Manager. (Figure 26) Use the **Active Scene** drop-down at the top of the menu to switch to the Emergency scene.

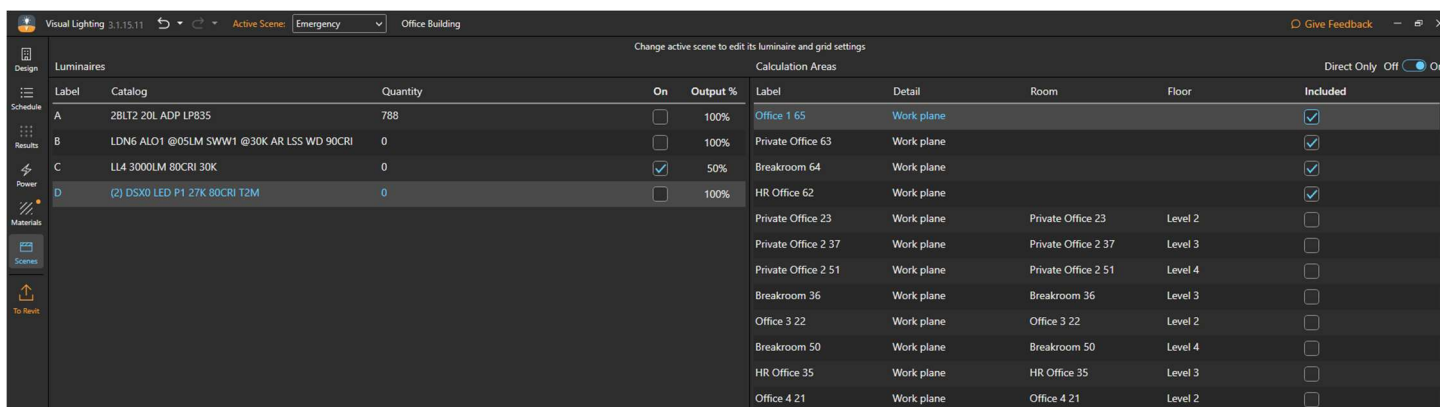


Figure 26. Scene Manager

Select the **Luminaires** and the calculation **Grids** that should contribute to the Emergency calculation and modify the output of the luminaire as necessary. Returning to the Design, with Emergency set as the **Active Scene**, run the **Calculate** command to generate new results.

The Active Scene drop down selection will determine which results are seen in the Design Environment, the Quick Results tab, the luminaire Schedule, and the Project Results table. In each of those, swap the Active Scene to see specific layouts, luminaires and results per scene. Calculation results will also be stored in each scene, so changes or calculations being run in one, will not stale results in another.

Materials

Visual® Lighting captures any materials associated to objects in the Revit project. They can be reviewed in the **Materials** section of the **Main Menu**. For each material, a color and reflectance percentage based on that color are assigned. Double click in the field to enter a new Reflectance Percentage for a material. This value will affect calculations in the design but will not alter the properties of the material when returning to Revit. These values will also persist whenever the project is returned to Visual® Lighting.

New Materials can also be created using the **Add** command at the top of the window. Rename and assign the necessary values to the new material in the list.

Within the design, materials associated with surfaces can be overwritten through the surface properties. Select a surface with the Shaded Display mode active to view properties. Use the Override field to replace the material with an alternate option. This change will affect calculations in Visual® Lighting but not make changes when returned to the Revit project. This change will also persist whenever the project is returned to Visual® Lighting. Surfaces can also be assigned to other categories in the project, for simpler group control.

The **Auto-assign** command can replace the detected walls, floors, and ceilings in the design with new materials set to a designated reflectance level. (Figure 27) This makes for each assignments across a project for calculating. Revert to original materials/reflectances at any point using the **Reset** command.

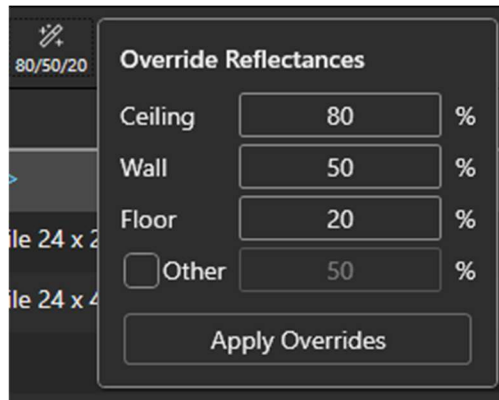


Figure 27. Auto-assign Reflectances

Categories

The categories of objects are captured when projects are imported from Revit. They are organized under the **Project Browser**. For categories that make up a large portion of the objects in the project, a small flame icon will identify them on the list. (Figure 28) Hover over the icon to see precisely the impact on the design.

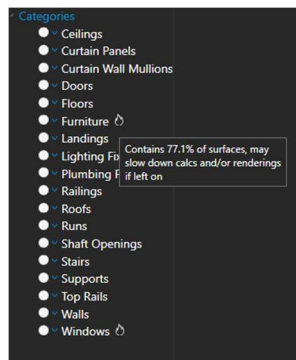


Figure 28. Categories Figure

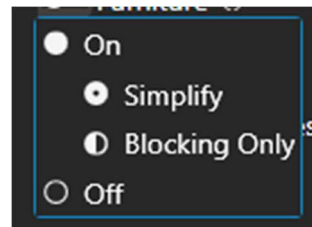


Figure 29. Visibility and Calculation Control

Each Category also has a drop-down to provide individual control over how those objects impact calculation and rendering. (Figure 29). Categories that are set to **On** will be visible in the design and fully impact calculation. Set objects to **Simplify** to reduce the complexity of the objects during rendering, improving calculation time. **Blocking Only** will include the object when calculating the space, to generate appropriate shadows, but without the object itself rendered in the image. It will appear flat compared to the rest of the environment. Objects that are **Off** will not be included in calculations or the rendering and will not appear at all in the design.

Updating Revit Projects

Return to Revit

To return any progress made in the Visual® Lighting plugin back to Revit, select **To Revit** from the bottom of the **Main Menu**. The Visual® Lighting window will close and the dialogue box enforcing the Revit lockdown will change. Select Continue to return the project updates to Revit. Revit will process any added luminaires, calculation zones, and reports returned from Visual® Lighting.

Revit Deliverables

After returning to Revit, the plugin UI will list all changes that can be brought back into the design. It will list Luminaires and Calculation Results for each scene generated in the plugin. (Figure 30) Select **Apply** to begin the import process.

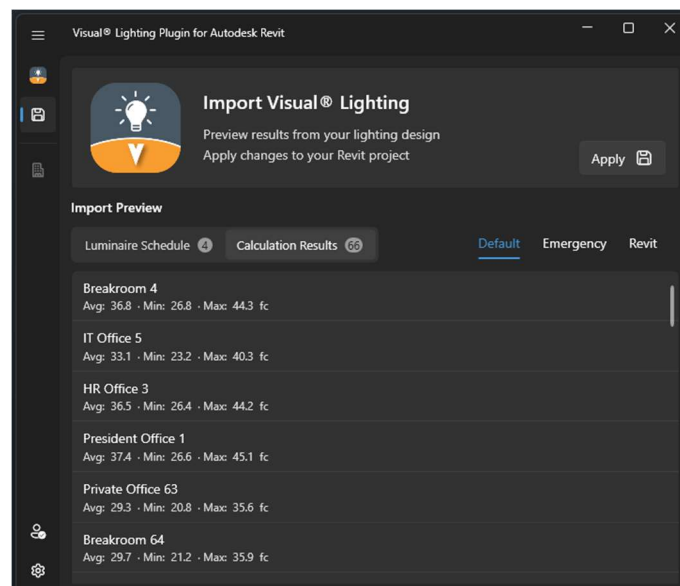


Figure 30. Return Deliverables to Revit

After returning objects to Revit, new options will be displayed on the Acuity Brands tab. Visual® Lighting supports a full round-trip workflow, to continually be able to refine your design. The **Active Scene** menu controls which elements are visible in the design. Choose to show Luminaires and Results from any scenes generated as well as any pre-existing Revit models if desired. The Calculations menu controls the visibility of calculation grids and results as well changes the display mode from points to a heatmap. (Figure 31)

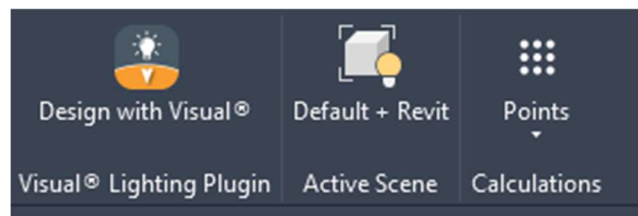
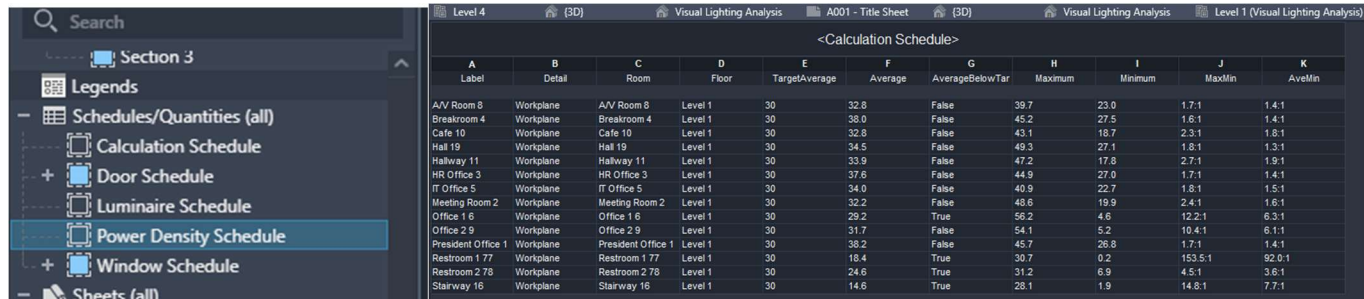


Figure 31. Return Deliverables to Revit

Visual Luminaires that are returned are fully functional Revit luminaires, categorized as *Lighting Fixtures*. These models contain IES files selected in Visual® Lighting as well as electrical connectors for creating circuits.

Visual® Lighting will also return prebuilt luminaire schedules and calculation reports. These are added to the Schedules/Quantities section in Revit's project manager. These can be selected and placed in Revit print pages. Schedules and Results are created for each scene brought back into Revit. (Figure 32)



The screenshot shows the Revit interface. On the left, the 'Project Manager' pane is open to 'Section 3' and 'Legends'. Under 'Schedules/Quantities (all)', the following items are listed: 'Calculation Schedule', 'Door Schedule', 'Luminaire Schedule', 'Power Density Schedule', and 'Window Schedule'. The 'Calculation Schedule' is selected. On the right, a table titled '<Calculation Schedule>' displays lighting analysis data for various rooms.

A	B	C	D	E	F	G	H	I	J	K
Label	Detail	Room	Floor	TargetAverage	Average	AverageBelowTar	Maximum	Minimum	MaxMin	Avellin
A/V Room 8	Workplane	A/V Room 8	Level 1	30	32.8	False	39.7	23.0	1.7:1	1.4:1
Breakroom 4	Workplane	Breakroom 4	Level 1	30	38.0	False	45.2	27.5	1.6:1	1.4:1
Cafe 10	Workplane	Cafe 10	Level 1	30	32.8	False	43.1	18.7	2.3:1	1.8:1
Hal 19	Workplane	Hal 19	Level 1	30	34.5	False	49.3	27.1	1.8:1	1.3:1
Hallway 11	Workplane	Hallway 11	Level 1	30	33.9	False	47.2	17.3	2.7:1	1.9:1
HR Office 3	Workplane	HR Office 3	Level 1	30	37.6	False	44.9	27.0	1.7:1	1.4:1
IT Office 5	Workplane	IT Office 5	Level 1	30	34.0	False	40.9	22.7	1.8:1	1.5:1
Meeting Room 2	Workplane	Meeting Room 2	Level 1	30	32.2	False	48.6	19.9	2.4:1	1.8:1
Office 1 6	Workplane	Office 1 6	Level 1	30	29.2	True	56.2	4.6	12.2:1	6.3:1
Office 2 9	Workplane	Office 2 9	Level 1	30	31.7	False	54.1	5.2	10.4:1	6.1:1
President Office 1	Workplane	President Office 1	Level 1	30	38.2	False	45.7	26.8	1.7:1	1.4:1
Restroom 1 77	Workplane	Restroom 1 77	Level 1	30	18.4	True	30.7	0.2	153.5:1	52.0:1
Restroom 2 78	Workplane	Restroom 2 78	Level 1	30	24.6	True	31.2	8.9	4.5:1	3.6:1
Stairway 16	Workplane	Stairway 16	Level 1	30	14.6	True	28.1	1.9	14.8:1	7.7:1

Figure 32. Schedules and Reports

Support and FAQ

Software Support

For any questions that you may have while running Visual® Lighting, please reach out to our support channel and VisualSupport@AcuityBrands.com

FAQ

Q: Do I need Revit to access this plugin?	A: Yes. Users require an active license for Revit.
Q: Which versions of Revit are supported?	A: The plugin will work with any currently Autodesk supported version of Revit.
Q: Can I use this with Revit LT?	A: No, unfortunately Revit LT does not support plugins, which is how Visual® Lighting works.
Q: Can I use this tool for outdoor lighting calculations?	A: Local exterior and area lighting are supported by this plugin. This includes pole mounted area lights, wall packs, and bollards. Floodlighting, Roadway, and Tunnel are not supported currently.
Q: What kind of specs do I need to run Visual® Lighting?	A: We recommend using the same minimum specs recommended to run Autodesk Revit. Visual will not require any further capabilities.
Q: Can I print results from Visual Lighting?	A: No. Luminaires and Calculation results added to designs in Visual Lighting are meant to be sent back to Revit, where they can be applied to documentation.

<i>Q: If I already bought a Visual license, do I need a new one for the plugin?</i>	A: Yes. The Revit plugin is a separate license than the legacy Visual Lighting software. There are separate tabs to manage those licenses on your account page.
<i>Q: Will I need to renew my license for the plugin?</i>	A: Yes. Like the legacy license model, it is secured yearly and can be managed from your account on the Visual-3D website.