

## Using the RevitWorks Lighting Families

Documentation for the RevitWorks lighting families.

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### Special Features

All of the RevitWorks Lights have additional features above and beyond out-of-the-box (OOTB) standard Revit lights; making them the perfect starting point for all your companies' lighting fixture requirements. In particular:

1. All lighting families are face based to ensure they don't require ceilings to be placed (i.e. User has the option of placing lights on the underside of beams, roofs or on work planes etc.)
2. They work on any vertical or horizontal surface.
3. The Premium version comes with an automated sloped-ceiling (and wall) solution for fixture symbols to still show in ceiling plans.
4. They come with automatic wall-ceiling symbol interchange if placed on wall instead of ceiling.
5. If rotated 90 ° on walls (i.e. placed vertically instead of horizontally) symbols still show correctly.
6. Initial placement of wiring defaults to the centre of the ceiling light fittings (it normally defaults to extent of fitting), allowing for efficient, neat and tidy wiring diagrams.
7. Lights snap to ceiling grids.
8. All useful parameters are schedulable.
9. Come preloaded with generic IES files for better rendering.
10. Cut-plane extension parameters included to allow low wall fittings to be shown on ceiling plans.

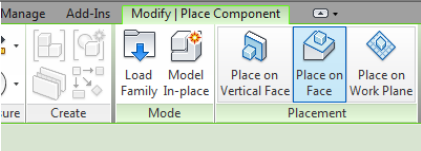
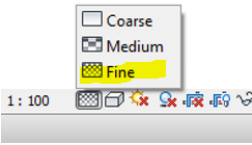
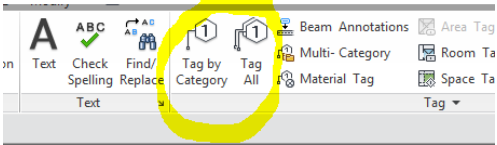
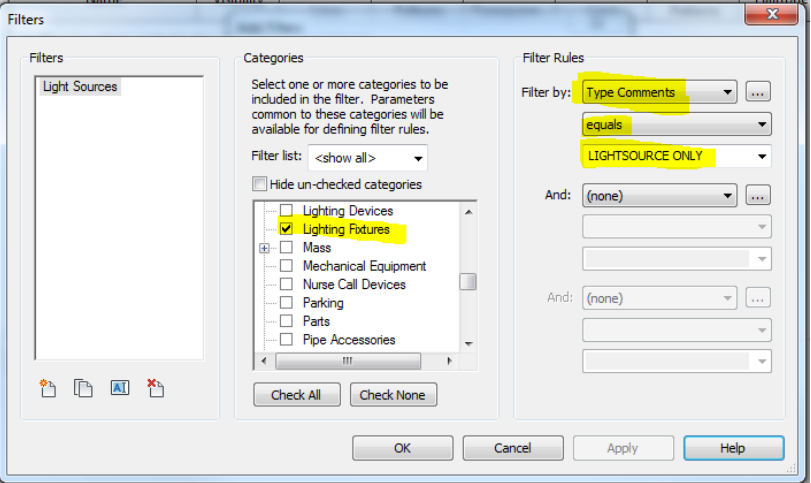
Because of the methodology required to create the above special-features, the lights work in a prescribed way which needs to be understood and taken on board.

Refer to the Lighting Specification documents for explanations of Object Styles, Detail Levels and all parameters as well as other relevant information.

# General Use

- The RevitWorks Lighting Store Lighting families are delivered within a Revit project within 2015 format. Open up the project in Revit and either save out the families to your library or “Edit Family” and then load into your current project
- Use **Standard lights** to place lights on to **vertical** and **horizontal surfaces**
- (Premium Version Only) Use **Sloping Containers** to place lights on to **sloping surfaces** (*can't find them? Sloping Containers are Generic Models*)
- **Lighting Fixture Detail Level Summary:**
  - **No models in Coarse** (model shows in Medium and Fine)
  - **No symbols in Fine** (symbols shows in Medium and Coarse)

## Using the Standard Lights:

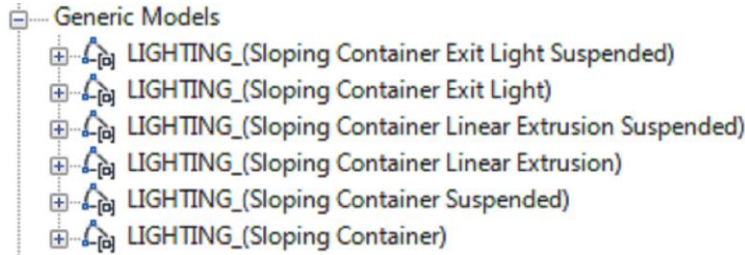
<p>1. <b>To place light</b></p> <p>Use standard Revit methods to place a light</p> <p>Revit will default to try to place the light onto a vertical surface - select "Place on Face" instead (unless you want it on a vertical wall)</p>	
<p>2. <b>To Tag Lights</b></p> <p>It is important to tag the 3d modelled part of the light fitting, not the 2d symbol. If you temporarily change the views Detail Level to “Fine” the 2d symbol will be turned off and it will be easier to select the 3d light fitting</p> <p>You will also need to create a view filter and apply it to your visibility graphics to turn off the light source families, otherwise you will be tagging all the nested light sources.</p> <p>Once above has been done, Tag by Category (or Tag All to tag all the light fittings in your view)</p>	<p><b>Detail Level:</b></p>  <p><b>Tagging:</b></p>  <p><b>View Filters:</b></p> 

# Using the Sloping Container Lights (Premium Version only):

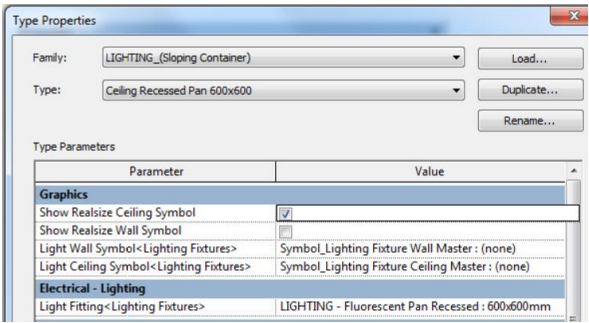
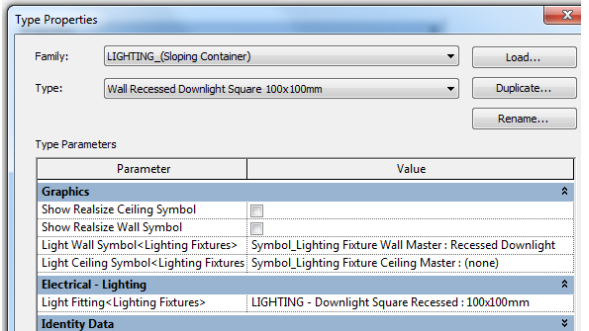
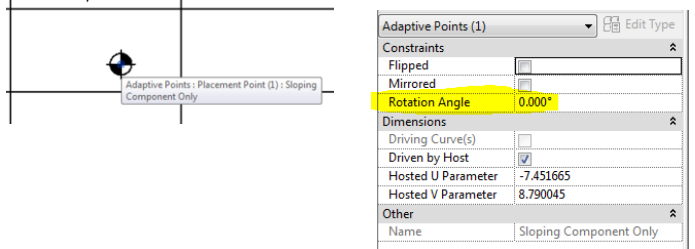
When placing Revit light families on sloping walls, floors, beams, ceilings or any other sloping objects there are two major limitations for out-of-the-box (OOTB) Revit lights:

1. If the light follows the slope of the object it is placed on (i.e. recessed downlights) symbols do not show in floor plans or ceiling plans.
2. There is no easy way of placing a light fitting vertically (i.e. a pendant) since light fittings do not have an "Always Vertical" tickbox (unlike some other categories).

To overcome both of these limitations, adaptive generic model "sloping containers" are included within the RevitWorks Premium Lighting. These containers can be placed on sloping objects and the lights automatically act as expected.

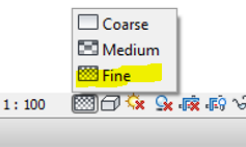
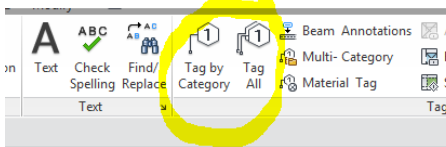
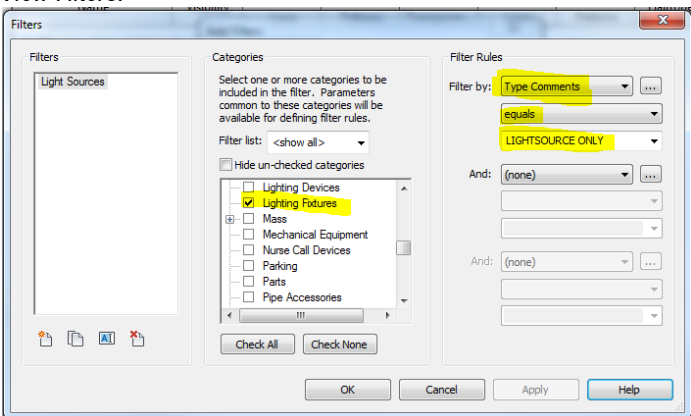


For these to work, all the RevitWorks lights and symbols are "Shared" so that when inserted into a project they can be selected within family type parameters. Please note that these components act slightly differently in the project and therefore new methodologies are required to manipulate the lights on sloping objects.

<p><b>1. To Setup a new sloping container light:</b></p> <p>Find one as similar as possible, duplicate and create a new "type"</p> <p>Select correct fitting and symbol.</p> <p>Make a Wall and Ceiling version.</p> <p>Ensure you have correct symbols ticked/unticked and selected –in the examples shown to the right the ceiling pan fitting just has the realize ceiling symbol showing, whereas the wall recessed downlights need the correct wall light symbol selected</p> <p><b>If the fixture has a "real size symbol" within it (i.e. fluorescent pan fittings, pendant lights,) then the Light Ceiling Symbol needs to be set to (none). For the Light Wall Symbol you need to set it to just the symbolic part of the symbol (i.e. Baseline or recessed.)</b></p> <p><b>Hence start off with one similar so you don't need to change these parts of the families and can follow the logic easier.</b></p>	<p><i>Ceiling Pan Fitting Example:</i></p>  <p><i>Wall Recessed downlight Example:</i></p> 
<p><b>2. To Rotate sloping container lights:</b></p> <p>Hover over the light until the adaptive point is highlighted, select and change its rotation parameter.</p>	

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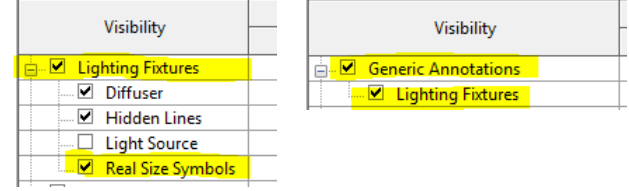

(Using the Sloping Container Lights continued....)

<p><b>3. To Tag sloping container lights:</b></p> <p>It is important to tag the 3d modelled part of the light fitting, not the 2d symbol. If you temporarily change the views Detail Level to "Fine" the 2d symbol will be turned off and it will be easier to select the 3d light fitting</p> <p>You will also need to create a view filter and apply it to your visibility graphics to turn off the light source families, otherwise you will be tagging all the nested light sources.</p> <p>Temporarily turn off the "Generic Models" category so the sloping container doesn't get tagged. (otherwise you will need to use &lt;tab&gt; to select the light fitting if individually tagging).</p> <p>Once above has been done, Tag by Category (or Tag All to tag all the light fittings in your view)</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>Detail Level:</b></p>  </div> <div style="width: 45%;"> <p><b>Tagging:</b></p>  </div> </div> <p><b>View Filters:</b></p> 
<p><b>4. To Wire sloping container lights:</b></p> <p>There are a variety of methods, but our recommendation is to (refer above for reasons):</p> <ol style="list-style-type: none"> <li>1. Temporarily change the views detail level to fine.</li> <li>2. Temporarily turn off Generic Models category.</li> <li>3. Select each light, hold down the &lt;CTRL&gt; key and select more lights, then hit the "Power" tool</li> </ol>	
<p><b>5. To Change sloping container lights:</b></p> <p>Delete the existing light and insert the new "Correct" one</p>	<p><i>Revit does not allow one to swap families if they have a "family type" parameter as well as an electrical connector within them.</i></p>

## Troubleshooting

### Light gone missing in plan?

Common Causes:

<p><b>1. Check Visibility Graphics:</b></p> <p>Lighting Fixtures and Generic Annotations should be on <i>including</i> the symbol subcategories as shown:</p>	
<p><b>2. Ensure detail level of view is correct:</b></p> <p>Course &amp; Medium: Symbol should show</p> <p>Medium &amp; Fine: Modelled elements should show.</p>	

(Continued)

(Troubleshooting continued...)

<p><b>3. Check the views view range and phasing are correct.</b></p> <p>Especially important where you have sloping ceilings: If the bottom of the sloped ceiling is within the view range then the whole ceiling will show – but not the lights which are on that ceiling but beyond the view range</p> <p><i>Hint: If a wall light is below (or above) the required view range, turn on the "cut plane extensions" on the light and amend the values until it shows correctly:</i></p>	
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**Light gone missing in 3d/ elevations/ sections?**

Common Causes:

<p><b>1. Check Visibility Graphics:</b></p> <p>Lighting Fixtures category should be on.</p>																																						
<p><b>2. Ensure detail level of view is on "Fine"</b></p> <p>The light fixture modelled elements only show if the detail level is set to "Fine" or "Medium"</p> <p>If it is set to medium, symbolic components of the lights will show as well (which will be unwanted)</p>	<p><i>Tip: Ensure that in all 3d views, elevations and sections, the light fixtures category has the detail level overridden always set to fine:</i></p> <table border="1" data-bbox="794 1055 1505 1151"> <thead> <tr> <th rowspan="2">Visibility</th> <th colspan="3">Projection/Surface</th> <th colspan="2">Cut</th> <th rowspan="2">Half-tone</th> <th rowspan="2">Detail Level</th> </tr> <tr> <th>Lines</th> <th>Patterns</th> <th>Transparency</th> <th>Lines</th> <th>Patterns</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> Lighting Fixtures</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td><b>Fine</b></td> </tr> <tr> <td><input checked="" type="checkbox"/> Lines</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td>By View</td> </tr> <tr> <td><input type="checkbox"/> Mass</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td>By View</td> </tr> </tbody> </table>	Visibility	Projection/Surface			Cut		Half-tone	Detail Level	Lines	Patterns	Transparency	Lines	Patterns	<input checked="" type="checkbox"/> Lighting Fixtures						<input type="checkbox"/>	<b>Fine</b>	<input checked="" type="checkbox"/> Lines						<input type="checkbox"/>	By View	<input type="checkbox"/> Mass						<input type="checkbox"/>	By View
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**Suspended Light Symbol not showing properly on sloping ceilings (Premium Version only)?**

<p>1. The view range cut plane needs to be below the entire fitting for it to show properly. If it is impractical to change the cut plane height for the entire view, use Plan Regions around the light fittings that aren't displaying properly.</p>		
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**Odd Work Plane message comes up?**

<p>1. The view you are working in has no Work Plane associated with it. You will need to setup a Work Plane for the view before placing your light (even if you intend to place the light on a "face"). You will only need to do this once within that view. You can also do this by using the "Set Work Plane" tool as shown and either set it to a plane or a named Work Plane</p>	<p><i>Work Plane Message:</i></p>	<p><i>Set Work Plane:</i></p>
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# Managing “Shared” Families

All the RevitWorks lighting families require a certain set-up process involving shared components:

All nested lighting symbols are shared to:

- Allow the lighting symbol to show on walls as well as on ceilings.
- Allow for automatic wall-ceiling symbol interchange.

All lighting families are shared to allow them to work within the Sloping Containers.

Some lights require light sources to be nested within the family:

1. Where light sources are arrayed (LEDs within linear extrusions)
2. For the light sources to "stick" to families that have rotational heads (within spotlights).

Some third party lighting calculation applications (i.e. Elum Tools) will not work as expected unless nested light sources are shared, so all of the RevitWorks nested light sources are shared to ensure maximum compatibility.

A major implication of this is that these shared symbols and light sources will schedule with the real fittings (resulting in double counting).

To counter this:

1. All of the shared symbol families have as many of their parameter values as possible assigned to "SYMBOL ONLY" - allowing you to filter them out from within your schedule so they are disregarded. (All of these shared symbols appear within your project browser: their names all begin with "Symbol\_").
2. All of the shared light sources have as many of their parameter values as possible assigned to "LIGHTSOURCE ONLY" allowing you to filter them out from within your schedule as well. (All of these shared light sources appear within your project browser: their names all begin with "LightSource\_").

Example of shared symbol family naming	Example of shared symbol parameter values	Example of shared light source family naming	Example of shared light source parameter values																																								
<ul style="list-style-type: none"> <li>⊕ Symbol_Lighting Fixture Ceiling Exit Light</li> <li>⊕ Symbol_Lighting Fixture Ceiling Master</li> <li>⊕ Symbol_Lighting Fixture Wall Master</li> </ul>	<table border="1"> <tr><th colspan="2">Electrical</th></tr> <tr><td>Wattage Comments</td><td>SYMBOL ONLY</td></tr> <tr><td>Lamp</td><td>SYMBOL ONLY</td></tr> <tr><th colspan="2">Electrical - Loads</th></tr> <tr><th colspan="2">Identity Data</th></tr> <tr><td>Type Comments</td><td>SYMBOL ONLY</td></tr> <tr><td>Model</td><td>SYMBOL ONLY</td></tr> <tr><td>Manufacturer</td><td>SYMBOL ONLY</td></tr> <tr><td>Keynote</td><td>SYMBOL ONLY</td></tr> <tr><td>Description</td><td>SYMBOL ONLY</td></tr> </table>	Electrical		Wattage Comments	SYMBOL ONLY	Lamp	SYMBOL ONLY	Electrical - Loads		Identity Data		Type Comments	SYMBOL ONLY	Model	SYMBOL ONLY	Manufacturer	SYMBOL ONLY	Keynote	SYMBOL ONLY	Description	SYMBOL ONLY	<ul style="list-style-type: none"> <li>⊕ LightSource_Circle</li> <li>⊕ LightSource_Point</li> </ul>	<table border="1"> <tr><th colspan="2">Electrical</th></tr> <tr><td>Wattage Comments</td><td>LIGHTSOURCE ONLY</td></tr> <tr><td>Lamp</td><td>LIGHTSOURCE ONLY</td></tr> <tr><th colspan="2">Electrical - Loads</th></tr> <tr><th colspan="2">Identity Data</th></tr> <tr><td>Type Comments</td><td>LIGHTSOURCE ONLY</td></tr> <tr><td>Model</td><td>LIGHTSOURCE ONLY</td></tr> <tr><td>Manufacturer</td><td>LIGHTSOURCE ONLY</td></tr> <tr><td>Keynote</td><td>LIGHTSOURCE ONLY</td></tr> <tr><td>Description</td><td>LIGHTSOURCE ONLY</td></tr> </table>	Electrical		Wattage Comments	LIGHTSOURCE ONLY	Lamp	LIGHTSOURCE ONLY	Electrical - Loads		Identity Data		Type Comments	LIGHTSOURCE ONLY	Model	LIGHTSOURCE ONLY	Manufacturer	LIGHTSOURCE ONLY	Keynote	LIGHTSOURCE ONLY	Description	LIGHTSOURCE ONLY
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