

Speeding up a Ray Trace

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The information in this article applies to:



QUESTION

When I create a high quality ray trace of my model, it takes a very long time. Is there something that I can do to speed up this process?

ANSWER

When we ray trace a view in Chief Architect, the ray tracer actually calculates the paths that individual photons take as they travel through the model and bounce off of surfaces.

Depending on the size of your model, the number of lights present, the quality settings that you are using, and the final image size that you have specified, this can take a very long time for the simple reason that the program is being asked to do a great deal of work.

There are a number of strategies that you can employ to reduce the time required to ray trace without sacrificing the quality of the final image. Choose one or more that suits your specific needs.

Delete everything that doesn't affect the ray trace view

For example, if you are creating a ray trace of a kitchen on Floor 1, begin by selecting File> Save As and making a copy of the file with a unique name like "kitchen_ray_trace.plan".

Then, delete the foundation, Floor 2, and even furnishings, fixtures, and lights on Floor 1 that cannot be seen from the kitchen. If the plan includes extensive landscaping, delete anything that cannot be seen from the kitchen windows. When you have the final ray traced image, the plan can be deleted in File Explorer if you wish.

Turn off layers that are not seen in the ray trace view

For example, if you are creating an exterior ray trace, you can create a custom Layer Set named "Exterior Ray Trace Set" and turn off the display of all interior objects in the plan - including interior fixtures, furnishings, and cabinets. Some objects, like interior railings and stairs, can be put on custom layers and turned off as well. Then select this layer set before you ray trace your exterior 3D view.

Turn off Soft Shadows (Ray Tracing) for as many lights as possible

'Soft Shadows (Ray Tracing)' increases the quality of the shadows produced by a light source, but also increases the time required to produce those shadows. So, for example, if you are creating an exterior nighttime ray trace that will include interior lights shining through the windows, turn off Soft Shadows (Ray Tracing) for the interior lights. 'Soft Shadows (Ray Tracing)' can be enabled or disabled for point lights on the Light Data panel of the object's specification dialog

Avoid shiny materials whenever possible


Shiny materials reflect more photons than matte materials do and result in more data for the program to process. Try changing materials such as the paint or siding materials on walls, or the wood on base or crown molding to the Matte material class. Change materials in the Shiny Metal material class to General or Matte materials when they are on objects in the periphery of the view. Reducing settings like Specular and Roughness without changing a material's class can also help.

Do not use Compute Caustics unless necessary

'Compute Caustics' is generally used in areas of focused light - for example, where light shines through glass. They also require extra time to calculate, so they should only be used in ray trace views where the light shining through windows or other transparent surfaces is an important feature. Examples include exterior nighttime views with interior lights, and interior daytime views of features like glass doors, mulled window units, or bow windows.

Related Articles

 [Using Layer Sets \(/support/article/KB-00765/using-layer-sets.html\)](/support/article/KB-00765/using-layer-sets.html)

 [Working with Light Sources \(/support/article/KB-00777/working-with-light-sources.html\)](/support/article/KB-00777/working-with-light-sources.html)