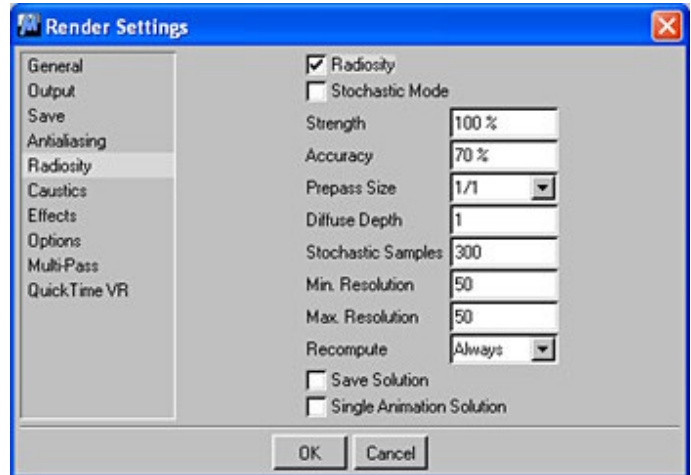


[RadiosityTut1MV.html](#)  
[RadiosityTut2MV.html](#)  
[RadiosityTut3MV.html](#)  
[RadiosityTut4MV.html](#)

## MV's Cinema 4D

Scenefile: RadiosityTut1MV.c4d.zip

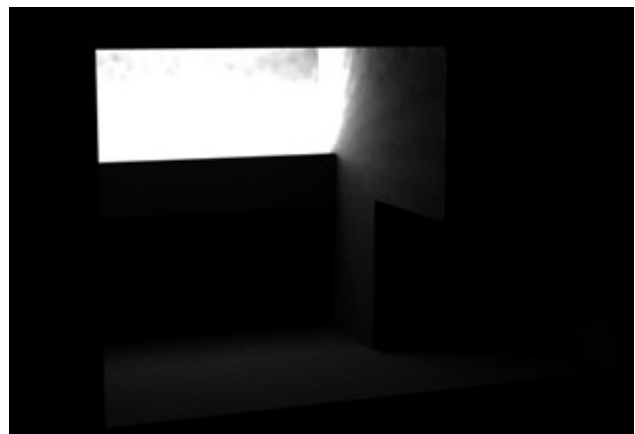
The diffuse depth setting in radiosity settings determines how far a ray will go to find a source of illumination. A setting of 1 means that the ray will look at everything in it's line of sight only. A diffuse depth setting of 2 means that the ray will bounce one time in search of the source. For the purpose of radiosity, there are two kinds of light sources. One is a luminant texture. The other is a non luminant texture being directly hit by a standard light. Below are five renders showing how a luminant texture impacts a scene with different diffuse depth settings from 1 to 5.



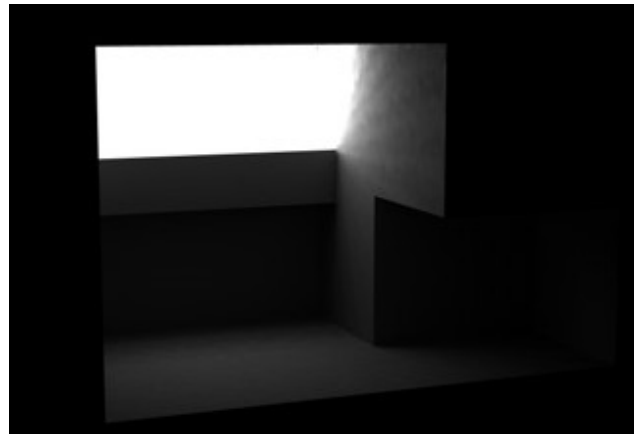
Diffuse Depth setting of 1: The luminant texture is applied to a single wall length polygon recessed in the wall of this simplified sample room. Only the parts of the room that are in a direct line of sight of that polygon get illuminated. Lets call this area illuminated here the first hit.



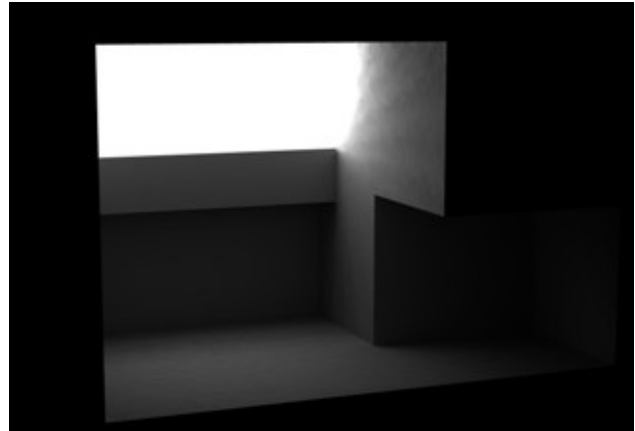
Diffuse Depth setting of 2: This setting means that the ray will bounce once in search of the light source. Therefore, everything in the direct line of sight of the illuminator polygon, plus everything in the direct line of sight of the first hit acquire illumination. Lets call the additional polygons illuminated by the bounce the second hit.



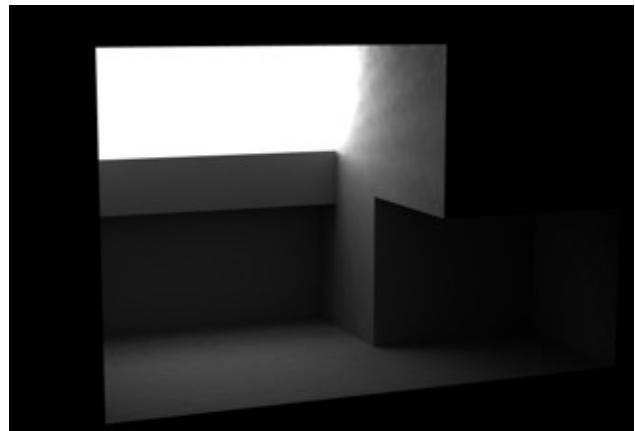
Diffuse Depth setting of 3: This setting means that the ray will bounce twice in search of the light source. Therefore, everything in the direct line of sight of the illuminator polygon, plus everything in the direct line of sight of the first and second hits will acquire illumination. Lets call the additional polygons illuminated by this second bounce the third hit. This is just a convenient way of thinking about it that makes intuitive sense to me because it's more nature based. In reality, the rays from each sample point travel outward at a randomly determined angle. When they hit a polygon, they reflect off of it at the angle of incidence to which it hit, and travels onward. At a diffuse depth setting 3, it bounces twice. If it finds a light source (or sources) within the allotted bounces, that point will be illuminated by radiosity.



Diffuse Depth setting of 4: This setting means that the ray will bounce three times in search of the light source. Therefore, everything in the direct line of sight of the illuminator polygon, plus everything in the direct line of sight of the first, second, and third hits will acquire illumination. At this point the scene has enough bounces so that the rays usually find the light source. It now looks pretty natural and is behaving as you might expect a real room to.



Diffuse Depth setting of 5: With each additional bounce you get a slightly more physically accurate result but at the cost of significantly greater render times. It's for you to decide when enough is enough. Obviously a diffuse depth setting of just one isn't going to be enough for a scene dependent upon indirect illumination from a luminant texture. If you replaced the laminate texture with a string of standard lights, you would find that you need one less bounce. This is because the light source (for purposes of radiosity) is not the standard light, but the textures that are directly illuminated by it.



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