Transparent Material

A transparent material in jMonkey shows a glimpse of the material behind it. The level of transparency is set by choosing the alpha value of the ColorRGBA object of the material. With a greater alpha value the material gets more and more opaque.

The transparent material has to have the BlendMode set to Alpha (in Java: geometry .getMaterial() .getAdditionalRenderState() .setBlendMode(BlendMode .Alpha)) and the super ordinate Geometry has to be allocated in the BucketQueue Transparent (in Java: geometry .setQueueBucket(Bucket .Transparent)). By setting the BlendMode of the material to Alpha the transparency or alpha of the material is considered.
Putting the geometry in the Transparent QueueBucket is a preparation for the rendering. It gives jMonkey the information that the geometry to render first is the furthest from the camera.
This way an object rendered nearer to the camera than an already rendered object receives the information to adjust its appearance in the points where the first object is behind it (see Figure 1 and Figure 2).

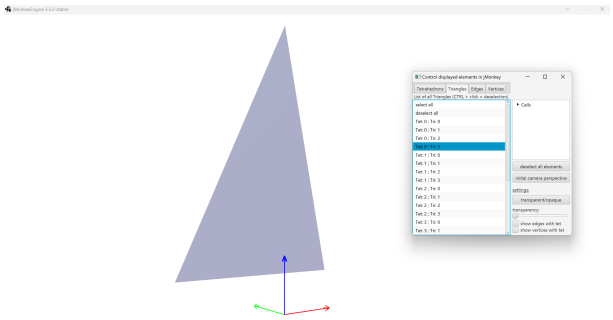

Figure 1: Furthest triangle in jme

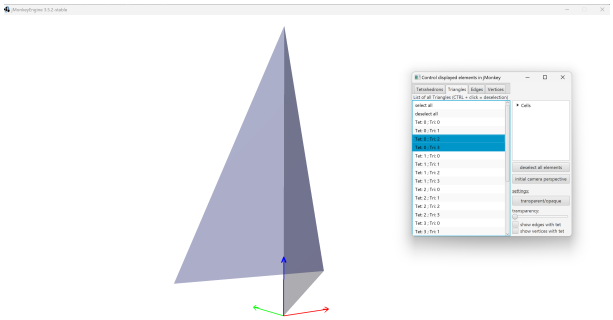

Figure 2: Furthest and second furthest triangle in jme

Contrarily, when geometries are put in the Opaque QueueBucket (for opaque materials) jMonkey knows to render the nearest geometry to the camera first.

Flickering of Transparent Objects in 3D

A common problem of transparent objects in 3D is flickering. The right depiction of transparent objects in jMonkey relies on the right order of the distance to the camera. To always provide the right order for arbitrary objects and a dynamic camera is a problem yet to be solved. If for example triangles are depicted as transparent objects there could be the corner of the furthest triangle nearer to the camera than the nearer triangle. For this circumstance the further triangle gets registered as nearer. Accordingly, the rendering will be false. If this case returns multiple times a flickering of the objects is apparent to the viewer.