

Included in the tutorial are:

- 1 project file "Bunkhouse Project"
- 2 fact files "Bunkhouse.fact" and "57chevy.obj.fact"
- 1 PICT file "Bunkhouse2.pict"

The goal of the project is to take a photograph from a PhotoCD disk and use it to create a realistic 3D environment. The photograph used is of an old bunkhouse on the Haugie Homestead outside Big Timber, Montana.

Initial Project Set-up

ElectricImage was launched and a second camera was added, "Camera Mapper". This camera was placed at 0,0,-100 with it's reference at 0,0,0. In the Render Control window, Resolution tab, the aspect ratio was set to 35mm (I did this because I knew my overall format was close to that of a 35mm photograph). Output resolution was set to 361 x 256. I chose this resolution because it was exactly half the resolution of my PICT file. Since I knew I would be zooming in close to the bunkhouse, I wanted the PICT file to be twice as large as the eventual output ; It is a good rule of thumb to make your texture maps twice the resolution that they will appear in the rendering.

Next, I added Bunkhouse2.pict as a projection map to the camera, "Camera Mapper". The controls to do this are under the Projection Map tab in the Camera Info window. I left the Camera Map Applied As: pulldown set to Luminance and the Camera Map Applied To: set to None. I also set the Show Roto flag to on (on the left side of the Camera Info window). I held down the option key at the top of the Camera View window and set the view to show "Camera Mapper" View of Bunkhouse Project 2.8. I used the new Roto Selection button (the button/pulldown that is sixth from the left at the bottom of the Camera View window) to show the Bunkhouse2.pict as the background image in the Camera View window.

At this point, I noted that my horizontal field-of-view as shown in the Camera Info Window, FOV Tab, was 38.84 degrees. This value is needed to build the models to the proper perspective.

The Models

The model, 57chevy.obj.fact, was downloaded from the Avalon web site and used virtually as-is. Though I did change some of its material characteristics.

The model, Bunkhouse.fact, was created in FormZ. The PICT file, Bunkhouse2.pict, was loaded into the background of the perspective view. The perspective view was given the same horizontal field-of-view as that in our project, 38.84 degrees. The bunkhouse itself was built in the perspective view. The simple terrain was made by creating six lines along the terrain's projection in the perspective view. Then, the lines were used to create NURBS surfaces. When completed, the geometry matched the photograph in the background of the perspective view.

This model was then saved as a fact file from inside FormZ.

Project Completion

The models were now imported with Assume Correct Normals turned on. Assume Correct Normals was used because FormZ is now writing out normals with their fact models and the 57Chevy was an obj file which also contains normals.

The last model to be added was a simple Standard Shape Plane. I used it to catch the sky and clouds. I placed this model far in the background so the clouds wouldn't appear to move very much as the camera zoomed and dollied.

Now that the models were imported, I created a set, "Main Set", to contain the models that were to receive the Camera Map. I selected the Standard Shape Plane, the terrain, and the house models in the Project Window. Then I used the menu command, Select>By Set>Edit Set to create a set called, "Main Set", and added the members I selected in the project window to it.

I went back to the Camera Info window for the Camera Mapper camera and chose the "Main Set" under the Camera Map Applied To: pulldown. This insures that the members of this set will receive the camera projection.

I moved the Camera Mapper back to 0,0,-145. This was the point where house model exactly lined up with the background pict in the Camera View window. I positioned the 57Chevy at the right end of the road.

I set the Darker/Brighter slider in the Diffuse Tab in the Material Info Window to 0 for the terrain, house, and Standard Shape Plane. This prevents the light in the scene from shading these objects. I want their material characteristics to be purely a function of the luminance map applied to them by the Camera Mapper.

I animated the 57Chevy so it would move along the road from right to left. Actually, I animated an effector moving from right to left and then linked the 57Chevy to it. I also animated the 57Chevy's scale so the left side of the road would appear closer to the bunkhouse than the right side.

I did not animate the Camera Mapper camera at all. Instead I switched the Camera View window back to Camera 1 and animated this camera so it slowly pulls out and does a small pitch and yaw.

If you move the camera such that it displays parts of the scene not covered by the matte, such as the part of the hill behind the bunkhouse, the image will fall apart. A similar thing happens if you pan to the left or right too far, uncovering geometry not mapped at all.

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