CHAPTER 2

Importing and Rendering a Model

Project Goals

When you have completed this project you will be able to:

1. Identify major sections of the **Visual Reality** display.
2. Import objects from DataCAD into **Visual Reality**.
3. Adjust camera and light positions.
4. Edit object parameters and render views.
5. Save a rendered image file.

Introduction

Visual Reality is a program that provides for loading objects (your DataCAD model), creating views by adjusting camera settings, parameters for object colors or texture maps, selecting a file for display in the background, defining and adjusting lighting, creating photo realistic rendering, and animation files. To take advantage of this capability, you will have to learn your way around the **Visual Reality** interface. Keep in mind that the more detail you want in a rendering, the more work you will have to do.

Before using **Visual Reality**, you will need to have objects that are in a file format that **Visual Reality** can use. The DXF file that was created in Chapter 1 will work, but **Visual Reality** can also import objects from a variety of other file formats.

1.__ Start **Visual Reality.** (If it was installed along with **DataCAD** using the default settings, it will be found by selecting **Start, DataCAD, Visual Reality.**)

The Visual Reality interface

Figure 2-1 shows the **Visual Reality** opening display.

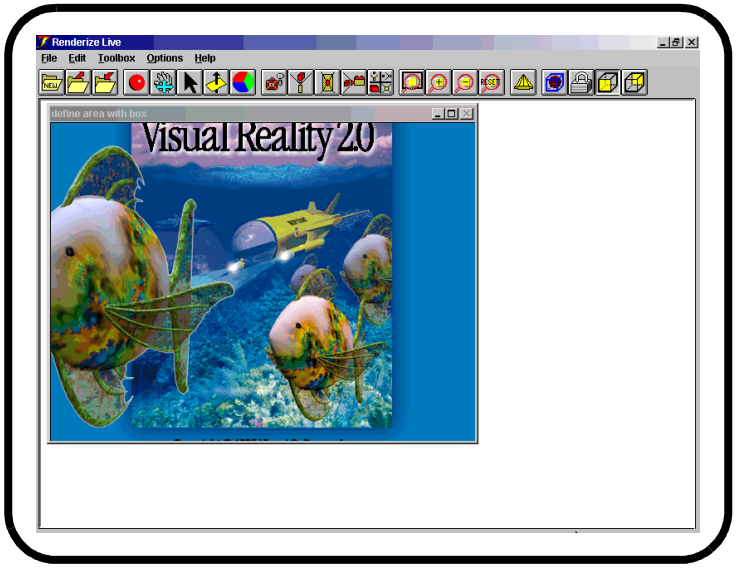

Figure 2-1, The Visual Reality display.

Like most Windows software, the display includes a **TITLE BAR** and a **MENU BAR**. To get started. the model room DXF file created in Chapter 1 will be imported.

2.__ From the **MENU BAR**, select **File, Load Object**.

The file **Open** dialog box is shown in Figure 2-2.

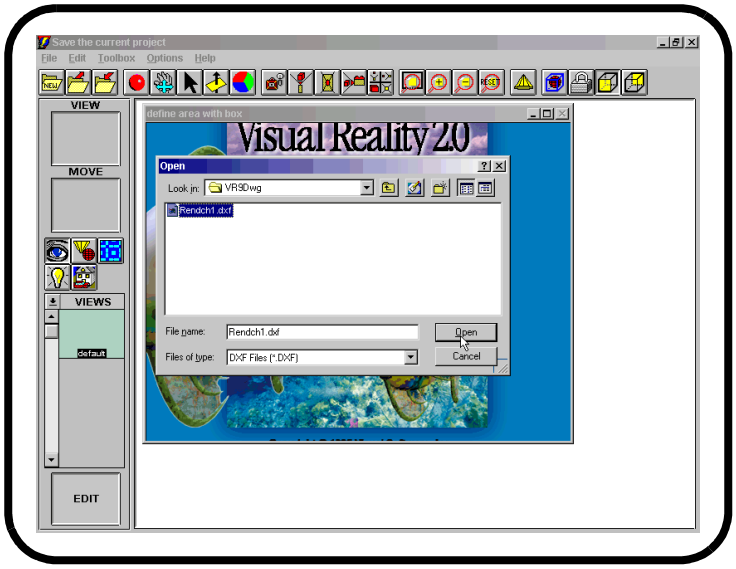

Figure 2-2, The Open dialog box.

When you click on the ***down arrow*** on the right side of the **Files of type** text box, you will see a list of the different file formats that **Visual Reality** can import.

3.__ Click on the ***down arrow*** on the right side of the **Files of type** text box. Then select DXF from the list.

4.__ Set the **Look In** path to the directory where you saved your model room file in Chapter 1. Then **Open** the **rendch1.dxf** file.

This opens the dialog box shown in Figure 2-3.

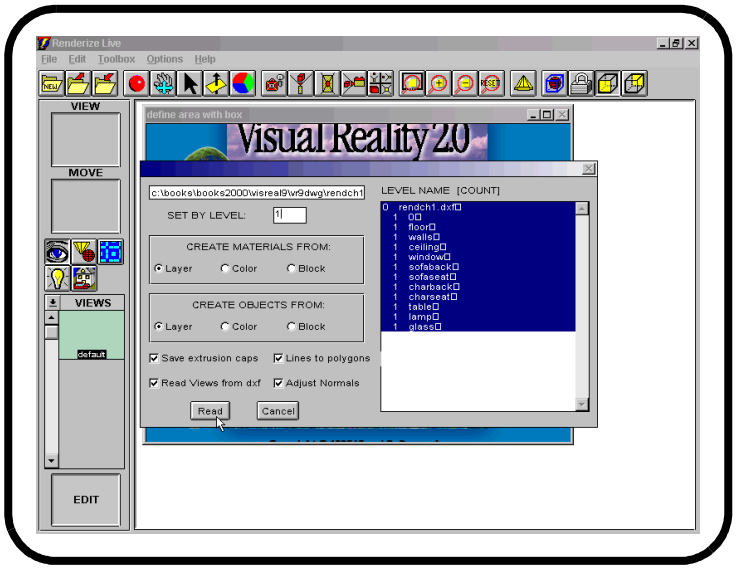

Figure 2-3, Setting import parameters.

The room model created in DataCAD was designed to isolate features that will share the same color or texture on separate layers. **Visual Reality** provides for creating both objects and materials from layers.

5.__ Edit the contents of the **SET BY LEVEL** text box to read **1**. (All items in the **LEVEL NAME** list should be highlighted after this step.)

6.__ Locate the **CREATE MATERIALS FROM** area of the dialog box. Then toggle **Layer** ***on***.

7.__ Locate the **CREATE OBJECTS FROM** area of the dialog box. Then toggle **Layer** ***on***.

8.__ Toggle ***four*** option boxes **on** in the ***lower*** portion of the dialog box on as shown in Figure 2-3.

9.__ Select the **Read** button to import the **DXF** file.

10.__ When the prompt appears, select **Include** to include ‘children’.

Your display should look similar to Figure 2-4. There is a window that contains a default view of the room model. The left side of the display contains several ***wells*** that surround a collection of icons.

In **Visual Reality**, the **TITLE BAR** area is used to show information about the function of available icons.

11.__ Move the cursor over the ***five*** **Resource Icons** on the ***left*** edge of the display while observing the information on the **TITLE BAR**.

These five **Resource Icons** (**View, Object, Material, Light** and **Image**) control the contents of the **Resource Palette** found just below the five icons.

12.__ Select the **View resource palette** icon.

The **VIEW** and **MOVE** wells (see Figure 2-4) contain the name of the **default_1** view resource.

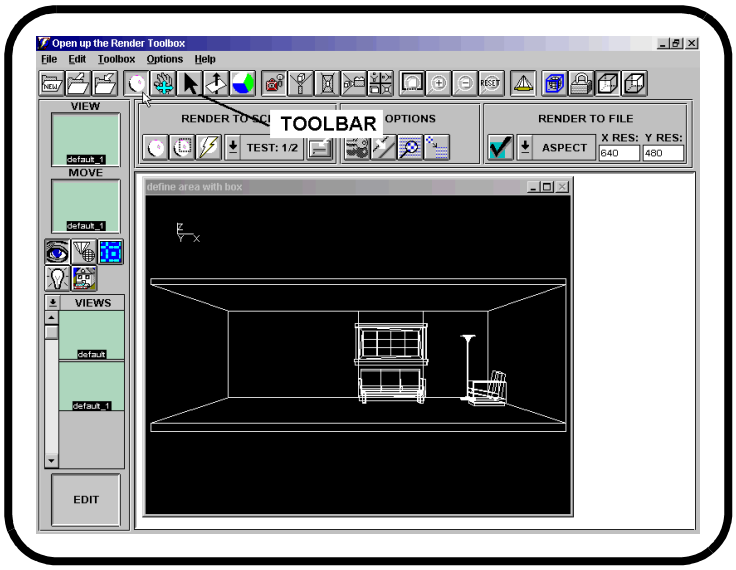

Figure 2-4, The Visual Reality display.

The **EDIT** well near the ***bottom left*** corner of the display is empty in Figure 2-4. Just above the **EDIT** well, is a scrollable area that contains the currently selected **Resource Palette**. Each time a different **Resource Icon** is selected, the contents of the **Resource Palette** will change.

To adjust the various parameters, resources are transferred from the **Resource Palette** to the various wells. To get started, let's do a quick rendering.

13.__ Select the **Open up the Render Toolbox** icon from the **ICON TOOLBAR** just below the **MENU BAR** near the top of the display (see Figure 2-4).

14.__ In the **RENDER TO SCREEN** area of the display, click on the **Render the entire viewport** icon.

The results will not be pretty, but at least you have created your first rendering. At this point, the system does not know whether to render both the front and back faces of various parts of the model. You will soon fix this problem.

Editing an object

15.__ Select the **Display the object resource palette** icon near the center of the ***left side*** of the display to change the contents of the **Resource Palette**.

The **Resource Palette** should now show the objects that were created by loading the DXF file (see Figure 2-5).

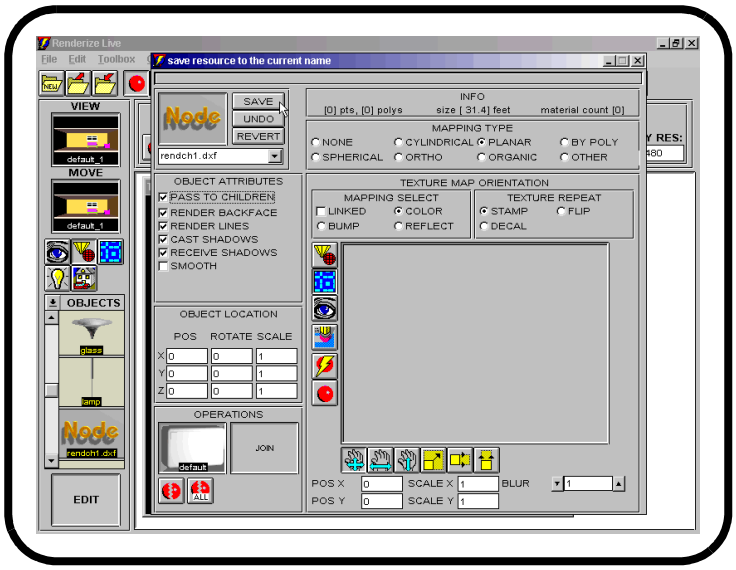

Figure 2-5, The Objects Resource Palette.

The **Resource Palette** has a scroll bar that can be dragged to scroll up and down the available resources.

Figure 2-5 also shows the **Object EDIT** dialog box that opens when the **rendch1.dxf** object is dragged into the **EDIT** well.

16.__ Position the cursor over the **rendch1.dxf** object (this object uses a **Node** icon) in the **Objects Resource Palette**, ***click and hold*** the ***left*** mouse button and drag the object down to the **EDIT** well and then release the mouse button.

This opens the **Object EDIT** dialog box.

•• **NOTE:** You may have to drag the dialog box ***window*** to the center of the display. This is done by positioning the cursor on the **Object** edit window **TITLE BAR**, and then clicking and holding the ***left*** mouse button down, and then moving the mouse.

There are a number of parameters in this dialog box that will be covered as they are needed. The **Node** object is a parent, and the different objects (created from the original drawing layers) are children. By turning the **PASS TO CHILDREN** option ***on***, **OBJECT ATTRIBUTES** for all of the objects can be set at once. The attributes can also be adjusted separately for each object.

•• **NOTE:** In the next step, an option is toggled ***on*** when the box to the left of the option contains a check mark. Clicking on the toggle box will turn the check on and off.

17.__ Toggle the **PLANAR MAPPING TYPE *on***. Toggle all **OBJECT ATTRIBUTES on *except* SMOOTH**.

18.__ Select the **Save** button near the top of the dialog box. Select **Replace** at the prompt.

This is enough busy work, that you would hate to have to do it again. So, a save is in order.

19.__ Select **File, Save Project As**, adjust the directory path as desired, and enter **rendch2** as the file name.

Next, you will learn how to adjust the camera position.

20.__ Close the **Object EDIT** dialog box (click on the **X** in the upper corner of the **Object** window [***not*** the **Visual Reality** window]).