

In Search of Art•lantis

A set designer discusses the rewards of using CAD software to draft sketches.

As a scenic designer, the change from traditional drafting to CAD software has mostly been a positive experience for me. Now with such CAD programs as **VectorWorks** and **LD Assistant Ac** that support 3D drafting, I can quickly determine overall composition and placement, a procedure that once required using drop point or a spider grid to develop an accurate perspective sketch.



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A screen shot of Art•lantis lighting dialog boxes, with the author's sketch rendering in the center

Recently I had the opportunity to work with the newest version of **Art•lantis Renderer**, which turns my 3D Vectorworks files into more polished renderings. With only a little more time invested, I'm providing nearly photo-realistic images of the scenery. Directors and other designers could see and comment on a much closer approximation of the final design much earlier in the process.

Art•lantis will work with most 3D modelers and CAD programs, either by direct import or with a provided plug-in that will export a 3D model as readable objects. Once imported, **Art•lantis** opens a preview of the model. The idea is that by using a surprisingly accurate fast preview, all of the various parameters can

be decided on and previewed before starting the actual time-consuming, high-definition rendering process.

The first parameter to deal with is the view. **Art•lantis** views are easily defined, and many different views can be saved. By moving between them, the view from any seat in the house can easily be checked. Camera angles, width of view and depth of field are all definable for each view.

The next step is to assign a "shader" to each object's surface. This means color and basic characteristics, such as shiny or matte finish. In addition, **Art•lantis** provides a library of textures, including various woods, tiles, stones, marbles and different checked, striped and mottled surfaces. The object is chosen in the window, then a click on the shader assigns the texture to that material. All objects of that material will show the assigned shader. All of the pre-defined shaders are customizable in terms of size, scale, direction (of stripe, for example) and color that make up the texture. In addition, textures can be imported from any jpeg or similar file format. One such use could be to import projections into a scenic design—a jpeg of the slide is imported as a texture, then scaled to fit the projection screen. These imported textures can be easily saved for future use.

Characteristics such as shiny/matte or rough/smooth can be adjusted as desired, even with the textures applied. **Art•lantis** also does ray tracing (reflections in shiny objects), refractions, transparencies and shadows. The amount of any of these options can be controlled, giving an incredible range of options to control the look of the final rendering.

One of the strongest features is the lighting model. Multiple light sources can be placed

anywhere in the model. These lights can be individually defined as an omnidirectional source (e.g., a bare light bulb), as a parallel source (the sun) or as a spotlight source. The color, the brightness and the spill travel can be defined. Using the spotlight, where each light is focusable, the beam angle and spread become controllable, as is the sharpness of the beam. Shadows from any light can be defined from sharp to soft. Even reflected light is taken into account and rendered accurately. By accurately placing lights and controlling their properties, a designer can demonstrate certain key moments.

One thing missing is an interactive atmosphere through which the lighting travels. **Art•lantis** does have an atmosphere function that will add the look of clouds or fog, but it does this by adding visual noise and blurring the objects seen through the atmosphere.

After a thumbnail model has been formed in Vectorworks and exported to **Art•lantis**, where surfaces and textures are defined, the lighting is set up and various views of the stage are indicated. But the projection screen, which can't be seen from this point in the house, has to move. As **Art•lantis** is only a renderer, a return to Vectorworks is needed to move the projection screen. Happily, there is an update option in the export plug-in, so only those changed items are exported back to **Art•lantis**, leaving past work intact. With a fair amount of memory, both **Art•lantis** and

What You Need To Download Art•lantis

RECOMMENDED CONFIGURATION:

On Power Macintosh:

System: MacOS 8.5 or higher

RAM: 64 MB minimum; 128 MB (or more) recommended

Hard Disc Capacity: 55 MB for a full program installation; it is recommended that the hard disk storage be greater than 100 MB, depending on the RAM available on your machine and the complexity of your 3D models.

QuickTime 3.0 or higher

On Windows 95, 98, ME, NT or 2000:

System: Microsoft Windows 95, Windows 98, Windows NT 3.51 or NT 4.0, Windows 2000.

Required Processor: Intel Pentium Pro, Intel Pentium II, Intel Pentium III or compatible.

RAM: 64 Mb minimum; 128 MB (or more) recommended

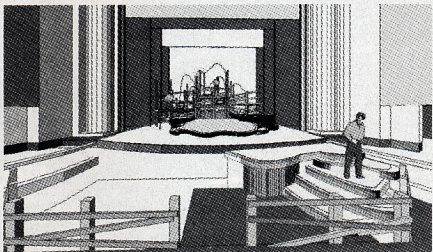
Hard Disc Capacity: 55 MB for a full program installation; it is recommended that the hard disk storage be greater than 100 MB, depending on the RAM available on your machine and the complexity of your 3D models.

Video: 24-bit card recommended.

QuickTime 3.0 or higher.

Vectorworks can be open at the same time, making any necessary changes and updates fast and easy.

A rendering process is necessary to get the final images. Art•lantis will output to tga, pict, bmp, tiff and jpeg, among others. Next, an image size is picked, ranging from a 400 x 400 pixel quick test to 3072 x 2048, with the option of custom sizes. All rendered images have a resolution of 72 dpi. To get a better resolution, the image is rendered to a larger size than needed; then the resolution versus the size is modified in Photoshop or the equivalent. Finally, options, including the number of reflections for ray tracing and the number of refractions for the transparency



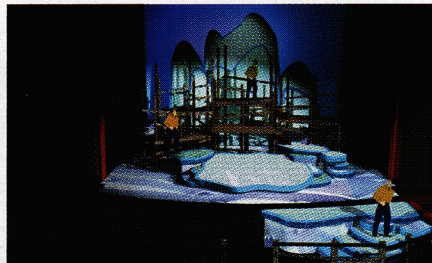
VectorWorks white model export of rendering for Theatre IV production of King Island Christmas

option, shadows and the amount of anti-aliasing, are defined. Art•lantis then processes the final rendering.

How long does rendering take? For large presentation-quality renderings, clicking the "render now" button is a good excuse to get a cup of coffee while Art•lantis does the rendering. If you've chosen to render several views, it could be a good time to go out to lunch. Luckily, there is an option to do all of the rendering at a later time, such as the middle of the night. But for an image at 640 x 480@72 dpi to upload on the Internet, plan on taking a step away from the monitor before it is done.

The final output should be tantamount to that of photo quality. Lighting effects, including reflections, shadows, ambient light, accurate scale, texture, color and perspective can be seen from any viewpoint in the house.

It is also possible to set Art•lantis up to do a definable walkthrough of the space, moving from various sightline reference points. Each step in between the defined points can be determined by Art•lantis or customized as to direction of view, camera angle, etc. The resulting renderings are melded together into



Art•lantis model of rendering for Theatre IV production of King Island Christmas

a Quicktime video.

As Art•lantis is only a renderer, manipulating the placement of objects is not possible. So it is not effective as an animator of a scene change. However, the advantages of using this CAD software in providing quick renderings have made the trauma of the spider grid a thing of the past.

For more information on Art•lantis, contact Art•lantis Publisher Abvent North-America, 360 rue Notre-Dame Ouest, Suite 402, Montreal, QC H2Y1T9 Canada; telephone: **800-452-9241**; fax: **514-842-1055** e-mail: sales@abvent.com; website: www.abvent.com/us/. **SD**

Gregg Hillmar designs scenery and lighting all over the country.