

In-house studio creates compelling imagery.

By using Autodesk 3ds Max software, artists in ASG's in-house visual imaging studio can create greater quantities of more compelling architectural imagery.



At Ayers/Saint/Gross, Architects + Planners (ASG), the benefits of Autodesk® 3ds Max® software are evident throughout the design process, from the initial drawing stage to the final rendering stage.

The ASG architects use Autodesk® Revit® Building software to create their drawings in 3D, explains Corey Rubadue, director of visualization in ASG's in-house visual imaging studio. "The architects give us their 3D Revit Building data, and we import it into 3ds Max, where we apply materials and textures to the models, conduct solar studies, create animated walkthroughs, do whatever is needed for the client-approval process," he says.

"Because the architects create 3D models rather than 2D drawings, and because 3ds Max can read Revit Building files, we don't have to build their models from scratch in 3ds Max before we start working on them," he continues. "That means the artists can spend all their time on the visualization process," he adds, "which results in a larger quantity of higher-quality images and animations for client approval."

Rubadue has been a fan of 3ds Max for several years. In fact, his architectural visualization company, D3CG, relied on 3ds Max for two years before ASG bought the company in 2003 and brought its talent and expertise in-house.

One thing that drew Rubadue to 3ds Max initially was its capability to read the DWG™ files his company received from the architects they worked with. He adds that the texturing tools were also a big draw in terms of making their models look photoreal, and the animation tools provided everything they needed for creating animated walkthroughs.

"Also beneficial was the Terrain tool, which allowed us to make site models for our projects quickly," he says. Plus, the AEC objects—doors and windows in particular—were helpful for creating quick design studies, to see whether they were heading in the right direction in their visualizations. "It was great not to have to model those objects from scratch," he notes.

These aren't the only features that have compelled Rubadue to stay with 3ds Max now that his company is part of ASG. The software's file-linking capability has also been a factor. "It's critical that we be able to link to the Revit Building models; that architects can update their models and we can update our links to those files," Rubadue says. "Because of this feature, design changes can happen in Revit Building, and we can update our models in 3ds Max based on those changes."

Another important feature in 3ds Max is Scene Material Definition, which allows all the materials the architects assign to their models to be brought directly into 3ds Max. "It's about the architects making the decisions, not us, and about their files maintaining those decisions between Revit Building and 3ds Max," he explains. "So, when we get a model from an architect, an object that's supposed to be made of wood, for instance, shows up as a wooden object. And if the architect didn't apply a texture to that object in Revit Building, it's clear once we hit the render button in 3ds Max, and then we can ask the architect to define the missing material. Nothing is left to interpretation on our end."

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The artists also appreciate the daylight system in 3ds Max, which enables them to accurately depict for clients how sunlight will affect the architects' designs over a period of hours, days, and months; and the software's photometric lighting capability, which enables them to use manufacturer-specified lighting data directly in 3ds Max. "So, if a project team has specified lighting from a certain manufacturer, we can input that information into 3ds Max, which adds to the realism of the final rendering," he notes.

According to Rubadue, the imagery his team creates is used for different purposes. Usually it's used to gain design approval from the architects' clients. But sometimes it appears on billboards at construction sites, showing area residents and others involved with the project what the completed buildings will look like. In these cases, the Strip Rendering feature in 3ds Max helps the team render images whose quality will hold up on large billboards.

Other times their imagery appears on DVD-ROMs, which clients use for marketing and fund-raising purposes. In these cases, the artists bring their files from 3ds Max into Autodesk® Combustion® desktop compositing software for color correction and post-processing to prepare the final DVD content.

Although the artists usually use 3ds Max as a visualization tool, sometimes they also use it as a design tool. One such project was for the Duke School of Nursing, which commissioned ASG to design its new café space. "They wanted a unique space that was a hybrid between the built environment and the nature and forest surrounding the building," Rubadue recalls.

Toward that end, the ASG architects, using Revit Building software, designed the space to have an interior structural system featuring a heavy timber

framework. Then they gave those 3D files to the artists. Because of the design's complex nature, the artists used 3ds Max to conduct a series of real-time design studies, with the project's structural engineer in the room providing feedback.

When the engineer made suggestions on sizing and spacing, the artists were able to incorporate them into the model in real time. Once the structural system was finalized, the artists made the necessary changes to the original model in Revit Building, and exported the DWG information from Revit Building to AutoCAD® software so that their design drawings could be incorporated into the architects' existing set of drawings. Those AutoCAD files were then turned into construction documents.

Meanwhile, back in 3ds Max, the artists applied materials and finishes to the model, using a photo of the site as an environment map. Then they rendered the imagery using Chaos Group's V-Ray rendering engine for 3ds Max. The final still images were shown to the client for their approval; in addition, the artists created a DVD of the imagery, which the client used for fund-raising purposes.

According to Rubadue, the Duke project is a great example of the power, flexibility, and speed of 3ds Max. "We could quickly make structural changes with the engineer in the room," he says. "The software helped us to communicate with the engineer clearly and quickly and show him what would and wouldn't work. It made for a very collaborative process."

In fact, Rubadue says the ASG artists have never worked on a project that 3ds Max couldn't help them with. As such, the software will continue to be a main tool in the artists' toolbox. "3ds Max is a very flexible and powerful program," he concludes. "It is an asset to our process, for sure."



With the power of the Modifier System in 3ds Max, we could bend and twist the structural system with the engineer right there beside us, and we could use the software's Viewport Walkthrough tool to walk through the space and look at different details and connections that to be designed.

—Corey Rubadue
Director of Visualization
Ayers/Saint/Gross, Architects + Planners

Images courtesy of Ayers/Saint/Gross, Architects + Planners.

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