Ergonom

Ergonom, a U.K.-based furniture specialist, is as particular about how it presents its designs as it is about the designs themselves.

Word descriptions and drawings certainly won't do. Neither will ordinary 3D computer renderings. Ergonom insists on presenting its designs with 3D renderings that provide a preview of every nuance of light, shadows and textures that will appear in the finished installation. "Realistic renderings are important within the design process," says George Pelekanos, an Ergonom designer. "They clearly communicate the design concept to someone who has difficulty visualising a proposal from the technical details of an engineering drawing."

Seeing is believing

Everyone has different ideas about how a work environment should look and function. Ergonom begins every design project by developing initial ideas with the client about methods of working and specific needs. Once the overall look and feel of the environment is determined, an architect creates sketches and space plans that address the client's preferences. These concept visuals are used in Ergonom development meetings to help define the final solution.

Data from engineering drawings is used to create the photorealistic renderings that improve client understanding of the project. The first step is to create 3D models in Autodesk's AutoCAD 2000i CAD/CAM software. The AutoCAD models are brought into 3ds max where textures and materials are added. Final rendering is done using the PURE ray-tracing system from ARTVPS.

The PURE card handles realistic effects that are traditionally expensive and time-consuming to calculate, including multiple area lights, accurate motion blur and depth of field, secondary illumination, and physically based materials, lighting and camera properties.

"Before using the PURE system, our 3D work looked rather flat and unrealistic," says Pelekanos. "Because we had such a high volume of renderings requiring a rapid turnaround, we would often have to sacrifice quality for quantity. On the few occasions we attempted to create realistic lights and shadows it took several hours to render. The results were good, but not worth the wait. The PURE system very quickly produces outstanding precision in lighting and shadow reproduction."

Unlike software-based renderers that rely on the graphics card in the PC, the PURE system is dedicated hardware that enables 3D rendering to be split across an array of eight specialized ray-tracing chips. "While the PURE system renders the geometry from 3ds max, I can prepare another 3D model in AutoCAD," says Pelekanos. "We get the highest quality of rendering while saving as much as 50-65 percent in rendering time for each project."

Once the client is happy with the final renderings, a mock-up is constructed and supplemented with additional visuals to show various design options, including different finishes or accessories. The renderings and mock-up allow Ergonom and the client to identify and correct any design problems before manufacturing begins.

"A leap forward"

High-quality 3D visuals enable Ergonom to convey its knowledge and understanding of each client's needs, and work in collaboration to produce successful solutions. Clients have the comfort of knowing that what they see in the renderings is almost exactly what they will get when the new furniture is installed. "The renderings we create now provide us with a leap forward in realistic visualizations," says Pelekanos. "They actually make clients feel like they can touch the solution."

ARTVPS