

ARCHITECTURAL DESIGNS COME TO LIFE WITH VISUALIZATION AND ATI'S FIREGL GRAPHICS TECHNOLOGY

Given the complexity of architectural projects today, to be competitive architects must be able realistically show the proposed buildings to their clients, even before construction begins. Architects have traditionally relied on two-dimensional drawings to illustrate their designs but as visualization and imaging technology has evolved, designers are replacing simple pencil illustrations with stunning 3D renderings and real-time walkthroughs to give clients an unprecedented glimpse into the future. Architects around the world, including Toronto, Canada based Axiom Architects and Beirut, Lebanon based ABAAD 3D have employed leading edge technology to communicate their creations to their clients in ways that basic sketches were never able to demonstrate.

"With today's state-of-the-art graphics technology, we are shifting a majority of the design phase away from the traditional pencil-on-paper sketches and relying more on direct computer input in which precise dimensions and proportions can be visualized instantly," says architect Joseph Caricari, a partner at Axiom Architects Inc. of Toronto. "For architects, this is a huge leap from the traditional method of clients going on blind faith and relying on simple two-dimensional drawings. We can really capture the essence and detail of a design by rendering 3D images that are unprecedented."

Caricari's firm, which designs large commercial, industrial, residential and institutional projects, has been using 3D technology for several years, relying on software and architectural applications such as

AutoCAD 2004 with AccuRender 3. But he considers ATI's FireGL graphics accelerators to be the key to creating breathtaking 3D renderings that never fail to impress demanding clients.

"ATI's workstation graphics accelerators enable us to create a 3D model of our design and render the building in a way that now lets the client tour the virtual building to see exactly how the design and materials will look," Caricari says. "Our clients are just amazed when we visually walk them right through a new building design."

The result is that full-color 3D renderings are quickly replacing simple 2D illustrations.



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EVOLVING WITH TECHNOLOGY

Caricari cites the example of an intricately detailed, \$1.1-million residential project his firm worked on north of Toronto. At the outset, his firm was able to take the client "inside" the new house to reveal all of the critical sightlines, views and vistas that the real house would eventually provide. The client could provide input on everything from layout and room design to ceiling height and trim details.

"During the design development stage, it was critical that we showed them the different design options available to them on a weekly basis, either in our office or at their home. We would spend about 30 minutes walking through the virtual house and providing verbal explanations of all the critical aspects," Caricari explains. The use of 3D imaging improves the precision and speed of the design process and eliminates costly errors by letting everyone see and agree on what the final results should look like before workers pick up a hammer to begin construction.

Caricari adds that ATI's FireGL graphics technology has also helped his firm to meet deadlines that in the past would have been impossible to even consider.

"There are projects that presented huge challenges in which we were very fortunate to be using the FireGL graphics cards," says Caricari, noting a recent case in which his firm had just 48 hours to create and deliver 3D images that a client required for an expensive billboard advertising campaign.

"The graphics technology helped us in two distinct ways," explains Caricari. "We were able to render the model very quickly and then revise, embellish and manipulate the scene to capture the desired view. It was the FireGL graphics cards that really helped us to work at the high level of speed and precision we needed for that project."

NEW ADVANTAGES EMERGE

Another design firm that is capitalizing on the advantages of ATI's FireGL graphics technology is design firm ABAAD 3D of Lebanon, which specializes in turning building designs into lifelike 3D computer models for architectural firms.

Working with Lebanon's leading architects on major urban projects that include shopping malls, high-rise apartment complexes and office towers, ABAAD 3D is turning out stunning, state-of-the-art renderings that make full use of the power, speed and reliability of the FireGL graphics card from ATI Technologies.

Like Axiom, ABAAD is leaving 2D drawings on the shelf and turning to 3D renderings to impress clients and vastly improve the entire design process.

"The architecture profession has relied on two-dimensional drafting capabilities for years but we've pushed beyond the traditional 2D barrier to create and perfect stunning 3D models and renderings that are unprecedented in our market," says Moustapha Majzoub, an architect at the Beirut-based firm.

"We are proud of how our work today is giving architects not just a new edge in design but also in helping to present and market projects, thanks to the way our models bring their drawings and presentations to life in three dimensions."

Computer-aided visualization, or CAV, is a highly interactive process that lets the architect study and modify a 3D design from a practically infinite range of perspectives by computer, eliminating the need for a physical model.

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"We turned to FireGL graphics cards just over a year ago and it has actually created a major shift in our entire modelling process, thanks to their speed and reliability," says Moustapha. "We considered every product

that might help us, including some competing products, but we chose ATI for both its performance and price, which were exceptional. And we haven't looked back."

LEAVING NOTHING TO THE IMAGINATION

ABAAD's designers combine 3D renderings with digital photos taken of future building sites to create a lifelike model that leaves nothing to the imagination. And the results consistently impress clients, who are awestruck by the visual impact of ABAAD's models. FireGL graphics proved instrumental in work done on projects such as Lebanon's Bata New Airport, Qatar Bay designed by MZ and Partners of Qatar and the Jizan Project by MedDesign Int. of Jordan.

"Our FireGL graphics cards have really helped for large projects in which clients rely heavily on 3D models to interactively update and improve their design," says Moustapha. "The speed and ease with which we manipulate and orbit very complex models is really remarkable. Previously, there was a lack of ability to easily refresh images and move them around on the screen. With ATI's FireGL graphics, there is no problem rotating images quickly and accurately, regardless of how big a file is."

By combining 3D images with digital captures of a project's surroundings, ABAAD 3D can give architects a perspective that is second only to the finished project, Moustapha says.

With the FireGL graphics card raising the bar for their capabilities, both ABAAD and Axiom are eagerly looking ahead to what the next generation of ATI graphics technology can deliver.

"We will stick with ATI technology and I would recommend it to any professional who demands peak performance in the world of 3D," says Moustapha. "For us, there is no match for what ATI delivers."

"We will continue to rely on ATI technology for all of the advantages it can provide for us, both today and in the future," adds Axiom's Caricari.

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