BLUE MARBLE 3D EXPANDS BUSINESS OFFERINGS WITH NVIDIA GPUs AND IRAY

Blue Marble 3D is a division of Chipman Design Architecture, an architecture and design firm specializing in retail and restaurant spaces. Located in metropolitan Chicago, Blue Marble 3D was formed in 2013 to restructure the firm's digital technology program and ensure a commitment to the fastest and most cutting-edge visualization solutions. The studio specializes in providing their clients both interactive, immersive 3D virtual reality experiences, and photo-real renderings including QTVR panoramas and 2D and 3D renderings of options for design and architecture projects. These advanced products give their clients the power to experiment in real time with various design scenarios.

Blue Marble 3D's ability to show designs from several immersive vantage points provides clients with a realistic view of the proposed space so that they can make highly informed design decisions before moving into construction. To handle the massive rendering requirements for these quick visualizations, Blue Marble 3D relies exclusively on both NVIDIA software and hardware – a combination so successful that it is enabling Blue Marble 3D to expand into new markets.

CHALLENGE

Clients typically seek out Blue Marble 3D for high-end architecture and design visualizations, particularly when they require extremely accurate physically-based lighting simulations. In the past, 3D renderings with hundreds of photometric light sources have been all but impossible to generate in a cost-effective timely manner. It was therefore critical for Blue Marble 3D to explore technological options that would allow its artists to create photo-real interactive environments and renderings efficiently, offering clients an opportunity to make confident, informed design decisions.

Blue Marble 3D's Principal George Matos understood this from the beginning when he first set out to find the most
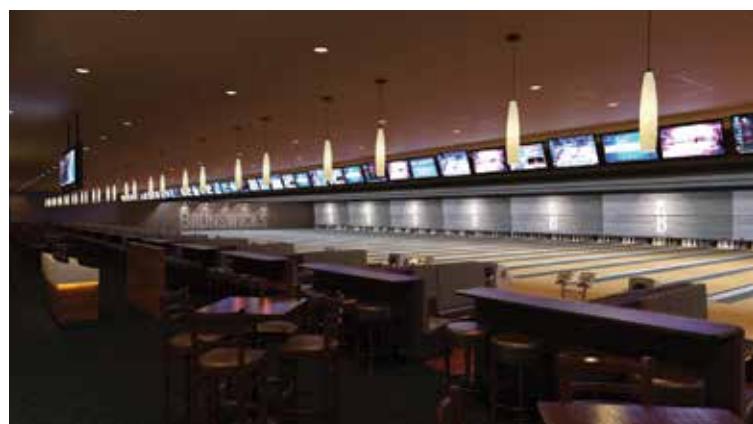
Brunswick Bowling. Image Courtesy of Blue Marble 3D

advanced tools and techniques available. Determined to create the most detailed and physically accurate visualizations in the least amount of time, Matos opted to work with NVIDIA to beta test multi-GPU configured BOXX workstations, leveraging the speed and power of GPU accelerated rendering with Iray.

SOLUTION

NVIDIA Iray generates physically-plausible, interactive renderings in near real time by simulating the physical behaviors of light. Iray is integrated into a range of 3D design and visualization applications, such as Blue Marble 3D's favorite, Autodesk 3ds Max Design. Proving to be the ideal solution for Blue Marble 3D, Iray allows Matos and his designers to produce images containing thousands of different light sources, reflections and refractions. This had previously been impossible with traditional rendering technologies.

NVIDIA GPUs also play critical roles in Blue Marble 3D's custom EON Reality Mobile Icube, a multi-wall immersive

virtual reality experience allowing clients to view and manipulate fully realized interior designs on demand.

"When Iray was first introduced, we were only using the CPU for Iray rendering. On the systems we had, this took up to 36 hours for a single image to render," explained Matos. "Now, with our combination of the newest Iray software and the latest-generation NVIDIA GPUs, we can render interior iterations and see results in only minutes – and that's in HD resolution with very complex lighting scenarios."

Ditka's Restaurant. Image Courtesy of Blue Marble 3D

"Iray is a tool that allows us to focus on the content of the render rather than the technology behind the render," continued Jenni O'Connor, Blue Marble 3D's Director of Digital Artists and author of the book Mastering mental ray (Sybex 2010). "I don't have to worry about the number of lights in a scene or whether any materials are reflective, I can simply do what I need to do and produce an image in the way that I want."

IMPACT

The introduction of Iray and NVIDIA GPUs allowed Blue Marble 3D to offer its clients the most engaging and accurate 3D visualization experiences possible. This ability to quickly create visualizations and panoramas with complex lighting scenarios has allowed Blue Marble 3D to work interactively with clients such as Ditka's Restaurants and Brunswick Bowling. The result is an opportunity to test varying options and vantage points when working through the design of their interior spaces, all with photo realistic results.

This new level of visual information available to clients has proven invaluable, allowing them to evaluate designs and make thoroughly informed decisions before moving into construction. The benefits most often lead to significant cost savings on their projects with fewer construction delays and a more effective end result. For instance, when switching from fluorescent lighting, Brunswick Bowling relied on Blue Marble 3D to visualize how a newer, softer lighting design would look throughout the bowling alley. The Iray renderings clearly illustrated that their existing design did not provide enough

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illumination in the player areas, leading Brunswick to test out new lighting options virtually. Brunswick ultimately doubled the number of lights from its original design and was thrilled with the results.

Another Blue Marble 3D client, Chicago-based Ditka's Restaurants, improved sales of its private banquet spaces with the studio's high quality panoramic Iray renders. "In the past, potential clients had trouble getting a good feel for the space," said Jessica Rice, Director of Private Dining at Ditka's Restaurants. "The wide-angle view and high quality of the renders from Blue Marble 3D helps our customers get a real world feel for the room size, lighting and ambiance."

Brunswick Bowling. Image Courtesy of Blue Marble 3D

Blue Marble 3D is now investing in multiple multi-GPU BOXX systems in order to leverage Iray and NVIDIA GPUs as much as possible throughout its facility. It has even expanded into consulting beyond retail and restaurant space, providing services to the hospitality, aerospace, manufacturing, oil and gas industries.

"NVIDIA solutions have truly changed our business and allowed us to expand our services and client base," said Matos. "And the best part is that everything is off the shelf. Although our services are specific, we don't need to spend time and resources building a custom pipeline to do what we do. Any company creating renderings needs to be taking advantage of these solutions."

To learn more about NVIDIA Quadro, go to **www.nvidia.com/quadro**