Ripple Creative Group Turns to NVIDIA Quadro and PNY to Streamline Management of Massive Virtual Building Tour Files—and Ends Up Establishing a New Standard for its Production Pipeline

What's the best way to demonstrate the feasibility of constructing an affordable, buildable, 'green'-certifiable, net-zero home using materials available at standard home improvement stores? Peninsula Publishing, publisher of building trade magazines such as *Builder and Developer* and *Green Home Builder*, and Southern California Edison decided that the answer was the ABC Green Home, a prototype house designed for the way families really live.

As a crucial part of the project, full-service multimedia production studio Ripple Creative Group was commissioned to create a fully realized virtual tour of the ABC Green Home. To create the ambitious virtual tour, Ripple relied on PNY to provide the pre- and post- technical sales expertise needed to select, integrate and support the right NVIDIA® Quadro® GPUs for the project. The resulting 3D virtual tour enabled the architects, designers, and construction contractors working on the ABC Green Home to see and tweak design details before construction began, while allowing people unable to travel to the home's physical location at the Great Park in Irvine, California, to fully experience all aspects of the house.

Manipulating Massive 3D Files With Ease
One of the mandates for the ABC Green Home project was that every step of the design/build process, from initial concept through physical completion of the home, be 100% paperless. To meet this mandate, Ripple created the virtual tour in tandem with the house design.

Instead of having a different 3D file for each room in the virtual tour, Ripple discovered a more efficient and cost-effective approach that maintained better continuity with the house

design process itself: keeping the virtual tour in a single 400MB file. This one file provided cloud-based panoramic views for all the architectural pieces of the project.

Moving around and editing this massive file demanded more graphics processing power than Ripple possessed, so they turned to PNY for their excellent reputation in the professional graphics industry. PNY had the expertise to help select and support the right graphics boards to power the project: NVIDIA Quadro K4000 GPUs, running on three workstations. Using this technology and software that included Autodesk® 3D Studio Max and ChaosGroup's VRayLight, Ripple delivered a 3D, ultra-realistic, full-blown interactive virtual tour of the ABC Green Home.

> "The Quadro GPUs sold and supported by PNY allowed us to create, navigate in, edit, and handle the entire virtual tour using a single, polygon-intensive panoramic file stored on our 24 TB file server," said Joe King, President, Ripple Creative Group.

"When we previously created virtual tours by separating the house parts into discrete files, it was a real challenge to track and remember to propagate edits to all the files. With the single-file approach, we didn't have to rely on our notes or memories to keep everything accurate and up-to-date."

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Visualizing Architectural Details with Real-World Accuracy

The accuracy and detail of the immersive 3D virtual tour, made possible by the Quadro-powered technology, was important for a number of reasons.

The ABC Green Home architects and designers used the virtual tour while the home was being designed, to make, see, and finalize changes before physical building began. This approach saved time and money on the project, because it's much easier to make changes in software than to tear down and rebuild something in the physical world.

In addition, architects, designers, and building contractors not involved with the project can use the 3D virtual model to intensively explore the ABC Green Home's innovations and green building processes. And even if they're unable to visit the ABC Green Home in person, homeowners and anyone else interested in the latest green building practices can experience and appreciate the same benefits as with a physical tour: the understanding that sustainable, green, net-zero energy buildings are attainable and affordable to average homeowners, using traditional building processes and materials readily available at local home improvement stores.

"We got some amazing feedback on the interactive virtual tour," said King. "One of the sponsors showed it to his staff, who reacted with shock. 'You've already built it?' they asked. The sponsor laughed and explained, no, it's just a virtual model. But it was so real it fooled a lot of people."

Changing the Graphics Workflow, and Making it the New Standard

Ripple has built its marketing and visual communications services business around visualizing building and real-estate projects in such exquisite and accurate detail that anyone can see what the built project will actually look like. Still, the Quadro GPUs' large-file management capabilities, discovered through the ABC Green Home virtual tour project, led them to make their own graphics pipeline more productive and efficient. Ripple decided to extend these advances to all their clients.

"The ABC Green Home turned out to be a true experiment not only in net-zero energy building, but also with our virtual tour pipeline," said King. "The success of this ABC Green Home project propelled us to adopt the new single-file approach with all our clients—which they love, because it allows us to work faster, make changes more easily, and saves money in the long run through greater accuracy and efficiencies."

King appreciates the support provided by PNY throughout the development of the ABC Green Home virtual tour, and beyond.

> "PNY's customer service is outstanding," he said. "They give us 100% attention for every little issue that arises, and they get us up and running in no time. They're also invaluable in guiding us toward the best products for our own pipeline, based on our unique needs, and in providing the total solution so that installation is a breeze."

PNY Professional Graphics solutions, like the ones used by Ripple Creative Group to create the fully realized virtual tour of the ABC Green Home for Peninsula Publishing, are available from leading resellers. To learn more about how Autodesk certified NVIDIA Quadro graphic boards can accelerate 3D Studio Max, visit www.pny.com/3DSMAX.

- FEATURED PRODUCT -

NVIDIA Quadro K4000

RIPPLE CREATIVE GROUP
Ripple Creative group is a full-service multimedia production studio offering marketing and visual communications services for the building and real-estate industry. Ripple pulls together graphics, video, 3D content and animations into websites or interactive presentations to provide a compelling, believable, visual narrative of a project's core attributes—visualizations that linger in the audience's imagination, often blurring the distinction between concept and reality. To find out more about Ripple and to see examples of their work, visit **www.ripplecg.com**.

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