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VIZLAB

When leading architecture and engineering firm [PBK](#) needed state-of-the-art rendering for their new visualization lab, they chose BOXX. *By John Vondrak*

Jose Galindo is the Director of the PBK Visualization Lab (or VIZLab as he likes to refer to it), a San Antonio-based illustration and animation group within [PBK Architects](#), a national architecture and engineering solutions leader focused on K-12 school, higher education, healthcare, corporate, and government clients. “The firm has been providing professional planning and design services for more than 34 years and has established a strong reputation for its unique approach to performance-based design and responsive customer service,” says Galindo. “We effectively facilitate a collaborative, consensus-generating design process that produces customized, purpose-specific, building environments which enhance end-user performance. We also maintain strict control of the client’s budget and schedule objectives.” PBK has offices in Houston, Dallas, Fort Worth, San Antonio, Austin, and McAllen.

In 2014, when PBK CEO Dan Boggio announced the creation of the VIZLab as an independent group within the firm, it was understood that the new division would be tasked with specific goals, chief among them, providing clients with dynamic, real-time, life-like, project visualizations prior to the start of construction. At its inception, the VIZLab primarily assisted PBK's Higher Education division (also based in the San Antonio office), but it wasn't long before that changed. "Now that the group has grown in its capabilities," says Galindo, "we're taking on projects sourced from the entire firm. Also, the VIZLab has the capability to work with outside clients on a variety of project types ranging from renderings to augmented reality presentations to mobile application development."

Galindo has worked in the A/E industry since 2005. Prior to PBK, he owned a small San Antonio illustration firm and had a stint at Jacobs Engineering, the Fortune 500 international technical professional services firm. The other VIZLab team member, visualization specialist Oscar Veloz, is an architecture school graduate of the University of Texas at San Antonio. Veloz began his PBK career as an intern in January of 2014, but transitioned to the VIZLab later that year. Together, Galindo and Veloz have built the VIZLab from the ground up, helping PBK develop stunning new visuals and client presentations.



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THE CREATIVE PROCESS

In most cases, when the PBK VIZLab receives a request from one of their offices, they ask the project team to send either a SketchUp or [Revit](#)® model, along with any related drawings, such as site plans and material boards. After reviewing all the materials, the VIZLab crew gets down to business. “We have a kickoff discussion to determine how our illustrations will be used so we can tailor the look and feel of the imagery to best fit the presentation,” says Galindo. “PBK typically has established, long-standing relationships with its clients, and I find that our more senior staff often have intimate knowledge of what specific clients like and dislike.”

As an example, Galindo cites a recent VIZLab animation developed from a request that the client presentation play within a high school yearbook (see accompanying video). The sequence, which bookends the presentation, was created in [Adobe After Effects](#) and features images of the school and its alums amid turning yearbook pages. It begins when the existing school was built and travels through the ensuing years, leading to the present day and the unveiling of the new school design. It’s an ingenious concept, but Galindo and Veloz weren’t finished yet. The team went one step further when, at the suggestion of the project manager, their visuals were accompanied by a popular song—one the PM knew would surely inspire the client. Galindo admits that this type of presentation is a bit uncommon. In more typical situations, where a pre-determined creative direction doesn’t exist, the VIZLab works with the project team’s point of contact to create storyboards and establish a sketched out direction for the project. “Once we have worked through a storyboard and feel happy with our creative direction,” says Galindo, “we jump into Autodesk® [3ds Max](#) and begin modeling, texturing, and lighting our projects.”



Lone Star College

WORKFLOW

Dependant on what group sends them a project, the VIZLab workflow begins with either a [Autodesk® Revit®](#) model or a model out of SketchUp. If it comes from [Revit®](#), Veloz usually cleans up the model as needed and then links to it from [3ds Max®](#). “We thoroughly enjoy working from [Revit®](#),” says Galindo, “because it makes it easy for us to apply changes to the model that came from the project teams. When we get a SketchUp model, we usually remodel the project in [3ds Max®](#) and use the SketchUp model as a reference. We spend most of our time in [3ds Max®](#) and rendering with [V-Ray 3.0](#), but we also rely heavily on [Adobe](#) Photoshop, After Effects, and Premiere Pro. When we have elaborate environments, we’ll use eon Vue because it can create intricate landscapes and environments quickly. In situations where we have tighter deadlines for animations, we use Lumion because it integrates with SketchUp and [Revit®](#) well and renders very quickly on the GPU.” The VIZ Lab manages the render farm load with Pipeline FX Qube! render management software and at present, is working with Pipeline FX to develop a new job type for SketchUp so they will be able to distribute render jobs from SketchUp through the Qube! interface.

University of Mary Hardin Baylor, Fitness Center



“ALL WE HAD WERE STANDARD DELL 3600 MACHINES AND A RENDER FARM MADE UP OF VARIOUS UNUTILIZED COMPUTERS... I WOULD SPEND MORE TIME TRYING TO GET THE FARM RUNNING AND STAY RUNNING THAN I WOULD ACTUALLY WORKING ON PROJECTS.

- Jose Galindo | Director of PBK VIZLab



RENDERING DILEMMA

Although the whole rendering process sounds ordered and efficient now, Galindo says that wasn't always the case. In fact, when he first arrived at PBK, it didn't take long for him to see that the rendering process left much to be desired. "All we had were standard Dell 3600 machines and a render farm made up of various unutilized computers," he recalls. "In the beginning, I would spend more time trying to get the farm running and stay running than I would actually working on projects." Realizing that they couldn't execute projects efficiently and wanting more from final product, Galindo spoke with Boggio about starting the VIZLab. Fortunately, the wise CEO quickly agreed that an illustration group in PBK would be a valuable asset to the firm's workflow. Given the 'go ahead,' on creating the VIZLab, Galindo set about establishing a proper render farm.

CALLING BOXX

He already knew his next move. While employed at Jacobs Engineering, Galindo had watched a render farm demonstration presented by [BOXX Technologies](#). Needless to say, it left an impact. "At the time, we were substantially building up our rendering capabilities in our San Antonio office," he recalls, "and I was very impressed with the demo that [BOXX](#) gave us." Over the past few years, Galindo also enjoyed occasional opportunities to use a high performance [BOXX](#) workstation. "When it came time to purchase a render farm for the VIZLab," he says, "my first thought was to approach [BOXX](#)." When Galindo contacted the Austin, Texas-based hardware manufacturer, the voice on the other end of the line was BOXX performance specialist Rich Petit. "The entire experience was awesome, Galindo recalls. "Rich was very knowledgeable and always quick to respond to my questions and concerns. He was very sensitive to my needs and budget, and I never felt like he was trying to sell me more than what I needed."



TURN KEY SOLUTION

What PBK needed was a [RenderFarm On Wheels \(ROW\)](#), the ultimate turn-key render farm, available in a wide range of sizes and expandable to over 80 modules (2880 cores). The complete hardware package included rack-mounted, dual CPU render nodes held in a mobile enclosure. When the [ROW](#) arrived, Galindo was surprised that it fit into two boxes and delighted that it only took an hour or so to assemble. The real excitement, however, began when he put it to work. "Once I had all our software installed," he says, "I was amazed that I could now render, in a matter of minutes, projects that previously took hours upon hours to complete. Since that point, we haven't had any down time on the farm; it simply works. The [ROW](#) allows our small group to output work at a rate that would have never been possible if we were using our previous impromptu farm."

An added bonus is that Galindo no longer spends hours maintaining a render farm. "The new technology has allowed our team to spend more time executing our projects, rather than stopping work earlier than necessary to render," he says. "In addition, having the [ROW](#) allows us to iterate many changes without worrying about render times getting in the way of our deadlines. It's amazingly effective to be able to render multiple jobs and thousands of frames at nights and on weekends, and know that in the morning, our jobs will be finished and we can spend our day working." As for legendary [BOXX Technical Support](#), Galindo has only needed to contact them once, and like the rest of the BOXX experience, it went as expected. "They were extremely quick to respond and solve our problem," he says.

[renderBOXX & RenderFARM On Wheels](#)

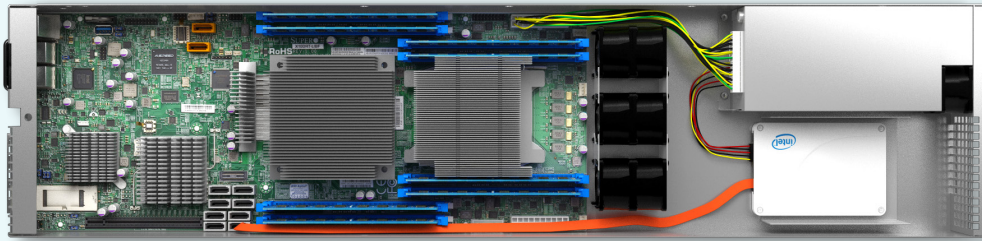
Purpose-built renderBOXX features dual Intel® Xeon® processors (up to 36 physical cores) to power the most demanding, render-intensive, 3D graphics and animation workflows.

Start with one or build a render farm. Ten modules fit into a 4U (7"x19") space and IPMI 2.0 technology featuring KVM over IP delivers the world's most efficient and flexible render farm network management.

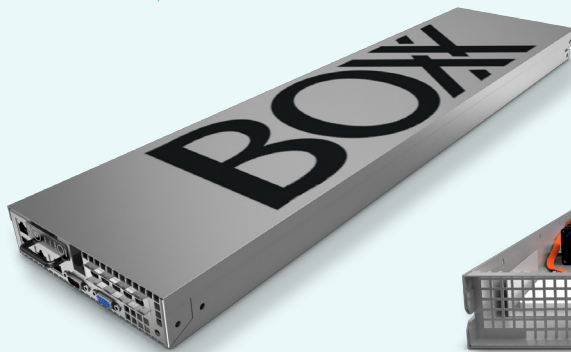
Multiple renderBOXX nodes can be configured into a BOXX RenderFarm On Wheels. It can include up to 80 modules with up to 2,880 cores in a 42U rack.



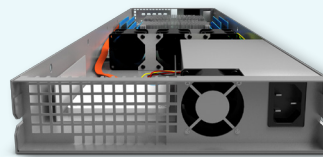
“I SEE OUR WORKFLOW TRANSITIONING INTO A HEAVIER GPU-COMPUTE WORKFLOW AND AWAY FROM PURE CPU RENDERING. AS A RESULT, BOXX SOLUTIONS MAKE EVEN MORE SENSE OVER COMPETING SOLUTIONS. I KNOW THAT I CAN GO TO BOXX AND GET A FOUR GPU WORKSTATION CUSTOM-TAILORED TO MY WORKFLOW. AS FAR AS I KNOW, SIMILAR CUSTOM CONFIGURATIONS ARE NOT OFFERED BY THE COMPETITION WITHOUT A SIGNIFICANTLY HIGHER PRICE TAG.”



renderBOXX node : top view



renderBOXX node : front view



renderBOXX node : back view

EXPANDING THE FARM

At present, PBK uses built workstations, but as the group continues to grow (and after seeing how their [RenderFarm on Wheels](#) performs), Galindo believes he will likely be making a transition over to [BOXX](#) workstations in the future. “If the performance and reliability of our [ROW](#) is any indicator, [BOXX](#) workstations should perform on par with our built machines while being more reliable,” he says. Galindo would also like to expand the render farm. “I see our workflow transitioning into a heavier GPU-compute workflow and away from pure CPU rendering. As a result, [BOXX](#) solutions make even more sense over competing solutions. I know that I can go to [BOXX](#) and get a four GPU workstation custom-tailored to my workflow. As far as I know, similar custom configurations are not offered by the competition without a significantly higher price tag.”

To see remarkable examples of PBK VIZLabs animation, watch, *PBK: A BOXX Video Customer Story* at: www.boxxtech.com/pbk

[Click here](#) to learn more about BOXX rendering solutions, or visit: www.boxxtech.com/products/rendering-and-simulation

[Click here](#) to learn more about PBK Architects, or visit: www.pbk.com

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