

Tryba Architects

renderBOXX Plays Key Role in High Profile Projects

Tryba Architects is an architecture, urban design and planning firm with a national reputation for design excellence. Led by Colorado native David Tryba, the Denver-based firm embodies its founder's passion for cities, as well as his design philosophy—coupling modernist design techniques with a respect for historic and urban context. The result is a new standard for modern contextual urbanism in numerous civic, cultural, corporate, and mixed-use projects. Recognized for his skill in the design of complex projects and recipient of numerous architecture and design awards, Tryba and his firm have been remarkably successful in the design of large infill projects and systems that inspire new neighborhoods and districts in emerging American cities.

Cesar E. Chavez Federal Building and Parking Complex

Location: Denver, Colorado
Square footage: 179,375 sf
Cost: \$33 million
Completion Date: 2012

History Colorado Center

Location: Denver, Colorado
Square footage: 198,000 sf
Cost: \$110 million
Completion Date: Fall 2011



Tryba Architects' image of the History Colorado Center rendered using a renderBOXX system from BOXX

The Design Process

Before beginning the process of formal design, Tryba Architects engages the client as early as possible in order to develop their program and investigate the inherent possibilities and opportunities. "It is vital that we understand to the greatest extent possible their mission, business plan and goals before developing the physical aspects of the building and spaces that will serve those functions," says founder and president David Tryba.

And as different clients have unique ideas,

plans, and goals, they also have different preferences with regard to presentation graphics. While some are more comfortable in their understanding of traditional architectural drawings, i.e., plans, section and elevations, etc., others need to see more detailed renderings in order to fully grasp all of the concepts involved in a project. Fortunately, Tryba Architects is able to adapt their graphic style to a client's particular needs while still maintaining a consistent, high quality palette.

"Internally, we use digital models and detailed renderings more and more frequently

in the early design stages to understand complex detail conditions as well as general concepts,” says associate principal Collin Kemberlin. “And having the capability to simulate materials, lighting, and architectural features quickly and accurately speeds our ability to make design recommendations to our clients.”

In many cases, the ability to depict aspects of the finished building continues through documentation and into the construction phases. However, Kemberlin is quick to point out that as opposed to a linear process, Tryba Architects’ design process is more akin to a spiral since it often circulates through and tests concepts at increasing levels of detail and sophistication.

“Our process is cyclical in a way,” he says. “We will quickly test concepts in rough sketches or models (both physical and digital) before developing those concepts with input from our consultants. As concepts are developed though, new information may be obtained that requires a re-evaluation of the basic concept.”

With regard to both software and workflow, the Tryba team incorporates two separate processes, though on complex projects (where design issues may be at different stages of development and sophistication) it is not uncommon for both processes to run simultaneously. Their workflow process, which used to begin with original hand sketches followed by Autodesk® AutoCAD® 2D drawings, now favors digital 3D modeling and rendering with products such as Autodesk® Revit® Architecture, Autodesk® 3ds Max® Design, Adobe® Photoshop® CS5, or Google SketchUp. Constantly evolving, Tryba is experimenting with a new digital ideation process as they move forward with Autodesk® Alias® Sketch and Adobe Photoshop CS5.



With Autodesk applications and renderBOXX, Tryba Architects created a photo realistic look at the inside of the Cesar E. Chavez Federal Building.

The Projects

The ten-story Cesar Chavez Federal Building (constructed in 1984) is home to a number of federal tenants including The Internal Revenue Service. Plagued by outdated and inferior mechanical systems, inadequate parking, and a deteriorating exterior, the structure was due for a major modernization. The project includes demolition of an existing parking structure deemed unsafe, full site work, design, construction, commissioning, and construction management.

History Colorado Center is a new building, just completed near the site of the old Colorado History Museum which closed in 2010. The new History Colorado Center will house a museum, curatorial and collections storage space, educational and public programs, the Office of Archaeology and Historic Preservation, the State Historical Fund, The Stephen H. Hart Research Library, and other Colorado Historical Society functions. It will open to the public in three phases beginning in the spring of 2012.

The Challenges

Because of the size and scope of this pair of high profile projects, principal architects David Tryba and Collin Kemberlin decided at the earliest stages that they would need renderings at all design phases, as well as detailed documentation of all design iterations throughout the creative process. By doing so, they would be delivering the best design possible for the client, and ultimately, the local community. However, it soon became apparent to the team of Saul Hayutin (Designer), Ken Roberts (Intern Architect) and then BIM Manager Richard Lopez, that it was going to be difficult to fulfill that request. At first, the team took their Revit Architecture model and imported it via FBX File Link to 3ds Max Design. By doing so, they could ensure that when the client, Tryba, or Kemberlin were reviewing design options, they were looking at what was actually going to be built by the contractor. They soon encountered a problem however, since their computer systems (Dell Precision 490 models) were taking anywhere from 8-36 hours to render. And since the team’s system could no longer keep up with rendering

requests, a backlog formed in the production pipeline. “We needed a system that would deliver rendering quickly in order for us to make rapid decisions on design options,” says Roberts.

The Solution

They also determined that a new system would have to arrive with specific requirements. It would have to be flexible (allowing multiple users “points of entry” to the processing power /parallel workflow), expandable and upgradable over time, reliable, and have a user interface simple enough for non-technical staff to monitor progress and access basic features.

Voicing their concerns, the team was authorized to find a system that could meet the firm’s needs. As it turned out, they didn’t have to look very far. A number of employees had been involved with the Autodesk Beta program (customer feedback forum) for some time, and it was there that many Autodesk users highly recommended BOXX systems. The enthusiasm for BOXX hardware didn’t stop there, however.

“Every time I did my research and approached my contacts with Autodesk and other resellers, BOXX always came up,” says Lopez, “so I called and spoke with (global solutions manager) Dustin Leifheit. Working with Dustin was great. He was informative and helpful. I was able to give him our parameters and expectations of rendering required for our firm and the time expected for each rendering. Armed with this information, he was able to provide many options, enabling us to pinpoint with laser accuracy, the system needed to perform the task at hand. In the end, we felt that BOXX was the best value.”

Featuring a multi-processor (Intel® Xeon® Processor 5600 Series running at up to 3.33GHz) and networked architecture, a



Update and Upgrade: A detailed street view rendering of the Cesar E. Chavez Federal Building.

renderBOXX dedicated rendering system is specifically designed to deliver outstanding rendering performance for intensive architectural visualization, animation, product design, and engineering workflows. Tryba elected to purchase three renderBOXX modules with upgraded video cards based on an assumption that if the renderBOXX units were ever not being utilized as a render farm, they could possibly be employed as a Revit production system.

The Test

When the modules arrived and it became time to put them to work, the Tryba team was pleasantly surprised to discover that BOXX’s claims of easy installation rang true.

“We received the computer on Friday and I had my team up and running Monday morning with the use of Autodesk® Backburner™ and our new BOXX render farm which we named Kyle,” says Lopez. “Kyle” was given a baptism by fire when Roberts took a rendering which had taken twelve hours to render on Tryba’s former computer system and ran it through the new renderBOXX farm. The results were astounding, with renderBOXX requiring only

45 minutes to finish the job.

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Then Ken took a previous eight hour render and tried it on “Kyle.” The rendering time was reduced to a mere 20 minutes. With the new render farm, Roberts and Hayutin were now able to produce an amazing forty large format renders in one week. When the team did the math with the different level of detail to each rendering, they concluded that it would have taken their old system approximately four weeks to complete the same task. “Allowing our firm to produce this many renderings, we were able to put the rendering in front of the design team and they were able to modify and course correct the design,” says Roberts. “The renderBOXX system has increased our rendering effectiveness eight-fold in terms of quantity and turnaround, which so far has translated into countless hours saved each month.”

In addition to fulfilling their need for a system that could deliver fast renderings, Tryba has also managed to fulfill their plan of utilizing the system in another capacity, namely, as a system for backup production units. The decision to upgrade the graphics cards was a wise one, for when Tryba experiences a decrease in rendering demand, they are able to have staff members benefit from renderBOXX processing power by using the system for Revit Architecture or 3ds Max Design.

The Future

Tryba Architects is so enamored with their new render farm that they jokingly provided Kyle with his own spot on the firm's staffing sheet; yet all kidding is pushed aside when they are asked to discuss the profound impact it has made at the firm.

"We really consider this system to be a valuable, collective resource worth managing effectively across all of our projects," says Kemberlin. "I can see this being a big part of the way we work in the future. We spend a lot of money upgrading our systems, and as you know, the average life span of a computer system is 2 to 3 years. We would like to expand the renderBOXX farm and allow our rendering department to push the boundaries with their renderings and start producing high quality animation."

There is also consideration of utilizing the renderBOXX system as Tryba Architects' own cloud computing system for projects.

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Intel® Xeon®-based renderBOXX increased rendering performance for the History Colorado Center project by 90%.

own cloud computing system for projects. "As demand increases," Kemberlin says, "instead of purchasing desktop workstations for our staff, I would rather purchase BOXX modules and maintain a user login to them. We are currently doing this with our Autodesk products and the feedback has been positive."

As building progresses on schedule at the Cesar Chavez Federal Building and has reached completion on History Colorado Center, Tryba Architects is certain that their decision to build a renderBOXX dedicated render farm was critical to the success of both buildings—as well as any future projects. Having earned a reputation for unique design, the professionals at Tryba regard renderBOXX as the solution that enables them to keep pushing that envelope while saving time, money, and increasing productivity and profit. It has provided another key benefit as well.

"Most importantly, the ability to quickly produce detailed renderings has required us to consider, at an early stage, the physical reality of the building, its components,

and systems," says Kemberlin. "Accurate rendering, when combined with powerful modeling tools, helps us detect and resolve conflicts in the building design before documentation and construction ever get underway."

The Task: Produce 40 renderings in one week
Previous hardware: Dell Precision 490
Time required: 696 hours
Current Hardware: renderBOXX render farm
Actual Time: 63 hours
Time saved: 633 hours

Performance increased by 90%

Author Contact Information:

John Vondrak
BOXX Technologies
10435 Burnet Road, Suite 120
Austin, TX 78758
512-835-0400 | 512-852-3326 (Direct)
jvondrak@boxxtech.com
WWW.BOXXTECH.COM

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