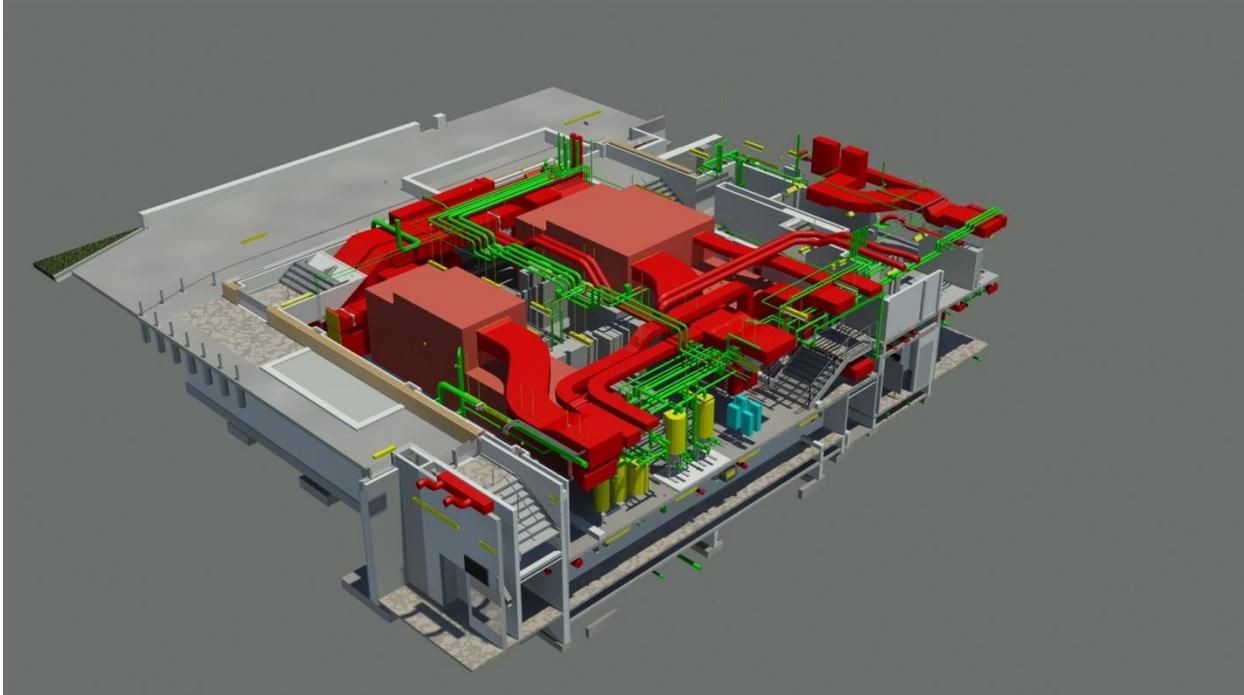


## Surmounting the Frequency Plateau



### ***Benchmarking Helps BOXX Win the Day for BIM Director Eric Bogenschutz and BSA LifeStructures***

Eric Bogenschutz was facing a dilemma. As BIM Director for BSA LifeStructures, one of the nation's top full service building design firms specializing in healing, learning and discovery environments, it was time for him to make upgrade recommendations regarding the company's vast network of computer workstations. These are the systems used by the firm's architects and engineers to run 3D visualization and analysis applications like Autodesk Revit and other professional software. For seven years, BSA had been a Dell shop and sitting on Bogenschutz's desk at that moment were three demo units from the well-known computer manufacturer.

His dilemma? The new Dell systems could offer no performance increase over BSALS's current crop of workstations. Top-of-the-line models produced by major manufacturers are capable of speeds as high as 3.7 GHz, yet that number has been the performance threshold since 2006. With speeds remaining virtually stagnant for six years, Bogenschutz realized that by purchasing the Dells, he wouldn't be solving any workflow problems—only replacing the old machines because they were soon to be out of warranty. He would not enable his architects and engineers to work faster and more efficiently.

For BSALS, the typical project workflow begins in the planning and programming phase by laying out diagrams, mapping out the building and getting the design in sync with the program requirements. They then move onto the process of construction documents, creating drawings

and models in Autodesk Revit—all while using the analytical tools in Revit (and other third party applications) as well as plug-ins to validate the design and to aide in making informed decisions. Budget, of course, determines the scope of a project, but as a full service firm, BSALS does offer services like complete energy analysis and lifecycle costing using historical energy usage and rates.

During the actual design phase of a project, the BSALS team begins in Revit, and then continues onward with the application. When necessary, a separate visualization department takes the project from Revit to Autodesk 3ds Max Design, while a full-time, 24/7 render farm handles the rendering. Final output is in Revit, but before the project goes out the door, Design Side Clash Detection is run multiple times throughout the design process to be confident of mitigating potential field issues within tight spaces. Clash Detection is completed in Autodesk Navisworks Manage. “We’re a little different because we do Clash Detection during design,” says Bogenschutz. “It’s just one of many services we provide which separates us from other design firms. Our clients expect a coordinated project that makes sense from the very beginning.”

Bogenschutz insists that the BSALS approach results in better, smoother running projects, where clients are well-informed and as a result, more focused. According to him, full coordination is the key. “Ultimately,” he says, “it gives the contractor a leg up on the schedule, so, for example, a fully coordinated hospital project is completed faster, therefore it opens sooner, serving the patients who need it, providing jobs, and generating revenue. Saving time is critical and delaying the completion of a project is a good way to not get hired again, you’re only as good as your last project.”



Which leads us back to Bogenschutz’s dilemma. The brand new demo workstations on his desks would not enable his teams to work faster and thus, finish projects sooner. He decided to do some research and the workstation manufacturer that continued to capture his attention was BOXX Technologies. “Our director of visualization knew some BOXX users as well,” Bogenschutz remembers, “and they couldn’t recommend them highly enough.”

His research revealed that BOXX was the only workstation manufacturer offering overclocked processor systems which would enable BSALS to surpass the frequency plateau. This line of 3DBOXX workstations (labeled XTREME) was capable of delivering speeds as high as 4.5 GHz. Armed with research and recommendations, Bogenschutz made a call to BOXX. The voice on the other end of the line was sales consultant Rene Meija who listened to the BSALS workflow issues and recommended possible workstation solutions. Meija also fielded plenty of Bogenschutz’s questions and after the discussion ended, the BIM Director informed both

management and IT that he wanted to give BOXX a try. Unfortunately, they had never heard of the Austin, Texas-based manufacturer and were reluctant to sign on.

*We're a Dell shop*, he was reminded. Eric responded by informing them that BOXX specialized in high performance, professional grade workstations and that the purchase of new Dell systems would not translate into any significant performance increase. BSALS was also concerned about technical support. *How could BOXX offer the level of support superior to a large corporation like Dell?* Eric pointed out that BOXX provided expert technical support (professionals who knew Autodesk Revit and BIM workflows) from their facility in Austin. He also pointed out the three-year BOXX warranty on all their systems—including the over clocked XTREME workstations.

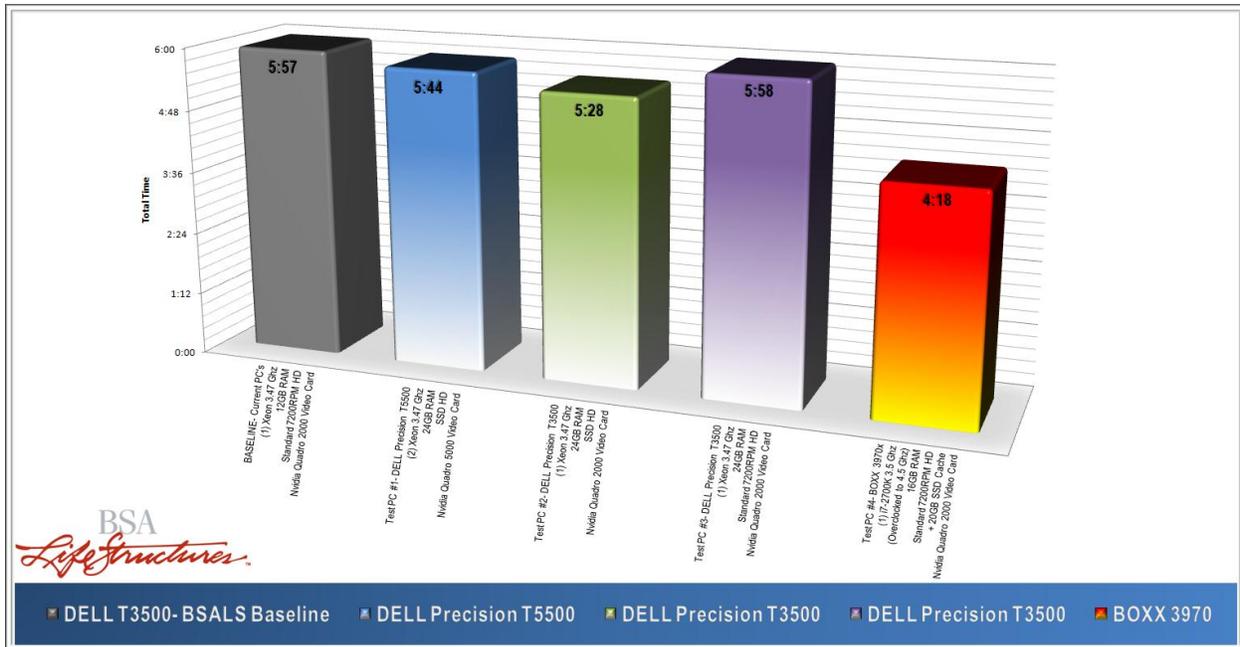


The decision makers were still skeptical, and the prospect of overclocked processors led to fears of, at best, failed workstations, and at worst, possible fires. Per Bogenschutz's request, Meija provided independent benchmarks, reviews from industry publications, and other documentation specifically related to overclocking. It also included a letter from BOXX which read in part:

*BOXX has been shipping overclocked systems since 2008 and throughout these past five years, with thousands of systems in the field, we have not experienced a processor failure rate any different from that of standard processor systems. In short, there has been no statistical variance whatsoever. The reason for this is because we work closely with our partner Intel to ensure that we stay within the parameters of safe overclocking, providing increased performance without applying significantly larger increases in voltage.*

Management and IT considered, but still weren't completely sold on making the switch. So Bogenschutz took matters into his own hands, phoned Meija and requested a demo model 3DBOXX 3970 XTREME, featuring an overclocked Intel Core i7 processor capable of reaching 4.5 GHz. "It was the easiest demo request ever," says Bogenschutz. "I had it in a week."

When the system arrived, including the complimentary BOXX t-shirt that ships with all orders, Bogenschutz decided to hang the apparel on the wall in his office, determined to initiate his own BOXX guerrilla marketing campaign. It worked, managing to catch the eye of any architect or engineer who happened by his office. He also put the workstation through its paces by conducting a series of benchmarks. The results were amazing. But based on his prior research, they were also just what the BIM Director had expected.



With performance gains of roughly 30%, Bogenschutz now had the ammunition he needed. Based on his benchmarks, it was easy to demonstrate that if fifty users at BSALS were given the 3DBOXX 3970 XT, the 30% performance increase would save fifteen minutes per day. Dell workstations were still in the running, primarily because the PC maker was offering slightly lower prices, but based on Bogenschutz’s benchmarking, that had now become less of an issue.

“It’s all about ROI,” says Bogenschutz. “Pretend for a moment that the Dell systems were free. Even in that instance, BOXX was still a better deal. At a 30% performance increase, in 6 to 12 months, user productivity outweighs cost. That’s the payback. Any time I can get an ROI to completely pay for itself in under a year, it’s a no brainer.” And at that point, says Bogenschutz, “benchmarking wins the day.”

Daily Time Savings (Minutes)	14.35	Minutes Saved/Day
x5 Days per week/60 Minutes (Hours)	1.20	Hours Saved/ Week
x48 Weeks (After vacation, holidays etc)	57.42	Hours Saved/Year
x\$100 average hourly billing rate/60 minutes	\$5,742	Yearly cost savings

With the BIM Director fanning the flames, word spread quickly through the offices of BSALS, and now the black BOXX t-shirt which adorned the wall led to direct questions about the 30% performance increase, followed by demands of “I want one!” “One” referred to the workstation, of course, although the shirt was popular as well.

IT and management were now satisfied and BSA began their conversion to BOXX with fifteen systems going to key users throughout the firm, i.e., those involved in a larger scale, two year project. “I knew our users were going to push them (the workstations),” says Bogenschutz, “but the BOXX systems never blinked.”

With the Dell machines, opening two models simultaneously had been a struggle, but now, one could open two or more simultaneously—and quickly too. After performing numerous tasks in Autodesk Revit and other applications, the new BOXX users were unanimous in their praise. The wildfire spread, and soon, another thirty-five BSALS professionals were asking when a new BOXX would show up on their desk. The firm recently purchased an additional thirty six BOXX workstations—3DBOXX 4050 XTREME models (the successor to the 3970 XT).

So far, one third of BSA's workstation fleet has been replaced with BOXX systems and with nearly all of their high end production users now working on BOXX machines, BSALS is now on track to eventually replace all of their old workstations, at a rate of 50 per year.

"It's the slippery slope," says Bogenschutz. "Once someone gets to experience Revit on a BOXX, they want that machine. Regardless of model size, you can break it down and quickly make changes—BOXX removes the limitations. And in the long run, that means we're saving time, saving money, and hitting deadlines."



*Eric A. Bogenschutz has been a presenter at Autodesk University since 2006, speaking on CAD and BIM issues, as well as Autodesk Revit MEP and 3ds Max workflows. He has also appeared as a lecturer at various building & construction associations and conferences. Mr. Bogenschutz's Autodesk credentials include: AutoCAD Architecture 2009 Certified Professional Revit Architecture 2010- 2012 Certified Professional*