

Peter Basso Associates mechanical and electrical engineering firm standardizes on HP Workstations, IT infrastructure



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– Bill Case, IT chief for Peter Basso Associates



Objective:

Facilitate mechanical and electrical CAD, with a focus on 3D modeling.

Approach:

Peter Basso Associates has standardized on HP Workstations.

IT improvements:

- Improved stability, reliability.
- Performance improvements facilitate transition to 3D modeling.

Business benefits:

- Faster modeling.
- Engineers can explore more design options.
- Improved visualization.
- Better use of data improves productivity.

HP customer case study: HP Workstations facilitate 3D CAD to improve productivity

Industry: Engineering



A few years ago, Peter Basso Associates was just starting to get into 3D design. Enabled by HP Workstations, they are now doing all mechanical design and some electrical design in 3D, necessitated by increasing complexity and customer demand.

When Bill Case began talking with HP about his need for engineering workstations, he was pleasantly surprised.

“With our previous vendor, if I wanted a server or workstation, it seemed like it immediately turned into a discussion of what was I going to buy and how soon. They were all about making a sale.

“With HP, the conversation began with them asking what I needed to do, and where I wanted to be technologically in the future. That was new to me,” recalls Case. “I’ve done business with HP for several years now, and consistently, I’m impressed with the IT professionalism. Everybody is eager and enthusiastic to get me into the right system for my needs. Sometimes it means spending more money, but often, they’re able to guide me to a solution that means





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spending less. And every time, I've known we had the right solution for our needs.

"In a lot of ways, HP is my free consultant."

Best use of engineers' time

As the IT chief for Peter Basso Associates (PBA), a mechanical and electrical engineering firm headquartered in Troy, Michigan, with a business presence in Las Vegas, Phoenix and Chicago, Case provides technology support for a company where technology is critical to success.

To customers, PBA's end product is drawings and specifications. But what the company really sells is time — what highly skilled engineers can produce efficiently. "We can't have engineers waiting around because their workstations are too slow," says Case. "In many ways, the value we offer clients comes down to how much our people can get done in a given amount of time."

So, Case standardized on HP Workstations. PBA is now on its third generation of HP Workstations, the HP xw4400 Workstation with Intel® Core™2 Duo processors, NVIDIA FX series graphics cards to enable 3D visibility, and 2 gigabytes of RAM. It has enabled the company to move forward into the leading edge of 3D mechanical and electrical engineering.

Engineering workstations at PBA are used primarily to run:

- Autodesk Building Systems 2007
- Autodesk Architectural Desktop 2007
- Microsoft Office 2003 and 2007
- AGI 32 lighting software
- Visual lighting software
- Trane TRACETM (Trane Air Conditioning Economics software)

The transition to design in 3D is driven by PBA's desire to provide clearer design intent, and has been demanded by clients. It has been made feasible with performance improvements.

Consider a straightforward case of cutting 3D sections of sheet metal for an entire floor of a large building. In the past, that operation might take a few hours. As a result, engineers couldn't use them in real time, if at all. "When we moved to the xw4400 workstation and Autodesk 2007 software, the time required for that operation was cut from hours to about a minute," says Case.

As a result, engineers have better visibility as they design, can consider more options, and reach the best solution faster. They're getting a lot more work done, with even better quality.

“As an engineering firm, it’s easy for us to see the innovation in HP technology. We know we have the tools for top performance.”

Bill Case, IT chief for Peter Basso Associates



The right workstations for engineering

To be fair, Case points out, not all that performance is the result of improved HP hardware. Some of it is due to software improvements. Which is why HP routinely tests and collaborates with leading software developers.

“What we’ve found is the workstations get better and the software gets better,” says Case. “Together, they’re making our engineers much more productive.”

How? Case points out several important ways:

- Greater creativity in design. Among the basic tenets of computer-aided design is an iterative process. Designers try one thing, then adapt their initial design with improvements. Faster processing means engineers can explore more options in the same amount of time. “To the extent you can design something, test it, and modify the design before your deadline, you can do more,” says Case. “Ultimately, we can consider more alternatives and arrive at a better solution.”
- Using design data more intelligently. In developing heating and cooling systems, for example, designers would develop the basic layout, and then manually enter design data in an HVAC calculation software package to determine sizing and efficiency. Now they can transfer the original information stored directly in the models to the secondary software. “It’s faster, easier, and more accurate. It eliminates the risk of transcription errors,” says Case. “In the past, it might take hours to input data for calculations. Now, we can do it in minutes, which is a big edge.”
- HP Performance Tuning Framework software. Case says that PTF helps him optimize workstation settings and ensure that he has the right drivers loaded for

best all-around performance. “I found things in HP software that you might not even know would impact workstation performance, but they had a substantial impact. I tell people, ‘I have a performance tuner right on staff. I don’t have to pay him anything, and he does great work.’”

- Multiple viewing ports. Engineers can view a model from multiple angles, including plan and isometric views to enhance visualization as design changes are tested. “Our designers are developing the model in real-time, so you need real-time awareness,” says Case.

Case says his target is a three-year turnover rate for engineering workstations. At the end of that period, they may be outmoded for engineering use, but are still perfectly acceptable for other non-technical use.

Total HP relationship

PBA’s relationship with HP products extends far beyond engineering workstations. HP has become the company’s standard for IT infrastructure. While Case has the opportunity to talk with HP experts, the company often works directly with one of two HP partners: INS (Integrator of New Systems) and Softchoice for local assistance.

Servers: In some ways, PBA differs from most companies in that the most demanding applications are run at the desktop on workstations. But HP’s presence extends throughout the organization. In the data center, the company uses HP ProLiant DL360 servers to run all back-office and database applications. Case says he’s anticipating a refresh of the server infrastructure shortly. “There’s great promise in virtualizing our server infrastructure, which is one of HP’s great strengths, so I’m looking forward to that.”

Data storage: Storage may actually impact the company's core IT demands even more than servers, since all project documents are stored in the data center. Three years ago, the company implemented an HP Storage Area Network (SAN) storage solution based on the Modular Storage Array managed with HP Array Manager software. A recent upgrade was designed to improve redundancy and availability, and increase capacity.

"The SAN is more efficient for sharing storage capacity," says Case. It replaces individual RAID arrays. The SAN is configured for RAID 6, which allows the array to lose up to two disk drives and still run effectively. "There are a lot of automated recovery features built in," Case adds.

A recent addition is the HP StorageWorks All-in-One 600 Storage System, which Case added to enhance backup. "The AiO600 offers 1.5 terabytes of storage and works as a backup server, all at a great price point," Case notes. "So we have additional storage and a dedicated machine where we take server and data image backups for disaster recovery without impacting production."

Printers: PBA has long utilized HP printers. The HP LaserJet printer remains the company's workhorse laser printer. In addition to general office printing, the LaserJet handles 11 x 17-inch check prints for engineering drawings.

Recently, the company has added HP LaserJet 9050mfp and M5035mfp devices to replace copiers. "We've added convenience because the MFPs offer fax capabilities and the ability to scan documents to PDFs," notes Case.

MFPs have also facilitated a workflow change with major benefits. In the past, the company would accept multiple sets of shop drawings from contractors for review during construction. An engineer would review a single set of drawings and mark them up; then someone (sometimes an engineer) would need to copy



the markup to the additional sets of drawings, and the originals would be sent back to the contractor. Marking up backup copies of the documents could take hours.

Now, after initial document markup, the drawings are scanned with an HP MFP. The scanned images serve PBA's future and archival needs, eliminating the need for someone to mark up additional copies of the document; and can also be passed along to contractors, clients and other interested parties. "The labor savings is incredible," says Case. "It saves several hours for each set of drawings."

Notebook PCs: PBA recently deployed HP Compaq 6900 series notebook PCs to its mobile executives. They allow the executives to connect to the company's local area network via a VPN. "They're very fast and functional for routine office applications, and we even deployed Autodesk Building Systems on one." With two gigabytes of RAM and a dual-core processor, "It's handled the application very well," says Case.

"As an engineering firm, it's easy for us to see the innovation in HP technology," says Case. "We know we have the tools for top performance."

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