

SMITHGROUP

HP Z Workstations, AutoDesk power transition to BIM



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HP CUSTOMER CASE STUDY:

HP Workstations, RGS software enable remote collaboration on complex models

INDUSTRY:

Architecture/engineering

Windows®. Life without Walls™. HP recommends Windows 7.

OBJECTIVE:

Enable use of AutoDesk® Revit® Architecture software and remote access to Revit models

APPROACH:

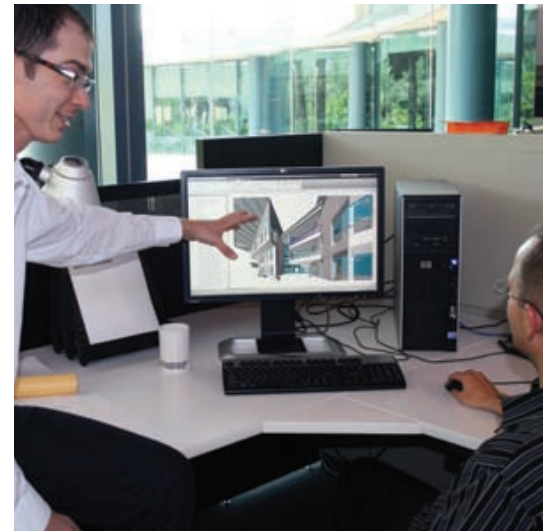
SmithGroup is standardizing on HP Z400 Workstations for its architects and engineers

TECHNOLOGY IMPROVEMENTS:

- Faster local processing
- Improved stability
- Less technology staff time spent on infrastructure maintenance

BUSINESS BENEFITS:

- Shorter rendering times
- Cross-office collaboration on even large, complex models
- Ability to develop and deploy proprietary tools leveraging past work



SmithGroup, a leading national architecture and engineering firm, was looking for desktop hardware that would efficiently run AutoDesk® Revit® Architecture building information modeling software, as well as provide access to Revit models from remote locations. Its research led directly to HP.

"We were first drawn to HP because HP's Remote Graphics Software (RGS) appeared to be the best tool for remote access. But one of the things that really sold us was HP's relationship with AutoDesk," notes Derek J. White, vice president and director of information technologies at SmithGroup.

The firm chose the HP Z400 Workstation as the standard desktop platform for its architects and engineers. "The Z Workstation gives us all the processing and graphics capability we need to support very demanding engineering software," says White. "We can't go out and buy \$4,000 to \$5,000 machines for everybody on our team.

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But with the Z400 Workstation, we get a high-performing hardware platform at a price that makes sense. It's a good value for our needs."

BIM MODELING REQUIRES MORE POWER

At 157 years and counting, SmithGroup is the oldest continuously practicing architecture and engineering firm in the United States. It operates 12 offices throughout the country. Its top practice areas include health care, science and technology, higher education and workplace.

The firm's current technology challenges fall into two areas: integrating building information modeling as a core design technology, and the need to facilitate collaboration among its various offices, which are often thousands of miles apart.

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The transition to building information modeling (BIM) is affecting every player in the design and construction industry. BIM is arguably a more powerful tool than any previous architectural and engineering software, but running it requires more robust hardware. To run AutoDesk Revit, which is SmithGroup's BIM software of choice, AutoDesk recommends HP Z Workstations.

Revit integrates physical and analytical models, bidirectionally associates features between models and views, and facilitates the creation of structural details from 3D model views.

"People used to draw by hand in this industry, and even with CAD, you were still just drawing things," White muses. "In Revit, you're dealing with objects that are graphically oriented databases. If you put a door into a design, that door has all

kinds of attributes connected to it. That makes the design much more powerful, but also much more complex. That's why we need the power of an HP Workstation."

PUSHING THE LIMITS OF DESKTOP HARDWARE, SOFTWARE

SmithGroup recently designed a one million-square-foot hospital using Revit software. It became a very large and highly complex model. "We pushed the limits of the software and our HP hardware with that project," White notes.

The model became extremely complex not simply because of its size, but also because hospitals contain unique spaces with special requirements. They often feature curtainwall design features that challenge engineering limits. Inside, imagine an operating theatre, emergency department or critical care suite. They all present special power and environmental requirements. So do patient rooms—with oxygen lines, dedicated data feeds to nursing substations, and more. And in this case, the new building consolidated several distinct health care functions into one superblock, with modular spaces designed to allow maximum adaptability in the future.

White says the hospital project illustrated the ability of HP Z400 Workstations not just to handle large models, but to boost employee productivity. Using Revit, employees would render portions of the building model many times each day.

"If you're doing something 50 times a day, and it takes 15 or 20 seconds less each time because of the processor and graphics card, that really adds up," White says. "It's fair to say that with their Z400 Workstations, our people are able to work more efficiently and accomplish more every day."

Another reason SmithGroup turned to HP Workstations is the need for employees in one location to remotely access Revit models in another. "Revit files don't open well across wide area networks," explains White. So the firm investigated software that would remotely access a model using a local Workstation where the model is stored. After investigating a number of possibilities, White's team decided on HP RGS software.

RGS enables users to view and interact with the desktop of a remote HP Desktop PC or Workstation over the Internet. RGS gives users access to rich-content environments that can include video, web flash animations and graphic-intensive applications. Applications run natively on the remote system and take full advantage of the computer and hardware graphics resources of the sending system—in this case, another HP Z400 Workstation.

CUSTOMER SOLUTION AT A GLANCE

PRIMARY APPLICATIONS

Architecture/engineering software

PRIMARY HARDWARE

- HP Z400 Workstations
- HP LP2475w 24-inch Widescreen LCD Monitor

SOFTWARE

- Genuine Windows® XP Professional
- Genuine Windows® 7 Professional 64-bit
- AutoDesk® Revit® Architecture
- HP Remote Graphics Software

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RGS captures the desktop of the remote system and transmits it to a window on the local client using advanced image compression technology. "We found we could put the RGS client on the remote workstation and access a model almost as if we were in the same room with the host," White says. "We like the power and flexibility that RGS gives us."

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Remote access is important to SmithGroup because it can't have its leading experts in every client sector—health care, science and technology, higher education, etc.—in every office, at all times. "It's critical for us to be able to share one person's talent in several offices," White explains. "We have key experts who are well-known in the industry. Allowing them to work from a single location and participate on multiple projects in multiple locations is a big advantage. That kind of collaboration is necessary every day."

HP AND AUTODESK

SmithGroup chose the HP Z400 Workstation in part because of the Workstation's robust design, and in part because it was being paired with Revit. "Revit gets updated on an annual basis, and there are a lot of moving parts—lots of graphics

card interaction," says White. "Knowing that HP and AutoDesk have a good relationship, and that the Z400 is certified to run AutoDesk software, is very important to us. We know the drivers are thoroughly tested. We can call up AutoDesk or HP, and we know we'll be connected to people that understand how the hardware and software work together.

"You can't overestimate the value of a good relationship between vendors," he continues. "It's very easy for customers to get caught in a disconnect between hardware and software. Not to have to worry about that is reassuring."

The Z400 Workstation's design was another important consideration. "The Z400s are clearly well built. You won't find pieces of plastic breaking off, and they're designed well internally," White says.

SmithGroup equips the HP Workstations with either Genuine Windows® XP Professional 64-bit, or soon, Genuine Windows® 7 Professional 64-bit, 24 GB of RAM and the NVIDIA Quadro FX3800 graphics card. "We're seeing that Windows® 7 gives us a more robust environment. We're looking to improve boot time and stability," White says.

The firm's standard workstation configuration is designed to meet the most demanding requirements that most of the firm's engineers and architects will place on them over a two-year period. After that, they are typically rotated to a general office worker for a third year's use.

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The firm pairs the Z400 Workstation with HP monitors—most often, a single HP LP2475w 24-inch Widescreen LCD Monitor, which is chosen for its color consistency and broad variety of connection ports. But the firm is happy to give staff members whatever they want, such as dual 20-inch monitors instead. “We try to treat our staff as professionals and assume they will only ask for things that they truly need to be as productive as possible,” White says.

HIGH-LEVEL TECHNOLOGY WITH RELIABILITY

White says SmithGroup tends to be an early adopter of new technology, which has a direct impact on its business. “We have to be early adopters to remain competitive in the industry,” he notes. While the firm is large by historical standards, recent consolidation in the industry has created giants with as many of 40,000 employees. “In order to compete with companies like that, which have incredible resources, we feel we have to be early adopters and nimble users of technology.”

He notes that the firm’s technology staff used to spend too much time simply maintaining infrastructure. Now, he says, the time devoted to such maintenance has been cut in half. And the savings has been redirected into technology innovation.

“That’s one reason we’ve turned to HP,” he says. “If we can deploy Workstations and servers that we can depend on day after day, month after month, that’s great. If we’re not spending all our time on maintenance, we can turn our attention to things that really add value to the business.”

One example: a new tool developed internally to work with Revit, called WorkSim®. It helps the firm leverage successful ideas from previous projects, so less time is spent reinventing the wheel. “In the past three years, we’ve done over 130 health care facilities. As we see trends developing, we can track them through all of our projects to ensure that we bring the latest information and ideas to our clients,” White explains.

Of course, developing such tools and running them efficiently is entirely dependent on the HP infrastructure that White just depends on—day after day, month after month. “HP is helping us move forward in ways most employees don’t even realize,” he says. “In our industry, innovation is the biggest single key to long-term success. HP Workstations give our designers the freedom and time to explore more solutions to every problem, to find not just a good solution, but the best solution our minds can imagine.”

To learn more, visit www.hp.com

Contact the HP Reference2Win Program, 866-REF-3734 for more information.

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4AA22078ENW, July 2010

