

# HP and Autodesk in AEC

HP Workstations deliver the high performance, expandable memory capacities, and extreme reliability needed for success in architecture, engineering, and construction.



## Autodesk®

### Accelerate architectural design, engineering, and construction with HP Workstations.

In architecture, engineering, and construction (AEC), models are getting more detailed and software is getting more sophisticated. HP helps you stay ahead of the curve with a portfolio of desktop and mobile workstations designed for today's challenges. HP Workstations deliver the innovation, high performance, expandable memory capacities, and extreme reliability you need to deliver your creative best efforts in less time. HP also brings you high-resolution displays that help you see your work in vivid detail; hardware certification for a wide range of professional applications; tool-less removable back covers for easy maintenance and upgrades; and HP Performance Advisor, an HP exclusive tool for performance optimization.

### When only the best will do.

HP Workstations are built for the unyielding demands of today's professional and technical workplaces. They are engineered to help your team work faster, work smarter, and gain a competitive edge. With bold designs, world-class engineering, robust management tools, and leading-edge visual collaboration solutions, HP Workstations take innovation, performance, and reliability to a new level.

### HP and Autodesk

HP resources and our relationships with Autodesk, graphics vendors, chip suppliers, and Microsoft provide a consistent application, operating system, hardware, and graphics technical direction. This results in broader, more dependable 3D application-oriented technology choices. HP and Autodesk have a relationship that provides more comprehensive solutions to the AEC industry.

### Rigorous ISV Certifications



HP invests in resources, equipment, relationships, testing and ISV (Independent Software Vendor) certification to ensure HP Workstations work as expected with Autodesk applications. This level of HP effort means your investment in software and HP hardware is protected, with a commitment to the quality and support of the full solution. [Check your HP Workstation certification status for Autodesk applications. >>](#)

Find more information on HP and Autodesk  
[Learn more](#)

HP recommends Windows.

## HP Advantages for Autodesk Customers

- Use What Autodesk Uses**
  - Autodesk has standardized on HP Workstations and Mobile Workstations to develop, test, and demonstrate their software.
- Protect Your Investment with HP Certification**
  - HP tests and submits HP Workstations to Autodesk for certification and our equipment stays onsite for support. This protects your solution investment.
- Use HP Expert Knowledge**
  - HP application experts support customer issues, develop recommended configurations, run performance testing, and application performance analysis.
  - HP Performance Advisor provides specific performance settings for individual applications.
  - Learn more with [HP Tech Tips](#) and see how you can benefit from specific HP and partner technologies.
- Use HP Collaboration Tools**
  - HP Remote Graphics Software is specifically designed to remotely access your Autodesk applications.

## Autodesk Architecture, Engineering and Construction Solutions

Autodesk helps AEC professionals deliver building and infrastructure projects faster and more economically, while minimizing environmental impact. With powerful tools for design, simulation, visualization, documentation, and construction, Autodesk Building Information Modeling (BIM) solutions support an intelligent model-based process that provides greater insight across the project lifecycle. The Autodesk® Building Design Suite Premium, which includes the Autodesk® Revit®, AutoCAD® building applications, Autodesk® 3ds Max® Design and Autodesk® Navisworks® Simulate, is the best way to access Autodesk's leading design and visualization tools for building projects which can help architects, engineers and contractors design and build better buildings.

The Autodesk® Infrastructure Design Suite Premium, which includes AutoCAD, AutoCAD® Civil 3D®, AutoCAD® Map 3D, Autodesk® Infrastructure Modeler, Autodesk® Navisworks® Simulate, and 3ds Max Design software, is Autodesk's most comprehensive software solution for planning, designing, building, and managing Civil and Utility Infrastructure. Learn more at [hp.com/go/autodesk](http://hp.com/go/autodesk).



### Environmental Systems Design case study

[Watch the video](#)

## Autodesk Design Visualization Solutions

Autodesk® 3ds Max® Design software provides powerful, integrated 3D modeling, animation, rendering, and compositing tools that enable artists and designers to more quickly ramp up for production. Using this specialized toolset for designers and engineers, you can demonstrate the operation of designs in real-world settings, providing seamless aggregation of CAD data and transforming digital prototypes into high-quality visuals. With an extensive material and texture library, “push-button” rendering, and cinematic-quality animation and effects, you have the ability to present your designs using Academy Award-winning technology. Autodesk® Showcase® 3D visualization software helps product designers and engineers transform digital prototypes into highly realistic imagery and immersive, interactive presentations.

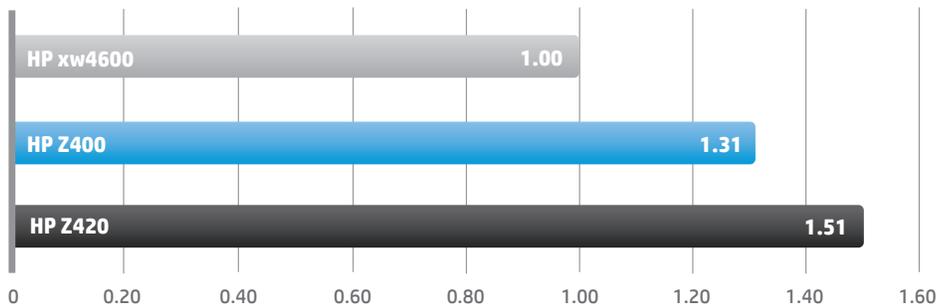
“Customers need tools that provide the power and flexibility to get their job done quickly, efficiently and to stay competitive. Autodesk and HP have partnered to provide the right solutions and together we offer our customers the hardware and software products they need to stay competitive.”

— Chris Bradshaw,  
Senior Vice President & CMO, Autodesk

## HP Z420 provides more AutoCAD Performance

### AutoCAD 2010 — Cadalyst 5.3 Total HP xw4600 vs. HP Z400 vs. HP Z420

Relative Performance (Higher is Better)



This chart compares a HP Z420 Workstation running an Intel® Xeon® E5-1660 3.30 GHz six-core processor<sup>6,7</sup> to a HP xw4600, which is approximately three-year old technology, running an Intel® Core™ 2 Duo E8600 (3.33 GHz) processor<sup>6,7</sup> so users can get an idea of the performance increase they might see by upgrading. Testing is based upon Cadalyst 5.3 Benchmark. Also shown is the HP Z400 running an Intel® Core™ i5-670 (3.46 GHz) processor<sup>6,7</sup>. All systems are running Windows 7 Ultimate 64-bit operating system<sup>3</sup> and Autodesk AutoCAD 2010.



## Built to perform like no other.

The HP Z Workstation family meets the full range of your workstation needs—from performance-driven computing and design work in space-constrained environments to extreme visualization and analysis with complex datasets.

### HP Z1 Workstation.

**Get all the power without the tower. >>**

When you work in architecture, engineering, or construction, space on your desk is at a premium. The all-in-one HP Z1 Workstation helps you simplify your desktop, save space, and eliminate wires. It puts the performance and reliability of a complete HP Z Workstation expertly designed into the back of a 27-inch diagonal greater than HD display. Add a wireless keyboard and mouse, the only cord you need is for power. Better still, a tool-less chassis design makes it a snap to upgrade and maintain.

### HP Z220 Workstation

**Our most affordable workstations. >>**

Available in an expandable minitower or a compact small form factor, the HP Z220 Workstation delivers workstation performance and reliability at starting prices that rival desktop PCs. Ideal for AutoCAD and Navisworks.

### HP Z420 Workstation

**Performance you want. Value you need. >>**

The HP Z420 Workstation provides high levels of performance and expandability in an accessible tool-free mini-tower form factor—all at a great price. Ideal for mainstream Revit users with good memory expandability.

### HP Z620 Workstation

**Our most versatile workstation ever. >>**

With up to 16 discrete processor cores, the HP Z620 Workstation packs tons of computing and visualization power into a quiet, compact footprint. Ideal for rendering on a low budget.

### HP Z820 Workstation

**Our ultimate workstation. >>**

The dual-socket HP Z820 Workstation delivers exceptional performance, award-winning industrial design, and tool-free serviceability in the industry's most expandable chassis. Ideal for Autodesk Showcase, 3ds Max, Maya and complex Revit users.

### HP Mobile Workstations

**Mobility for Business. >>**

Make no compromises on performance or durability with the HP EliteBook Mobile Workstations. Offering high performance with exceptional battery life. Inspired by aerospace craftsmanship and materials, they feature a wear and smudge-resistant DuraFinish and an optional backlit keyboard for use in low-light environments. With HP rigorous design testing, 26 drops and still running smooth.

## HP Workstation Innovation Highlights

HP award-winning Workstations are rich with customer-driven innovations. Servicing is easy with a tool-less access chassis and modular, direct-connect drives and power supplies on select models.

### HP Performance Series Displays

**Stunning at every angle. >>**



HP Performance Displays are engineered to outperform, so you can create with striking visual results. These displays deliver maximum image performance and accuracy, thanks to vivid IPS panels, 178-degree viewing angles, and up to 10x the contrast ratio of mainstream displays, with top end resolutions. They also offer 30-bit panels (over 1 billion colors)<sup>1,2</sup> for outstanding visualization.

### HP Performance Advisor

**The built-in workstation guru. >>**



HP Performance Advisor delivers a simple, effective way to keep your HP Workstation operating at its peak potential. Like having an IT pro always on hand, this helpful software wizard can take you from initial configuration and customization through the optimization of your system for each new application and driver you install.

### Remote Graphics Software

**Remote access with a “just like local” feel. >>**



HP Remote Graphics Software gives you high-performance remote desktop access to your 2D, 3D, video, and media-rich applications—when and where you need them, on-site or from a remote location through a standard Internet connection. This HP innovation allows you to collaborate with colleagues across geographies, in real-time, using content-rich interactive applications.



**Desktop Engineering**  
**Editor's Pick of the Week:**  
**HP Z1 Workstation >>**

*HP Innovation helps customers do more, and get more.*



HP recommends Windows.



## HP Workstations for Autodesk Products

Model	HP Z220 CMT & HP Z220 SFF for affordable high performance	HP Z1 for simplicity, all-in-one, and great performance	HP Z420 for mainstream users needing memory expansion	HP Z620 for affordable multi-core machines	HP Z820 for the best performance and expandability	HP EliteBook 8470w/8570w/8770w Mobile Workstations for power on the go
<b>Operating System</b>	Windows 7 Ultimate 64-bit <sup>†</sup>	Windows 7 Ultimate 64-bit <sup>†</sup>	Windows 7 Ultimate 64-bit <sup>†</sup>	Windows 7 Ultimate 64-bit <sup>†</sup>	Windows 7 Ultimate 64-bit <sup>†</sup>	Windows 7 Professional 64-bit <sup>†</sup>
<b>Autodesk Solution</b>	AutoCAD LT (SFF), AutoCAD, AutoCAD vertical applications, Navisworks, Autodesk Design Suite	AutoCAD, AutoCAD vertical applications, Revit, Navisworks, Autodesk Design Suite	Autodesk Revit Architecture, Revit MEP, AutoCAD Civil 3D, Building Design Suite	Autodesk 3ds Max, Revit power users	Autodesk 3ds Max power users, Autodesk Alias Design, Autodesk Showcase	All Autodesk applications
<b>Recommended Min Processors</b> <small>3,4,5,6,7</small>	Intel® Xeon® Processor E3-1230v2, 3.30 GHz, 3.7 T,HT, 8 MB cache, 69 W, Quad-Core, 1600 MHz memory	Intel® Xeon® Processor E3-1245, 3.3 GHz, 95 W, 8 MB cache, 1333 MHz memory, Quad-Core, HT	Intel® Xeon® Processor E5-1620, 3.6 GHz, 10 MB cache, 1600 MHz, Quad-Core	(2) Intel® Xeon® Processor E5-2667, 2.9 GHz, 130 W, <sup>8</sup> 15 MB cache, 1600 MHz memory, Six-Core, HT	(2) Intel® Xeon® Processor E5-2667, 2.9 GHz, 130 W, <sup>8</sup> 15 MB cache, 1600 MHz memory, Six-Core, HT	Intel® Core™ i7-3720QM, 2.6 GHz (up to 3.6 GHz), 1600 MHz, 6 MB L3 cache, 45 W
<b>Recommended Min Graphic Card</b>	NVIDIA Quadro 600, AMD FirePro V4900, AMD FirePro V3900 (SFF)	NVIDIA Quadro 1000M	NVIDIA Quadro 2000 or AMD FirePro V5900	NVIDIA Quadro 2000 or AMD FirePro V5900	NVIDIA Quadro 4000 or AMD FirePro V7900	AMD FirePro M2000 (14"), AMD FirePro M4000 (15" or 17"), NVIDIA Quadro K1000M (15"), NVIDIA Quadro K3000M (17")
<b>Memory Guidance<sup>9</sup></b>	8 GB	8 GB	16 GB	16 GB	32 GB	16 GB, 8 GB (14")
<b>Disk Drive Guidance<sup>10,11</sup></b>	256 GB SATA SSD 500 GB 7200 RPM SATA HDD	(2) 160 GB SATA SSD or (1) 500 GB 7200 RPM SATA HDD	256 GB SATA SSD 500 GB 7200 RPM SATA HDD	(2) 256 GB SATA SSD (RAID 0) (2) 500 GB 7200 RPM SATA HDD	(2) 256 GB SATA SSD (RAID 0) (2) 500 GB 7200 RPM SATA HDD	256 GB SATA III or 500 GB 7200 RPM SATA (17" use both)

### Learn more

[hp.com/go/autodesk](http://hp.com/go/autodesk) and [hp.com/zworkstations](http://hp.com/zworkstations)

Screen images courtesy of Autodesk and Cannon Design.

<sup>†</sup> Windows 7 systems may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See [www.microsoft.com/windows/windows-7](http://www.microsoft.com/windows/windows-7) for details.

- All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.
- 1.07B colors through A-FRC technology
- 64-bit computing on Intel architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. See [intel.com/info/em64t](http://intel.com/info/em64t) for more information.
- Intel® Turbo Boost technology requires a PC with a processor with Intel Turbo Boost capability. Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See [intel.com/technology/turboboost](http://intel.com/technology/turboboost) for more information.
- Intel HT Technology (HT) is designed to improve performance of multi-threaded software products and requires a computer system with a processor supporting HT and an HT-enabled chipset, BIOS and operating system. Please contact your software provider to determine compatibility. Not all customers or software applications will benefit from the use of HT. See [intel.com/info/hyperthreading](http://intel.com/info/hyperthreading) for more information.
- Multi-core is designed to improve performance of multithreaded software products and hardware-aware multitasking operating systems and may require appropriate operating system software for full benefits; check with software provider to determine suitability. Not all customers or software applications will necessarily benefit from use of these technologies.
- Intel's numbering is not a measurement of higher performance.
- In the HP Z820 Workstation, the Intel® Xeon® Processors E5-2667 require the 1125W chassis.
- Each processor supports up to 2 channels (HP Z220/HP Z220 SFF) or 4 channels (HP Z420/HP Z620/HP Z820) of DDR3 memory. To realize full performance, at least 1 DIMM must be inserted into each channel. To get full 8 channel support on the HP Z620 & HP Z820, two processors MUST be installed.
- For hard drives, 1 GB = 1 billion bytes. 1 TB = 1 trillion bytes. Actual formatted capacity is less. Up to 20 GB of hard drive (or system disk) is reserved for the system recovery software for Windows 7.
- SATA hardware RAID is not supported on Linux systems. The Linux kernel, with built-in software RAID, provides excellent functionality and performance. It is a good alternative to hardware-based RAID. Please visit <http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00060684/c00060684.pdf> for RAID capabilities with Linux.

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4AA4-1455ENW, October 2012

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