BOOSTING REVIT AND AUTOCAD

Autodesk® AutoCAD® 2026 and Autodesk® Revit® 2026 both embrace modern graphics technology, shifting more power to the GPU for ultra-smooth navigation of drawings and 3D models. Paired with the new AMD Ryzen™ AI Max PRO processor, the latest HP Z Workstations deliver professional-grade performance for CAD and BIM in compact, energy-efficient form factors

CAD and BIM software is entering a new era. Autodesk® AutoCAD® and Autodesk® Revit® — two of the most widely used design tools in Architecture, Engineering and Construction (AEC) — are now getting more out of modern graphics APIs and software frameworks, enabling them to fully tap into the power of today's advanced Graphics Processing Units (GPUs).

This shift offloads more of the processing from the CPU to the GPU, easing a common performance bottleneck. The result? Smoother model navigation, more responsive design environments, and a significant boost in productivity — with less need for model simplification or performance workarounds.

Meanwhile, workstation hardware is evolving just as quickly. Traditionally, integrated graphics — where the GPU is built into the CPU — was often seen as inadequate for professional use. Discrete GPUs used to be the standard. But that assumption is now being challenged.

The latest AMD Ryzen™ AI Max PRO processors feature integrated Radeon™ GPUs with levels of performance once reserved for discrete solutions. These GPUs are not only powerful and energy efficient, but also fully compatible with, and optimised for, the advanced graphics features in AutoCAD 2026 and Revit 2026.

This convergence of next-gen software and hardware marks a turning point. Architects and engineers using some of the latest HP Z Workstations — such as the slimline 14-inch HP ZBook Ultra G1a laptop and compact HP Z2 Mini G1a mini desktop — can now access the advanced graphics capabilities of Revit 2026 and AutoCAD 2026, without needing a discrete GPU. The benefits? Lower cost, reduced power consumption, and sleeker, more portable hardware.

As software and hardware continue to advance in tandem, the future of CAD and BIM promises to be faster, smoother, and more flexible than ever.
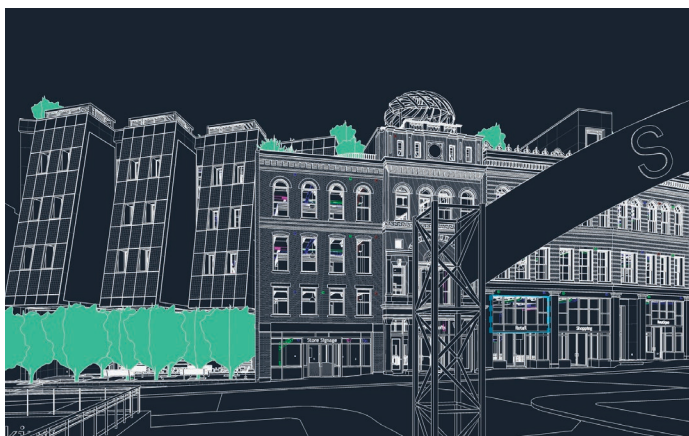
REVIT: ACCELERATED GRAPHICS

Powered by the AMD Ryzen AI Max PRO processor, the HP ZBook Ultra G1a laptop and HP Z2 Mini G1a desktop workstations are well positioned to maximise the benefits of Revit 2026 and its next-gen graphics engine — delivering a significant performance boost, particularly when navigating complex BIM models

Snowdon Tower project from Autodesk® Revit® 2026

Snowdon Tower project from Autodesk® Revit® 2026

Revit 2026 introduces a new graphics technology designed to significantly improve performance in both 3D and 2D views. The 'Accelerated Graphics Tech Preview', which is still in development, delivers smoother, more responsive model navigation when panning, orbiting, or zooming. Those working with particularly complex Revit models should experience the most noticeable performance benefit.

To unlock these performance gains, the Revit development team is harnessing the latest technology in both software and hardware. This includes Universal Scene Description (USD) — an XML framework born out of Pixar® but increasingly used in AEC for data exchange and collaboration. However, Revit uses USD in a different way. In the 'Accelerated Graphics Tech Preview' it's employed solely to draw the graphics on screen, faster. A direct export of Revit models to USD is not currently on Autodesk's roadmap.

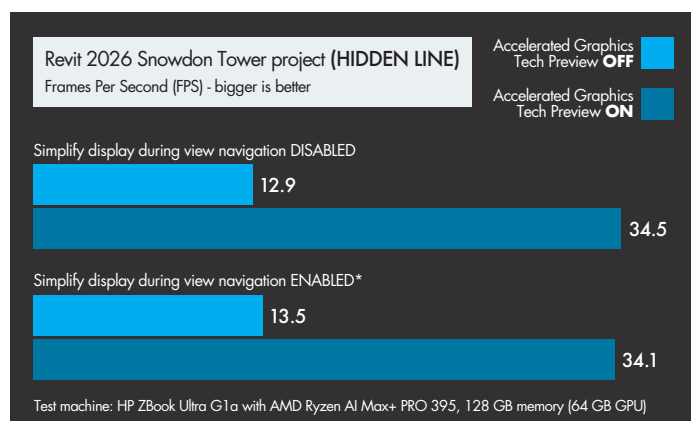The 'Accelerated Graphics Tech Preview' also makes much better use of modern GPUs — processors that are well-suited for graphics rendering. By offloading more of the graphics workload to the GPU, visual performance is significantly improved while also freeing up the CPU to handle other tasks — helping boost overall system performance.

The 'Accelerated Graphics Tech Preview' currently supports popular display styles such as 'shaded' and 'hidden line'. It can be toggled on or off at any time, giving users flexibility to choose the best mode for their current workflow. As the technology matures, expect to see support for other display styles such as 'realistic', along with 'shadows', 'sketchy lines', and 'transparency'. The ultimate goal is to replace Revit's entire graphics engine, making 'Accelerated Graphics' the default experience without the need for manual activation.
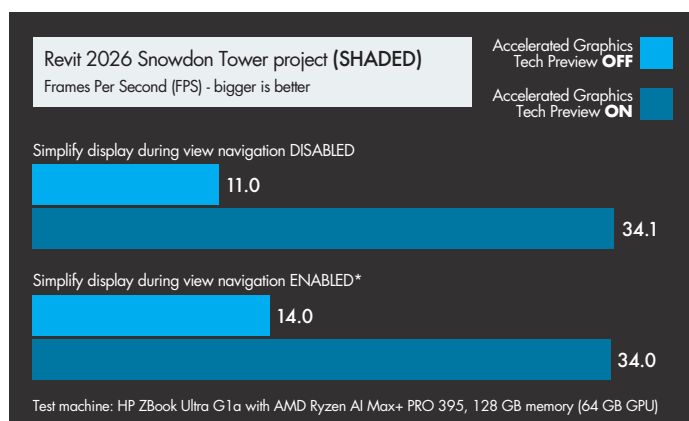
To get the best performance Autodesk recommends a workstation with at least 64 GB of RAM and a GPU with at least

8 GB. In the past, this would have meant a workstation with a discrete GPU. However, with the new AMD Ryzen AI Max PRO processor — featured in the HP ZBook Ultra G1a laptop and HP Z2 Mini G1a desktop workstations — users now have access to an integrated AMD Radeon GPU with the equivalent performance of a mid-range discrete GPU. Coupled with up to 128 GB of system memory, of which up to 96 GB can be assigned to the GPU, the chip is fully capable of handling Revit's new graphics demands.

When running Revit's Snowdon Tower sample project on the HP ZBook Ultra G1a with an AMD Ryzen AI Max+ PRO 395 processor, the viewport feels significantly more responsive compared to the traditional graphics engine. Model navigation is silky smooth, and the model is not simplified in any way — a technique often used to maintain full interactivity with larger models. As shown in our benchmarks below, performance (measured in frames per second) was approximately 2.5 to 3 times faster.

Revit 2026 Snowdon Tower project (HIDDEN LINE)
Frames Per Second (FPS) - bigger is better

Accelerated Graphics Tech Preview **OFF**
Accelerated Graphics Tech Preview **ON**

Simplify display during view navigation DISABLED
12.9
34.5

Simplify display during view navigation ENABLED*
13.5
34.1

Test machine: HP ZBook Ultra G1a with AMD Ryzen AI Max+ PRO 395, 128 GB memory (64 GB GPU)

*With Accelerated Graphics Tech Preview on, model is always displayed in full detail during view navigation

---

Revit 2026 Snowdon Tower project (SHADED)
Frames Per Second (FPS) - bigger is better

Accelerated Graphics Tech Preview **OFF**
Accelerated Graphics Tech Preview **ON**

Simplify display during view navigation DISABLED
11.0
34.1

Simplify display during view navigation ENABLED*
14.0
34.0

Test machine: HP ZBook Ultra G1a with AMD Ryzen AI Max+ PRO 395, 128 GB memory (64 GB GPU)

*With Accelerated Graphics Tech Preview on, model is always displayed in full detail during view navigation

TWINMOTION: BEYOND BIM

Bring your BIM models to life with advanced real-time visualisation

Snowdon Tower project from Twinmotion 2025

Twinmotion for Revit by Epic Games, included with select Revit subscriptions, brings high-quality, real-time visualisation directly into your BIM workflow. The software is GPU-accelerated, and the AMD Ryzen AI Max PRO processor is well suited to handling mainstream visualisation tasks. A key advantage is the ability to directly allocate up to 96 GB of system memory to the processor's integrated Radeon GPU — far more than most discrete GPUs with comparable performance.

On test with the HP ZBook Ultra G1a, powered by the AMD Ryzen AI Max+ PRO 395 processor, the Revit Snowdon Tower sample project consumes 8.1 GB of GPU memory on load. This increases to 14.2 GB when rendering at 4K and 35.1 GB when rendering at 8K.

With the test machine configured with 128 GB of system memory, of which 64 GB is allocated to the GPU, the system maintains ample headroom throughout.

In contrast, when a discrete GPU runs out of dedicated memory, it must offload data to system memory — a process that can introduce latency, slow performance, and significantly increase render times.

ADVANCING AUTOCAD

AutoCAD 2026 feels faster and smoother when navigating 3D models, thanks to Graphics System Fabric (GSF), a powerful graphics engine built on DirectX 12 that harnesses the power of modern GPUs
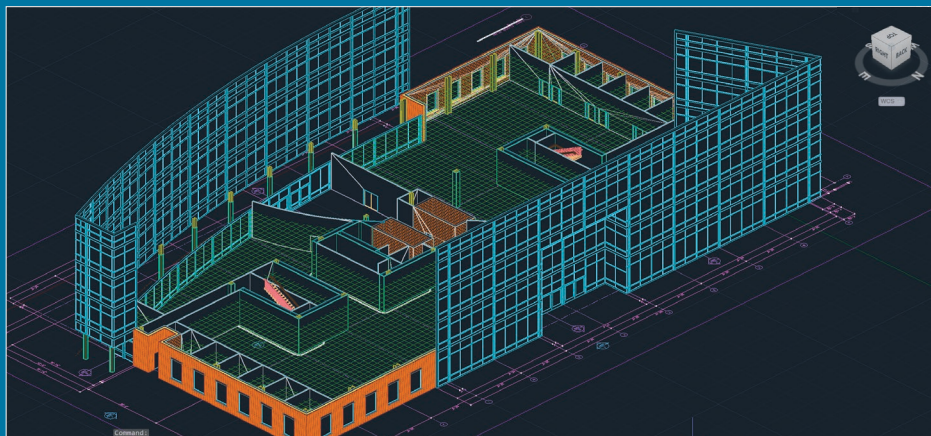
Sample architectural project from AutoCAD® Architecture 2026

According to Autodesk, AutoCAD 2026 delivers major performance improvements over the 2025 release, including file open times up to 11x faster and application launch speeds up to 4x faster.

One of the most impactful — yet less talked about — enhancements lies in the graphics pipeline. Users can expect noticeably smoother navigation of 3D models and a significantly more responsive design experience when using wireframe, conceptual, and hidden

visual styles. These improvements are enabled by the latest enhancements to Graphics System Fabric (GSF), a next-gen graphics engine built on Microsoft® DirectX® 12 that optimises GPU utilisation. GSF offloads more graphics processing from the CPU to the GPU and caches more data in GPU memory, allowing for faster access and better real-time performance.

GSF represents a significant leap forward for AutoCAD, but it is still under development. Certain visual styles — such as realistic — are not yet supported, so AutoCAD will automatically switch between GSF and the previous Graphics System One (GS1) engine, based on the active view or model requirements.

Another key advancement in AutoCAD 2026 is improved support for processors

with integrated graphics. Historically, integrated GPUs often lacked sufficient memory to be supported by GSF, which typically requires between 4 GB and 8 GB of dedicated GPU memory.

That limitation is effectively removed with the AMD Ryzen AI Max PRO processor, which can allocate up to 96 GB of system memory to its integrated Radeon GPU — far exceeding the capacity of most discrete GPUs in its class.

In real-world testing on an HP ZBook Ultra G1a powered by the AMD Ryzen AI Max+ PRO 395 processor, the benefits of GSF are clear. Navigating a complex
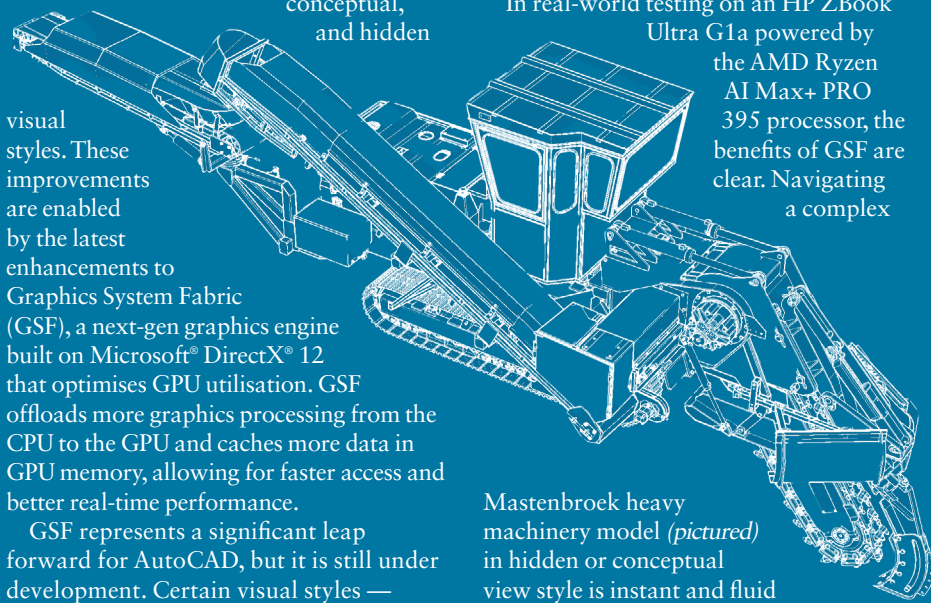
Mastenbroek heavy machinery model *(pictured)* in hidden or conceptual view style is instant and fluid in AutoCAD 2026 with no loss of detail. In contrast, there is a noticeable lag in AutoCAD 2025: mouse movements lead to delayed on-screen responses, as the software must first lower model detail in order to maintain interactivity, before restoring full detail once movement stops.

Heavy machinery model courtesy of Mastenbroek

Product features and availability may vary. For complete details & disclaimers, please visit www.hp.com/zbookultra

INTEGRATED GRAPHICS, REDEFINED

Integrated graphics just got serious. Powered by AMD's Ryzen AI Max PRO, the HP ZBook Ultra G1a and HP Z2 Mini G1a deliver impressive performance for CAD, viz and AI – without the need for a discrete GPU

For CAD and BIM workflows, architects and engineers have traditionally relied on workstations with separate CPUs and discrete GPUs. Processors with integrated graphics have often fallen short — lacking the 3D performance, application-specific optimisations, and software certifications required for professional use.

But the AMD Ryzen AI Max PRO processor at the heart of the new HP ZBook Ultra G1a mobile workstation and HP Z2 Mini G1a desktop workstation is redefining what's possible with integrated graphics.

At the top of the range, the AMD Ryzen AI Max+ PRO 395 features a powerful AMD Radeon 8060S GPU, delivering performance that rivals that of a mid-range discrete GPU. It enables smooth, responsive viewports in Revit and AutoCAD, even when working with large models, and can also handle real-time visualisation workflows in Twinmotion for small to medium-sized projects.

This leap in capability is powered not only by AMD's RDNA 3.5 graphics architecture, but also the ability to allocate large amounts of system memory to the GPU — far more than the fixed on-board memory of most comparable discrete GPUs.

In the BIOS, users can choose from 512 MB, 4 GB, 8 GB, all the way up to 96 GB. However, dedicating large amounts of memory to the GPU isn't always necessary. In some workflows the GPU can dynamically borrow additional memory from the system when needed, without the severe performance penalties that occur when discrete GPUs exceed their onboard memory and must fall back on slower system RAM.

The processor's large memory pool also unlocks new possibilities in AI workloads. When the system is configured with 128 GB, the GPU can run colossal 128B parameter Large Language Models (LLMs) – roughly the size of Chat GPT 3.0 – well beyond the limits of most fixed-memory GPUs.

For architects and designers, more memory also unlocks practical creative advantages in other AI-driven workflows. Text-to-image tools like Stable Diffusion, which are increasingly used for early-stage visualisation, can benefit directly. With fast, direct access to a large pool of GPU memory, it becomes feasible to generate high-resolution images — far beyond the practical pixel limits imposed by GPUs with restricted memory.

Finally, the Ryzen AI Max+ PRO 395 also comes with a Neural Processing Unit (NPU), which is designed to handle mainstream AI tasks very efficiently. It is capable of dishing out 50 TOPS of AI performance, meeting Microsoft's requirements for a Copilot+ PC.

HP ZBook Ultra G1a — slimline 14-inch mobile workstation

The HP ZBook Ultra G1a with Ryzen AI Max PRO processor is an extremely powerful 14-inch mobile workstation. It offers noteworthy upgrades over other 14-inch models, including significantly more high-performance cores (up to 16) and substantially improved graphics.

It's not just about performance. It's the thinnest ZBook ever, just 18.5mm in profile and weighing as little as 1.50kg. The HP Vaporforce thermal system keeps it running cool and there is very little fan noise even when the processor is running flat out.

The power efficient laptop is paired with either a 100 W or 140 W USB Type-C slim adapter for charging. For video conferencing, there's a 5 MP IR camera with AutoFrame, Spotlight, Background Blur, and virtual backgrounds all powered by the 50 TOPS NPU. Additional highlights include a top-tier 2,880 x 1,800 OLED panel (400 nits), up to 4 TB of NVMe TLC SSD storage, and support for Wi-Fi 7.

HP Z2 Mini G1a — mini desktop workstation

Despite it diminutive form factor, the HP Z2 Mini G1a is a very powerful desktop workstation.

Like its laptop sibling, it features the same AMD Ryzen AI Max PRO processor. However, with a 300W internal power supply, the ultra compact desktop workstation can deliver significantly more sustained power to the processor, resulting in superior performance in multi-threaded CPU and graphics-intensive workflows.

One of the most compelling use cases for the Z2 Mini G1a is in rack-mounted deployments, where multiple units serve as a centralised remote workstation resource managed by HP Anyware. Each architect or engineer connects to their own dedicated workstation via a 1:1 session, ensuring both simplicity in deployment and predictable, high-performance access.

Up to five workstations can be installed side by side in a 4U rack space, offering impressive density and scalability for teams.

Product features and availability may vary. For complete details & disclaimers, please visit www.hp.com/zbookultra