

6 WAYS TO ELIMINATE IT BOTTLENECKS IN AEC

White Paper

*Unlocking
Productivity and
Performance with
Cloud-Powered
Infrastructure*

EXECUTIVE SUMMARY

AEC (Architecture, Engineering, and Construction) firms are under increasing pressure to deliver complex projects on tight deadlines. However, legacy IT infrastructure and inconsistent support systems often create bottlenecks that hinder performance, collaboration, and profitability.

This white paper explores six actionable strategies to eliminate IT roadblocks by leveraging modern technologies, including cloud desktops, GPU acceleration, and expert technical support. Whether you're an IT leader, CFO, or small business owner in the AEC industry, you'll discover practical ways to empower your teams and scale with confidence.

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THE AEC IT BOTTLENECK PROBLEM

AEC professionals rely on powerful applications like Revit, AutoCAD, Civil 3D, Navisworks, and Bluebeam. These programs demand high-performance hardware, constant updates, and stable connectivity. Yet many firms struggle with:

- **Underpowered workstations and inconsistent desktop performance.**
- **Difficult collaboration across locations: Remote teams face latency and file versioning problems.**
- **Inconsistent desktop performance: Variability in user environments leads to unpredictable behavior in CAD/BIM software.**
- **Long rendering and simulation times: Extended processing cycles affect deliverables and downstream workflows.**
- **Delayed hardware procurement: Supply chain issues and CapEx limitations slow down onboarding and scalability.**
- **Overburdened internal IT teams: Day-to-day troubleshooting and system maintenance pull focus away from strategic initiatives.**

Beyond hardware limitations, AEC firms face “information bottlenecks”, delays in decision-making or project execution caused by poor visibility into unresolved tasks or inconsistent communication across roles (e.g., designers, contractors, engineers). These bottlenecks often arise in high-interdependency activities where collaboration is critical but fragmented. Detecting and mitigating these inefficiencies requires infrastructure that supports integrated communication, data transparency, and project-wide accountability.

Recent academic studies have also highlighted how the integration of Building Information Modeling (BIM) with real-time game engines (GEs) offers the potential to transform AEC workflows. By improving design visualization, supporting modular construction, and enabling real-time simulation, BIM-GE integration enhances decision-making and stakeholder collaboration. However, challenges such as interoperability barriers, scalability constraints, and limited integration with advanced technologies like AI and robotics still hinder widespread adoption. IT strategies that address these constraints, through scalable infrastructure, real-time rendering capabilities, and standardized data protocols, are essential to eliminate emerging bottlenecks.

These challenges lead to productivity losses, increased operational costs, and project delays.

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6 WAYS TO ELIMINATE IT BOTTLENECKS

1. Move to GPU-Accelerated Cloud Desktops

Physical workstations are expensive to maintain and hard to scale. Cloud desktops powered by NVIDIA A16 or A40 GPUs provide the graphics acceleration needed to run BIM, CAD, and rendering software efficiently.

- Support for DirectX, OpenGL, and CUDA workloads
- Hosted on Omnissa (Horizon) or Citrix DaaS platforms for seamless access
- NVMe SSD-backed storage with IOPS optimization for faster file access
- Ability to assign resources dynamically based on user profiles (Standard, Power, GPU)

2. Centralize Project Data for Real-Time Collaboration

Disparate storage systems and local file dependencies create confusion and inefficiencies. A centralized workspace integrates with platforms like Autodesk Construction Cloud, Procore, and Bluebeam Revu.

- Data is stored in enterprise-grade storage clusters with daily backups
- Access controls using Active Directory integration, Entra ID, and role-based policies
- Low-latency access via optimized data center peering (AWS Direct Connect, Azure ExpressRoute)
- Capture metadata from collaboration platforms to monitor unresolved activities and communication frequency — helping identify potential bottlenecks based on interaction gaps across stakeholders
- Supports integration with real-time engines for dynamic model viewing and immersive collaboration workflows

3. Scale Resources On-Demand

Project timelines and staffing needs change rapidly in AEC. Cloud-based infrastructure offers elastic scalability:

- Add or remove users via self-service portal with RBAC controls
- Autoscale compute/GPU workloads during rendering and simulations
- Integration with Microsoft 365, SharePoint, and Teams for seamless onboarding
- Metered usage reports via dashboard (RAM, CPU hours, storage tiers)

4. Automate Updates and Security Patching

Manual patching and updates slow down teams and expose firms to risk. A managed environment ensures:

- Automated OS and application patch cycles using RMM tools (e.g., NinjaOne, Atera)
- Endpoint Detection & Response (EDR) solutions like SentinelOne for zero-day threats
- Application-specific patch policies (e.g., Autodesk version management)
- Full audit logging of changes to maintain compliance with SOC 2 and ISO 27001

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5. Monitor and Optimize Performance with Proactive Support

Real-time analytics platforms monitor session metrics, enabling IT to resolve issues before they impact users:

- Performance telemetry: GPU load, vCPU throttling, disk I/O latency
- Alerting thresholds for RAM saturation or long login times
- SLA-backed response times and trend analysis reports
- API integration with tools like ServiceNow or Autotask for ticket generation

6. Ensure Fast Response Times with 24/7 Technical Support

Support delays can derail critical project milestones. With 24/7 U.S.-based help desk and technical support:

- Tier 1–3 escalation paths, including certified VDI and CAD support specialists
- Remote session shadowing via Omnisia for faster troubleshooting
- Application-level troubleshooting for Autodesk, Bluebeam, Adobe Creative Cloud, etc.
- User-specific documentation stored in secure ticket history for recurring issues:

CONCLUSION & NEXT STEPS

By eliminating IT bottlenecks through scalable, cloud-based infrastructure and expert support, AEC firms can improve project delivery, reduce risk, and empower teams to do their best work.

IronOrbit's Infinity Workspaces are purpose-built for AEC professionals who need speed, security, and reliability for computer-intensive applications. With enterprise-grade GPU infrastructure, compliance-ready hosting, and AEC-specific support, we help teams work smarter, faster, and from anywhere.

READY TO ELIMINATE IT FRICTION?

Schedule a free consultation to learn how IronOrbit can support your growth and performance goals.

WHY IRONORBIT?

The client chose IronOrbit for its track record of delivering secure, highly redundant cloud solutions. With a deep commitment to business continuity and 24/7 proactive monitoring and US-based support, IronOrbit provides them with peace of mind, and a technology foundation built for the future.



IronOrbit is Recognized in the 2023 and 2024
Gartner Magic Quadrant for DaaS (Desktop as
a Service) and is included in the 2021 & 2023
Gartner Market Guide for DaaS.

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