BROTHERLY TECHNOLOGY

ENGINEERING IT GUIDE

The Engineering Firm IT Guide

Workstation specs, file handling and backup strategy for firms working with large CAD and simulation files.

01	**Workstation and network specs that stop CAD slowdowns**
02	**Version control and file locking for shared projects**
03	**Backup strategy sized for very large project files**

Use this guide to assess where you are, identify the evidence you need, and turn the biggest gaps into a practical action plan.

Prepared by Brotherly Technology
Owner-led IT, security, and compliance support.

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15-MINUTE ASSESSMENT

Start with the current state

Mark each item Yes, Partial, or No. A written policy only counts as Yes when the process is operating and you can show evidence.

[ ] Workstation standards are based on supported application versions and representative project benchmarks.	[ ] Yes [ ] Partial [ ] No
[ ] CPU, RAM, GPU, storage, display, and drivers match the actual CAD, BIM, GIS, or simulation workload.	[ ] Yes [ ] Partial [ ] No
[ ] Network and storage performance are measured from user workstation to project data.	[ ] Yes [ ] Partial [ ] No
[ ] Active projects use fast local or cloud-connected storage with an explicit collaboration model.	[ ] Yes [ ] Partial [ ] No
[ ] Large transfers, remote work, sync, and VPN paths are tested with real project data.	[ ] Yes [ ] Partial [ ] No
[ ] File locking, worksharing, or version control prevents silent overwrites.	[ ] Yes [ ] Partial [ ] No
[ ] Project templates, libraries, plugins, fonts, and plot configurations are centrally managed.	[ ] Yes [ ] Partial [ ] No
[ ] Patches and driver changes are piloted before firm-wide release.	[ ] Yes [ ] Partial [ ] No
[ ] Backups account for project size, change rate, retention, and recovery bandwidth.	[ ] Yes [ ] Partial [ ] No
[ ] Restore tests recover a coordinated project, references, and dependencies.	[ ] Yes [ ] Partial [ ] No
[ ] Client retention, confidentiality, export-control, and contract requirements are mapped.	[ ] Yes [ ] Partial [ ] No
[ ] Capacity trends trigger upgrades before storage or performance becomes urgent.	[ ] Yes [ ] Partial [ ] No

Quick score: Yes = 2, Partial = 1, No = 0. Start with any No that could stop work, expose sensitive data, or create an avoidable contract cost.

PERFORMANCE BASELINE

Size the whole path, not just the workstation

A high-end workstation still feels slow when storage latency, Wi-Fi, VPN, sync, or a saturated uplink sits in the data path.

Layer	Baseline question	Validation
Application	Is this version, plugin, and driver combination supported?	Vendor matrix and pilot
CPU / RAM	Which tasks are single-threaded, multi-threaded, or memory-bound?	Representative model benchmark
GPU	What viewport, rendering, compute, and certification are required?	Supported GPU/driver and scene test
Local storage	Is OS/cache/scratch on fast SSD with free capacity?	Read/write and free-space check
Project storage	What are latency, throughput, locking, and metadata needs?	Open/save/sync test with real project
Network / remote	Can every hop sustain the workflow at peak?	Wired, Wi-Fi, VPN, and internet measurement

Keep a benchmark project and repeat the same open, regenerate, render, save, and sync tests before standard changes.

FILE INTEGRITY

Choose one collaboration and version model

Different file types need different controls. Do not assume consumer sync, shared drives, BIM worksharing, and source control behave the same.

1	Classify project types by collaboration need: file lock, central model, object sync, check-in/out, or source control.
2	Document the approved location, naming, references, ownership, and offline-work rules for each type.
3	Pilot conflicts: two users edit, a laptop goes offline, a sync fails, a reference moves, and a file is restored.
4	Back up active projects at a frequency that meets the RPO and keep isolated copies with lifecycle retention.
5	Restore a complete project set and validate links, references, fonts, libraries, permissions, and application opening.

What to watch for

WATCH: Large project folders are synced through a tool the application vendor does not support.

WATCH: Users email files or create 'final-final' copies to avoid locking problems.

WATCH: Backup windows exceed the interval between usable recovery points.

WATCH: Remote performance is judged from a speed test instead of an application workflow.

WATCH: Retention is assumed rather than mapped to client and contract requirements.

MAKE IT ACTIONABLE

Turn the worksheet into a 30-day plan

Do not try to solve everything at once. Assign one owner, one next action, and one date for each priority.

NOW	Name the owner and confirm the current state.	_____
NEXT 7 DAYS	Fix the highest-risk gap or gather the missing evidence.	_____
NEXT 30 DAYS	Complete the remaining quick wins and set review dates.	_____
NEXT QUARTER	Test the process, document results, and assign improvements.	_____

Notes / decisions / questions for your provider

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Want a second set of eyes? Book a free consultation at brotherlytechnology.com/contact/ or call 404-907-1005.