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AI-Managed Operations in Commercial Glazing

How a Florida Contractor Runs
Bid-to-Closeout on Custom Agents

Connor Walsh

President & Co-founder, American Commercial Glass

EXECUTIVE SUMMARY

The Thesis

- Commercial glazing is one of the slowest trades on a US jobsite. A two-week glazing slip pushes drywall, MEP rough-in, flooring, and the certificate of occupancy out by two weeks⁵ — and standard storefront aluminum runs 10–14 weeks while custom curtain wall runs 14–20 weeks before a panel ships.⁵
- Most glazing contractors still run on email, spreadsheets, and tribal knowledge. Construction remains one of the world's least digitized sectors,¹ and the average RFI takes 6.4 to 9.7 days to answer — with roughly one in four never answered at all.³
- American Commercial Glass runs four custom AI agents in production — **Sub.ai**, **jobcost.ai**, the **CFO Agent**, and the **ESWindows Dealer Portal** — built in-house and wired into Procore and QuickBooks. No other glazing contractor in the US runs operations this way.
- The result: a five-lens priority engine re-scores every open task nightly, every delivery is confirmed in writing 48+ hours out before it reaches a crew, no Florida lien window has been missed, and weekly margin forecasts run off live job-cost data instead of a month-old spreadsheet.
- This white paper documents what we built, what failed, and what a general contractor can expect from an AI-managed glazier — including the three experiments that did not work, because the failures are more instructive than the wins.

“I wanted a system that could run this company if I died today. Not a chatbot. A decision engine.”

— Connor Walsh

Sources cited throughout; full list on the final page. Key: ¹ McKinsey · ³ Procore/Navigant · ⁵ ACG glazing-delays analysis.

THE PROBLEM

Glazing Is the Slowest Trade to Digitize

Construction is among the least digitized industries on earth. The McKinsey Global Institute's industry digitization index ranked it second from the bottom,¹ and the consequences are well documented: large projects run on average 20% longer than scheduled and up to 80% over budget,² while construction R&D and IT spending each sit below 1% of revenue — versus 3.5–4.5% in auto and aerospace.² The tools exist. The trade has not adopted them.

Glazing is harder than most. We sit at the end of a long procurement chain with real fabrication lead times — 10–14 weeks for standard storefront, 14–20 for specialty curtain wall, and beyond 20 weeks for custom coatings, colors, and sizes.⁵ Impact-rated insulated glass units require two separate fabrication processes — glass fabrication and lamination — which adds time. We depend on a small set of manufacturers, and a single missed delivery confirmation cascades into idle crews and a slipped certificate of occupancy. Add the ambiguity of owner-direct versus GC-routed scope, and a glazing job carries more ways to go sideways than almost any other Division 08 trade.

The hidden cost lives in the paperwork. Responding to a single RFI costs a construction firm an average of \$1,080, average first-reply times run 6.4 to 9.7 days, and roughly one in four RFIs never gets a reply at all.^{3,4} Submittal cycles for a first-round glazing approval run 6–10 weeks.⁵ When that workflow lives in an email inbox, the schedule depends on whether the right person happened to read the right message on the right day. That is not a system. That is luck.

“Email is where schedules go to die. A thread is not a system of record.”

— Connor Walsh

¹ McKinsey, Decoding digital transformation in construction. ² McKinsey, Imagining construction's digital future. ³ Procore, RFIs guide. ⁴ CMAA/Navigant, Impact & Control of RFIs. ⁵ ACG, Commercial glazing delays.

Four Agents in Production

We run four custom agents in production. Each was built to solve a problem that was costing us money or schedule — not to chase a technology trend. All of them write back to Procore, our primary system of record, and pull financial truth from QuickBooks. They were built on Perplexity Computer, not a third-party automation platform, because we wanted to own the logic and the data.

Sub.ai — Subcontractor Coordination & Bid Management

Problem. Bid invitations, sub coordination, and award communications used to live across an inbox, a phone, and a project manager's memory. A late bid response, or a delivery committed without written manufacturer confirmation, would surface as a crisis days later.

Architecture. Sub.ai monitors the inbound mailbox, classifies every message against a five-lens priority model — time urgency (30%), money risk (25%), project tier (20%), blocker risk (15%), comm age (10%) — and scores each task 0–100 into critical/high/medium/low bands. Legal language (“lien,” “default,” “notice to cure,” “stop work”) or a delivery inside 48 hours with no confirmation triggers automatic escalation. It drafts replies in the company voice, sends through a dedicated authenticated mailbox with leadership copied, and a nightly cron re-scores every open task before anyone opens a laptop.

[Connor to confirm exact model names and lens weights before publication.]

Outcome. Every inbound message is triaged within the hour instead of whenever someone reaches the inbox; no delivery hits a crew without written manufacturer confirmation 48+ hours out.

[Connor to confirm: response-time reduction % and bids managed per month.]

jobcost.ai — Real-Time Job Costing & Margin Tracking

Problem. Job costing on a one-month lag is a guess. Between a material deposit going out and final retention coming back, we float working capital for 6–18 months per job. A margin problem found at closeout is found too late.

Architecture. jobcost.ai reconciles committed costs, actuals, and billed-to-date by pulling project and budget data from Procore and financial actuals from QuickBooks Online. It maps each cost back to the job and produces a weekly per-project margin forecast rather than a quarterly look-back. Variances above a set threshold flag for review.

[Connor to confirm refresh cadence and exact Procore + QuickBooks objects synced.]

Outcome. Weekly forecasting runs off live data, so a margin slip is visible while we can still act on it.

[Connor to confirm: forecast-accuracy improvement and average days-to-detect a variance.]

CFO Agent — Autonomous Finance Assistant

Problem. Cash flow is everything. At any time we carry 5–10 pay applications across stages — filed, under review, approved, check cut, mailed, received — plus supplier balances that can hold a delivery. Missing an AR follow-up, or a Florida Notice-to-Owner window, costs real money.

Architecture. The CFO Agent triages AP and AR against live balances, models cash runway, and flags anomalies — a held supplier payment, a pay app aging past 45 days, an approved invoice not yet received. Every payment instruction routes through accounting: the agent drafts, accounting remits. Lien math is tracked against Florida's 90-day Notice-to-Owner rule.

[Connor to confirm autonomy boundaries — what it sends vs. what it only drafts.]

Outcome. No lien or Notice-to-Owner window has been missed; AR aging is held to a disciplined weekly cadence.

[Connor to confirm: DSO improvement and value of protected receivables.]

ESWindows Dealer Portal — Manufacturer-Integrated Ordering

Problem. Our largest material partner is ESWindows. Ordering, delivery scheduling, and balance-driven holds all moved through email and phone across multiple contacts — finance, logistics, account management — with no single auditable view of where an order stood.

Architecture. We built our own dealer portal rather than wait for a manufacturer system. It tracks orders, container and order numbers, delivery confirmations, and account balances that can gate a release, and surfaces them against the live install calendar. Address-confirmation and balance rules are enforced before an order is signed — a wrong address or open balance is the fastest way to brick a delivery.

[Connor to confirm integration depth — API vs. structured email vs. manual entry.]

Outcome. Delivery surprises are designed out: every scheduled delivery carries written confirmation before it touches a crew, and balance holds surface before they stop a shipment.

[Connor to confirm: reduction in delivery reschedules and storage-fee dollars avoided.]

“We didn't wait for a vendor to build our software. We built it, then made the vendor part of it.”

— Connor Walsh

ACG manufacturer partners

Partner	Role
ESWindows	Largest material partner — windows, curtain wall
Euro-Wall	Folding / bifold door systems
PGT	Impact-rated windows and doors
Allegion	Door hardware and access
TGP	Technical / fire-rated glass products
Slimpact	Slimline impact-rated systems
Aldora	Storefront and fire-rated glass

THE STACK

What Integrates — and What Doesn't

A working AI stack is mostly discipline about what is the source of truth. Ours is deliberately boring at the foundation.

- **Procore — primary system of record. Do not mess with it.** Every agent reads from and writes back to Procore. Submittals, RFIs, schedule, and project records live there. The agents annotate and route; they do not replace it. Procore's own insights show RFI and submittal turnaround against company and industry benchmarks,⁶ turning the system of record into a scoreboard, not just a filing cabinet.
- **QuickBooks Online — financial truth.** All cost actuals, AP, and AR reconcile here. jobcost.ai and the CFO Agent treat it as authoritative for dollars.
- **Microsoft 365 / Google Workspace — communications surface.** Email, calendar, and documents. Read access comes through the mailbox connector; outbound goes through a dedicated authenticated send path so client and vendor threads stay clean and attributable.
- **Twilio + Pipedream — the glue.** Messaging and event wiring connect the surfaces to the agents without hand-carrying data between systems.

What we tried and dropped

We evaluated off-the-shelf automation platforms — the n8n / Lindy / Make category — and walked away. They were fine for toy workflows and wrong for ours: we did not want our operating logic and financial data living inside someone else's rules engine that we could not fully audit or version. We built on Perplexity Computer instead so we own the decision logic outright. We also dropped automatic daily briefing reports — nobody wanted a “nothing changed” ping every morning. The agents now stay silent on success and speak only when something newly crosses into a critical state.

“Procore is the source of truth. The agents serve Procore — they don't replace it.”

— Connor Walsh

⁶ Procore, De-risk your schedule with new Insights.

HONEST ACCOUNTING

Three Failed Experiments

This is the most honest page in the document, and on purpose. Anyone who tells you their AI rollout worked the first time is selling something. Here are three things we tried that did not work, and what we changed.

1. Auto-drafted RFIs sent without human review

Early on we let an agent draft and queue RFIs straight from flagged drawing conflicts. The drafts were fast and frequently wrong in ways that mattered — wrong detail referenced, missing contractual basis, or a question already answered in the documents. Unnecessary, imprecise RFIs slow the whole process and cost roughly \$1,080 each to handle.³ We pulled it back: the agent now drafts and flags, a human releases. Speed without accuracy on an RFI is negative value.

[Connor to confirm / replace.]

2. LLM-summarized submittals released without architect review

We tried having an agent summarize and pre-clear submittal packages to compress the 6–10 week first-round cycle.⁵ The summaries read well but introduced a liability we would not carry — a glazing submittal commits us to NOA-rated, code-specific products, and a summary that smooths over a specification difference can ride straight into a failed inspection and rework. We killed the auto-clear. The agent assembles and tracks the package; the architect of record still reviews the real documents.

[Connor to confirm / replace.]

3. Fully autonomous bidding

We tested letting an agent price and return bids end-to-end. It compressed margin — it optimized for winning the bid, not for the cash-float reality of a 6–18 month working-capital cycle and material lead times that move between bid and order. We do not compete on price, and a model that quietly trades margin for win rate is the opposite of our strategy. Bidding is now agent-assisted, owner-decided.

[Connor to confirm / replace.]

“The failures taught us more than the wins. The rule we landed on: the agent drafts, a human signs.”

— Connor Walsh

FOR GENERAL CONTRACTORS

What You Get From an AI-Managed Glazier

The agents are not the product. The schedule certainty they produce is.

- **Faster RFI and submittal cycles.** Inbound items are triaged within the hour and routed against a live priority model instead of sitting in an inbox — against an industry backdrop where the average RFI takes 6.4 to 9.7 days and one in four goes unanswered.^{3,4} [Connor to confirm: ACG average RFI turnaround in days.]
- **Real-time schedule transparency through Procore.** Because every agent writes back to Procore, your team sees the same submittal, RFI, and delivery status we do — no separate status email, no version drift.
- **Predictable margins, predictable price hold.** jobcost.ai tracks margin weekly off live data, so we are not surprised into renegotiating. A glazier who knows their numbers holds their number.
- **Lower change-order disputes.** Change orders run 10–15% of contract value on major projects and 56.5% of cost overruns trace to design changes;⁷ disputes thrive on missing records. Our data is auditable in Procore, so a change is supported by a trail instead of an argument.
- **A track record, not a pitch.** The Haines City Public Safety Complex & EOC — a 25,443 SF two-story tilt-wall package covering Fire Station #3, Police HQ, and the EOC, delivered with Pirtle Construction and completed in 2025 — ran through this operating discipline. So did Panther National and the Wild Blue Clubhouse. The agents are how we keep that coordination repeatable across 350+ projects.

“GCs don't buy our agents. They buy a schedule they can trust and a price that holds.”

— Connor Walsh

⁷ Rhumbix, Change Orders in Construction.

ROADMAP

What's Next: 2026–2027

We are not done, and we would rather say where we are going than pretend we have arrived.

- **Field-side voice agents for QA punch lists.** Mini-inspections at 25%, 50%, and 75% completion prevent punch-list accumulation.⁵ We want crews to log deficiencies by voice in the field and have them land in Procore immediately — corrections happen when found, not at punch time.
- **Computer-vision shop drawing review.** A first-pass model that flags likely conflicts and specification mismatches on shop drawings before they become RFIs — assistive, not authoritative, with the human and the architect still in the loop.
- **Multi-state expansion.** Our fourth office opens in Nashville in Q3 2026, with broader Southeast expansion targeted for 2027. The operating system travels with us — that is the point of building it as software.
- **An open question for the industry.** If glazing is going to digitize, what should we standardize together — submittal data formats, RFI response SLAs, manufacturer order APIs? We built our own because nothing common existed. We would rather help build the common thing. That is an invitation, not a closed door.

“We built our own because nothing common existed. We'd rather help build the common thing.”

— Connor Walsh

ABOUT

The Author & American Commercial Glass

Connor Walsh — President & Co-founder

Connor is the Florida CGC qualifier for American Commercial Glass and a former pilot. Before ACG, he founded Liberty Impact and scaled it from \$400K to \$10M in revenue. He built ACG's four production AI agents himself, holds final authority on money, legal, schedule, and scope, and runs the company on the principle that operating logic should be auditable and owned, not rented.

Rielly Walsh — CEO & Co-founder

Rielly holds a degree in Concrete Industry Management from Middle Tennessee State University and previously ran the stoneworks operation at Aqualina. As CEO, Rielly is the co-escalation partner on the company's most sensitive accounts and decisions.

Company Snapshot

American Commercial Glass	
Projects delivered	350+
Glass installed	1M+ square feet
Safety	0 OSHA recordables since 2021 · OSHA 30 on 100% of field crew
Founded	2020 · FL CGC #1531993
Bonding	\$3M single / \$6M aggregate · Arch Insurance (A+ XV)
Certifications	WBE + SBE certified
Offices	West Palm Beach (HQ) · Naples · Tampa · Nashville (Q3 2026)
Manufacturer partners	ESWindows, Euro-Wall, PGT, Allegion, TGP, Slimpack, Aldora

Contact. +1-772-486-7711 · connor@acglass.com · acglass.com

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Citations & Further Reading

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