

NEW CONSTRUCTION · 14 PAGES

Specifying Access Control in New Construction — The Developer's Checklist

A pre-construction checklist for developers specifying access control before the first conduit is pulled. Includes infrastructure requirements, conduit routing, and platform evaluation criteria.

14 pages · 12 min read · PDF

Why This Has to Happen Before the First Conduit Is Pulled

Access control gets specified late on more construction projects than it should. It often shows up as a line item added during finish-out, after electrical rough-in is already complete, when the general contractor asks "what are we doing about the gates and doors?" By that point, some of the most cost-effective infrastructure decisions have already been made — or missed — for reasons that have nothing to do with access control.

Conduit that isn't roughed in before drywall goes up has to be surface-mounted, fished through finished walls, or trenched after the fact — all dramatically more expensive than a \$2 run of empty conduit pulled during rough-in. The same is true for network drops, power requirements, and backbox placement. None of this requires choosing a final vendor before groundbreaking. It does require specifying the infrastructure early enough that the electrical and low-voltage trades can build to it.

WHAT THIS CHECKLIST GIVES YOU

A vendor-neutral list of what any modern access control platform will need in terms of conduit, cabling, power, and coordination timing — so you can specify the infrastructure now and select the specific platform later, without having to reopen a wall to do it.

WHY IT MATTERS

The Cost of Retrofitting Later

The same access control infrastructure costs dramatically different amounts depending on when it's installed relative to the construction timeline.

Work Item	During Rough-In	After Drywall / Post-Occupancy
Conduit run to a door or gate	Low cost — open walls, direct routing	Significantly higher — surface-mount, fish walls, or trench
Network drop to an access point	Bundled into low-voltage rough-in	Separate mobilization, patching, and finish repair
Backbox placement for readers/panels	Installed alongside electrical boxes	Requires cutting into finished surfaces
Dedicated power circuit for panels	Added to the electrical plan at no marginal trip cost	New circuit run, potential panel capacity issues
Coordination with fire/life safety systems	Reviewed once, during design	May require re-inspection or code compliance rework

This is the core argument for reading the rest of this checklist before your electrical rough-in is finalized, not after.

Infrastructure Requirements Overview

Regardless of which specific platform is eventually selected, every modern access control deployment needs the same three infrastructure elements at each access point.

- ✓ **Conduit** — a physical pathway for low-voltage cabling from each door, gate, or elevator control point back to a network closet or panel location.
- ✓ **Network connectivity** — most modern readers, panels, and video intercom units are IP-based and need a network drop, whether delivered over dedicated Ethernet or a building-wide wireless backbone.
- ✓ **Power** — either delivered over the network cable itself (Power over Ethernet) or via a dedicated low-voltage power circuit, depending on the hardware.

Specifying generous, future-proofed versions of these three elements during design costs very little relative to the total construction budget, and it removes the single biggest constraint on which access control platform you can select later — a building with no conduit or power at the gate limits your options to whatever can be installed after the fact, regardless of which vendor you'd otherwise prefer.

Rules to Follow Before Drywall Goes Up

1. **Run conduit to every current and reasonably anticipated future access point** — main entrances, secondary gates, pedestrian doors, elevator control rooms, and any amenity space likely to need controlled access.
2. **Oversize the conduit relative to today's cable count.** A 3/4" conduit with room for future cable pulls costs little more than an undersized run, and it avoids having to add a second conduit later for a system upgrade.
3. **Leave a pull string or pull rope in every run,** so future cable installation doesn't require re-fishing the conduit from scratch.
4. **Route low-voltage conduit away from high-voltage AC lines** wherever possible, or maintain proper separation, to avoid electromagnetic interference with data and camera signals.
5. **Use a home-run (star) topology back to a network closet** rather than daisy-chaining access points together, which simplifies troubleshooting and supports a wider range of platform choices later.
6. **Label every conduit run at both ends** during rough-in, while it's still obvious which run goes where — this single step saves significant troubleshooting time during commissioning.

Cable and Power Specifications

Element	Recommended Specification
Data cable	Cat6 or Cat6a, shielded (STP) in electrically noisy environments such as near elevator motors or large electrical equipment
Power delivery to readers/ controllers	Power over Ethernet (PoE/PoE+) where supported, eliminating a separate power run
Power delivery to electrified locks/strikes	Dedicated low-voltage power circuit (typically 12V or 24V DC), sized for the specific hardware's draw
Backbox size for readers and panels	4-11/16" square box with an appropriate mud ring, which accommodates most modern reader and panel form factors
Backup power	Battery backup or UPS integration at the panel and network closet level, sized to your required failover duration

Confirm final specifications with your selected access control vendor and a licensed low-voltage contractor — these are general starting points, not a substitute for hardware-specific engineering documents.

Coordination Timeline — When to Loop In Access Control

Construction Phase	Access Control Task
Design development	Identify every access point and confirm conduit, power, and network requirements with the electrical engineer
Construction documents	Include access control infrastructure (not necessarily final vendor) in the electrical and low-voltage drawings
Rough-in	Pull conduit, set backboxes, and run network cabling to every access point
Trim-out	Install readers, panels, and intercom hardware once finishes are complete
Commissioning	Test every access point, confirm network connectivity, and configure the platform
Substantial completion / turnover	Final walkthrough, credential issuance setup, and staff training

You do not need to select a final access control vendor by design development — you do need to specify the infrastructure by then, so the electrical drawings reflect it.

Server Room and Network Closet Requirements

Even cloud-managed access control platforms need reliable local infrastructure at the property — network switches, a patch panel, and often a local controller or gateway device.

- ✓ **Dedicated electrical circuit** for the network closet, separate from general building loads, to reduce the risk of an unrelated circuit trip taking down access control.
- ✓ **UPS (uninterruptible power supply)** sized to bridge short outages and allow for a graceful shutdown during longer ones.
- ✓ **Adequate cooling and ventilation** for the equipment closet, especially in climates where ambient temperatures can affect network hardware reliability.
- ✓ **Patch panel capacity for growth** — plan for more ports than your current access point count, since adding capacity later is far more disruptive than installing it during construction.
- ✓ **Conduit sleeves between floors** in multi-story buildings, to allow riser cabling for elevator control and upper-floor access points without future core drilling.

Integration Points With Other Building Systems

- ✓ **Fire and life safety systems.** Egress doors with electrified locking hardware must comply with local fire code — typically requiring fail-safe (unlocked on power loss or fire alarm activation) behavior on designated egress paths. Loop in your fire protection engineer early; this is not a detail to resolve after installation.
- ✓ **Elevator controls.** If elevator floor restriction is part of the plan, the elevator contractor and access control integrator need to coordinate on relay wiring and control interfaces during the same phase the elevator controller itself is specified.
- ✓ **Building management system (BMS).** If the property uses a BMS for HVAC, lighting, or energy management, confirm whether access events (such as an amenity space being occupied) should trigger any BMS response, and plan the integration point accordingly.
- ✓ **Intrusion / alarm systems.** Determine whether access control and intrusion detection will be a single integrated system or two coordinated systems, since this affects panel selection and wiring topology.
- ✓ **ADA and accessibility compliance.** Confirm reader mounting heights, door hardware operating force, and automatic door operator integration meet applicable accessibility requirements during design, not after installation.

Platform Evaluation Criteria for New Construction

Evaluating a platform for new construction is different from evaluating one for a retrofit — the priorities shift toward future-proofing and integrator compatibility, since you're building the infrastructure once and expecting it to serve multiple platform generations.

- ✓ **Open, standards-based hardware compatibility** — favor platforms that work with industry-standard conduit, cabling, and backbox specifications rather than proprietary infrastructure requirements that lock you into one vendor's hardware ecosystem.
- ✓ **PoE support** across as much hardware as possible, to reduce dependency on dedicated power circuits at every point.
- ✓ **Confirmed compatibility with your low-voltage integrator** — ask your electrical/low-voltage contractor which platforms they have direct installation experience with, since installer familiarity affects both cost and quality.
- ✓ **Scalability for phased occupancy**, if the project will be occupied and leased in phases rather than all at once.
- ✓ **Cloud-based management** to reduce on-site server hardware requirements and simplify long-term maintenance.

See our Access Control RFP Template for a full vendor evaluation framework once you're ready to select a specific platform.

The Developer's Pre-Construction Checklist

- ✓ Every current and anticipated future access point identified and documented
- ✓ Conduit specified and included in electrical drawings for every access point, appropriately oversized
- ✓ Pull strings specified for every conduit run
- ✓ Home-run topology confirmed back to a network closet, not daisy-chained
- ✓ Cat6/Cat6a cabling specified, with shielded cable near electrically noisy equipment
- ✓ PoE vs. dedicated power circuit determined for each hardware type
- ✓ Backbox sizes and locations coordinated with the electrical contractor
- ✓ Network closet electrical circuit, UPS, and cooling specified
- ✓ Conduit sleeves between floors specified for multi-story buildings
- ✓ Fire/life safety engineer consulted on egress door locking behavior
- ✓ Elevator contractor coordinated with, if floor restriction is planned
- ✓ ADA/accessibility compliance confirmed for reader heights and door hardware
- ✓ Platform evaluation criteria reviewed, even if final vendor selection comes later

Common Mistakes That Cost Money Later

- ✓ **Waiting until vendor selection to specify infrastructure.** You don't need a final vendor to run conduit and pull cable — waiting for that decision is what causes rough-in to be missed entirely.
- ✓ **Undersizing conduit to save a small amount on rough-in.** The cost difference between adequately sized and undersized conduit is minor compared to the cost of adding a parallel run later.
- ✓ **Skipping the pull string.** A conduit run without a pull string often has to be abandoned and re-run rather than re-fished.
- ✓ **Not consulting the fire protection engineer on egress hardware early.** Retrofitting fail-safe hardware after an inspection failure is far more disruptive than specifying it correctly from the start.
- ✓ **Assuming Wi-Fi will cover access control connectivity needs.** Most access control panels and readers perform more reliably on wired connections — treat Wi-Fi as a supplement, not the primary connectivity plan.
- ✓ **Failing to coordinate elevator floor restriction with the elevator contractor early,** since elevator controller specifications are typically finalized well before general trim-out.

CONCLUSION

Key Takeaways

- ✓ Specify access control infrastructure — conduit, cabling, power, and network — during design and rough-in, well before selecting a final vendor.
- ✓ Oversize conduit and cabling relative to today's needs; the marginal cost during construction is far lower than any future addition.
- ✓ Coordinate with your fire protection engineer, elevator contractor, and low-voltage integrator early — each has requirements that affect the access control plan.
- ✓ Evaluate platforms on standards-based compatibility and integrator familiarity for new construction, not just feature lists.
- ✓ Use the consolidated checklist on page 11 as a review item at your design development and construction document milestones.

Once your infrastructure is specified, our Access Control RFP Template and Property Manager's Guide can help you move from infrastructure planning into vendor selection and platform configuration.

VIVO CONTROL

Built to Work With Standard Construction Infrastructure

Vivo Control is designed around standard conduit, Cat6/Cat6a cabling, and PoE-compatible hardware — so the infrastructure you specify today keeps your options open, whichever platform you ultimately choose.

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