

Commercial Building Construction Process

Start to finish — the phases, the real failure points, and the checks that keep a job boring.

Version: 2026-03-04 | **Audience:** owners, PMs, architects, GCs, supers, and anyone new who's tired of getting surprised.

Commercial work isn't hard because the steps are mysterious. It's hard because **small misses turn into big bills** once they're buried behind drywall, cladding, ceilings, or concrete. Most "disasters" are the same repeat failures: **water**, **air leakage**, and **bad sequencing** (doing the right thing in the wrong order).

How to use this PDF: skim the phase map, then jump to the phase you're in. Each phase has: (1) what happens, (2) what breaks in real life, (3) the stop-the-job checks.

Phase map (at a glance)

Phase	Name	The point
0	Feasibility + project setup	Scope, site reality, money, risk register
1	Design + permits	Code path, details, approvals, bid-ready set
2	Preconstruction	Budget, schedule, logistics, early buyout plan
3	Procurement + submittals	Long-leads, shop drawings, substitutions control
4	Mobilization	Site safety, temp services, laydown, access plan
5	Earthwork + foundations	Soils, water control below grade, concrete quality
6	Structure	Steel/concrete frame, coordination holes, embeds
7	Enclosure / dry-in	Roof, walls, windows, air barrier continuity
8	MEP rough-in	Penetrations, shaft/chase coordination, testing readiness
9	Interiors + finishes	Moisture management, fire/smoke ratings, details
10	Commissioning + start-up	Functional testing, TAB, controls tuning
11	Closeout + turnover	CO, O&M manuals, training, warranty baseline

The 3 things that break projects (over and over)

Water (bad drainage, bad flashing, bad roof edges). It shows up late and charges interest.

Air leakage (continuous line exists on paper, but not in the field). Comfort problem + moisture transport problem.

Sequencing (covering problems, missing inspections, trades stacked wrong, long-leads ordered late). You pay twice.

Phase 0: Feasibility + project setup

What happens

Owner goals get turned into something buildable: site, program, money, schedule, risk.

You pick delivery method (design-bid-build, CM/GC, design-build) and start lining up decision-makers.

What breaks in real life

Site picked because it “looks flat” — then you discover poor soils, drainage, or access constraints.

Budget set off vibes. No contingency. Then every change feels like betrayal.

No one owns decisions → design stalls, procurement stalls, and the schedule bleeds quietly.

Stop-the-job checks

- You have a written scope that includes **what is NOT included** (this saves fights).
- Utilities reality checked (power, water, sanitary/storm) and **lead times** are known.
- A simple risk list exists (water, wind exposure, below-grade, complex interfaces).
- You walked the site after rain/snowmelt and marked where water sits and where it wants to go.

Phase 1: Design + permits

What happens

Concept → schematic → design development → construction documents.

Code path gets locked (occupancy, construction type, fire ratings, egress, energy).

Permit drawings are submitted and review cycles start.

What breaks in real life

Details that 'look fine' in plan... but don't show the control layers (roof edge, window head/sill, slab edge, balcony).

VE happens too late and turns into redesign during construction.

Permits treated like admin. Then you miss an inspection window and the job stops.

Stop-the-job checks

- You can trace **water/air/thermal** continuity on typical details (wall, roof edge, slab edge, openings).
- The schedule includes permit review time + resubmittals (not just best-case).
- Key performance requirements are written (air leakage target if any, thermal targets, waterproofing approach).

Useful official refs (1–2 minutes each)

- ICC (model codes hub — where the IBC/IECC family lives)
 - NFPA (fire & life safety standards used across commercial work)
 - U.S. DOE Energy Codes (plain guidance + tools)
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Phase 2: Preconstruction

What happens

Estimating, bid packages, trade coverage, schedule logic, logistics, early buyout plan.

Submittal schedule gets drafted (what needs approval before procurement).

What breaks in real life

No long-lead list → you're 'ready' to build, but the windows/gear/steel are 12–24 weeks out.

Scope gaps between trades (nobody owns flashing at transition, nobody owns firestopping at penetrations).

Site logistics ignored until day one → chaos, damage, missing productivity.

Stop-the-job checks

- There's a long-lead list with dates, owners, and weekly updates.
 - Trade scopes call out the ugly interfaces (who flashes? who seals? who firestops? who tests?).
 - You have a real site logistics sketch (access, laydown, crane path if needed, deliveries).
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Phase 3: Procurement + submittals

What happens

Trades buy materials, submit shop drawings/product data, and get approvals.

You lock substitutions (same-looking is not same-performing).

What breaks in real life

Submittals pile up, approvals lag, then you miss production slots.

Mixing systems: tape + WRB + sealant + primer that aren't compatible → leaks later, warranty fights later.

Stop-the-job checks

- Submittals are tracked with dates and "approved as noted" items are actually addressed.
 - Any substitution is reviewed for **compatibility** with adjacent products (not just cost).
 - Critical enclosure products have their install manuals saved to the job folder (and the crew has them).
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Phase 4: Mobilization

What happens

Temp power/water, fencing, site office, safety plan, laydown, deliveries start.

What breaks in real life

Materials arrive and get wrecked (wet, warped, stolen) because there's no storage plan.

Safety is treated like paperwork → one incident stops the job and nukes morale.

Stop-the-job checks

- Material storage keeps moisture-sensitive stuff dry and flat (drywall, insulation, finishes).
- First week has a delivery plan (who receives, where it goes, what gets checked).
- Safety basics are real: housekeeping, ladders, fall protection, trench rules if excavation is active.

Useful official refs (1–2 minutes each)

- OSHA (jobsite safety hub)
 - OSHA Trenching & Excavation topic page
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Phase 5: Earthwork + foundations

What happens

Clearing, grading, excavation, underground utilities, footings, slabs, waterproofing, drainage.

What breaks in real life

Water ignored: grades slope wrong, drains missing, waterproofing terminations sloppy → leaks later.

Concrete rushed: bad weather, poor curing, wrong placement → cracking, curling, weak surfaces.

Underground conflicts found after pour (missing sleeves, wrong elevations) → demolition or ugly workarounds.

Stop-the-job checks

- Stormwater plan exists (during construction, not just final) so the site doesn't turn into a pond.
- Underground rough-in is coordinated (locations, sleeves, elevations) before concrete placement.
- Concrete curing plan exists for weather (cold/hot) and is actually followed.
- Below-grade waterproofing/drainage is inspected before backfill.

Useful official refs (1–2 minutes each)

- ACI (concrete standards and best practices)
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Phase 6: Structure (steel / concrete frame)

What happens

Erection of steel or cast-in-place/precast concrete; embeds, connections, decking.
Coordination for penetrations, sleeves, and future MEP paths.

What breaks in real life

'We'll core it later' becomes expensive fast (rebar conflicts, fire rating, schedule).
Out-of-plumb/out-of-square structure cascades into curtain wall and finishes pain.
Missing embeds/blocking becomes field drilling and patchwork.

Stop-the-job checks

- Major penetrations and sleeves are coordinated before pours / deck installs.
- Connection details and special inspections are scheduled (so you're not waiting on an inspector).
- Field tolerances are tracked early (don't wait until cladding is fabricated).

Useful official refs (1–2 minutes each)

- AISC (steel design + construction resources)
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Phase 7: Enclosure / dry-in (roof + walls + openings)

What happens

Roofing, air/water barrier work, windows/curtain wall, cladding, flashings, terminations.

This is where the building becomes weather-resistant — or doesn't.

What breaks in real life

Leaks aren't 'bad siding.' They're bad **interfaces**: window corners, roof-to-wall, parapets, penetrations.

Reverse laps, missing end dams, unrolled tapes, wrong sealant on wrong substrate — tiny details, huge cost later.

No ownership at transitions → trade blame ping-pong until the warranty runs out.

Stop-the-job checks

- You can trace a continuous **air barrier line** around the whole enclosure (and it matches what's built).
- Openings (head/jamb/sill) have a real drainage path + end dams where required.
- Roof edges/parapets have termination details checked before they're buried.
- High-risk details get a mockup or a test (water test at openings if exposure is high).

Useful official refs (1–2 minutes each)

- NIBS/WBDG Building Enclosure Commissioning guidance (overview)
- ASTM (standards hub; E2813 is a common BECx reference)

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Phase 8: MEP rough-in

What happens

Ducts, piping, conduit, fire protection rough-in, controls rough-in, shafts, equipment pads.

Penetrations multiply fast. Coordination matters more than effort.

What breaks in real life

Penetrations left for 'later sealing' → later never comes. Then you get air leaks + smoke/fire rating issues.

Duct routing and beam conflicts become field hacks that kill airflow and increase noise.

No clear responsibility for firestopping at MEP penetrations → inspection failures.

Stop-the-job checks

- Penetrations are planned and assigned (who cuts, who seals, who firestops, who verifies).
- MEP is coordinated with structure and enclosure before work gets buried (especially shafts and roofs).
- Fire/smoke rated assemblies are tracked and protected (don't let random holes appear).

Useful official refs (1–2 minutes each)

- ASHRAE (HVAC and building performance standards)
- SMACNA (duct construction standards)
- NECA (electrical construction association resources)

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Phase 9: Interiors + finishes

What happens

Insulation, drywall, ceilings, flooring, paint, millwork, doors/hardware, final devices.

What breaks in real life

Closing walls while assemblies are wet (framing/insulation) → mold risk.

Fire/smoke ratings compromised by untracked changes (new penetrations after inspection).

Finish work starts before substrate is flat/plumb/dry → the finish looks cheap no matter what you paid.

Stop-the-job checks

- Moisture conditions are acceptable before closing (don't trap wet framing/insulation).
- Rated assemblies are re-checked after late trade work (one missed hole can fail inspection).
- Finish sequencing protects completed work (damage is a silent budget killer).

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Phase 10: Commissioning + start-up

What happens

Functional testing of systems, controls verification, TAB (testing/adjusting/balancing), training prep.

What breaks in real life

Commissioning started too late → you discover issues when occupancy is looming.

Controls left 'default' → comfort complaints, energy waste, constant callouts.

No documentation baseline → warranties become arguments.

Stop-the-job checks

- Commissioning plan exists early (who tests what, when, what 'pass' means).
- TAB is scheduled at the right time (not before the building is reasonably sealed).
- Owner training and O&M manuals are being assembled before the last week scramble.

Useful official refs (1–2 minutes each)

- ASHRAE commissioning resources

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Phase 11: Closeout + turnover

What happens

Punch list, final inspections, certificate of occupancy, closeout docs, warranties, training, handover.

What breaks in real life

No closeout package → owner can't operate the building, then blames the build.

Punch list drags because trades left the job and won't come back without money.

Missing paperwork stalls occupancy even though 'the building is basically done.'

Stop-the-job checks

- CO requirements are known and scheduled (don't discover this at the finish line).
- O&M manuals, warranties, as-builts, and training are delivered and acknowledged.
- A first-season maintenance checklist is handed over (filters, roof checks, drains, sealants).

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One-page “Don’t Screw This Up” Checklist (Commercial)

Not a fluffy checklist. A stop-the-job checklist. Print it. Mark it. Use it before you cover work.

Before cladding / roofing closes

- Water details verified at openings (head/jamb/sill), roof edges/parapets, decks/balconies, and penetrations.
- Drainage path exists (where does water go if it gets behind the cladding/roofing?).
- Photos taken of every risky transition before it gets covered.

Before insulation / drywall

- Air barrier is continuous (if you can’t draw it continuously on the plan, you don’t have it).
- Penetrations have an owner (who seals it, who firestops it, who verifies it).
- Assemblies are dry enough to close (don’t trap wet framing/insulation).
- Photos taken before covering: every wall, corner, shaft, and penetration zone.

Management sanity (this saves your schedule)

- One person owns decisions (if two people ‘kind of’ own it, nobody owns it).
- Inspection calendar is visible and current (missed inspections stop jobs).
- Long-lead list is updated weekly with dates + owners.
- Issue log exists and gets closed (not ‘noted’).

If you only remember one rule: make water boring, make air continuous, and don’t hide problems behind finishes.

Official links worth bookmarking (short, useful, not blog noise)

- OSHA — construction safety basics (falls, trenches, scaffolds)
- ICC — model building codes hub (IBC/IECC/IRC families)
- ICC Digital Codes — searchable code library
- NFPA — fire & life safety standards
- U.S. DOE Energy Codes — official energy code guidance/tools
- ENERGY STAR — performance programs + product categories
- WBDG/NIBS — Building Enclosure Commissioning overview
- ACI — concrete guidance/standards
- AISC — steel construction resources
- ASHRAE — HVAC/building performance standards