

CONSTRUCTION PROJECT MANAGEMENT



- Construction project management coordinates labor, materials, budgets, schedules, contracts, and stakeholders to deliver built assets



- The core discipline balances cost, schedule, quality, safety, function, and scope from preconstruction through closeout



- Professional management reduces rework, controls risk, and protects owner outcomes



- This course covers roles, planning, control, safety, reporting, and closeout

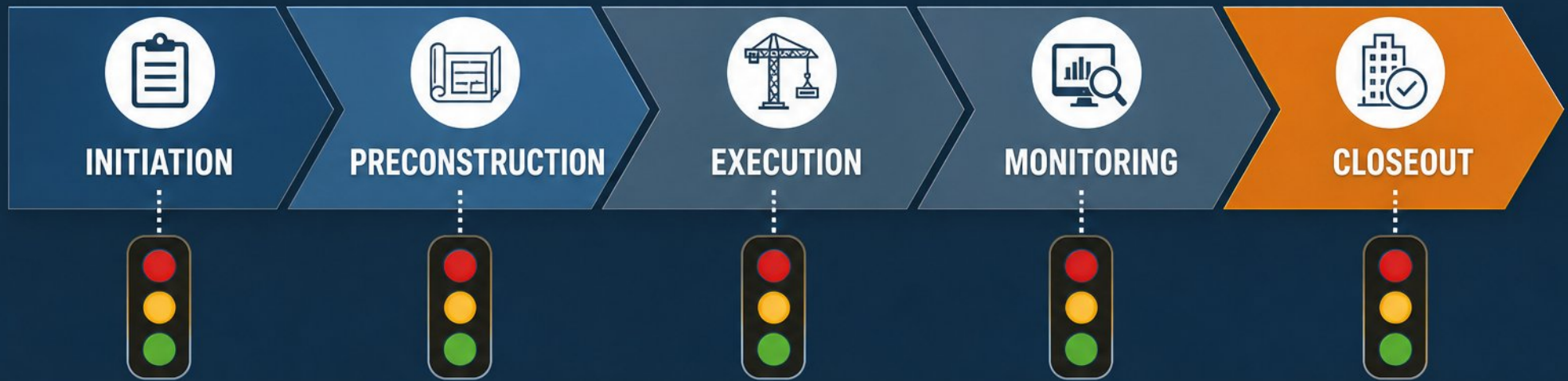


Roles, Responsibilities, and Governance



- **Project manager:** owns budget, schedule, contracts, and client communication
- **Superintendent:** directs daily site labor, safety, and work sequencing
- **Engineer:** verifies design intent, quality, and technical compliance
- **Owner's representative:** protects owner outcomes through decision rights and escalation paths
- Contract structure and delivery method define authority limits and governance

The Construction Project Lifecycle



- From initiation through preconstruction, execution, monitoring, and closeout
- Key decisions at each stage: scope, permits, procurement, construction, commissioning
- Early planning and proactive risk management prevent costly late-stage changes
- Duration benchmarks vary by delivery method and project complexity
- Distinct deliverable gates structure each phase



Contract Types and Delivery Methods

CONTRACT TYPE CHARACTERISTICS



- Lump sum, GMP, cost-plus, and T&M pricing structures



- Design-bid-build, design-build, and CM-at-risk delivery models



- Trade-offs between cost certainty, schedule speed, and risk



- Scope maturity and owner capability guide contract choice

RISK ALLOCATION FOCUS



Procurement Strategy and Bid Management



- Procurement planning aligns purchases with project goals and timeline



- Evaluate bids on price, qualifications, past performance, and risk



- Identify long-lead items early to prevent schedule delays



- Standardize procedures and track vendor performance with clear KPIs



- Maintain pre-approved suppliers and enforce ethics for urgent needs

PROCUREMENT PIPELINE



Project Planning and Baseline Development



- Work breakdown structure defines full project scope



- Draft safety-first work plan and risk register



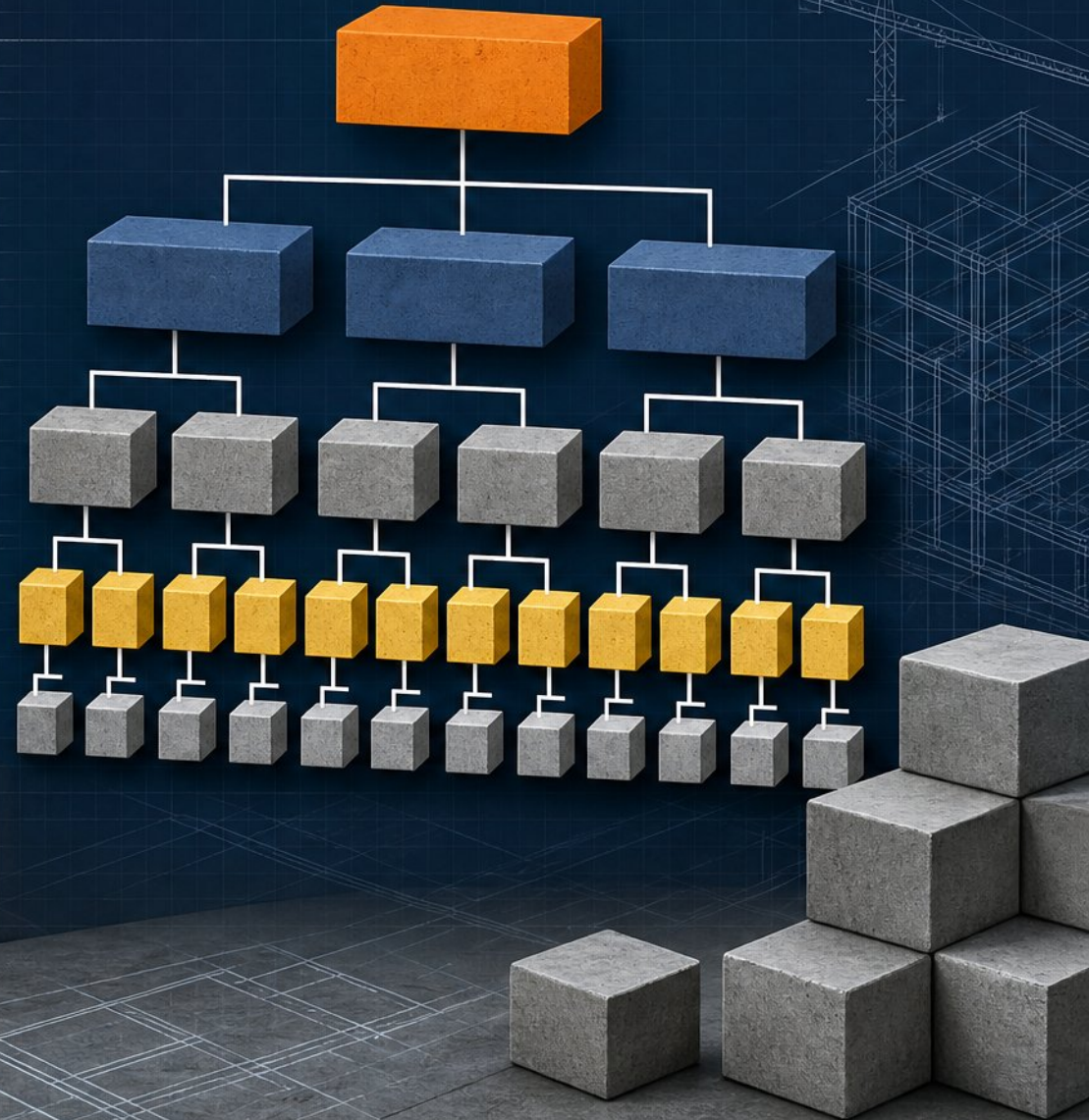
- Build baseline schedule and budget with contingency buffers



- Integrate owner requirements into baseline before execution



- Owner-approved baseline drives look-ahead schedules



SCHEDULING AND CRITICAL PATH MANAGEMENT



- Activity sequencing, durations, and dependencies between trades



- Critical path method and float analysis identify schedule risks



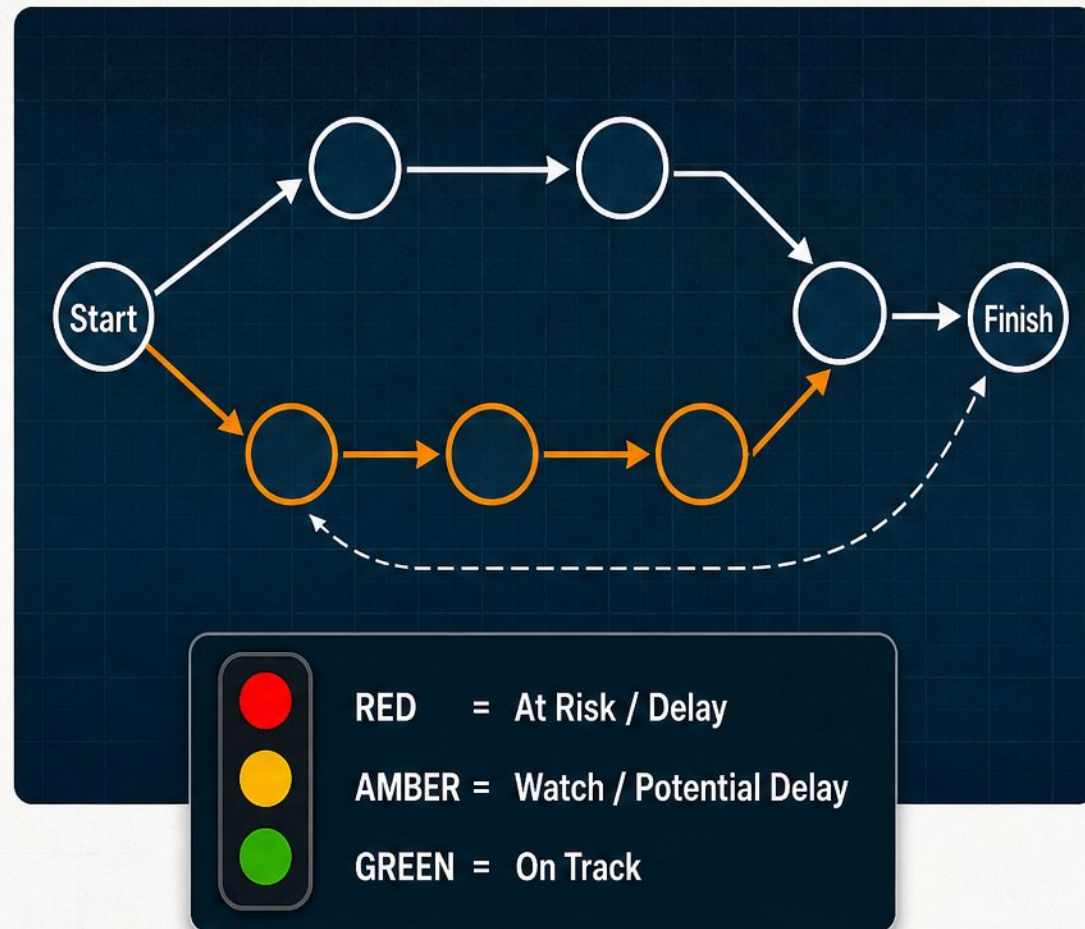
- Look-ahead schedules of 3–6 weeks keep resources ready



- Track delays, plan recovery, and decide when to accelerate



- Communicate schedule status clearly to all stakeholders



COST CONTROL AND EARNED VALUE MANAGEMENT



- Establish cost baseline and track committed costs



- Earned value metrics: EV, PV, AC, SPI, CPI



- Rigorous change order management and budget adjustments



- Tailored monthly cost reports for field and executive audiences



Quality Assurance and Quality Control

- Quality plan defines inspection, testing, and documentation duties
- Inspections, testing, and non-conformance reporting
- Commissioning verifies systems perform to specifications
- Punch list items resolved before owner acceptance
- Defined acceptance criteria and early documentation prevent rework



SITE SAFETY LEADERSHIP AND COMPLIANCE



- Daily routines: hazard walks, pre-task planning, toolbox talks



- JHA review, site audits, and prompt corrective action



- OSHA documentation, incident response, and 2026 heat rules

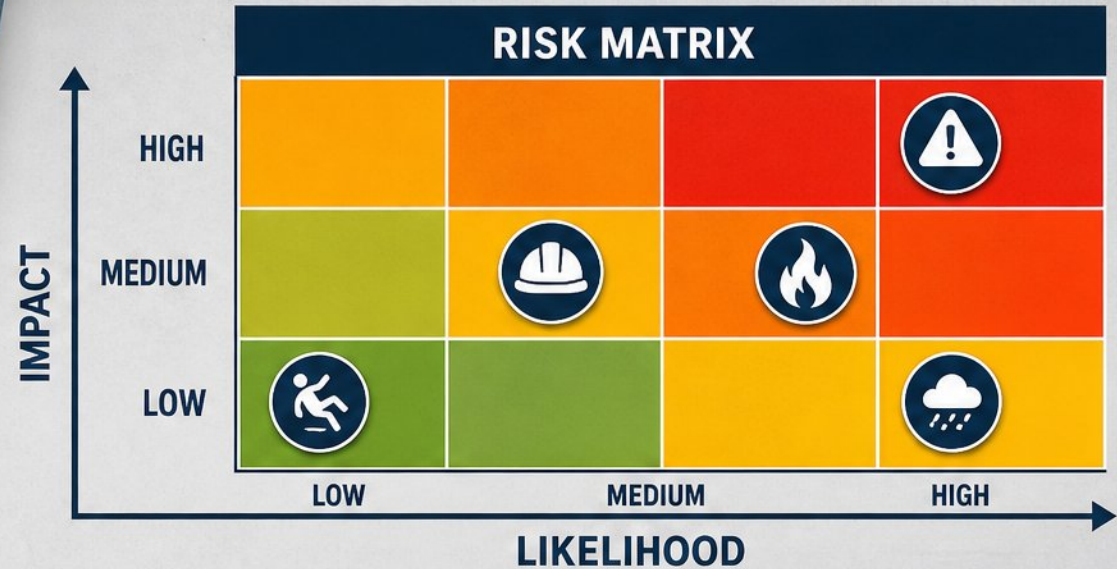


- Multi-employer sites: coordination and stop-work authority



Risk Management, Insurance, and Bonding

- ▶ Identify, mitigate, and track schedule, cost, and site-specific risks in a risk register
- ▶ Typical insurance: builder's risk, general liability, professional liability, and auto coverage
- ▶ Performance and payment bonds; surety requirements and capacity change with safety record
- ▶ Strong safety programs lower insurance premiums and reduce project risk exposure
- ▶ Escalate risks; allocate contingency for residual and unknown scope changes



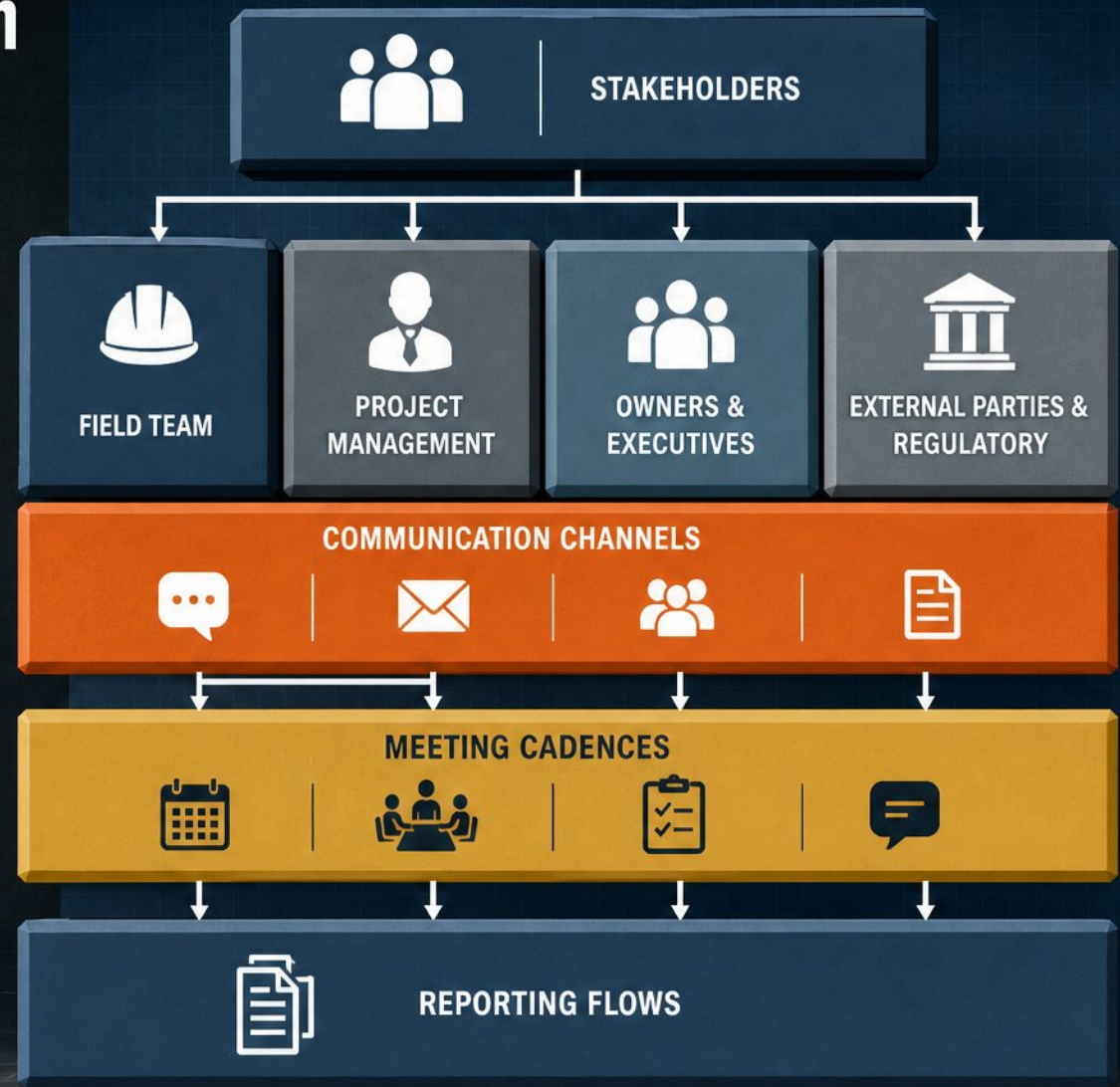
TYPICAL INSURANCE COVERAGES	
	Builder's Risk
	General Liability
	Professional Liability
	Auto Coverage



Stakeholder Communication and Progress Reporting

Stakeholder Communication & Progress Reports

- Map stakeholders and build a communication plan
- Document daily logs, site meetings, meeting minutes, and progress dashboards
- Translate technical issues for non-technical owners and executives
- Navigate difficult conversations, claims, and early dispute resolution



» Closeout, Handover, and Documentation



- Punch lists, final inspections, and certificate of occupancy



- As-built drawings, O&M manuals, warranties, and owner training



- Lien waivers, retainage release, and final payment closeout



- Begin closeout tracking 60–90 days before substantial completion



- Document collection during construction prevents end-of-project delays



Lessons Learned and Continuous Improvement



- Conduct post-project reviews with both field and office teams



- Capture lessons learned: what worked, what failed, what to change



- Apply findings to future bids, planning, and risk management



- Build an institutional knowledge base from completed projects



- Use closeout discipline to boost performance and win more work



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