

Introduction to Project Management in Construction

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(A concise, easy-to-read guide for students, new hires, or anyone getting started in construction project management)

1. What Is Construction Project Management?

Element	Description
Definition	The application of planning, coordination, and control techniques to deliver a construction project on time, within budget, and to the required quality and safety standards.
Key Objectives	• Scope fulfillment • Cost control • Schedule adherence • Quality assurance • Safety compliance • Stakeholder satisfaction
Typical Deliverables	• Project charter & scope statement • Detailed design & specifications • Construction schedule (Gantt, CPM) • Cost estimates & budgets • Risk registers • Progress reports & close-out documentation

2. Core Phases of a Construction Project

Phase	Main Activities	Typical Outputs
1. Initiation	• Identify client needs • Feasibility studies • Site selection • Develop project charter	• Project charter • Preliminary budget • High-level risk list

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Phase	Main Activities	Typical Outputs
2. Planning	• Define scope (WBS) • Create detailed schedule (CPM) • Cost estimating & budgeting • Procurement strategy • Health & safety plan • Risk management plan	• Scope statement & WBS • Baseline schedule (Gantt/Network) • Cost baseline • Procurement schedule • Risk register
	• Mobilize resources (labor, equipment, materials)	• Daily/weekly progress reports
3. Execution (Construction)	• Manage subcontractors • Perform quality inspections • Monitor safety • Update schedule & budget • Track performance (cost, schedule, quality)	• Updated schedule (earned value) • Change order logs
4. Monitoring & Controlling	• Conduct variance analysis • Manage change orders • Resolve issues & claims • Update risk register • Final inspections & punch?list completion	• Earned Value Management (EVM) reports • Updated risk & issue logs • Revised forecasts
5. Closing	• Hando?over to owner • Final accounting & settlement • Lessons?learned workshop	• As?built drawings • Close?out report • Warranty documents • Lessons?learned register

3. Key Roles & Responsibilities

Role	Primary Responsibilities
Project Owner / Client	Sets objectives, provides funding, approves major changes
Project Manager (PM)	Overall planning, coordination, risk & cost control, stakeholder communication
Construction Manager / Site Superintendent	Day?to?day site operations, crew supervision, safety enforcement

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Role

Primary Responsibilities

Construction

Design Team (Architect, Engineer)	Develop design documents, respond to RFIs, issue shop drawings
Contract Administrator	Manages contracts, change orders, claims, and payments
Procurement Officer	Sources materials/equipment, negotiates supplier contracts
Safety Officer	Implements safety plan, conducts inspections, ensures regulatory compliance
Quality Assurance/Control (QA/QC) Engineer	Monitors workmanship, conducts testing, ensures con