



زبان تخصصی مدیریت ساخت

بر اساس اسناد و استانداردهای بین‌المللی

ارائه دهنده:

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J



Jobsite overhead

- ❑ **Field indirect costs** that **cannot** be typed to an item of work but
are project specific and,
in the **case of cost-reimbursable contracts**,
are considered **part of the cost of the work**;
also referred to as **general conditions (as costs)**

L



Labor burden

- ☐ Taxes and insurance the **employer** is **required to pay by law**,
based on **labor payroll**, or on behalf of or for the benefit of labor.

❑ The **ratio** between

- ❖ Actual workhours required to perform a task under project conditions and
- ❖ Workhours required to perform an identical task under **standard conditions**.

- ☐ **Shortage** in available labor **resulting from**
injury, widespread illness (epidemics), competition from other projects, or
other unusual and unforeseeable circumstances.
- ☐ These problems are **usually the responsibility** of the contractor.



Lack of information or decision

☐ Time spent awaiting

☐ instructions, decisions or clarifications from the owner; work force or activities shifted while waiting, or efforts wasted because information comes late.

☐ Depending on the **existence of contractual provisions** stating otherwise, such lack of information or decision problems may entitle the contractor to a **compensable delay** if

1. Work affected by such problems was on the **critical path** at the time that the delay occurred and
2. Contractor was not responsible for **other concurrent delays** at that time.



Lack of permits

- ☐ **Failure of the owner** to secure permits or licenses necessary for the performance of the work; **delay in securing permits**.
- ☐ If the **owner was responsible** for securing such permits by a contractual date, the **contractor may be entitled to recover** is delay costs if
 1. **Activities in its schedule** that were affected by not having the necessary permit(s) were on the **critical path** of the project schedule at the time that the permits were needed and
 2. Contractor was **not responsible** for **other concurrent delays** at that time.



Lack of right-of-way

- ☐ **Roadways or routes** to or from the project are blocked, unavailable, or otherwise impaired.
- ☐ If the owner was responsible for securing such right-of-ways to access the project, the contractor **may be entitled** to recover is delay costs if
 1. Activities in its schedule that were affected by not having the necessary right-of-ways were on the critical path of the project schedule at the time that the right-of-ways were needed and
 2. Contractor was not responsible for other concurrent delays at that time.



Latent defect

- ❑ A hidden flaw, weakness or imperfection in
design or constructed component (or entire) facility
which a **designer** or **contractor** knows about,
but the **owner cannot discover** by reasonable inspection.

Leadership in energy and environmental design (LEED)

- ❑ Developed by the U.S. Green Building Council (USGBC), the **LEED green building certification** program offers a suite of rating systems that recognize projects that implement strategies for better **environmental and health performance**.
- ❑ **LEED** provides building owners and operators a **framework** for identifying and implementing practical and measurable green building design, construction, operations, and maintenance solutions.

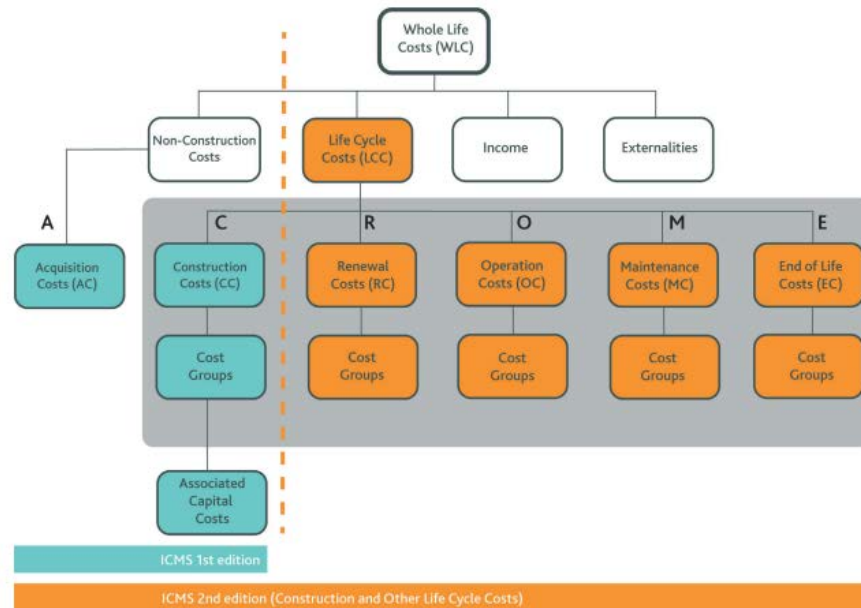


Letter of intent

- ❑ A **letter**, in lieu of a contract, **notifying** the contractor that the **client intends** to enter into a contract **pending resolution** of some restraining factors, such as *permits, financing, or design completion*;
sometimes allows
limited construction or procurement activities to occur.

Lifecycle cost

- ❑ **All costs** incident to the planning, design, construction, operation, maintenance, and demolition of a facility, or system,
for a given life expectancy,
all in terms of **present value**.



'Occupancy Costs' are considered part of the 'Non-Construction Costs'.



Liquidated damages

- ❑ An **amount of money** usually set on a per day basis,
which the **contractor agrees** to pay the owner for delay in completing the
work in **accordance** with the contract documents.



Long lead item

- ☐ Material or equipment having an **extended delivery time**.
- ☐ Such items may be considered for early procurement and purchase
under separate contract to
facilitate on time completion of the project.

- ☐ The **responsible** bidder who has **submitted the lowest bid**,
which is determined to be **responsive** to the request for bids
for a division of work described in
- ❖ Bid document,
 - ❖ Proposal form, or
 - ❖ Contract.



Lump sum fee

☐ A **fixed amount (fee)** that includes
cost of overhead and profit

paid for work or a service,

that does **not change** with

1. Time the work takes or
2. Scope of the services provided

M



Maladministration

- ❑ A **contractor** has the right to enjoy least-cost performance.
- ❑ Unless specified in the contract, the owner **may not** interfere with the **contractor's** sequencing of **work or methods** of construction.
 - ❖ **Maladministration** is an entitlement recognized by the courts that **allow contractors** to recover costs when the **owner's actions or inactions** interfere with the **contractor's work**.
- ❑ Maladministration rulings are often based upon the **doctrine of implied warranty** that provides
 - “an implied provision of every contract, ... that **neither party** to the contract will do anything to*
 - 1. **Prevent performance** thereof by the other party, or*
 - 2. **Hinder or delay** him in its performance.”*

Management information system

❑ **Web-based project tool** for managing information for large programs.

❑ These **shared programs** generally include

- ❖ Document control,
- ❖ Budget tracking,
- ❖ Cost tracking,
- ❖ Commitment tracking,
- ❖ Communication tools,
- ❖ A calendar, and
- ❖ Review and approval functions.

- ☐ As variously used in construction estimating, includes such **percentage applications** as general overhead, profit, contingency and other indirect costs.
- ☐ When mark-up is applied to the **bottom of a bid sheet** for a particular item, system, or other construction price,
any or all of the above items (or more) may be included,
depending upon local practice.



Master schedule

- ☐ An **executive level summary** schedule **identifying** the major components of a project, their sequence, and durations.
- ☐ The schedule can **be in the form of** a network, milestone schedule, or bar chart.
- ☐ The master schedule increases in detail **over time** as contracts are awarded and design is developed.



Mechanic's lien

- ❑ A **legal claim** against an owner's property by a project participant to the **value of monies earned but not paid** for by the owner or an employing contractor.

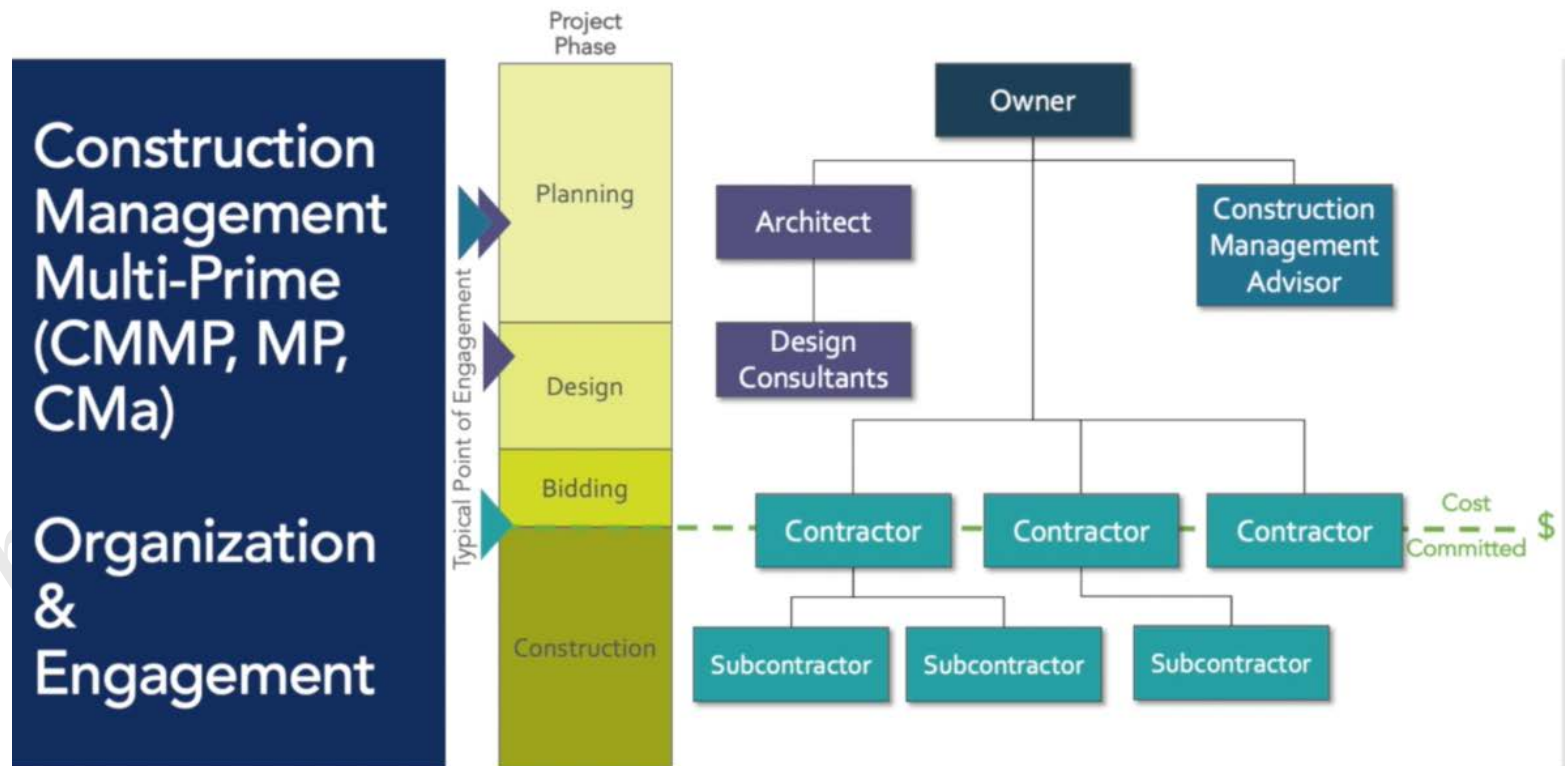


Milestone schedule

- ☐ A schedule **representing** important events along the **path to project completion**.
- ☐ Not all milestones are equally significant.
- ☐ The **most significant** are termed **“major milestones”** and **usually represent** the **completion** of a group of activities.

Multiple-prime contracts

- ❑ **Separate contractors** contracting directly with the owner for **specific** and designated elements of the work.



Courtesy Design Build Institute of America

N



Narrative reports

- ☐ A narrative report should be submitted **with each schedule**: preliminary, baseline and update.
- ☐ A narrative report assists the project team in
 1. **Thinking through project progress** during the previous update period,
 2. **Impact** of major events during the period,
 3. **Causes** of delays, if any, and
 4. **Actions** that may be necessary in the future as a result of the project events.
- ☐ The narrative also helps the **CM understand** the contractor's means and methods so as to **ensure** that the schedule logic and sequencing reflect the **contractor's intent**.



Narrative reports

❑ The narrative should require:

- ❖ Executive summary,
- ❖ Areas of progress,
- ❖ Delays or potential delays,
- ❖ Time extension requests,
- ❖ Logic and duration changes,
- ❖ Resource consumption or usage,
- ❖ Recovery plans, and
- ❖ An overall assessment of schedule achievement.



Non-Conforming work

- ☐ Work that does not meet the **requirements** of the contract documents.

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Notice of award

☐ The **written notice** of acceptance of the bid by the owner **to a bidder**

stating that,

*upon **compliance** with the condition precedent enumerated therein, within the time specified,*

*the owner **will sign** and deliver the contract.*

Notice of intent letter...



Notice to proceed (NTP)

- ☐ A **formal document** or point in the project's lifecycle
authorizing an individual or organization to
commence work under its contract.

- ☐ The **issuance of the NTP** typically
 1. **Marks** end of the procurement phase and
 2. **Establishes** the date for commencement of the **contract time.**

O



Officer-in-charge

❑ **General contractor's principal** individual

who supervises the **project manager** and

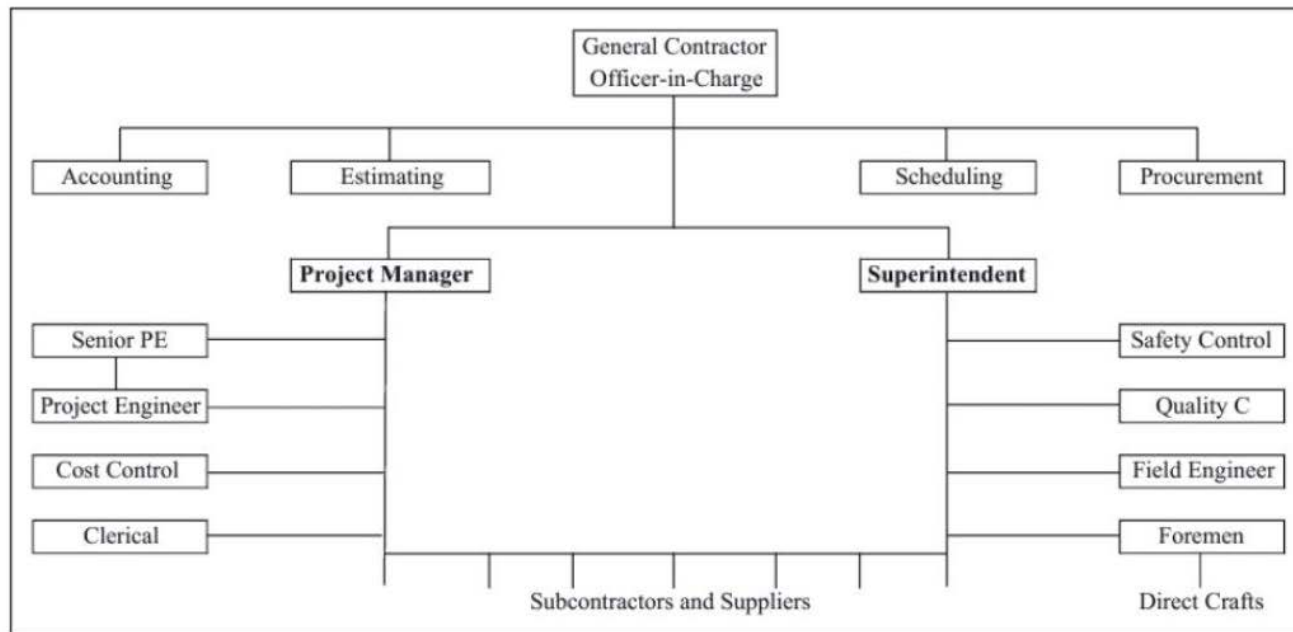
is responsible for overall contract compliance;

also project executive

Officer-in-charge

Officer-in-charge

The officer-in-charge is the principal official within the construction company who is responsible for construction operations. He or she generally signs the construction contract and is the individual to whom the project owner turns in the event of any problems with the project manager. This individual often carries the title of vice president for operations, operations manager, or district manager or may be the owner or chief executive officer.





Open-book accounting

- ❑ **Payment method** requiring the construction firm to show its costs to the **other party**;
it provides **transparent access** to cost information to the **purchasing party**
but **adds more bureaucracy** to the contract administration



Out-of-sequence work

- ☐ By **not planning** the work in a logical manner,
crews are **moved around** excessively and **productivity declines**.
- ☐ If the **contractor can demonstrate**
that the **owner is responsible** for the need to perform work out-of-sequence,
the contractor may be entitled to **recover its loss of productivity costs** for such problems.



Owner construction management

- ☐ A form of construction management that does **not use an independent** construction management organization as a team member.
- ☐ The owner **performs all required** construction management services with **in-house staff**.



Owner's representative

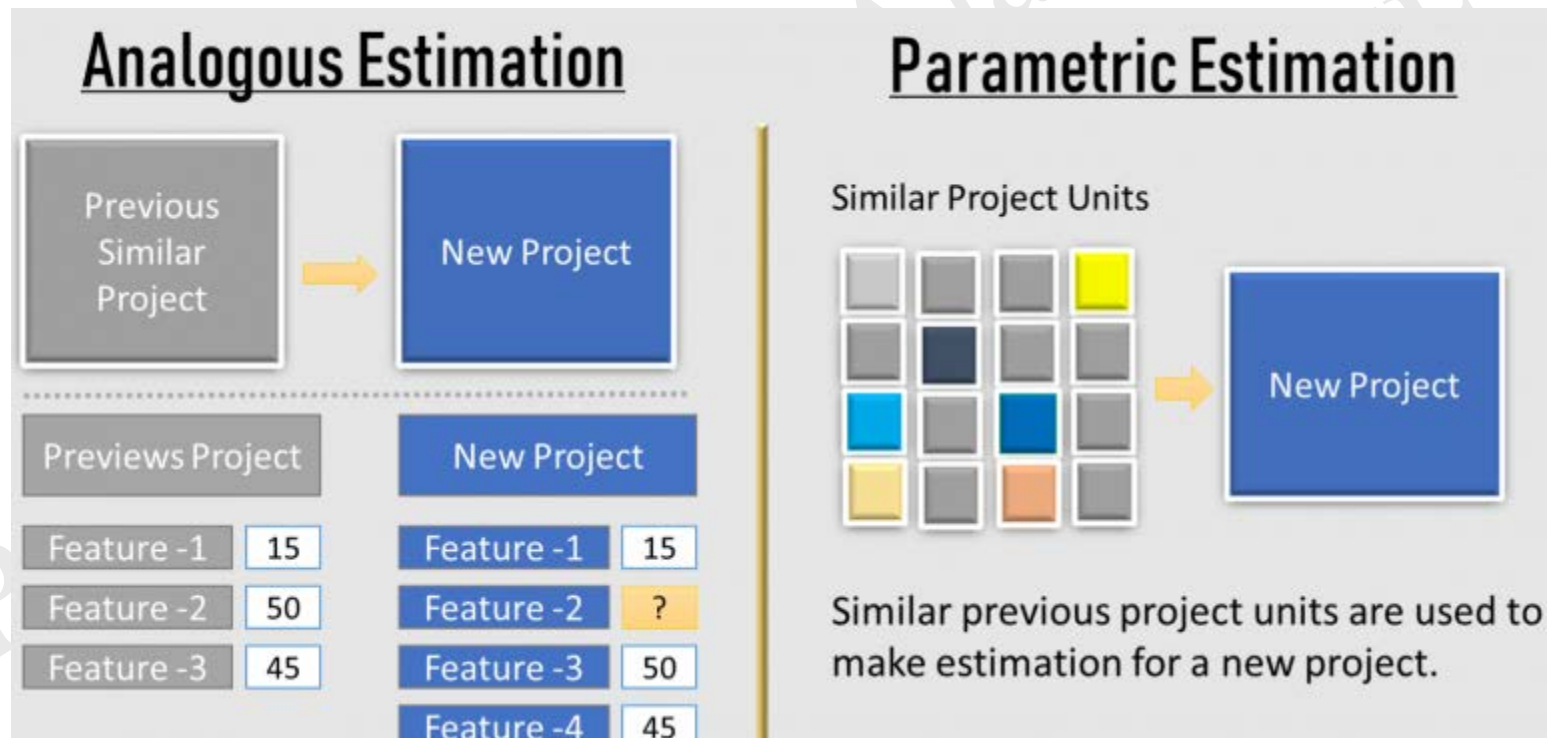
- ☐ The individual **representing the owner** on the project team.

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P

Parametric cost estimate

- ❑ An **estimate** derived from **statistical correlation** of historic system costs with performance and/or physical attributes of the system.





Payment bond

- ☐ A surety instrument that **guarantees** that the contractor (or subcontractor) **will make payments** to their craftspeople, subcontractors, and suppliers.



Penalty

- ❑ A **punitive measure** usually associated with failure to fulfill a **contractual obligation**.



Performance bond

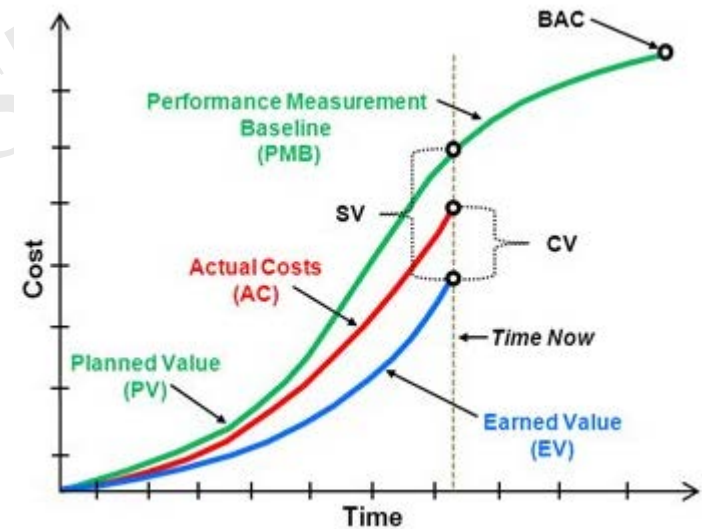
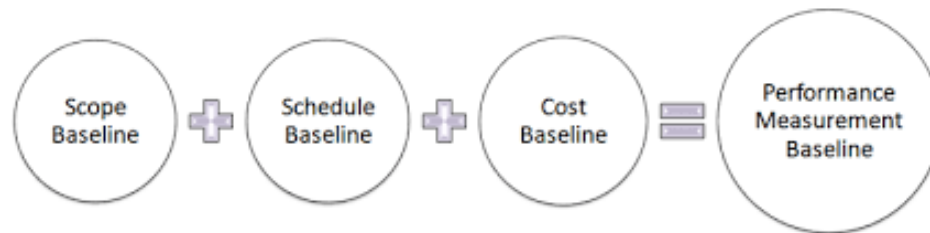
☐ A **pledge** from a **surety** guaranteeing

1. Performance of the work or
2. Payment of the bond amount to the obligee (owner or contractor)

in the **event** of a default in performance of **contractual obligations**.

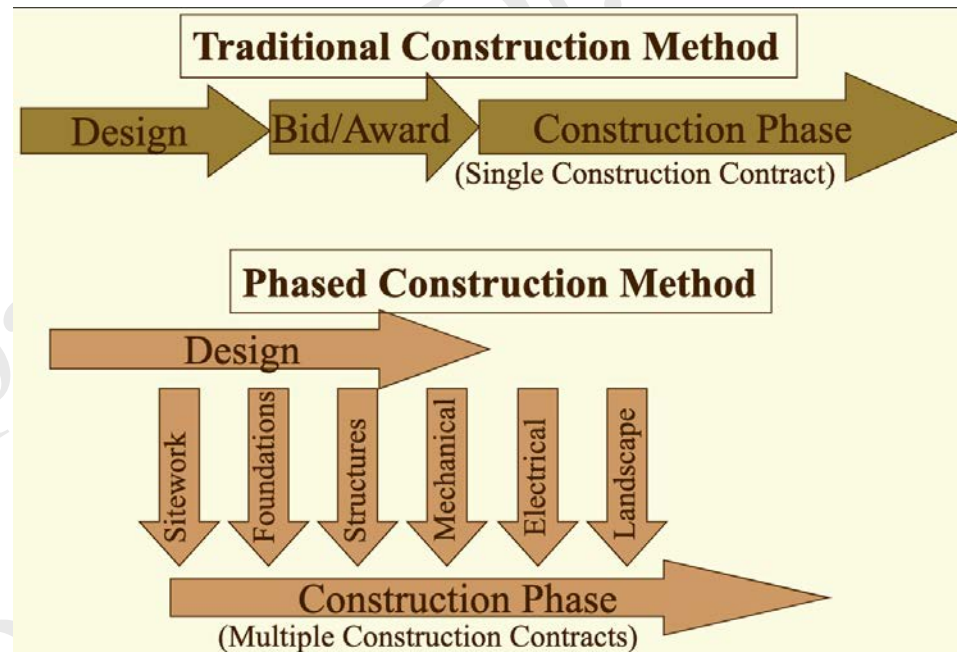
Performance measurement baseline

- ❑ The time-phased budget plan against which **contract performance** is **measured**.
- ❑ It is formed by the budgets assigned to scheduled work elements
plus the applicable indirect budgets.

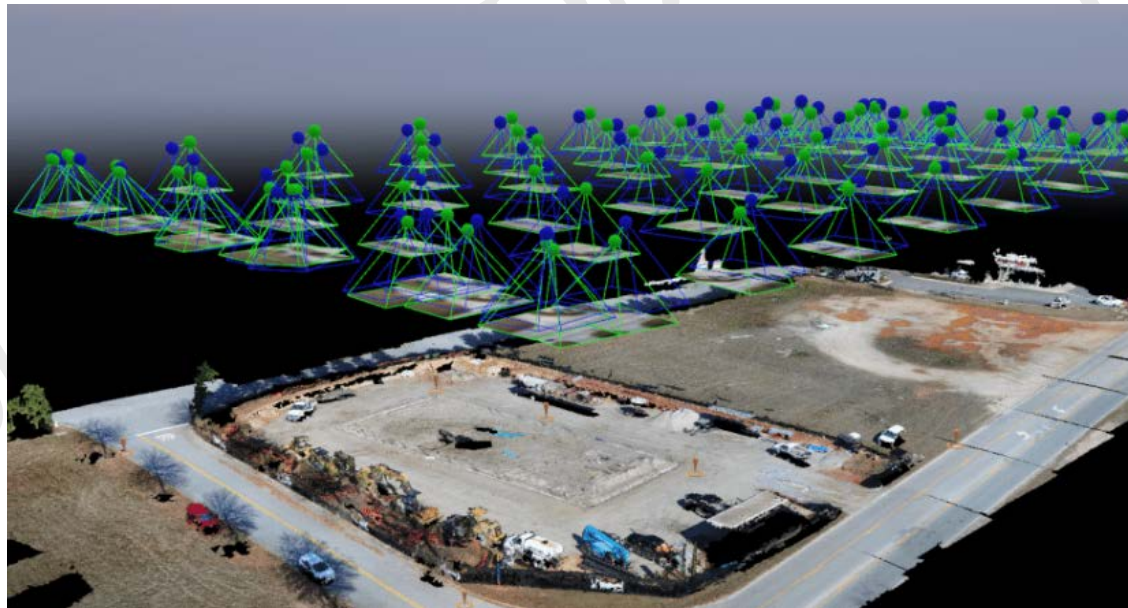


Phased construction

- ❑ An **incremental approach** to construction or design and construction.
- ❑ **Each** overlapping or sequential phase or element has a defined work scope.



- ❑ A **process** that uses **overlapping photographs** of an object or area and converts them into **2D or 3D models**.



- ☐ **Graphic representations** showing the relationships, geometry, and dimensions of the elements of the work.



Post-construction phase

- ☐ The **period** following substantial completion.

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Pre-bid conference

- ❑ Meeting of **bidding contractors** with the project client, CM and architect.
- ❑ The **purpose** of the meeting is to explain the project and bid process and to solicit questions
regarding the **design** or **contract requirements**.



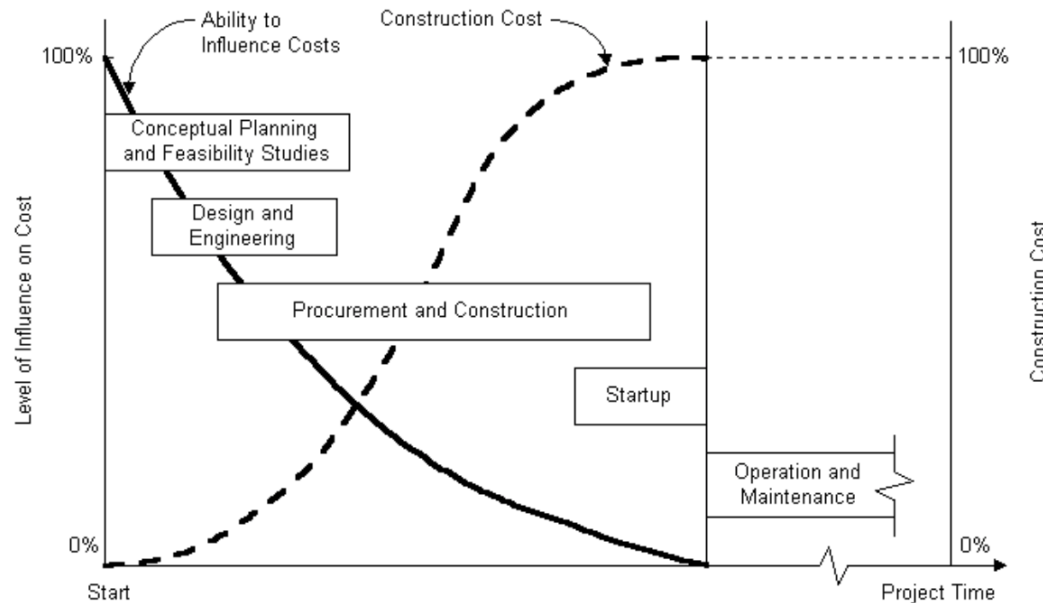
Pre-construction conference

☐ **Meeting** conducted by client, CM or designer to

1. Introduce project participants
2. Discuss project issues
3. Management procedures

Pre-design phase

- ❑ The period before schematic design commences during which the **project is initiated**, and the program is developed, the planning and conceptual phase.





Prime contract

- ☐ A **direct contract** with an owner.
- ☐ It can be a **single contract** and include the work specified for several contracts depending upon the **division of work**.



Procurement phase

- ☐ The **establishment** of acquisition processes and contracting format for bidding and contracting procedures to be employed.

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Product data sheet

☐ Also known as a material data sheet or cut sheet.

☐ **Information** furnished by a **manufacturer** to illustrate
a material, product, or system for some portion of the project;

it can include

1. Illustrations,
2. Standard schedules,
3. Performance data,
4. Instructions, and
5. Warranty



Professional services

- ☐ **Services provided** by a professional or by an organization that has **specific competence** in a field of endeavor that requires
1. **Professional** (and technical) knowledge and capabilities and
 2. That meets recognized standards of performance.

Program management

- ❑ A **substitute term** for construction management sometimes used when two or more projects are concurrently **managed by a CM** for the owner.
- ❑ The **principal differences** between project management and program management are
number, size, complexity, and scope of the projects.
 - ❖ **Project management** typically applies to a single project with **sequential phasing**.
 - ❖ **Program management** often involves multiple projects occurring concurrently or at varying times.
 - ✓ The practice of **professional construction management** applied to a capital improvement program of one or more projects from **inception to completion**.



Program management plan (PgMP)

- ❑ A **document prepared** by the construction manager and **approved** by the owner which defines
 - ❖ Owner's vision,
 - ❖ Implementation strategy,
 - ❖ Schedule,
 - ❖ Budget criteria,
 - ❖ Standards, and
 - ❖ Policies and procedures to fulfill the program's requirements.
- ❑ **Unlike** a project management plan, a program management plan addresses **common elements** across the **entire program** rather than one specific project.



Progress meeting

- ☐ A **meeting** dedicated to the **subject of progress** during any phase of project delivery.



Progress payment

- ☐ **Partial payment** of the contract amount periodically paid by the owner, upon **approval** by the CM, **verifying that portions** of the work have been **accomplished**.

- ☐ The **total effort** required in all phases from
conception
through design and construction completion to
accomplish the owner's objectives.

- ☐ Also, defined as All work to be
 - 1. Furnished** or
 - 2. Provided**in **accordance with** the contract documents prepared by the **designer.**



Project budget

- ☐ The sum or target figure established to **cover all** the owner's costs of the project.
- ☐ It includes the cost of construction and all other costs such as land, legal and consultant fees, interest, and other project related costs.

Project control

❑ **Methods** the project team utilizes to

1. Anticipate,
2. Monitor, and
3. Adjust to risks and trends

in **controlling**

1. Costs
2. Schedules
3. Quality
4. Safety



Project cost

- ☐ The **actual cost** of the entire project.

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Project delivery method

❑ A contracting strategy used by an **agency** or **owner** for organizing

- ❖ Design,
- ❖ Construction,
- ❖ Operations, and
- ❖ Maintenance

services for a construction project from
conception to occupancy by

entering into **legal agreements** with **one or more**
entities or parties.

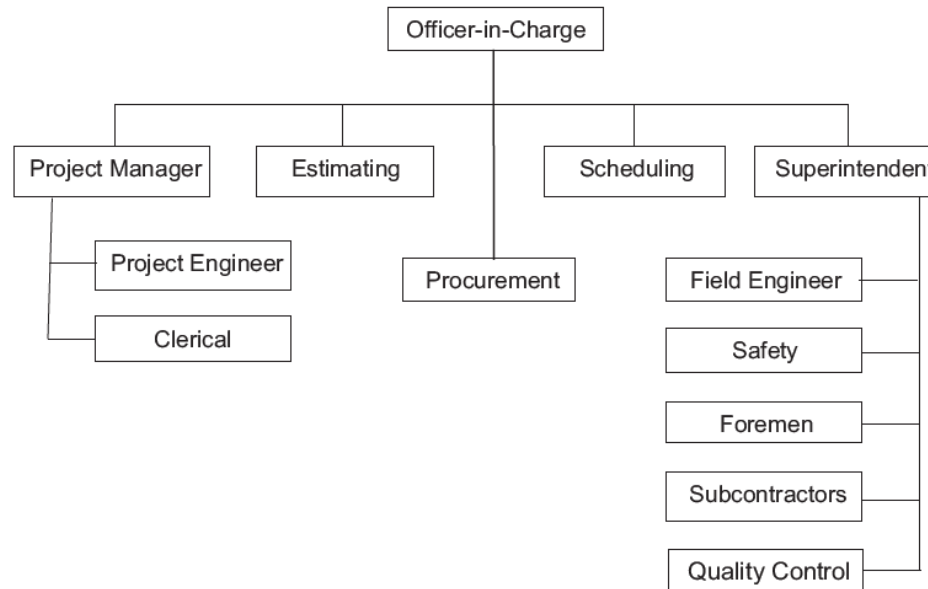


Project engineer

- ☐ Project management team member **responsible** for **management** of technical issues on the **jobsite** who assists
 - ❖ Project manager
 - ❖ Superintendent on larger projects
- ☐ On **small projects**, the project engineer's responsibilities may be performed by the project manager.
- ☐ Project engineers may have **different levels** of experience and responsibilities, from **field engineering** all the way to **assisting** the project manager.
- ☐ In some companies, this position might be called an assistant project manager.

Project executive

- ❑ **General contractor's principal** individual who supervises the project manager and is responsible for **overall contract compliance**; also officer-in-charge.





Project execution plan (PxP)

❑ A **stand-alone document** used for BIM rather than part of the **PMP**.

- ❖ The **CM** develops the PMP, which addresses the **anticipated tools and technology** needed throughout all project phases.
- ❖ If the **project uses BIM**, the PMP either
 1. Establishes the BIM modeling criteria or
 2. Refers to it as a separate document called the **BIM project execution plan**.
- ❖ The BIM procedures **explain** the project's BIM standards, including distribution and access protocols.
- ❖ The design contract also includes these standards.



Project management

- ❑ As applied to a **construction project**,
the use of integrated **systems** and **procedures** by the project team to
accomplish design and construction.
- ❑ Project management is an integral function of **construction management** and
includes
overall responsibilities that a CM must be capable of performing.

Project management application of knowledge, skills, tools, and techniques to the many activities necessary to complete a project successfully

Project management information system (PMIS)

- ❑ An orderly and disciplined **accounting** and **reporting** methodology which provides for
1. Accurate recording of data and
 2. Timely extrapolation and transmission of **management information** used in the **decision-making process**.



Project management plan (PMP)

❑ A **document** prepared by the CM, and

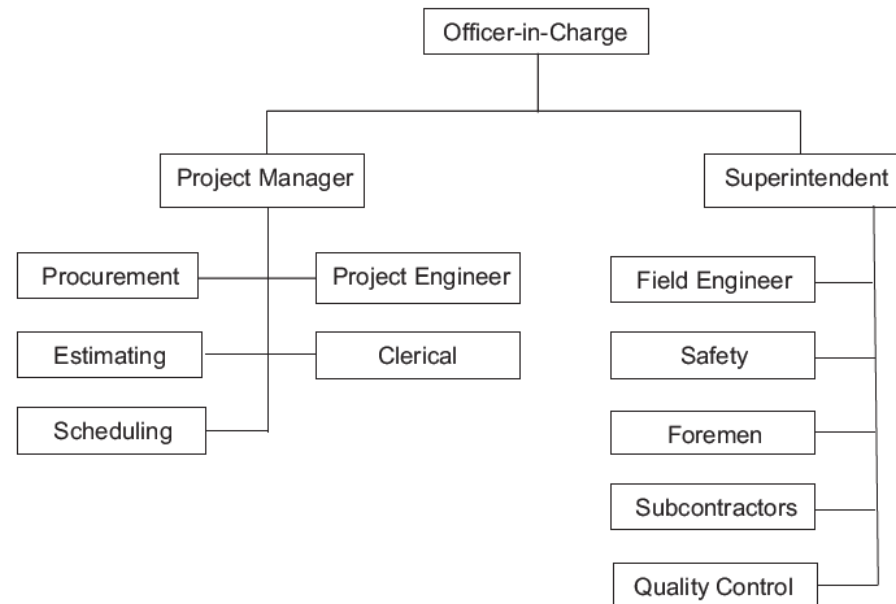
approved by the owner,

which **defines** owner's goals and expectations including

- ❖ Scope,
- ❖ Budget,
- ❖ Schedule, and
- ❖ Quality and
- ❖ Strategies to be used to fulfill the requirements of the project.

Project manager

- ❑ The **leader** of the contractor's project team who is **responsible for** **ensuring** that all contract requirements are achieved safely and within the desired budget and time frame;
- usually **supervises field office staff**,
- including **project engineers**.





Project planning

- ❑ The **process** of selecting the **construction methods** and the **sequence of work** to be used on a project.



Project procedures manual (PPM)

❑ A written, project-specific plan that

outlines the project's scope, organization, and the specific approach

to be **undertaken to accomplish** the various management tasks for the project.

❑ **All project stakeholders**

engaged in **completing the project** and

consisting of the owner, designer, CM, and prime contractors

engaged in the design and construction.

- ☐ A list made **near the completion** of the construction work **indicating** **items** of work that remain unfinished,
do **not meet**
1. Quality requirements or
 2. Quantity requirements
- as specified or are yet to be performed and
which **must be accomplished** by the contractor
prior to **completing** the terms of the contract.

Q



Quality assurance (QA)

- ❑ The **application** of planned and systematic methods to **verify** that quality control procedures are being **effectively implemented**.



Quality control (QC)

☐ The **continuous**

- ❖ Review,
- ❖ Certification,
- ❖ Inspection, and
- ❖ Testing of project components,

including

- ✓ Persons,
- ✓ Systems,
- ✓ Materials,
- ✓ Documents,
- ✓ Techniques, and
- ✓ Workmanship

to **determine** whether such components conform to the plans, specifications, applicable standards, and project requirements.

Quality management plan (QMP)

- ❑ The CM develops a comprehensive project QMP with **direct input** from the design professional and the owner.
- ❑ The QMP should **identify** the various steps in **design development** leading to **approvals** by the *owner, users, government agencies, affected utility companies, and agencies having jurisdiction* over the project.
- ❑ The plan should also provide for senior level design professional review of *design criteria, calculations, drawings, and specifications*.
- ❑ All parties should **review** and **modify** the QMP as required, then formally agree to the QMP.
Subsequent revisions should undergo a **formal modification procedure** to maintain a current and effective plan.



Quantity take-of

- ❑ One of the **first steps** in the estimating process to measure and count items of work to which **unit prices** will later be applied to determine a **project cost estimate**.

- ❑ For various reasons, the **contractor may be unable** to recover damages under the original contract.
- ❑ When this occurs, **recovery may be pursued** under a quasi-contractual remedy known as **quantum meruit**, which simply means “**as much as he deserves.**”
 - ❖ Such situations may **occur when**
 1. Contract is found to be unenforceable or
 2. Contractor performs extra work that is not covered by the original contract.
- ❑ Where **quantum meruit** recovery is sought, the contractor will set forth **its determination of the reasonable value** of the benefit conferred upon the owner.
- ❑ All competent evidence of actual expenditures of the contractor will usually be considered by the court in determining that reasonable value.

R



Record drawings

- ❑ **Drawings (plans)** prepared by the designer
after construction is complete,
that **represent** the **work accomplished** under the contract.
- ❑ The **As-Built model**, provided by the contractor, and
the **Record model**, provided by the A/E,
will often need to be modified and enhanced to **achieve effective use**
by the owner.



Recovery schedule

- ☐ The **schedule** that depicts action(s) and special effort(s) required to recover lost time in the **approved schedule**.
- ☐ It can **depict** activities of **any member** of the project team.



Reimbursable costs

- ☐ Costs incurred on a project that are **reimbursed by the client**.
- ☐ The **categories of costs** that are reimbursable are **specifically stated** in the contract agreement.



Request for change proposal

- ☐ A written document issued by the **CM/AE** to the **contractor** that describes a proposed change to the **contract documents** for purposes of establishing cost and time **impacts**.
- ☐ May also be **known** as a bulletin or request for quote.



Request for information

❑ **Document** used to clarify discrepancies between

- ❖ Differing contract documents and
- ❖ Assumed and actual field conditions;

also known as a **field question**

A formal request by the contractor for information or clarification of

drawings, specifications, or work scope

that may be

unclear,

ambiguous, or

not yet provided to the contractor to perform its work.



Request for information log

- ☐ A project management document in **spreadsheet format** for tracking requests for information from initiation through designer response.



Request for proposals

☐ **Document** containing instructions to **prospective contractors** regarding

1. Documentation required and
2. Process to be used

in selecting the contractor for a project.



Request for qualifications

- ☐ Request for prospective contractors or subcontractors to **submit** a specific set of documents to **demonstrate** the firm's qualifications for a specific project.

- ❑ The **ability** to withstand **adverse impacts** from natural and man-made **threats**.

❑ A **portion withheld** from progress payments for contractors and subcontractors to **create an account** for finishing the work of any parties not able to or unwilling to do so;

also known as retainage



Risk register

- ☐ A spreadsheet or database used to
 1. Collect and
 2. Organizeinformation about **each risk**.

- ☐ The team should **continuously** update the risk register with information about each risk
throughout a project's/program's lifecycle.

S

Schedule acceptance

- ❑ The **owner's right** to **review** the schedule and the procedures and protocols to be **followed related** to the review and acceptance process, as well as the contractor's responsibility to conform to the **owner's review comments**, must be defined in the contract documents.



Schedule of submittals

- ☐ A **project management document** in spreadsheet format that lists all submittals required by the **contract specifications**.

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Schedule of Values

- ☐ A **list** of basic contract segments, in both labor and material, where **each line item** consists of a description of a portion of work and a related cost and the sum of the line items equals the **total contract price**.
- ☐ Generally used to **determine** progress payments to the contractor(s).

DIVISION	DESCRIPTION OF WORK	MSBA CODE	SCHEDULED VALUE	WORK COMPLETED			COMPLETED AND STORED TO DATE (D+E+F)	% (G/C)	BALANCE TO FINISH (C-G)	RETAINAGE
				PREVIOUS APPLICATION	THIS APPLICATION					
					WORK IN PLACE	STORED MATERIAL				
31	Earthwork	0502-3100					0	#DIV/0!	0	
32	Exterior Improvements	0502-3200					0	#DIV/0!	0	
33	Utilities	0502-3300					0	#DIV/0!	0	
	- Alternates	0506-0000					0	#DIV/0!	0	
	- TOTAL BASE CONTRACT AMOUNT									
	Change Order No. 1	0508-0000								
	Change Order No. 2	0508-0000								
	Change Order No. 3	0508-0000								
	Change Order No. 4	0508-0000								
	- TOTAL CHANGE ORDER AMOUNT									
	TOTAL CONTRACT AMOUNT									

*Bold indicates subtotal of detailed line item budgets

- ☐ Identification of all requirements of a **project** or **contract**.

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Scope Change

- ☐ **Changes** that expand or reduce the **requirements** of the project during design or construction.



Self-performed work

- ☐ Project work performed by the **general contractor's workforce**,
rather than by a subcontractor.



Shop drawings

- ❑ **All** drawings, diagrams, illustrations, schedules and other data which are **specifically prepared** by or for the contractor to **illustrate** some portion of the work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a supplier and **submitted by the contractor to the designer or construction manager** to demonstrate understanding of and compliance with the **provisions** of the contract documents.



Site logistics plan

❑ Pre-project planning tool,

often created by the general contractor's superintendent,

which incorporates elements including

- ❖ Hoisting locations,
- ❖ Parking,
- ❖ Trailer locations,
- ❖ Fences,
- ❖ Traffic plans, etc.

Spearin doctrine

- ❑ If a **contractor** incurs damages because of **problems** with the owner's drawings and specifications,

the contractor usually can **base its request** for an equitable contract adjustment on entitlement supported by the **Spearin Doctrine**.

- ❑ In most cases, the courts and boards have relied on the **implied warranty** established by this benchmark case to find in the **contractor's favor**.

- ❑ The Spearin court said,

*“**But if** a contractor is bound to build according to plans and specifications prepared by the owner, the **contractor will not** be held responsible for the **consequences of defects** in the plans and specifications.”*

Special conditions (of the contract for construction)

- ☐ A **contract document** that describes operating procedures that are **unique requirements** for the project.
- ☐ It is used to
 - ❖ Supplement and/or modify,
 - ❖ Add to, or
 - ❖ Delete portions of the general conditions (as document);
also known as supplementary conditions



Special consultants

- ❑ The **designation** for various professionals, including engineers, architects, designers, and other experts,
who provide expertise in **specialized fields**.

☐ The detailed written descriptions of

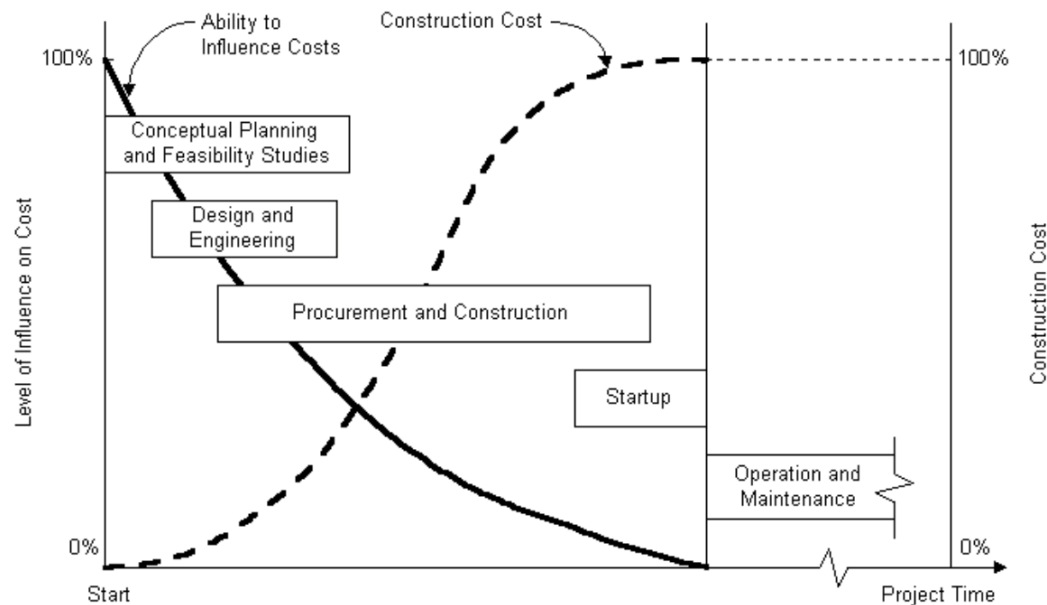
- ❖ Materials,
 - ❖ Equipment,
 - ❖ Systems,
 - ❖ Required workmanship and
 - ❖ Other qualitative information
- pertaining to the work.



Stacking of trades

- ☐ **Multiple trades** working in the **same location** such that the contractor's work cannot be performed efficiently.
- ☐ Less than optimum work space may cause **interference from other workers** of the same trade or workers from other trades, resulting in **productivity loss**.
- ☐ If the **owner was responsible** for the problems that resulted in trade stacking, the **contractor may be entitled** to recover its loss of productivity costs.

- ❑ The **period prior to occupancy** when systems are activated and checked out, and the **owner's operating and maintenance** staff assumes the control and operation of the systems.





Status report

- ☐ A **report** reflecting the situation as of a specified date with respect to programs, functions, activities, projects, or processes.

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- ☐ Any individual, partnership, firm, corporation, or other business entity that has a contractual relationship with a contractor or any other subcontractor to *furnish labor, equipment, or materials for performance of the work at the site.*



Subcontractor call sheet

- ☐ A form used to **list all of the bidding firms** from which the **general contractor** is soliciting subcontractor and vendor quotations

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Subcontractor pre-construction meeting

- ❑ A **meeting** the project manager and/or superintendent conduct with **each subcontractor**

before allowing them to start work on a project;

the client, CM, and architect may also be invited



Substantial completion

- ☐ The date, **certified** by the designer or CM or both, that the contractor has **reached that stage of completion** when the **facility may be used** for its intended purposes, **even though all work is not fully completed**.



Submittals

- ❑ Transmittals of information as **required** by the contract documents.

(CMAA)

- ❑ **Document** or **product generated** by the construction team to

verify that what they plan to purchase, fabricate, deliver, and ultimately install is in fact what the design team intended by their drawings and specifications;

examples of submittals include

shop drawings, product data sheets, and samples

submitted by contractors and subcontractors for verification by the design team.

❑ Individual from the contractor's project team who is

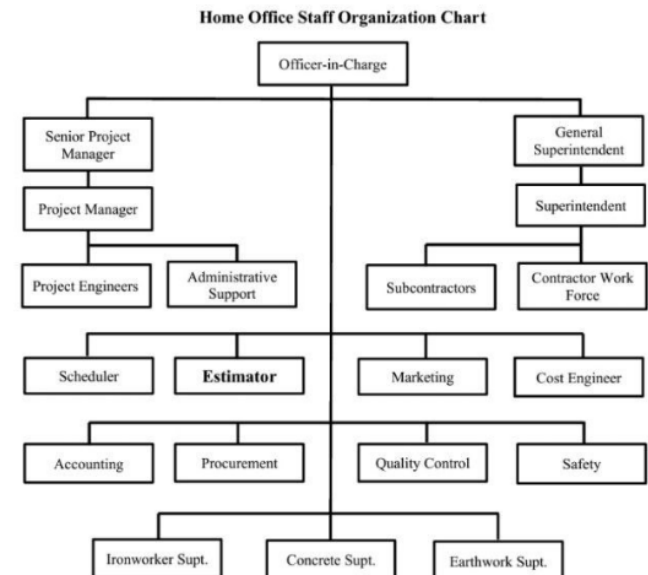
1. **Leader** on the jobsite and

2. **Responsible** for supervision of daily field operations on the project

❑ on larger projects,

more than one individual may have the title of superintendent and serve under a leading superintendent

who is titled general superintendent or project superintendent.





Superior knowledge/misrepresentation

☐ **Performance** undertaken by the contractor

1. Without knowledge of facts
2. That the **contractor later learns** are **vital to its performance**,
3. The **contractor had no reasonable way** of learning the facts, and
4. The **owner knew the facts** and
5. Either
 - ✓ Failed to disclose them or
 - ✓ Deliberately concealed them.

So what happens then?

Superior knowledge/misrepresentation

- ☐ If the contractor is delayed, disrupted and incurs increased costs as a result of such superior knowledge,
1. The **contractor may be entitled** to recover is **direct costs** resulting from such problems.
 2. The contractor may also be entitled to **recover its delay costs** if
 - a) The activities in its schedule that were affected by such problems were on the critical path of the project schedule at the time that the problem occurred and
 - b) Contractor was not responsible for other concurrent delays at that time.



Supplementary general conditions

- ☐ Additions or modifications to the general conditions,
which are **part of the bid documents** or **contract documents**.

- ❑ The **condition** of being able to **meet the needs** of **present generations** without compromising resources for **future generations**.



Sustainability plan

- ☐ A project-specific, written plan that enables the **CM to coordinate** efforts, track progress and focus energies on the deliverables and milestones **required to satisfy** project sustainability goals and requirements.
- ☐ A sustainability plan is both a guidance document and the foundation for a reporting system.
- ☐ It should be as **concise as possible**.

T



Technical/scope baseline

☐ A document or a set of documents

1. Formally designated and
2. Approved

at a **specific time** that define the **Scope of Work** to be performed.

☐ Technical baselines,

plus **approved changes** to these baselines,

constitute the **current configuration** identification.



Technical specifications

- ❑ A part of the construction contract that provides the qualitative requirements for a project in terms of materials, equipment, and workmanship

Timeframes

- ❑ Timeframes for the submittal, review, re-submittal (if necessary), and acceptance of the initial or preliminary schedule, baseline schedule, schedule updates, and schedule revisions must be specified.
- ❑ Generally, an **accepted baseline schedule** should be in place on a project within 30 to 60 days of the receipt of the notice to proceed for the work.

But notice to proceed?

- ❑ These timeframes may **vary somewhat depending** on project length and complexity, but it is **essential that a viable schedule** be in place as quickly as possible and that the **maintenance of this schedule** be performed **expeditiously**.



Total cost claim

❑ A **total cost claim** contends that the claimed costs are

1. **Not caused** by the actions or inactions of the **contractor** and
2. **Caused only** by the factors for which the **owner is responsible**, and
3. **Does not detail** separate damages as being the **result of each specific event**.

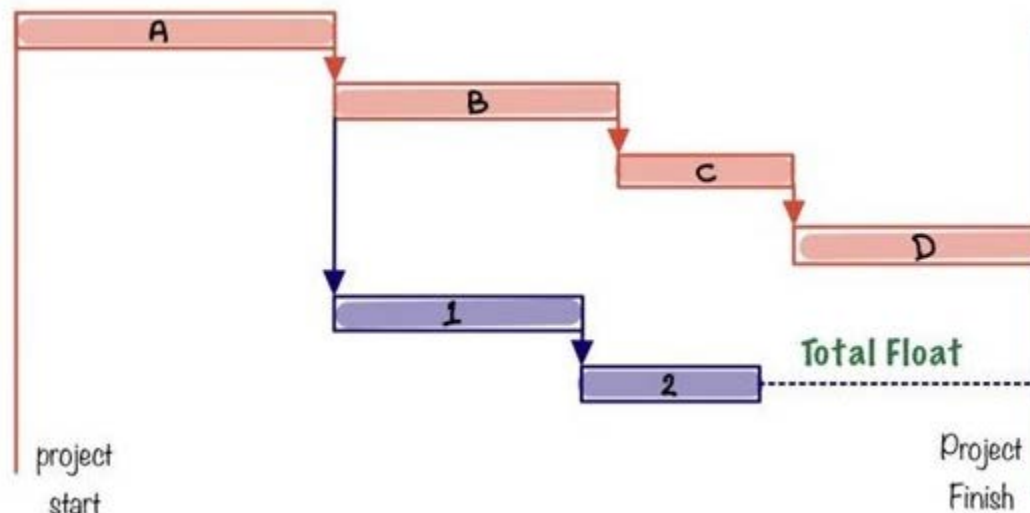
How the contractor could succeed here?

Total cost claim

- ❑ To succeed in a total cost claim, the contractor must establish that:
1. The **bid** must be shown to be reasonable;
 2. The **actual costs** must be shown to be reasonable;
 3. All events contributing to the loss must be compensable;
 4. It must be demonstrated that there is no other way to calculate the claim; and
 5. It must be demonstrated that the **contractor did not contribute** to the increased costs in any way.

Total float

- ❑ It represents the **amount of time** that activity may be delayed without effecting the end date of the schedule.
- ❑ It is measured by comparing the early start and late start, or early finish and late finish dates, of an activity.





Trade contractors

- ❑ **Construction contractors** who specialize in providing or installing specific **elements** of the overall construction requirements of a complete project.



Trade-off study

- ☐ The study to define the **comparative values and risks** of a substitution or exchange of a design component.
- ☐ The **tradeoff** can identify both monetary and functional values.
- ☐ Also known as an alternatives analysis.

- ☐ A **form** used as a **cover sheet** for formally **transmitting documents** between parties.

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U



Undistributed budget

- ☐ **Budget within the performance measurement baseline applicable to **work effort** that **has not yet been identified** to both a responsible organization and a WBS element.**

Unit cost contract

- ☐ A **type of contract** whereby the contractor provides unit costs for performing certain work, such as a cost per cubic yard of concrete installed.
- ☐ The unit price **includes** all of the contractors' direct and indirect costs for performing the work,
including **profit**.

- ❑ The **U.S. Green Building Council** is a non-profit organization devoted to shifting the building industry toward sustainability by providing information and standards on **how** buildings are designed, built, and operated.
- ❑ The USGBC is **best known** for the development of the Leadership in Energy and Environmental Design (LEED®) rating system and Greenbuild, a green building conference.

V

❑ A specialized cost control technique,

which utilizes a systematic and creative analysis of

1. Functions of a project or
2. Operation

to **determine how best** to achieve the necessary

1. Function,
2. Performance, and
3. Reliability

at the **minimum lifecycle cost**.

Virtual reality (VR)

- ❑ An **interactive tool** that fully immerses a user in a **digital environment**.



W

❑ Generally, “**normal weather**” should be included or factored into

1. Contract durations and the
2. Contract milestones

for any work that is affected by weather.

❑ “Normal weather” should be **defined**.

- ❖ This can be done by referencing reliable sources of weather data, such as data compiled by and available from the **National Oceanic and Atmospheric Administration (NOAA)**, and

then **determining** how this “normal” weather might affect the project.

- ❑ Note that NOAA data will **not establish** alone the number of days that might be lost to “normal” weather.
 - ❖ For this reason, it is often useful to include in the contract a **table listing** the **number of days** that are expected to be lost to “normal” weather each month.
 - ❖ Using this table in conjunction with
 1. A well-written time extension provision and
 2. Careful tracking of the impact of weather on **daily** project operationsshould allow project participants to **avoid disputes** associated with determining the **“normal” impact** of weather on a project.
- ❑ There are a **number of methods** of planning for normal or adverse weather; the **CM** should be knowledgeable about the methods and the **benefits or risks** of using each method.

☐ Contractor requirements to provide **all**

1. Labor,
2. Materials,
3. Tools,
4. Equipment,
5. Supplies,
6. Services,
7. Supervision, and
8. Performance

for **all operations** as required by the contract documents.



Work breakdown structure

- ❑ The WBS is a **multi-tier framework** that organizes and graphically displays **elements representing work** to be accomplished in logical relationships.

- ❑ The WBS should be organized such that **each element** can be
 1. Estimated,
 2. Scheduled, and
 3. Budgeted and
 4. Work progresscan be **reported**.

Work package

☐ **Subdivisions** of the lowest level WBS element accorded **detailed**

1. Scope,
2. Schedule (start and finish points),
3. Budget,
4. A description of scope (including activities) and
5. Responsible manager.



Work versus calendar day

- ☐ The contract and the scheduling specifications need to be **consistent** as to the **definition of a “day.”**
- ☐ There are **differing opinions** as to the advantages and disadvantages of workday contracts versus calendar-day contracts.
- ☐ The project team needs to determine **what is appropriate based** on the owner's standard practice and the project's needs.

For **consistency** and if schedules will be imported into a master schedule, calendar use should be **limited and specified**.

موسسه مهندسی و مدیریت ساخت علوی پور (ACEMI)

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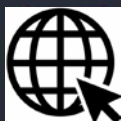
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