



زبان تخصصی مدیریت ساخت

بر اساس اسناد و استانداردهای بین‌المللی

ارائه دهنده:

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Contract change authorization

- ☐ A **document** used by the owner or the CM **authorizing** changes to the scope of work of the project.
- ☐ This authorization is usually for interim coverage (i.e., authorizes changed work to start) and
is eventually replaced with a **formal change order**.

Contract documents

- ❑ This includes the signed agreement, as well as, the Instruction to Bidders, the Contract, the General Conditions, any Supplemental Conditions furnished to the contractor, the drawings and specifications, addendum, amendments, attachments, modifications, and change orders issued in accordance with the General Conditions, and all other documents specified as part of the project.
- ❑ The documents may also include **references** to standard specifications, manuals or codes of a technical society, organization, or association or to the laws or regulations of a governmental authority in effect at the **time of opening of bids**, except as may be otherwise specifically stated.

Contract time

- ❑ The **period of time** allotted in the contract documents for the contractor to achieve substantial completion; also known as **project time**.

contract completion date

The date by which the Contractor is contractually obliged to complete the works, taking account of the award of any EOTs. As well as being an overall date for completion, the contract completion date may be the date for completion of a section of the works or a milestone date. The expression 'completion date' is sometime used by Contractors to describe the date when they plan to complete the works (which may be earlier than the contract completion date). The Protocol avoids this confusion by using the expression 'contract completion date'.

پروتکل SCL و بسیاری از اسناد
دیگر از عبارت

Contract Duration

استفاده نکرده اند
زیرا تاریخ است که مبنای
محاسبه قرار می گیرد نه مدت

- ❑ The organization or individual who undertakes **responsibility** for the performance of the work,
 - in accordance with
 - plans, specifications and contract documents,
 - providing and controlling
 - the labor, material and equipment to accomplish the work.



Control/cost account

- ☐ The terms “**cost account**” and “**control account**” are often used interchangeably.
- ☐ The management control point at which
 1. **Actual costs** are accumulated and
 2. **Performance** is determined.
- ☐ The **control account concept** is applicable to all projects.
- ☐ Large projects may have a **series of control accounts**
that may be divided into work packages and planning packages.
- ☐ Small projects may have **only one control account** consisting of a **single charge number**.



Cost accounting

- ☐ The **historical reporting** of costs on a project.
- ☐ When used in conjunction with a **current working estimate**,
cost accounting can assist in giving the precise status of the **project to date**.



Cost and resource loading

- ❑ If **contractor payments** are based on schedule progress, the contract must include **cost-loaded schedules** and **payment provisions**.
- ❑ Knowing **which resources** a **contractor** intends to mobilize for the project in order to achieve the scheduled productivity significantly **enhances the CM's ability** to monitor the progress of work and potentially **foresee and analyze** the sources of delays.

Cost breakdown structure

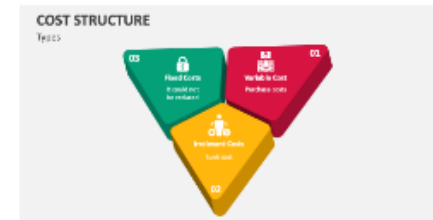
❑ A **system** for subdividing a project into

- ❖ System elements
- ❖ Sub-elements,
- ❖ Functions
- ❖ Sub-functions
- ❖ Cost categories,

to provide for more effective management and control of the project.

متناظرکردن ساختار شکست هزینه (CBS) با
ساختار شکست کار (WBS)

در این مقاله به بررسی ساختار شکست هزینه (CBS)، شکست
کار (WBS) و ریزه‌کاری‌های آن در زمان متناظرسازی پرداخته‌ایم.



<https://dralavipour.com/blog/view/Cost-Breakdown-Structure>



Cost control

- ☐ The **function** of limiting the **cost** of the construction project to the established budget based upon **owner-approved** procedures and authority.

Is it only about the owner?



Cost management

- ❑ The act of **managing** all or partial **costs** of a planning, design, and construction process
to **remain** within the **owner's budget**.



Cost of construction

❑ All costs attributed to the **construction of the project**, including

- ❖ Cost of contracts with the contractor(s),
- ❖ Construction support items,
- ❖ General condition items,
- ❖ All purchased labor, material, and fixed equipment.



Cost overrun

- ☐ The amount by which a contractor **exceeds** either
 1. Estimated contract cost or
 2. Final limitation (ceiling) of the contract.



Cost underrun

☐ The **amount** by which **actual contract cost** is **less than** either

1. Estimated contract cost or
2. Final limitation (ceiling) of the contract.



Cost plus contract

❑ A **cost-reimbursable contract** in which the contractor is

1. Reimbursed for stipulated direct and indirect costs associated with the construction of a project and
2. Paid a **fee** to cover profit and company overhead;

also known as a cost plus a fee contract.



Cost plus contract with guaranteed maximum price

- ❑ A cost plus contract in which the **contractor agrees** to **bear any construction costs that exceed** the guaranteed maximum price,
unless the project **scope** of work is increased.



Cost plus with fixed-fee contract

- ❑ A cost plus contract in which the contractor is guaranteed a fixed fee,
irrespective of the actual construction costs.



Cost plus with incentive-fee contract

- ❑ A cost plus contract in which the **contractor's fee** is based on measurable incentives, such as actual construction cost or construction time.
 - ❖ **Higher fees** are paid for lower construction costs and shorter project durations.

- ☐ **Non-managerial field labor force** who construct the work, such as carpenters and electricians



Craft turnover

- ❑ **Learning curve productivity** loss results from the continual turnover of labor.
- ❑ Unless it can be demonstrated that the **owner is responsible** for this problem, the **contractor is usually responsible** for the consequences (delay and loss of productivity) for this problem.



Critical path method (CPM)

- ❑ A **scheduling technique** used to plan and control a project.
- ❑ CPM
 - ❖ Combines all relevant information into a **single plan** defining the **sequence** and **duration** of operations and
 - ❖ Depicting the interrelationship of the work elements required to complete the project.
- ❑ The critical path is defined as the longest sequence of activities in a network that establishes the **minimum length of time** for accomplishment of the **end event** of the project.

- ❑ A **practice** to allow **project stakeholders** to access appropriate information from digital systems and devices while also **protecting that data** from unauthorized persons/entities.

D



Daily job diary

- ☐ Also known as the daily journal or daily report.
- ☐ A **daily report** prepared by the superintendent that documents **important daily events** including weather, visitors, work activities, deliveries, and any problems

Defective and deficient contract documents

1. Errors or omissions in the contract drawings or specifications;
 2. Impossibility or extreme difficulty in performing contract requirements;
 3. Incorrect dimensions;
 4. Unattainable performance requirements.
- ☐ Unless the **contractor is also responsible** for the design,
 - ☐ such **errors or omissions** may entitle the contractor to a compensable delay if
 1. Work affected by such errors or omissions 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.

Delay: Basis for determining time extension

- ❑ The contract should define the **procedure** for requesting time extensions, along with
 1. Associated notice requirements,
 2. Required submittal information, and
 3. Method to be used to evaluate delays and time extension requests.
- ❑ For predictive or prospective delay events, the **CM should recommend** that the contract require a fragnet (or “network window,” or “sub-network,” depending on the terminology commonly used in the owner’s or CM’s industry or region) analysis for **each delay event** within a reasonable time after the event is known.



Delay: Basis for determining time extension

delay event

An event or cause of delay, which may be either an Employer Risk Event or a Contractor Risk Event.

Delay to Completion

In common usage, this expression may mean either delay to the date when the contractor planned to complete its works, or a delay to the contract completion date. The Protocol uses the expressions Employer Delay to Completion and Contractor Delay to Completion, both of which mean delay to a contract completion date - see their definitions.

Delay to Progress

In the Protocol, this means a delay which will merely cause delay to the Contractor's progress without causing a contract completion date not to be met. It is either an Employer Delay to Progress or a Contractor Delay to Progress.



Delay: Basis for determining time extension

Contractor Delay

Expression commonly used to describe any delay caused by a Contractor Risk Event. The Protocol distinguishes between: Contractor Delay to Progress which is a delay which will merely cause delay to the Contractor's progress without causing a contract completion date not to be met; and Contractor Delay to Completion which is a delay which will cause a contract completion date not to be met.

Contractor Delay to Completion

See Contractor Delay.

Contractor Delay to Progress

See Contractor Delay.

Employer Risk Event

An event or cause of delay or disruption which under the contract is at the risk and responsibility of the Employer.

Contractor Risk Event

An event or cause of delay or disruption which under the contract is at the risk and responsibility of the Contractor.

Delay: Excusability and compensability

- ❑ The contract should define **excusable and non-excusable delays**.
- ❑ A **nonexcusable** delay is a delay for which no time extension would be due.
 - ❖ Generally, a non-excusable delay is a delay for which the **contractor has control and is responsible**.
 - ✓ Equipment breakdowns, remedial work, and similar circumstances for which the contractor typically bears responsibility are **non-excusable**.

Delay: Excusability and compensability

- ❑ An excusable delay is a delay for which a **contractor would be entitled** to a time extension.
- ❖ Excusable delays are typically defined as delays for which the contractor is not responsible, that were **not caused by the contractor**, and that could **not have been reasonably foreseen** by the contractor.
- ✓ **Industry-wide strikes** are an example of an excusable delay.
- ✓ **Weather delays** might be either non-excusable or excusable.
 - The **contractor is typically expected** to **anticipate or foresee** a “normal” amount of inclement weather.



Delay of approvals (slow turn-around)

☐ Unreasonable delay by the owner in approving

shop drawings, schedules, samples, or other items that the contractor timely, accurately, and completely submitted.

☐ Depending on the existence of contractual provisions stating otherwise, such as a deemed approved clause after so many days without a response by the owner **after the contractor's submittal**,

such delays may entitle the contractor to a **compensable delay** if

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



Delayed notice to proceed

☐ The owner

1. **Fails** to issue a notice to proceed (for the contract as a whole, or any divisible part of the contract) on the **date set forth** in the **contract**, or
2. **Unreasonably delays** issuance of the notice to proceed where the **contract does not set a specific time** for issuance of the notice to proceed.

So what happens then?



Delayed notice to proceed

☐ The contractor may be **entitled to delay costs** if

1. Contractor **reasonably relied** upon the owner's representations and
2. Contractor was **not responsible** for other concurrent delays at that time.

- ☐ Those items, contractual or otherwise, **requiring delivery** to another area of responsibility.
- ☐ Deliverables can be
 1. Project documents, such as drawings, schedules, procedures, purchase orders, etc.;
 2. Physical items to be installed in a facility, such as equipment or materials; or
 3. Components of or the entire completed facility or project.

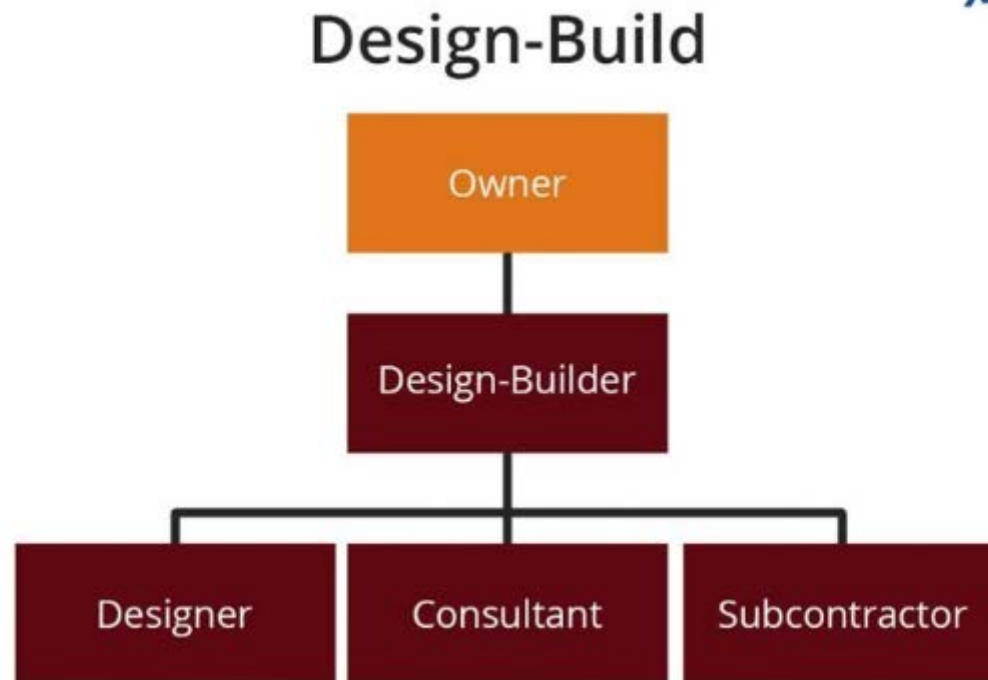


Descope meeting

- ❑ A **meeting** with the apparent low bidder to analyze and discuss the **important elements of the project**, such as
- ❖ Schedule,
 - ❖ Detailed project requirements,
 - ❖ Unusual elements of construction, and
 - ❖ Sustainability goals,
- to **ensure the bidder's submission** is accurate.

Design-Build

- ❑ A project delivery method, which combines architectural and engineering design, services with construction performance under **one contract agreement**.



Project teams work together and collaborate often.

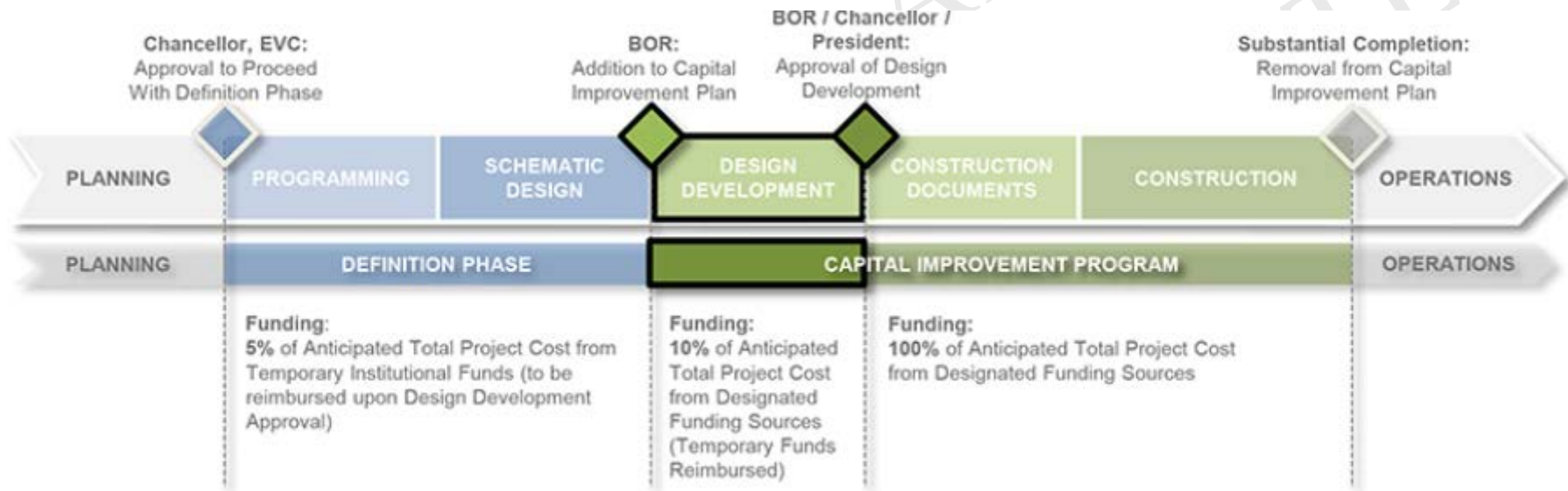


Design development

- ❑ **Transitional phase** of an architect/engineer (A/E) services in which the **design moves** from the schematic phase to the **detailed design phase**.
- ❑ In the design development phase, the **A/E prepares** drawings and other presentation documents to
 1. **Crystallize** the **design concept** and
 2. **Describe** it in terms of architectural, electrical, mechanical, and structural systems.

Design development phase

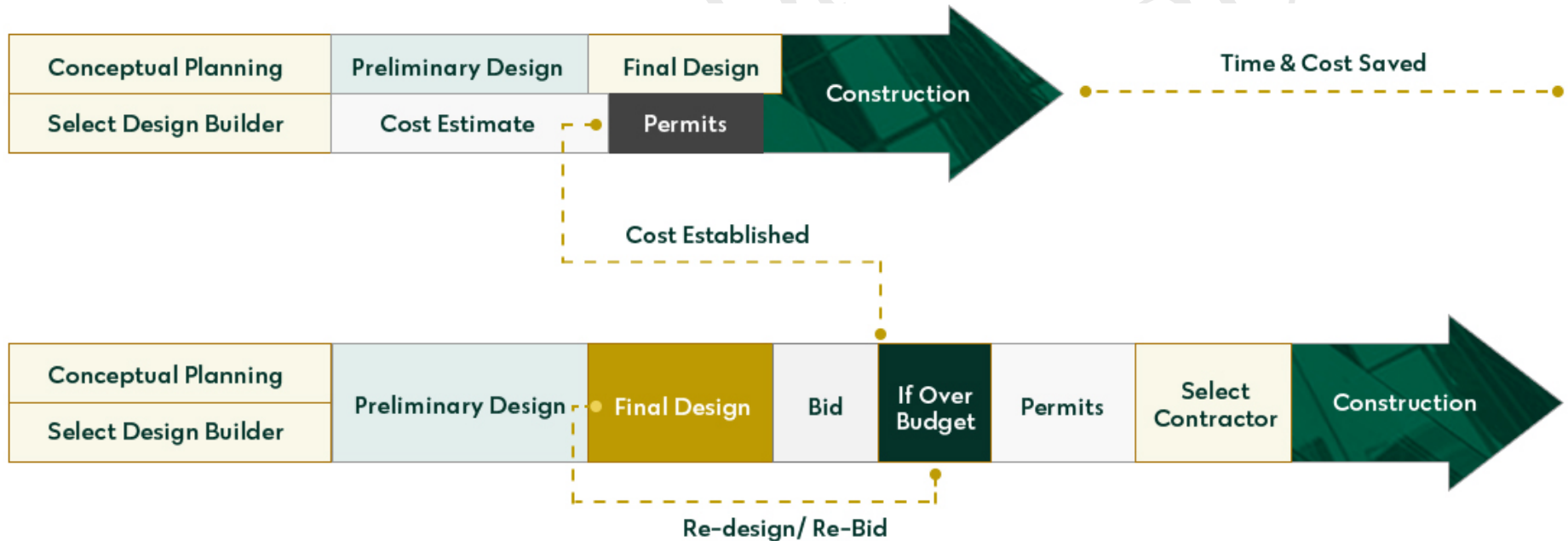
- ❑ The term used on architectural projects to describe the **transitional phase** from the Schematic Phase to the Contract Document Phase during design.



Design – final

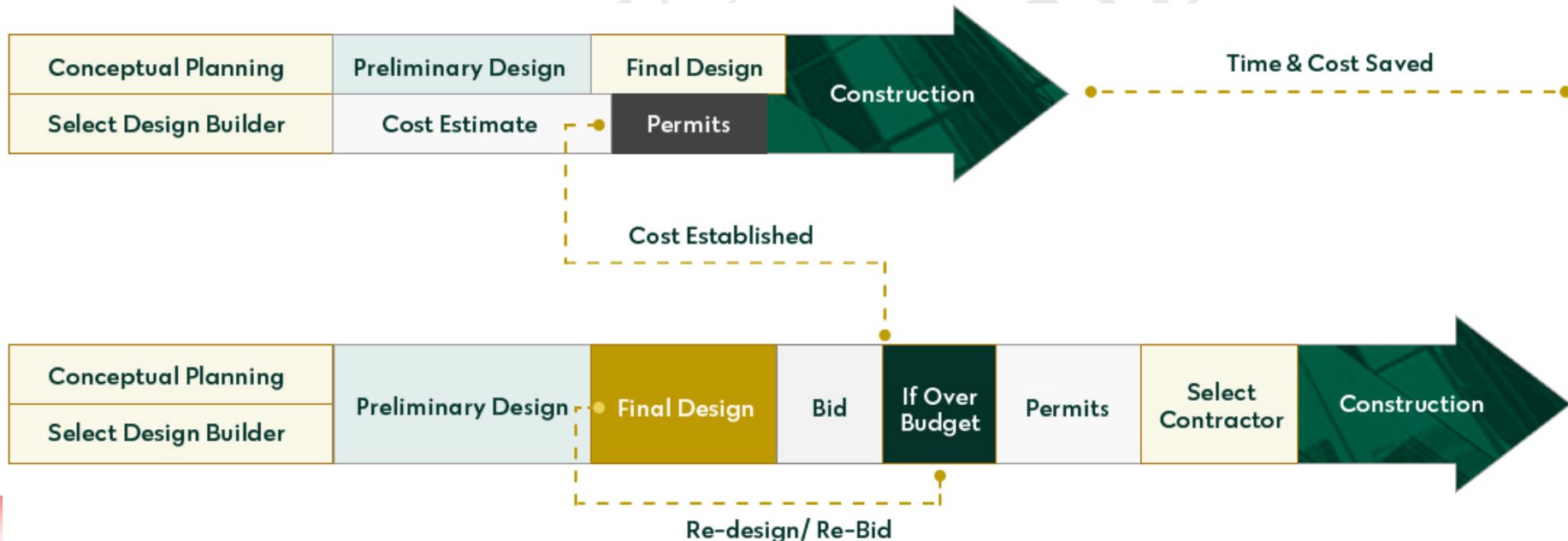
❑ The **stage** of the **design process** when **drawings and specifications** are **completed** for construction bid purposes.

❖ It is **preceded** by the **preliminary design stage** and followed by the **procurement phase**.



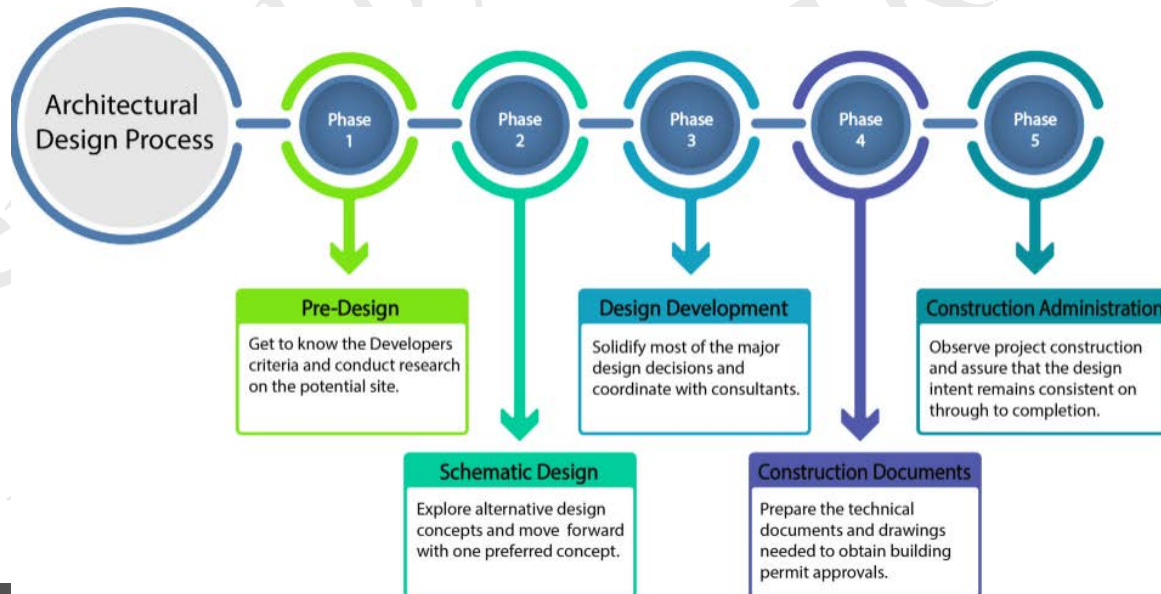
Design – preliminary

- ❑ The **transition** from the schematic stage to the completion of design development.
- ❑ During this stage, **dimensions** are finalized.
- ❑ **Outline specifications** are developed into technical specifications; **sections** are delineated, and **elevations** are defined.



Design – schematic

- ❑ **Traditionally** the first stage of the **designer's** basic services.
- ❑ In the schematic stage, the designer
 1. **Ascertains** the requirements of the project and
 2. **Prepares** schematic design **studies** consisting of drawings and other documents illustrating the scale and relationships of the project.



❑ A **management concept** wherein rigorous cost goals are established during project development and the control of **systems costs** to these goals is achieved by practical tradeoffs between

1. Operational capability,
2. Performance,
3. cost, and
4. Schedule.

- ❑ The individual or organization that
 1. Performs the design and
 2. Prepares plans and specifications for the work to be performed.

- ❑ The designer can be an architect, an engineer, or an organization, which combines **design services** with **other professional services**.





Destruction or damage to completed work

- ☐ Destruction or damage to completed or partially completed work that
 1. Stops, delays, disrupts or hinders the contractor's on-going or planned work or
 2. **Requires the contractor** to perform extra or additional work.
- ☐ If such damage **occurs as a result** of weather problems, the contractor may have to recover its costs through its **insurance policy**.
- ☐ Depending on which party is **contractually responsible** for site security, the contractor may be entitled to a compensable delay if
 1. Such damage occurs through **vandalism** or other similar acts **after normal working hours** and
 2. Contractor was not responsible for other concurrent delays at that time.



Detailed cost estimate

☐ **Extensive estimate** based on definitive design documents.

❖ Includes separate

labor, material, equipment, and subcontractor quantities.

☐ Unit prices are applied to **material quantity take-offs** for every item of work.

☐ This type of estimate is most often associated with

1. Competitively lump sum bid projects and
2. Unit price bid projects

Differing site conditions

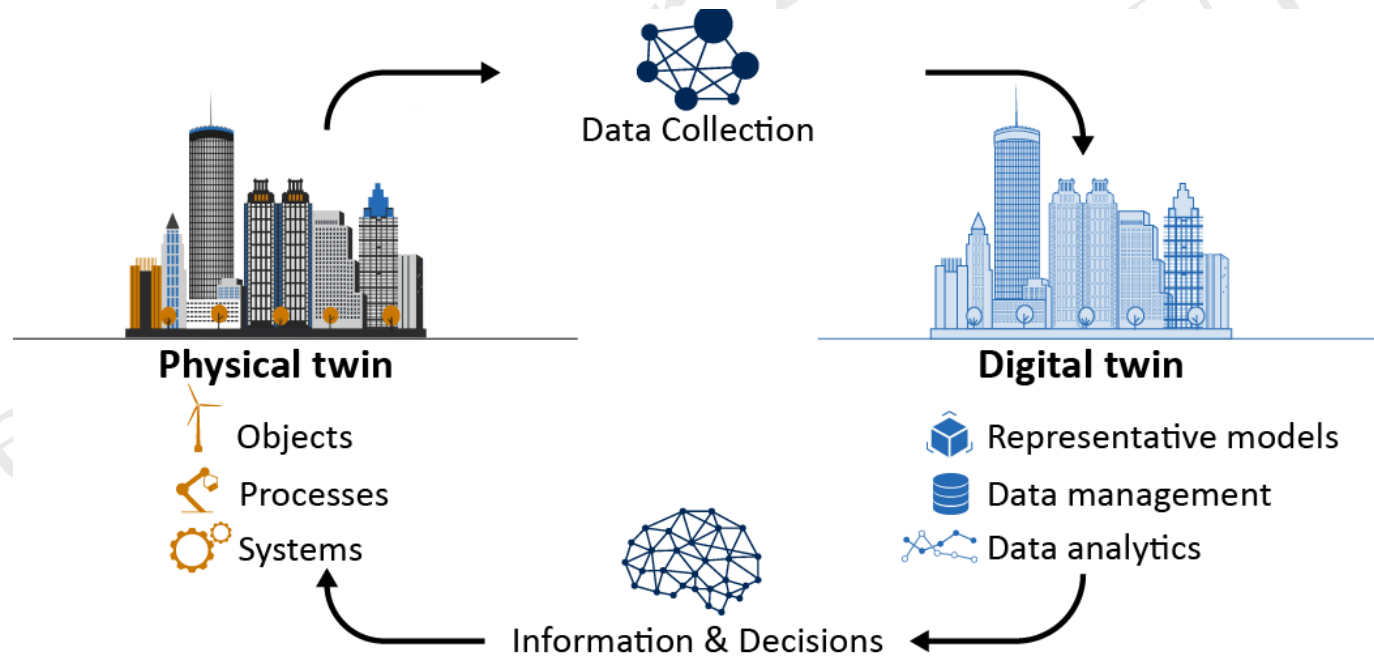
- ❑ Encountering **site conditions** different from those assumed in developing the design.
- ❑ A “Differing Site Condition” (DSC) occurs when
a construction contractor encounters a **subsurface** or otherwise **concealed site condition** that
differs materially from
 1. What was indicated in the contract or
 2. What would normally be expected.

*The term DSC was **originally called** “changed conditions.”*

- ❑ **Conditions or circumstances**, physical or otherwise,
which differ from the **conditions or circumstances** on which the contract documents were based.

Digital twin

- ❑ A **virtual model** linked to physical elements, components, and processes on the actual construction site for the full project lifecycle.



Sources: GAO; ladoga/stock.adobe.com. | GAO-23-106453



Dilution of supervision

☐ Splitting up crews to perform

- ❖ Base work and changed work, or
- ❖ Continual replanning and resequencing of work,

can result in **less than effective supervision** and lower productivity.

☐ If the **owner is responsible** for changes to the work which require dilution of supervision,

the contractor may be entitled to **recover its loss of productivity costs** that result from this problem.



Direct costs

❑ The **field costs** directly attributed to the **construction of a project**, including

- ❖ Labor,
- ❖ Material,
- ❖ Equipment,
- ❖ Subcontracts, and
- ❖ Their associated costs.



Direct impact

❑ Direct impact is generally characterized as the immediate and direct disruption

resulting from a change that lowers productivity in the performance of

1. Changed work or
2. Unchanged work.

❖ Direct impact is considered **foreseeable**.

- ☐ A **contract claim** between the owner and the general contractor that has not been resolved.

☐ **Graphic representations** showing

1. Relationships,
2. Geometry, and
3. Dimensions

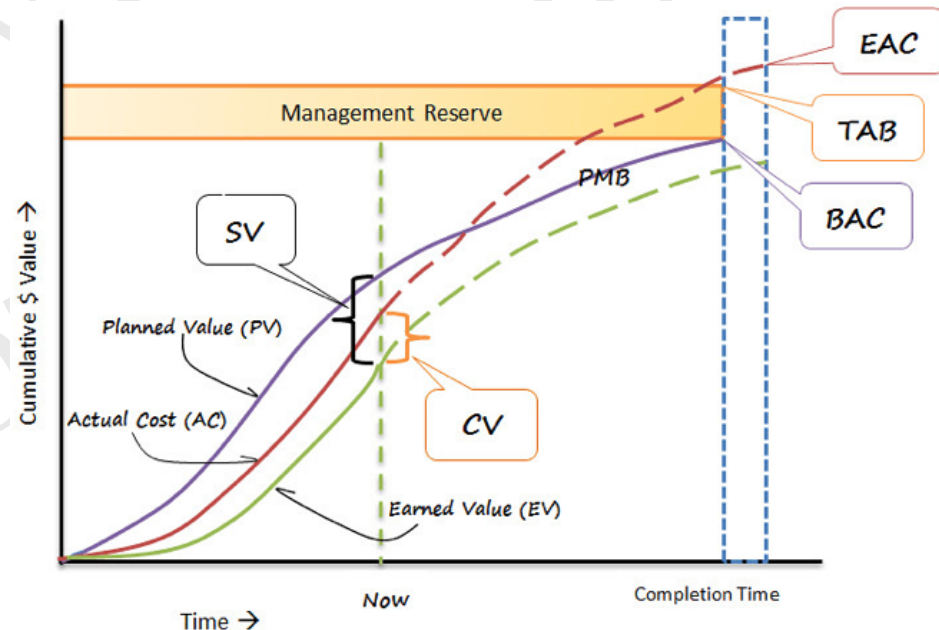
of the elements of the work.

E

Earned value management

❑ A technique for

1. Determining estimated or **budgeted** value of the work completed to date and
2. Comparing it with the **actual cost** of the work completed.
3. Determining the **cost** and **schedule status** of an activity or the entire project





Empirical cost estimating

- ❑ The **step-by-step creation** of a cost estimate based only on the skills, knowledge, intuition and working files of a **proficient cost estimator**.

Enterprise resource planning (ERP) platform

- ❑ Company-wide software platform to integrate **multiple business processes**





Estimated cost to complete

- ❑ The current estimate of the **remaining costs** to be incurred on a project at a specific point in time.

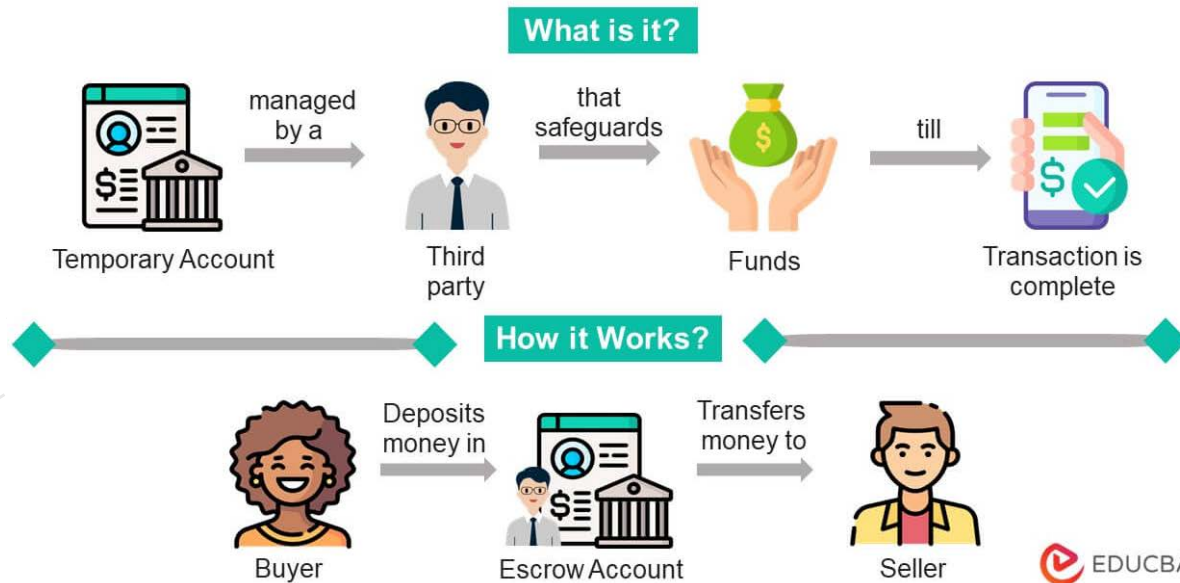
$$\text{ETC} = \text{EAC} - \text{AC}$$

<i>Estimate to Completion</i>		<i>Estimate at Completion</i>		<i>Actual Cost</i>
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Escrow account

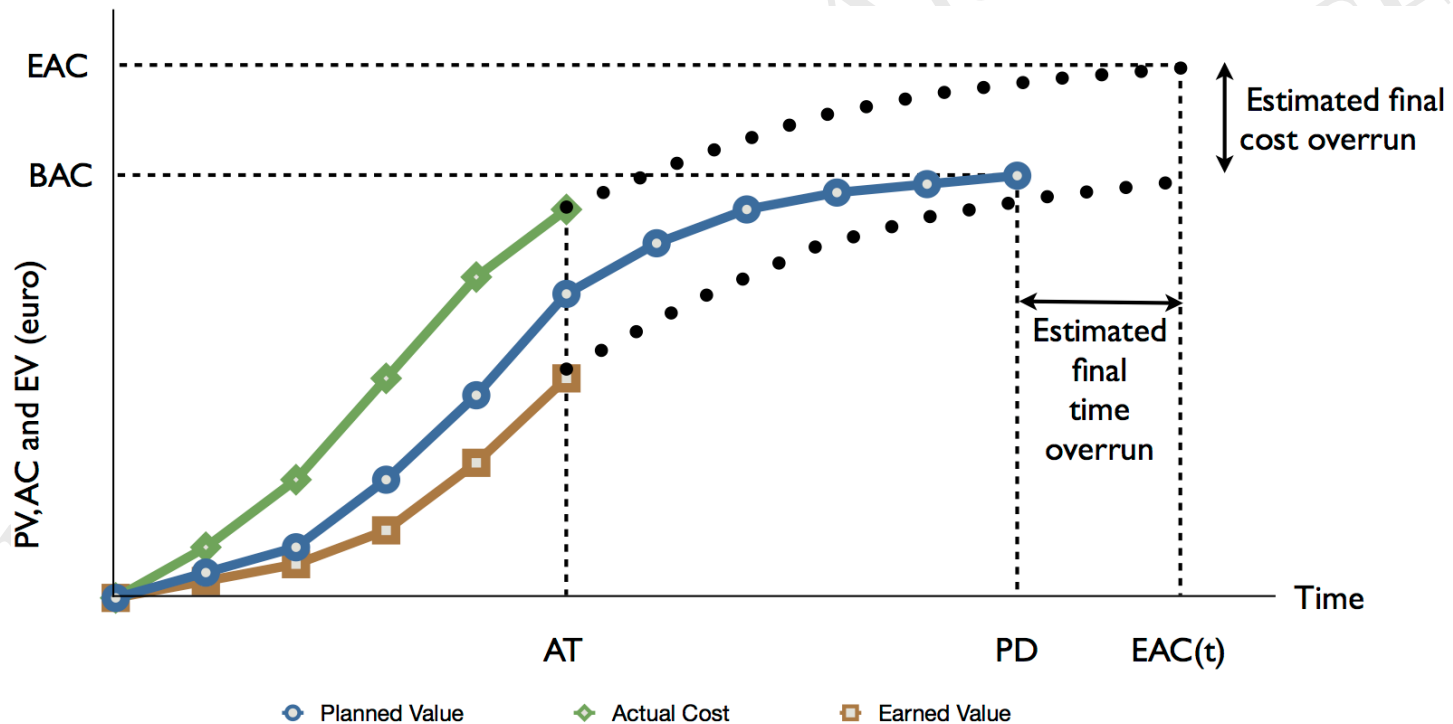
- ❑ Money put into the custody of the third party by the **first party** for disbursement to the **second party**.
- ❑ A brief temporary depository for progress payments until **authorized** for release according to **depositor's explicit instructions**.

Escrow Account



Estimated final cost

- ❑ The **anticipated cost** of a project or project element when it is complete.
- ❑ The **sum** of the cost to date and the estimated cost to complete.





Equitable adjustment

☐ A **change** in the contract price and/or time to

1. Compensate the contractor for

expense or delay incurred due to

the actions or lack of action of the owner or the owner's
representative or other occurrences, or

2. Compensate the owner for contract **reductions**.

- ❑ The **provision** in actual or estimated costs for an **increase** in the **cost** of equipment, material, labor, etc. over that specified in the contract or estimate due to continuing price level changes **over time**.

- ☐ **Important documents** that are attached to a contract,
such as a summary cost estimate, schedule, and document list

- ☐ **Process of monitoring and actively ensuring vendors' compliance with purchase order delivery requirements.**



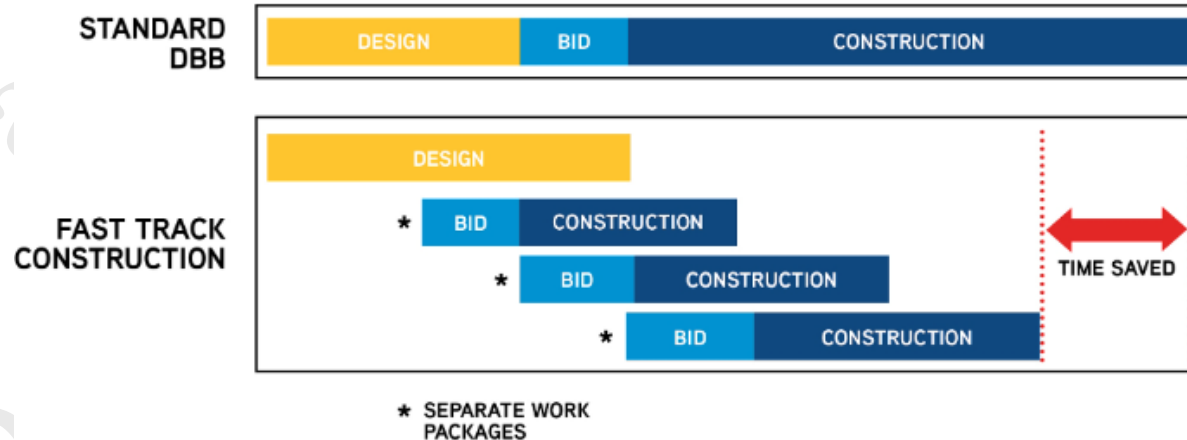
Expediting log

- ☐ A project management document in **spreadsheet format** used to track material delivery requirements and commitments

F

- ❑ The **process** of dividing the design of a project into sub-phases in such a manner as to permit construction to start before the **entire design phase is complete**.
- ❑ The **overlapping** of the construction phase with the design phase.

Design Bid Build versus Fast Track Delivery



- ❑ **Productivity declines** as workers are tired, and
more than normal mistakes, injuries, and accidents may occur.
- ❑ If the **contractor** can demonstrate that
the **owner is responsible** for such problems,
the **contractor may be entitled** to recover its loss of productivity
costs for such problems.

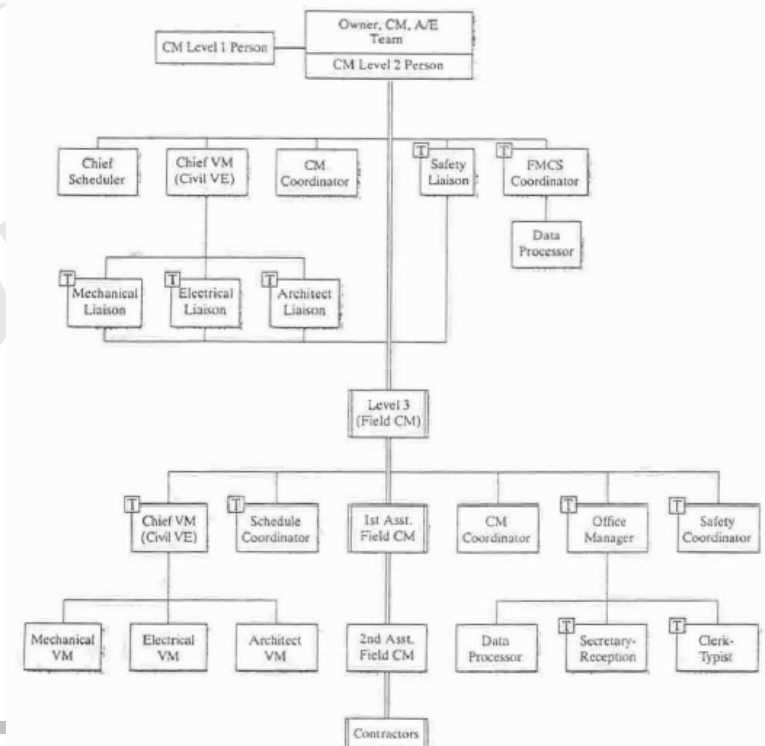


Feasibility analysis

- ❑ Analysis performed at the planning stage to evaluate
 1. Proposed project's **ability to fulfill needs**,
 2. As well as the **technical** and **economic** feasibility of the project concept

Field construction manager

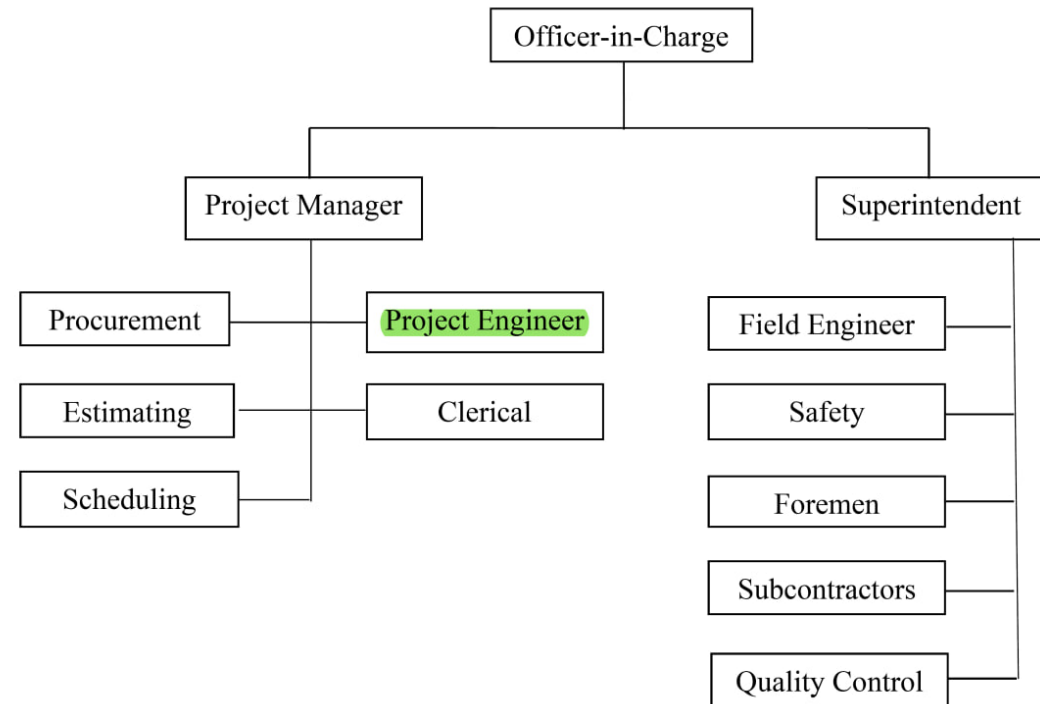
- ❑ A person designated by the CM firm to **interface** with the owner's and A/E 's representatives on the project learn at the **third management level**.
- ❑ A person located at the site and charged to administer the procedures established by the **team's Level 2 Manager** for the construction of the project.





Field engineer

- ❑ **Project engineer** responsible for field control and monitoring activities and usually **less experienced** than an office project engineer; may also be tasked with **assisting the superintendent** with technical office functions.





Field engineer

The field engineer works for the project superintendent. Specific responsibilities include:

- Project layout and dimensional accuracy of the project;
- Interpretation of project plans and specifications;
- Communications with craft labor and subcontractors;
- Jobsite safety; and
- Reporting of daily job production.

Field order

- ☐ A written order issued at the site by the owner or CM to
clarify or **require** the contractor(s) to perform work not included in the contract documents.
- ☐ A field order normally **represents** a minor change
Not involving a change in contract price or time.



Final completion

- ☐ The **stage of construction** when all work required by the contract has been completed.



Final lien release

☐ A **lien release** issued by

1. Contractor to the client or
2. Subcontractor to the general contractor

at the **completion of a project** to

indicate that all payments have been made and

that **no liens** will be placed on the **completed project**



Force account

- ☐ Directed work accomplished by the **contractor outside** of the contract agreement usually **paid** for on a time and material basis.

☐ **Direct supervisor of craft labor on a project;**

on larger projects, more than one individual may have the title of **foreman** and serve under a **leading foreman** who is titled general foreman.



Free on board

- ☐ A **material item** whose quoted price includes delivery at the point specified.
- ☐ Any **additional shipping costs** are to be paid by the purchaser of the item;
also known as **freight on board**



Free float

☐ The **amount of time** an activity can be delayed

from **its earliest start time** to the point where

it **interferes** with the **earliest start time** of its succeeding activity.

G

General conditions (as costs)

General requirements expenses

❑ Indirect costs that cannot be attributed solely to any direct work activities.

“General conditions costs” is a frequently used term in the construction industry, but the exact meaning, and related scope of coverage, can vary based on a variety of factors. In construction, this term generally refers to indirect costs that are incurred during performance of work, such as expenses associated with the management, administration, and coordination of the project. Typically, contractors include general conditions costs in their estimates to cover their operational expenses and project-related services when bidding or negotiating agreements.

1. **Administration:** Administrative expenses generally include the wages, salaries, and benefits of superintendents, project managers, and administrative staff responsible for overseeing, coordinating, and managing the day-to-day issues on the project.
2. **Temporary Facilities:** This includes the cost of installation, maintaining, and removing temporary facilities on the site, such as job trailers, site offices, restrooms, and storage. It can also include rental charges for these items.
3. **Cleanup and Waste Removal:** Costs for removing debris from the site and disposing of construction waste properly.
4. **Permits, Inspections, and Tests:** Costs associated with obtaining necessary permits and paying for inspections and tests required by authorities having jurisdiction over the project.
5. **Safety and Security:** Expenses for implementing safety protocols, security, and equipment to ensure a safe working environment for personnel and equipment on the site.
6. **Mobilization and Demobilization:** The cost of moving and storing equipment, materials, hand tools, and supplies to and from the site.
7. **Weather Protection:** Expenses for providing weather protection measures for the site and the work performed.
8. **General Liability Insurance:** Insurance and bond premiums to cover the requirements under the agreement.

General conditions (as costs)

Job Overhead Costs (Direct Expense)



Job overhead costs are also known as General Conditions expense and includes all costs that can be directly charged to a specific project.

These are items that are unique to the project and are required to successfully construct the project.

Job overhead costs or general conditions are in addition to the indirect or general overhead costs.

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General conditions (as a document)

- ☐ A **section of general clauses** in the contract specifications that establish how the project is to be administered.



General contractor

- ☐ Construction firms with knowledge of the **whole process** to provide overall supervision and coordination
through **employment** of direct craft labor and subcontractors.
- ☐ They usually serve as prime contractor and **agree to construct the project** in accordance with the contract documents
while **being responsible** for the overall planning and coordination of construction operations



General overhead

- ☐ The **fixed cost** in the operation of a business.

- ☐ General overhead is **most often associated** with office, plant, equipment, staffing, and expenses thereof, maintained by a contractor for general business operations, which are **not specifically applicable** to any given job or project.



Global claim

❑ **Global claims** may be defined as those where a global or composite sum,
however **computed**,

is put forward as the **measure of damage** or **contractual compensation**
where

1. There are **two or more specific matters** of claim or complaints, and
2. It is said to be **impractical or impossible** to provide a breakdown or
sub-division of the sum claimed between those matters.

Global claim

- ❑ **‘Total actual cost’** or **‘total cost’** are American expressions used...to describe those claims,
 - ❑ whether in respect of one only or more than one matter of complaint, where the alleged total costs of [the contractor] ... is compared with the contract value or price, and
 - the difference then put forward as representing the **measure of damage** or additional cost caused by **one or more matters complained of**.
 - ❑ Where **more than one separate matter** is relied on, as is very often the case, a total cost claim will also, therefore, constitute a global claim as above defined.

Green building facilitator (GBF)

- ☐ The **project team member responsible** for facilitating the **receipt** of information, submittals, and other deliverables **needed to verify performance** of tasks necessary to achieve the project's **sustainability objectives**.
- ☐ The **role of the GBF** may be filled by
 1. CM,
 2. A member of the CM's staff,
 3. An independent commissioning agent, or
 4. Another party whose efforts are monitored by the CM organization.

❑ The Green Building Initiative (GBI) —

The **exclusive provider** of Green Globes Building certifications in the US, it was developed as an **evolution of the BREEAM international standard**, and the first commercial building rating system based on an **American National Standard (ANSI).**

❑ Green Globes provides a choice of programs for green building guidance and assessment that includes

Green Globes New Construction (NC), Green Globes Continual Improvement of Existing Buildings (CIEB), and Green Globes CIEB for Healthcare.

- ❑ **Green Building Council of Australia (GBCA)** has developed a variety of **rating tools and a custom tool development service** to measure and promote sustainability within Australia's built environment.
- ❑ Green Star is a comprehensive, national, voluntary environmental rating system that **evaluates the environmental design and construction** of buildings and communities.

- ❑ A **legally enforceable** assurance by the contractor, a third party, or both of **satisfactory performance** of products or workmanship during a **specific period of time** stated and included in the **contract**.



Guaranteed maximum price (GMP)

- ☐ A **contractual Form of Agreement** wherein a maximum price for the work is established based upon an **agreed to scope**.
- ☐ Established with an **understanding by the parties** that the **actual cost** of the work could be more or less.

H

Hong Kong – building environment assessment method (HK BEAM)

- ❑ This Hong Kong based method is a **comprehensive environmental assessment scheme** for buildings recognized by the HKGBC and was established in 1996, largely **based on** the **UK Building Research Establishment's BREEAM system** and was significantly upgraded in 2009 to become BEAM Plus.
- ❑ *The BEAM Plus assessment scheme includes the six aspects of a project as follows: Site aspects; Materials aspects; Energy use; Water use; Indoor environmental quality; and Innovations and additions.*

Hold and witness points

- ❑ **Two points** during the construction phase that require **inspection** or **verification**.
 1. **Work cannot proceed** beyond the **identified hold point**
without approval from the designated engineer/consultant/ inspection.
 2. The **witness point** is where the engineer/consultant can review, “witness,” or inspect
the **method or process** of
work being performed.

I



Idle equipment cost

- ☐ The **cost of equipment** that remains on-site ready for use but is placed in a **standby basis**.
- ☐ Ownership or rental costs (but not operations costs) are **still incurred** even **while the equipment is idle**.

Impact cost

- ☐ Added expenses due to the **indirect results** of a changed condition, delay, or changes that are a consequence of the initial event.
- ☐ **Examples** of such costs include premium time, lost efficiency and extended overhead costs.



Inadequate utilities

❑ The contractor **may be** entitled to compensable direct costs and delay costs

if the **owner fails** to deliver, or delays in delivering utilities (e.g., electrical power, water, etc.) in

1. Violation of the contract, or
2. That were reasonably expected.

Also, the **contractor may be entitled** to compensable direct costs and delay costs

if the owner-provided **utilities are inadequate** to properly support contract performance.



Independent cost estimate

❑ A **cost estimate** developed in organizational channels separate and independent from **program channels** and

having the express purpose of serving as

1. An analytical tool to validate or
2. Crosscheck program developed estimates.



Indirect cost

- ☐ The cost incurred by an organization for common or joint objectives that **cannot be identified** specifically with a particular part of
 1. Project or
 2. Activity



Interference

- ☐ **Owner** actions, inactions, or instructions that **interfere with**,
stop, delay, disrupt or hinder the contractor's on-going or planned work.
- ☐ The contractor **may be entitled to recover**
 1. Disruption costs for such interference as well as
 2. Its delay costs
 - ☐ if the activities in its schedule that were affected by such interference were on the **critical path** of the project schedule at the time that the interference occurred and
 - ☐ if the contractor was **not responsible** for other concurrent delays at that time.



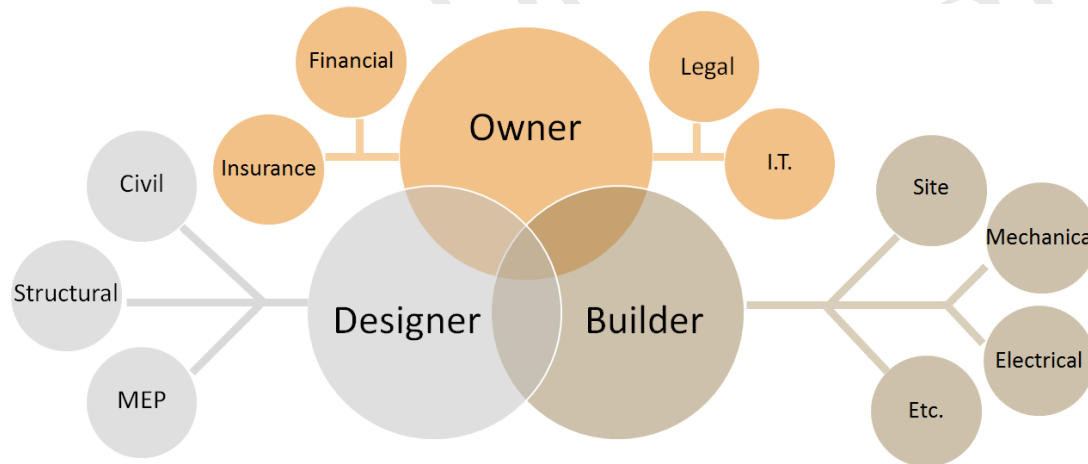
Invitation to bid

- ❑ An **Invitation To Bid**, also known as an **ITB**, is a document issued by a government agency or organization seeking **competitive bids** for a project or purchase.
- ❑ The ITB typically **contains information** about the project scope, requirements, and timeline, and is used to solicit bids from qualified vendors.

Integrated project delivery

- ❑ A project delivery process that **integrates** a project's design, construction, and operational functions

through a **team-based approach** that includes the designer, owner, CM, key technical consultants, the contractor, and key subcontractors.



- ❑ Project risks are **fairly allocated** among the stakeholders who **work as one to achieve** faster delivery, lower costs, and avoid litigation.

J

موسسه مهندسی و مدیریت ساخت علوی پور (ACEMI)

دفتر آموزش



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