استراتژی مدیریت قرارداد

برای مدیران پروژه

معرفی دوره

ارائه دهنده:

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ACEMI مقدمه

موسسه ACEMI سه ساختار را برای مدیریت قرارداد طراحی نموده، که در سه سطح کارشناسی، ارشد و مشاوران ارائه می‌گردد. در سطح کارشناسی که پیش‌نیاز این دوره استراتژی قرارداد است، "قراردادهای ساخت و روش‌های اجرا و تحویل پروژه"، "برنامه‌ریزی و زمان‌بندی پروژه"، "مدیریت مالی، حسابداری و هزینه پروژه"، "مدیریت اسناد و مدارک پروژه"، "آنالیز تاخیرات پروژه" و "مدیریت ادعاء و اختلافات پروژه" ارائه گردیده، تا بعد از تکمیل فرآیند یادگیری و یکپارچه‌سازی مبانی مختلف از نگاه مدیریت پروژه و حقوقی، به سطح ارشد (استراتژی قرارداد) برسیم.

در واقع در سطح کارشناسی، از مبانی، دستورالعمل‌ها، استانداردها و رویه‌های مختلف ارائه شده توسط انجمن‌ها، تشکل‌ها، شرکت‌های مشاور و بسیاری از کتب مطرح بین‌المللی در این زمینه استفاده گردید (مانند FIDIC، CII، CMAA، ASCE، AACE، SCL، AGC، AIA، LONG International، JCT، FLUOR، NAVIGANT، NCMA، GAO، ConsensusDocs و بسیاری از موارد دیگر)، تا در کنار تطبیق‌سازی این مبانی با قراردادهای داخلی (نشریه ۴۳۱۱، برخی قراردادهای همسان مانند EPC صنعتی و طرح و ساخت غیرصنعتی و EPC اختصاصی نفت)، به یک آموزش جامع دست یابیم.

اما اکنون به سطح ارشد مدیریت قرارداد رسیدیم. در این سطح، استراتژی جامعی برای مدیریت قرارداد، در دو بخش زیر ارائه می‌شود.

۱. استاندارد مدیریت قرارداد برای مدیران پروژه

۲. استاندارد مدیریت قرارداد برای مدیران قرارداد

در این دوره که بخش اول آموزش داده می‌شود، به صورت یک دستورالعمل کامل، فرآیند اجرایی قرارداد را به عنوان یک مدیر پروژه در صنعت ساخت، از مرحله قبل از طراحی تا پس از ساخت، فرا خواهید گرفت. با انواع فرم‌ها و ساختارهای اجرایی آشنا می‌شوید و علاوه بر یادگیری وظایف و مسئولیت‌هایی که یک مدیر پروژه برای اجرای صحیح قرارداد در طول چرخه حیات پروژه نیاز دارد، چکلیست‌های مشخصی را در این زمینه فرا می‌گیرید.

در انتهای این بخش نیز به یکپارچه‌سازی مبانی برنامه‌ریزی، مالی و تاخیرات در قالب ماده‌های قراردادی برنامه‌ریزی (Scheduling Contract Terms) و تاخیرات (Delay Contract Terms)، با بررسی یک مدل نمونه خواهیم پرداخت.

دوره‌ای که نه تنها برای مدیران پروژه یک الزام تلقی می‌شود، بلکه کارشناسان و مدیران امور قرارداد نیز باید این موارد که بر اساس استانداردهای بین‌المللی طراحی شده را فرا بگیرند.

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استراتژی مدیریت قرارداد (برای مدیران پروژه)

مقدمه: معرفی دوره

سرفصل‌ها

۱. راهنمای مدیریت قرارداد مختص مدیران پروژه (Contract Administration Guidelines)

» **تعاریف اولیه و مفاهیم:** اهداف مدیریت قرارداد، فرم‌های قراردادی همسان، مدیریت قرارداد و...

» **مدیریت قرارداد در فاز قبل از طراحی (Pre-Design):** برنامه مدیریت پروژه PMP، انتخاب روش‌های اجرای پروژه (PDS)، مدیریت اطلاعات (PMIS)، مدیریت پایداری (Sustainability)، الزامات کارفرما (OPR)، مطالعات مفهومی (Conceptual)، مطالعات هزینه، مطالعات برنامه زمان‌بندی (Master و Milestone)، انتخاب طراحان و مشاوران طراحی، انتخاب مشاوران قرارداد و...

» **مدیریت قرارداد در فاز طراحی (Design):** مدیریت قراردادهای طراحی، مدیریت برنامه زمانی Master، سیستم مدیریت کیفیت (QMS)، ارزیابی‌های طراحی، ارزیابی‌های پایداری، تدوین نقشه‌های و شرایط فنی قرارداد، ارزیابی شرایط فنی و الزامات تدوین شده، ارزیابی ساخت‌پذیری نقشه‌ها، ارزیابی قابلیت بهره‌برداری، ارزیابی مهندسی ارزش، تدوین بسته قرارداد، بودجه‌بندی فازبه‌فاز، تدوین برنامه زمانی Pre-Bid Construction و...

» **مدیریت قرارداد در فاز تدارکات/مناقصه (Procurement/Bidding):** تدوین لیست مناقصه‌گران، ایجاد کمپین، پیش ارزیابی، تبلیغات، توزیع اسناد، الحاقیه‌ها، کنفرانس‌های پیش از مناقصه، مدیریت اطلاعات در فاز مناقصه، برگزاری و ارزیابی در حین مناقصه، جلسات پیش از Award قرارداد، اعلان شروع به کار (Notice to Proceed)، مدیریت برنامه زمانی و گزارشات هزینه و...

» **مدیریت قرارداد در فاز ساخت/اجرا (Construction):** جلسات پیش از شروع ساخت/اجرا، الزامات و شرایط خصوصی قرارداد، برنامه اجرایی مدیریت قرارداد، مستندسازی شرایط اولیه قرارداد، مجوزها، ضمانت‌نامه‌ها، فرآیند مدیریت ارتباطات، جلسات، فرآیند مستندسازی حین اجرا، مدیریت اطلاعات، مدیریت کیفیت، مدیریت ایمنی، گزارشات روزانه سایت پروژه، مدیریت تغییرات، کنترل هزینه، مدیریت برنامه زمان‌بندی، مدیریت پرداخت‌ها و صورت وضعیت‌ها، ارزیابی وضعیت گزارشات، ارزیابی ادعاءها، ارزیابی خسارات، ارزیابی مستندات، ارزیابی Punch-listها، تست و بررسی نهایی جهت بهره‌برداری و راه‌اندازی و...

» **مدیریت قرارداد در فاز پس از ساخت (Post-Construction):** چکلیست بهره‌برداری و برنامه زمان‌بندی، دستورالعمل اجرا و نگهداری، آموزش نیروهای فاز بهره‌برداری، مدیریت قطعات و دوره ضمانت، مجوزهای نهایی، مستندسازی پروژه پایدار، حل ادعاءها و اختلافات، اختتام قرارداد و پرداخت نهایی، گزارشات اختتام پروژه، اختتام پروژه و...

» **نمونه چکلیست‌ها:** چکلیست‌های مدیریت قرارداد از مرحله قبل از طراحی تا مرحله پس از ساخت، چکلیست‌های PMP و CPM و PPM، چکلیست‌های مدیریت جلسات در فازهای مختلف طراحی تا پس از ساخت

» **نمونه‌های موردی از اسناد مناقصه در عرصه بین‌الملل:** تبلیغات، اطلاعات برای مناقصه‌گران، فرم‌های مناقصه، اظهارنامه تایید صلاحیت پیمانکاران، اعلان اعطای قرارداد (Notice of Award)، ضمانت‌نامه اجرا، ضمانت‌نامه پرداخت و...

» **نمونه ابزارهای رایج پروژه:** نقش‌های تیم پروژه، جداول RACI، جداول Document Log و Submittal و برنامه زمان‌بندی در فاز طراحی، گزارش‌های روزانه پروژه، صورت جلسات، اختتامیه فاز طراحی، اختتامیه پروژه، بررسی وضعیت موادومصالح، لیست Follow-up و Change Order Log و...

۲. نمونه قراردادی برای برنامه زمانی و تاخیرات

» **بررسی یک نمونه الزامات قراردادی برنامه زمان‌بندی (Schedule Contract Terms)**

» **بررسی یک نمونه الزامات قراردادی تاخیرات (Delay Contract Terms)**

استراتژی مدیریت قرارداد (برای مدیران پروژه)

مقدمه: معرفی دوره

ویژگی‌ها و جزئیات

آنچه خواهید آموخت

شاید بتوان گفت این رویه تدوین شده برای مدیریت قرارداد در صنعت ساخت برای مدیران پروژه، یکی از جامع‌ترین رویه‌ها در کشورمان بوده، که با ترکیب ساختارهای فنی و قراردادی، برای اولین بار به این شکل ارائه می‌شود. در این دوره:

۱. به عنوان مدیر پروژه، با تمامی مسئولیت‌ها و وظایف، از مرحله قبل از طراحی (Pre-Design) تا مرحله پس از ساخت (Post-Construction) آشنا شده و چگونگی مدیریت قرارداد را با بررسی چکلیست‌های متعدد، به صورت یک راهنمای جامع فرا خواهید گرفت.

۲. با بررسی نمونه پیشنهادی قراردادی در بخش‌های برنامه‌ریزی پروژه (Scheduling Terms) و تاخیرات (Delay Contract Terms)، چگونگی یکپارچه‌سازی مبانی برنامه‌ریزی، مالی و تاخیرات را فرا خواهید گرفت.

وجه تمایز این دوره

۱. اولین موسسه‌ای که راهنمای مدیریت قرارداد را با رویکرد صنعت ساخت و بر اساس آخرین نسخه از استانداردهای بین‌المللی، مختص مدیران پروژه در کشور آموزش می‌دهد.

۲. اولین موسسه‌ای که یک نمونه ساختار یافته از مشخصات فنی برنامه زمان‌بندی قرارداد را با رویکرد یکپارچه‌سازی زمان‌بندی، مالی و تاخیرات آموزش می‌دهد.

۳. برگزاری دوره بر اساس جدیدترین نسخه از راهنماها و استانداردهای مدیریت قرارداد که بعضا دسترسی به بسیاری از آنها در کشور سخت و یا ناممکن است.

۴. اولین برگزارکننده دوره جامع مدیریت قرارداد در کشور و عرصه بین‌الملل که مبانی برنامه‌ریزی، مدیریت مالی، مدیریت اسناد، آنالیز تاخیرات، مدیریت ادعاء و مدیریت قرارداد را یکپارچه نموده است.

۵. متمایزسازی فراگیران با آموزش به‌روزترین منابع، استانداردها، سندها و مراجع مدیریت قرارداد در دنیا که بعضا دسترسی به برخی از آنها در کشور سخت و یا ناممکن است.

۶. ارائه ویدئوها و جزوات به صورت کامل

۷. گروه پشتیبانی ۶۰ روزه از زمان شروع دوره

۸. ارائه محتوا به صورت جامع، ساختار یافته و هدفمند در راستای نقشه راه CM

جزئیات دوره

نوع دوره	مهارت سخت
سطح دوره	ارشد - استراتژی
سطح تخصص	سطح ۳
دپارتمان	مدیریت قرارداد
مدرس	دکتر سید محمدرضا علوی‌پور
گواهینامه‌ها	گواهینامه حضور - گواهینامه حرفه‌ای
پیش‌نیاز	قراردادهای ساخت، مدیریت برنامه‌ریزی و زمان‌بندی، مدیریت مالی، مدیریت اسناد و مدارک پروژه، آنالیز تاخیرات، مدیریت ادعاء

استراتژی مدیریت قرارداد (برای مدیران پروژه)

مقدمه: معرفی دوره

مهارت‌های سخت (Hard Skills) - سطح کارشناسی و اجرایی

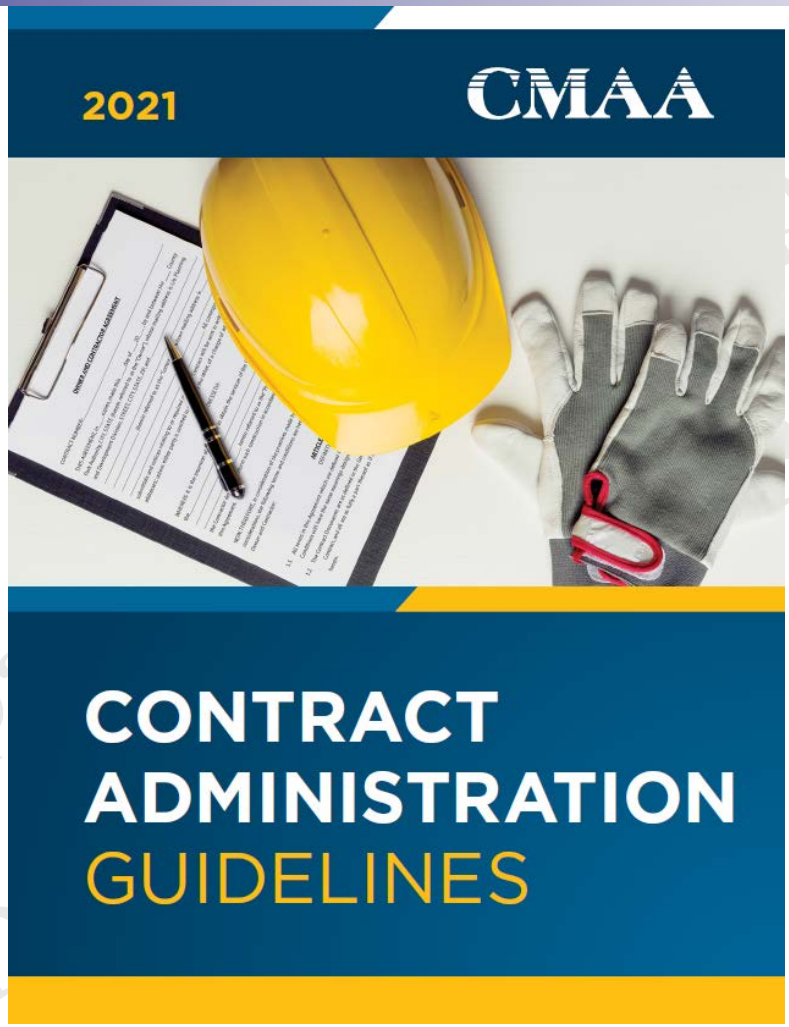
دپارتمان‌ها	سطح ۱	سطح ۲	سطح ۳	سطح ۴	سطح ۵
مدیریت پروژه	مدیریت پروژه‌های صنعت ساخت	راهنمای PMBOK	متدولوژی Prince2	استاندارد مدیریت ساخت CMAA	
مدیریت مالی و هزینه	مدیریت مالی و هزینه پروژه ارزیابی اقتصادی پروژه			تامین مالی پروژه	
مدیریت برنامه‌ریزی و زمان‌بندی	برنامه‌ریزی و کنترل پروژه نرم‌افزار MSP نرم‌افزار P6				
مدیریت کیفیت			مدیریت کیفیت پروژه		
مدیریت قرارداد	آنالیز تاخیرات پروژه	مدیریت ادعاء و اختلافات			اجرای پروژه به روش CM
مدیریت ایمنی			مدیریت ایمنی پروژه		
مدیریت طرح و برنامه		مدیریت پروژه به روش Lean دفتر مدیریت پروژه (PMO)	مدیریت چابک Agile		مدیریت طرح
مدیریت پایداری			مدیریت پایداری پروژه		
مدیریت ریسک		مدیریت ریسک پروژه			
مدیریت اطلاعات	مدیریت اسناد و مدارک پروژه	نرم‌افزار Power BI			
مدیریت مدل‌سازی اطلاعات ساختمان (BIM)		نرم‌افزارهای BIM		مدیریت BIM در پروژه	

مهارت‌های سخت (Hard Skills) - سطح ارشد استراتژی

دپارتمان‌ها	سطح ۱	سطح ۲	سطح ۳	سطح ۴	سطح ۵
مدیریت پروژه			منشور اخلاق در مدیریت پروژه		
مدیریت مالی و هزینه		استراتژی مدیریت هزینه و مهندسی ارزش			
مدیریت برنامه‌ریزی و زمان‌بندی		استراتژی مدیریت برنامه‌ریزی و زمان‌بندی			
مدیریت کیفیت				استراتژی مدیریت کیفیت	
مدیریت قرارداد	اصول مدیریت ساخت		استراتژی مدیریت قرارداد		
مدیریت ایمنی				استراتژی مدیریت ایمنی	
مدیریت طرح و برنامه					استراتژی مدیریت طرح و برنامه
مدیریت پایداری				استراتژی مدیریت پایداری	
مدیریت ریسک			استراتژی مدیریت ریسک		
مدیریت اطلاعات			استراتژی مدیریت اطلاعات		
مدیریت مدل‌سازی اطلاعات ساختمان (BIM)					استراتژی مدیریت BIM

References Used in This Course

Primary resources



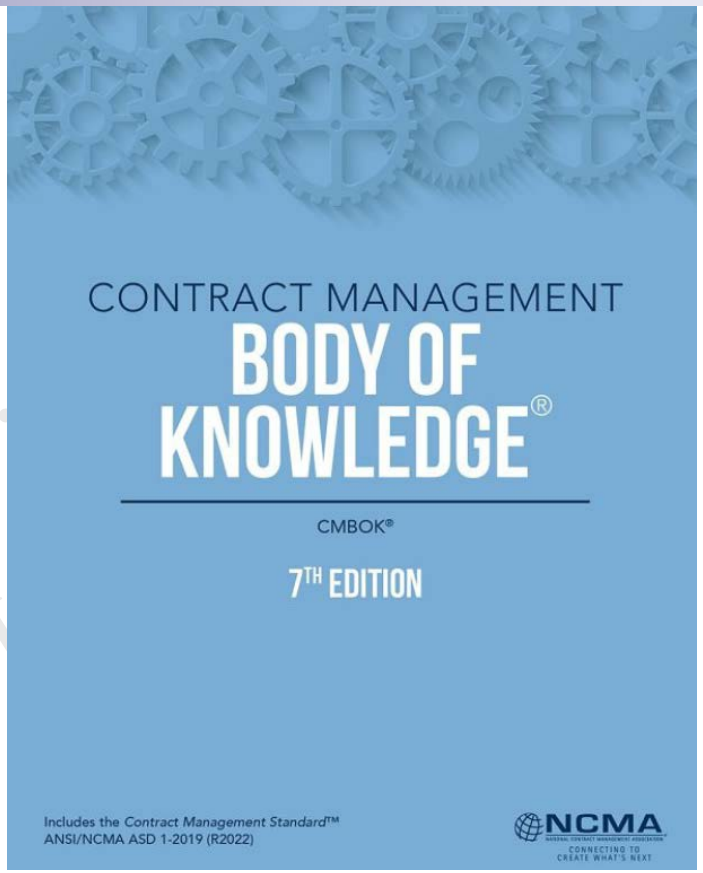
Other resources

- **Contract Contract Administration**, Construction Specification Institute, **2020**
- **Construction Delays**, Nagata, Manginelli, Lowe, Trauner, *Elsevier*, **2018**
- **Drafting Scheduling Specifications**, Wickwire Groff, *CMAdvisor*, **2003**
- **Contract Scheduling Provisions**, Long International, Inc., **2021**

References Used in

Contract Management for Contract Managers

Primary resources



استراتژی مدیریت قرارداد

برای مدیران پروژه

راهنمای مدیریت قرارداد مختص مدیران پروژه (Contract Administration Guidelines)

بخش اول: تعاریف و مفاهیم

ارائه دهنده:

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What we will learn?

- Introduction to contract administration guideline
- Contract administration objectives
- Contract administration preparation
- Contract formats
- Contract administration

INTRODUCTION TO CONTRACT ADMINISTRATION GUIDELINE

Purpose

- The Contract Administration Guidelines **address**

  administrative and reporting requirements for

  construction manager (CM)

  during the execution of construction projects.

- This guideline **supplements** Chapter 6 of the CMAA Standards of Practice by providing an overview of

  typical contract administration responsibilities on a project

  from **concept to occupancy**.

The Standard will be published by ACEMI

Overview

- This section
  1. Provides an **overview** of the guidelines for contract administration
  2. Discusses the **functions** for specific project phases (pre-design, design, procurement, construction, and post-construction)
  3. With **recommended actions and/or techniques** to accomplish the stated objectives.

CONTRACT ADMINISTRATION OBJECTIVES

Introduction

- The final contract agreement should be administered/managed in various ways such as by
  1. A CM acting as the owner's agent or
  2. A CM at-risk (CMAR) representing the contractor

Contract administration

Contract Administration: The function of implementing the terms and conditions of a contract, based upon established systems, policies, and procedures.

CM roles in contract administration

- The CM **establishes**

1. Systems,
2. Policies, and
3. Procedures

necessary to ensure adequate project controls are in place.

- The CM **must confirm** that appropriate stakeholders are **identified**.
- It is also important to understand the basic responsibilities and interrelationships of all team members, i.e., the owner, the designer, the contractor, the CM, the consultants, and any required specialty professionals.
- Additionally, the CM must have the functional knowledge of the **interrelationships** between such *management components as time, claims, cost, information, quality, risk, safety, and sustainability.*

CONTRACT ADMINISTRATION PREPARATION

ACEMI

Contract administration in PMP

- In conjunction with the **owner and design professional**,

  the CM may lead the effort to define the **project requirements** using a project management plan (PMP).

- The document is typically prepared by the project manager,

  with **assistance from** the CM,

  to **outline the strategies** for fulfilling the requirements of the project.

- It is a **"cradle to grave"** document that must also be **updated throughout the project**.

- The owner should **approve** the **PMP** so that it can be used to measure performance of the project team and the overall success of the project.

- It is critical that all **team members** understand it at the outset.

Contract administration in CMP

- In addition to the PMP, a construction management plan (CMP) may be created to provide **more detail** about the construction phase.

- The **CMP is a written**, project-specific plan that outlines the project's scope, budget, schedule, organizational roles, quality standards, and specific methods and procedures that the

  CM will undertake to accomplish the **various management tasks** for the project.

ACEMI

Contract administration in PPM

- With **input from the team**, the CM
  1. Develops,
  2. Drafts,
  3. Assembles, and
  4. Edits

  the **project procedures manual (PPM)**

  which defines the team responsibilities, levels of authority, communication protocol, and the systems, methods, and procedures for **project execution**.

Which one should be updated?

Update to PMP, CMP, and PPM

- During the project, the PMP, CMP, and PPM documents must be **kept up to date with changes** required due to various constraints such as budget, schedule, regulations, etc.

Sample of PMP/CMP/PPM

- For an example of document contents, see Appendix B: PMP/CMP/PPM.

You will see the contents later in this course.

How to start?

Type of contract

- The CM may play a role in establishing the **type of contract** used for the project, but **usually the selection** is determined by
  1. Project delivery method
  2. Preference of the owner

What is the next step should be taken by CM?

Type of contract

- **Larger**, more established clients likely **have standard contracts**

  while others may need **CM assistance for recommendations** to develop contracts **tailored** to their project.

BEST PRACTICE

Bottom line: CMs should stay informed of applicable contract contents including changes, updates, and revisions.

There are several organizations within the construction industry documenting standard terms, forms, and references. These organizations will be referenced throughout this text. They are the American Institute of Architects (AIA), ConsensusDocs, LLC, the Construction Management Association of America (CMAA), the Design-Build Institute of America (DBIA), and the Engineers Joint Contract Documents Committee (EJCDC).

Type of contract

- **CMs** must review final contracts to ensure that **appropriate contract provisions** are inserted for contract administration, which conforms to
  1. Basic industry standards
  2. PMP
  3. PPM

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Contract documents

- The **contract documents** describe the proposed construction (**referred to as the Work**).
- **Contract documents** consist of both written and graphic elements.

Contract Documents: The collective term used to define the contract between an owner and the contractor. 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 and all exhibits thereto, 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.

Addenda vs. amendment vs. modification

Wait …

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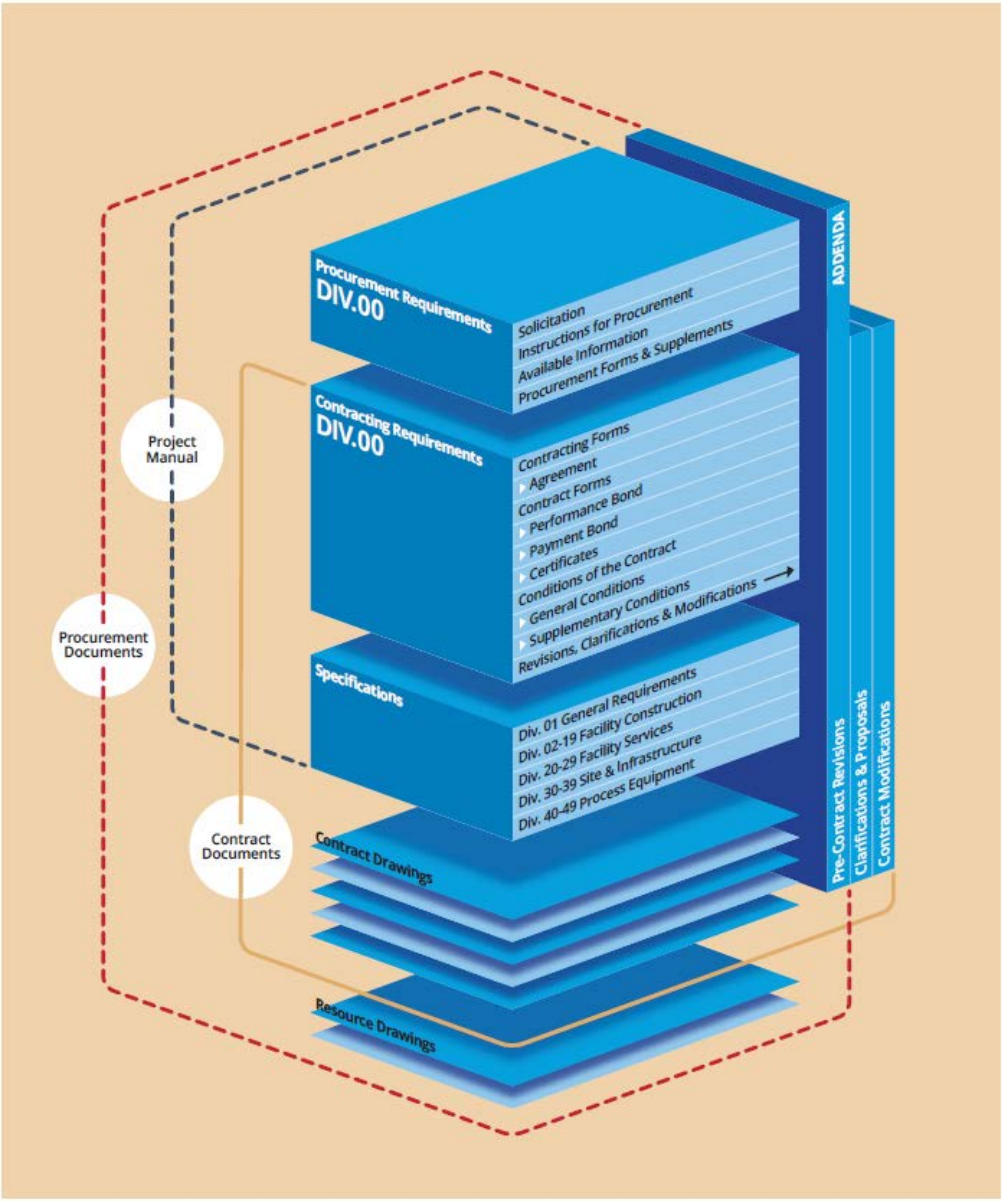
Type of contract

- Distinction between procurement documents and contract documents.

The contract documents for a typical construction project, consisting of the following.

Wait …



Addenda vs. amendment vs. modification

Addenda

Precontract revisions include revisions made prior to signing the agreement. Such revisions include written addenda or graphic information issued to clarify, revise, add to, or delete information in the original procurement documents or in previous addenda. Typically, an addendum is issued prior to the receipt of bids or proposals. Other revisions may include bid or proposal revisions when permitted. Addenda items affecting the contract documents are contract document revisions and should be enforced during the administration of the contract.

Contract Modifications

Contract modifications include modifications after the construction agreement has been signed and may include additions to, deletions from, or modifications of the work to be done. These are accomplished by change orders, change directives, field orders, and minor changes. These can be issued at any time during the contract period.

A **contract amendment** allows the parties to make a mutually agreed-upon change to an existing contract. An amendment can add to an existing contract, delete from it, or change parts of it. The original contract remains in place, only with some terms altered by way of the amendment.

Addenda vs. amendment vs. modification

Clarifications and Proposals

Clarifications and proposals include documents initiating changes or clarifications that have not been incorporated into the contract by formal contract modifications. These documents include requests and proposals.

The contract documents for a typical construction project, consisting of the following.

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Typical contract documents

- Many organizations simply refer to Parts I – III as the **"specifications."**

- However, **on some** public works and even private projects, the term **"specifications"** refers to an **agency defined set of Standard Specifications** (examples include the Greenbook Standard Specifications for Public Works Construction).

	SECTION	TITLE	CONTENTS
SPECIFICATIONS	Part I	Agreement	**Bid/Proposal Forms** ✓ Notice inviting bids/Bid schedule ✓ Contractor certificates/list of subcontractors (public) ✓ Non-collusion/non-discrimination affidavits (public) **Agreement** ✓ Contract ✓ Licenses ✓ Workers comp certificate ✓ Performance/payment bonds
	Part II	Conditions (the boilerplate)	✓ Scope of work ✓ Change order processing ✓ Jobsite notice requirements ✓ Termination clause ✓ Dispute resolution procedures
	Part III	Technical Specifications	✓ Quality standards ✓ Acceptable materials and techniques ✓ Quality testing requirements ✓ Dispute resolution procedures
	Part IV	Drawings	✓ Drawings ✓ Blueprints

Resource drawings vs. contract drawings

Resource Drawings

These are the drawings furnished during the procurement stage that generally show existing conditions such as roads, buildings, and current construction circumstances. These may be drawings that were prepared for the construction of existing facilities. Drawings of this nature rarely show exact as-built conditions and may be record drawings from the previous contractor. Resource drawings are generally furnished for reference only and are not contract documents. Resource drawings may also include items such as owner-furnished and owner-installed equipment that requires utility rough-in locations or attachment requirements.

Contract Drawings

Contract drawings include large graphic illustrations of the physical form of the work to be performed. The drawings are graphic representations of the work upon which the contract is based. As the graphic documents usually contain more than plan views, the preferred term is *drawings* rather than *plans*. Contract drawings show the quantitative extent and relationships of elements to one another.

Coordination drawings vs. record drawings

Coordination Drawings

Information provided by the contractor and various subcontractors is brought together to coordinate utilization of limited space. Information on the contract drawings may be diagrammatic, with single lines indicating general locations. Coordination drawings are drawn with actual (scale) dimensions of the elements. These drawings help determine how elements will actually fit in the space available. Without coordination drawings, the installation of each element may require that the next element fit in the remaining space. This creates frequent problems that can extremely difficult to rectify and thus requires elements to be repositioned. Regardless of submission or approval by the architect/engineer, coordination drawings are not contract documents.

Record Drawings

The contract documents may require record drawings. Often the contractor marks up the contract drawings to indicate changes and field conditions. The contract documents indicate the type of information required to be included on the record drawings. Concealed conditions and utility locations are the most common information required. These record drawings are submitted through the architect/engineer to the owner as a permanent record of the actual conditions of the completed work.

CM knowledge for execution

- The **execution of these responsibilities** requires a thorough understanding of
  - Contracts
  - Construction law
  - Standard contracting documents
  - A complete knowledge of traditional contracting procedures
  - Construction management procedures
  - Possibilities for contracting innovation

CONTRACT FORMATS

Standard forms vs. customized or combination forms

STANDARD FORMS	CUSTOMIZED OR COMBINATION FORMS
» American Institute of Architects (AIA) » Construction Management Association of America (CMAA) » ConsensusDocs » Design Build Institute of America (DBIA) » Engineers Joint Contract Documents Committee (EJCDC) » Owner-specific	» Federal, state, county governments » Education systems, colleges/universities » "Serial builders"

Standard forms vs. customized or combination forms

Standard Contract Advantages	Standard Form Modifications
✓ Increase the predictability of project outcomes ✓ Increase the consistency of pricing ✓ Simplify management ✓ Updated regularly ✓ Organizational support and user groups	✓ Seek advice of legal counsel ✓ Assure modifications are properly coordinated with other project documents ✓ Think ahead: how will modifications be received? ✓ Place responsibility and authority with the party best able to perform duties and control the risks

CONTRACT ADMINISTRATION

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Components of focus

- CMs need to focus on the **components** of a contract to ensure they are accurately represented and implemented throughout the project, including the following:
  1. Cost
  2. Quality
  3. Risk/Safety
  4. Sustainability
  5. Time

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Cost

- The CM usually has the responsibility to generate and track

  all project costs,

  from the initial conceptual estimate to the final accounting.

What is the general process?

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Cost

- Before design begins,

  the CM **prepares** a detailed project budget that becomes the designer's guide as the **process moves toward** the procurement phase.

- After bids are received,

  the **value** of the accepted contractor proposals provides the **budget basis**.

- During construction,

  the CM **ensures** all contract changes and allocated expenses are **recorded**.

Every aspect of the project's cost should be estimated as early as possible and substantiated as it occurs.

Who should be the primary contacts of CM?

Cost

- As a best practice,

  CMs should contact all project participants to

  1. **Request** their estimated costs to **complete** the project
  2. **Use** that information to perform a **pro forma financial analysis**

Why this action taken?

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Cost

- This analysis compares
  1. Historic data
  2. Future projections

  to **provide** a breakdown of the estimated project costs

  which can then be **used to develop** a financial statement

  to **manage** budget and cash flow.

- From conceptual estimates to detailed line item construction budgets,

  this process is **essential** for project cost control.

Quality

- The quality assurance (QA)/quality control (QC) requirements should **clearly indicate** that the **contractor** is responsible for

  delivering the project in accordance with the contract documents.

Who has the primary responsibility for QC?

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Quality

- The contractor should be identified as having **primary responsibility** for QC on the project, and

  the owner's expectations regarding the QC activities of the contractor should be **documented**.

Is it acceptable that GC has separate QC manager?

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Quality

- If the CM **suggests** (with the **owner's approval** as required)

  that the contractor have a **QC manager separate** from other QC inspectors,

  that should be **documented as soon as possible**.

What should be specified and clear in this process?

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Quality

- It should be **clear that** the contractor is **expected to prepare and submit** for acceptance

  any written QA/QC **plan**

  for their organization or for any vendor or supplier.

- **Documentation** should also specify **how the contractor** will control the acceptance of materials at the worksite for **introduction into the work**.

- In addition, a procedure should be outlined to indicate **how the contractor** should
  1. **Identify** construction, which is **not in accordance with specifications**, and
  2. **Provide** corrective action or otherwise **replace** the unacceptable elements.

What is the CM authority here?

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Quality

- These **quality management procedures** should also state the CM's authority to
  1. **Reject** nonconforming work and
  2. Either
     1. **Order** replacement or
     2. **Allow it to remain** on a reduced cost basis if in the best interests of the **owner**.

What else?

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Quality

- The quality management specifications should also include the **procedure** for **acceptance** of various elements of the work that may occur **prior to final acceptance**.
- It should **rely heavily** on
  1. Use of **checklists**
  2. **Formal sign-off** of hold and witness points to be **used jointly** by the contractor and CM in progressing certain elements of work.
- In this manner, an **acceptable level** of quality should be **achieved** in the final product.

Who should perform the audits?

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Quality

- Finally, the **CM** should perform internal audits of its **field office operations** to ensure that

  the approved quality assurance program and procedures are being implemented **properly**.

What should be focused in the audit?

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Quality

- These audits will focus on
  1. Inspection procedures
  2. Inspection documentation
  3. Data quality
  4. Document control system
  5. Critical path method schedule analysis effort
  6. Quality assurance documentation
  7. Sustainable design documentation
  8. Safety program

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Risk/safety

- Risk is an **inherent** component in every design and construction project.

- **Based** on the delivery method,

  CMs may need to **assist the owner** in identifying and assessing the **sources** of risk

  in advance of critical project **decision-making** and

  then **help the owner** manage risk through the project lifecycle.

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Risk/safety

- **CMs** should follow best practices for health and safety of the **workforce** and the **public**.
- A safe work environment includes a culture where responsibility for health and safety of **all** is **shared by all project participants**.
- **CMs must be aware** of their contractual obligations regarding safety on the project site.

Is it the sole responsibility of contractor?

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Risk/safety

- In the past, **site safety** was the sole responsibility of the contractor.
  - However, **federal and state governments**, as well as the **legal system**, are increasingly holding all construction professionals and the owner **responsible** for job site safety.
  - So, the CM must have a **thorough understanding** of the current local, state, and federal safety laws and requirements to ensure they are **incorporated into the contract documents**, as well as into the PMP, CMP, and PPM.

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Risk/safety

- All construction contracts have **provisions that distribute risk responsibility** between parties.
  - Before entering into an agreement,

    each party must understand how risk is allocated in the contract documents.
  - Then, based on the delivery method,

    CMs should review **common risk allocation provisions** such as
    - ✓ Indemnification and negligence,
    - ✓ Ambiguity or conflicts,
    - ✓ Notice requirements,
    - ✓ Contractor safety plans,
    - ✓ Submittals and approvals, and
    - ✓ Errors and omissions insurance.

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Risk/safety

Indemnification is a concept whereby one party contractually agrees or is otherwise legally obligated to bear the financial risks of another party. These parties are respectively known as the indemnitor and indemnitee. The construction industry relies on indemnification clauses to manage and transfer risk. Consider some of the common indemnification provisions that may be encountered in construction contracts.

https://clr.modares.ac.ir/article-20-10742-en.pdf

تحلیلی بر شرط پذیرش مسؤولیت و جبران خسارت
(موردکاوی قراردادهای نفت و گاز)

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دریافت: ۹۵/۰۳/۱۷ پذیرش: ۹۵/۱۱/۰۹

چکیده

شرط پذیرش مسؤولیت و[1] جبران خسارت با توجه به اهمیت و کاربردی بودن آن در قراردادهای صنعتی دارای جایگاه ویژه‌ای است. این نهاد بنا بر مطالعاتی کلی که صورت گرفته برخاسته از عرف شکل گرفته بین تجار است که به مرور زمان در حقوق انگلستان و سایر نظام‌های حقوقی مورد شناسایی قرار گرفته است. ویژگی این نهاد در حقوق کامن‌لا و تطبیق آن با نظام‌های حقوق نوشته از جمله با مبانی موجود در فقه امامیه و حقوق موضوعه ایران از مسائلی است که تاکنون به قدر کافی بدان پرداخته نشده است. شروط قراردادی همواره صراحتاً دلالتی بر ایجاد تعهد برای طرف مقابل ندارند، بلکه مواردی وجود دارد که فرد با درج آن‌ها در قرارداد درصدد است که ذمه خود را از مسؤولیت مبرا ساز، و بر مسؤولیت طرف مقابل بیفزاید. این دسته از شروط که تحت عنوان شرط پذیرش مسؤولیت و جبران خسارت (که در مواردی صدق عنوان شرط عدم مسؤولیت نیز بر آن صحیح است) از

* نویسنده مسؤول مقاله: Email: Ebrahimpooradel@gmail.com

1. Indemnity/Indemnification

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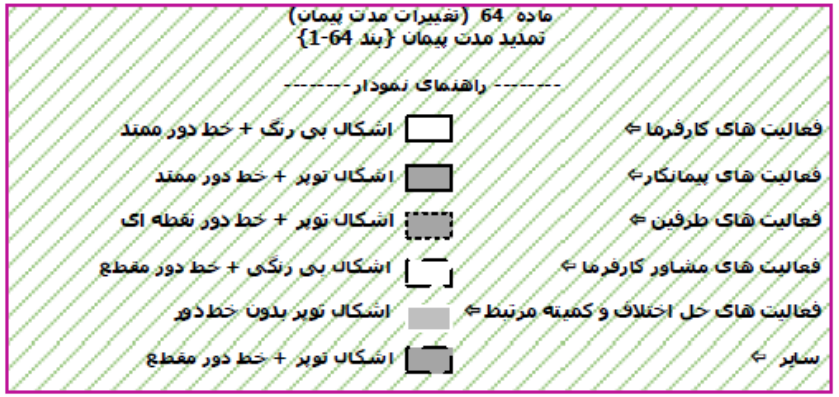
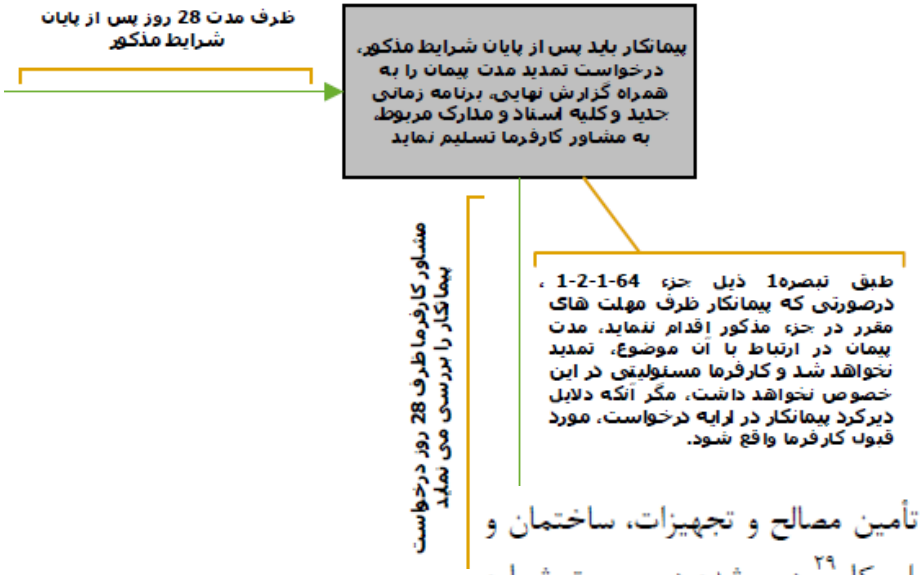
Risk/safety

- Ambiguity or conflicts





۳-۲-۱ برنامهٔ زمانی تفصیلی اجرای هر یک از بخش‌های کار (طراحی و مهندسی، تأمین مصالح و تجهیزات، ساختمان و نصب) بر اساس برنامهٔ زمانی کلی اجرای کار و مقاطع زمانی قسمت‌های اصلی کار[۲۹] درج شده در پیوست شماره ۱۴ پیمان با لحاظ توالی منطقی و یا روابط فعالیت‌های پروژه.

۳-۲-۲ برنامهٔ زمانی تحویل مدارک تسلیمی پیمانکار.

۲۸-۲-۱ به‌جز در مواردی‌که در شرایط خصوصی امکان کار در خارج از ساعت‌های عادی روز و یا در شب پیش‌بینی شده باشد، پیمانکار موظف به انجام کارها در ساعت‌های عادی روز است. همچنین در مواردی که پیمانکار برای جبران عقب‌ماندگی از برنامهٔ زمانی، درخواست کار در خارج از ساعت‌های عادی روز و یا کار در شب را از کارفرما بنماید، تنها با تقبل تمام مسئولیت‌ها و هزینه‌های اضافی ناشی از آن و پس از تأیید کارفرما، مجاز به کار در ساعت‌های یاد شده است.

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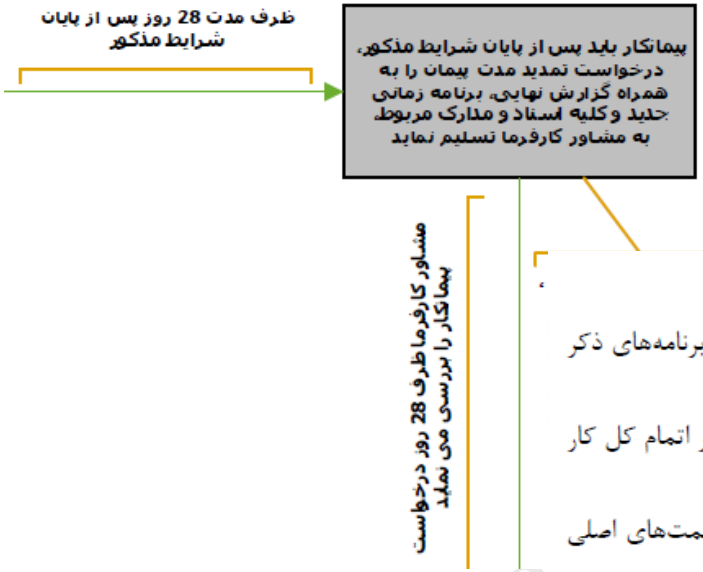
Risk/safety

- Ambiguity or conflicts



ماده ۳۲ - برنامهٔ پیشرفت کار

۳۲-۱ پیمانکار موظف بـه رعایت دقیق برنامهٔ زمانی پیشرفت کار درج شده در پیوست شماره ۱۴ پیمان و برنامه‌های ذکر شده در بند ۳-۲ شرایط عمومی است.

۳۲-۲ پیمانکار می‌تواند در طول اجرای کار، تغییرات پیشنهادی در برنامهٔ زمانی را بدون آنکه باعث تأخیر در اتمام کل کار و یا قسمت‌های اصلی آن شود، برای تصویب به کارفرما ارائه کند.

۳۲-۳ در مواردی از تغییرات در برنامهٔ پیشرفت کار، که منجر به تغییر در مدت پیمان و یا مدت انجام قسمت‌های اصلی پیمان شود، بر اساس ماده ۶۴ عمل می‌شود.

۳۲-۴ پیمانکار موظف است گزارش پیشرفت کارها را ماهانه و یا در دوره‌های زمانی مندرج در اسناد پیمان، به کارفرما تسلیم کند. این گزارش، شامل مواردی از قبیل درصد تکمیل‌شدهٔ فعالیت‌های مختلف، مواردی که نسبت به برنامه تأخیر دارد و برنامهٔ پیشنهادی پیمانکار برای جبران تأخیرها می‌باشد. پیمانکار باید فهرست عوامل درگیر در کارهای ساختمان و نصب، ازجمله پیمانکاران جزء، نیروی انسانی و ماشین‌آلات ساختمانی مربوط را به کارفرما تسلیم کند.

۳۲-۵ در موارد اختلاف پیمانکار و کارفرما درخصوص برنامهٔ زمانی پیمان، پیمانکار موظف به ادامهٔ عملیات طبق آخرین برنامهٔ زمانی مصوب بوده و به‌هیچ‌عنوان حق تعویق یا متوقف نمودن کل کار و یا بخش‌هایی از کار را ندارد، مگر اینکه دو طرف به نحو دیگری توافق کنند. در شرایط بروز چنین اختلافی، کارفرما نیز باید به تعهدات خود طبق آخرین برنامهٔ زمانی عمل کند.

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Risk/safety

- Ambiguity or conflicts

ماده ۲۹ - تأمین مصالح و تجهیزات، حمل و انبارداری آن‌ها

۲۹-۱ پیمانکار باید مصالح و تجهیزات و لوازم یدکی، ازجمله تجهیزات و کالاهای با زمان ساخت و تحویل طولانی[۳۶] را طبق اسناد و مشخصات فنی پیمان و بر اساس برنامهٔ زمانی، از فهرست منابع فروشندگان دستگاه مرکزی کارفرما به علاوه سایر منابع مورد تأیید کارفرما، مطابق پیوست شماره ۱۵ پیمان تأمین کند.

Risk/safety

- Comparison of the standard general conditions concerning who has **responsibility** for interpreting the contract documents.

AIA DOCUMENT A201™ General Conditions of the Contract for Construction	"4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents ..."
CONSENSUSDOCS® 200 Standard Agreement and General Conditions Between Owner and Constructor	"14.2.2. ...Subject to an equitable adjustment in Contract Time or Contract Price pursuant to Article 8, or a dispute mitigation and resolution, Owner's clarifications are final and binding."
CMAA CMAR-3 General Conditions of the Construction Contract Between Construction Manager and Contractor	"2.1.6 Should errors, omissions, or conflicts in the drawings, specifications or other Contract Documents prepared by the Designer be discovered, the Designer shall prepare such clarifications, amendments or supplementary documents and provide consultation as may be required."
DBIA 540 Standard Form of Agreement Between Design- Builder and Design Consultant	DBIA general conditions does not include any provision for the design professional to visit the site, however, the document identified at the left did include the following: "2.7.2 Design Consultant shall timely provide requested clarifications and interpretations of the Construction Documents, which shall be consistent with the intent of, and reasonably inferable from, the Contract Documents. ..."
EJCDC C-700 Standard General Conditions of the Construction Contract	"3.04 A ...Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder."

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Sustainability

- **Contract administration** is the **function of**

  implementing the **terms and conditions** of a contract

  based upon established systems, policies, and procedures.

- The key contract administration tools are the PMP/CMP, sustainability plan, and PPM.

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Sustainability

- When a project includes sustainability goals or features,

  The CM should **develop (or facilitate developing)**

  submittal procedures early in the project—

  1. In the pre-design phase if possible—
  2. To allow time for recording and controlling the flow of submittals required by the green building facilitator (GBF).

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Time

- Time management encompasses all aspects of scheduling during the project.

- Scheduling **integrates** the **restrictive elements** of time and resources **from planning through** design, construction, and project occupancy.

Main objectives of scheduling?

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Time

- The **main objectives of scheduling** are to
  1. Mitigate (or eliminate) time and resource **crises** and
  2. Predict a **completion date**

- Scheduling should be used as
  1. A **flexible tool**;
  2. A **means to an end**, not an end itself; and
  3. A **process** that reflects the management philosophy of the **construction management system**

Where to put scheduling terms?

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Time

- Scheduling and other time management contract provisions should be included in the
  1. **General conditions** and
  2. Other **front-end specifications** of the contract documents

  for every project and contract that requires schedules.

What does CM do here?

But wait …

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Time

AIA DOCUMENT A201™ General Conditions of the Contract for Construction	"3.10.2 The Contractor, promptly after being awarded the Contract, and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. ... The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. ..."
CONSENSUSDOCS® 200 Standard Agreement and General Conditions Between Owner and Constructor	"6.2.1 Before submitting its first application for payment, Constructor shall submit to Owner, and if directed, to Design Professional, a Schedule of the Work showing the dates on which Constructor plans to begin and complete various parts of the Work. ...."
CMAA CMAR-3 General Conditions of the Construction Contract Between Construction Manager and Contractor	"7.2.5 The Contractor shall submit to the CM the Contractor's Construction Schedule before mobilizing on site. The Contractor's Construction Schedule shall be acceptable to the CM as providing an orderly progression of the Work to completion within the specified milestones and the contract time ..."
DBIA 535 Standard Form of General Conditions of Contract Between Owner and Design-Builder	"2.1.3 Unless a schedule for the execution of the Work has been attached to the Agreement as an exhibit at the time the Agreement is executed, Design-Builder shall prepare and submit, at least three (3) days prior to the meeting contemplated by Section 2.1.4 hereof, a schedule for the execution of the Work for Owner's review and response. The schedule shall indicate the dates for the start and completion of the various stages of Work, including the dates when Owner information and approvals are required to enable Design-Builder to achieve the Contract Time(s). ..."
EJCDC C-700 Standard General Conditions of the Construction Contract	"2.03 Before Starting Construction Preliminary Schedules: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review: a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract; 2.05 Initial Acceptance of Schedules A.1 The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. ..."

I will discuss this later in this course!

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Time

- The CM may recommend **appropriate additions** to any contracts that do not include these provisions.

- Generally, the CM should ensure that

  Scheduling and other time management provisions of the contract

  properly reflect the time management standards and procedures to be implemented on the project.

Time

ردیف	نوع برنامه (انگلیسی)
۱	Master Schedule
۲	Milestone Schedule
۳	Design Schedule
۴	Pre-Bid Construction Schedule
۵	Overall Schedule
۶	Contractor's Construction Schedule
۷	Initial or Preliminary Schedule
۸	Construction Baseline Schedule
۹	Short Interval Schedule
۱۰	As-Built Schedule
۱۱	Occupancy Plan

این موارد را به همراه شرح فرآیندی آن‌ها در استاندارد مدیریت ساخت ایران منتشر خواهیم کرد.

البته این موارد آموزش کاملی دارند که در موسسه ارائه شده است.

https://dralavipour.com/video-course/web23

استراتژی مدیریت قرارداد

برای مدیران پروژه

راهنمای مدیریت قرارداد مختص مدیران پروژه (Contract Administration Guidelines)

بخش دوم: مدیریت قرارداد در فاز قبل از طراحی

ارائه دهنده:

سید محمدرضا علوی‌پور

(PhD, PMP, CMIT)

دانشگاه Illinois Tech آمریکا

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What we will learn?

- Introduction to pre-design phase
- Project management plan (PMP)
- Construction management plan (CMP)
- Project procedures manual (PPM)
- Documentation system
- Project delivery
- Project management information system
- Sustainability plan
- Owner's project requirement (OPR) document
- Conceptual studies
- Pre-design cost investigation
- Master schedule
- Milestone schedule
- Design consultant selection
- DESIGN CONSULTANT contract

INTRODUCTION TO PRE-DESIGN PHASE

CM pre-design tasks

- Depending on the established role, the CM may assist in the
  - Completion of planning for the project,
  - Initiating overall coordination with the various project team members, and/or
  - Selecting the designer

CM pre-design tasks – Appendix A

Pre-Design Phase Tasks	
ITEMS TO DEVELOP	**ADDITIONAL TASKS**
✓ PMP/CMP	✓ Project delivery methods
✓ PPM	✓ Conceptual studies
✓ Project Management Information Systems	✓ Pre-Design cost investigation
✓ Owner's Project Requirements	✓ Sustainability plan/environmental analysis
✓ Communications procedures	✓ Design consultant selection/contract
✓ Master or milestone schedule	

CM pre-design tasks – Appendix F

ATTACHMENT A
SCOPE OF SERVICES
This Attachment A is attached to and part of the Agreement for Program Manager between CLIENT and COMPANY dated DATE for the PROGRAM NAME. Capitalized terms used herein shall have the same meanings as in the agreement.

Program Manager - Responsibility Matrix
DATE
R - Responsible A - Approve C - Contribute I - Informed

		Scope Item	Owner	Program Mgmt	Notes
	The Program Manager shall provide the following services; these services shall include but not be limited to:				
A.	**Program Management Services**				
	1	Coordinate and support the Owner's Bond Program interfacing with Owner's leadership. Stakeholders of Various departments. and representatives of outside organizations interfacing with the Facilities	A,C,I	R	
	2	Support the Owner's Purchasing Department in evaluating cost sayings and effective purchasing of goods and services for the program.	A,C,I	R	
	3	Develop a Program Procedure Manual, which will provide the framework on how the program will be executed on a day-to-day basis. The manual will identify team member's roles and responsibilities, as well as, approval processes, lines of authority, reporting requirements, external communications with owner's leadership , stake holders, and additional procedures n necessary for the success of the program. The Program Procedure Manual shall incorporate all policies of the owner as adopted by the Board of Trustees, as well as, the requirements of the Owner's Facilities Specifications Guidelines to include local and state building authority's requirements	A,C,I	R	

CM pre-design tasks – Appendix F

		requirements			
	4	Review/Revise/Recommend Owner Construction. Commissioning. IT, FFE, and Security Standards.	A,C,I	R	
	5	Recommend/Coordinate Commissioning and Building Envelope Agent or Services for the projects.	A,C	C,R	
	6	Assign a designated program team member to coordinate the development of a website for public information regarding the overall Bond Program status and maintenance of the site including photographic and video media. Program Manager shall gather and provide all information necessary to update the status of the Program. All contend must be reviewed and approved by Owner before being uploaded and published by assigned team member. Program Manager shall ensure that the web site is updated each month thru the duration of the program	A,R	C,R	
	7	Review, Recommend Updates to the Program Management Plan. which outlines and defines the capital improvement scope, schedule. and budgets by project.	A,C	C,R	
	8	Develop the criteria and a process to identify and prioritize various work items, interfacing with the Project Managers and Facilities Department.	A,C	C,R	
	9	Provide Computer Scheduler/Analysts to develop and maintain a comprehensive master schedule, which documents the sequence and timeframe for each project within the Program. Reporting on the Program progress and status shall be sent to the Owner's Facilities Department at regular, defined intervals or as requested. Develop critical dates for each project schedule.	A,C	R	
	10	Prepare and maintain Program's master budget incorporating Cost Accounting Procedures. Produce cash flow models to track. anticipated project receipts against projected expenditures, incorporating and preparing periodic summaries of program expenditures for review. Prepare and maintain project cost model for project. building systems. and component estimating.	A,C	C	

CM pre-design tasks – Appendix F

	11	Utilize a Software System for Document and Data Control and project reporting to monitor program/project status and support of communications between team members. The system shall be used to track and control project information (e.g. contracts, costs, issue-tracking, design review, changes, payments, document control, meeting minutes.	A,C,I	R	
	12	Report on the market climate and recommend strategies to minimize project delays, project scope creep, and maximize project budgets. Provide analysis of Program/Project delivery methods to determine and optimal construction framework to complete construction projects timely and minimize school disruption.	I	R	
	13	As requested by the strategic Leadership Team and/or Chancellor, provide information sessions to the Board of Trustees regarding Program status and updates.	A,R	C,I	
	14	Schedule/Attend meetings as requested by the Owner. Meetings may be conducted during or after regular business hours. Examples of the types of meetings, which the Program Manager may be requested to attend			
		a) Project Review Meetings	C,I	R	
		b) Owner Board Meetings, including workshops and Board committee meetings.	A,R	C,I	
		c) Facilities Department Staff Meetings	A,C	C,R	
		d) Local Governmental Agencies	A,I	C,R	

PROJECT MANAGEMENT PLAN
(PMP)

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PMP components

- The CM may work with the owner and other project team members to define and document the project requirements.

- The resulting document, known as the **PMP**,
  typically outlines the plan and strategy
  for fulfilling the **project requirements** after **owner approval**.

- The PMP establishes the project scope, budget, schedule, environmental conditions, basic systems to utilize, and the methods and procedures to follow.

PMP components – Body of the documents

A typical Project Management Plan includes the following basic components:

- ✓ Project description
- ✓ Sustainability plan/Owner's Project Requirements (OPR) for sustainability
- ✓ Milestone schedule master schedule
- ✓ Quality management approach
- ✓ Design team's Basis of Design (BOD) document
- ✓ Reference to project documents
- ✓ Project organization chart and staffing plan
  - Explanation of roles, responsibilities, and authority of team members
- ✓ Project budget with work breakdown structure
- ✓ Environmental and/or archaeological considerations
- ✓ Reference to PPM
- ✓ Project Management Information Systems
- ✓ Communications protocol
- ✓ Bid packaging and contracting strategy
- ✓ Site mobilization and utilization phase
  - Commissioning plan

What is BOD?
When is it prepared?

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BOD

Basis of Design

(BOD)

The Basis of Design (BOD) documents the principles, assumptions, rationale, criteria, and considerations used for calculations and decisions required during design. The BOD is developed by the Designer and builds upon the PC and OPR. The BOD describes the technical approach planned for the project and is incorporated into the project technical specifications. The BOD is used as the basis for design calculations and other design decisions. It includes catalog cuts and manufacturers information used to set the minimum levels of quality or performance set by the design. It also includes a narrative to describe the design approach and evolves into a more detailed document that can be used later by maintenance and operations personnel for building operation, recommissioning, and maintenance.

BOD is submitted at the Schematic Design (SD) phase and is continually updated through the Design Development (DD) and Construction Document phase (CD).

Read basis-of-design PDF file uploaded to your profile.

PMP components – Appendix B

A typical PMP includes the following basic components:

- ✓ Project description
- ✓ Scope of work
- ✓ Milestone schedule
- ✓ Master schedule
- ✓ Quality management approach
- ✓ Safety management plan
- ✓ Reference to project documents
- ✓ Project organization chart and staffing plan
- ✓ Explanation of roles, responsibilities, and authority of team members
- ✓ Project budget/work breakdown structure
- ✓ Sustainability plan
- ✓ Logistics including temporary construction support requirements, i.e. laydown or marshaling area
- ✓ Environmental/archaeological considerations
- ✓ Reference to project procedures manual
- ✓ Management information system
- ✓ Communications protocol
- ✓ Bid packaging, contracting strategy, and delivery system evaluation
- ✓ Site mobilization and utilization phase
- ✓ BIM implementation strategy

What is Milestone schedule?
What is Master schedule?

CONSTRUCTION MANAGEMENT PLAN
(CMP)

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CMP components

- The PMP may also include the **construction management plan**.

- The **CMP** can be
  1. A component of the PMP or
  2. A stand-alone document/strategy that is incorporated into the PMP by reference.

- The CMP **typically**
  1. **Outlines** the approach that will be used to manage the construction phase of the project and
  2. **Identifies** possible impacts on the area **around the project**.
- The CMP may also **detail**

  schedules, costs, and the tasks to be accomplished.

CMP components

A CMP may include the following components:	
✓ Project overview ✓ Public safety (police, perimeter, emergency access) ✓ Perimeter coordination (other construction projects, signage, utilities, trees)	✓ Construction logistics (work hours, waste management, parking, sanitation) ✓ Mitigation (air, noise, water, vibrations)

CM role here regarding PMP and CMP

- On projects with both a CM representing the owner and a CMAR,

  both would have to **document** project cost and time.

1. The CMAR would typically handle the **more detailed documentation (primary)**
2. The CM representing the owner would use the **documentation** to
   1. Verify progress
   2. Provide status reports

PROJECT PROCEDURES MANUAL
(PPM)

CM responsibility for PPM

- The CM should develop a PPM that clearly defines
  - The responsibilities of the project team,
  - Levels of authority, and
  - The systems, methods, and procedures to be followed for project execution

What are the components of PPM?

PPM components – Appendix B

The PPM should address:

- ✓ Cost controls and the systems required for monitoring and controlling project costs
- ✓ QC and quality assurance program established by the team and how it is to be implemented
- ✓ The project schedule and how it is to be developed, implemented, and maintained
- ✓ Document control and specific project systems, methods, and procedures (i.e. bidding, payments, charge orders, submittals, correspondence, reports, performance records, claim resolutions, etc.)
- ✓ Functional responsibilities and limits of authority
- ✓ Correspondence distribution matrix
- ✓ Safety program
- ✓ Checklists
- ✓ Meetings listing (i.e. type, frequency)
- ✓ Sample forms to be used
- ✓ Detailed bidding and construction phase procedures
- ✓ Coordination among various prime contractors
- ✓ Sustainability requirements

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PPM components

- The **basic elements** of the PPM include:
  - The budget and the systems required for **monitoring and controlling** project costs.
  - Procedures for controlling the **flow of information** between all parties.
  - The quality assurance program established by the team and how it is to be **implemented**.
  - The project schedule and how it will be developed, implemented, and maintained.
  - Specific project systems, methods, and procedures (i.e. bidding, payments, contractor schedule forensics, change orders, submittals, correspondence, reports, performance records, claims avoidance/resolution).

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PPM components

- The **basic elements** of the PPM include:
  - **Defining** requirements for the project (for example sustainability) and **establishing** procedures to monitor and **confirm** the requirements have been met.
  - Functional responsibilities and limits of authority.
  - Change management and invoicing procedures.
  - Correspondence distribution matrix.
  - Checklists.
  - Meetings (types and frequency) and minutes (documentation and distribution).
  - Sample forms to use.
  - **Detailed** procurement phase procedures.
  - Coordination between the team members during all project phases.

PPM components

- The **basic elements** of the PPM include:
  - Communication plan that includes **detailed information** about change management.
  - **Design review** process and procedures.
  - Project acceptance and closeout procedures.
  - **Procedures** for verifying compliance with all **safety laws and regulations**.

DOCUMENTATION SYSTEM

Solid documentation system

A solid documentation system may include:	
✓ Correspondence	✓ Issues book
✓ Conversation & phone logs	✓ Meeting minutes
✓ Claims/Notices of intent	✓ Project diary
✓ Photos and videos	✓ Inspector reports
✓ Submittals/shop drawings	✓ Contract documents
✓ Clarifications from architects	✓ Test reports
✓ Changes	✓ Invoices
✓ Contractor progress payments	✓ Certified payroll
✓ Schedules	✓ Pay applications

PROJECT DELIVERY

Delivery methods

- The **CM** must
  1. Be aware of the project delivery method chosen by the owner and
  2. Provide appropriate contract administration processes to manage the type of contract and/or contracts selected.

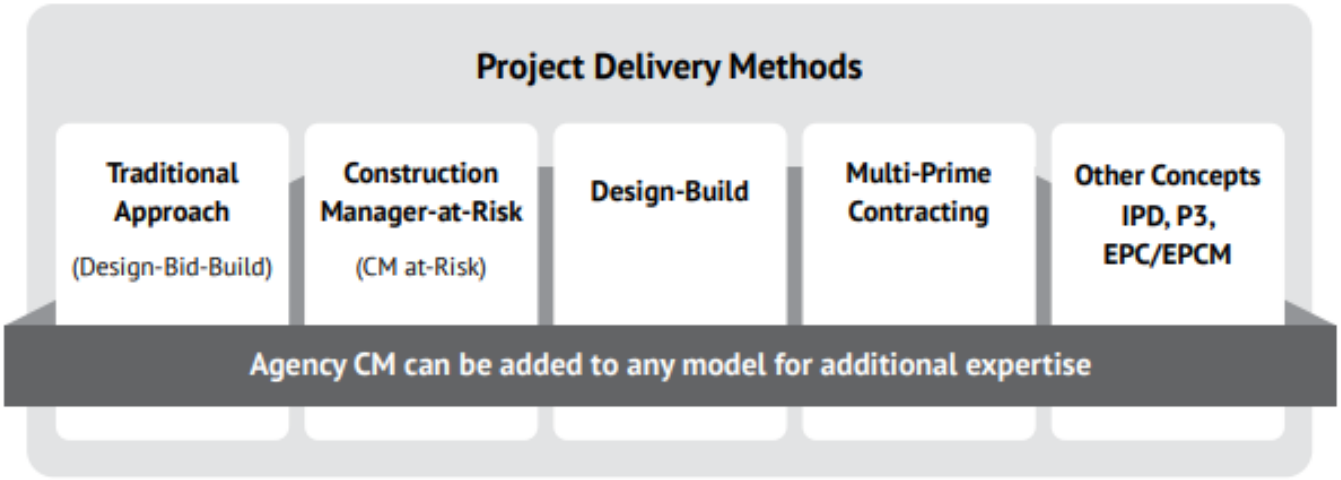
Delivery method selection

- Even before design,

  the CM should provide guidance to the owner concerning **various methods available** to deliver the project,

  e.g. design-bid-build, design-build, multiple prime contractors, CM at-Risk, and others.

Project delivery methods



Agency construction management

- **Agency CM** is a professional service that an owner can **use regardless** of the project delivery method selected.

- The owner and agency CM have a defined relationship

  that establishes a **specific role for the CM**

  acting as the owner's principal agent in connection with the project and/or program

Comparing of CMAA agency series and AIA contracts

CMAA Agency Contracts	AIA A101, B132 Contracts
✓ 1 or more construction contracts ✓ CM is the owner's principal agent ✓ The CM handles the contract administration ✓ The designer handles the design	✓ 1 or more construction contracts ✓ The designer is the owner's principal agent ✓ The designer handles the contract administration ✓ The designer handles the design

CMAA Document A-1

Standard Form of Agreement Between
OWNER AND CONSTRUCTION MANAGER
Construction Manager as Owner's Agent

2013 EDITION

AIA Document A101™ – 2017
Standard Form of Agreement Between Owner and Contractor *where the basis of payment is a Stipulated Sum*

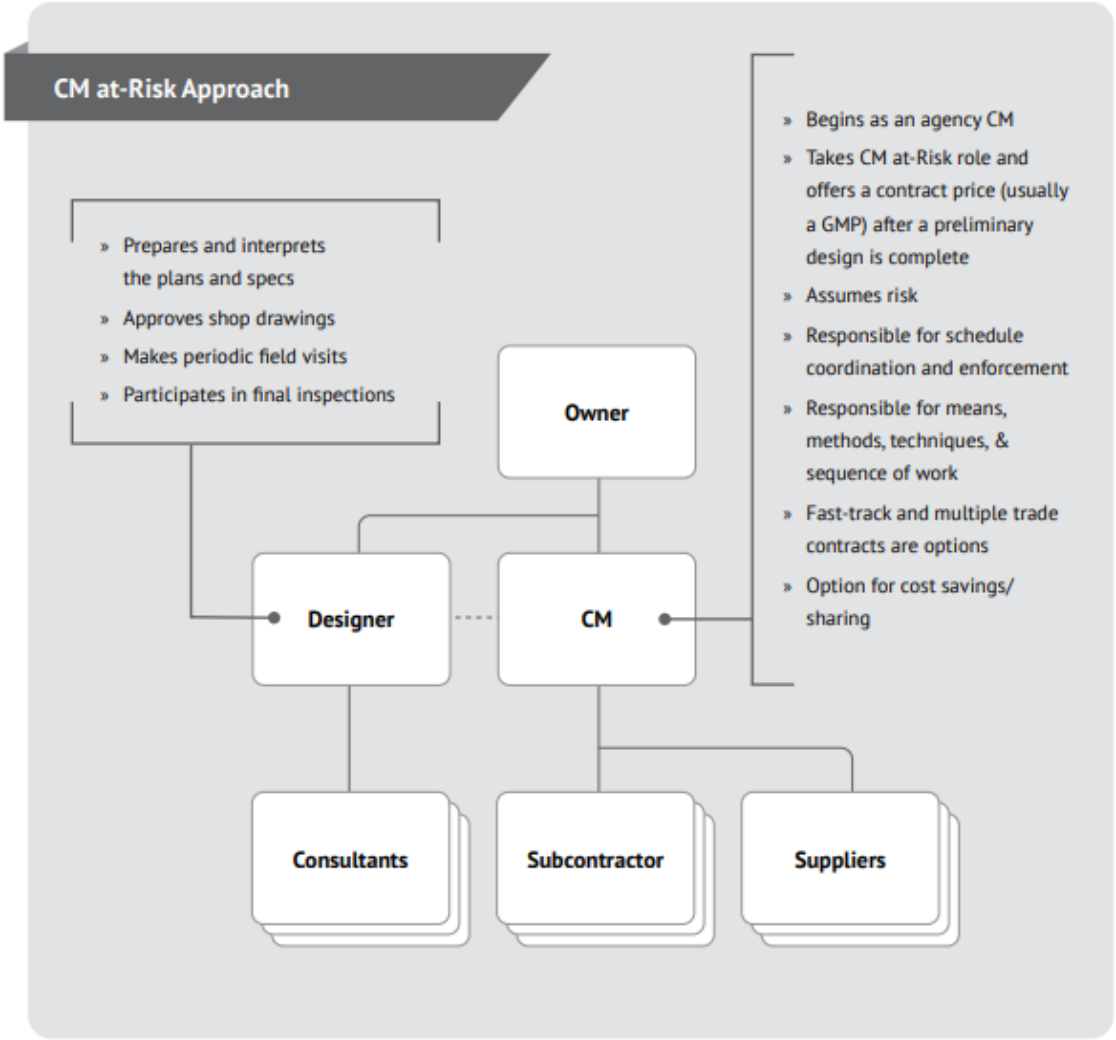
AIA Document B132™ – 2019
Standard Form of Agreement Between Owner and Architect, *Construction Manager as Adviser Edition*

Will talk later in this course!

Construction management at-risk (CMAR or CM at-risk)

- Using qualifications-based selection vs. low price,
  1. The **contractor** is sometimes **first hired** as an advisor CM
     who works with the owner and design team in the development phases in part by
     1. Analyzing documents for constructability,
     2. Developing a logistic plan, and
     3. Providing **estimates** at the design milestones.
  2. Once the design phase is almost complete, the **owner asks for a GMP**.
     i. The **owner can accept** the GMP
     (which includes both contractor and owner contingencies) and the **CM becomes the CMAR**.
     ii. If the owner **does not accept** the GMP,
     one of the **alternatives** is to complete the design, **advertise the construction opportunity**, and perform the project as a **traditional D-B-B**.

Construction management at-risk (CMAR or CM at-risk)



Comparing of CMAA CM at-risk and AIA contracts

CM at-Risk	AIA A133, B133 Contracts
✓ CM's extensive professional services during design ✓ Self-perform work only if low bid, owner approves, and a separate Guaranteed Maximum Price (GMP) contract is signed ✓ Owner may reject GMP, CM may continue as agent ✓ Owner may require additional services after GMP is signed	» CM's limited professional services » during design » CMs may self-perform work at their own discretion without submitting bids » No option for owner to reject GMP and continue CM's services » No option for owner to require additional services after GMP is signed

Will talk later in this course!

Design-Build (D-B)

- A project delivery method which **combines**

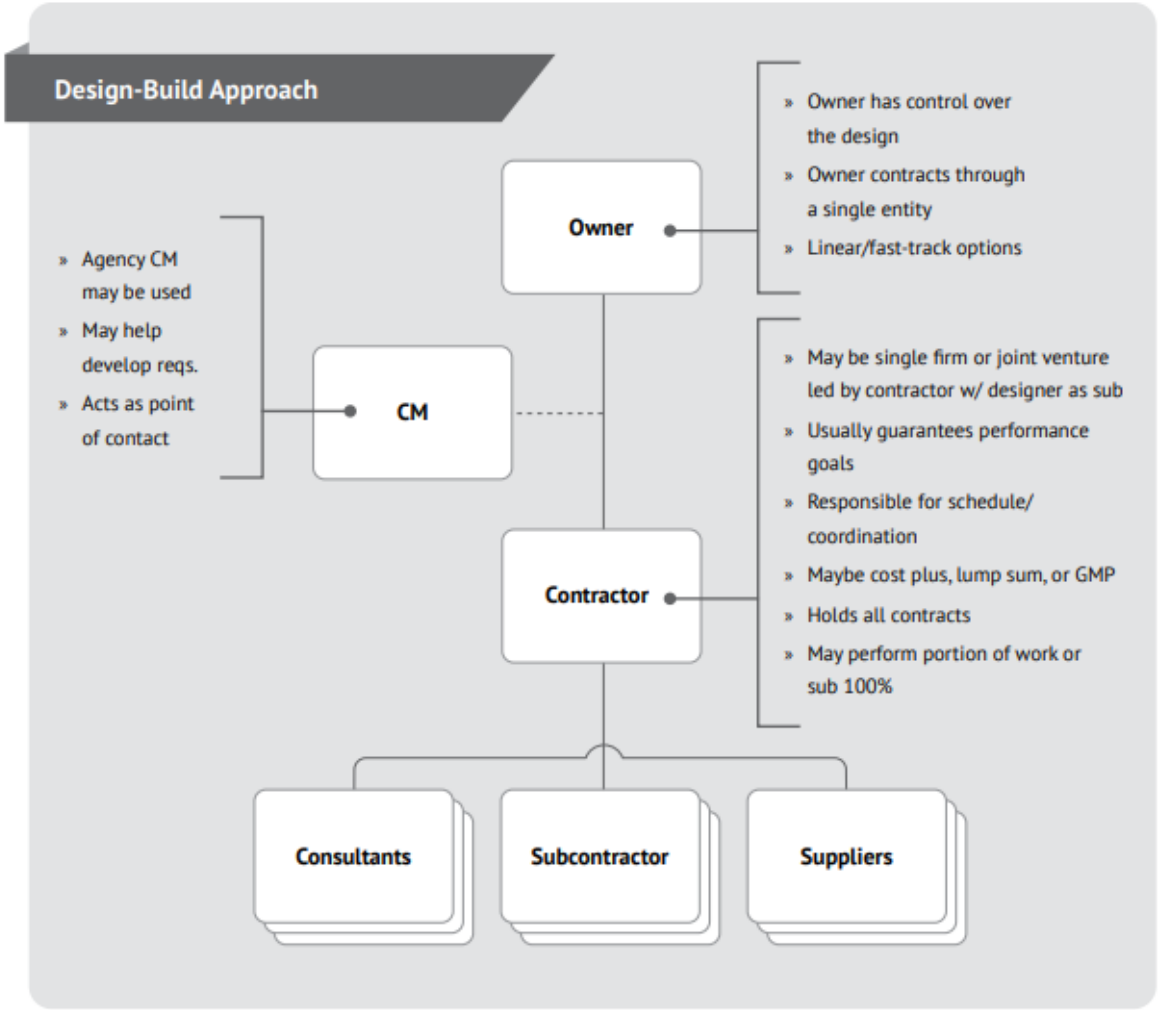
  architectural and engineering design services with

  construction performance

  under **one contract**.

Remember the variations presented in Construction Management Course?

Design-Build (D-B)



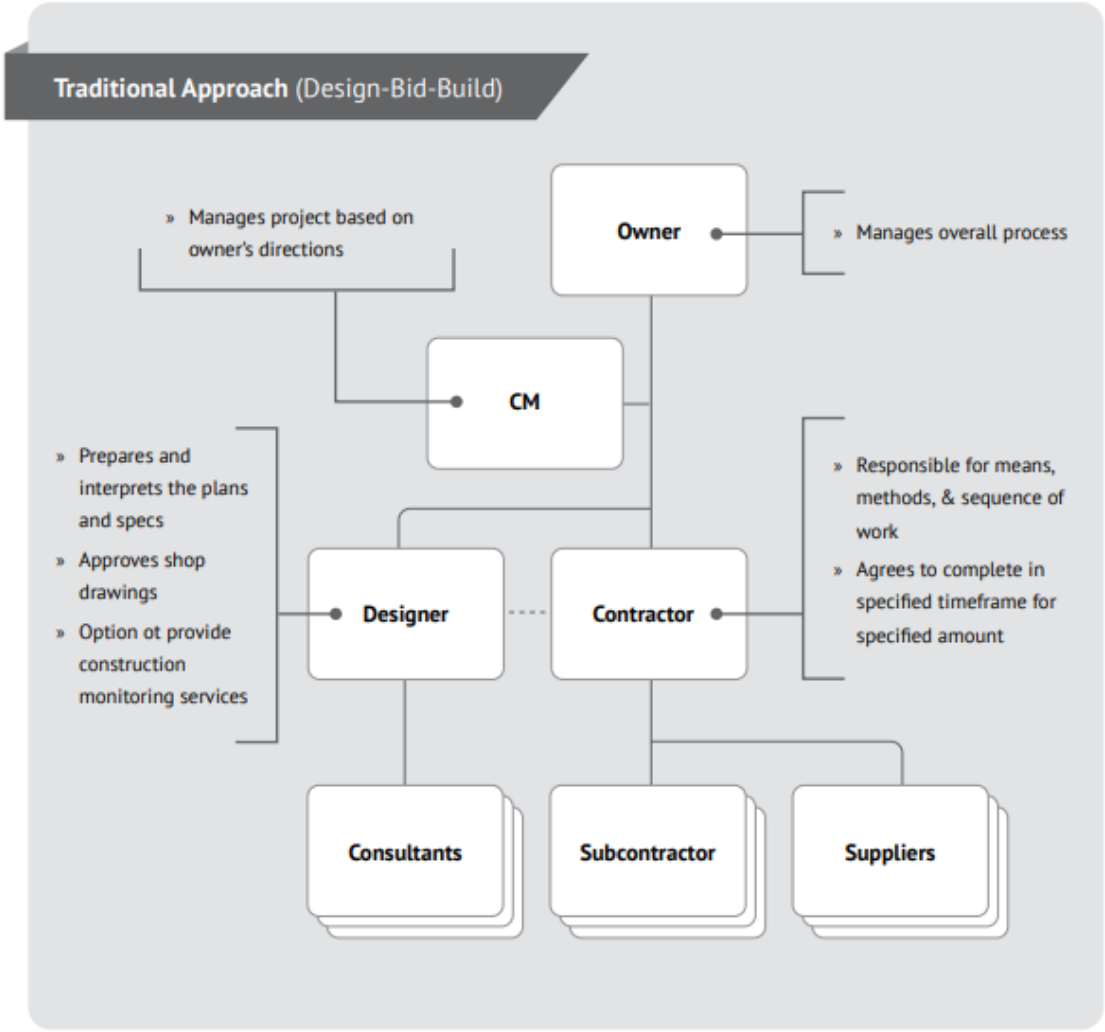
Design-Bid-Build (D-B-B)

- The **traditional US project delivery method** involves the **owner first contracting** with a designer (architect/ engineer or engineer) to prepare construction documents.

- Then the **owner** **advertises** the construction opportunity and **accepts** **lump sum, fixed-price bids** from contractors.

- The owner
  1. **Chooses** the lowest priced responsible (qualified) bidder and
  2. **Establishes** a separate contract with the contractor, who subcontracts trade (discipline) work and
  3. **Hires** a designer to create 100% milestone and construction documents for the project.

Design-Bid-Build (D-B-B)



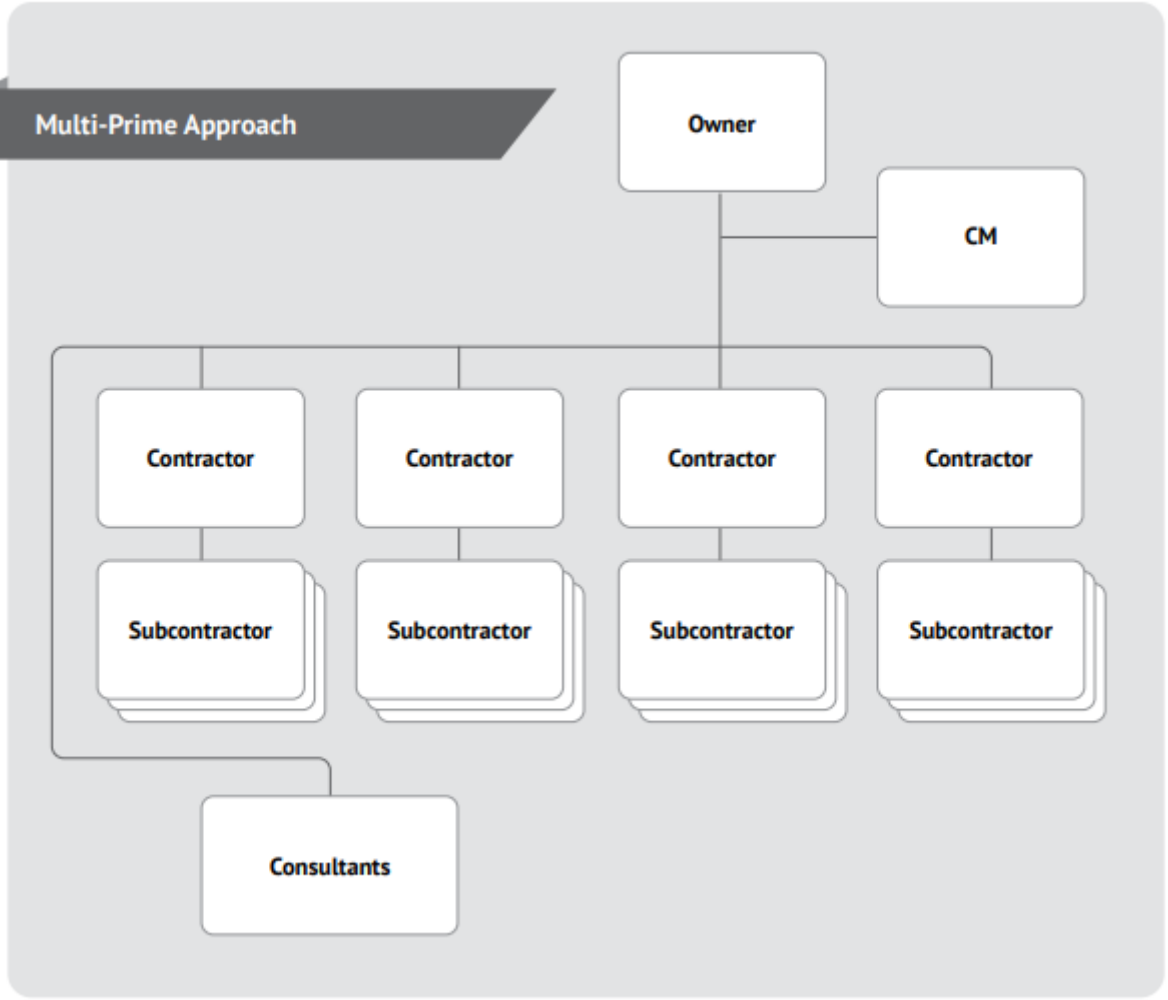
Multi-prime contracting

- An owner **contracts directly** with separate trade or discipline contractors for specific and designated elements of the work,

  rather than with a single general or prime contractor.

- This method enables the owner
  1. An opportunity to fast track the project;
  2. Gains the flexibility of **bidding portions** of the work as **soon as the design** for that aspect is complete.
- The major disadvantage is the **additional coordination** in the development of separate bidding and contract packages for each separate prime contractor.
  - If **not coordinated properly**, there is the **possibility of work scope** being duplicated or omitted.
  - The **owner assumes** these risks as they have basically become the general contractor.

Multi-prime contracting



Other methods

Engineering, Procurement, Construction (EPC)

- EPC is a **prominent form** of contracting agreement used to undertake construction works by the private sector on large-scale and complex infrastructure projects, especially in the energy sector.
- The **engineering and construction contractor** will carry out the detailed engineering design of the project, procure all the equipment and materials necessary, and then construct to deliver a functioning facility or asset to their clients.
- Companies that deliver EPC projects are commonly referred to as EPC contractors.
- Normally the **EPC contractor** must execute and deliver the project to the **"turn of the key"** within an agreed time and budget,

  commonly known as a Lump Sum Turnkey (LSTK) Contract.

Other methods

- **Engineering, Procurement, Construction Management (EPCM)**
  - In **contrast to the EPC model**,

    EPCM contractor is **not directly involved** in the building and construction of the project,

    but is rather **responsible** for the detailed design and overall management of the project,

    on behalf of the owner or principal.
  - While an **EPC contract** takes the form of a design and construction contract, the EPCM model can be regarded as a professional services contract.

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Other methods

Integrated Project Delivery (IPD)

- A project delivery method that contractually requires collaboration of the primary parties - the owner, the designer, and the builder,

  so that the risk, responsibility and liability for project delivery are collectively managed and appropriately shared

  whether through

  1. Partnership agreements or
  2. Multi-party contracts

Other methods

Job Order Contracting (JOC)

- This delivery method is effective for **managing standard construction projects** quickly using multi-year contracts for minor projects including **renovations and repairs**.
- A JOC is a contract with a fixed term or maximum value where a **contractor** is chosen through a competitive bid to perform **job orders** during the **contract period**.

Project team role – Appendix F

TO: Project Team Members

FROM: XXXXX, Director Planning and Development Division

DATE:

SUBJECT: Project Team Roles and Responsibilities

The success of our capital development projects depends largely on the effectiveness of the Project Team. When the Project Team works cooperatively together to determine the scope of work, the project is much more likely to satisfy user expectations and be completed within the approved budget and schedule.

As with anything that involves a team of people, open communication, acceptance of other's views, and willingness to compromise are critical to creating an effective working environment for the team. The purpose of this memorandum is to make certain that everyone participating on the Project Team understands their roles and responsibilities as a member of the project team. The mission of the Project Team can best be described as follows:

We as the Project Team are committed to an effective development process that creates a clear definition of the purpose and scope of a project, sets attainable goals for the project, and is accountable for results.

Project team role – Appendix F

- Roles and Responsibilities of the Project Team Members are as follows:

Team Leader

- Send memo to the Division Directors soliciting team members.
- Determine which outside agencies or organizations should participate on the team and at what level.
- Chair team meetings, prepare meeting minutes, and distribute project information to team members for review, comment, and approval.
- Develop a full understanding of the expectations that each team member has for the project.
- Maintain open and effectiveness lines of communication with all team members.
- Document in writing all decisions made by the team.
- Complete the project within the parameters (deliverables, budget and schedule) of the Park Authority Board approved project scope.
- Involve Division Directors if consensus on an issue cannot be reached.
- Secure approval from Senior Management prior to changing the approved project scope.

Project team role – Appendix F

- Roles and Responsibilities of the Project Team Members are as follows:

Team Participant

- Develop a full understanding of the expectations that each team member has for the project.
- Maintain open and effectiveness lines of communication with all team members.
- Review meeting minutes and other project-related information and provide comments in a through and timely fashion.
- Anticipate project issues and bring them forward for discussion as soon as possible.
- Serve as the project point of contact for your Division.
- Obtain your Division Director's approval for items requested outside of the approved project scope.

Thank you in advance for your continued support of the XXXXX Project team concept.

PROJECT MANAGEMENT INFORMATION SYSTEM

موسسه مهندسی و مدیریت ساخت علوی پور (ACEMI)

دفتر آموزش

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