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Types of Construction Contracts

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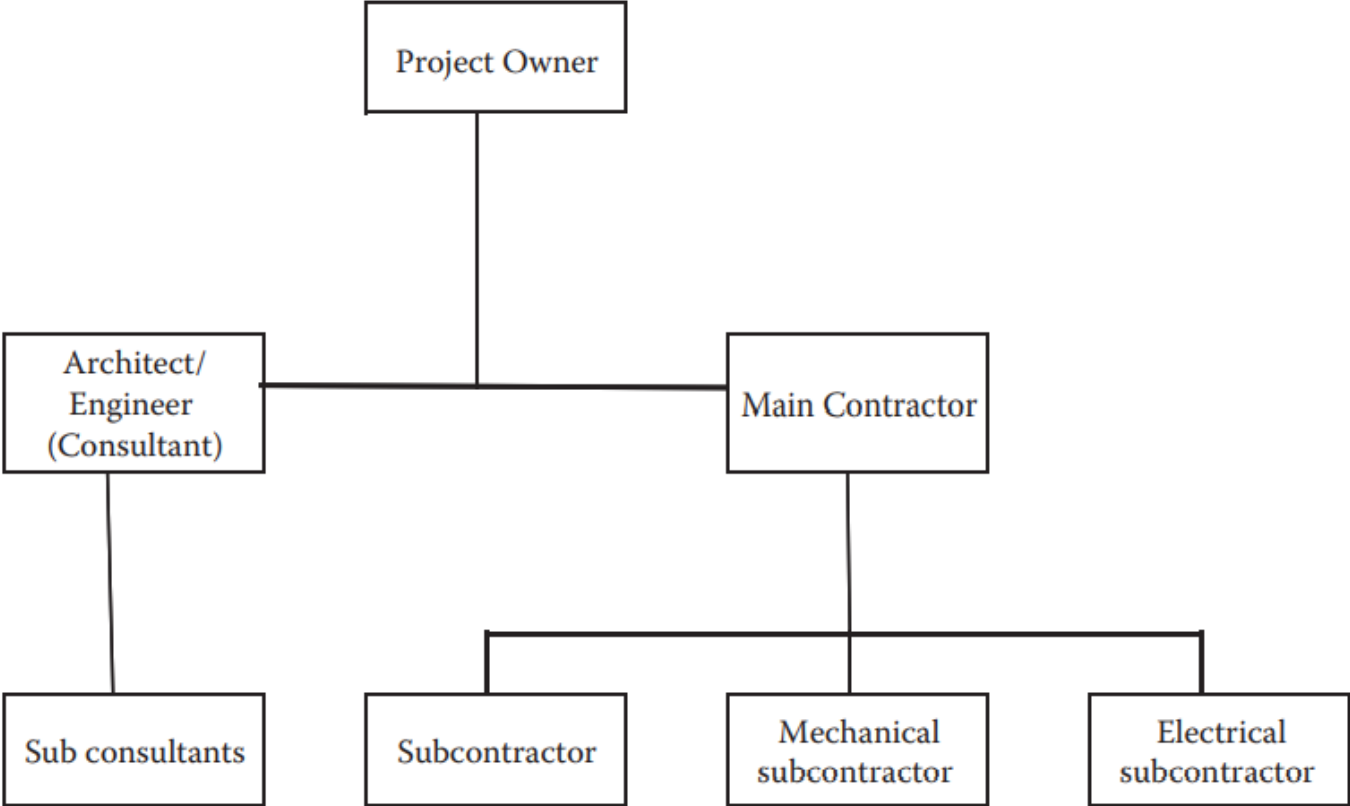




Design/Bid/Build

- Preparation of complete detailed design and contract documents for tendering
- Receiving bids from prequalified contractors
- Award of contract to successful bidder

Design/bid/build type contracting system



Source: Rumane (2011)

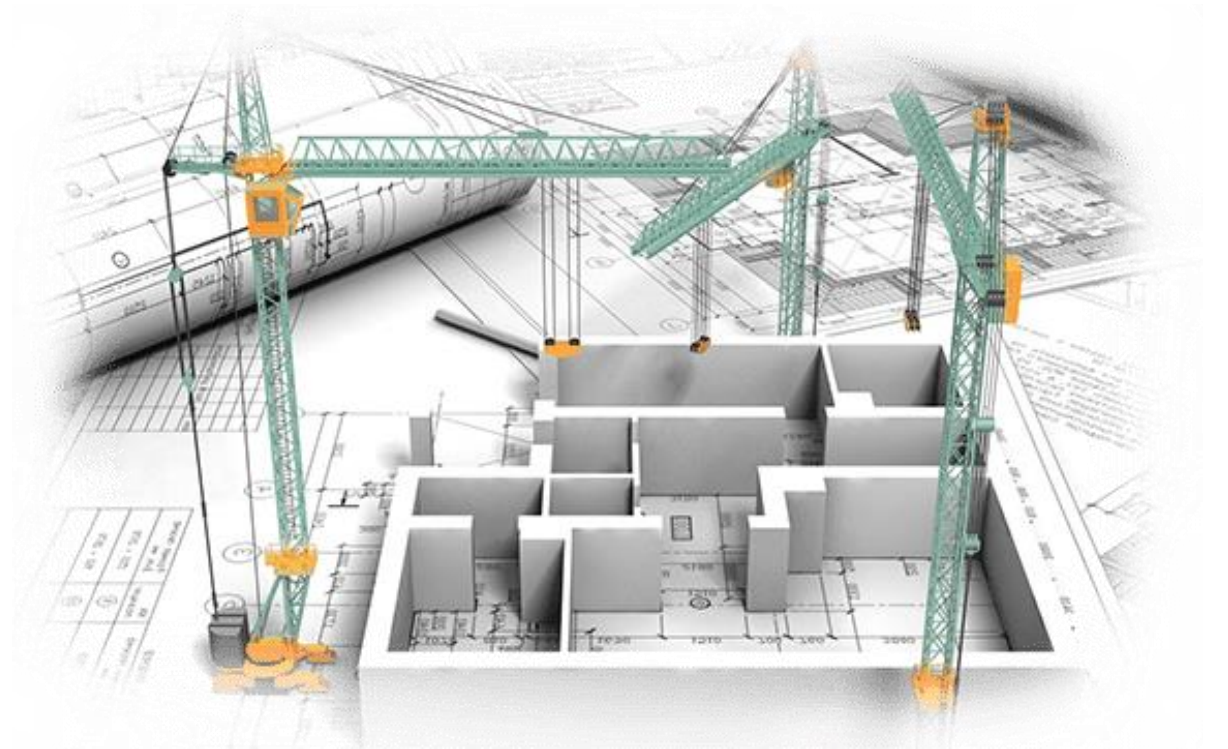


Responsibilities

- Structure, design - responsibility of architect or engineer employed by the client.
- Construction - primarily responsibility contractor.
- **Any variation, or change, during the construction needs prior approval from the owner/client.**

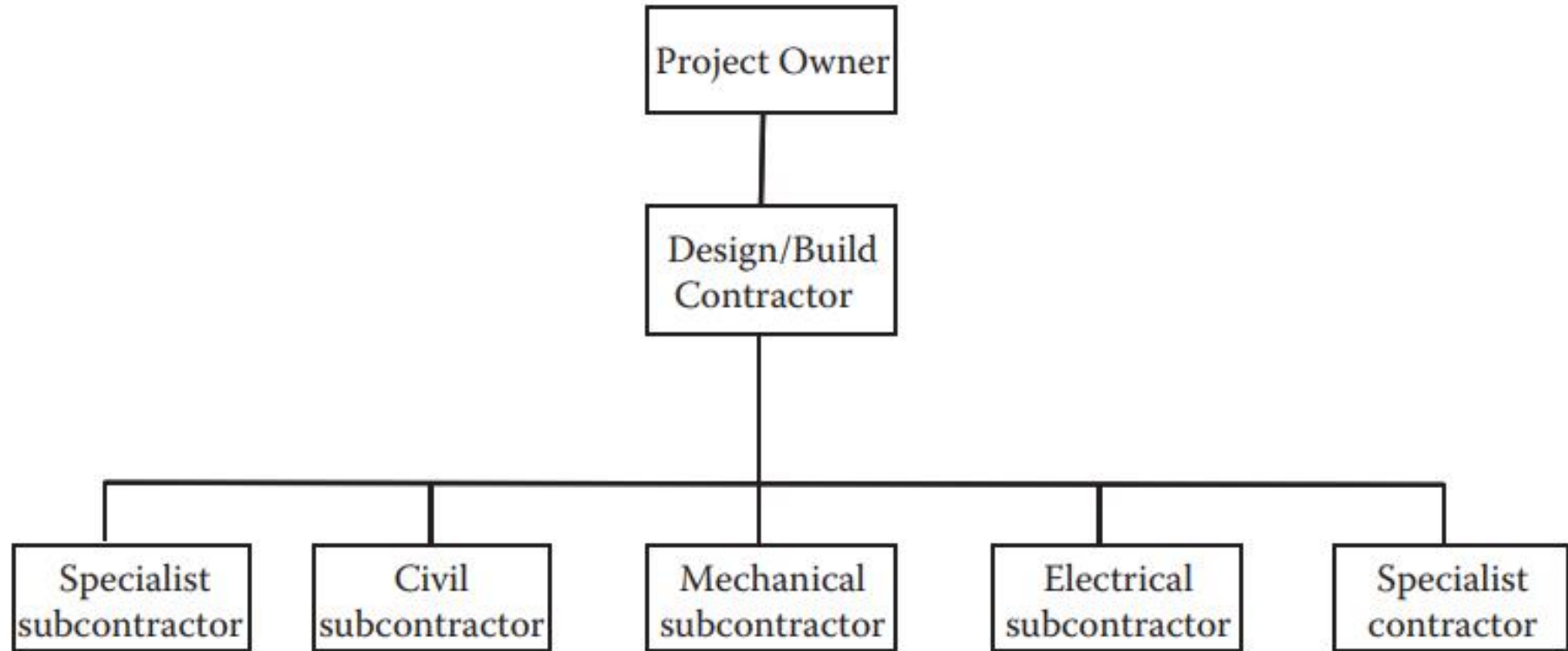
Design/Build

- The owner contracts a single firm to design and build the project.



Source: Rumane (2011)

Design/build type contracting system

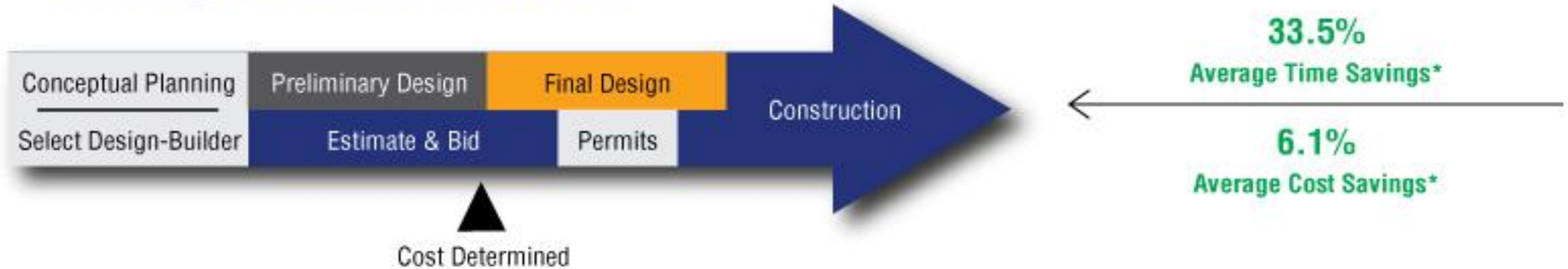


Source: Rumane (2011)

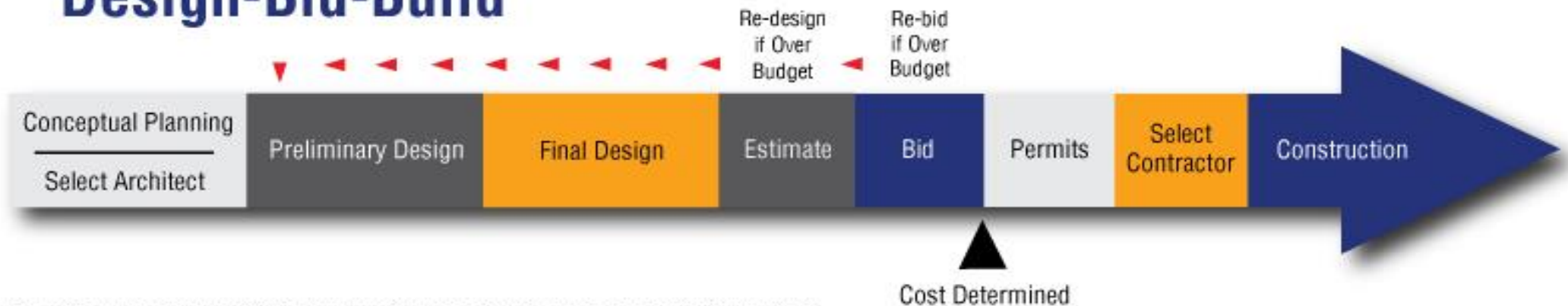
The Benefits of Design-Build

Best Value. Faster Completion. Reduced Cost.

Design-Build Method



Design-Bid-Build



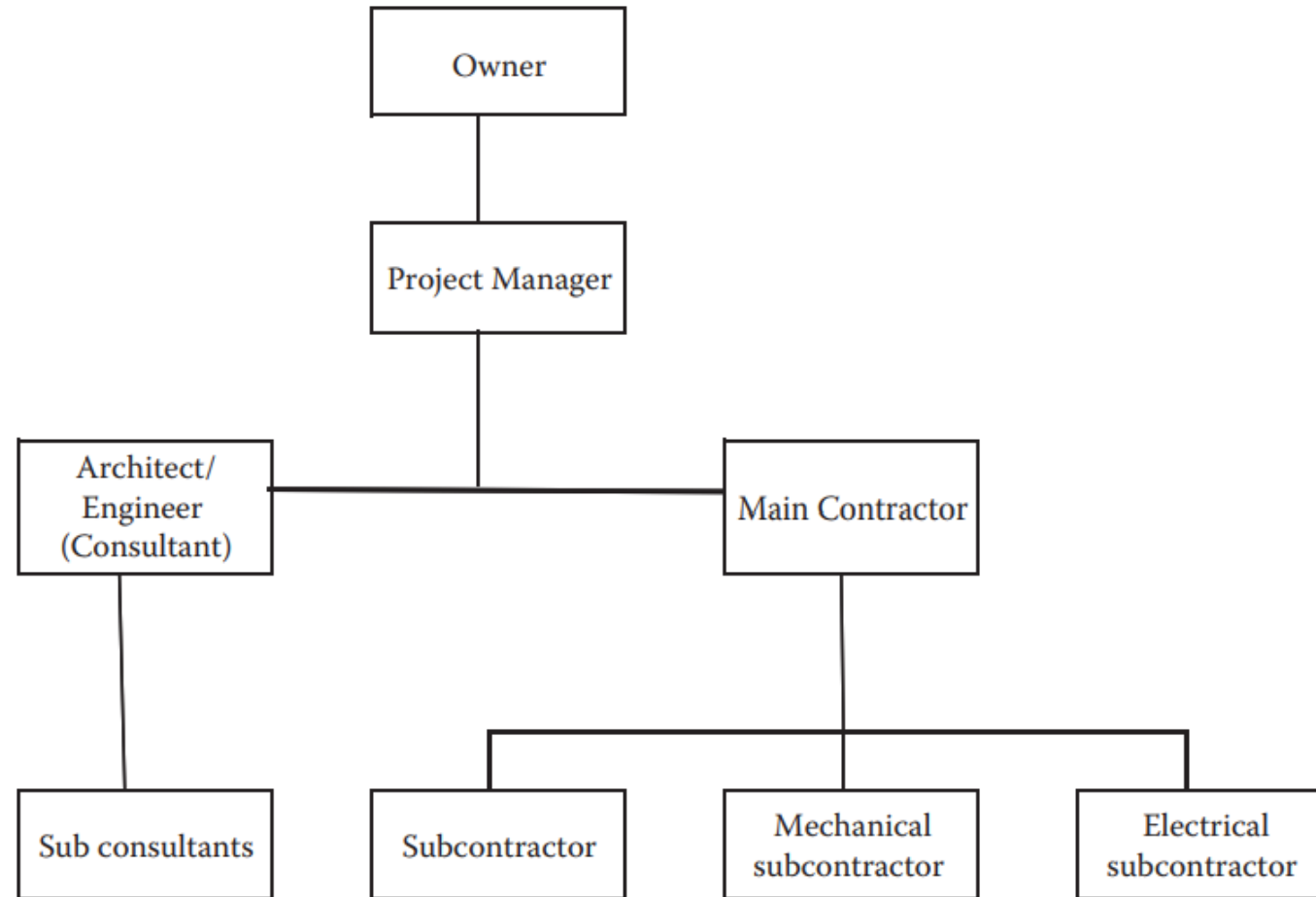
*Source: Construction Industry Institute/Penn State research comprising 351 projects ranging from 5,000 to 2.5 million SQ. FT.



Project Manager

- A project manager contract is used when the owner decides to turn over the entire project management to a **professional project manager**.
- Project manager is the owner's representative and is directly responsible to the owner.
- The project manager is responsible for planning, monitoring, and managing the project.

Project manager type contracting system



Source: Rumane (2011)

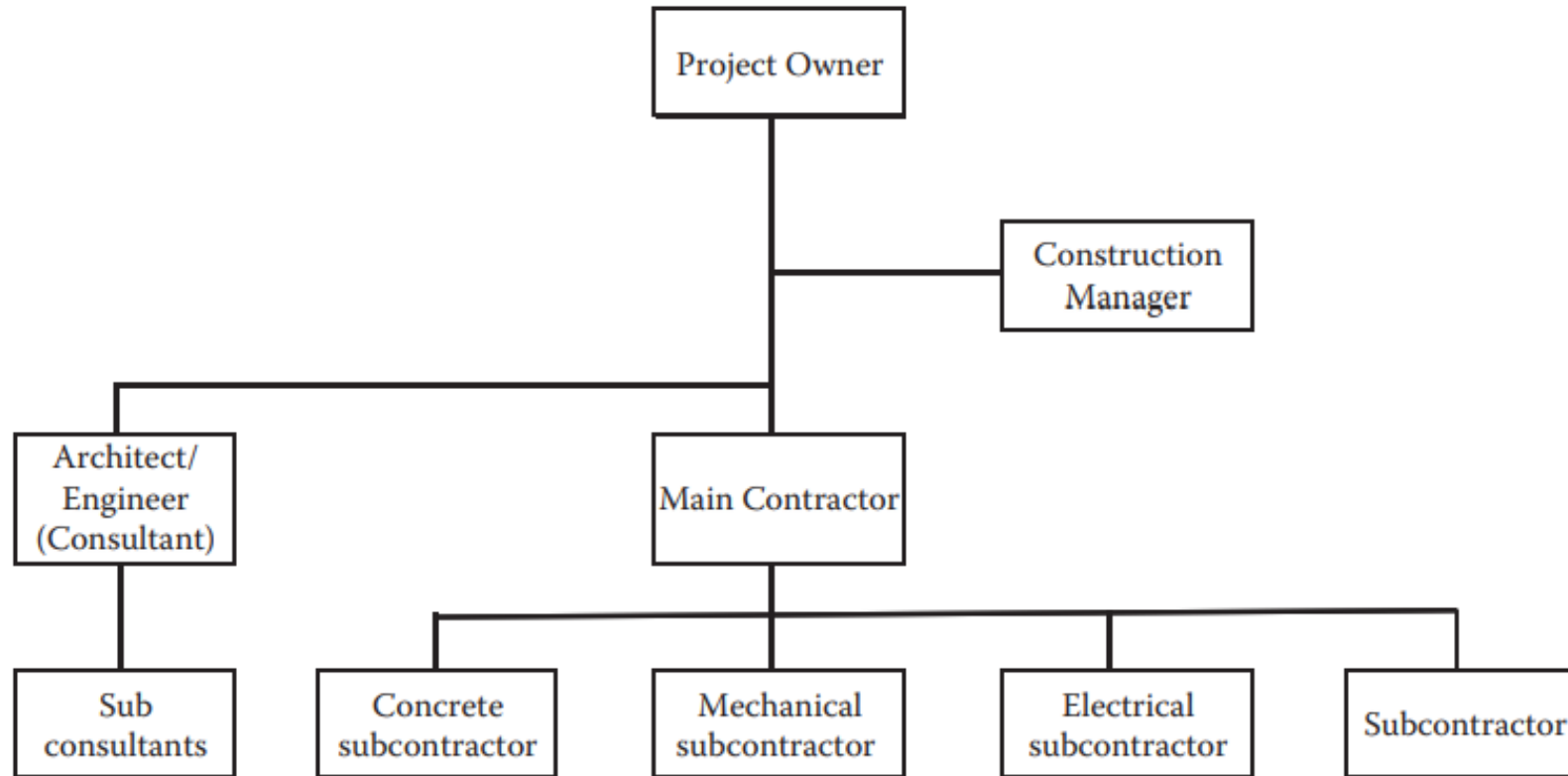
Construction Manager

- The owner contracts a construction management firm to coordinate the project and to provide construction management services.



Source: Rumane (2011)

Construction manager type contracting system

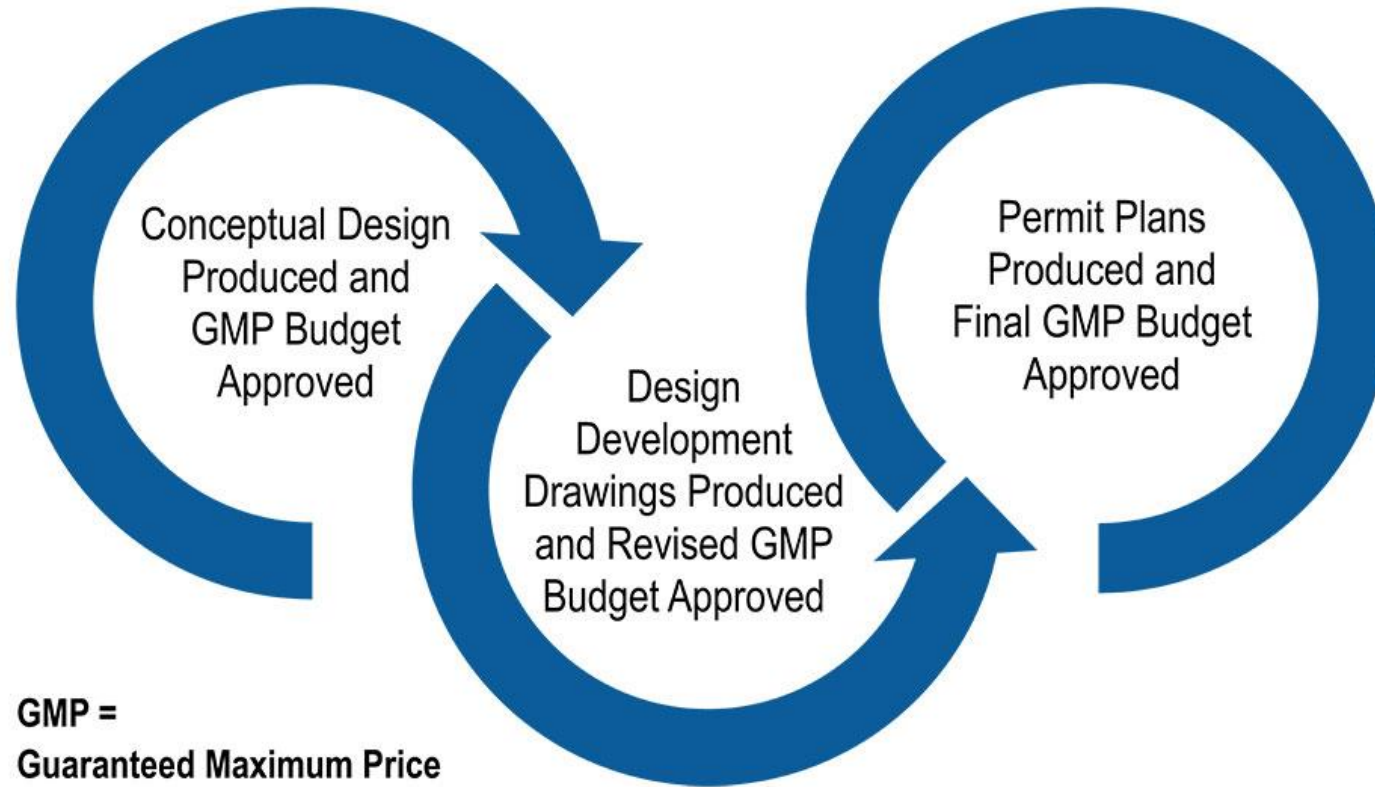


Source: Rumane (2011)



Guaranteed Maximum Price

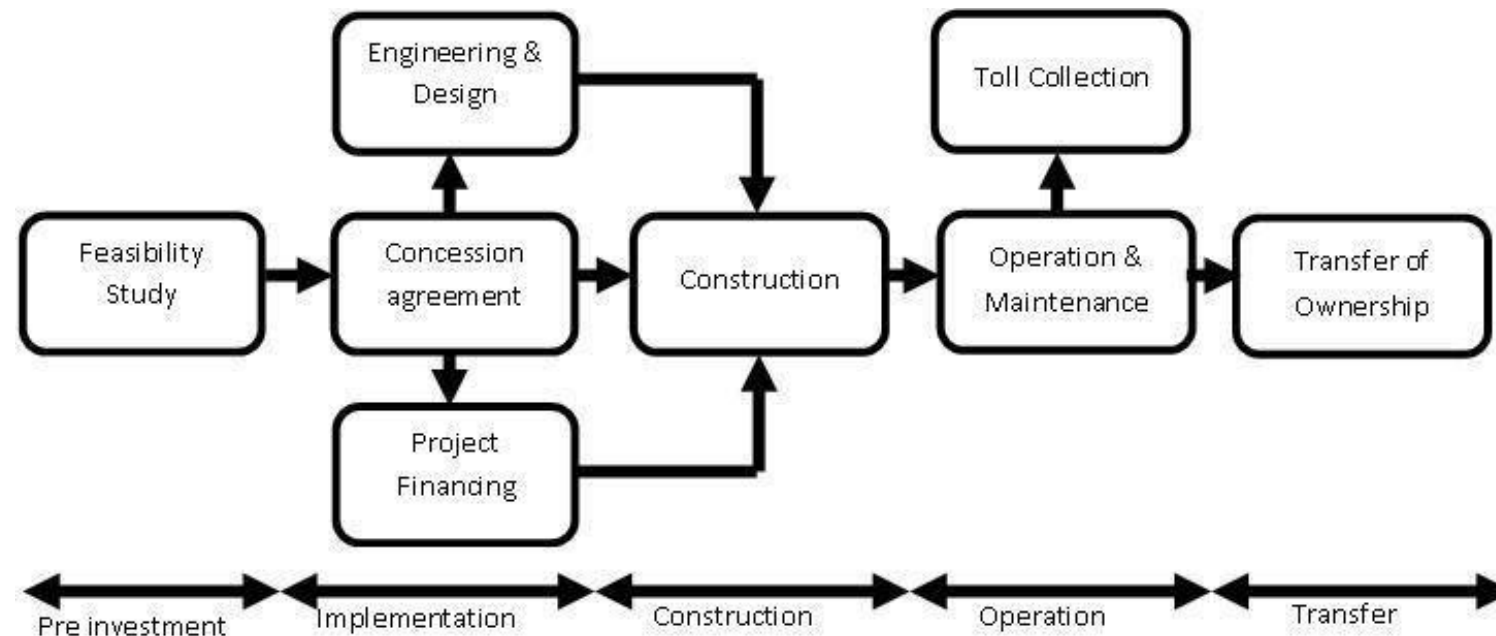
- The contractor agrees to a fixed fee and profit at a cost **not to exceed pre-established max. price.**
- Costs above the guarantee are **absorbed by contractor.**
- Savings may be reverted to the owner or shared by the owner and the contractor.



Source: <https://www.fraser-construction.com/design-build>

Build–Own–Operate–Transfer

- Generally used by governments to develop public infrastructure by involving the private sector in financing, designing, operating, and managing the facility for a specified period and then transferring the facility to the same government free of charge.



Source: <https://sites.google.com/site/riskbotnitk/literature-revi/risk-allocation-and-cash-flow-management>

Example: Millau Viaduct (France)



Photo: https://en.wikipedia.org/wiki/Millau_Viaduct#/media/File:Creissels_et_Viaduct_de_Millau.jpg

The Turnkey Contract

- The owner employs a single firm to undertake design, procurement, construction, and commissioning of the entire work.
- The firm is also involved in management of the project during the entire process of the contract.



Source: Rumane (2011)

Engineering, Procurement and Construction (EPC)

EPC			
Scope of Work	Technical specifications	Testing & acceptance	Performance & Gurantees
Engleer & Design	Design & technology	Construction Monoltroring	Peilformance mesurment & Calculation
Component Procurment			
Construction & Installation			
Test & Commissioning		Completion test	Guaranteed Performance
Decommissioning	Brand & quality	Provislonal Commissioning	Defect llablility period / EPC warranty
Site/Structral Study			
Weather Station			
Surveillance / Security			
Site Perparation	Component warrantlies	Final Commissioning	Final Commissioning
access roads/ Paths			
O&M Manual Provision			
Spare Parts			

Source: <http://photosunsolar.com/engineering-procurement-construction-epc/>



Questions?

