



An Introduction to Design-Build and Sustainable Projects

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Quiz

- How many years has design-build been a viable option for projects: 21, 175, 733, 1927, 3654?
- Is design-build a market, industry, or delivery method?
- In regards to design-build, “sustainable” means: 1) the ability to sustain long-term business operations, 2) the ability of the market to sustain design-build work, or 3) “green” construction?
- Is meeting a sustainability goal the same as being sustainable?
- Is there a difference between DBB and DB sustainability?

Overview

Design-Build

- Project Delivery timeline
- Origins of the Master Builder
- The Rise of Professionalism
- Effects of the Industrial Revolution
- Professional Societies
- Legal Separation of Design and Construction

Fundamentals of Design-Build ©2004 by DBIA

Sustainability

- Executing the Sustainable Project
- Difference Between Sustainable and Meeting a Sustainability Goal
- What's Different About Design Bid Build "Sustainable Projects" and DB "Sustainable Projects"?
- Why D-B Might Be Your Best Sustainable Choice
- Legal Considerations...

History of Project Delivery

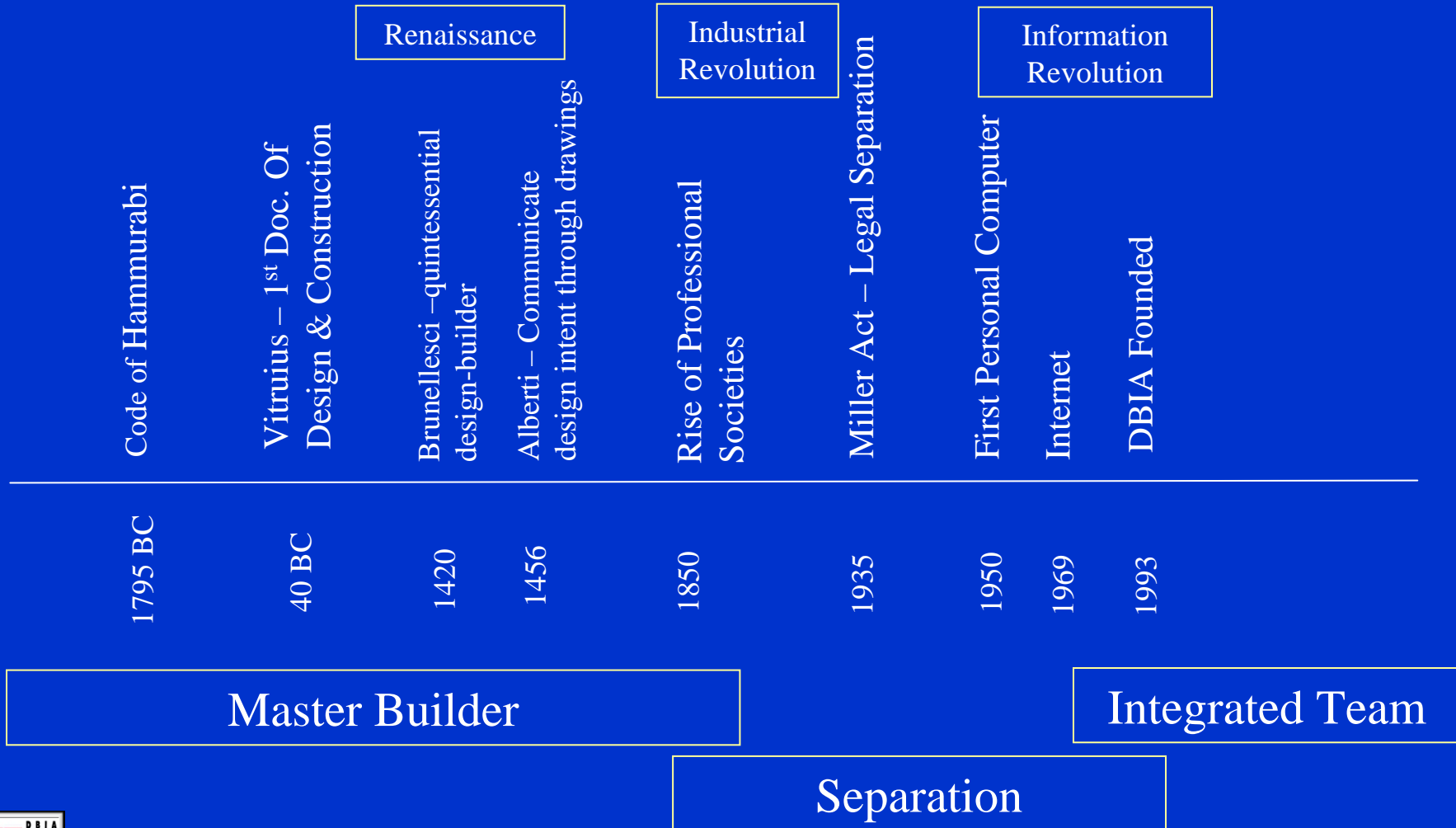
History of Project Delivery

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Project Delivery Timeline



History of Project Delivery

■ The Master Builder

- Code of Hammurabi: Obligation of design & construction to society (1795-1750 BC)
- Vitruvius: Documentation of design and construction practices (40 BC)
- Brunelleschi: quintessential design-builder and innovator (1377-1446)

History of Project Delivery

■ The Rise of Professionalism

- Alberti: first intentional separation of the art from the craft (1456)
- Establish architecture as a profession distinct from the science of engineering and construction
- From 15th century into 19th century Architects retained responsibilities for both design and construction

History of Project Delivery

- Effects of the Industrial Revolution
 - Task specialization
 - Ability to communicate design intent
 - Division of labor
 - Entrepreneurship
 - Need for capital

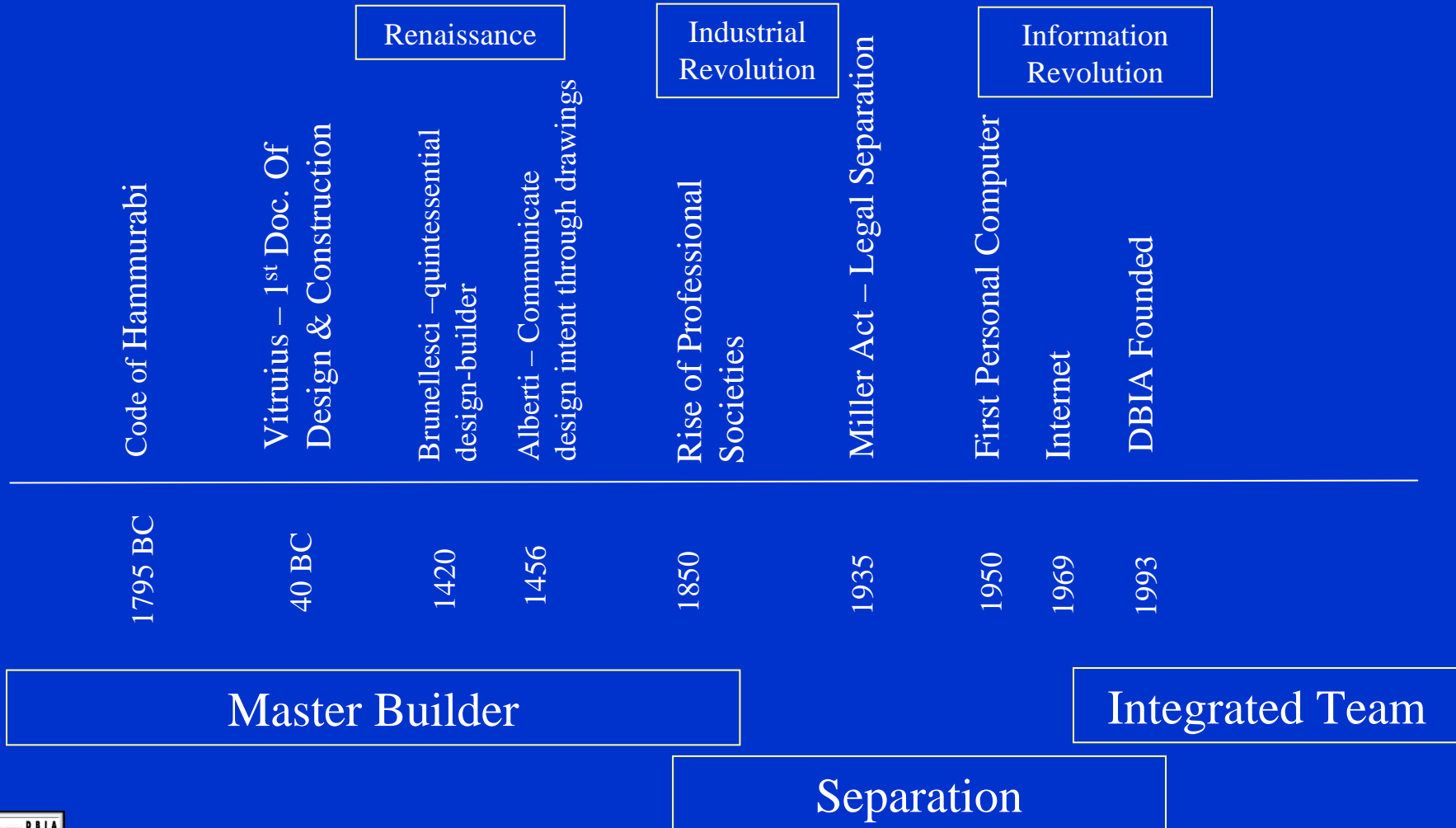
History of Project Delivery

- **Professional Societies**
 - Greater professional specialization
 - Increase in specialized knowledge
 - Promotion and advocacy of professional interests and markets
 - Ethical standards of practice
 - Rise of conflict-of-interest issues

History of Project Delivery

- Legal Separation of Design and Construction
 - The Miller Act (1935)
 - Public contracting laws mandating separation of design from construction & contractor selection solely on cost
 - Professional licensing requirements

Project Delivery Timeline



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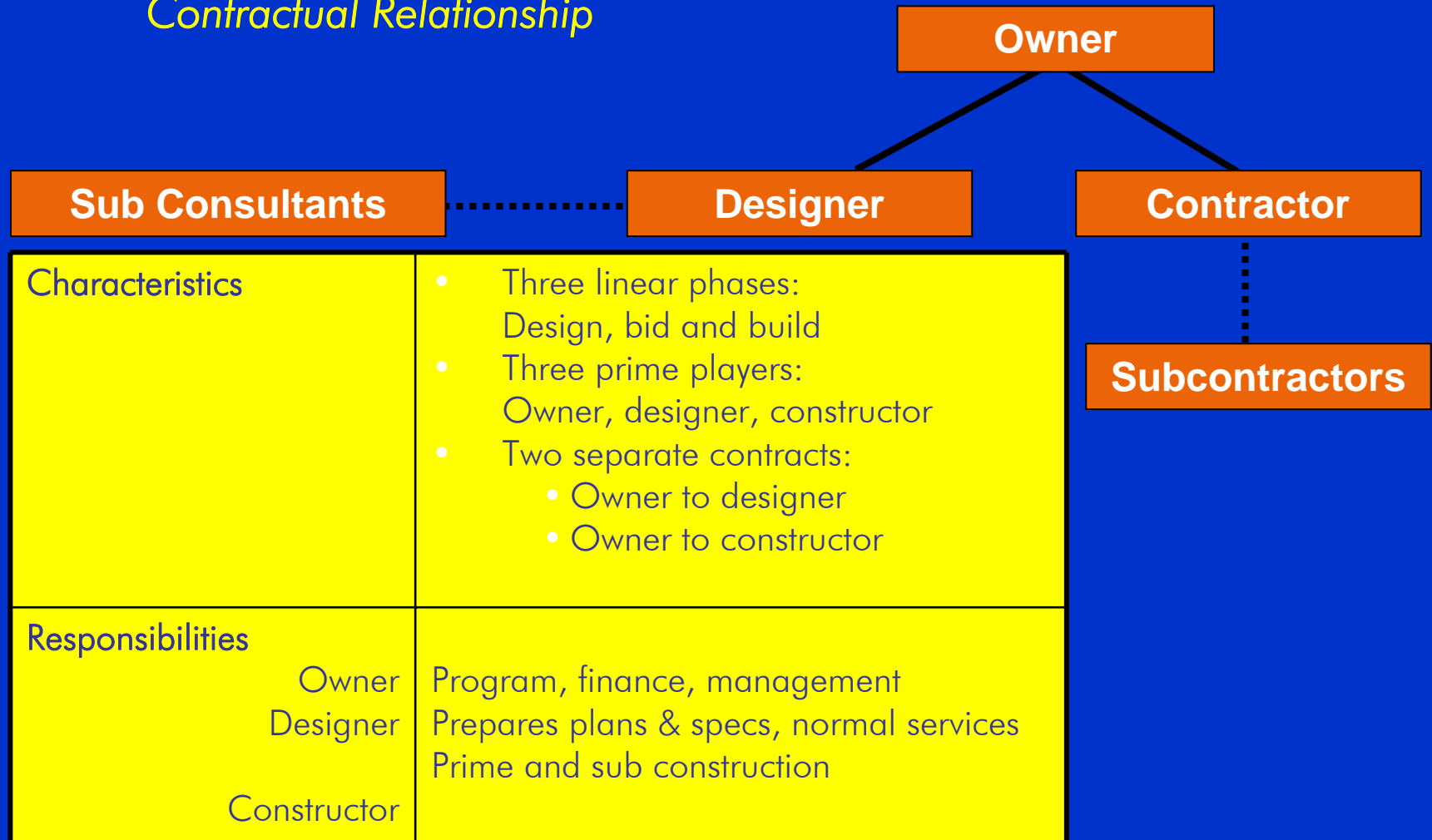
2.0 Project Delivery -Overview-

Project Delivery Overview

- Four Delivery Methods
- Unique features

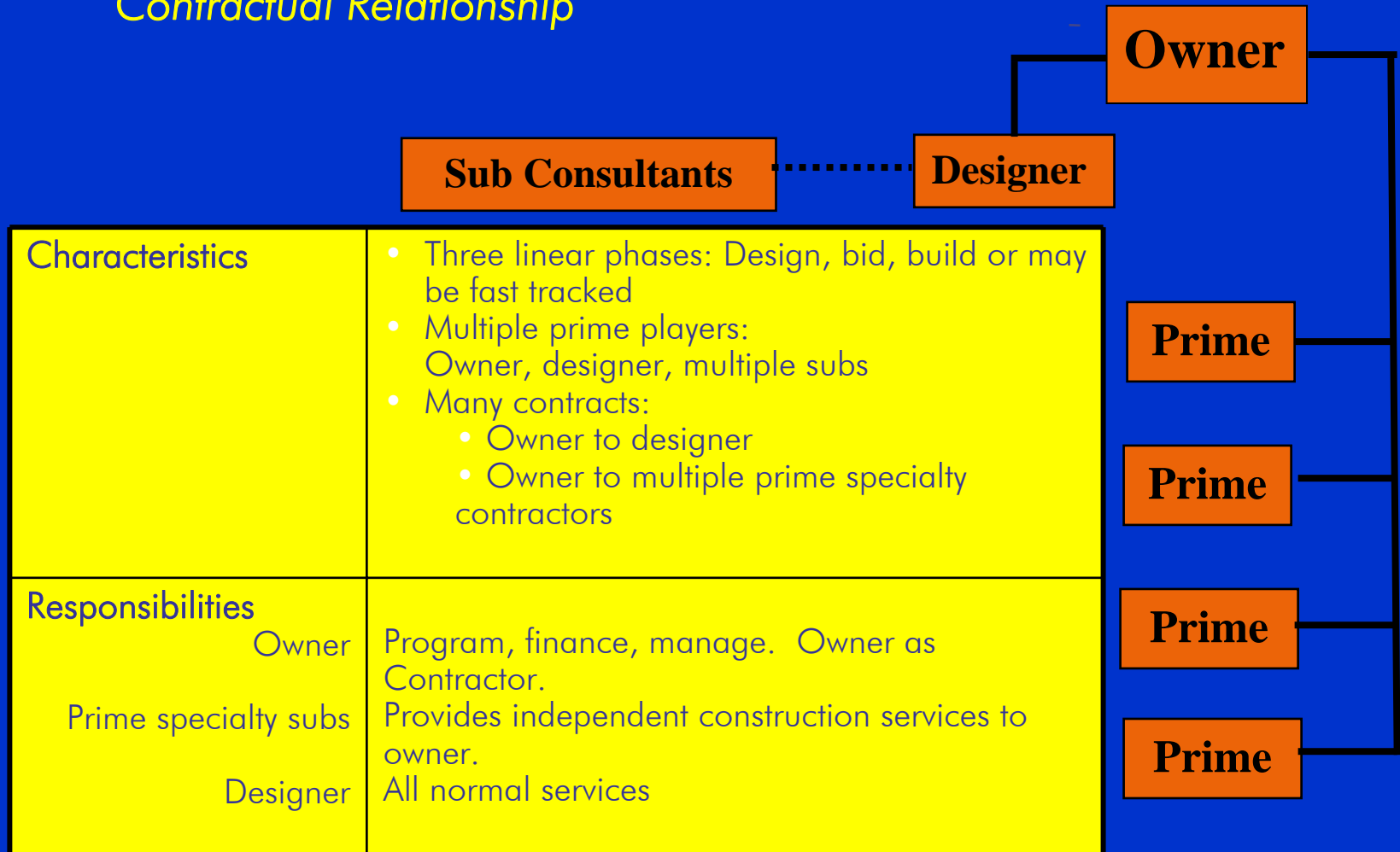
Design-Bid-Build

Contractual Relationship



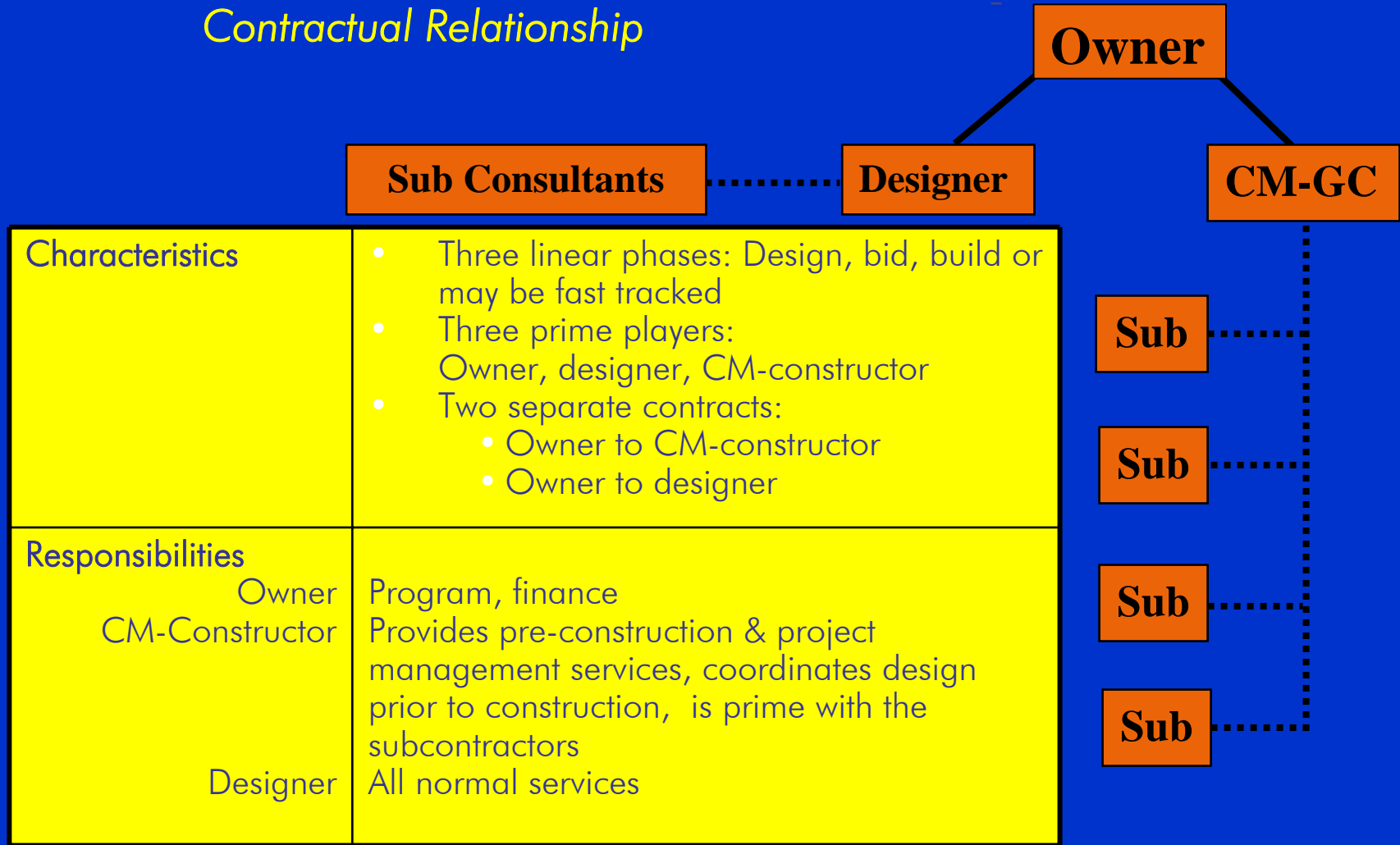
Multiple Prime

Contractual Relationship



CM-at-Risk

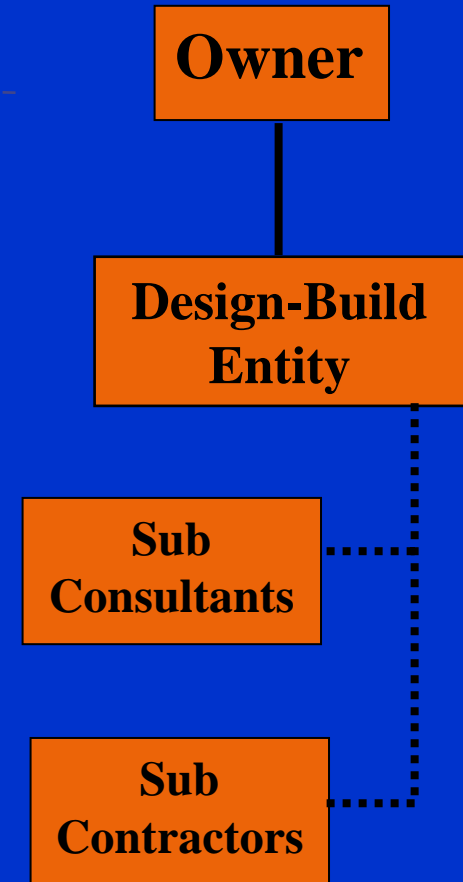
Contractual Relationship



Design-Build

Contractual Relationship

Characteristics	<ul style="list-style-type: none"> • Integrated process-overlapped design & construction • Often fast tracked • Two prime players: Owner & design-build entity • Entity can take on many forms • One contract - <ul style="list-style-type: none"> • Owner to Design-Builder
Responsibilities Owner Design-Builder	Program, performance requirements, and finance* Design and construction. Can include programming & post construction services. * DB can expand services to include programming, finance, operate, etc



Expanded Services

Design-Build PLUS

- **D-B Plus:** Project delivery methods that may include additional services:
 - Business planning
 - Feasibility studies
 - Site acquisition
 - Programming
 - Financing and asset management
 - Operation and maintenance

Typical Expanded D-B Service Packages

- D-B/Operate/Maintain
 - Ongoing care of a single facility
- BOT (build-operate-transfer)
- BOOT (build-own-operate-transfer)
- BOO (build-own-operate)
- LST (lease-sale-transfer)
- D-B/Portfolio Management
 - Overseeing an inventory of facilities
 - Evaluating financial performance, not just efficient operations

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Executing the Sustainable Design-Build project

Overview

- Difference between sustainable and meeting a sustainability goal
- What's different about Design Bid Build "sustainable projects" and DB "sustainable projects"?
- Why D-B might be your best sustainable choice
- Legal considerations....

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Sustainability and meeting a sustainability goal

- There are plenty of buildings that meet a certain Sustainable standard/goal but will not be standing in 15 years
- Not all sustainability features/processes are appropriate for all projects
 - Example: There is no PVC recycling center in San Antonio. Does the environment benefit by trucking PVC construction waste to Houston (nearest PVC recycler?)
- In other words, meeting a sustainability goal does not necessarily mean you've truly achieved a sustainable building.

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DBB sustainability projects vs. DB sustainability projects?

- What's the same?
 - Some sustainable credits can only be achieved by Owner, AE or Constructor
 - Owner establishes a certain sustainable goal (e.g. LEED "gold")
 - Owner selects the site with/without assistance
 - Owner makes fundamental decisions that affect ability to achieve sustainability goals: e.g. selection of site affects ability to achieve certain credits

DBB sustainable projects vs. DB sustainable projects?

- What's different?
 - Design Bid Build:
 - "Sustainable/LEED" leader and AE usually establishes the sustainability strategy
 - Design Bid Build usually precludes any collaboration/cooperative effort between the AE and the constructor
 - Often little design and constructor coordination
 - Impact: design/green intent may be lost in transition between design and construction
 - Design prescribes the actions constructor must take to meet the goal
 - AE and Constructor are mainly responsible for achieving their assigned credits rather than achieving the overall goal

DBB sustainable projects vs. DB sustainable projects?

- What's different?
 - Design-Build
 - Fundamental difference:
 - Early constructor involvement
 - DB tends to build a cost-effective building that functions as well as meeting a goal
 - The DB **team** establishes the sustainable strategy
 - DB **team** responsible for achieving the sustainability goal (rather than a particular piece of the goal)...all speak with one voice
 - DB encourages/promotes/necessitates collaboration and input among team members including owner toward achieving the sustainable goal
 - Reasonable/doable/feasible strategy rather than theoretical
 - Cost effective strategy
 - Promotes continuous owner/AE/constructor coordination

Why D-B might be your best green choice

- DB promotes collaboration...essential to achieve sustainable construction with the best price and quality
 - AE/Constructor/Owner early collaboration provides well-rounded/achievable sustainable strategy
 - Helps ensure the intent of a specific element of the strategy is understood by all team members
 - Inherent in the process...better communication....Helps ensure the “hand off” between AE and constructor is nearly seamless
 - Easier consolidation of credits and points
 - Promotes accountability

Sustainable Legal considerations for the D-B Team....

- Owner makes fundamental decisions that affect ability to achieve sustainability credits important to reaching certain sustainability goals:
 - Example: selection of site affects ability to achieve certain credits ...what happens if an owner wants a LEED Platinum building...on a pristine lake
- Worse...what happens if the owner makes decisions that affect the team's ability to meet **Requirements**?
 - Example: What if an owner has a "smoking allowed inside" policy or chooses not to recycle? (sustainable *requirements*)...
- Some "green" products are long-lead items
- USGBC review are not always "fast"

DB + Sustainability—how to

- Ensure requirements are met...before accepting the project
- Create a green strategy early
- Plan on achieving extra credits...just in case
- Manage green requirements throughout the process

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