

Project Delivery

Professional defined...OED

- One who follows an occupation as his (or her) profession, life-work, or means of livelihood, as a professional soldier, musician, or lecturer; hence used in contrast with amateur.
- Reaching a standard or having the quality expected of a professional person or his work; competent in the manner of a professional.
- That is trained and skilled in the theoretic or scientific parts of a trade or occupation, as distinct from its merely mechanical parts; that raises his trade to the dignity of a learned profession.

What we do...as professional constructors

- In the Business of Managing Risk & Opportunity
 - Finance the project
 - Select the site
 - Receive design / develop design
 - Develop bid packages
 - Solicit subcontract / supplier bids
 - Assemble into an overall bid to the Owner
 - Award subcontract / supplier bids
 - Receive material
 - Move material
 - Install material per design
 - Operate Building
 - Decommission/recycle the building

The major players

The Owner

- Has the need
- Has the land (usually)
- Has the partial design (sometimes)
- Pays the bills (usually)

The Design Professional

- Works for the Owner (usually)
- Advises the Owner (usually)
- Makes the design
- Makes the bid documents (usually)
- Conducts the Bidding or Negotiation (usually)
- Observes the construction and approves the request for payment (usually)

The Construction Professional

- Manages the risk of building
- Establishes the bid packages
- Assembles subcontract and supplier bids
- Provides bid to the Owner
- Procures Subcontracts
- Schedules the work
- Coordinates the work (subcontracts and suppliers)
- Constructs the work

Additional Players

Consulting Engineers

- Works for Designer (S, M, E)
- Works for Owner (Surv. Geotech, Commissioning)
- Works for Builder (Surv. Geotech...)

Subcontractors

- Works for Builder
- Usually falls under General, Mechanical or Electrical work packages

Suppliers

- Contracted by General (sometimes)
- Contracted by Subcontractor (often)
- Can be material or equipment, purchased or rented

Regulatory Officials

- Building Official (codes)
- Zoning Official (ordinances)
- Safety Official (state & federal)
- Environmental Official (Air, Water quality, endangered species)

...and a few more

Insurance Brokers

- Owners
- Designers
- Builders
- Subcontractors
- Suppliers

Bankers

- Owners
- Designers
- Builders
- Subcontractors
- Suppliers

Attorneys

- Owners
- Designers
- Builders
- Subcontractors
- Suppliers

Accountants Auditors

- Owners
- Builders
- Subcontractors
- Suppliers

How many entities to make a house?

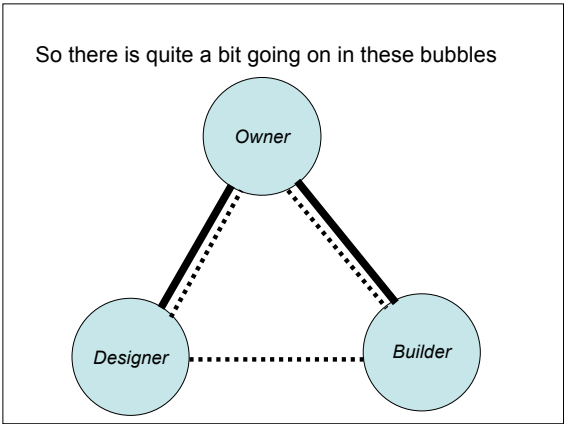
- Owner
- Architect
- Interior Designer
- Landscape Architect
- Structural Eng.
- Mechanical Eng.
- Electrical Eng.
- Acoustical consultant
- General Contractor
- Surveyor
- Excavator
- Form carpenter
- Mason
- Waterproofing sub
- Framer
- Siding sub
- Roofer
- Gutter sub
- Insulator
- Drywall
- Painter
- Cabinet installer
- Tile installer
- Carpet installer
- Landscaper

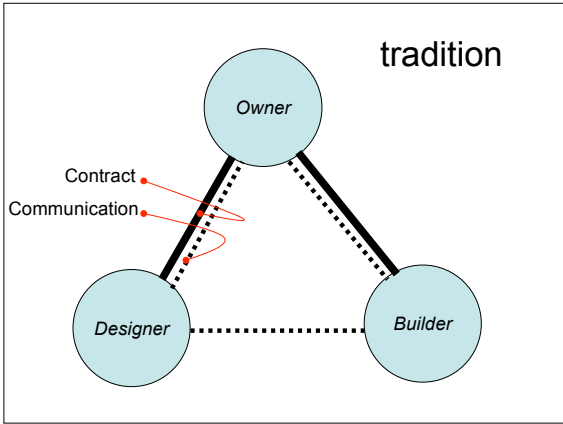
- Suppliers
- Drainage fill/fill/topsoil
- Drain tile/waterproof
- Subslab pipe
- Subslab conduit
- Concrete/cmu
- Lumber/windows/housewrap
- Engineered components
- Building paper/shingles
- Steel columns
- Electrical wiring/panel/boxes/fixtures
- Fdn. Insul/wall/attic
- Drywall
- Carpet/hardwood/tile
- Paint
- Doors/hardware
- Landscape materials
- Alarms/surveillance
- Cabinets/countertops
- Electrical fixtures & trim
- Plumbing fixtures and trim

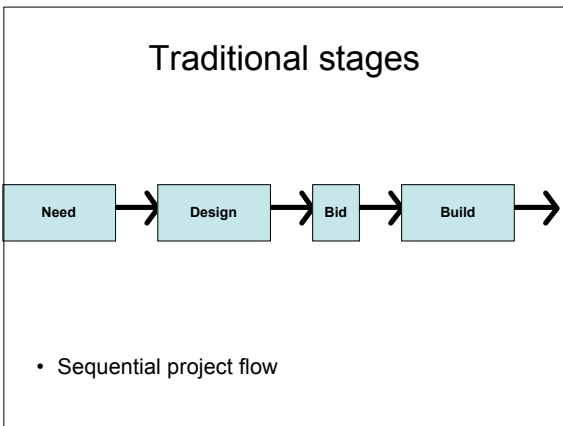
- Mechanical Contractor
- Plumber
- Furnace / ductwork
- Controls
- Radiant floor
- Water softener
- Septic
- Well
- Garden irrigation
- Electrical Contractor
- Power, Light
- Home theatre/network
- Alarm/surveillance
- Photovoltaic/battery

All in ?? Days?

Activity Description	Original Sched	Actual Completion
1 Operations start	8/22/01	8/22/01
2 Order/scheduling	8/23/01	8/23/01
3 Stakeout	8/24/01	8/22/01
4 Excavate Building	8/27/01	8/24/01
5 Form Footings	8/28/01	8/27/01
6 Pour Footings	8/29/01	8/28/01
7 Brickpoints	8/30/01	8/30/01
8 Form Foundation wall	8/31/01	8/30/01
9 Pour Foundation wall	9/4/01	8/31/01
10 Strip Foundation wall	9/5/01	9/4/01
11 Groundworks 1st day	9/6/01	9/6/01
12 Groundworks 2nd day	9/7/01	9/7/01
13 Sewer/water	9/10/01	9/7/01
14 Water/Sewer inspection	9/11/01	9/10/01
15 Backfill/Rough grade	9/12/01	9/11/01
77 Install Carpet	12/13/01	12/11/01
78 Final Clean	12/14/01	12/12/01
79 Superintendent Prewalk	12/17/01	12/12/01
80 Final inspection	12/18/01	12/12/01
81 RUP Insp/QA	12/19/01	12/13/01
82 Quality walk complete 1st day	12/20/01	12/14/01
83 Quality walk complete 2nd day	12/21/01	12/15/01
84 Quality walk complete 3rd day	12/24/01	12/17/01
85 Reclean for C.O. walk	12/26/01	12/17/01
86 C.O. walk	12/27/01	12/17/01
87 C.O. walk complete 1st day	12/28/01	12/18/01
88 C.O. walk complete 2nd day	12/31/01	12/19/01
89 C.O. walk complete 3rd day	1/1/02	12/20/01
90 Rewalk C.O. list	1/2/02	12/21/01

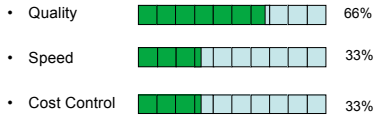




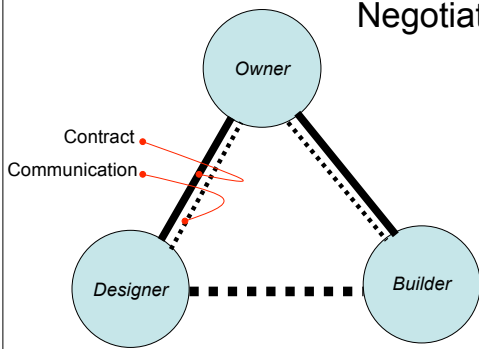


- ### Responsibilities (traditional)
- Owner
 - Program
 - Finance
 - Management
 - Designer
 - Design (schematic, design development, construction documents, bid/negotiate, construction observation)
 - Engineer
 - Bid Documents
 - Bid Process
 - Construction Observation - approves monthly pay requests
 - Contractor
 - Bid
 - Procure Subs
 - Coordinate
 - Schedule
 - Construct

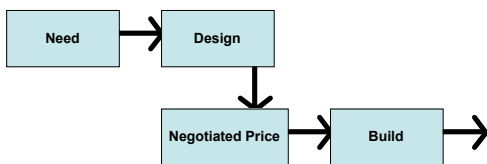
Satisfaction...participants perspective



Negotiated



Negotiated stages






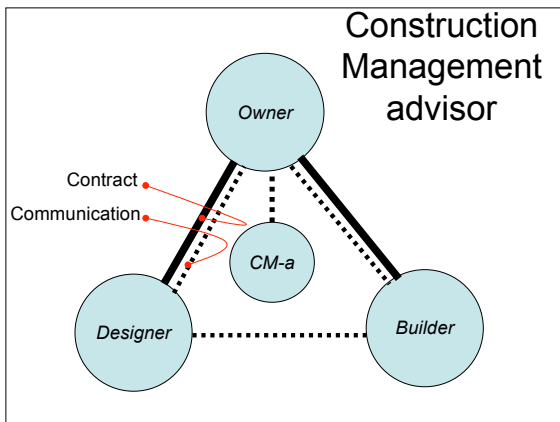
- Concurrent project flow

Responsibilities (negotiated)

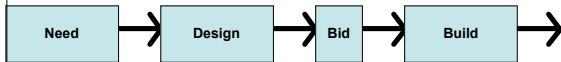
- Owner
 - Program
 - Finance
 - Management
- Designer
 - Design (schematic, design development, construction documents, bid/negotiate, construction observation)
 - Engineer
 - Construction Documents
 - Negotiate
 - Construction Observation
- Contractor
 - Negotiate
 - Procure Subs
 - Coordinate
 - Schedule
 - Construct

Satisfaction...participants perspective

- Quality  80%
- Speed  60%
- Cost Control  80%



CM advisor stages

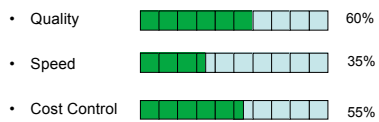


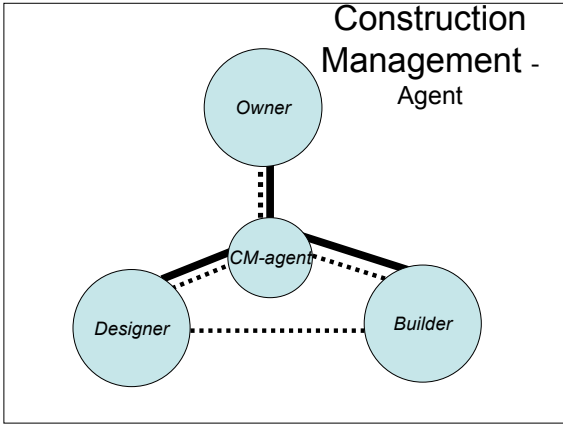
- Sequential project flow

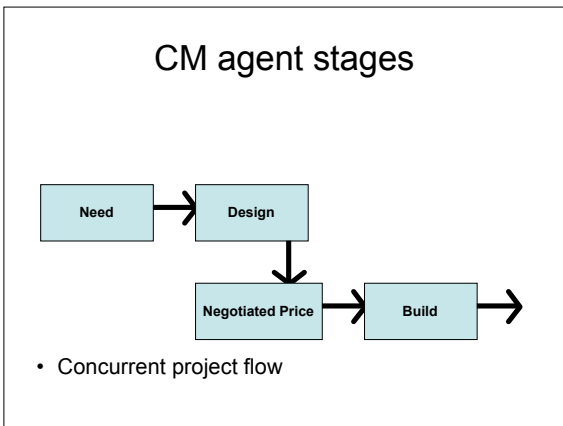
Responsibilities (CM-advisor)

- Owner
 - Program
 - Finance
- Construction Management Advisor
 - Coordinate Designer and Builder
- Designer
 - Design (schematic, design development, construction documents, bid/negotiate, construction observation)
 - Engineer
 - Bid Documents
 - Bid Process
 - Construction Observation
- Contractor
 - Bid
 - Procure Subs
 - Coordinate
 - Schedule
 - Construct

Satisfaction...participants perspective

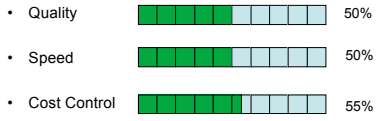


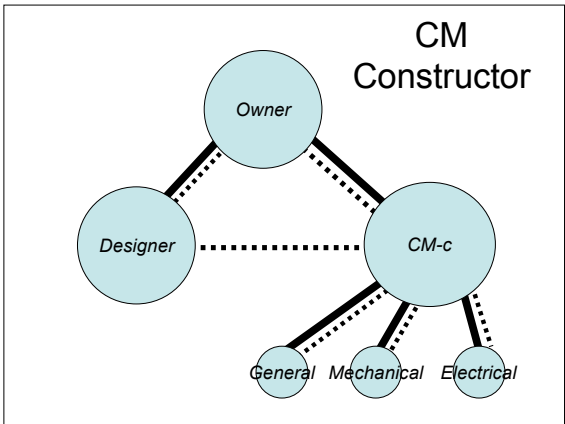




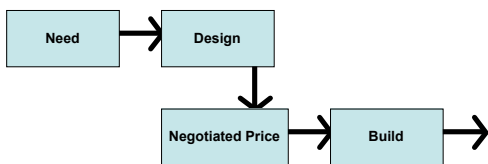
- ### Responsibilities (CM-agent)
- Owner
 - Program
 - Finance
 - Construction Manager - Agent
 - Legal agent for the Owner
 - Hires Designer and Builder
 - Designer
 - Design (schematic, design development, construction documents, bid/negotiate, construction observation)
 - Engineer
 - Bid Documents
 - Bid Process
 - Construction Observation
 - Contractor
 - Bid
 - Procure Subs
 - Coordinate
 - Schedule
 - Construct

Satisfaction...participants perspective





CM Constructor stages



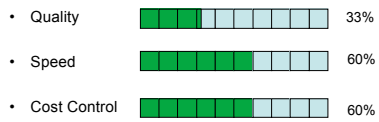
- Concurrent project flow

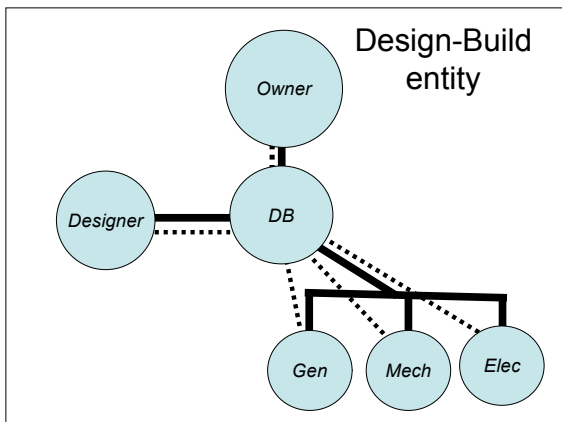
Responsibilities (CM-constructor)

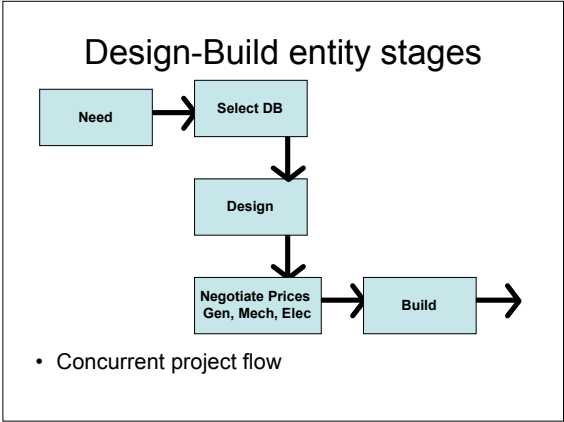
...REV8.20

- Owner
 - Program
 - Finance
- Construction Manager - Constructor
 - Legal agent for the Owner
 - Hires General, Mechanical, Electrical Contractors
- Designer
 - Design (schematic, design development, construction documents, bid/negotiate, construction observation)
 - Engineer
 - Bid Documents
 - Bid Process
 - Construction Observation
- Contractor
 - Bid
 - Procure Subs
 - Coordinate
 - Schedule
 - Construct

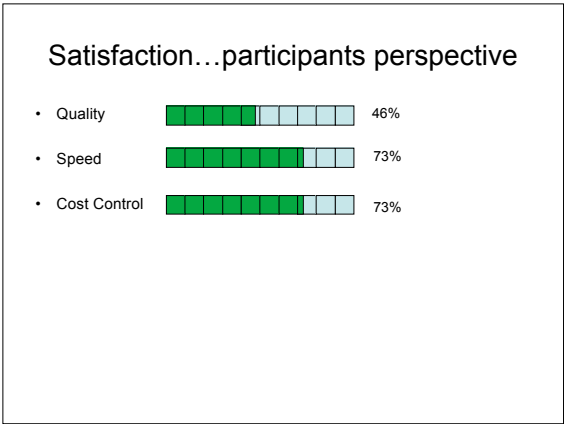
Satisfaction...participants perspective

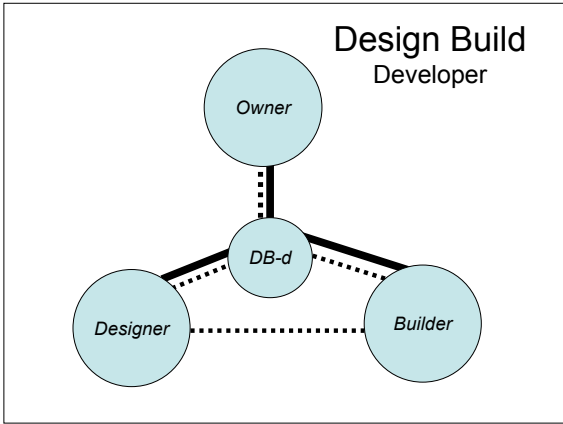


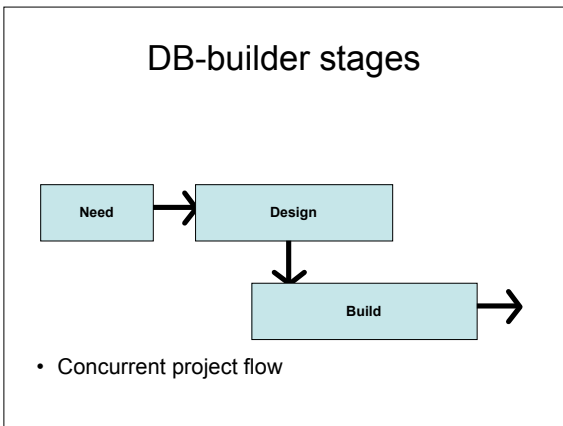




- ### Responsibilities (Design-Build entity)
- Owner
 - Program
 - Finance
 - Designer
 - Limited Services articulated by Design Build Entity
 - Design
 - Document
 - Design-Build entity
 - Coordinate Design
 - Schedule / manage
 - Bid
 - Procure Subs
 - Coordinate Subs
 - Schedule
 - Construct

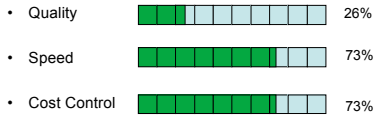




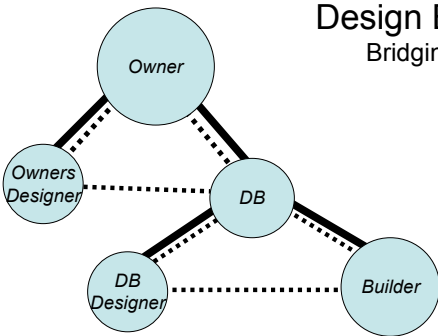


- ### Responsibilities (Design-Build developer)
- Owner
 - Program
 - Designer
 - Limited Services articulated by Design Build Entity
 - Design
 - Document
 - Design-Build developer
 - Finance
 - Coordinate Design
 - Schedule / manage
 - Bid
 - Procure Subs
 - Coordinate Subs
 - Schedule
 - Construct

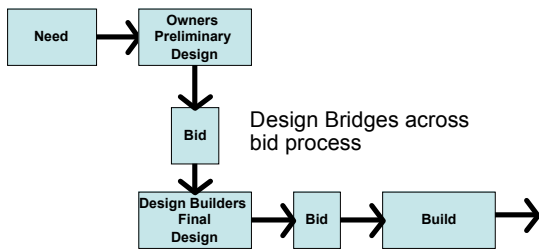
Satisfaction...participants perspective



Design Build Bridging



Bridging stages

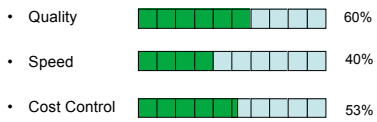


- Two bids

Responsibilities (Design-Build Bridging)

- Owner
 - Program
 - Finance
 - Management
- Owners Designer
 - Design Preliminary
 - Bid Documents for bridging bid
- Design Builders Designer
 - Limited Services articulated by Design Builder
- Design-Builder
 - Coordinate Design
 - Schedule / manage
 - Bid
 - Procure Subs
 - Coordinate Subs
 - Schedule
 - Construct

Satisfaction...participants perspective



Any Clear Winner? (overall participant perception)

