

City Facilities Project Delivery Methods

Presented to:
Quality of Life Committee

Public Works and Transportation Department
January 14, 2008



Purpose

- To provide an overview of **City facilities planning and construction**
- To focus on the design and construction process and the available and applicable delivery methods

An Overview

City Facilities

- **Public Works, Park and Recreation, Equipment and Building Services and Dallas Water Utilities (Construction Departments)** are responsible for the design and construction of all city facilities:



New South Central Police Station – opened October 23, 2007

- Fire stations
- Branch libraries
- Police sub-stations
- Recreation centers
- Service centers
- Cultural facilities
- Dallas Convention Center
- Sanitation
- Aviation
- Water and wastewater
- Dallas Zoo
- Fair Park

An Overview

New City facilities refers to:

- Replacement facilities for existing buildings that have exceeded capacity or are outdated
- New facilities needed due to increase in demand, population, or sector served
 - **2003 bond program new facilities include:**
 - Fire Station 42, 40, 38, 33, 35
 - South Central Police
 - Hampton Illinois, Timberglen, Walnut Hill, Lancaster Kiest branch libraries
 - Homeless Assistance Center
 - Animal Shelter

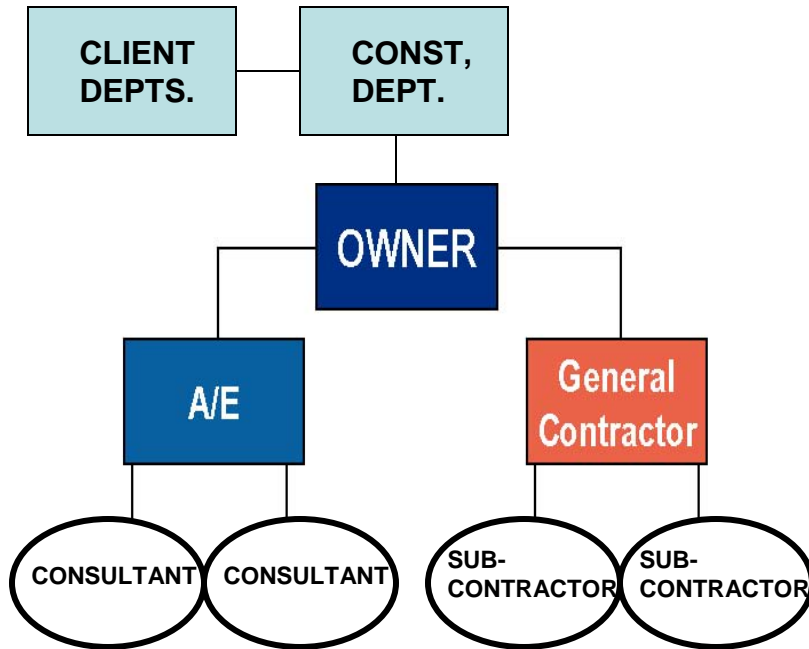


An Overview



- **2006 bond program facilities include:**
 - City Performance Hall
 - Fretz Park, Park Forest, Polk Wisdom, White Rock branch libraries
 - Southeast Service Center
 - Fire Stations 6, 10, 27, 32, 37, 44 and 50
 - Phase 2 Latino Cultural Center
 - Nash-Davis and White Rock Hills recreation centers
 - Cotton Bowl renovation and expansion
 - Dallas Zoo African Savannah exhibit

Design and Construction



Who is involved in the process of design and construction?

- **City of Dallas** – Owner and Client
 - Owner's representative- **Designated Construction Department**
 - **Client Departments**
 - Library
 - Cultural Affairs
 - Fire Rescue
 - Police
 - Health
 - Code
 - Aviation
 - Sanitation
- Architect/engineer consultant
- Contractor/construction manager

Project Phases



What are the phases of the Design and Construction Process?

DESIGN

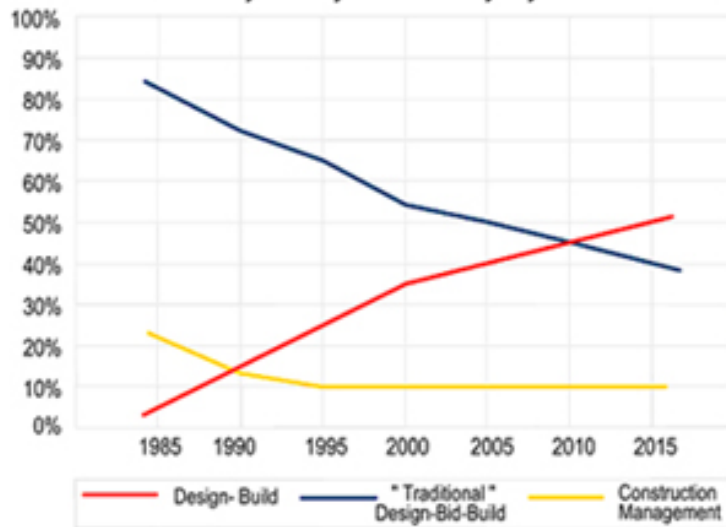
- **Programming**
“Define and quantify all individual components of the facility”
- **Conceptual Design**
“Transform program into a clearly defined three-dimensional architectural form”
- **Schematic Design**
“Execute the program and conceptual design”
- **Design Development**
“Develop the project to a level of detail to work out a clear, coordinated description of all aspects of the project”
- **Construction documents**
“The last stage of the design process, details all components and systems of the building for construction”

CONSTRUCTION

- **Bidding**
“Initiates the public procurement process”
- **Construction**
“The project becomes a reality”

Project Delivery Methods

Market Penetration Of
Major Project Delivery Systems



How is the process delivered?

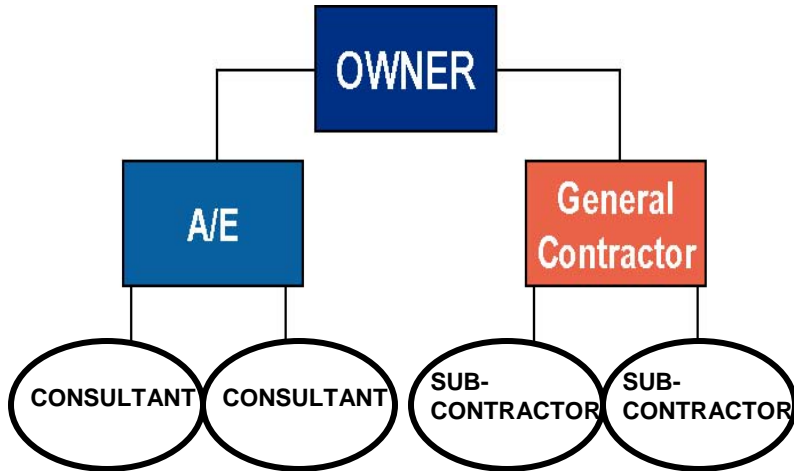
There are several methods:

- **Design-bid-build**
 - Lowest responsible bid
 - Competitive Sealed Proposal
- **Design Build**
- **Construction Manager at Risk**
- **Construction Manager Agent**
- **Job Order Contract**

The method is determined based on which represents the **best value** for the City for a particular project.

Design-Bid-Build

The delivery method most used by the City



- The architect is selected based on qualifications;
- The contractor is selected through competitive bidding.
 - **Lowest responsible bid; or**
 - **Best value (competitive sealed proposals - CSP)**

Design-Bid-Build

Straight bidding - lowest responsible price bid

No negotiations are allowed; all bidders must bid the cost of fully satisfying the City's material requirements

Competitive sealed proposal (CSP)- best value

This process involves competitive sealed proposals received in response to a defined project construction scope of work; the scope of work and price **may be negotiated** on the basis of a best and final offer received from the qualified contractor that provides the **best value**

Comparison

Competitive sealed proposal (CSP) method vs. lowest responsible bid:

CSP:

- Post-proposal negotiations may take place; and
- a contract may be awarded at a price or with a scope of work other than what was originally requested.

Lowest Responsible Bid:

- In a traditional competitive bidding situation, the City must award to one of the bidders on the exact same basis as was originally bid, without material deviation.



Competitive Sealed Proposal

Advantages

- Defined project scope at time of proposal.
- Flexibility in contractor selection.
- Enables the scope to be redefined to fit the budget without having to re-propose.
- Single point of accountability.
- Allows award based on value rather than price alone through evaluation process.

Disadvantages

- Lengthy project duration: back-to back-to-back phases
- No design or budget input from contractor prior to proposal.
- Not optimal for projects that are sequence or schedule sensitive.
- Price not established until design and bidding are complete.

CSP Examples



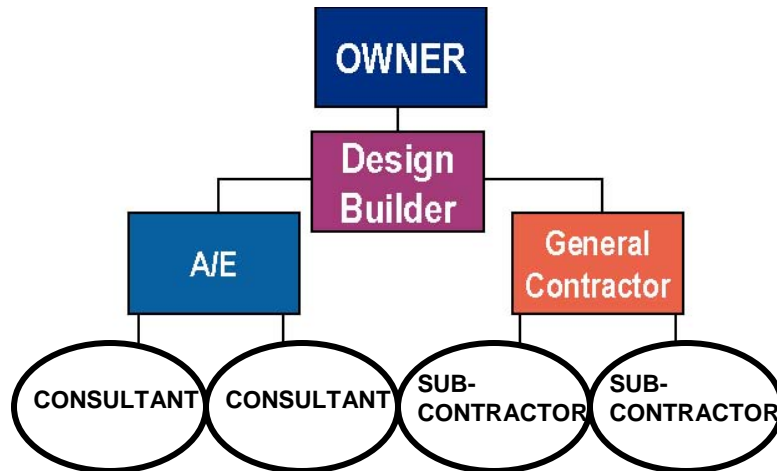
**Homeless Assistance Center- A
58,000 s.f. facility**



**South Central Police Building- a 35,000
s.f. facility**

Design Build

Design-build method of contracting



- City awards a **single** contract to the design-builder to design and construct the project
- The design-builder undertakes responsibility for **both** the design and construction of the project.

This process selects a firm or other entity with combined architectural and construction talents to perform all services necessary to **both design and construct** the project from start to finish (a “turnkey” project); the project can be done for a guaranteed maximum price, but does not necessarily require a guaranteed maximum price in all instances.

Design Build

Advantages

- Selection flexibility.
- Team concept.
- Single point of accountability for design and construction.
- Enables fast-track delivery (construction begins before design is complete), saving time.
- Reduced cost escalation
- Early determination of true costs
- Greater budgeting confidence
- Early GMP facilitates alternative financing methods.
- GMP eliminates Owner concern with cost overruns.

Disadvantages

- No check and balance between architect and builder.
- Owner must select a team rather than the best architect and best builder.
- Design is completed after GMP is given.
- Most design-build teams are led by the contractor, so the A/E will owe its loyalty to the contractor rather than to the owner
- There is still a cumbersome RFP process
- Less flexible for changes in scope of work



Design Build Examples



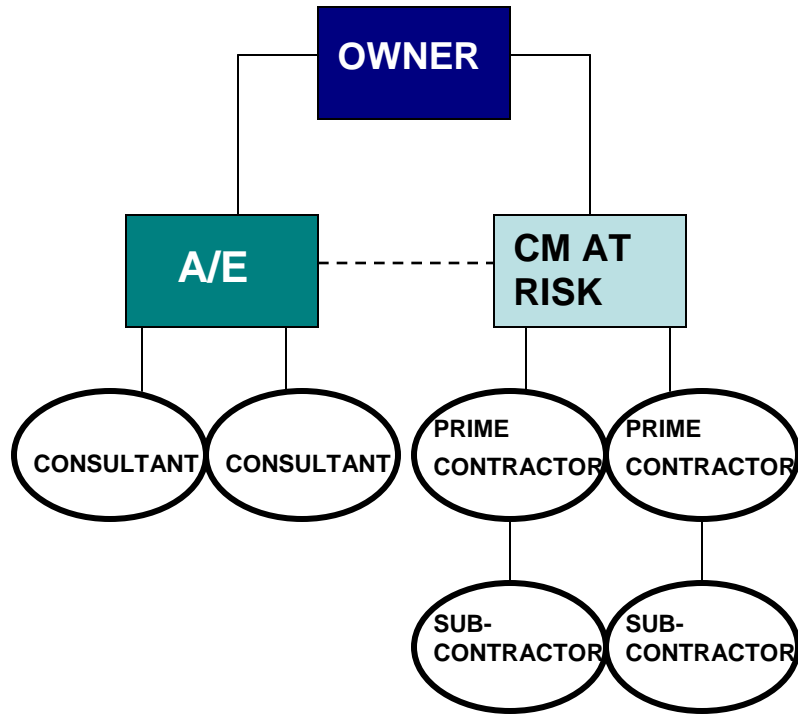
McCommas Eco Park – A **20,000 s.f.** research, training and technology center.



Northwest Service Center (NWSC) - A **92,271** square foot maintenance complex that sits on a **17-acre**, site in Northwest Dallas.

Construction Manager at Risk

A construction manager-at-risk (CM at risk) is intended to assume the risk for construction at the contracted price.



- Construction management is a professional service for which competitive bidding is not necessary
- CM at risk provides consultation to the City regarding construction issues during and after design of the project

Construction Manager at Risk



Jack Evans Police Headquarters - a six-story structure is just over **350,000 s.f.**

This process selects a firm or other entity to provide traditional construction management services, including but not limited to:

- value engineering of architectural designs
- scheduling
- construction administration and performance of general conditions work
- obtain bids for contractors, or perform work with the manager's own forces, for a guaranteed maximum price, assuming the risk of all cost overruns that occur within the agreed-upon project scope

Competition occurs at the trade contractor level

Construction Manager at Risk

Advantages

- Team Concept
- Construction manager selected by interview based on quality rather than cost.
- Early CM involvement in estimating and constructability
- Owner selects architect and CM separately and may be involved in selection of subcontractors
- Competitive pricing for prime contractor work
- Single point of accountability: CM at-Risk signs contracts with all prime contractors.
- Guaranteed maximum price.
- Enables fast-track delivery – time savings
- Good for large, complex projects and multi-phase projects that are time critical

Disadvantages

- Potential adversarial relationship when design intent is challenged by price cutting
- May result in excessive amount of prime contractors
- CM at risk sometimes sees itself as more of a general contractor than a member of the design “team”



Other Methods

Job order contracts

This process selects **multiple contractors** for certain types of small-scale facility construction, repair, or alteration work

The work is obtained by requiring price quotes for performance of predescribed tasks, based upon standard published construction unit price books (with discounts, if any) or coefficients/multipliers applied to unit price books or specifically offered unit prices; actual work on specific tasks described during the selection process is then ordered from a job order contractor on the basis of unit prices applicable to that task, at the lowest available cost for the task ordered

Construction manager-agent

This process selects a **firm or entity** to provide only traditional construction management/ administration services

The City awards a construction contract under a separate procurement process; the manager-agent performs no construction or general conditions work and provides no guaranteed maximum price; the fee compensates only for those traditional construction management/ administration services agreed to as the scope of work

Factors in selection of method

- Time considerations
- Complexity and Size of Project
- Level of City control desired
- Type and size of contractors that City wants to attract
- Budget constraints
- Openness to alternative methods
- Appropriate community and business participation
- Level of acceptable legal and financial risk
- City staff capacity

Recommendation

- Utilize Construction Manager at Risk (CM at Risk) for large/complex city facilities
- Construct next fire station utilizing the Design Build approach