



DESIGN-BUILD AND ALTERNATIVE PROJECT DELIVERY IN TEXAS

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Recent Texas legislative sessions have seen a proliferation of bills related to design-build and alternative project delivery. The Legislature has responded by slowly expanding the authority of select governmental entities to use these delivery systems for certain types of projects.

At the same time, the public debate over design-build has struck some observers as an echo chamber – a few examples amplified by repetition into a panacea for all construction project delivery problems.

This paper reviews the statutory and political history of design-build in Texas and discusses related policy issues.

I. Background

The term “design-build” commonly means a system of contracting for construction projects under which an owner enters into a single contract with an individual firm or joint venture team that controls both design and construction of a project. This is in contrast to the traditional system under which an owner contracts with an engineer or architect to prepare plans and specifications for a project, then contracts separately with a constructor to build the project in accordance with plans.

During the nineteenth century, design-build was widely used under terms such as “package dealers.” By the early twentieth century, resistance built to the point that architectural and engineering professional organizations adopted ethical principles that required them to put the owners’ interests above their own, forbidding design professionals from acting as design-builders. (Buesing, 1991) One of the major arguments for the change was that separating design and construction responsibilities reduced the ability of contractors and designers to commit fraud by using inadequate materials or unsatisfactory design or construction practices in an effort to save money. (Tirolo, 1999) These restrictions lasted until the 1980s.

The use of design-build contracting has reappeared in the public and private sectors during the last few decades. It was originally viewed as an effective method for simple repetitive projects, such as buildings. Federal agencies adopted it in the 1980s, particularly the U.S. Postal Service and the U.S. Army Corps of Engineers. In recent years, the use of design-build has spread into other areas of construction such as transportation. For example, the Transportation Equity Act for the 21st Century (TEA-21) authorized the use of design-build on projects of a certain size. In 2001, Texas law authorized design-build for the Department of Transportation under the term “comprehensive development agreement.”

This paper uses the term “alternative project delivery” to include design-build procedures, but also a variety of other project delivery processes. These include:

- Construction manager-agent – contracting with an entity that provides consultation to an owner regarding construction, rehabilitation or repair of a facility, separate from contracts for design or construction.
- Construction management-at risk (sometimes referred to as design/contract-build) – contracting with an entity that assumes the risk for construction, rehabilitation, or repair of a facility at a contracted price as a general contractor and that provides consultation regarding construction during and after design. Design services are contracted separately.
- Negotiated contracting (or competitive sealed proposals for construction services) -- contracting for construction services using other criteria in addition to lowest bid.
- Job order contracting – contracting for indefinite quantities or indefinite delivery times of substantially pre-described and pre-priced tasks.

II. Statutory/Political History of Alternative Project Delivery in Texas 1995-2005

Traditionally, procurement of construction projects in Texas has been guided by two sets of statutes. On the one hand, purchases over a certain threshold amount, including construction, generally must be procured through competitive bidding. (Government Code, Chapter 2155 and Local Government Code, Chapter 271.) On the other hand, state

law (Government Code, Chapter 2254) provides a specific exception from this requirement for professional services. In fact, the statute provides that a governmental entity may not select a professional services provider on the basis of competitive bid but must make the selection based on the basis of (1) demonstrated competence and qualifications to provide the services and (2) at a fair and reasonable price.

The Government Code further provides a more specific process that public entities must follow in procuring engineering and architectural (E/A) services. The entity must first select the most highly qualified provider and attempt to negotiate a fair and reasonable price with the most highly qualified provider. If a satisfactory contract cannot be negotiated with the most highly qualified provider, then the entity must end negotiations with that provider, select the next most qualified and attempt to negotiate a contract, continuing in order of rankings until a contract is successfully negotiated.

This process is referred to as qualifications-based selection, or QBS. Similar laws exist in the vast majority of states. The policy rationale behind QBS is several-fold, ultimately resting on the distinction between professional judgment and goods or services purchased in accordance with extensive specifications. For example, when an entity purchases a computer or a building, all bidders are working from a set of plans and/or specifications which are intended to place all bidders on an equal footing. By contrast, a purchaser of design services cannot provide an equivalent level of detail about the services sought, since the building or facility is not yet designed.

QBS laws recognize that engineering and architectural costs are a small percentage of overall project cost, but the application of judgment associated with design can have a huge impact on construction cost and life-cycle costs. A solution that is cheapest for the designer to design may be vastly more expensive for the owner to construct. Ultimately, QBS laws recognize that the engineer/architect is the owner's agent, with an ethical obligation to the owner, charged with translating a usually amorphous idea into specific plans and specifications. The contractor's contractual obligation, by contrast, is to provide a product that meets the plans and specifications and extends no further.

Competitive bidding laws and professional services procurement laws have constrained the use of design-build procedures in Texas. In 1990, Attorney General Jim Mattox addressed this conflict in Opinion # JM-1189. This opinion held that a commissioner's court is prohibited from awarding a design-build contract for the construction of a public work on the basis of competitive bidding where architectural or engineering services would be a component of the contract. Such a process would violate the statutory prohibition against competitive bidding for professional services. As a result, any use of design-build procedures requires specific statutory authorization.

The first exception to this rule for design-build procurement was with the 1995 enactment of Senate Bill 1, the omnibus education reform bill of that year. The bill authorized school districts to use a broad range of so-called "best value" purchasing techniques, specifically including design-build procedures for the construction of facilities. The bill provided no procedural guidelines; it simply referenced and authorized these procedures.

Frankly, most of the construction industry trade associations were caught off-guard by the inclusion of this language in the bill, becoming aware of it only after the bill was passed.

Leading up to the 1997 session, a coalition of the Texas Council of Engineering Companies (CEC), the Associated General Contractors-Building Branch (AGC), and the Texas Society of Architects (TSA) evaluated whether to attempt to repeal the authorization or to attempt to develop procedural guidelines. They chose the latter course, an approach that ultimately led to the passage of Senate Bill 669 authored by Senator Bill Ratliff.

S.B. 669 provided specific procedural requirements that school districts (and universities, who were added to the bill) must follow in utilizing design-build contracting, CM-agency, CM-at risk, negotiated contracting, and job order contracting. For example, the statute clearly provides that, for all of these contracting methods other than design-build, the owner retain an engineer-architect through QBS procedures in order to develop plans and specifications for the project.

For design-build projects, the statute essentially provides for an alternative to the traditional process. In this alternative, the owner first retains an engineer-architect to develop a design criteria package that defines the basic parameters of the project. (Typically these packages lack detail and are subject to interpretation.) Statements of qualifications are then solicited from design-build firms or teams, with respondents short-listed based on a variety of largely qualifications based criteria. Cost-related factors may not be included. Short-listed firms then provide a proposal. The owner may not require the submission of detailed design plans and specifications. Proposers are then re-evaluated on the basis of a variety of considerations. This is not a low-bid system. The statute allows the owner to consider “costing methodology” along with other criteria to select the proposer that offers the best value to the district or institution of higher education.

Senate Bill 583, enacted in 1999 and Senate Bill 510, enacted in 2001, modestly tweaked this statutory scheme. Perhaps the most significant change was the extension in 2001 of alternative project delivery authority to cities, counties, and river authorities. This necessitated a further clarification that the authority extended only to vertical construction (e.g., buildings). Eligible projects are defined largely by exclusion in S.B. 510 as found in the definition of “facility”:

“Facility” means buildings the design and construction of which are governed by accepted building codes. The term does not include:

(A) highways, roads, streets, bridges, utilities, water supply projects, water plants, wastewater plants, water and wastewater distribution or conveyance facilities, wharves, docks, airport runways and taxiways, drainage projects, or related types of projects associated with civil engineering construction; or

(B) buildings or structures that are incidental to projects that are primarily civil engineering construction projects. (Texas Local Government Code, Sec. 271.111 (7)).

There are both policy and political reasons for this distinction. The policy rationale rests on genuine distinctions between the two types of projects. For example, buildings are governed by building codes; hence, key life-safety issues are not solely dependent on engineering judgment. Further, civil engineering projects, unlike architectural projects, tend to involve substantial front-end environmental and right-of-way acquisition hurdles, and construction cannot start until these hurdles are cleared. Often, if an owner wishes to take the risk, the time associated with clearing these hurdles can be used to initiate design, thus achieving some of the savings in time achieved by overlapping design and construction in the design-build model.

The political reason for the vertical-horizontal distinction is simply that key engineering and construction lobby groups did not care about design-build in the building environment but opposed its expansion into the civil engineering environment and were in a position to maintain that distinction.

One other aspect of Senate Bill 510 is worth noting. Section 7 of the bill amended the Professional Services Procurement Act to include in the definition of “governmental entity” a local government corporation or other entity created by or acting on behalf of a political subdivision in the design or construction of a project.

This provision closed a loophole that had been inadvertently created by the Legislature in 1997. During that session, as part of a broader bill on tax increment reinvestment zones, statutory provisions on the contracting authority of local government corporations (LGCs) were amended. These amendments were later interpreted (we believe erroneously) by the Attorney General as exempting LGCs from competitive bidding laws, professional services procurement laws (PSPA), and other restrictions. During the intervening year, several jurisdictions used this loophole to establish local government corporations to pursue design-build projects, most notably the Houston Area Water Corporation (HAWC). Senate Bill 510, however, closed this loophole by subjecting any local government corporation contract for which requests for proposals were published or distributed after August 31, 2001 to the PSPA.

Until 2003, Texas law restricted alternative project delivery to vertical construction. Two changes were made by the 78th Legislature – for navigation districts, or ports, and for toll road or turnpike projects. House Bill 3028 permitted the use of alternative project delivery by ports for facilities including “buildings, associated structures, utilities, docks, wharves, channels, dredge material placement areas, marine terminal improvements, railroads on or adjacent to the marine terminal, roads and bridges on or adjacent to the marine terminal, and improved or unimproved land.” Generally, the Legislature granted this latitude under the theory that ports are quasi-private entities competing with other ports for specialized projects.

Also in 2003, the Legislature authorized TxDOT, as a part of a sweeping transportation package, to use what are called in House Bill 3588 “comprehensive development agreements” (CDAs). CDAs are defined as agreements that at minimum, provide for design and construction of a transportation facility and may also provide for financing, operation, or maintenance.

H.B. 3028 and H.B. 3588 are significant in that they push alternative project delivery into projects other than buildings and facilities. They also contemplate a slightly different procurement process for design-build. The various statutes that govern design-build for buildings explicitly prohibit the owner from requiring detailed design in the proposal phase. An owner may consider the “costing methodology” (a vague phrase) used by proposers, but by and large the design-build procedures are qualifications-based.

Typically, however, the procurement of design-build services in large-scale civil engineering projects tends to involve what are considered “design competitions.” In other words, getting a contract involves substantially more engineering effort and substantially higher transactional costs. Accordingly, these statutes authorize the payment of stipends to unsuccessful proposers. From the perspective of the engineering community, an owner is in essence requiring preliminary engineering of the project from multiple firms and should pay for that. H.B. 3028, for example, requires an owner to pay an unsuccessful proposer an amount up to one-half of one percent of the final contract price for any reasonable costs incurred in preparing the proposal. The CDA process required under H.B. 3588 has similar language, although it does not reference a specific percentage.

Both H.B. 3028 and H.B. 3588 contain language on intellectual property rights that is significant to design firms. Early versions of H.B. 3588 (the omnibus transportation bill), for example, contained language stating that TxDOT would own the ideas in submitted proposals. CEC strenuously objected to this concept. The final language in both bills states that after payment of the stipend the owner may make use of the design concepts in an unsuccessful proposer, but that such use is at the sole risk and discretion of the owner and imposes no liability on the designer, who may also make alternative use of the design concepts.

The legislative history of design-build in Texas would not be complete without some discussion of Senate Bill 298 in the 77th Legislature and S.B. 1499 in the 78th – both authored by Sen. Frank Madla. These similar bills would have authorized the Texas Department of Transportation and the Texas Turnpike Authority to use design-build procedures on a pilot project basis. Whereas CDAs may be used for turnpike projects, these bills would have established a pilot project for 24 other TxDOT projects, with a \$50 million construction cost threshold for eligible projects. The required process was similar to HB 3028 for ports and included requirements for a design criteria package, shortlisting, proposals, selection on best value, and payment of a stipend to unsuccessful proposers. SB 1499 passed the Senate but did not pass the House.

III. House Bill 1886 (2007)

The most recent chapter in this history is House Bill 1886, passed by the 80th Legislature. HB 1886 made the first major expansion of alternative project delivery into the horizontal, or civil engineering, environment. Changes included

- Expanding the use of competitive sealed proposals for construction, construction management-at risk, and design-build into horizontal, or civil engineering, construction;
- Limiting the ability of interlocal purchasing cooperatives, or buy boards, to purchase design services;
- Providing for enforcement of the Professional Services Procurement Act through injunctive relief;
- Providing that the owner must hire an architect/engineer to prepare construction documents for job order contracts (e.g., the A/E may not be hired by the contractor); and
- Requiring local government corporations to comply with the procurement laws of the entity that created the corporation, except in limited circumstances.

A. Definition of Eligible Governmental Entity

Initially, H.B. 1886 makes a slight expansion of the types of governmental entities that can use alternate project delivery techniques. Prior to the passage of the bill, the methods could be used largely by cities, counties, river authorities, and defense base redevelopment authorities.

H.B. 1886 expands the eligibility to include hospital districts, conservation and reclamation districts, and water districts or authorities created under Section 59, Article XVI of the Texas Constitution (thus bringing in other kinds of water districts other than river authorities).

B. Expansion of Competitive Sealed Proposals for Construction and Construction Management-at Risk Into Infrastructure Market

Since the inception of the various statutes on alternative project delivery, these methods have been limited to vertical construction, defined as a building or associated structure. In the past, the statutes specifically excluded highways, roads, streets, bridges, water supply projects, water plants, wastewater plants, wharfs, docks, airport runways or taxiways, drainage projects and similar projects.

Perhaps the most significant elements of H.B. 1886 is that it expands most of the alternative project delivery methods into horizontal construction. This may not be plainly apparent to anyone making a cursory examination of the bill. However, this expansion is accomplished by revising the definition of “facility” in Sec. 271.116 and Sec. 271.118 Local Government Code, which cover competitive sealed proposals for construction

(CSP) and construction management-at risk (CM-at risk or CMAR), to mean include any improvement to real property.

The major exceptions to this are job order contracting and construction manager-agent. The term “facility” in these sections continues to be defined as vertical or building construction, meaning that job order contracting and CM-agency may not be used for infrastructure construction.

Under Chapter 271, competitive sealed proposals and CM-at risk are basically different ways to select a construction contractor. Under both of these methods, the law is very clear that a design professional (engineer or architect) must be selected separately (and generally prior to) the selection of the contractor using qualifications-based selection as is customary for professional services. Under the CSP method for contractor selection, a design professional must prepare construction documents prior to seeking proposals for a contractor. Under CM-at risk, the design professional must be selected prior to or concurrently with selecting the CMAR.

Essentially, the competitive sealed proposal process allows for considerations other than price to be considered in the selection of the construction contractor. These alternative criteria can include reputation, quality, past relationships with the governmental entity, and any other relevant criteria that is defined in the request for proposals. The weighting to be assigned to the evaluation criteria must be stated in the RFP.

Construction management-at risk, by contrast, usually involves selecting a contractor before design plans are complete. The CMAR is the contractor and often is involved in the design process, at least as to constructability. The CMAR is usually selected largely on experience and qualifications, with some consideration for the price of general conditions, then provides a guaranteed maximum price to the owner later in the process.

Design-build procedures are also expanded into the infrastructure area on a limited and phased-in basis. However, whereas CSP and CMAR procedures are the same for both vertical and civil engineering construction, HB 1886 creates a different set of statutory rules for design-build for civil works projects. These procedures are spelled out in a new Subchapter J, Chapter 271, Local Government Code.

C. Job Order Contracting

Although significant reform of job order contracting was derailed by the veto of H.B. 447, H.B. 1886 makes one noteworthy change relating to JOC procedures related to architectural and engineering services. It clarifies that if a contract or a job order requires the preparation of architectural or engineering plans under the relevant practice acts, the A/E services must be selected by and contracted to the owner. In at least some cases in the past, A/E services have been provided through the job order contract.

D. Design-Build for Civil Works Projects

One of the most significant changes in the package of bills passed by the 80th Legislature is the extension of design-build procedures to civil works construction, albeit on a limited and phased-in basis. This authorization is contained in H.B. 1886. Up to now, the use of design-build procedures has been limited to vertical construction (with a few limited exceptions such as authority granted to navigation districts).

The procedures for civil works design-build are substantially different than those in Chapter 271 for architectural projects. Therefore, the first question any user must determine is the type of facility being constructed. This will determine whether the procurement procedures used fall under Subchapter H or Subchapter J of Chapter 271.

The definition of civil works projects is essentially the set of projects excluded from the vertical definition. It includes

roads, streets, bridges, utilities, water supply projects, water plants, water distribution and wastewater conveyance facilities, desalination projects, airport runways and taxiways, storm drainage and flood control projects, or transit projects;

Buildings or structures incidental to these projects are also included.

The bill applies to local government entities, defined as a municipality (including a municipally owned water utility with a separate board), county, river authority, defense base development authority, or any other special district or authority authorized to enter into a public works contract. The term does not include a regional tollway authority, a regional mobility authority, or a water district with less than 50,000 population. [This threshold was intended to exclude municipal utility districts and small water districts, but the population threshold is an anomaly in the bill. Since other sections of the bill were changed to 100,000 or greater, the real threshold for eligibility is a population of 100,000.]

The authorization to use design-build for civil works is also limited by the size of a governmental entity. Beginning September 1, 2009, entities over 500,000 in population or service area may use the authority. Beginning September 1, 2011, this threshold is lowered to 100,000.

Finally, there are limits on the number of projects for which an entity may use design-build. Entities over 500,000 may use design-build for three projects per year for the first four years, then beginning September 1, 2013 these larger entities have authority for six projects per year. Entities between 100,000 and 500,000, for which authority begins September 1, 2011, have two projects per year for four years then four projects per year after September 1, 2015. Special provisions are made for municipally owned water utilities with a separate governing board.

There was a great deal of discussion during the 80th Legislature about these limitations. The policy reasons for a phase-in were to promote a learning process about what kinds of projects are best suited to design-build. By almost all accounts, design-build requires different staffing and project approaches than traditional projects, and the Texas law is based on that premise.

As noted, the procedural rules for design-build in the civil engineering context are different than those provided in Subchapter H, Chapter 271, Local Government Code, for architectural projects. Initially, a governmental entity must make several findings on the extent to which the project requirements can be adequately defined, the time constraints on the project, the ability to ensure a competitive procurement, and the owner's ability to manage the project. An independent engineer is also required to be the owner's agent and the construction materials engineering and testing and related services must be contracted separately from the design-builder.

The governmental entity is required to develop two documents – a request for qualifications with information on the project site, scope, budget, schedule and criteria for selection (including weighting) and a design criteria package with more detailed information.

The initial step in the selection process is a shortlisting process based exclusively on qualifications. Each proposer must certify that the engineer that is a member of the team was selected on the basis of demonstrated competence and qualifications as provided by the Professional Services Procurement Act.

Any number of initial proposers can be shortlisted and proposals requested from them. The request for proposals must include the design criteria package, a geotechnical baseline report on the project site, instructions on preparing the proposal, and the relative weighting technical and price proposals. This weighting is left open; it can be 100 percent on technical proposals, 100 percent on price or something in between.

The technical proposal is required to address project approach, anticipated problems, proposed solutions, ability to meet schedule, conceptual design, and other information. No more than 180 days may be allowed for submission of proposals.

The statute requires that technical proposals must be opened and scored first, then cost proposals from firms that submitted a responsive technical proposal are opened and scored. The selection must be made in accordance with formula provided in the RFP. Negotiations must be conducted sequentially in order of rankings.

The issue of stipends for unsuccessful proposers was an issue throughout the legislative session. The payment of a stipend is considered a best practice by the Design-Build Institute of America, one that promotes more proposals and higher quality proposals and that provides access to the work product of unsuccessful proposers. Throughout the debate, the engineering industry pushed for either a mandatory stipend or strong protections for intellectual property in the proposals of unsuccessful proposers. The

Texas Council of Engineering Companies and a coalition of cities agreed on a mandatory stipend when the bill passed the House, but several senators involved in the bill in the Senate rejected this compromise.

The final bill, therefore, provides that unless a stipend is paid, the design-build team retains all rights to the work product. Nothing in the work product of an unsuccessful proposer may be disclosed and no use may be made of any unique or non-ordinary design element, technique, method or process contained in the unsuccessful proposal that was not also in the successful proposal when it was submitted, unless a license is obtained.

There are powerful sanctions against unauthorized use of an unsuccessful proposer's work product. These sanctions include liability for one-half of the cost savings, along with attorney's fees, and enforcement by declaratory or injunctive relief.

These sanctions can be avoided by the payment of a stipend of one-half of one percent of the contract amount. If the stipend is offered and paid, the governmental entity may make use of any design element in the proposal, at no liability to the unsuccessful proposer.

One other provision in the bill is worth noting – it explicitly limits the transfer of certain elements of risk to the design-builder. The owner must assume the risk of scope changes, unknown or differing site conditions (with some exceptions), regulatory permitting, natural disasters, and the costs of property acquisition. This language does not mean that tasks such as right-of-way acquisition or permitting cannot be assigned to a design-builder; rather, it means that the owner must assume the cost risks associated with these tasks (i.e., cannot require the design-builder to accomplish these tasks for a predetermined fee).

E. Interlocal Agreements for Design Services

H.B. 1886 also addressed the use of interlocal agreements to purchase design services. This issue was precipitated by the growth in interlocal purchasing cooperatives, or “buy boards,” and the role of these boards in the procurement of job order contracting. In the view of the design and construction industry, purchasing coops are appropriate vehicles for the purchase of commodities and goods, since a desk or a computer or a vehicle work the same in any location. Design services (and other services for that matter) are more site specific and are heavily dependent on personnel, management, and related considerations.

Therefore, the legislation specifically prohibits a contract between a governmental entity and a purchasing cooperative for the purchase of engineering or architectural services. Buy boards cannot be used to purchase engineering or architectural services.

F. Enforcement of Professional Services Procurement Procedures

Under long-standing law, governmental entities are required to purchase engineering and architectural services on the basis of competence and qualifications rather than price (Chapter 2254, Government Code). However, the only real enforcement in this statute is that it provides that a contract entered into in violation of the law is void.

This legislation adds to Chapter 2254 the power for an interested person to enforce the Act through injunctive or declaratory relief. Similar language has been in Chapter 271, Local Government Code for alternative project delivery processes and is carried over into Chapter 2264, Government Code. Injunctive relief for enforcement is also provided in many other statutes.

G. Local Government Corporations

Since alternative project delivery statutes have generally restricted the use of design-build procedures in civil infrastructure work, there have been examples of governmental entities using local government corporations as a subterfuge to avoid procurement law that might otherwise apply to the entity itself. A loophole that allowed this was created in 1999, but largely closed in 2001. However, some ambiguity has remained as to the permitted authority of LGCs.

H.B. 1886 resolves this ambiguity and clearly requires local government corporations created by a governmental entity to comply with procurement laws that apply to the governmental entity that created the corporation. The only exceptions to this requirement remaining in law are for LGCs constructing projects with a private venture participant in a reinvestment zone or projects 50 percent or more funded by a private entity. These exceptions are for legitimate public-private partnerships. Otherwise, with the expansion of design-build authority, the need to use (and the option of using) LGCs as a subterfuge is eliminated.

IV. Policy Issues Related to Design-Build

In spite of the clamor for design-build in recent legislative sessions and the constant repetition of the mantra “better, faster, cheaper,” a literature review and anecdotal evidence on the subject suggests that some greater balance would be in order.

There are surprisingly few independent studies of the results of design-build projects, especially outside of the facilities/building environment. The most often-cited study is a 1997 study by the Construction Industry Institute that looked at over 350 projects, all

vertical construction (buildings) and found improvements in time, quality, and cost of design-bid-build projects. An earlier study of design-build experiences of federal agencies with design-build was performed by the Federal Construction Council. Again, this study was mostly facilities. Outside the facilities area, DOTs in Florida and Colorado have studied the results of pilot programs. There are also a few case studies of specific projects. In fact, the U.S. General Accounting Office found in a 1997 report to Congress that there was not enough experience with horizontal design-build to evaluate its effectiveness.

A. Better/Faster/Cheaper?

Most of these studies -- and common sense -- would suggest a bit of caution before joining the “better, faster, cheaper” parade. Design-build procedures may very well expedite projects by allowing some overlap in the design and construction phases of a project. The best anecdotal examples of design-build successes are projects that are especially time sensitive, such as the I-15 reconstruction in Salt Lake City where the 2002 Olympics imposed a significant deadline. However, design-build procedures are unlikely to be cheaper and are especially unlikely to reduce an agency’s costs.

The Florida Department of Transportation (FDOT) review suggests that the type of projects selected for design-build construction introduces bias in the comparisons. For example, FDOT’s inclusion of project time as a major scoring criterion for selection created the incentive to reduce project time. The review also suggests that because the pilot project participants were exceptional constructors and designers, some degree of improvement is expected.

These studies also beg the question of whether the benefits could be achieved in other ways. For example, could the innovation that flows from greater designer-constructor interaction have been achieved through value engineering or a CM-at risk arrangement. On the matter of timeliness, TxDOT has significant success within the traditional design-bid-build system by using A+B bidding or penalties/bonuses for contractors. The Pierce Elevated Freeway reconstruction in Houston and the recent reconstruction of the Padre Island Causeway are two examples. More recently, a turnpike project under construction in northern Travis and southern Williamson County (MoPac extension/45 North) has been significantly expedited through the use of contractor incentives. Turnpike authorities generally have shown a significant ability to expedite projects within the traditional design-bid-build system; in Texas, the experiences of the Harris County Toll Road Authority and the North Texas Toll Authority bear this out.

By contrast, initial efforts to use the EDA/CDA process in Texas on projects such as 45 SE in Austin and LBJ Freeway improvements in Dallas suggest that significant front-end time can be wasted as owners attempt to develop a process and sort out risk allocation. Clearly, a design team can be engaged and put to work quicker than a design-build team.

The fact is that, in spite of the rhetoric about time being money, most public agencies do not manage for time in public construction. Rather, the goal of managers is usually on

the order of achieving the letting of \$X billion in contracts annually and achieving a politically acceptable distribution of funds across the population. It is the rare high-profile project where managers are held accountable for time. And on those projects, there are many tools available within the traditional process.

B. Litigation and Disputes

Proponents of design-build often argue that the process avoids what they call the “design-bid-build-sue” system. Theoretically, designer and constructor are working together, the owner has a single point of contact and a single point of responsibility, and arguments between designer, contractor and owner about fault vanish.

This is a naïve assumption. One commentator in *The Construction Lawyer* noted that “design-build concept continues to create many uncertainties because of its departure from the traditional paradigm of an owner contracting separately with an engineer/architect and contractor.” In this view, the dearth of reported case-law decisions is partly a consequence of the industry’s relatively recent return to design-build, partly a result of delays in cases percolating to the appeals courts for decision, and partly attributable to the construction industry’s extensive use of alternative dispute resolution. However, this commentator noted a surge in judicial decisions addressing design-build issues, with the pace accelerating in recent years. (Whitney, 1995)

More recent commentators have also noted this trend. *Design-Build: Lessons Learned* is an annual survey performed by Michael Loulakis of litigation related to design-build. The publication has gotten progressively more voluminous with each passing year. In the introduction to the 2003 volume, Loulakis noted a “staggering” increase in the number of reported cases.

Not unexpectedly, disputes arise about the same issues that are disputed in the traditional system – indemnity agreements, what bonding or insurance applies to what sorts of claims, who has responsibility for design services covered by professional liability coverage, owner interference with design and responsibility for changes, limits on liability, and similar issues. Additionally, however, there are new issues such as whether performance standards (which tend to govern D/B projects rather than more clear-cut design standards) are met in the final design. In addition, insurers who supply professional liability coverage to the design industry have noted a marked upsurge in contractor/designer disputes over issues such as the accuracy of projections made from partial plans in the initial bidding phase.

C. Potential for Conflicts of Interest

Probably the main question mark about design-build for the engineering and design industry should be an issue for the public interest as well – that is the potential for conflict of interest or the potential for downward pressure on the independent exercise of

professional judgment by the designer. Under the traditional system, the engineer is clearly the agent of the owner and has an ethical obligation to protect the owner's interests. In most instances, the A/E has a contractual obligation to identify contractor work not in accordance with plans and specifications and the contractor has an incentive to identify design errors. (In this sense, the adversarial nature of the process is positive.)

In a design-build arrangement, where the engineer is more typically a joint venture partner or subcontractor to the contractor, arguably these protections are diluted or absent. This can easily lead to practices such as overdesign or overbuilding or inferior product substitutions that maximize profits. This problem has led some owners to retain an owner's design professional to monitor design, schedule, and cost. This re-introduces some system of checks and balances; on the other hand, it is a step away from the single point of responsibility that is supposedly the strength of design-build.

D. Demands on owner

In a design-build project, the changed role of the design professional makes it critical that the owner have an extremely well-defined outcome and a professional staff that understands its role. In the absence of these, a project is likely to fail. By definition, design criteria packages and similar materials used to select a design-builder have less definition than a package of plans, specifications, and estimates; a design-builder has more latitude than a traditional contractor to utilize alternative methods. For example, under current Texas law a design-builder, after selection, completes plans and submits them to the owner or owner's E/A, but only for determination of scope compliance. This approach forces the owner to be sure of his minimum requirements up-front. It also suggests that an owner with a staff that has difficulty surrendering control and ownership of a project is likely to have difficulties with design-build. Almost all primers on design-build warn against micro-management by the owner.

E. Vertical/Horizontal Distinctions

As noted above, current Texas law makes a distinction between vertical and horizontal construction. Generally, design-build procedures may be used by most public entities for building projects but not for civil engineering construction such as water and wastewater facilities. Is this a valid distinction?

It is, for a variety of reasons. First, buildings are governed by building codes, which, regardless of design judgment, provide for a basic level of public health and safety. Second, discussions with public agencies suggest that the biggest historic problem areas in construction are facilities – jails, firehouses, convention centers, office buildings, etc. – not infrastructure.

Third, the primary factor that distinguishes most civil engineering projects from vertical construction projects is the existence of considerable front-end environmental clearance

and permitting requirements. Often, these requirements require considerable engineering before any construction can begin, lessening the possible time savings from a design-build approach. For all the clamor over design-build in the transportation arena, most people conversant with highway construction know that the primary delays in highway projects are in the environmental, right-of-way acquisition, and utility relocation areas, not design and construction.

F. Environmental Issues/Public Involvement

This discussion points to another policy issue related to design-build procedures that may concern the environmental and public interest community. Civil engineering projects, more typically than facility projects, draw extensive public interest and comment regarding siting, design, and related considerations. If final designs are not developed until a project is underway, the possibility exists that a project can move faster than the public's ability to digest and critique what is occurring.

A Minneapolis Star-Tribune article last year (May 7, 2001) reviewed a Minneapolis light-rail project in which the elimination of traditional review steps led to delayed awareness on the part of citizens of key design changes. In response, the City Council restored the earlier design, but at a significant redesign cost.

The Star-Tribune article also noted that "because a design-build contractor moves fast, and can bill for any delays, any surprises that stop the work can raise financial risks." In this case, the unexpectedly high cost of land purchases exceeded contingencies, leaving little room for other surprises.

G. Managing Community Impacts

A similar issue, particularly for projects in developed areas, is whether certain construction delivery systems are better than others in addressing community impacts of projects. Design-build projects almost by definition have a much-reduced level of ongoing owner involvement. Once the program is defined in general terms, the design-builder must be left with broad latitude to build what the owner has defined. This can be problematic for projects such as rail or transit that can have significant community impacts. In a conventional project, an owner can check design details with community leaders and redesign around objections without massive construction change orders; in a DB project that is more difficult.

This can also be a factor when construction impacts other operations. For example, when DFW Airport constructed a new automated people-mover as part of new terminal construction, the Airport Authority opted for a CM-at risk approach rather than design-build, because it did not want to lose control over management of how the construction affected ongoing airport operations.

H. The “Spectacle” of Best Value Purchasing on Major Projects

While not necessarily an argument against design-build, it should be understood that an inevitable side-effect of “best value” selection is politicization of the process. When decisions are not cost-based, they are inherently more subjective. Under current law, for sound workability and policy reasons, the selection of design professionals is qualifications-based, and thus somewhat subjective. This process occasionally engenders controversy, but usually the dollar amounts involved are relatively small and the decisions delegated to technical staff. In the typical design-build selection process, subjective decisions are made involving contract amounts that are 10-15 times larger and, therefore, likely to draw more political interest.

While protections can be put in place, the spectacle can be ugly. One need look no further than the process that took place during the selection of a contractor by the Houston Area Water Corporation last year where teams of lobbyists and insiders were employed by the various contenders. The ultimate selection was no doubt technically based and sound, but in the political/public world appearance is reality. In this case, the appearance was such that the Houston Chronicle, which had previously editorialized in support of the HAWC as a vehicle to get around procurement laws, withdrew its support, aghast at the process.

The current procurement system is not without flaws. But in reality it is a check-and-balance system that has as one of its primary goals protection of public integrity through competitive bidding. For the most part, this goal has been achieved, and compromises ought to be carefully considered.

I. Design-Build as a Business Model for the Design Industry

Finally, one of the major concerns of the design industry about design-build is that as a business model, design-build potentially raises the costs of competing for work. In the traditional model, there is a cost associated with being selected by an owner, but rarely does the selection process involve significant pre-design of the project. In a design-build process, however, from two to five firms may be required to essentially perform preliminary engineering, or in some cases detailed design, of a project. For the unsuccessful proposers, this can be a significant cost. That is why the industry has promoted the idea of stipends for unsuccessful proposers, even though stipends rarely cover the cost. Some may feel that the government has the right to establish the cost of doing business with itself however it chooses to do so, but the design industry can be expected to oppose that premise.

V. Toward the 81stth Legislature

Given recent history, it seems likely that these issues will be before the 81st Legislature in some form or another. Exactly what that might be is difficult to predict at this point

Owners are clearly frustrated with low-bid construction and the change-order artistry and disputes between designer and constructor that can often result from that system. However, too many promoters of design-build seem to imply that simply adopting D/B procedures will make those problems vanish – no more disputes, less owner involvement, just hand over the performance criteria at the beginning and get a finished product at the end that is better, faster, cheaper. That is extraordinarily naïve and not borne out by the evidence.

However, we must identify improvements to the traditional system -- and address the aspects that frustrate owners -- and there are options short of design-build that do that. For example, the University of Texas System, probably one of the more sophisticated owners, has experimented with design-build but seems to be moving to CM-at risk as its preferred delivery mechanism. Under this approach, a CM, acting as a general contractor, is brought into the process early and has input into the design, but the owner contracts separately with the engineer/architect and the CM. The owner gets the benefit of designer-constructor synergy, but knows that the E/A ultimately represents the owner.

Another option is expanded use of negotiated contracting. Most political subdivisions now have the authority to select contractors on facility projects on a best value basis, using considerations other than low bid. If an owner wants to avoid change-order artistry and unnecessary delays, a consideration in selection can be past history on other projects.

Either of these approaches would seem to offer many of the advantages of design-build without the disadvantages. For example, proponents of design-build almost always cite the view that DB promotes team ownership, cooperation, communication, and a less adversarial process. However, these attributes can just as easily be promoted through CM-at risk and negotiated contracting approaches where the contractor is brought onto the team using something other than a pure low-bid approach. Using these approaches, the owner can promote cooperation without losing the advantage of a direct contractual relationship with the design professional.

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