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Design–build contrasts sharply with design–bid–build, the traditional and most commonly used project delivery model in the United States. Under design–bid–build, a project owner must first execute a contract with a design professional to prepare construction documents. Much later, when the construction drawings and specifications are complete, the owner must then enter into a second contract with a construction contractor to build the project. Design–build’s most distinguishing feature is that it streamlines the two–contract process.

Using design–build, the owner saves time and effort by executing only one contract with a design–builder, which then takes responsibility for completing both the design and construction of the project.

Design–build is as old as antiquity – the “master builders” of biblical and medieval times were all design–builders. What we now call “traditional” design–bid–build did not develop until the Renaissance, but it took over in popularity in the late–1800’s. By that time, buildings had gotten taller and more complex, architecture had developed into a profession, and general construction contracting – requiring the coordination of multiple trade subcontractors – was becoming a full–time job.

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In 1996 the federal government changed its procurement laws to allow design–build, and the states began to follow suit. Today, all states allow design–build procurement, with only a few states placing limitations on its use. The DBIA reports that transportation is the fastest growing design–build sector, with the number of transportation projects doubling over the past five years and nearly all states enacting legislation allowing for design–build on transportation projects.

Public–Private Partnerships (“P3”) are also driving the use of design–build. Under P3, a private sector entity, called the concessionaire, agrees to finance, design, build, operate and maintain a public service or facility. The concessionaire provides design and construction by contracting with a design–builder.

Under traditional delivery, the owner is legally responsible to the construction contractor for the accuracy of the construction drawings and specifications that the owner’s architects and engineers prepare. For that reason, Owners are frequently obliged to pay change orders to contractors based on errors and omissions in those documents.

Under design–build delivery, the design–builder – not the owner – is legally responsible for the accuracy of the construction documents. If there are errors in the construction documents the design–builder’s architects and engineers prepare, the design–builder may have to pay change orders to its subcontractors to tear out and rebuild, and may have to defend itself from third–party claims of personal injury and property damage arising from those design errors.

To cushion itself from that liability, a design–builder may transfer design risk by subcontracting portions of the design and construction to design–build subcontractors, a practice that is becoming increasingly popular.

The benefit to the owner of this single point of responsibility for design and construction liability cannot be overstated. Using design–build, the owner remains liable only for errors in any detailed design information it provides, so long as the design–builder relies upon the accuracy of the information in preparing its contract price.

By the end of 2013, 35 states and Puerto Rico had enacted P3 enabling legislation for transportation projects and 23 states also allowed P3 for vertical construction. As public budgets are being cut and restricted, P3 is becoming increasingly popular.

Single point of responsibility

The design–build contract between the owner and the design–builder creates a “single point of responsibility” that offers considerably more to a project owner than mere convenience and time savings: the opportunity to transfer all design risk to the design–builder.

When the owner provides performance specifications, the design–builder has the latitude to prepare its own detailed design specifications to the extent it deems necessary. The design–builder has the freedom to be creative.

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Performance specifications

Owners can avoid all liability for the design information they provide by using only performance specifications for bidding and negotiating design–build contracts. Performance specifications set forth an objective or standard to be achieved. Design specifications, on the other hand, describe in precise detail the materials to be used and the manner in which the work is to be performed. With design specifications, the contractor has no discretion, but is required to follow them as if they were a road map.

When the owner provides performance specifications, the design–builder has the latitude to prepare its own detailed design specifications to the extent it deems necessary. The design–builder has the freedom to be creative, and the owner benefits as well because design–build case law holds that where the design–builder provides a bid based on performance specifications, the design–builder is required to meet the owner’s required performance, regardless of the level of difficulty.

For example, in Strand Hunt Construction, Inc., ASBCA No. 55671, 55813, 08–02 BCA ¶ 33,868 (2008), specifications required windows for an Air Force Base in Alaska that would meet antiterrorism standards for blast resistance and also provide insulating values suitable for an arctic winter. The design–builder claimed defective specifications when it could not find the windows commercially available without having them custom made. The administrative judge denied the claim, noting that nothing in the performance specifications stated that the windows would be available off–the–shelf.

In other cases where the design–builder was obligated to meet performance specifications, the results have been similar. In Aleutian Constructors
v. United States, 24 Cl. Ct. 372 (1991), the contractor obtained approval to change the government’s design for a roofing membrane to one the contractor devised by warranting that the contractor’s new design would meet the government’s performance specifications for wind uplift pressure.

When the roof later failed, the contractor repaired the roof at its own expense and claimed the costs, alleging defective specifications and impossibility. The government successfully defended that when the contractor used its own design, it assumed the risk that performance might be impossible.

Where a contract includes both performance and design specifications, the design–builder must comply with both, and cannot ignore the design specifications, even if it can meet the performance specifications in another, less costly way. A design–builder’s incorrect assumptions during bidding regarding whether a performance specification will trump a design specification can lead to an artificially low and winning bid.

As illustrated in FSEC, Inc., ASBCA No. 49509, 99–2 B.C.A. ¶ 30,512 (1999), deviating from design specifications and providing a more efficient, but less costly, design that meets only the performance specifications can ultimately be more costly to the design–builder. In FSEC, Inc. the design specifications required four fans, but the contractor discovered that it could meet the performance specifications for airflow with only two fans. After installing the two fans, the contractor was required to install two more fans at its own expense to comply with the design specifications.

**Bridging alternative**

Although design–build gives the owner a single point of responsibility, it also takes away the owner’s traditional and exclusive control over the project’s design. That loss of control is concerning to some owners who want to secure the benefits of the single point of responsibility, but also obtain exactly what they want from the project’s design.

To do both, an owner may enter into a design contract with its own design professional to prepare design drawings that are generally 20–30% complete, and then use those drawings (“the bridging documents”) as the basis for obtaining a competitive bid or negotiated price from a design–builder.

Bridging allows owners to provide detailed design specifications to the design–builder, and still obtain the benefits of a single point of responsibility. However, where owners have attempted to transfer to the design–builder the owner’s liability for errors in detailed design specifications that the owner has prepared, the courts have not been sympathetic.

To no avail, some owners have marked their bridging documents “for information only” to provide notice to the design–builder that it cannot rely on the accuracy of the documents.

For example, in Donohue Electric, Inc., VABCA No. 6618, 03–1 BCA (CCH) ¶ 32,129 (2002), the government’s design required that the contractor install a specific sterilizer and a specific seven horsepower boiler. After contract award, the design–builder’s engineer determined that the two pieces of equipment could not be used in tandem, and that a 25 horsepower boiler would be required.

The government argued that since it had advised the bidders that its 50% drawings were informational only, the design–builder had no right to rely on their accuracy. The judge disagreed, holding that the government had to bear responsibility for detailed design information that it had provided to bidders.

Some owners have gone one step farther by identifying their design documents as “informational” and then requiring that the design–builder verify the accuracy of the owner’s design. In M.A. Mortenson Co., ASBCA No. 39978, 93–3 B.C.A. (CCH) ¶ 26189 (1993), the government presented 35% complete drawings to design–build offerors. The government represented that its drawings could be relied on as the basis for cost proposals, but the successful proposer was “required to verify and validate the accuracy of the preliminary design information.” Mortenson prepared its quantity take–off for structural concrete and steel reinforcing bar from the government’s design, but those quantities proved to be insufficient to properly construct the building’s foundation. Mortenson claimed for additional costs, but the government denied the claim, relying on the verification requirement.

The judge found the government’s position was unreasonable. He noted that the verification requirement was part of post–award design and not a proposal effort – so would not be completed prior to establishing a contract price – and held that the government had warranted the adequacy of its design drawings for proposal purposes.
Performance guarantees: EPC contracting

Engineer–procure–construct (EPC) adds another element to a design–build contract: the purchase of equipment, such as turbines, boilers, distillery equipment or other equipment essential to the operation of a plant. An EPC contractor may be required by contract to guarantee that the completed plant will achieve a certain level of performance.

In the power generation market, the client may be an electric utility with the obligation to deliver electrical power to a local community. These clients favor EPC contracting because it provides a single point of responsibility for equipment, design, construction and commissioning.

Because of the commitments that the utility makes with regard to the amount of power it can deliver to its customers, and its obligation to comply with environmental regulations regarding emissions, the utility believes it must require that the EPC contractor provide performance guarantees regarding such things as carbon removal rates, heat rates for boiler performance and the megawatt output for turbine generators.

Liability under performance guarantees is normally not open–ended because the contracts typically include a start–up period of 30 to 180 days during which time the plant and equipment are tested and the compliance with performance guarantees is determined. If performance is not achieved, the owner may assess liquidated damages for a failure to perform according to the tests, and the liquidated damages become the limit of the EPC contractor’s liability. A far different outcome can result where a design–builder makes an express or implied warranty of continuing performance beyond an initial period. In that event, disputes over performance may continue for a period of years.

In Colorado–Ulte v. Envirotech, 524 F.Supp. 1152 (D.Colo. 1981), an EPC contractor warranted that it would bear all costs of corrective measures to achieve the state’s air quality emissions standards in the operation of a hot–side precipitator it purchased and installed at a coal burning power plant. After several years of intermittent testing and tweaking, the equipment was never able to meet the performance requirements for more than two days.

The operator was finally able to achieve emissions performance by introducing chemical additives to the flue gas, but the contract required achieving the performance without such additives. Moreover, it was uncertain whether the state would continue to allow additive use. The utility sued for specific performance or damages.

The court found that Envirotech had made several express and implied warranties, including the implied warranty of merchantability. Envirotech defended that performance was impossible, but the court held that because Envirotech had expressly warranted that it could provide a satisfactory precipitator, it had assumed the risk of impossibility. Because the precipitator was a unique item, and useless to the utility if not functioning, the court found that specific performance was the appropriate remedy and ordered Envirotech to keep working until it could pass the performance tests.

Performance guarantees: building construction

The owner’s requirement that the design–builder provide a performance guarantee has largely been confined to projects that would deliver a measurable rate of performance, such as the megawatt hour requirement for the power plant discussed above.

Performance guarantees are difficult to assess with respect to buildings that are not designed to produce anything, such as an office building. That way of thinking is now starting to change due to the relatively recent emphasis on reducing energy consumption in buildings.

Two building projects recently in the news draw attention to the owner’s ability to use the design–build process to hold the design–builder liable for the building’s post–completion energy performance. One of the projects discussed below used performance guarantees and liquidated damages to motivate the design–build team. The second used an award fee incentive program.

GSA Federal Center South, Seattle, WA

In March, 2010 the US General Services Administration (GSA) entered into a $66M design–build contract for a new office building in Seattle, WA, called Federal Center South. The design–build team was required to guarantee that the building, when constructed and after a one–year performance period, would use 30% less energy than ASHRAE 90.1–2007. The liquidated damages that could be assessed were calculated as a 0.5% hold–back of the design–builder’s fee, or $330,000.
To cushion its risk, the design–build team designed the building to use 40% less energy than the ASHRAE standard. The team also considered the risk that the owner would not operate the building in accordance with the energy management plan. The building completed construction and was dedicated in May, 2013, so it will be several months before the team will learn whether it will receive the fee now being held back.

**National Renewable Energy Laboratory (NREL), Research Support Facility (RSF), Golden, CO**

Rather than assessing liquidated damages for failure, NREL, a division of the U.S. Department of Energy, used incentives to motivate the achievement of 26 performance goals through a Best Value Design–Build/Fixed Price with Award Fee contract. NREL awarded the contract, which implemented many of DBIA’s published best practices, in July 2008 after a national competition to select a design–builder for the design and construction of the RSF, a 220,000 square foot office building. NREL provided only performance specifications. Among the 26 performance goals were the achievement of LEED Platinum and net zero energy performance.

NREL initially awarded the contract only for preliminary design, and later exercised its right to negotiate a fixed price with the design–builder for design development and construction. The award fee covered both phases of the contract and made incentive payments by contract modification at seven milestones, the last of which occurred after a twelve month post–occupancy period.

The building was completed in 2011. It met or exceeded all 26 goals with no claims, change orders or disputes. NREL is so pleased with the process, which it calls “performance–based design–build,” that it is actively promoting it on the NREL web site, www.nrel.gov, where it has posted the Request for Proposals and several papers and presentations about the process it followed in selecting the design–builder and developing the contract.

**Performance guarantees: special issues for design professionals**

Professional liability insurance policies defend the insured design professional from claims and reimburse costs incurred due only to the design professional’s negligence, which is measured against a professional standard of care. Professional liability policies specifically exclude from coverage any express guarantee or warranty. For that reason, professional liability insurance companies and brokers routinely advise that the design professional avoid making any warranty or guarantee that its design, when constructed, will perform in a certain way.

Design–builders and EPC contractors frequently enter into subcontracts with architects and engineers to fulfill the design requirements of the design–build or EPC contract. To avoid gaps between the prime contract and any subcontract, prime contractors typically incorporate the prime contract into the subcontract. The subcontract often further requires that the subcontractor assume to the design–builder the contractual obligations that the design–builder owes to its client, the project owner. These “flow down” provisions are quite standard across the design and construction industry.

When the prime contract requires that the design–builder guarantee performance, the subcontracting design professional will likely object to incorporating that requirement into the subcontract. While it may be counter–intuitive not to flow down to a subcontractor all of the requirements of the prime contract, limiting the design professional’s liability to negligence in failing to achieve the required performance may lead to better outcomes for the design–builder.

This is because a professional liability insurance carrier may deny a breach of warranty or guarantee claim, based on the professional liability policy’s standard exclusions, but it will typically defend a claim that the design professional’s negligence has resulted in the failure of the design–builder to achieve the performance requirements of the prime contract, and it will reimburse damages that the design–builder incurs due to the design professional’s negligence.

**Contract drafting and interpretation**

In all contracts, clear drafting is important. This is particularly true in a design–build or EPC contract where the typical and well–understood design–bid–build roles of design professionals and subcontractors may be filled in different ways.

In the case of *Evergreen Engineering Inc. v. Green Energy Team, LLC.,* 884 F.Supp.2d 1049, (D.Haw. 2012), the owner hired Evergreen to serve as the managing project engineer for the construction of a biomass–to–energy plant. Although Evergreen was not a design–builder or EPC contractor, the contract between the owner and Evergreen provided, as follows:
Overall plant performance guarantee will be achieved via guarantees by suppliers of individual equipment and the undertakings of the Contractor and certain project investors as well as by the undertaking of Evergreen in the Agreement. Equipment performance guarantees will be written into the specifications for each piece of major equipment with financial penalties for performance shortfalls. Evergreen will work together with your Construction Manager, Contractor and Owner’s Representative to ensure that your project is designed and built to the high standards you require in order to achieve your continual goals.

After a dispute over the amount of fuel required to operate the plant at its required efficiency, the owner claimed that Evergreen had guaranteed the overall plant performance, based on the language above.

Evergreen argued that the contract was for “modified design, bid, build,” project delivery and did not create an EPC relationship. It further argued that as only the owner’s engineer, it was not the guarantor of plant performance. Plainly confused, the court found that by having included the term “overall plant performance guarantee” in the paragraph above, the agreement between Evergreen and the owner memorialized Evergreen’s assurance regarding overall plant performance.

Although it believed Evergreen had guaranteed something, the court could not determine the scope of the guarantee. It found the agreement ambiguous and remanded the case to the trial court for further determination.

Clear contract wording specifically stating which party would be responsible for what with regard to the “overall plant performance guarantee” would likely have avoided this case altogether, because the owner would not have been able to use the ambiguous wording to support its contention that the design engineer had agreed to guarantee plant performance.

Another example of poor drafting centers on design services that design–build subcontractors often provide. In design–build delivery, a subcontractor may fill the traditional role of a trade contractor performing only construction based on the design–builder’s design, or it may provide design services as a design–build subcontractor and then construct its own design.

In BMAR Associates, Inc. v. Midwest Mechanical Group, a design–builder subcontracted the design and construction of the boiler to a mechanical design–build subcontractor. When the design–build subcontractor failed to provide payment and performance bonds required for construction, the design–builder hired a replacement subcontractor. The new subcontract did not include any design duties to complete the design, but was written purely for construction of the design–build subcontractor’s design. When design was required, the replacement subcontractor refused to accept design responsibilities and even questioned the quality of the design that the first subcontractor provided. The design–builder argued that the parties fully understood that the replacement subcontractor would take over the design. The design–builder also tried to shift the risk for the failure of the contract to address design services by claiming that both parties had made a mutual mistake.

Courts typically do not consider prior negotiations when interpreting a written contract; particularly, as in this case, when the contract includes an integration clause to clarify that all prior negotiations are merged into the contract. Because the contract language in BMAR Associates, Inc. did not support the design–builder's contentions, the judge disagreed with the design–builder and held that the subcontract only covered construction of the design documents prepared by the first subcontractor.

The high cost to compete

Federal Acquisition Regulation (FAR) Part 36.3 sets forth a two–step procurement process for design–build that other public and large institutional owners have followed. The process calls for the government first to develop a short list, based solely on qualifications, and then to request a technical and price proposal from the short–listed firms.

The FAR contemplates that the offerors will be required to provide design work, and may incur substantial costs in preparing offers. Although favorably seen when it was developed in 1996, the FAR two–step process has resulted in limiting competitors only to larger firms with the means to finance the proposal costs.

Industry organizations are now lobbying for reform of the federal design–build process. The AIA’s incoming president testified before the House Small Business Committee in May 2013. She explained that architecture firms spend a median amount of $260,000 to compete in the two–step process, but that 76% of all firms earn less than $1M in annual revenue. On that basis, she asked the committee to revamp the statute so that small businesses can “survive the bidding process and bring quality work to the federal government.”
The DBIA is now promoting a purely qualifications-based selection process for design-build, just as the government now selects design professionals, and is in the process of developing such legislation for proposal to Congress this year.

The DBIA has also issued a position statement in favor of providing stipends to competitors in order to reduce the burden on the proposers and increase the competition. DBIA explains that stipends help, but usually do not fully defray the proposal costs.

Some owners may not be inclined toward adding to the costs of the project by paying stipends, or may find themselves prohibited from doing so due to regulations. Other owners may demand that in exchange for stipends they receive the right to use the proposer’s design, even if later awarding the contract to another design-builder.

Some owners are already using alternatives to the two-part process. In one alternative, the owner retains the design-builder on the basis of qualifications only, which substantially reduces the costs to compete. After award, the design-builder completes the owner’s design and provides a guaranteed maximum price, in a process not dissimilar from a typical construction management at risk (CMAR) project. Called progressive design-build, this process would work well for any owner, public or private, that is already accustomed to the CMAR process.

Because of the high costs to compete, design-builders and design professionals often enter into teaming agreements before spending their time preparing designs and proposals for design-build projects. At a minimum, the teaming agreement allocates responsibility for the various tasks needed to prepare the proposal and the payment terms of any pre-proposal stipends.

A teaming agreement should also cover the form of agreement that will be entered into if the team wins the award, including the scope of services, contract price or method for determining it, and payment terms. Teaming agreements may also cover other issues such as confidentiality and exclusivity. Because the enforceability of a teaming agreement varies from state to state and depends upon the specificity of the contract language, local counsel should be consulted before executing them.

**Design-Build going forward**

An historic project delivery model that largely disappeared from non-residential construction during the 19th and 20th centuries, design-build is gaining market share. Federal, state and local governments now embrace design-build and have made dramatic revisions to procurement regulations to support it.

Because of 20 years of relatively wide-spread usage within the federal government, a sizable body of case law now exists to govern owner and design-builder behavior across the country. Increased use of Public-Private Partnerships and the recent enactment of P3 statutes in several states will drive even more design-build usage and acceptance of design-build as a mainstream method for delivering a project.

For these reasons, design professionals and construction contractors that have never performed on a design-build project will likely consider doing so in the future. Because design-build changes typical roles and responsibilities, they will need to adapt to new ways of competing and performing.

The high cost to compete will continue to be a challenge, unless sweeping procurement reforms take place. Those costs will require that all firms carefully evaluate on a project-by-project basis the chance of winning the contract and recouping the proposal costs. Some firms may choose not to compete, especially when the owner has not limited the number of competitors, or the process requires too much up-front design.

As can be seen in the case law, some owners are using design-build to shift all design costs to the design-builder, even when the owner provides detailed designs. A case now being appealed to the Federal Circuit Court of Appeals, *Metcalf Construction Co., Inc. v. United States*, 102 Fed.Cl. 334 (Fed.Cl. 2011), found that the government was allowed to transfer to the contractor the risk of differing site conditions based on the contractual requirement that the contractor conduct an independent soil analysis. The trial court held that Metcalf was on notice that the government’s report was for information only, and, for that reason, could not recover on its differing site conditions claim.

The *Metcalf* case has specific application regarding the extent to which an owner can avoid liability for site information it provides to bidders and proposers. The logical result of permitting a project owner to contractually disallow differing site conditions claims is that contractors, including design-builders, will increase their bids on all projects across the board to cover the contingency of encountering a potential differing site condition. Since not every project will have a differing site condition, the net result is that
project owners as a whole will be paying more for their projects due to having to pay for the contingency built into every bid, than they would have otherwise paid if they only paid for actual differing site conditions claim. Fiscal prudence was indeed a key rationale for the Federal Acquisition Regulations and body of federal procurement law that has historically prohibited the federal government owner from disavowing differing site condition claims. Owners actually obtain financial benefit by acknowledging and paying for differing site conditions. Everyone is harmed if the owner attempts to bar differing site condition claims and pass along other unmanageable risks to the design–builder.

With respect to design–build, a holding such as the trial court decision in Metcalf could broadly be applied to disallow all design–builder claims based on the inaccuracy of owner–provided designs, including bridging documents and site information upon which the design–builder reasonably relied, whenever the owner includes contract language requiring the design–builder to perform its own investigations and verify the accuracy of all documentation. As discussed above, design–builders would be required to add contingencies to their bids and proposals, or might ultimately decide that no contingency could adequately cover the risk and still be competitive. In that event, design–builders may decide to avoid the risk altogether and decline to compete.

The resolution of the Metcalf appeal and the success of industry associations in bringing about less costly procurement processes may both play a role in determining whether we will see more, or less, design–build delivery in the future.
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