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Design-Assist: Getting Contractors Involved Early

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Innovation in construction delivery methodology is clearly trending toward collaborative, teamwork approaches. Design-assist is one such approach that requires taking only a small step away from traditional delivery methods and avoids the leap required by integrated project delivery. Its potential advantages are reduced time and cost for construction, improved constructability and added value.

[A] What Is Design-Assist?

1. **Overview.** Design-assist is a project delivery method in which the construction team is engaged by the owner to collaborate with the architect or engineer during the design phase. It is intended to reduce the cost and time for construction, improve constructability and add value. Design-assist is part of the recent trend in delivery methods toward teamwork approaches to design and construction.

Under the traditional design-bid-build delivery method, the contractor does not see the plans and specifications until they have been completed by the architect or engineer and are ready for bids. Any suggestions or concerns that the construction team might have with respect to them arise at a point in the process when it might be difficult, very expensive or too late to address them. For example, the curtainwall subcontractor might have an idea for improving the fastening system that could save time and money or the plumbing subcontractor might have a concern with constructability that could result in a change order that will add cost and time to the project.

It has long been common for owners to hire the construction manager or the pre-selected general contractor prior to the completion of the design to provide “pre-construction services.” These services typically consist of reviewing the draft plans, commenting on constructability and providing cost estimating and scheduling services, but may also include providing advice on materials, systems and equipment, labor and material availability, procurement timing and alternative designs. Trade subcontractors are usually not involved, so the services lack the benefit of their specialized expertise.

Under design-assist, the construction team is engaged during the design phase far more extensively than under normal pre-construction services. Design-assist involves in the design process not only the construction manager or general contractor, but also key trade subcontractors, and makes them active participants in creating the plans for the project. Participation of the individual trade subcontractors in the design is intended to allow their specific construction expertise to add value to the plans (excluding the aesthetics and style of the project) and reduce the cost and the schedule for the project. Furthermore, instead of reacting to draft plans as part of pre-construction services, design-assist calls for a proactive approach in which the construction team participates in the preparation of the design. It seeks to replace the sequential process of design, preliminary cost estimating, re-design and, hopefully, final cost estimating, in which the design and construction teams perform separate and isolated roles, with one coordinated group effort.

In contrast to design-bid-build, design-assist provides a process that encourages design suggestions from the construction team during the design phase, which is a role not traditionally performed by

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contractors. Design-assist also solicits and addresses design concerns from the construction team during the design phase, as opposed to dealing with them when and if they arise during the construction phase under traditional delivery methods. As discussed further below, while design-assist results in a design phase that is more complex and costly than design-bid-build due to the involvement of the construction team, it promises a shorter construction schedule and improved value with fewer issues, such as requests for information (“RFIs”) and change orders.

Design-assist is a unique delivery method because its focus is solely on the design phase of construction (but it promises a positive impact on the entire project). Other delivery methods, whether traditional or not, address the design and the construction of an entire project. Design-assist is a delivery method that can be used in conjunction with, or incorporated into, other delivery methods. Design-assist is most commonly used with the construction management at risk delivery method, but the design-bid-build method can be adapted to it as well. Although by definition the design-build delivery method involves the owner hiring both a design team and a construction team under one contract, it does not necessarily require the input of the construction team during the design phase of the project. Accordingly, design-assist can be utilized under design-build as well.

Like integrated project delivery (“IPD”), design-assist is an evolving delivery philosophy that can be implemented in various ways and is not rigidly defined. While it generally advocates contractor involvement in the design prior to construction, the number of trades involved and the scope of their design assistance services can be tailor-made to suit the needs of each project. As of this writing, no standard pre-printed form, such as those published by the American Institute of Architects (“AIA”), ConsensusDocs or the Engineers Joint Contract Documents Committee (“EJCDC”), appears to exist for design-assist.

2. Scope of Work. Under the design-assist delivery method, the construction team members are hired by the owner early in the design process. To gain the full benefit of their design input, they are usually hired prior to the commencement of construction documents. Hiring typically occurs after programming and during the schematic design phase or the design development phase.

The construction team provides advice during the design phase, but does not diminish the role of the architect or engineer or their ultimate responsibility for the design. The construction team works cooperatively with the design team with respect to any or all of the following items:

- Design assistance
- Value engineering
- Constructability
- Cost estimating and final price determination
- Schedule
- Permitting
- Procurement
- Building Information Modeling (“BIM”)
- Site issues
- Maintenance and life cycle

It has long been common for architects and engineers to provide performance specifications for certain components of the project, such as HVAC, sprinkler systems and earth retention, with the trade

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contractors performing the work for those components on a design-build basis. Under design-assist, any or all of such design work provided by the trade contractors could be done during the design phase.

Design-assist is sometimes structured to include “target value design” or “TVD.” Target value design is a process in which the design is prepared with early input from the construction team and strives to meet an aggressive, low target price. Rather than preparing the design, estimating the cost and then deciding whether the cost is acceptable, target value design establishes a preferred cost up-front and then strives to prepare a design that matches it. Target value design is a process and an objective that can be incorporated into design-assist, IPD or similar collaborative delivery methods.

3. Contracts. Contracts for design-assist vary significantly in multiple respects. As for the parties with whom the owner contracts, the owner can enter into one contract solely with the general contractor or the construction manager, in which case they will, in turn, enter into multiple separate contracts with the trade contractors. The owner can also enter into a separate contract with each member of the design-assist construction team, i.e., the general contractor or the construction manager and each trade contractor.

As for the scope of work to be covered under the contract, one of two basic alternatives is usually followed: One alternative is for the scope of work to be limited to only the design-assist services to be rendered prior to construction. If the scope of work under the contract is limited to the design-assist services, a new contract will obviously be needed for construction services regardless of whether the same construction manager or general contractor is hired to construct the project. The other alternative is for the scope of work to cover everything from the commencement of design-assist services through the completion of construction.

As for the design-assist services to be rendered, they can vary from performing an isolated and defined task (e.g., value engineering) to providing comprehensive design assistance (such as all of the services identified in the list above). Also, different construction team members can be hired to provide different design-assist services, as the owner wishes. Similarly, payment for design-assist services are completely negotiable, and may be a fixed fee, a monthly sum, an hourly rate or other mutually agreed amount. Like other collaborative delivery methods, some design-assist contracts are adopting the “gain share / pain share” approach to compensation whereby a bonus is paid in the event that a certain target price is achieved or savings realized as well as a penalty (a portion of the fee is not paid) in the event that the target price is not achieved or the savings are not realized.

[B] When Should Design-Assist Be Considered?

Design-assist could be used on any project, whether large or small, simple or complex. However, design-assist is intended to shine brightest when the nature of the project is such that early engagement of the construction team, particularly specialty trades, in the design process can be most beneficial. Prime candidates for design-assist are unique and complicated projects. For example, hospital projects are often large and complex. The mechanical, electrical and plumbing (“MEP”) work constitutes a large portion of their overall cost. Involving the MEP trades in the design might have a significant, positive impact on the cost, the schedule or other aspects of the project. Plain vanilla or replicated “cookie-cutter” projects, like standard big box retail or convenience stores, would probably not be prime candidates for design-assist.

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[C] What Does the Owner Look for in a Design-Assist Team?

When an owner hires a design team under a traditional delivery method, such as design-bid-build, the owner logically focuses primarily on purely design-related criteria, such as style, function and creativity. Similarly, when an owner hires a construction team under a traditional delivery method, such as design-bid-build, the owner logically focuses primarily on purely construction-related criteria, such as craftsmanship, quality and dependability. Of course, the owner also seeks a good fit in terms of the personal interaction between the owner's team and the design and construction teams.

However, the collaborative and cooperative nature of design-assist requires the design and construction teams to have not only the qualities needed for traditional delivery methods, but also strong skills in communication and teamwork. This manner of working is much different from traditional delivery methods in which the design and construction teams generally perform completely separate tasks in isolation from each other and sometimes unfortunately develop adversarial relationships. For design-assist, the owner must determine whether the design and construction teams can work together harmoniously to achieve common objectives for the project. Owners using design-assist typically select contractors using a request for qualifications ("RFQ") or request for proposal ("RFP") procedure, which may or may not include pricing as discussed below. Personal interviews are essential to the selection process as well.

[D] What Are the Advantages of Design-Assist?

Design-assist is based on the premise that engaging the construction team in the design process benefits the overall project. It is intended to improve cost, timing, constructability, quality and value. If a trade contractor has an idea that will save time or money, why not hear about it during the design phase rather than wait until construction is underway or, perhaps, never hear about it because the contractor was never asked? Also, many design issues can be "nipped in the bud" with design-assist because they can be discussed and resolved simply during the design phase instead of in the field during construction when the stakes, especially in terms of time and cost, are much higher. As a result, design-assist promises fewer RFIs, change orders, building code issues and other issues with the plans and specifications.

By involving the construction team members in the design, and having them generate cost estimates and schedules during the design phase, many of the pre-construction services that are normally rendered after the design has been completed under traditional delivery methods are completed, or are well underway, by the time the plans are finished under design-assist. This feature of design-assist helps to shorten the construction schedule.

Some owners find IPD to be a very appealing delivery method, but are not willing to take the leap. Design-assist is a step in the direction of IPD. It has some of the attributes of IPD (teamwork, collaborative design process, etc.) and avoids the more controversial elements of IPD (limited liability, joint decision-making, etc.). Design-assist may be the perfect alternative.

Under the design-assist method, the design team and the construction team are required to work together toward the common goal of producing the best plans for the project. This cooperation creates an environment that, if the design-assist method is done properly, should foster collaborative and respectful relationships between them during the design phase. By the time construction commences, the design and construction personnel should be functioning as a cooperative and harmonious team. Consequently, the frequency and severity of disputes should be reduced or, if they arise, resolved more easily than if those relationships had not been formed.

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[E] What Are the Disadvantages of Design-Assist?

Some owners are concerned that the pricing for the project under design-assist might not be competitive because the construction team is hired before firm prices can be provided. However, benchmark prices can be obtained during the programming phase to determine accurate market prices. Also, nonbinding preliminary bids can be obtained during the contractor selection process based on initial plans, such as schematic drawings, and binding final prices can be submitted upon completion of the plans. If the owner is not satisfied with the price, it can always obtain competitive bids. The risk of not getting the job should motivate the contractors to provide fair and competitive prices.

Some contractors are concerned that their participation in the design might cause them to be liable for design errors and omissions or bar them from later making claims based on design errors. To address this concern, the design-assist contract should clearly set forth the obligations and liabilities of the construction team with respect to the plans and specifications so that there are no unintended consequences.

Some architects and engineers are concerned that design-assist represents an invasion of their “turf,” and, therefore, are reluctant to participate in it. However, if design-assist is implemented in such a way that the role of the design team is not diminished, but rather supplemented, by the participation of the construction team, then the concern should be assuaged. Many architects and engineers view a collaborative design process involving the construction team as a growing trend and believe that their industry should embrace it.

Design-assist requires added cost and time during the design phase of a project: the contractors must be identified, interviewed and selected; if applicable, the contractors need to review and submit pricing information as part of the selection process; the contractors need to be paid for their design-assist services; and, of course, time is needed for the construction team to participate in the design process. While design-assist may add time and cost to the design phase of the project, proponents of design-assist believe that the reductions it achieves in the construction cost and schedule make it advantageous overall.

Design-assist is a relatively new and evolving project delivery method. It is part of what seems to be a growing trend toward heightened collaboration between the design team and the construction team. Advocates of design-assist believe that it reduces the cost and time for construction, improves constructability and increases value.

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