

## **DESIGN-ASSIST: THE GOOD, THE BAD, AND FOOD FOR THOUGHT**

### **Introduction**

An emerging collaborative model becoming more prevalent in construction is the Design-Assist model. Owners, Design Professionals, Construction Managers and Design-Assist Subcontractors need to consider several factors when involved in a project using the Design-Assist model.

### **What is Design-Assist?**

Design-Assist is a term used to describe the strategy of engaging key construction subcontractors early in the design and pre-construction phase, to assist the design team and the construction team with value engineering, constructability analysis, and other pre-construction services. As examples this may include a construction manager hiring separate A/Es or simply bringing in trade subcontractors early before bids, to assist in pre-construction during the design process.

### **When Should Design-Assist Be Considered?**

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 such as hospital projects which are often large and complex and thus a natural fit for the Design-Assist process. The mechanical, electrical and plumbing (“MEP”) work constitutes a large portion of their overall cost. Involving the MEP trades in the design phase 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.

### **What is “Delegated Design”?**

Design-Assist should be distinguished from “delegated design” – a term used to describe the shifting of design responsibility from the design team to the construction team. For example, some trades may be performed using a “design/build” approach where the design team establishes performance specifications and the trade subcontractor produces the actual design while also performing the installation work. This process could be used for the HVAC, sprinkler, and curtainwall systems, and other similar systems that require specialized engineering or design. Design/build subcontractors may be engaged early in the process to jumpstart the design/build process. However, these subcontractors have different design responsibilities than pure Design-Assist subcontractors.

## History / Trends

Under the traditional Design-Bid-Build method, the contractor/subcontractors performing the construction work do not see the plans and specifications until the A/E has completed them and they are “ready” for bid. This leads to an inability of the contractors/subcontractors to provide constructability input prior to design completion, and could lead to significant change orders later in the project.

Construction projects have started to shift away from the traditional Design-Bid-Build model, toward more compressed and collaborative models, where both the design and the construction team are engaged early on to provide better integration of the design with the construction process. For instance, in the Construction Manager At-Risk model, the Owner can look to a Construction Manager to provide pre-construction services, including value engineering, constructability analysis, and cost estimating, that may impact and develop the design more comprehensively prior to bidding.

The Design-Assist model is a natural evolution of these methods, and seeks to also bring on key trade subcontractors early on in the design process to assist the Construction Manager or General Contractor with constructability analysis and other pre-construction services. The trend is to provide more input, from more parties, earlier in the process, in order to hopefully achieve more efficiency and cost savings in the process.

## Benefits and Draws

The Design-Assist method can be a helpful tool on complicated projects. Parties can benefit from the input of experienced subcontractors who will be fabricating and installing systems for the project. A few key benefits and draws of the Design-Assist method are described below.

- **Faster Project Delivery:** Engaging Design-Assist subcontractors early in the project can help identify opportunities for schedule compression and accelerate the design, pre-construction, procurement, and construction processes. Many activities can be completed earlier with key subcontractors engaged ahead of bidding. For example, subcontractors can learn critical product information earlier in the process and order long lead items sooner. This more proactive approach allows for better outcomes both from a cost and schedule standpoint.

- **Better Design Coordination:** Bringing Design-Assist subcontractors into the pre-construction process can help enhance the constructability review of the design. Parties may be able to identify and address design issues that would not have been evident until the bidding phase. This can also help reduce design-related RFIs and change orders during the construction phase.
- **Better Pricing:** More input during design can translate to reduced costs going forward. Involving Design-Assist subcontractors with specialized construction expertise can help eliminate costs caused by inefficient and un-constructible designs. More certainty in the design, as a result of more knowledgeable and effective input from key trades during the pre-construction process, can lead to reduced contingencies and lower costs with less design creep.

### Risks and Issues

Although there are certainly benefits to utilizing Design-Assist strategies, there are some risks and issues to consider. A few examples of risks and issues are summarized below:

- **Design Responsibility Confusion:** Collaboration can sometimes lead to confusion if parties are not clearly aligned on their various responsibilities and duties. A Design-Assist subcontractor may inadvertently take on more design responsibility than it anticipated (or is licensed for), or the design team may rely too heavily on design input from subcontractors without double-checking calculations or data. Instead of helping the design process, this can actually cause additional problems down the road.
- **Insurance:** It is important to recognize that only professional liability insurance policies will respond to allegations of design deficiencies. Accordingly, parties not normally involved in design decisions may be exposed to uninsurable claims against them, unless proper precautions are taken. If a party is a Construction Manager, General Contractor or Subcontractor who is involved in the Design-Assist process, professional liability insurance coverage should be maintained (both at the prime level and at the subcontractor level) to respond to design related allegations arising from the Design-Assist activities. Many contractors feel they have no exposure as they are hiring design professionals, but they are vicariously liable for who they hire.
- **Licensing:** Design-Assist subcontractors need to be careful of licensing regulations, which vary from state to state. Some states may prohibit Design-Assist subcontractors from performing design-related activities without a license. This could be a more significant issue to consider if the relevant contracts do not appropriately describe and limit Design-Assist activities, blurring the line between pure Design-Assist activities and delegated design.

- **Reduced Competition:** When subcontractors are engaged early, prior to bidding, the Owner may lose some of the benefits of competitive pricing on construction costs for those trades. The subcontractors may inflate their costs with additional contingency based on incomplete design, or the Owner may be required to commit to the subcontractors without construction bids, depending on the competitiveness of the trades market.

### **Solutions and Strategies**

Here are a few pointers to consider when weighing the benefits and risks of the Design-Assist model. Implementing some of these strategies and solutions could help mitigate the risks of using Design-Assist and help maximize the benefits noted above:

- **Project Delivery Assessment and Planning:** Ensure the project is well suited to the Design-Assist model, before the process begins. Some projects are straightforward and would not benefit from a robust preconstruction / Design-Assist phase. The evaluation of the Design-Assist method should be a key part of early project planning and assessment stages.
- **Contract Language:** The contract should clearly describe the roles and responsibilities of the parties involved in the Design-Assist model. The contract should also clarify that design responsibility is not delegated unless specifically intended. Consider developing a responsibility matrix as a contract exhibit.
- **Insurance Strategies:** A clear understanding of professional liability insurance coverage as it relates to each party involved in the Design-Assist process is vital. In the event of a significant design-related claim, if there is no insurance coverage available, everyone loses. It is important to thoroughly review this aspect of Design-Assist at the outset of any project to ensure appropriate insurance coverage is in place for all participants.
- **Best Value Bidding:** Consider engaging Design-Assist subcontractors on qualifications for their preconstruction phase services and reserving the right to perform competitive bidding for the pricing component.

## **Conclusion**

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” through Design-Assist. Problems 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.

Design-Assist can be a useful tool on certain projects when managed properly. While it does initially add cost and time to the design process, it can also lead to improved constructability along with an overall reduction in the construction schedule and ultimate cost. These savings can more than offset the increased costs of Design-Assist. The process can also lead to fewer RFIs, code issues and disconnects in the plans and specifications.

As always, collaboration is key. Proper planning with the right parties is paramount if success is to be achieved. Open lines of communication along with clear delineation of responsibility and decision making authority are mandatory. It is also important to recognize and address the need for all parties, not just A/E firms, to evaluate and address the need for professional liability insurance. There are numerous resources available to help project stake-holders gain a more thorough understanding of the Design-Assist process. Parties should seek advice from experienced design and construction professionals along with trusted legal and insurance advisers. A well-conceived and properly implemented Design-Assist project can be well worth the time and effort involved.

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