Design Liability: Claims and Recovery

Expert Commentary

by American Global

Design Liability: Claims and Recovery

Article by: American Global

This article is the second installment in our series about design liability on design-build (DB) projects.[1] After going over the procurement phase, we will now dig deeper into the types of claims that have arisen between contractors and their designers and the circumstances behind them.[2]

While they are on the same team, the risk allocation, the limited time and resources that can be reasonably dedicated to the procurement process, the competitive tension, and the resulting financial pressure of DB delivery often result in cost overruns due to a mix of missed items, errors, and decisions that were made at bid time. All of these can create friction between contractors and designers.

With regard to the missed items, most of the challenges (and controversies) stem from the difficulties in anticipating what changes may arise from the normal course of design development after a fixed-price date/certain binding proposal has been prepared on the basis of a preliminary design. The terms of the agreements between designers and contractors are often not specific enough and themselves generate additional uncertainty and become part of the litigation process as opposed to simply playing their intended support role to govern that relationship.

We will now see how these situations play out through real-life examples of claims.

Setting the Framework—Back to the Basics of DB Delivery

Under a traditional design-bid-build setting, the design is developed by the designer, working with the owner, to reach 100 percent completion. Only then are the plans put out for bid by contractors. Contractors have no input into the design process, which may result in an unoptimized design and an overall lengthier process. At the same time, the fact that contractors are bidding on plans that are final brings a high level of certainty (plus, under this delivery method, owners are taking the risk of quantities increases and scope creep).

The DB delivery method involves the contractor earlier in the process whereby designers and contractors team up before a bid and deliver a fixed-price, date-certain proposal on the basis of design that is only partially developed (typically 20 to 30 percent, with the understanding that this measurement is more of a qualitative assessment than the result of a calculation, or the acknowledgment of industry-wide recognized milestones).

Once the DB contract is awarded and signed, the design development continues and construction begins. Because of the fixed-price, date-certain nature of the contract, any change arising out of the design development process can result in additional costs and additional time to build the project. Working through the risk allocation in the DB contract, these changes are either covered by the owner (e.g., unforeseen geotechnical conditions, unknown utilities, or reliance on owner's documents) or assumed by

1 See "Design Liability: The Procurement Phase," May 31, 2023.

2 Thanks to François Wasselin, senior vice president of American Global, for authoring this article.

the contractor. For the latter, the contractor would then determine whether this is a risk that was transferred (e.g., to the designer) or whether it needs to dip into its contingencies (and once exhausted, profit margin) to fund the costs associated with these changes.

Naturally, designers typically require a defined liability cap to agree to work on large projects as losses could far exceed their fee. However, as seen when reviewing the cases below, the implementation of such practice has not always been straightforward, and the details of such limitation of liability, particularly how it applies to the prebid and the final design, are often disputed.

Because the contractor is liable to the owner for delivering a completed project in accordance with the specifications of the DB contract, the contractor will itself take steps to correct any deficiency stemming from the design process. For this reason, claims around design issues on DB projects almost exclusively involve only the contractor and the designer (although in some cases they may be triggered by a claim from the owner against the contractor or run parallel to a claim from the contractor against the owner).

Real-Life Claims between Contractors and Designers

Real-Life examples can provide a clearer picture of the exact nature of claims between contractors and designers. While all of the information presented below has been extracted from publicly available court documents, it has been anonymized as the identity of the firms involved and project location do not matter for our purpose in this article. Note that the value of the claims initially presented tends to be overstated. It is regularly difficult to properly identify the exact extra costs pertaining to the claim itself versus extra costs stemming from other construction issues (and it is often part of the negotiations strategy as well). As a result, claims are often settled for considerably less than originally anticipated. As such, while we have sometimes included the amounts sought by the plaintiffs, it does not necessarily indicate precisely what the ultimate outcome may be when the claim is adjudicated or settled.

Finally, the summaries provided below are meant as illustrative examples only as they reflect elements of the original complaints as filed by contractors, which may evolve over time as the litigation process unfolds, which, therefore, mean that they don't reflect any argument of the designer's defense. All the projects below were delivered (or are being delivered) using the DB delivery method, whether directly with an owner or with a developer as part of a public-private partnership project.

Project #1

Project description: A steel arch bridge over a river

Approximate construction value: $100 million

Construction period: 2012–2015

Litigation start: 2015

Summary of the dispute: This dispute focused entirely on allegations of breach of the standard of care during the prebid design and resulting cost overruns due to changes between prebid design and final design. The contractor argued the following.

- The designer failed to alert the contractor of a last-minute prebid change that added drag brackets attaching the decking to the crown of each arch and made the deck part of the posttensioning system rendered necessary by the fact that the arches did not perform as true arches due to their flat design. The amount claimed was around $350,000. The judge found that the designer breached its standard of care; however, the contractor failed to prove that it would have increased its bid if it had been alerted (based on the aggressive approach taken by the contractor in its bid) and the steel price carried by the contractor in its bid was slightly in excess of the final cost of steel even with this change.
- The designer omitted certain items in the bid design that led to an extra cost of $240,000 for posttensioning, $130,000 for bearings, and $100,000 for miscellaneous items. The judge found that these were not errors but rather were the result of normal design development.
- The owner rejected the drainage optimization that was included in the bid. However, because it was a reasonable approach consistent with codes and standards, the judge found that the designer could not have anticipated such a rejection and, therefore, there was no breach of standard of care.

- The designer failed to update its pavement design to reflect changes in the owner's bid documents, which led to a final design with an increased asphalt thickness to be laid at various locations. The judge held that this was a breach of the standard of care and awarded close to $140,000 to the contractor for cost overruns and indirect costs.

Status of the dispute: A 2019 verdict rendered by a judge awarding approximately $140,000 out of the close to $1 million claimed by the contractor.

Project #2

Project description: New tolled lanes on an existing highway, widening of bridges, and ramp improvements

Approximate construction value: $200 million

Construction period: 2016–2020

Litigation start: 2019

Summary of the dispute: The designer sued for nonpayment of additional design services (damages over $5 million), and the contractor countersued for negligent misrepresentation, breach of the teaming agreement (for errors related to prebid design), and breach of the design agreement. According to the contractor, the designer prepared a design under its original (bid) teaming agreement that failed to follow basic engineering and project requirements and affirmatively misled the contractor. The DB joint venture provided examples of the alleged prebid problems, including an outdated drainage design, 34,000 feet of missing drainage pipe, and missing concrete barriers. All breaches of the teaming agreement and subcontract allegedly required the contractor to expend over $195 million dollars (later increased to $263.5 million) to address and correct the designer's gross negligence.

After 2 years of back and forth, the court denied the designer's motion for partial summary and ruled that the provisions of the design agreement and teaming agreement were in direct conflict with regard to whether the design services wrapped the prebid design work, and as a result, it is not clear whether the design agreement limit of liability should apply for all alleged breaches or whether breaches under each agreement should go toward separate limits of liability (noting that the teaming agreement does not have a limit of liability). Both parties submitted their arguments, and it appears that the judge has yet to rule on that question.

Status of the dispute: It is set for trial in early 2024.

Project #3

Project description: A reconstruction of a portion of a highway including a major precast concrete segmental arch bridge spanning over 1,000 feet and related roadway improvements

Approximate construction value: $800 million

Construction period: 2019–ongoing (expected to be completed in 2027)

Litigation start: 2022

Summary of the dispute: The contractor argued that, in its preliminary design at bid time, the designer failed to research, calculate, and properly account for anticipated wind loads that would be encountered by the signature bridge and factor those wind loads into the preliminary design documents. The complaint also stated that the structural engineer of record certified (erroneously at bid time) the dimension accuracy of the signature bridge and that sufficient preliminary engineering had been performed to ensure the viability of the signature bridge. It took two revisions before the final design was approved by the owner in May 2019.

According to the complaint, changes to widen the arch ribs and add corner chamfers to the arch rib section to lower the wind loads drastically increased the complexity of construction; increased steel and concrete quantities; required additional shoring, anchoring, scaffolding, and temporary support measures; complicated the installation of posttension steel tendons; compelled additional coordination and supervision to complete the project; and resulted in substantial delays. The contractor is seeking to recover approximately $155 million in compensatory damages.

Status of the dispute: The litigation process is ongoing.

Project #4

Project description: An interchange reconstruction including new ramps, new bridges, and rehabilitation of a portion of a highway

Approximate construction value: $200 million

Construction period: 2016–2019

Litigation start: 2018

Summary of the dispute: The contractor sued the designer and its subconsultants for breach of contract and negligence for design errors both in the prebid design and in the final design, which resulted in significant delays and additional costs, and is seeking to recover $60 million in damages. In particular, the contractor argued that some of the final design drawings were rejected by the owner for noncompliance due to specific errors, including failure to specify the use of galvanized rebar, failure to include conduit in the bridge barriers, failure to design barrier placement to allow for the addition of a future travel lane, failure to design proper girder spacing at a particular bridge, and failure to design rebar at pile caps for certain bridges.

Furthermore, the contractor stated that numerous changes and additions were required to the initial design performed at bid stage to make it compliant and to correct errors and omissions, such as failure to properly design and include permanent interior storm drainage systems and other drainage requirements such as concrete paved ditches and instead taking an incomplete storm drainage concept drawing prepared by the owner and stamping the concept drawing as its own design, failure of the design to include temporary drainage requirements, failure of the design to include permanent impact attenuators, failure of the design to include geo fabric at bridge abutments, significant increases in the size of elastomeric bearings over and above the sizes shown in the design, improper design recommendation regarding the applicable factor for structural backfill requirements for the mechanically stabilized earth (MSE) walls, failure to provide any design guidance on shoring requirements for a particular MSE wall, and failure to engage in and perform design optimization to reduce construction costs.

Status of the dispute: A court-mandated arbitration process is ongoing for all participants (note that one of the subconsultants was successful in removing itself from 5 out of the 6 items against it).

Project #5

Project description: The replacement of many bridges throughout a state

Approximate DB value: $900 million

Construction period: 2015–2020

Litigation start: 2017

Summary of the dispute: This dispute has several aspects.

- Excessive quantity growth between the prebid design and the final design ($25 million).
    - The contractor alleged breach of contract (originally $12 million, later amended to $25 million) for (1) failing to provide construction documents requiring material quantities within the allowable percentage of increase in such quantities as set forth in the quantity matrix developed at bid, and (2) breaching the standard of care when the designer provided other quantities with respect to additional materials outside of the quantity matrix permissible limits.
- Construction rework due to the designer's fault ($1.3 million).
    - According to the contractor, design errors have caused rework in the field as they were discovered during the performance of construction work after the design was supposed to be final and complete. Such errors allegedly included (1) the placement of geotextile fabric wrongly omitted in the drawings under riprap on bridge slopes, (2) the reinstallation of incorrectly detailed reinforcement of the concrete barrier walls on certain bridges, (3) removal and replacement of full depth pavement at two bridges, (4) removal and replacement of guide rail end treatments within the clear zone, and (5) replacement of the barrier and end section of one bridge.
- Design rework due to the designer's fault (total of $25 million).

- Overpayment to the designer ($12 million) for design work performed due to extensive rework of nonconforming designs as the result of (1) design teams being managed at a distance and not having sufficient familiarity with the local conditions or requirements, (2) the owner discovering numerous errors, and (3) corrections after ready for construction (RFC) drawings were provided. The following are examples of design errors.
    - Lack of coordination among design disciplines (i.e., bridge, road, traffic, erosion, and environmental)
    - Incorrect roadway data informing the hydraulics and hydrology studies
    - Failures to minimize streambed disturbances and errors in designing protections against scouring in stream embankments
    - Significant super-elevation errors on bridge approaches when interfacing with existing roadway elevations
    - Significant errors in bridge profiles that were changed to improve drivability and eliminate overdesign in excess of the preliminary design documents
    - Errors in the length of bridge spans that failed to conform to the preliminary design documents and resulted in excessive roadway disturbances
- The contractor also sought relief from having to pay a $13 million invoice from the designer for work that the contractor argued was redesign work as a result of the designer's own delays, errors, and omissions and needed to (1) reduce quantities in excess and to investigate the excess quantities in the nonconforming designs, (2) design rework to address errors in RFC documents, and (3) excessive resubmittals for owner review.
- Delay costs due to the designer's poor performance ($26 million)
    - The contractor accuses the designer of being liable for delay costs (originally $4 million, later amended to $26 million) as a result of (1) failures mentioned above, (2) failure to manage the performance of its design team and subconsultants, (3) failure to assign the supervision necessary to ensure timely and proper performance, (4) lack of quality control, and (5) lack of progress in the permitting process.

Status of the dispute: It was settled out of court in 2020.

Project #6

Project description: A new cable-stayed bridge plus reconstruction of two large interchanges

Approximate DB value: $700 million

Construction period: 2001–2005

Litigation start: 2005

Summary of the dispute: More than the details of the claims themselves, this case is interesting for the steps that it went through. The contractor accused the designer of professional negligence related to timely and acceptable design, including 50 discrete acts of negligence (most of these were linked to the prebid design) and a request for $70 million in damages (later reduced to approximately $50 million). The designer counterclaimed that the contractor owed it around $2.6 million for additional services.

The design agreement contained a mandatory arbitration clause. The parties agreed to go through an "early neutral evaluation" to engage a neutral evaluator to produce an initial and final evaluation setting forth the relative strength of the parties' claims including the amount that the neutral evaluator would award to each party (if any) if tasked as the arbitrator (with the claims being heard over 5 days maximum). To incentivize the parties to act reasonably, the agreement for the early neutral evaluation had fee-shifting provisions, which stated that if the party that rejects the evaluation award obtains a final arbitration award that is not more favorable than that of the neutral evaluation, then that party shall pay for the costs and expenses of the other (accepting) party for neutral evaluation and arbitration (costs were apportioned from 0 to 100 percent in 10 percent increments dependent on the percentage variance between the final evaluation and the final arbitration award).

The neutral evaluator determined a net award of close to $1 million in favor of the contractor, which the designer accepted but the contractor rejected. At that point, the parties moved to arbitration and litigated their claims in front of a panel of arbitrators for 6 months. Around 5 months later, the panel awarded $1.3 million to the contractor and $36,000 to the designer, so a net award in favor of the contractor slightly greater than at neutral evaluation (plus fees for administration and arbitration of close to $1 million to be split between the parties).

While the designer argued that the fee-shifting provisions had been triggered by taking into account other payments outside of the arbitration proceedings, the court disagreed with that view. After the arbitration award, the parties still brought litigation to the court, with the designer seeking to have the arbitration award confirmed (which was granted), the contractor seeking to have the arbitration award modified (denied because time-barred as the motion came more than 3 months after the final award), and both parties seeking a summary judgment on the fee-shifting provisions discussed above (which was ruled in favor of the contractor).

Status of the dispute: A final arbitration award was issued in late 2008 and confirmed by the court in mid-2009.

Conclusion

This article has sought to highlight real-life examples of issues that have arisen between contractors and designers on DB projects and discussed the potential factors driving such issues. Drawing from these few examples, aside from these items that are clearly errors and omissions in the final design, the most common themes in disputes between contractors and designers on DB projects appear to revolve around the following questions.

- Is the prebid design work part of the overall design work? Which agreement governs (prebid or final) to deal with which claim?
- Similarly, which limit of liability (if any) applies? Which insurance may respond?
- What level of details can be expected from the prebid design and what constitutes an omission? What is the standard of care for prebid design, and is it lower than for final design?
- Is the prebid agreement meant to transfer liability to the designer for cost overruns during actual project construction or only for damages in case a bid rejected due to poor design/for the cost of replacing a designer that may have breached its standard of care on prebid work before the DB contract is executed (which oftentimes is not even allowed by procurement rules), or somewhere in between? Where is the line?
- What changes are due to normal design development versus correction of errors made during the prebid design?
- How to quantify expected changes in quantities during normal design development (e.g., quantity growth matrix) in the bid estimate? What happens if quantities move beyond expectations? And, even if a contractor or a designer were to have a crystal ball (or more realistically, go through all of their past projects to extract typical quantity growth data), would it necessarily want to use it to calculate contingencies, understanding that this may result in a less competitive bid?
- What is the proper amount of risk retention (e.g., contingencies potentially shared between contractor and designer and deductible levels) and professional liability limits versus cost efficiency? How involved should the designer be in the quantity estimating process and in establishing associated contingencies?
- What is the best venue to resolve such disputes? What is needed for insurance coverage to be triggered?

While these questions can be extremely difficult to answer and will result in different answers depending on the parties involved, the specificities of the project, its risk allocation, etc., it is crucial to start by understanding where the pain points have been historically to encourage open and healthy negotiations between contractors and designers. Understanding what areas to pay attention to prebid, as the DB team is drafting the agreement that will govern its internal relationship over the next few years, can help ensure expectations are aligned among partners and mitigate issues down the line.

Ultimately, these are often issues that are symptoms of the inherent risk profile of DB projects. While there is room for improvement for DB teams to mitigate future similar issues, a broader discussion with owners is necessary so that the DB model remains workable. (We will explore the most recent market trends in a future article in this series.)

Beyond the impact that the risk allocation has had on contractors' and designers' balance sheets, it has also had a significant impact on the professional liability insurance market. In our next article, we will explore how professional liability insurance may respond to some of these claims and, as a result, the impact that the risk profile of DB projects has had on the professional liability market.