

Using a design-build contract for Lean Integrated Project Delivery

Joel Darrington¹

Abstract

Purpose: By making a distinction between design-build as a *project delivery system* and design-build as a *contract type*, I suggest that design-build contracts can be a useful vehicle for implementing Lean Integrated Project Delivery.

Research Method: Experience, observations and personal insight.

Findings: Not all owners are legally allowed or institutionally prepared to enter a three-party relational contract that some consider the hallmark of Integrated Project Delivery™. Some of those owners are better suited to a design-build contract format. A design-build contract can be structured as a relational contract in order to more fully implement Lean IPD, or can be structured as a transactional contract using a traditional design-build form in which the supply chain chooses to implement Lean IPD principles without an owner mandate.

Limitations: Design-build contracts do not displace the need for three-party relational contracts. Owners who have legal authority and suitable temperament may be better served by a three-party integrated agreement. Since not all owners fit that description, design-build contracts may be useful vehicles to deliver Lean IPD projects.

Implications: Lean IPD can more deeply penetrate the industry if more owners are able to utilize it. Increasingly, public owners are gaining legal authority to use design-build procurement. Many private owners would have difficulty getting internal stakeholders to agree to a three-party integrated agreement, but may be able to implement Lean IPD using a design-build contract instead.

Value for practitioners: Having an alternative contracting method opens up new avenues for practitioners to implement Lean IPD on projects that might not otherwise allow for it.

Keywords: Lean; Integrated Project Delivery; design-build; contract type; relational contract

Paper type: Forum essay

¹ Attorney, Hanson Bridgett LLP. jdarrington@hansonbridgett.com.
<http://www.hansonbridgett.com/attorneys/index.php?id=200>

Introduction

The Lean Construction Institute (LCI) sponsored a symposium on relational contracting for Lean Construction in November 2004. The participants agreed that relational contracts² were best suited to Lean Construction, based on the discussion of certain multi-party relational contract forms presented at the symposium (Ballard & Howell 2005). LCI officially supports ConsensusDocs, and the ConsensusDoc form that provides a relational contract for Lean Construction is the ConsensusDoc 300, a three-party contract that LCI helped develop. It is clear that the collective preference in the Lean community is for a Lean project to use a multi-party relational contract. To be frank, I share that preference.

However, not all owners are legally allowed or institutionally suited to enter a three-or-more party relational contract. This essay focuses on one contracting alternative that may open the door for more projects to implement Lean Integrated Project Delivery: design-build.

Before some readers start immediately shutting down, let me be clear that I am not advocating departing from principles of Integrated Project Delivery (IPD) or relational contracting in putting forth design-build as an alternative. I know, from experience, that it is possible to have a relational design-build contract that would support Lean IPD. It also should be possible to have a traditional transactional design-build contract that allows for at least partial implementation of Lean Project Delivery.

Design-build has a longer track-record than Lean IPD and is thus more familiar to owners, contractors and designers. At least in the United States, public entities in various jurisdictions have increasingly gained statutory authority to procure projects through design-build. While not yet wide-spread, its use on public projects is growing at a significant rate. Even private owners without public procurement restrictions may find design-build a more comfortable contractual arrangement than a multi-party relational contract, yet still desire, or at least be willing to allow, the project to be delivered on a Lean basis. For these, perhaps design-build contracts could be a gateway to eventually embracing multi-party relational contracts.

To start this exploration, let me draw a distinction between design-build as a *project delivery system* and design-build as a *contract type*.

Design-build: Project delivery system vs. contract type

Design-build is typically understood as a project delivery system that is implemented through a contract between the owner and a single entity that takes the legal responsibility for both designing and constructing the project. However, there is more to the design-build delivery system than just the type of contract that implements it. While there are many variations of the design-build delivery system, there are major themes typical of most design-build projects.

The Design-Build Institute of America (DBIA) has taken pains to portray itself as a form of integrated project delivery (DBIA 2010). If you view projects as existing on a spectrum from completely non-integrated to completely integrated (with no projects

² A discussion of relational contracting versus transactional contracting is outside the scope of this essay. For more information on relational contracting, see the articles in the 2005 issue of Lean Construction Journal.

actually occupying either end), then I would agree that design-build as a project delivery system is somewhere on the “integrated” side of that spectrum. However, generally speaking, design-build keeps in place the silo wall between owner and the project team even while it works to break down silos among the designers and contractors.

Typically, design-build works by requiring the owner, in advance of engaging the design-build team, to define the programmatic and performance requirements for the project. This is then “thrown over the wall” to the prospective design-build teams in the request for proposals, who provide a firm contract price to the owner. The owner selects the most advantageous proposal and engages the design-builder. Once engaged, the design-build team is responsible for designing the project to meet the owner’s programmatic and performance requirements. While owners typically are given limited approval rights over specified design deliverables, the general principle is that in exchange for the certainty of an up-front guaranteed price, the owner gives the design-builder significant independence and latitude to design and manage the project as it sees fit. It is, generally, a “hands off” approach by the owner; the end-user is not well-integrated into the design process.

But it does not have to be that way, at least for private projects. If we keep the contract type – a contract between the owner and a single design-build entity with legal responsibility to design and build the project – without taking along with it the whole design-build delivery system, we can fashion an alternative relational contract that supports Lean IPD.

Using a design-build contract to implement Lean IPD

I see two major alternatives in using design-build contracts to implement Lean IPD: (1) a relational design-build contract that allows for full implementation of Lean IPD; or (2) a transactional design-build contract where the implementation of Lean IPD is predominantly done within the supply chain and not through the owner’s mandate. The first option is more integrated and thus more Lean, but the second option would be more Lean than going with a traditional design-build project delivery approach and can be implemented without active sponsorship of the owner. Of course, a contract could fall somewhere in between, but I will focus on just the two alternatives.

Relational design-build contract for full Lean IPD implementation

What would a relational design-build contract look like? It would look quite similar to a three-party relational contract such as Sutter Health’s Integrated Form of Agreement for Lean Project Delivery (IFOA). The major difference would be that contractual rights and obligations flow to and from the owner and the design-build entity; however, other rights and obligations could still flow down to project team members through the design-builder. Many major features of the IFOA could still be utilized in this two-party context:

- **Core Group.** The project could be lead by a Core Group (a/k/a Project Management Team) comprised of representatives of at least the owner, lead contractor and lead designer. If the design-build entity is separate from the lead contractor or lead designer, then it would also have a seat on the Core Group.

- *IPD Team.* The contract could specify how the integrated project delivery team is formed, with its obligations. IPD Team members could be required to sign joining agreements binding themselves to the terms of the design-build contract.
- *Validation & Target Value Design.* As with other IPD projects, key trades would be engaged early in the design phase. The lead contractor and major trades would be deeply integrated with the designers and owner from the beginning of the project. The IPD Team would go through a validation effort to attempt to find one or more design solutions that meet the owner's project parameters and establish a baseline cost estimate keyed to current best practice. The team would then establish an aggressive Target Cost and a Target Value Design plan to focus the team on delivering value to the owner through the design process.
- *Lean Processes.* The design-build contract could require the IPD Team to utilize Lean processes such as pull planning, built-in quality programs, 5 "S" program, streamlined submittals and other project communications, and continuous improvement.
- *Risk/Reward Sharing.* The design-build contract could also provide for the owner and the design-build team to share the risks of project cost overruns and the rewards of project cost savings. This could be dealt with only at the level of owner and design-builder, or it could further address how the design-builder and its contractors and consultants share risk and reward. However, some public owners with design-build authority may have legal restrictions that could limit the extent of owner's ability to share risk of cost overruns.³

Unlike traditional design-build contracts, the owner would not be able to take a "hands off" approach with this kind of contract – the owner would be deeply integrated with the project team in the governance, design and risk mitigation aspects of the project. If a project team seeks to implement Lean IPD on a project with a "hands off" owner, then the next alternative may have value.

Transactional (traditional) design-build contract and supply-chain-only implementation

While not optimal, I think it is also possible for a project team to largely implement Lean IPD using a plain-vanilla transactional design-build contract, even without the owner's advocacy of Lean. Simply by choosing design-build, the owner has made possible many of the key elements of Lean IPD:

- *Early and intensive involvement of major trades in design.* This is the essential feature of IPD, and cannot be achieved through design-bid-build or CM-at-Risk. Having the major trades involved from the early stages of design greatly

³ Even if the public owner is required to have a hard price, there are several strategies that would allow for better commercial integration of the owner and design-builder than a traditional guaranteed maximum price. See page 5 of my article "Rethinking the 'G' in GMP: Why Estimated Maximum Price Contracts Make Sense on Collaborative Projects," available at <https://www.box.net/shared/2eog3bybu8>. My favourite is the "high deductible" GMP strategy inspired by the innovative compensation structure used for the Pentagon Renovation Program.

improves design, facilitates better trade pricing, and improves the quality of construction. It also increases trust among team members.

- *Increased collaboration.* Having the designers and contractors in closer contractual alignment dramatically reduces the adversity inherent in design-bid-build and related delivery models. Their increased commercial alignment drives increased collaboration, which benefits the project.
- *Optimize the whole project, not its parts.* By allowing major trades to get involved in the design, it is easier for the project team to optimize the whole project. Also, the design-builder could implement commercial arrangements among the trade contractors to reward behavior that benefits the project as a whole instead of the trade contractor itself. This is much more difficult to effectively accomplish when major trades are bid post-design.
- *Implement Lean methods.* Even if not required by the design-build contract, the project team could choose to use Lean methods in both design and construction, such as pull planning/ Last Planner System™, Target Value Design, commitment-based management, streamlined communications, built-in quality program, 5 “S” program, and continuous improvement, none of which would conflict with the provisions of a typical design-build contract.

The major disconnect between a transactional design-build contract and Lean IPD involves risk allocation. Typical design-build contracts require the design-build entity to give the owner a lump sum or guaranteed maximum price covering the design and construction of the project. Except for certain owner risks such as differing site conditions, the design-builder is taking the full risk for cost and schedule overruns. A relational IPD agreement would normally provide mechanisms for the owner and project team to collectively share those risks and protect the project team from catastrophic cost overruns. The typical design-build risk allocation results in less integration between owner and the design-build team, and increased danger of adversarial behavior.

Where teams are implementing Lean IPD under a traditional design-build agreement, they may consider addressing the above points using contractual language in their joint venture agreement and/or agreements between the design-builder and the major design and trade partners. In addition to provisions regarding use of Lean IPD methods, such agreements could also include liability limits or waivers among the design and construction team, or set aside funds received from owner to use as an incentive fund, in order to promote better commercial alignment of the non-owner participants.

There could also be potential opportunities to facilitate better commercial alignment of the project team and owner based on how the design-build entity is legally organized. If the lead contractor, lead designer, major trades and major design consultants together formed a corporation, limited liability company, or other entity with limited liability to act as the design-build entity, then the project team could shield their firms’ assets from project losses. With that protection, team members would not need to be unduly risk adverse or feel as keenly the temptation to treat the owner as an enemy when cost overruns loom on the horizon.

In that scenario, the owner would want to be comfortable with the capitalization of the design-build entity and the protection offered by a surety and/or insurance. This whole-project-team entity may also be useful where public procurement requirements require the bidding of all or part of the subcontractors - if major trades are part of the

design-build entity, then possibly the design-build entity could self-perform the bulk of the work and only minor trades would need to be subcontracted. This of course depends on how public procurement laws are read and interpreted. Also, be careful of state licensing requirements. Not all forms of legal entities are able to be licensed under state laws governing contractors or design professionals. Given the legal and insurance complexities, this approach is probably only worth exploring for large projects.

Other considerations

On the topic of public procurement, most public agencies do not have legal authority to implement Lean IPD using a relational three-or-more-party agreement. However, increasingly public agencies are gaining statutory authority to use a design-build delivery method. This creates opportunity for both public owners and firms in the public works market to pursue Lean IPD through the vehicle of a design-build contract.

Of course, public procurement requirements for design-build projects vary by jurisdiction and agency. To the extent the requirements mandate use of design-build project delivery features, such as requiring owner to define the programmatic and performance criteria prior to engaging the design-builder or requiring the bidding of certain trade contractors, then elements of Lean IPD may not be fully implemented. Still, even under rather restrictive design-build statutes, project teams could implement most elements of Lean IPD and achieve substantial integration.

Also, while it has not been true of projects with which I have been involved, I have heard that IPD projects have been difficult to insure in certain cases. At least in the U.S., insurance products specific to IPD are reported to be on the horizon, with Schinnerer and CNA already having put one type of IPD-specific professional liability product on the market. It will be years, however, before these products have matured and become widely available and cost-effective. By contrast, design-build has been around long enough for specific insurance products to have been developed and insurers to gain expertise in underwriting and using these products. At least in the near term, there could be insurance-related advantages in using a design-build contract for a Lean IPD project.

Another consideration involves the potential for designers to be relegated to a lesser position in a design-build project. Anecdotally, some designers are viewed or view themselves as second-tier players when on a design-build team, often because the general contractor is the largest entity with the biggest piece of the compensation pie. This cuts two ways. Designers under a design-build contract could view Lean IPD as a position-enhancer, as they would usually be given a seat on the Core Group and otherwise treated as an equal under collaborative principles. Or, given a choice between using a three-party integrated agreement and a design-build agreement, the design firm may resist a design-build arrangement to avoid being put in a secondary role.

Conclusion

To sum up, some owners are not well-suited to a three-or-more-party relational contract, whether due to legal restrictions or institutional factors. A sizeable percentage of these owners would be willing and able to enter a design-build contract. Some owners would seek to implement Lean IPD by using a relational design-build contract with IFOA-

like features. Others would desire a typical, transactional design-build contract. Even with the latter, if the designers and constructors wanted to implement Lean IPD under such a contract, they have most of the essential elements in place to allow them to largely do so. By including the design-build contract in the Lean toolkit, practitioners can help more projects benefit from Lean IPD, further hastening the transformation of the industry.

References

Ballard, G. and Howell, G. (2005) "Relational Contracting and Lean Construction." *Lean Const. J.*, 2(1), pp1-4.

Design-Build Institute of America (2010). "DBIA Position Statement: Integrated Project Delivery." <http://bit.ly/cdvUVE> (14 jan 10).