

No Good Deed Goes Unpunished

John Cross, P.E. and Joseph Jun

AISC's marketing staff takes a look at how fabricators can ensure they reap the rewards of early involvement.

The late diplomat and legislator Claire Booth Luce used to say, with reference to public service, that no good deed goes unpunished. Today steel fabricators who invest their time and resources in working with project owners and designers to generate cost and schedule savings often share that sentiment. When a steel fabricator is involved early in a project's design, cost savings in excess of 10% and schedule compression measured in weeks are commonplace.¹ Yet after investing hours, if not days of time, and sharing years of expertise, the fabricator often cringes to hear, "thanks for all your input...but you know the owner still wants us to bid this job out." And inevitably a competing fabricator wins the job.

On the surface, the new design-team members seem like the winners—they get a well-designed project that is less costly to construct, more rapid to complete and less problematic. But in reality they will be the biggest losers. How many times will a helpful fabricator be able to offer this free consulting service? How often will he be able to contribute his expertise to a project that he has little chance of winning? Good fabricators are good businessmen and good businessmen will not invest their capital without expecting a return on that investment. So steel fabricators draw back from early project involvement, waiting instead for a set of documents they can bid competitively against other fabricators.² And when they see the bid documents they shake their collective heads and think about how much time and money they could save the owners if they could have

done it their way. But now it's too late—the plans are set, the bids are due. So the project loses!

Architects, structural engineers and contractors are experts in their fields and add significant value to a project. But a steel fabricator is an expert when it comes to framing systems. A fabricator is a specialist who brings expertise in detailing, optimization, purchasing, scheduling, fabrication, and erection that always leads to a more cost-effective project. Structural-steel framing is not a commodity that is purchased off the shelf at a local hardware store. Structural steel fabrication is a specialty activity that requires a professional who can bring value to a project.

Studies performed over the past 10 years at Penn State University and the Construction Industry Institute demonstrate conclusively that when

specialty contractors are involved in projects during the schematic phase, a better project results.³ Lower costs, accelerated schedules and enhanced quality are typical. A study performed by Chris Taylor at Penn State and presented at the 2000 Design Build Institute of America annual conference demonstrated that for a sample of 70 contractors, 94% of projects they ranked as "excellent" had specialty contractor involvement in the schematic phase. When specialty contractor involvement was delayed until detail-design work is underway, project quality ratings drop by more than 50 percent.⁴

So the result is a stand-off: Steel fabricators are reticent to get involved early in projects because their early input is "shopped" to other fabricators. Owners and contractors need steel fab-

What to look for in an early-involvement fabricator

- Your own past experience in working with the specific fabricator
- Experience in similar type and size projects, demonstrating sufficient fabrication capabilities and capacities
- Reputation within the construction community
- AISC Quality Certification
- Project-management capabilities
- Willingness to take the risk of early project involvement
- Willingness to work under a GMP contract
- Ability to think, work and estimate conceptually
- Management commitment to project solutions
- Systems in place to define and manage scope of project
- Engineering capabilities – cooperative, in-house or external
- EDI capability to work cooperatively with a structural engineer
- Financial strength and adequate bonding capacity
- Qualifications of staff assigned to the project
- Working relationships with suppliers, detailers and erectors
- Desire to become a partner rather than a supplier
- Willingness to market the benefits that early fabricator involvement brings to a project

ricators' input to build the greatest value into their projects, but since they still want competitive project pricing they lose the opportunity for enhancing value.⁵ The solution? A "win-win" mechanism will give key project decision makers confidence in the pricing structure while the fabricator can anticipate a reasonable return on investing in the project.

The key is trust. A 1993 study by the Construction Industry Institute called "The Cost-Trust Relationship" demonstrates that as trust between construction-team members increases, project costs are reduced. That study states:

In the construction industry, the nature of competitive contracting practices often promotes short-term (project driven) adversarial relationships. These types of relationships are unstable, which adds to project uncertainty. ... A cooperative relationship between the parties is considered instrumental in reducing project uncertainty and increasing the chances for project success. The development of an effective cooperative relationship is based on mutual trust. ... A trusting relationship between the parties is based on a mutual understanding of each other's capabilities and limitations.⁶

It is not expected that project owners, general contractors or construction managers will blindly negotiate a contract for the steel-framing system on a project with a steel fabricator that they have never worked with and do not yet trust. But it is just as inconceivable that a steel fabricator, who contributes to the project design and specification, should be subject to the adversarial bidding process by team members with whom a trustworthy working relationship has already been established.

Figure 1 presents a methodology for encouraging early steel-fabricator project involvement while maintaining competitive input into project pricing.

Scenario 0 (BIDDING) is traditional competitive bidding. In this scenario, it is unreasonable to expect that any early involvement of the specialty contractor take place. The fabricator has no incentive to invest time or energy in the project, and the opportunity for enhancing project value is lost.

Scenario 1 (LIMITED GROUP) still retains the advantages of competitive bidding and is most applicable where key project decision makers lack a confident relationship with a steel fabricator. In this scenario, three or four

qualified steel fabricators are identified through a qualification-based selection process. This selection takes place after a rough concept for the project is developed but before schematic design work. This group of steel fabricators is invited to a project meeting and the project is discussed. In these cases, one or more of the steel fabricators might choose to work with the designer on an early-involvement basis, or the group could provide design input together as a team. The incentive for the steel fabricators is the knowledge that they are competing against a limited group of other fabricators who are experienced with similar projects.

Scenario 2 (COMPENSATION) involves early qualification-based selection of a steel fabricator to work with the design team and provide input for the framing design. The owner's intention is that the final design will still be submitted for competitive bidding. Since the steel fabricator has no guarantee of obtaining the project, some compensation for the fabricator's services should be provided. This can take several forms. The fabricator can be compensated on an hourly basis, a fixed stipend can be determined or a specific bid item can be included for the fabricator's reimbursement from the winning bidder. This mechanism must be determined prior to the steel fabricator's involvement and should be targeted at or slightly below the fabricator's actual cost without any profit. In selecting the winning bid, it should be recognized that the steel fabricator involved early in the project might not be the low bidder on the project. This might not result from a higher cost structure, but from the fabricator's increased knowledge about the project. It is reasonable to expect a higher level of change orders and extras from fabricators not involved early in the project.

Scenario 3 (BUDGET) is the first scenario where an increasing level of trust results in a project-based relationship between the steel fabricator and key members of the project team. In this scenario, a steel fabricator is selected based on qualifications and prior working relationships. From experience and conversation with the steel fabricator, the project team determines a reasonable budget number for the steel defined within the scope of the project. The steel fabricator then works

with the design team in the design and specification of the project to determine a Gross Maximum Price (GMP). If the GMP is greater than the agreed-to budget price for the steel portion of the project, the project decision maker either accepts the higher GMP or is free to bid the design out on a competitive basis. This scenario provides the incentive for early fabricator involvement while maintaining the check and balance of the competitive bidding system.

Scenario 4 (NEGOTIATED) is based on an elevated level of trust between the project team and the steel fabricator, and yields even greater opportunity for enhancing project value. With this scenario, a steel fabricator is selected through an interview process at the conceptual stage of the project, based on experience and qualification. As the project design proceeds, the steel fabricator works closely with the structural engineer to develop a series of conceptual estimates. These estimates will form the basis of a GMP at the point when the final pricing package is submitted to the owner. This scenario requires a significant degree of trust between owner, project team members, and the steel fabricator. This trust will manifest itself in an on-going dialogue between the parties with respect to project approaches and pricing. The end result will be a negotiated price that is tied to a clearly defined project scope that minimizes surprises as well as opportunities for extras.

Scenario 5 (TEAMWORK) exhibits the highest level of trust and generates the greatest value to the project by integrating the steel fabricator directly into the project team. The steel fabricator's input into the design and specification of the project is fully integrated into the design suggestions of all team members representing design-builders, general contractors, engineers, architects and other specialty contractors on the team. The pricing structure determined by the steel fabricator becomes part of the package submitted to the owner. The key at this level is that all team members have the common focus of enhancing project value and performance. In this scenario the steel fabricator is defined as a non-replaceable member of the project team in all documents submitted to the owner.

All but scenario 0 (BIDDING), provide a vehicle for the early involvement of the steel fabricator, bringing important value to the project while protecting the interests of other project-team members. In each case it is critical that the fabricator and project team clearly agree on the scope of services to be provided by the steel fabricator. It is becoming more common that the steel fabricator actually represents a team of professionals, including the erector, detailer and even the structural engineer, taking single-source responsibility for all aspects of steel included in the agreed-upon scope.

Several other approaches to early fabricator involvement on projects have been proven to be less than effective. Open competitive bidding has already been identified as an ineffective framework for value enhancement through early involvement. Also ineffective is a variant of competitive bidding, that allows a fabricator who has provided design assistance an opportunity for a final look on a project in order to match the lowest bid. Early project involvement results in a greater knowledge of the project conditions and restraints. The fabricator involved early in the project has a much greater appreciation for these concerns and will have developed a price based on that knowledge. The low bidder in this scenario will claim additional compensation for extras as he becomes aware of these same conditions, claims that probably would be disallowed for the original fabricator. This approach also discounts the value of the expertise brought to the project by the early-input fabricator to the level of the low bidder, who may not be as experienced with this type of project.

To encourage early fabricator involvement, it is critical that the project team determines the value that it brings to a project. If structural steel is simply a commodity that can be acquired from any source without concern for quality, timeliness and applicability to design parameters, then competitive bidding is appropriate. But if fabricating structural steel is a specialty activity that is performed on a project-by-project basis, varies by the expertise of the steel fabricator and has significant impact on the critical path of the project, then the early integration of the steel fabricator is critical

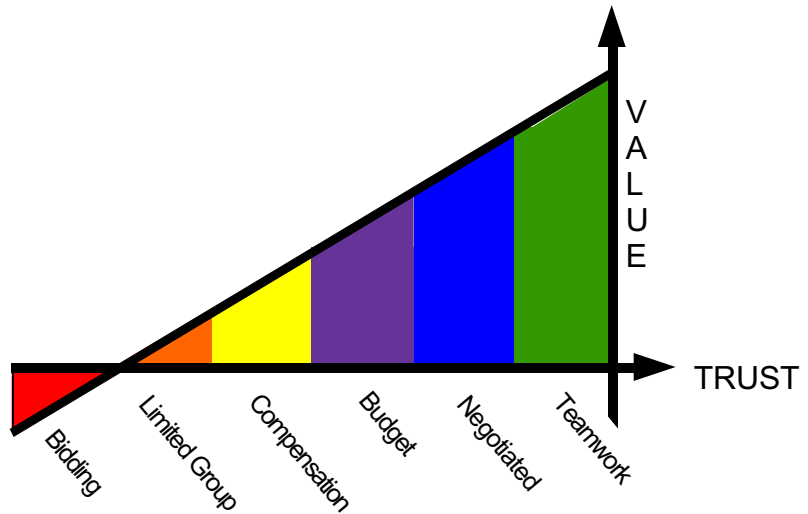


Figure 1.

How to avoid being shopped...

- Understand that effective early involvement is not a spontaneous occurrence, but the result of following a well-thought-out marketing plan that focuses on developing relationships with a targeted client base
- Recognize that the cost of early involvement is part of the risk of pursuing jobs (just like the cost of bid preparation), so set a goal for the percentage of early-involvement projects you feel you need to be successful in pursuing
- Concentrate your efforts in market areas (project type, geographic area, project size) where you have expertise
- Be selective in choosing the clients you pursue on an early-involvement basis by evaluating past relationships with the client, the client's performance on previous projects, and the potential to partner on future projects
- Talk with the right people at the client's organization, focusing on decision makers and risk takers that might be willing to embrace change for the sake of improving the project
- Recognize that few owners and general contractors will negotiate a contract the first time they deal with a specialty contractor
- Have a clear understanding before investing time and resources of what the final selection process will be and document it with a memo of understanding
- Balance your effort and the level of input and involvement in the project with the level of commitment you receive to be part of the project team
- Ask to be specified in the RFP as a designated team member, not subject to substitution
- Identify the value you bring to the project by demonstrating an initial area of saving, but only speak of additional areas where savings could be realized contingent on the commitment level to the fabricator
- Be willing to work against a reasonable budget number supplied by the contractor
- If competitive bidding is to be utilized, challenge owners and contractors to preselect a limited group (3) of bidders by qualification
- Request in advance no-margin reimbursement for your efforts if you are not awarded the project
- Develop relationships with influential decision makers and risk takers to gain the competitive edge on current and future projects
- Work on communicating...communicating...communicating
- Perform!
- Make yourself indispensable on the project by building other team members' confidence in your ability
- Don't be "shopped" by the same owner or contractor more than once – shake the dust off your feet and move on
- Talk about your project successes with anyone who will listen

for maximizing project quality and value. In reality, a steel fabricator is not a commodity provider, but rather a steel specialty contractor. At roundtable discussions held throughout the United States the unanimous opinion of contractors, architects, structural engineers, construction managers, owners and developers is that the steel fabricator ALWAYS brings value to a project through early involvement.⁷

The project decision maker should not expect the fabricator to share all cost-saving and value-enhancing ideas if there is no reasonable assurance that the fabricator can perform the work for a reasonable profit. Likewise, the fabricator shouldn't share all details of the value-enhancing solution only to see them incorporated in project bid documents.

Not every project will fit clearly into one of these scenarios. Projects that involve the conversion of a non-steel structure into a more cost-effective and beneficial steel system demand greater early involvement effort. To convert these projects, the steel fabricator will need to provide a conceptual steel solution, and either convince the project decision makers to authorize an alternative steel design or have them agree to a steel alternative at the time of bidding. Each of these scenarios carries the risk for the fabricator of significant investment of time and resources without reasonable assurance of project award. Yet, in this case, the potential conversion of the project's framing system could bring the greatest value to the project owner.

In order to aid the steel fabricator in these situations, the structural steel industry has funded the creation of the AISC Steel Solutions Center to provide conceptual solutions for projects evaluating competing framing systems. By utilizing the resources of the Steel Solutions Center, design, cost and schedule information can be provided on a project-specific basis to steel fabricators dealing with project owners, architects, contractors and construction managers. Since project work performed on behalf of a specific fabricator is treated confidentially, the resources invested in the initial phase of early project involvement by the fabricator are minimized. If the project decision maker chooses to pursue a steel alternative following presentation and evaluation

of the conceptual solution, the relationship between the fabricator and the project team should be defined according to one of the earlier scenarios.

Presenting a steel alternative at the time of bidding has certain advantages but involves additional risk: the fabricator takes the risk for the cost of the alternative design, but is not facing the prospect of any other fabricator bidding against the same design. Project owners and contractors should take seriously these submissions as a means of optimizing project value, cost and schedule. However, before investing significant resources in an alternative project design, there must be a clear understanding between the fabricator and project decision maker that the steel alternative will be objectively evaluated and an agreement regarding the basis of the final decision should be reached.

The traditional competitive bidding system is a barrier to early involvement of steel fabricators. This has resulted in lost opportunities for the construction industry to capitalize on maximizing project value while reducing costs and schedules. But the opportunity for effective cooperation between construction professionals and steel fabricators has never been greater. The time has come for owners, designers and contractors to embrace and protect early fabricator involvement as an effective means to enhance project value and their own competitive advantage. ★

John Cross is Vice President, Marketing and Joseph Jun is National Project Director for AISC Marketing, LLC.

1. Cross, J. "Design-Build and the Steel Fabricator." *Modern Steel Construction*. November, 2001.
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3. Sanvido, V. & Konchar, M.. *Selecting Project Delivery Systems: Comparing Design-Build, Design-Bid-Build and Construction Management at Risk*. State College, PA: Project Delivery Institute.
4. Sanvido, V. & Taylor, C. *Selecting Design-Build Subcontractors*. Presentation at the 2000 Professional Design-Build Conference, DBIA/AIA.
5. A cost-benefit curve tracking the influence of value engineering on project cost at various project stages was developed by the Haskell

Company based on the work of Paulson, B.C. "Designing to Reduce Construction Costs." *Journal of Construction Engineering and Management*, 1976.

6. The Construction Industry Institute Contracting Task Force. *Cost-Trust Relationship*. The Construction Industry Institute. November, 1993.
7. Johnson, A. "It doesn't have to be that way!" *Modern Steel Construction*. January, February and March, 2003