

# BluePrint

For Design Professionals

## Value Engineering: Design Professional Realities, Risk Management, and Opportunities

By David A. Ericksen

“Value Engineering” is seldom viewed as a positive development or experience by design professionals. That is true because of the common timing and pervasive objective of the value engineering process. That is, in most projects, the value engineering process is initiated after the design is complete and solely for the purpose of cost reduction. As such, it represents a challenge and threat to the design professional’s design product, a financial risk to the design professional who may be compelled to a potentially uncompensated design effort, and a liability risk of ultimate client satisfaction with the performance of the reduced project.

In origins and prevailing definitions, value engineering is not and need not be so restricted or negative. It may actually become a positive opportunity and validation in the modern world of Building Information Modeling (“BIM”), growing design-build usage, and overall aspirations of integrated practices. The concept of value engineering was developed by General Electric during World War II, and has been adopted and implemented as a process in a variety of industries, including design and construction. Proponents of the process in design and construction expressly reject a “cost cutting only” definition and optimistically define it. The National Institute of Building Sciences’ Whole Building Design Guide defines it as:

*VE is a creative, organized effort, which analyzes the requirements of a project for the purpose of achieving the essential functions at the lowest total costs (capital, staffing, energy, maintenance) over the life of the project. Through a group investigation, using experienced, multi-disciplinary teams, value and economy are improved through the study of alternate design concepts, materials, and methods without compromising the functional and value objectives of the client.*



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Anyone familiar with the recent aspirations and narratives with respect to BIM, IPD, and design-build will note the obvious similarities in theme and tone. As described, it is also a process and goal which typically should be subsumed within any design process.

Unfortunately, when the term is ultimately invoked, the reality of value engineering in design and construction is that it often comes too late to be a positive or efficient process. In general, the “value engineering” process comes after a completed design when projected costs are higher than desired and the goal is cost cutting through scope, programming, and material sacrifices. The disconnect between high-minded aspirations and the practical realities are pervasive in both the private and public sectors. For example, the Department of Defense asserts that its goal for value engineering is “value improvement”, but its analysts then necessarily concede that the only truly measurable element is “cost savings” and, therefore, the basis for justification and validation of the process. True to that concession, the Department of Defense promotes its own value engineering program as saving over \$1B annually.<sup>1</sup>

**“The principal problem with the common value engineering process is that it occurs too late and with the principal objective of reduction with cost as the driving criterion.”**

The point of this paper is then two-fold. The first is to recognize the realities of the prevalent value engineering process and objectives with strategies and tools for design professionals to manage the professional, financial, and liability risks associated with that process. The second is to develop a strategy to transform the process into a positive point of the design process, for both financial opportunity and for risk management purposes.

### Value Engineering in the Real World

The principal problem with the common value engineering process is that it occurs too late and with the principal objective of reduction with cost as the driving criterion. As a result, it almost never enhances the design and only threatens both the timing and integrity of the design. This is then exacerbated by the perception by far too many owners that reduction is a simple, no-cost process since it only involves removal and not creation. Obviously, that is not the case. Such reductions carry many financial and design challenges and risks.

Chief among those common challenges and risks are:

- Cost of implementation of the change. Generally, the burden is not shared equally across all members of the design team.
- “Ripple” impacts of the change on other elements of the design, as well as the schedule and construction process. Few such changes are discretely limited in their impact.
- Client/owner recognition and acceptance on the corresponding impacts on aesthetics, programming, and performance in the ultimate project which will typically be less than what they had expected or hoped for at one time. Too often clients and owners are oblivious to or forget the correlations.

To prepare for, manage, and overcome these challenges, design professionals should consider a five-step series of steps or solutions. Ideally, each would be incorporated, but the reality is that as the value engineering issues arise, any of these steps can be used to positively impact the event and related risks.

1. Contract for Value Engineering as an Additional Service with an Expanded Definition. Many design professional service agreements include value engineering as an additional service outside basic services. That is a positive, but as it is often limited to a the two-word description “value engineering”, it also falls short of more fully defining that process and the potential impacts at the time the client is likely to be most agreeable and particularly so with respect to clauses outside the basic scope of work. Ideally, such a clause would include the potential range of

<sup>1</sup> Dr. Jay Mandelbaum, Institute for Defense Analyses

issues, the importance of timing, and the corresponding project impacts.

2. Document the Source and Objective of the Value Engineering Request. As stated above, in common practice the value engineering process most often comes into play when there is an issue with financing or budgets. It may also arise when contractors or design-builders have a financial interest in reduced costs. The issue may arise informally in conversation or more formally in an official project meeting, request for substitution, or owner/client directive. No matter the circumstance, it is critical that the timing, source, and objective of the request be documented and communicated in project Meeting Minutes or correspondence.

3. Clearly Establish the Scope of the Design Participation in the Process & Secure Adequate Fee & Time for the Process. The design professional's role in the value engineering process may vary widely from an aesthetic and consistency with the overall design review akin to a bridging design professional on a design-build project, to total design responsibility with revision and modification of all corresponding design elements. Whatever the role, it needs to be clearly established in writing with the corresponding roles and responsibilities of others, as well as the adequate fees and schedule associated with the process.

4. Evaluate the Proposed Change for Obvious Impacts and Document that Process. Obviously, design professionals need to provide all of the services established by contract or the revised scope as established above. However, when problems arise, the adversarial and financial realities of litigation lead to a wide net that may often include even those design professionals who have clearly documented a limited role and responsibility. As result, it is often worthwhile for design professionals to make an internal review of the value engineering changes, their potential impact and open questions, and to document that review. This should be documented internally as a part of a standard process supported by an internal template. As for the "outside world", ultimately and ideally, any concerns or open issues should be referred to others for evaluation and action. Preferably, the design professional will identify only the issue without a suggested solution.

5. Complete Process through Documentation with Identifies Purpose, Corresponding Risks, Limits on Role, Responsibility of Others, and Secure Informed Consent. As stated above, the common purpose of the value engineering process is typically for the purpose of reducing the design professional's preferred design and typically arises too late to be efficiently incorporated into the design process. As such, it is typically a client-or contractor-initiated and motivated process. The value engineering process will conclude with a confirming report, memorandum, letter, or agreement (ideally acknowledged by the client and contractor) which reconfirms the objectives of the process, the corresponding risks and tradeoffs in that process, the respective roles and responsibilities with the corresponding design limitations, and securing or confirming the informed consent to that decision.

## Evolving Value Engineering for Positive Impact & Change

The foregoing discussion and strategies focus on the historic realities and adverse outcomes of many value engineering processes. However, it need not be particularly so in a design and construction community so enthused about the affirming principles associated with BIM, IPD, and design-build. In fact, ideally positioned in terms of timing, participants, and process, a value engineering process and commitment can:

- Validate and improve designs thereby improving quality and reducing claims and losses;
- Validate constructability and material selection issues;
- Secure owner buy-in, commitment, and authorization which limits later modifications;
- Minimize the financial and schedule risks associated with belated and partial design changes driven solely by cost; and
- Establish another service/compensation opportunity for design professionals.

Ideally, such a process would take place somewhere around the transition from design development phase and

before the construction documentation phase gets going, and it would include owner, contractor, and design professionals with the focus being on an evaluation of value as determined by correlating function and cost. Working from the Value Methodology of the Society of American Value Engineers (“SAVE”) for design professionals, a streamlined approach would result in a proposed additional phase of intermediate services which might be described as a multi-step “Value Assessment” which might provide:

### *Value Assessment Phase*

A four step process focused on evaluating project value as a reflection of function/programming/aesthetics and the corresponding cost involving owner, consultants, contractors, cost estimators, and proposed manufacturers. The four steps include:

- 1. Functional/Programming Analysis & Confirmation: Reconfirm and verify the desired and required project objectives, programming, and functions.*
- 2. Creative Phase: Generate ideas on all the possible ways to accomplish the required functions through alternatives with potential value impacts. Include short term and long term considerations.*
- 3. Evaluation & Development Phase: Select and prepare the “preferred” alternative(s) for improving overall value.*
- 4. Confirmation Phase: Confirmation of selected alternatives with consensus of all project stakeholders.*

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## **Tips on Drafting Better Contracts**

**By Steven R. Goldstein, Esq.**

Design professionals often find themselves involved in disputes arising out of services they performed at a project. In such instances, the existence of a properly prepared and executed contract may mean the difference between remaining a party to such a dispute or being relieved of liability for such claims. The days of the handshake deal are far gone and it is imperative that the design professional be armed with a written agreement that clearly delineates the nature and extent of each party’s roles, rights and responsibilities. Below are several important tips on drafting a well versed agreement:

**BE CLEAR AS TO THE SCOPE OF YOUR SERVICES.** The contract should clearly state the nature and extent of each service being performed by the design professional during both the design and construction phases of the project. Further, if the contract provides that the design professional will perform additional services over and above basic services, the agreement should clearly state that any such services will only be provided if requested and expressly agreed to in writing.

**IDENTIFY SPECIFIC EXCLUSIONS.** Services that the parties agree will not be performed by the design professional should be specifically delineated in the contract. An example is that the design professional will not

be responsible for the contractor's means, methods, techniques or sequencing of construction, or for site safety.

**IF APPROPRIATE, INDICATE THAT THERE ARE NO THIRD PARTY BENEFICIARIES TO THE CONTRACT.** If it is agreed between the parties that the services being performed by the design professional are to benefit someone who is not a party to the agreement, make certain the contract clearly identifies that party. If not, make sure the agreement provides that no relationship, contractual or otherwise, is being created between the architect and any third party.

**INCLUDE A COPYRIGHT PROTECTION PROVISION.** Unless agreed otherwise, the contract should include language that provides that the design professional retains all copyright protection and ownership to the plans and drawings. It should also be stated that the design professional is granting the owner a nonexclusive license to the plans and drawings solely for construction and use with respect to the subject project.

**BE CAUTIOUS WITH INDEMNIFICATION LANGUAGE.** Many owners request design professionals sign agreements which contain indemnification language which requires the design professional to defend, indemnify and/or hold harmless the owner in the event of a claim. Be careful when agreeing to any contracts with such language, as such provisions often result in significant legal ramifications.

**INCLUDE PAYMENT LANGUAGE.** Clearly state the precise amounts the design professional is to be paid and when payment is to be made.

**ADD TERMINATION LANGUAGE.** Include a provision that clearly states when and how the parties may terminate the contract.

**INCLUDE LIMITATION OF LIABILITY LANGUAGE.** In certain circumstances, the Courts of the State of New York have enforced limitation of liability clauses. Therefore, consider adding language limiting the amount of damages for which the design professional will be responsible.

**CONSIDER ALTERNATIVE DISPUTE RESOLUTION.** In anticipation of a dispute between the parties, consider including a provision setting forth a mechanism (i.e., arbitration or mediation) for resolving such a dispute. Such language can be helpful to stave off full blown litigation should a conflict between the parties arise.

**GET A FULLY SIGNED AND DATED CONTRACT.** It is difficult, and sometimes impossible, to enforce a contract that is not dated and signed by all parties.

While having an appropriate contract is no guarantee against a claim, the absence of one certainly impedes the design professional's ability to extricate themselves from such claims. The paramount rule is to be cautious when entering into professional service agreements. The design professional must be careful to review and understand all of the terms and conditions of the agreement, which set forth the rights and responsibilities of the parties, prior to executing the agreement. In this regard, the design professional should strongly consider consulting with an attorney qualified to assist in drafting an agreement which will fully protect the design professional's interests.

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**“A good contract is always our first line of defense in protecting our insured’s interests.”**

**- Roseanne DeBellis, Esq.,  
Navigators Senior  
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