



WATER DESIGN-BUILD COUNCIL
AN ASSOCIATION OF LEADING DESIGN BUILDERS

WATER DESIGN-BUILD COUNCIL FACT SHEET

OPTIMIZING VALUE ENGINEERING

VALUE ENGINEERING

Value Engineering (VE) utilizes a systematic approach to add definable, measurable, and desired benefits to a project. VE focuses on addressing functionality by leaving alternative benefit and value options open. Although the most obvious benefit is cost reduction, value can be measured in schedule improvement, improved functionality, higher reliability, reduced operating costs, and the reduction of risk. VE is a design theory intended to produce designs with maximum value. This fact sheet provides an overview of VE and presents best practices relating to it.

VALUE ENGINEERING VERSUS CONSTRUCTABILITY REVIEW

Constructability reviews seek to provide input to the design process on construction methods and materials that improve efficiency during construction. In contrast, VE is focused on a much broader scope that considers design, construction, operations, financial, and other life cycle elements of the program or project. While a valuable process, constructability can be considered a subset of the VE process.

VALUE ENGINEERING WORKSHOPS

The VE process is usually conducted through facilitated workshops. While internally facilitated workshops bring familiarity with the project, they may also limit ideas or carry preconceived limitations about the approach. An external facilitator can provide a fresh perspective and promote “out of the box” thinking, but may lack the background necessary to focus the workshop on viable VE alternatives. In either case, the facilitator’s primary role is to keep the participants focused and progressing towards the open identification and documented development of VE alternatives.

WHO SHOULD PARTICIPATE IN THE VALUE ENGINEERING PROCESS?

Representatives from design, procurement, construction, operations and maintenance, administrative and financial, management, and legal, when appropriate, can bring different perspectives to the VE process. For example, an alternative that has good technical merit from the design side may create unacceptable risk or exposure from a legal perspective. Or, an alternative that has low initial cost to procure and construct may be cost prohibitive to operate and maintain. These considerations can be best highlighted when participants from each phase provide constructive input to the process and help define true VE options. The process also provides an opportunity for participants to work together and develop a partnering relationship through the life cycle of the project.

WHEN SHOULD VALUE ENGINEERING BE PERFORMED?

The most significant benefits are seen when the VE process is performed early in the design process while project criteria are being developed. At this point, the cost of implementing VE alternatives has less of an impact on schedule or constructed cost. To maximize the benefit, early identification and implementation is desired.

INCENTIVIZING VALUE ENGINEERING

When the contractor submits a VE proposal, and it is approved by the owner, the savings are often shared between the contractor and the owner after reimbursement of allowable costs for implementing the VE proposal. This results in a win-win outcome for the team.

A project can derive significant benefits from the implementation of a VE program. By creating a VE team that represents all phases of the project, alternatives can be identified through a formal facilitated workshop process that considers many potential VE alternatives but focuses ultimately on those specific alternatives that provide the greatest benefits. For those specific alternatives, formal documentation is prepared that provides a comparative basis for evaluation and approval. As a potential incentive, savings achieved through the VE can be shared with the program or project team members thus promoting the VE process and maximizing benefits to the owner.



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