

ASSEMBLE SYSTEMS

WORKFLOW GUIDE

Value Engineering Collaboration and Tracking

Enhance the Speed, Accuracy and Outcome
of the Process

VALUE ENGINEERING

Value engineering (VE) has become a standard practice for many, if not most, AEC projects today. As common as it is, however, VE is not always fully understood or well executed. Value engineering is not a design review process. Nor is it a cost-cutting exercise conducted at the expense of project integrity. Designers should apply VE by considering alternative design solutions to optimize the expected cost/value ratio of components within a project. Contractors should use VE to identify and propose changes that cut costs while maintaining or enhancing the quality, value, and functional performance required by the owner.

But when applied optimally, value engineering is a creative, organized exercise conducted collaboratively – and as early as possible – by all project stakeholders to deliver project requirements at the lowest total cost. Progressive project owners are looking for partners who can fulfill their visions and deliver a project on time and under budget, and collaborative VE ensures that all parties are working toward the same goal.

Whatever the approach to VE on any given project, one aspect holds true across the board: Value engineering is effective only to the extent that it is carefully planned and executed. Fortunately, new technology is making this easy and affordable for AEC professionals.

TRADITIONAL VALUE ENGINEERING: **MIRRED IN DOUBT AND CONFUSION**

Typically, value engineering on AEC projects has been applied so poorly that the concept often meets with scrutiny at best, and at worst results in reduced project quality and value for the owner. Many contractors have come to view VE as a negative side effect of poor budget management during design that requires them to reduce scope or quality when they attempt to realign the project to the budget. VE also gets a bad rap because some contractors or subcontractors involved in the process do not restore value dollar-for-dollar – that is, one subcontractor might understate savings in one area while another overstates the trade-off cost, essentially taking money from the owner's pocket.

All this happens because the typical approach to VE is unstructured, ill-informed, and unaudited. Typically the VE process is poorly executed because of time constraints, it usually entails a lot of brainstorming sessions that are not fully tracked or documented. In addition, as quick as these

changes are discussed and agreed upon, it's even faster that they have to make their way to the plans and into the field. This is where it can be really difficult to audit. You may never really know everything that made its way to the drawings until it's too late. The usual approach involves a discussion based on 2D project plans where, in a random fashion, project stakeholders suggest materials substitutions and other design changes in the interest of cost cutting. Numerous options and their iterations are examined but not effectively tracked or organized, and confusion results around which options are accepted. Agreed upon cost delta and scope changes may not get translated to the drawings.

Downstream, the result is design discrepancies that lead to rework, confusion, additional RFIs, late change orders, scheduling problems, and added expenses that result in diminished profits for designers and contractors and diminished value for the owner.

A BETTER WAY

Assemble Systems has developed a solution that sidesteps traditional obstacles and allows AEC professionals to easily and affordably optimize value engineering by greatly enhancing the speed, accuracy, and outcome of the process. Flexible VE tracking and collaboration provides a window into accurate quantities of elements, tracks proposed changes, and creates an audit trail for later verifications. Assemble's cloud-based model data management platform provides all project members with the ability to access the model information and easily understand the elements, quantities and costs being discussed – regardless of their physical locations – facilitating team collaboration is the cornerstone of true value engineering. At its core, Assemble taps the 3D building information model (BIM) for accurate, up-to-date project data that supports an optimized VE process. Using Assemble, users can:

1

Utilize saved views during the discovery phase of a VE exercise to **quickly identify opportunities to add value**.

2

Associate model quantities with cost adjustments to **quickly understand the impact of changes** and quickly make decisions.

3

Tag each identified element with a VE number and description, change type, adjusted costs or other relevant parameters, and status of approval for later auditing.

4

Quickly obtain quantities of items to be changed as well as quantities of the entire scope, so you can **verify unit costs from the original bid** in your effort to recoup the same unit costs for the changes.

5

Create an audit trail of what was in the contractual document compared to what gets done increasing accountability and providing supporting data in case of discrepancy.

6

Push information back into the model for design update and verification giving designers the ability to **quickly find components that need to be changed** directly within the design file.

DELIVERING REAL VALUE

On many AEC projects, value engineering is nothing more than a scramble to reduce costs, missing the mark of delivering the true payoffs of properly executed VE to the owner. But thanks to Assemble Systems solution, AEC professionals today can move past the VE practices of old and toward an informed, collaborative process that delivers the real payoffs of value engineering throughout the building lifecycle.

