Training course on Value Engineering in Construction Projects

Professional Development Training Course Outline

Category	Real Estate Institute	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Value Engineering (VE) in Construction Projects is a systematic, creative, and interdisciplinary approach focused on optimizing project value by analyzing functions, identifying unnecessary costs, and enhancing overall performance without compromising essential quality or functionality. It is not merely cost-cutting but a rigorous methodology that seeks to deliver the best possible value for money over the entire project lifecycle. In an industry facing increasing cost pressures, sustainability demands, and complex stakeholder requirements, mastering Value Engineering is paramount. For developers, contractors, designers, project managers, and financial professionals, a profound understanding of VE enables proactive problem-solving, fosters innovation, mitigates risks, and ultimately leads to more efficient, higher-performing, and financially successful projects. Failure to integrate VE can result in suboptimal designs, inflated costs, missed opportunities for innovation, and ultimately, a reduced return on investment. Training Course on Value Engineering in Construction Projects is meticulously designed to equip with the advanced theoretical insights and intensive practical tools necessary to excel in Value Engineering in Construction Projects. We will delve into sophisticated methodologies for conducting rigorous function analysis and creative idea generation, master the intricacies of evaluating alternatives through lifecycle costing and risk assessment, and explore cutting-edge approaches to facilitating effective VE workshops, gaining stakeholder buy-in, and implementing value-driven changes. A significant focus will be placed on understanding the distinction between value and cost, integrating VE into various project delivery methods, and ensuring that value enhancements contribute to both economic and sustainable outcomes. By integrating industry best practices, analyzing real-world complex VE case studies, and engaging in hands-on function analysis, brainstorming techniques, and proposal development simulations, attendees will develop the strategic acumen to confidently identify and implement value-adding solutions, fostering unparalleled efficiency, innovation, and project profitability, and securing their position as indispensable assets in the forefront of smart and value-driven construction management.

Programme Curriculum

Training Course on Value Engineering in Construction Projects

Introduction

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Training Course on Value Engineering in Construction Projects is meticulously designed to equip with the advanced theoretical insights and intensive practical tools necessary to excel in **Value Engineering in Construction Projects**. We will delve into sophisticated methodologies for **conducting rigorous function analysis and creative idea generation**, master the intricacies of **evaluating alternatives through lifecycle costing and risk assessment**, and explore cutting-edge approaches to **facilitating effective VE workshops, gaining stakeholder buy-in, and implementing value-driven changes**. A significant focus will be placed on understanding the distinction between value and cost, integrating VE into various project delivery methods, and ensuring that value enhancements contribute to both economic and sustainable outcomes. By integrating industry best practices, analyzing real-world complex VE case studies, and engaging in hands-on function analysis, brainstorming techniques, and proposal development simulations, attendees will develop the strategic acumen to confidently identify and implement value-adding solutions, fostering unparalleled **efficiency, innovation, and project profitability**, and securing their position as indispensable assets in the forefront of **smart and value-driven construction management**.

Course Objectives

Upon completion of this course, participants will be able to:

1. Analyze the fundamental principles and philosophy of **Value Engineering (VE)** and its distinction from simple cost-cutting.
2. Comprehend the systematic **Value Engineering Job Plan** and its key phases.
3. Master techniques for conducting **Function Analysis (FAST Diagramming)** to identify essential project functions.
4. Develop creative and innovative **idea generation techniques** for alternative solutions.
5. Apply rigorous methodologies for **evaluating proposed alternatives** based on value, cost, and performance.
6. Understand and utilize **Lifecycle Costing (LCC)** in evaluating long-term value and operational expenses.
7. Formulate effective strategies for **presenting VE proposals and gaining stakeholder buy-in**.
8. Facilitate and participate effectively in **Value Engineering workshops** and interdisciplinary teams.
9. Identify and mitigate **risks associated with VE proposals** and ensure quality is maintained or enhanced.
10. Integrate **Value Engineering principles within various project delivery methods** and project management processes.

11. Explore the contribution of VE to **sustainable construction and environmental performance**.
12. Analyze **case studies of successful Value Engineering applications** in diverse construction projects.
13. Design a comprehensive **Value Engineering study framework** for a hypothetical construction project.

Target Audience

This course is designed for professionals seeking to optimize value and efficiency in construction:

1. **Real Estate Developers:** Seeking to maximize value for their investments.
2. **Construction Project Managers:** Leading project teams and optimizing execution.
3. **Architects & Design Managers:** Integrating value principles into early design phases.
4. **Civil & Structural Engineers:** Analyzing design alternatives for cost-effectiveness and performance.
5. **Quantity Surveyors & Cost Estimators:** Identifying cost reduction opportunities and lifecycle costs.
6. **Procurement & Contracts Managers:** Evaluating material and system alternatives.
7. **Owners/Clients of Construction Projects:** Understanding how to demand and benefit from VE.
8. **Consultants (Value Management, Project Controls):** Expanding their service offerings.

Course Duration: 10 Days

Course Modules

Module 1: Introduction to Value Engineering (VE) & Value Analysis (VA)

- Defining Value Engineering (VE) and Value Analysis (VA): history, purpose, and core philosophy.
- Distinguishing VE from simple cost-cutting: focus on function, quality, and value.
- Benefits of implementing VE: cost reduction, improved performance, enhanced quality, risk mitigation, innovation.
- The concept of "Value" in construction: Function / Cost.
- When to apply VE in the project lifecycle for maximum impact (early engagement).

Module 2: The Value Engineering Job Plan (Systematic Process)

- Overview of the formalized VE Job Plan stages: Information, Function Analysis, Creative Speculation, Evaluation, Development, Recommendation, Implementation.
- Understanding the iterative nature of the VE process.
- Establishing the VE study team: multidisciplinary approach, roles, and responsibilities.
- Setting goals and objectives for a VE study.
- Prerequisites for a successful VE study.

Module 3: Information Gathering & Project Understanding

- Collecting comprehensive project data: drawings, specifications, reports, budgets, schedules.
- Understanding owner's objectives, stakeholder requirements, and critical success factors.
- Analyzing existing conditions, constraints, and assumptions.
- Benchmarking against similar projects and industry best practices.
- Techniques for effective data organization and visualization.

Module 4: Function Analysis (The Core of VE)

- Defining "function" in VE: breaking down a project into its basic and secondary functions.
- Using "Verb-Noun" pairs to express functions (e.g., "support load," "provide shelter").
- **Function Analysis System Technique (FAST) Diagramming:** A systematic approach to mapping functional relationships.

- Identifying "value killers" and areas of potential unnecessary cost.
- Practical exercises in performing function analysis on construction components.

Module 5: Creative Speculation & Idea Generation

- Techniques for generating alternative ways to perform identified functions: brainstorming, lateral thinking, analogy.
- Encouraging "out-of-the-box" thinking and challenging conventional solutions.
- Overcoming creative blocks and fostering a collaborative environment.
- Exploring innovative materials, construction methods, and design approaches.
- Documenting and categorizing generated ideas.

Module 6: Evaluation & Development of Alternatives

- Establishing evaluation criteria for alternatives: cost, performance, constructability, maintenance, risk, aesthetics.
- Quantitative and qualitative assessment methods for comparing alternatives.
- **Lifecycle Costing (LCC):** Calculating initial costs, operational costs, maintenance, energy, and disposal costs over the asset's lifespan.
- Risk assessment of alternatives: identifying new risks or changes in existing risks.
- Developing selected alternatives into refined concepts with supporting data.

Module 7: Lifecycle Costing (LCC) in Detail

- Principles of LCC: total cost of ownership vs. initial capital cost.
- Components of lifecycle costs: acquisition, operation, maintenance, disposal.
- Time value of money: present worth, annual worth, future worth analyses.
- Application of LCC to various building systems and material choices.
- Using LCC to justify higher initial costs for long-term savings.

Module 8: Recommendation & Presentation of VE Proposals

- Structuring a compelling Value Engineering proposal report.
- Quantifying potential savings, quality improvements, and performance enhancements.
- Strategies for presenting VE recommendations to stakeholders (owners, executives, design teams).
- Gaining buy-in and approval for value-driven changes.
- Addressing objections and demonstrating the value proposition effectively.

Module 9: Implementation, Monitoring & Lessons Learned

- Planning for the implementation of approved VE proposals.
- Integrating changes into design documents, specifications, and construction plans.
- Monitoring actual savings and performance against projections.
- Documenting lessons learned from VE studies for future projects and organizational knowledge.
- Fostering a culture of continuous improvement and value consciousness.

Module 10: VE in Different Project Delivery Methods & Contexts

- Applying VE in Design-Bid-Build, Design-Build, Construction Management, and Integrated Project Delivery (IPD).
- The role of VE in early project phases (conceptual design) vs. later phases (construction).
- VE for renovation, adaptive reuse, and infrastructure projects.
- Adapting VE for sustainable construction goals and green building certifications.

- International perspectives and variations in VE practice.

Module 11: Overcoming Barriers & Facilitating VE Workshops

- Common barriers to VE implementation: resistance to change, lack of understanding, time constraints.
- Strategies for overcoming organizational and individual resistance.
- Best practices for facilitating effective VE workshops: agenda setting, team dynamics, conflict resolution.
- The role of a certified Value Specialist (CVS) or facilitator.
- Building a value-driven organizational culture.

Module 12: Advanced Topics & Future of Value Engineering

- Relationship between Value Management (VM) and Value Engineering (VE).
- The role of digital tools in VE: BIM integration, AI for data analysis, simulation software.
- Integrating VE with risk management and quality management systems.
- VE for social value and community benefit in public projects.
- Emerging trends and research in the field of value methodology.

Training Methodology

- **Interactive Workshops:** Facilitated discussions, group exercises, and problem-solving activities.
- **Case Studies:** Real-world examples to illustrate successful community-based surveillance practices.
- **Role-Playing and Simulations:** Practice engaging communities in surveillance activities.
- **Expert Presentations:** Insights from experienced public health professionals and community leaders.
- **Group Projects:** Collaborative development of community surveillance plans.
- **Action Planning:** Development of personalized action plans for implementing community-based surveillance.
- **Digital Tools and Resources:** Utilization of online platforms for collaboration and learning.
- **Peer-to-Peer Learning:** Sharing experiences and insights on community engagement.
- **Post-Training Support:** Access to online forums, mentorship, and continued learning resources.

Register as a group from 3 participants for a Discount

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Certification

Upon successful completion of this training, participants will be issued with a globally recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

- Participants must be conversant in English.
- Upon completion of training, participants will receive an Authorized Training Certificate.
- The course duration is flexible and can be modified to fit any number of days.
- Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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