

Strategies to Ensure Sustainable Funding, Design, Construction and Maintenance of Africa's Bridge
Infrastructure Through Value Engineering Principles

Value Engineering in Bridge Design & Construction Workshop

2 CPD *

Dates : 2-3 Dec, 10-11 March 2022, 23-24 May 2022 , 15-16 August
2022 , 24-25 October 2022

Venue : Johannesburg , South Africa / Online



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www.casi.co.za



Value Engineering in Bridge Design & Construction Workshop

As business professionals in the design and construction industry, we face challenges daily. As engineering professionals, we embrace challenges and work with our clients and fellow professionals to provide solutions for all projects. We benefit from new experiences and welcome the opportunity to incorporate innovative and environmentally conscientious solutions into our design.

Value Engineering is a systematic process of review and analysis of a project during the concept and design phases. Value Engineering is conducted by a multi-disciplined team of persons not involved in the project to provide recommendations such as: a) providing the needed functions safely, reliably, and at the lowest overall cost; b) improving the value and quality of the project; and c) reducing the time to complete the project.

Value Engineering in Bridge Design and Construction Seminar will create a platform to which stakeholders exchange information on upcoming bridge projects, investment and operational patterns, engineering/material advances and new technologies emanating in this globalised era.

The 2-day Masterclass create a platform training participants to be valued contributors to the Value Engineering team and will bring together all stakeholder groups in transport infrastructure to discuss the growing needs of bridge infrastructure in Africa. Value Engineering in Bridge Design and Construction Masterclass will present leading design, engineering and material innovations used in iconic and technically complex bridges across the African region. Your international expert will present the best practices and trends in design, engineering and material solutions needed to develop cost effective, efficient and sustainable infrastructures.

Upon successful course completion, participants will have acquired the training necessary to successfully participate in future Value Engineering studies for their agencies.

Who Should Attend

National government agencies (transport, public works/planning authorities)

- Municipalities
- Architectural firms
- Contractors
- Consultancy firms
- Material/technology suppliers

With The following roles and responsibility

- Directors of Infrastructure
- Heads of Transport
- Chiefs of Engineering Department
- Heads of Bridges/Design
- Technical Directors of Bridges
- Bridge Designers
- Structural/Bridge/Design Engineers
- Project Directors/Manager
- Construction Engineers
- Electrical Engineers

Benefits of Attending

- Best practice in planning and implementing bridge design
- Explore the requirements of major infrastructure
- Become aware the very latest design and engineering features onsite,
- Understand the impact of heavier traffic loads on legacy structures
- Maximise your organisation's visibility with key decision makers for bridge projects
- Hear about the latest bridges projects to generate future business leads
- Build business contacts by networking with international and regional bridge design and construction industry leaders and professionals

Overview





Day 1

Session 1 - Introduction to Value Engineering

- What is Value Engineering and what it is not?
- What are the Benefits of VE?
- Timing of Value Engineering
- Financing of Value Engineering
- Prioritizing Values which govern projects
- The Value Engineering Team
- Elements of Value Engineering Success

Session 2 - Value Engineering Methodology Phases:

A. The Pre-study Preparation Phase

- Establish the objectives of VE workshop
- Confirm the schedule of events
- Review the required information
- Capital costs, energy costs and life cycle costs

B. The Project Study Workshop Phase

- Information Phase: Gather information to better understand the project.
- Function Analysis Phase: Analyze the project to understand and clarify the required functions.
- Creative Phase: Generate ideas on all the possible ways to accomplish the required functions.
- Evaluation Phase: Synthesize ideas and concepts to select feasible ideas for development into specific value improvement.
- Development Phase: Select and prepare the “best” alternative(s) for improving value.
- Presentation Phase: Present the value recommendation to the project stakeholders.

C. In the Post Workshop Phase

Consideration of the Report by the Client and the designer

- Implementation and redesign

Session 3 – Bridge design process, its stages and the applicability of Value Engineering at each stage

- Procurement
- Concept
- Preliminary
- Detailed
- Construction

Day 2

Session 4 – Industry Practice and Commitment to Value

Engineering in Bridge Engineering

- Limits placed on time and budget
- Terms of Reference
- Creative idea
- Technological changes in processes, products or materials
- Examples of good and poor practice

Session 5 – Group Exercise

The attendees will work on various tasks covering planning and implementing of Value Engineering relevant to bridge project. The objective is to stimulate discussions and understanding of the process and to bring a practical value to the learned material.

Session 6 - Holistic approach for optimizing value in bridge solutions in typical highway project

- Function
- Cost
- Durability and maintenance
- Appearance
- Constructability
- Future Adaptability

Session 7- Case Studies from Middle East Projects:

Macro and micro interpretation of value in bridge engineering

This session will demonstrate how value can be added to clients and the community beyond satisfying the technical and functional requirements. Reference will be made to various bridges in modern mixed use urban and landmark developments.



Day 2

Session Five

Key Deliverables in Construction Projects

- Analyses key deliverables: On time; On budget; Within Scope and, with Quality
- Discussion and review as to whether it is important that all tasks are completed in time, or that the project is completed on time
- The conflicts that arise surrounding priorities, resource availability, costing and variations.
- Challenges to improve reserve net present value, quality, production and financials
- Project managers often have too little time to solve many problems - issue of focus
- Productivity, lead time vs. touch time, exploring the flow principles and time consumption within projects
- Analysing the effect of interdependencies and relationships between tasks/projects and how they present themselves as variations/fluctuations,
- Murphy, blockage, starvation, setups and reworks
- How and where time is lost, haulage example and general time analysis.
- What we believe, what is in our control and what is not?
- Summary, why project owners/ managers often juggle between time, costs, scope or content

Session Six

Effective project management, planning and scheduling

- Allocation of people, tasks, and time in projects
- Balancing capacity vs. balancing flow
- Understanding leverage points
- Reliable project execution, by
- Integration and synchronization
- Project staggering
- Building and managing safety
- Selecting correct planning/scheduling approach to meet the need of the project (CP-CC)
- Knows where to focus to bring the project on track
- Effective project reporting methodology
- Reviewing potential project time and costs savings, and the impact on the opportunity costs/income

Session Seven

Successful change processes that ensure effective project execution and performance

- The importance of Quality Management
- Continuous Quality Management as a core procedure
- Quality and change
- Summary of the solutions and how to effect change
- Influencing behaviour and measurements that drive behaviour
- The 4step change process, simple and powerful approach
- Steps to generate, focus on, and drive significant improvements
- Continuous improvement
- Knowing when to and what to, stop, start, continue doing
- Where to focus for investment and return on investment
- Being successful creates momentum and trust

Session 8

Overall Project Governance and Reporting Standards

- Governance – Reporting on Schedules, Reporting on Financials (TD), Simultaneous Tasks – Saving time
- Vendor Management
- Supply Chain Management
- Contractor Management
- Design-Construction Management
- Scope Change Management
- Risk Management
- Integration Management
- Financial Management
- Human Resource Management

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Registration

- Complete the registration on the last Page
- Select delegate package
- Submit scanned copies to register@casits.co.za
- Receive invoice , Make payment , Complete pre-workshop Questionnaire
- Attend Session



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To register Email: register@casits.co.za

Contact Numbers +27 87 700 5633 /+27 794 11 70 42

Delegate Registration form- MK www.casi.co.za +27 (0) 87 700 5633/ +27 794117042 Email scanned copy to : register@casi.co.za

Delegate Details

Full Names : _____

ID number : _____

Position : _____

Cell Number : _____

Email : _____

Regular Vegetarian Halal

Full Names : _____

ID number : _____

Position : _____

Cell Number : _____

Email : _____

Regular Vegetarian Halal

Full Names : _____

ID number : _____

Position : _____

Cell Number : _____

Email : _____

Regular Vegetarian Halal

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Delegate Fees

R9 999 excl. VAT per delegate Local Delegates

Session , Conference fees , material hand outs . Does not include Travel and Accommodation .

R11 999 excl. VAT per delegate International Delegates

Session , Conference fees , material hand outs . Does not include Travel and Accommodation .

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All Payments Must be made directly into the CASI Bank Account provided on the invoice and proof of banking details

Please state the invoice number as reference .

A copy of the bank deposit / Proof of Payment receipt must be emailed to accounts@casits.co.za

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Department : _____

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I hereby acknowledge that I have read an understood all the terms and conditions of registration and have the authority to approve the registration on behalf of the company

Name _____ Position _____

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Direct line: _____ Company Name: _____

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