



SERVICES DESIGN TECHNOLOGY International



Value
Engineering

Our Value Engineering Services

Value engineering is used to solve problems and identify and eliminate unwanted costs, while improving function and quality.



The aim is to increase the value of the project, satisfying the project's minimum requirements at the lowest possible cost.



Considerations & Benefits

In construction projects, Value Engineering involves considering the following:

- availability of materials,
- construction methods,
- transportation issues,
- site limitations or restrictions,
- planning and organisation,
- costs, profits, and so on...

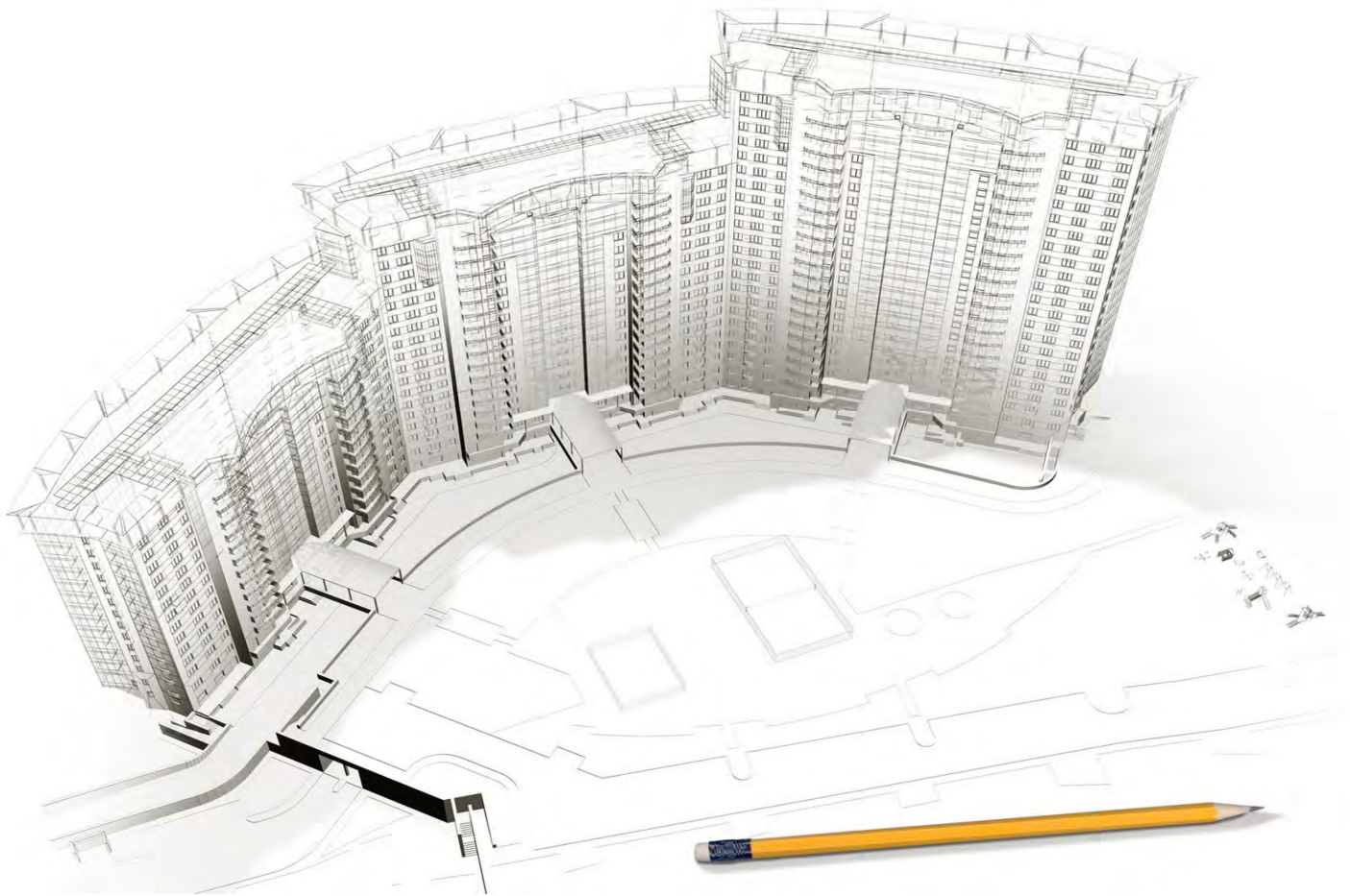
Benefits that can be delivered include a reduction in initial cost as well as life cycle costs, improvement in quality, reduction of environmental impacts, etc...

At SDT we are capable of delivering value engineering across all project engineering disciplines:

- Architectural and Structural Elements
- MEP Systems and Services
- Finishing and Fit-Out
- Site Works & Civil Utilities
- Landscaping
- Urban Planning and so on...

What is Value?
The Value Equation

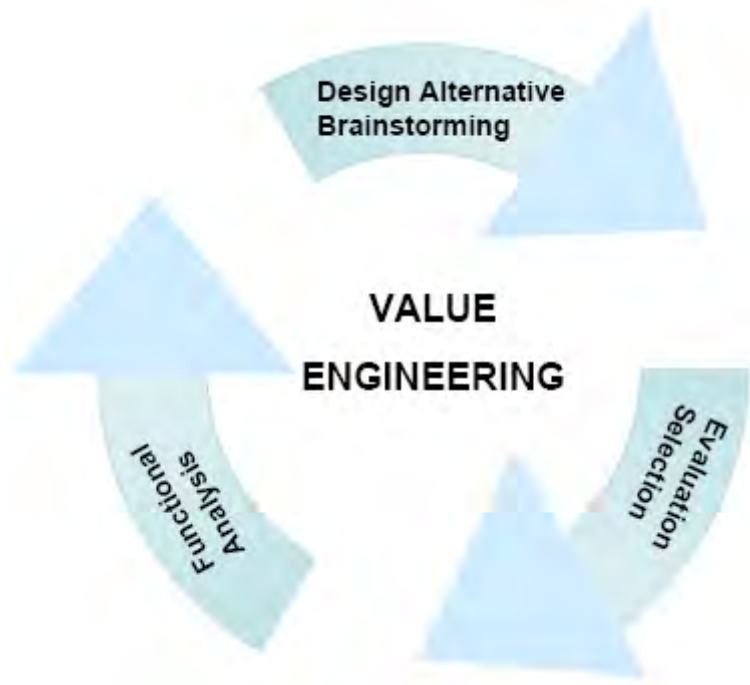
$$\text{Value} = \frac{\text{Function}}{\text{Cost}}$$



Value Engineering Process

The Value Engineering Process involves:

- Identifying the main elements of the project.
- Analyzing the functions of those elements.
- Developing alternative solutions for delivering those functions.
- Assessing the alternative solutions.
- Allocating costs to the alternative solutions.
- Developing in more detail the alternatives with the highest likelihood of success.



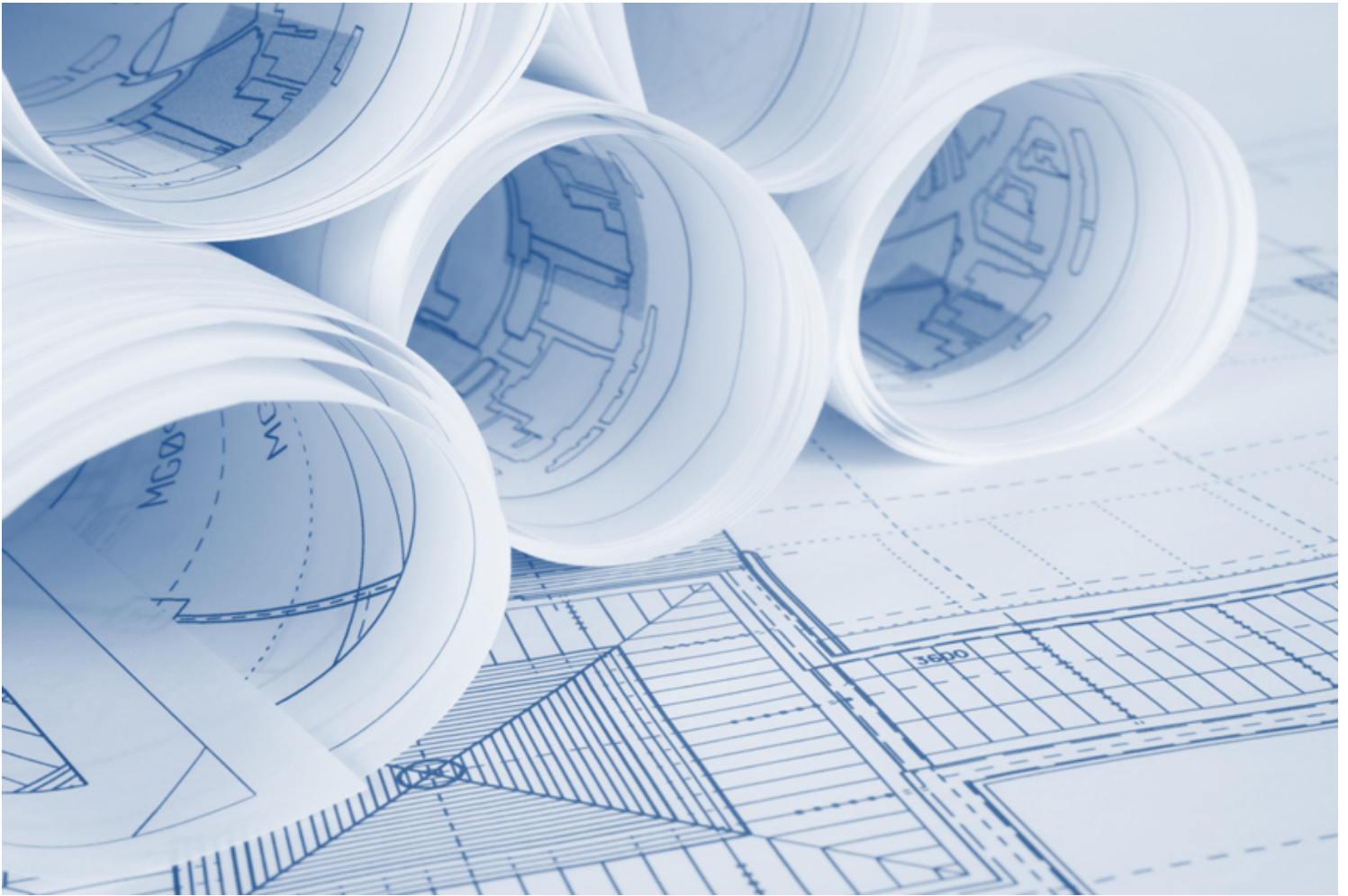


Value Engineering Objectives

- Systematic problem solving process
- Multi discipline team approach
- Life cycle cost oriented
- A proven management technique
- Save money during the project execution phase

Value Engineering Profits

- Improve decision making
- Develop realistic budgets
- Enhance the understanding of the project systems
- Identify and remove unnecessary costs
- Encourage cross discipline communication
- Improve design quality
- Cutting the cost without scarifying needed quality, reliability or performance



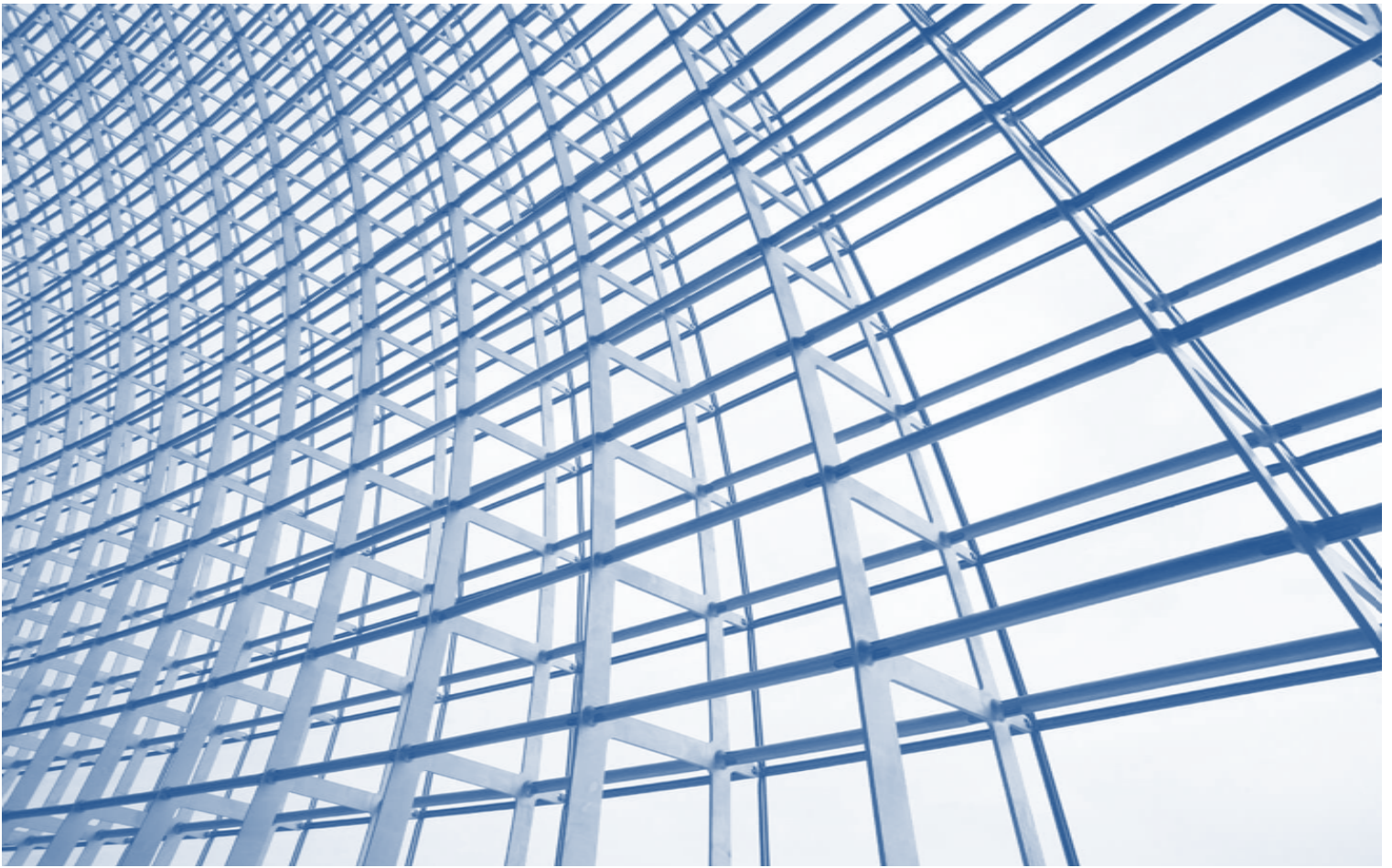
Architectural Value Engineering

The value engineering approach in essence is a decision making system which foster the elimination of unnecessary elements or functions from a project without decreasing its functional, qualitative or aesthetics value.

The functional thinking of value engineering with its two folds of quality and cost control can be integrated in the process of architectural design through completion of building process. While architecture is to provide a humane enclosure, value engineering is focused in refining the outcome in its physical context.

The Scope will consist of:

- Review the current design
- Perform a functional analysis of the facility
- Obtain the owner/users definition of value
- Define the key criteria and objectives for the project
- Verify/validate the proposed design
- Offer alternative solutions
- Verify if the budget is adequate for the developed program



Structural Value Engineering

A value engineering study will provide an evaluation of the structural design of the project in order to develop optimum systems that maximize the efficiency of the design geometry, constructability, and materials of construction.

The Value Engineering study will identify and recommend opportunities to achieve efficiencies in design systems, construction methodologies, materials of construction and constructability in order to reduce construction cost and schedules while improving the quality of the project.

The value engineering report will provide a graphic and narrative overview of the results of the study. Recommendations shall be made for alternate structural systems, efficient geometries, appropriate materials of construction, and connections and other recommendations to promote quality, cost reduction, and ease of construction.

The alternate designs, materials, and methodologies will be detailed in the report and will include a detailed quantity and cost estimate of the savings that can be achieved by the recommended systems. The report will be presented to the owner's representative for approval prior to being transmitted to the structural engineer for implementation



MEP Value Engineering

Value Engineering can be defined as an organized effort directed at analyzing designed building features, systems, equipment, and material selections for the purpose of achieving essential functions at the lowest life cycle cost consistent with required performance, quality, reliability, and safety.

2) Electrical Systems:

- Power supply.
- Emergency power supply
- Clean power supply (UPS).
- General distribution boards.
- Secondary electrical panel boards
- Sub-circuit for lighting and power circuits.
- Conduits and related accessories
- General lighting installation.
- Low Current systems to include: Telephone distribution, television and cable, access control, computer network fire alarm.
- Earthing system and Lightning Protection
- Lighting systems

1) Mechanical Systems:

- Ventilating and Air-conditioning (HVAC)
- Plumbing
- Sanitary drainage
- Domestic Water supply
- Hot Water Distribution
- Fire protection.
- BMS



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About SDT

SDT international was established in 1991 as an engineering consultancy company that provides comprehensive range of services in the Structural, Mechanical, Electrical, Infrastructure, Environmental and Plumbing design.

For the past 22 years, we have been a pioneering force in the planning, design and implementation of development projects in the Middle East, UK and Australia.

With six offices in six countries, we employ high caliber specialized engineers capable to apply innovative approaches to design and deliver practical and cost effective solutions.

UK . Lebanon . KSA . Qatar . Dubai . Australia

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