

### WHY SOME MANAGERS THINK OF VALUE ENGINEERING AS COST REDUCTION

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#### ABSTRACT

This paper illustrates the reasons behind the confusion between Value Engineering (VE) and Cost Reduction (CR) among managers and engineers.

#### INTRODUCTION

There is a great deal of misunderstanding and confusion among managers in a working place about the distinction between VE and Cost Reduction (CR), especially in an environment where VE is newly introduced. Managers and engineers need to be aware of the clear distinction between the two approaches and deal with each one separately on its own merits.

Managers look at the bottom line when they go through a VE Study report and focus on savings (less cost), and Engineers make savings (reduce cost) for obvious reasons.

From this kind of environment the confusion between VE and CR emerged to exist. The distinction between VE and CR have been clouded by factors, which I have observed during my work as a member of VE Section within a large government Engineering Department, and as an occasional lecturer on Engineering Management.

#### WHAT IS VALUE ENGINEERING?

VE is defined as *An organized effort directed at analyzing the functions of goods and services for the purpose of achieving necessary functions at lowest overall cost, consistent with achieving essential characteristics.*<sup>1</sup>

The distinct characteristics of VE, can be summarized in the following points:

- 1) Function Analysis
- 2) Balanced consideration among the three major elements of any project (Function, Cost and Quality).
- 3) Use of VE Job Plan Phase (Information, Function Analysis, Idea generation, Evaluation and Development).
- 4) Savings earned as a result of better utilization of all resources (Materials, Manhours and Know-how).
- 5) VE is a multi-disciplined effort.

Hence, the VE objective is to increase Value, by either making the performance of a product better, and/or the cost of producing it less.

#### WHAT IS COST REDUCTION?

Cost Reduction (CR) can be defined as a cost cutting technique that focuses on parts which might result in quality or performance reduction in order to meet the goal of reducing the budget, by the amount or percentage set by management.

The characteristics of CR can be summed up in the following points:

- 1) One step procedure (decision)
- 2) Can be applied by almost anyone in his/her own way
- 3) Required by Owner or Management (Non-technical people)
- 4) Deleting parts or elements of the project (essential elements)
- 5) Concentrating on reducing cost by modifying the product which may result in inferior product.
- 6) Replacing specified items with cheaper ones.

Therefore, the aim of CR is just what the terms indicate, reduce cost, that in many cases, reduces the quality and consequently reduces the value of the product.

#### WHY THE CONFUSION?

VE study is a well distinguished and effective problem-solving technique. It differs from all other techniques by using the function analysis approach, which is considered the heart of any successful VE study.

In spite of its distinction, confusion between VE and CR exists among managers and some VE engineers as well, especially in places where VE is not yet well established. As I have encountered them in my daily work as Deputy to the Director of Value Engineering Section in General Directorate of Military Works, the reasons for the confusion are of two major areas, where each area can be traced to several reasons. These two areas are:

I. Bad cases of VE studies which turned into cost reduction.

II. Bad practices by some Value Engineers.

Bad cases of VE study that turned into CR can be attributed to:

- 1) Skipping the function analysis to obtain fast results.
- 2) Not allowing enough time to study and analyze the project in-depth, i.e. not following the VE Job Plan.
- 3) Temptation to jump the sequence of the VE Job Plan to minimize the effort spent on the study.

Bad practices by some Value Engineers can be traced to several wrong practices, these are:

- 1) Nature of the project become unrealistic when many restrictions are imposed by management such as the project is prestigious, military requirements, matching existing structures, etc.
- 2) Incomplete or unorganized design directives for the project to be VE studied.
- 3) Excitement on the part of the engineers to make savings at the bottom line of the report to look and appear good and to please management.
- 4) Meeting the deadline specified by management which is often short.

- 5) Concentration by the engineers to make savings to convince managers that VE study is worth the time, effort and money spent.

#### CASE STUDY

A VE Study was conducted on the preliminary design of the New Exhibition Center in Riyadh, Saudi Arabia. The project consists of:

- One story building, pentagon-shaped
- Parking Shed
- Guard House
- Outdoor Exhibition Area

The VE study team suggested 22 proposals to improve quality, constructability and function of the project (improve the value of the project). A presentation was given to the Project Management to explain the proposal. After the presentation, management gave the following restrictions:

- Redesign of the project is not acceptable. (The present design has already been approved by higher authorities).
- Final report has to be submitted within 3 days (to utilize the appropriated fund).
- Construction cost has to be lowered by 25% (funding constraint).

The result was to re-study the project in light of the three constraints. In other words, working around the present design by modifying the elements of the project such as systems, materials and method of construction to cut down cost. What was supposed to be a VE Study turned out to be a CR Process.

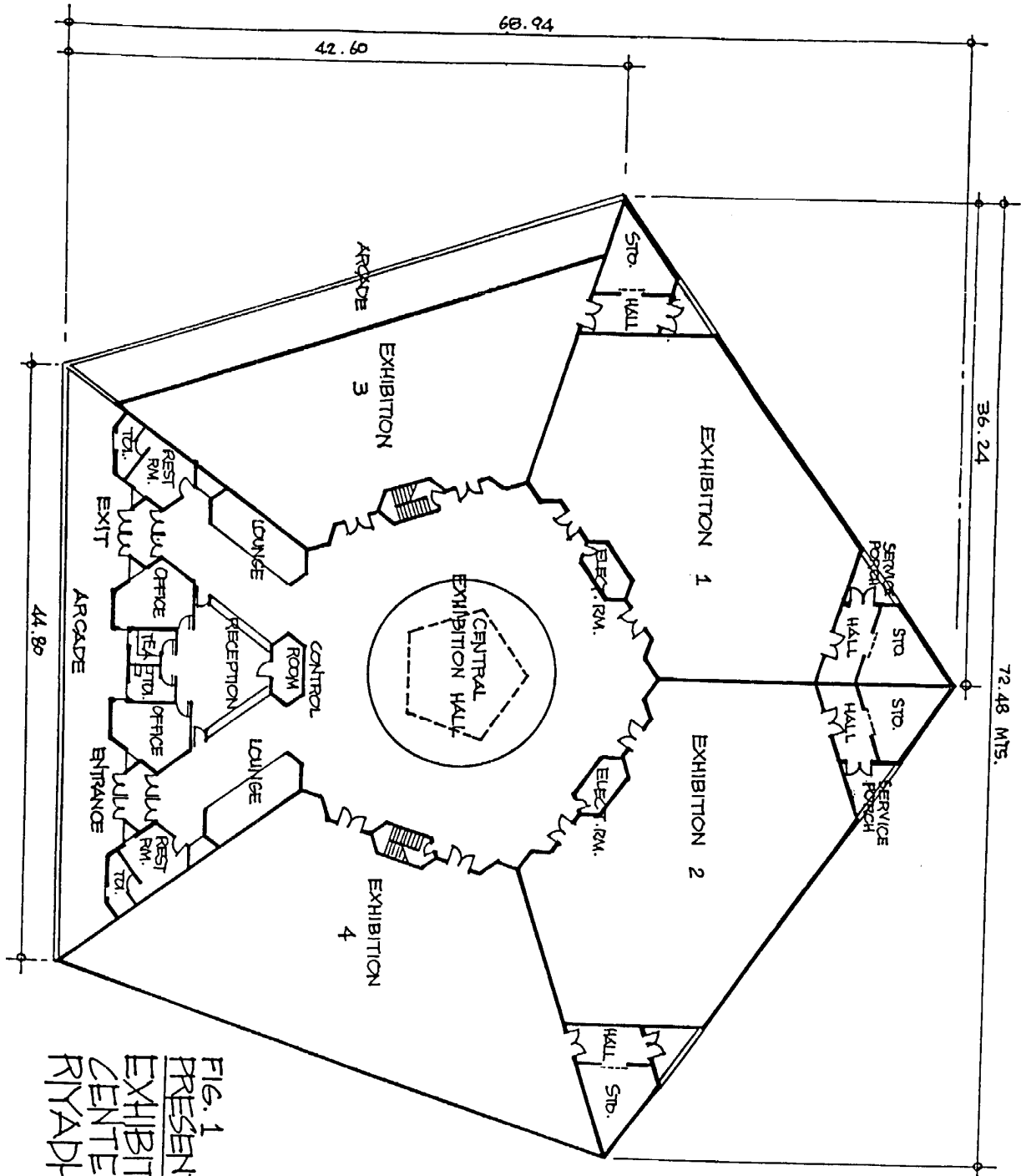
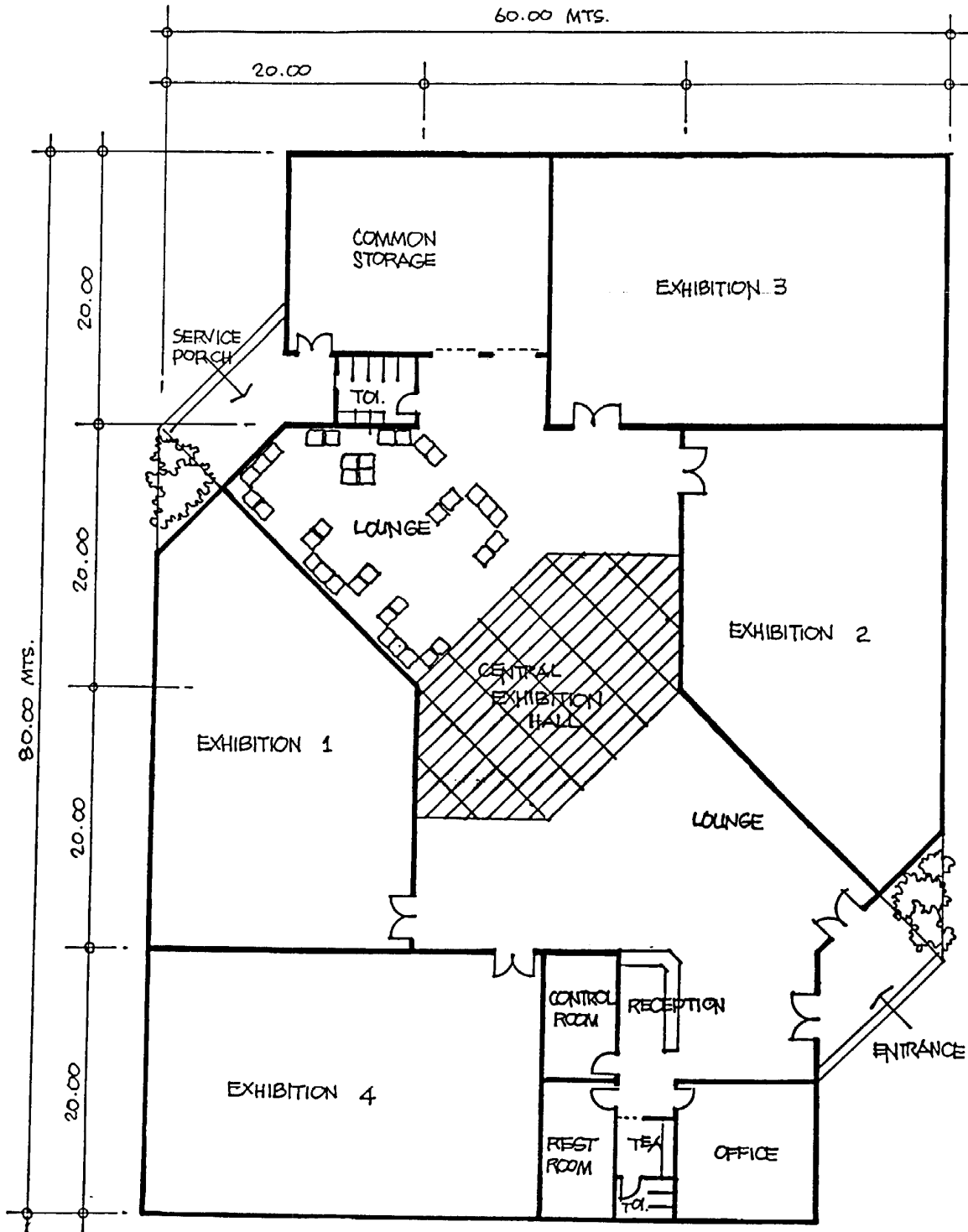


FIG. 1  
PRESENT DESIGN  
EXHIBITION  
CENTER  
RIYADH, K.S.A.



⊙ FLOOR PLAN

FIG. 2  
PROPOSED DESIGN  
EXHIBITION  
CENTER in  
RIYADH. K.S.A.

#### CONCLUSION

Management in the public sector is more concerned with time, schedule, budget constraints and approval of design, so CR seems to satisfy their requirements, or rather their restrictions. CR is faster to implement than a VE study, and works within what is given (product, design). VE methodology may create an entirely different thing (new product, new design) but it will satisfy the function, and that is what makes management reluctant for reasons such as never tried before, reliability, time or the need for approval by higher authority.

One way of overcoming this problem (roadblock) is to integrate VE study within the design process right at the beginning, at the stage where scope of work for the projects is being formulated. By integrating VE into the design process, VE becomes an integral part of the design directives of the project.

#### REFERENCES

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