

## VALUE ENGINEERING APPLIED TO CONDOMINIUM RECONSTRUCTION IN CALIFORNIA



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### ABSTRACT

The development of new applications for the Value Engineering (VE) methodology is critical to the continued growth of the methodology. This paper discusses a new application of the VE methodology in the field of condominium reconstruction following either defect litigation or natural disasters. By applying VE to these situations, the limited funds available can be spent in the most effective way, reinstating those affected by the losses as quickly and efficiently as possible.

### INTRODUCTION

VE is synonymous with the terms Value Management and Value Analysis - a function oriented, multi-disciplinary management practice developed in the 1940's by Lawrence D. Miles of the General Electric Company, it is used extensively in many industries including manufacturing, industrial, government and the construction industry.

The objective of applying VE to a reconstruction project is to solve problems, and to determine the "best value", or the best relationship, between worth and cost in all the reconstruction work that is being undertaken.

### CONDOMINIUM RECONSTRUCTION

This paper deals with condominium reconstruction following either defect litigation or natural disasters.

### Defect Litigation

In the 1969 California Appellate court case of *Kriegler v. Eichler Homes*<sup>1</sup>, the court held that new homes were a product, and that the manufacturer, (the builder) should be held to a strict liability standard, giving the buyer the highest amount of consumer protection. This case opened the door to the construction litigation 'industry' which has flourished in California over the past 10 years.

In the building boom of the 1980's there was a tremendous amount of new residential home construction. Unfortunately, many of these projects were undertaken without appropriate controls and quality assurance systems in place. This resulted in a high incidence of defective, non code compliant work, which has fed the current wave of construction defect litigation being seen in California.

In the last 10 years, the rate of condominium construction has declined compared to overall home construction. According to Tom Torkalson, chairman of the Assembly Housing and Development Committee, in 1986 condominiums represented 31 percent of new construction, and by 1996 this share had dropped to 12 percent<sup>2</sup>. This decline has been attributed largely to the high risks of becoming involved in construction defect litigation that builders and developers face in developing new home communities.

Issues in these lawsuits include all trades and items of work such as:

- ◆ Soils problems, such as excessive settlement
- ◆ Water intrusion into buildings
- ◆ Framing issues such as omitted seismic shear walls and framing connectors
- ◆ Defective roofs improperly nailed, flashed and waterproofed.

Final settlements in these lawsuits (in the author's experience) are typically in the range of 10% to 50% of the amount claimed, and plaintiff attorney and expert fees can cost the homeowners association up to 40% of the amount awarded. This then leaves the Association a relatively small amount of money to reconstruct their homes.

### Natural Disasters

Between the years 1976 and 1996 the Federal Emergency Management Agency (FEMA)<sup>3</sup> had an average of 34 Major Disaster Declarations per year in the USA, many of these being in California, including:

- ◆ Earthquakes
- ◆ Floods and Mudslides
- ◆ Fires and Riots
- ◆ Wildfires

Often these disasters result in damage to or loss of homes, and it becomes imperative that the limited funds available are spent in the most effective way, which would reinstate the unit owners in the best way possible.

### WHY VALUE ENGINEERING?

Most reconstruction projects have two things in common; 1) a vast number of problems to be addressed and 2) limited funds available to address these problems. These problems make it extremely important that each dollar spent on reconstruction is spent in the most efficient and appropriate way possible.

Emerging from defect litigation, an Association will usually be awarded a sum of money that is significantly less than the amounts of their alleged defect costs. How to spend the limited amount of reconstruction funds is a critical decision, if all the major construction defects/deficiencies are to be resolved.

Homeowners Associations entrusted with the reconstruction of homes are often overwhelmed with

the massive amount of data they have to study in order to make decisions regarding which defects/deficiencies are to be resolved.

In a complete report done prior to the commencement of the reconstruction work, VE simplifies and clarifies the options available, and gives the Reconstruction Committee a manual of available options to resolve the various problems. The report will identify areas where project criteria changes may be desirable to maximize savings in materials and methods of design and construction.

A VE study will help to bring peace-of-mind to those entrusted with the reconstruction, to assure the most appropriate and informed decisions regarding the reconstruction work are made.

### OWNER INVOLVEMENT

A VE team is typically made up of a selected group of experts and some, or all, of the homeowners Reconstruction Committee. Therefore, having participated on the VE study, the Reconstruction Committee would be actively involved in the development of the solutions to the various problems.

### WHEN SHOULD THE VALUE ENGINEERING STUDY BE PERFORMED?

A VE study performed early in the project life cycle has the greatest ability to impact costs, since the process will determine the scope of the project rather than the details of the project. A VE study may be performed at any time during any phase of the project life cycle, but the sooner the VE study is performed, the greater the return on the VE investment. It is in the early stages of a project that the Association has the most control over the future cost of any reconstruction work.

In the case of natural disasters, the VE study should be performed when damage has been quantified and documented, and an initial budget has been established.

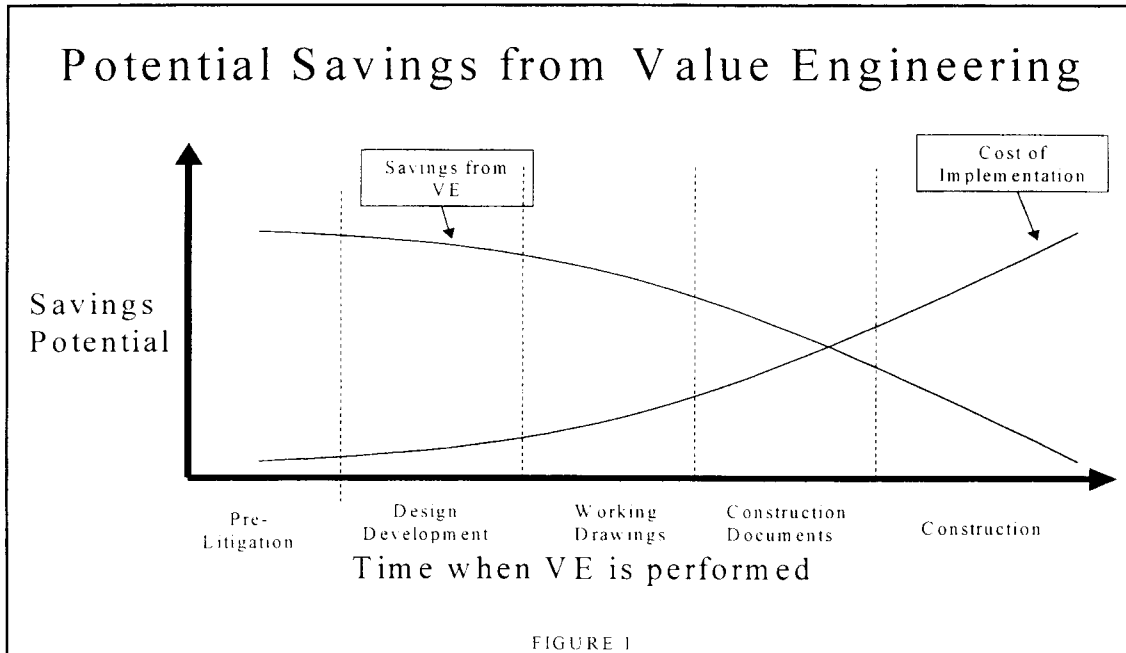
Regarding defect litigation, VE should ultimately be used during settlement negotiations, involving both sides of the dispute. If this can be done successfully, a significant amount of both time and money could be saved, and this would result in an earlier repatriation of the homes of those affected. According to Juan Costa, Lobbyist for the California Building Industry Association, when construction defect lawsuits go to trial, they cost the builders

about \$500,000 in attorney and expert witness charges, and have typically 25 to 30 defendants<sup>2</sup>.

If builders and developers can be brought in to negotiate a realistic deal prior to a full scale lawsuit there can be big savings potential for them as well as a quicker end to the dispute which will be beneficial to homeowners.

Legislation adopted in California in 1997 now requires that meetings be held between the parties to the litigation prior to being allowed to file a lawsuit.

VE can be of great help in developing realistic cost - effective solutions as an effective tool in early stage negotiations.



**CASE STUDY - VE APPLIED TO A CALIFORNIA HOUSING PROJECT FOLLOWING DEFECT LITIGATION**

This study is the first known application of VE to Post Defect Litigation Home Reconstruction.

In this study, a VE Team (consisting of a CVS, technical specialists and additional consultants) began their study by speaking to occupants and reviewing construction deficiencies in a complex of 253 luxury residential units in Southern California. A FAST diagram was then developed to represent potential "fixes" in three major construction categories: 1) Windows and Doors; 2) Decks and Railings; and 3) Courtyards and Retaining Walls.

Home owners representatives joined the Team to brainstorm and evaluate by SIRRS (Simplified Idea Rating / Ranking System)<sup>4</sup> over 80 ideas, resulting in 44 options that could provide varying degrees of corrective action.

Options recommended by the Team and accepted by the client will result in a program that will not only REMEDIATE DAMAGE for immediate reconstruction and short term efforts, but will also PREVENT DAMAGE in the future by modifications to the existing buildings and site.

Per the following Chart of Results, these VE efforts will allow the Homeowners Association to correct all major discrepancies and still deposit over \$1.6 million of the \$6.84 million litigation award funds into a "maintenance reserve" account. These VE savings also allowed over \$360 thousand to be "value added" in an area where the Team felt not enough budget was allocated to correct discrepancies that could directly impact the safety and comfort of dwelling occupants.

<b>CHART OF RESULTS</b>				
<b>Work Group</b>	<b>Proposals Evaluated</b>	<b>Original Budget</b>	<b>Revised Budget</b>	<b>Savings Potential</b>
Windows/Doors	<b>14</b>	\$1,750,000	\$1,022,990	\$727,010
Deck/Railings	<b>8</b>	\$1,850,000	\$2,212,290	-\$362,291
Courtyards/Retaining Walls	<b>22</b>	\$3,240,000	\$1,940,457	\$1,299,543
<b>TOTALS</b>	<b>44</b>	<b>\$6,840,000</b>	<b>\$5,175,737</b>	<b><u>\$ 1,664,262</u></b>
Note: Savings Potential represents 24.3% of Original Budget				
CHART 1				

**CONCLUSION**

VE is a management practice proven to be of great benefit to homeowners following reconstruction due to either defect litigation or

natural disasters. It is an effective tool to assist Reconstruction Committees or Homeowners Associations in making the 'right' decisions by involving and educating them in developing a wide variety of cost effective options.

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