



THE VALUE MANAGER

The Hong Kong Institute of Value Management



Volume 4, Number 3, 1998

Message from the President

Tony Toy, President of HKIVM

“What’s the difference between commitment and involvement? – it’s like bacon and eggs, the pig is committed but the hen is only involved.”

It’s been a while since I’ve had the chance to sit down and reflect on the year from neither a work orientated nor a personal perspective. Writing this column on a hazy yet sunny day, when I really should be outside being involved in a game of golf (as I still can’t play for nuts), is such a time. For those who have been to my office they may have noted that I am fortunate to still have a decent view of the harbour and the Kowloon peninsular. Today, however, the spectacular panoramic view only provided food for thought. Namely: a) the worsen state of pollution all around us, b) the relative inactivity of the harbour and streets below, and c) the massiveness and density of the infrastructure(s) and the future problems it will create. The question then is, does or should the HKIVM have any commitment and/or involvement in any of these community issues?

The crystal clear autumn days are now but a rarity. The director of Friends of the Earth (FOE), Mrs. Mei Ng, in her September luncheon talk to us covered eloquently many of the environmental concerns that face all of us. During the lunch she was most interested in the Value Methodology and how this could be taught to the young, particularly in China. She recognised that for the environment to be improved it is not appropriate to just tell the populace what not to do but to find viable alternatives for them to meet their essential needs and at the same time address the myriad of environmental concerns. She considered that educating the youth in the principles of VM would be of great benefit. In this the HKIVM could and should take a more active role. I have already committed myself and the Institute that we would provide facilitators for workshops arranged by FOE. Can we do more? Should we be more proactive? Any one interested to be involved please contact me so that we may take some formal follow up action.

The Economy is still in distress. The opportunities, as we are already well passed challenging times, is for the HKIVM to more actively promote the application of VM principles through training and other initiatives. Recently I got feed back from one of our members, David Yau, that the HKPC is now conducting a two-day VA/VE course for the manufacturers. Why is the HKIVM not directly involved with the manufacturing sector? How can we redress this situation? As an Institute, what can we offer during these difficult times? Our report card does not look good. In lieu of the usual sit down luncheon in November I would like to propose a round table forum to take stock. Please contact me if you have other ideas or want to get involve.

Sustainability from an environmental perspective was discussed in a recent LegCo motion, and hopefully some tangible commitments will eventuate. However, sustainability from a Life Cycle Cost (LCC) viewpoint is still only thought about but rarely practice in the provision of infrastructural projects, which directly involves the construction industry. I would like to see some articles in this newsletter, or organise a luncheon speaker to update us on

Table of Contents

- ◆ Message from the President
- ◆ Announcement of the 3rd AGM
- ◆ Value Management Assistance in Design - Build
- ◆ International Benchmarking: The Establishment of Best Practice
- ◆ HKIVM News
- ◆ Forthcoming Events
- ◆ Welcome New Members
- ◆ 3rd Int. VM Conference Update

EDITOR:

Dr. Geoffrey Qiping SHEN
Dept. of Building & Real Estate
Hong Kong Polytechnic University
Hung Hom, Kowloon, Hong Kong

practical applications of LCC. (Practical success stories rather than theory) As VM facilitators I think there is room for improvement and more tangible involvement. Any suggestions to make this happen? As many of us are involved in the construction industry, what can HKIVM initiate to enhance the accountability of the construction industry?

The proposed 1999 conference is also about to be committed, but this will again depend on the involvement/commitment of the membership. Can we use the proposed 1999 conference to help focus on some of these issues? Please contact Tony Wilson on 2867 3798 if you have any feedback from the last conference or if you want to contribute in any way.

The honeymoon period of the HKIVM is over and we need to seriously consider the future of HKIVM in the light of our expectations and aspirations. Hopefully, some of the ideas voiced in this column will initiate some feedback to the executive committee or myself. At the forthcoming AGM in December it will again be a time to reflect on our achievements and plan for future goals. I would implore that the membership participates more actively in determining the Institute's specific future involvement and commitments, particularly from a community perspective.

I look forward to seeing all of you at the annual AGM, if not before, and your commitment to be involved.



MARK YOUR DIARY NOW!!!!

Annual General Meeting & Christmas Lunch

12:00 pm, 8th December 1998

The Hong Kong Club, 1 Jackson Road, Central, Hong Kong

During the last Executive Committee meeting held on 11 Sept. 1998, the Committee decided to organise this year's AGM in December 1998 in conjunction with HKIVM's Christmas Lunch meeting. During the AGM, the Committee will seek your support and approval in two important issues: (1) the establishment of a new status "Value Management Facilitators" (VMF) for some qualified members, and (2) the change of the duration of services from one year to two years for elected Council Members to enable them to have a relatively long-term plan for the Institute.

The preliminary agenda for the AGM is as follows:

1. Approval of the minutes of the 2nd AGM
2. President's address
3. Treasurer's report
4. Membership report
5. Announcement of new Council members
6. Approval of changes in HKIVM's articles
7. Any other business
8. Christmas Lunch

Value Management Assistance in Design - Build

Stephen J. Kirk, Ph.D., AIA, CVS, FSAVE

Vice President & Director of Facility Economics, Smith Group, Inc., Detroit, MI U.S.A.

Editorial Note: This paper was originally published in the 2nd International VM Conference organised by the HKIVM in 1997, and is reprinted here in order to address the need of a wider readership.

ABSTRACT

Value Management has continued to meet owner, designer and contractor challenges by enhancing project value since its inception in the 1940's at General Electric by Larry Miles. Since then, value specialists have continued to develop new tools to meet these challenges. This paper highlights tools that are very valuable in the Design-Build (D-B) project delivery process. These new tools permit the owner and the Design-Builder to maximize project value while minimizing costs. Topics addressed include: function analysis systems technique (FAST) diagramming, modelling (quality, space, cost, life cycle cost, time, risk), weighted evaluation, value workshops, design and constructability analysis, and post occupancy evaluation.

INTRODUCTION

The traditional design, bid and construction project delivery process is being challenged by government and private industry owners alike. The design-build process is nothing new for many countries such as Australia, who have been using it as a method of project procurement for many years. In the United States however, the use and interest in D-B has greatly accelerated in the last 5 years. This is one of the most significant trends in the U.S. design and construction industry today.

Design-build, also known as "design/construct" or "single responsibility," is a method of project delivery in which one entity contracts for both architectural/engineering design and construction. This is similar to the "master builder" approach used by Michelangelo in the fifteenth century. In the traditional design-bid-construction approach, the owner commissions an architect or engineer to prepare drawings and specifications, and then selects a construction contractor, either by negotiation, or as is

hospitals, educational facilities, office buildings, retail centers and hotels.

WHY VALUE MANAGEMENT WITH D-B?

Value management stages of application and techniques have continued to expand over the past twenty years. Today, VM is highly effective in the early planning stages of a project as well as during various stages of design and construction. Since the design-build process spans from project planning & definition through design and construction, VM offers a variety of unique techniques that improve upon the project's performance. These value enhancements include:

- Construction cost savings of 5-15%, or more
- Life cycle cost optimization
- Function-based project criteria definition
- Balanced quality, program and cost expectations
- Project risks identified along with mitigation strategies
- Improved schedule coordination and project delivery
- Enhanced business process/operational effectiveness

Effective application of VM with D-B, results in owner project expectations which are defined, managed and achieved, if not exceeded. For the D-B entity, this means being selected by owners to provide D-B services and, upon project completion, repeat business opportunities. Specific VM techniques, along with example applications, are presented as they relate to the D-B process, which follows:

The design-build typical process can be described as consisting of three broad stages:

- Request for Qualifications/Request for Proposal (RFQ/RFP) preparation by the owner
- Response to RFQ/RFP by the D-B entity
- Design and construction by the D-B entity with input from the owner

RFQ/RFP PREPARATION AND VM

The RFQ/RFP preparation stage involves defining owner expectations regarding such things as project size and operational performance, quality of building systems, architectural image, environmental sustainability, flexibility, safety, schedule of completion and cost budget. These criteria are defined in performance terms only, in order to give D-B firms an opportunity to creatively explore alternatives. In many cases however, certain elements of the project can only be described in prescriptive terms, such as the type of mechanical system required. Other data about the

project is also presented such as: site information, code and regulatory standards, economic and financial considerations and other restrictions. Some owners also prepare a detailed space program of requirements. Still others may develop conceptual layout designs to begin to understand the consequences of their project requirements as well as to communicate to prospective D-B entities their preferred solution. VM can provide owner assistance with the above.

The VM approach focuses on desired functions of the owner. This is the heart of VM and consists of verb-noun function descriptions. A technique called FAST diagramming (Function Analysis Systems Technique) permits project definition in terms of desired functions. It also helps communicate the higher level business purpose (s) of the project. Asking "how" questions helps determine the specific solution to the problem. Asking "why" questions leads to the overall purpose of the project. The FAST diagram, when completed, provides a big picture of the project functions for all concerned.

Another VM technique called "Quality Modeling" assists the owner in carefully defining the quality elements of the project. These elements consist of the following:

- Operations
 - Operational effectiveness
 - Flexibility / expandability
 - User comfort
- Image
 - Site planning / image
 - Architecture / image
 - Community values
- Technology
 - Engineering performance
 - Security / safety
 - Environmental
- Resources
 - Operations & maintenance costs
 - Schedule
 - Capital cost

The quality modeling process assists in the defining, measuring and managing of owner quality expectations. An interactive workshop setting, with owner and user participation, allows project expectations to be brought out, explored and documented. The relative importance between these quality elements is then explored, prioritized and documented with the owner. The

quality model consists of narrative descriptions of each quality element and a graphic diagram which shows the relative priorities.

Space Modeling is a third VM technique which is used to assist in documenting space functional requirements. Space technical criteria, relationships and other information are also a part of space modeling. Benchmarking of similar space functions helps to validate overall needs.

Cost Modeling is a formal VM technique which ties quality and space requirements to a realistic cost budget. The cost model is organized into project functional systems. UNIFORMAT is an elemental cost accounting system used by VM specialists to organize costs. Historical project costs, also organized by UNIFORMAT, permit benchmarking comparative information.

Some owners also establish life cycle cost budgets for their projects. For those that do, the VM technique of life cycle cost modeling assists in setting realistic budgets. Normally, cost elements include:

- Capital costs
- Staffing costs
- Energy costs
- Maintenance costs
- Replacement costs
- Associated costs

All costs are converted to an equivalent present worth basis using the owner established economic criteria for discount rate and life cycle.

A time model is also prepared to relate critical scheduling activities with the overall anticipated project completion date. This VM technique permits discovery of potential problems and leads to improvements to the project schedule.

Once the above models are prepared, a value workshop is held to review all criteria for adequacy and completeness. In most cases, the quality and space expectations exceed the cost budgets. The value workshop study team includes participants from the owner, user, designer, constructor and facility manager. They explore a variety of options to get the project in balance. The workshop itself is structured following SAVE International's Value Methodology. This methodology consists of the following phases: information, function, creativity, evaluation, development, and presentation.

In addition to the above design criteria, including VM techniques, the owner also identifies the minimum qualifications acceptable for prospective Design-Build firms. This might include:

- Experience on similar projects
- Performance in meeting owner budgets, schedules
- Overall capability and resources
- Financial strength
- Previous owner references
- Management approach and leadership

The above information is assembled into an RFQ document. The project is advertised and qualification proposals are received (in response to RFQ). The owner then shortlists (selects) preferably three and usually no more than five of the most qualified D-B entities, for further consideration.

The shortlisted firms are then given a formal request for proposal (RFP). This document seeks a design and cost proposal in response to the design criteria developed earlier. Once these proposals are received, each D-B entity is evaluated on the basis of quality of design, price and other factors. Before making a final award, the short listed firms may be called in to make presentations.

RESPONSE TO RFQ/RFP AND VM

D-B entities interested in responding to owner requests for qualifications prepare appropriate information for consideration. Management strategies are developed by the D-B entities which explore how best to design and construct the facility, should they be selected. The VM technique of function analysis helps identify strategies.

Upon notice of being short listed by the owner, the D-B entity then begins the process of responding to the RFP. Superior creativity and innovation in the preparation of a response is needed in order to satisfy both the quality of design sought as well as to achieve a cost that is competitive. VM can provide terrific assistance in developing a design which is both high quality and lower in cost than the competition.

To gain competitive advantage, the D-B entity uses VM techniques and outside experts. A Value Workshop is held to explore options in satisfying owner criteria. This workshop follows SAVE International's Value Methodology. The workshop begins with a review of the RFP and VM material including the FAST diagram; quality, space, cost, life cycle cost and time models. The team then explores alternatives which will meet the required functions but at a cost that will be

low enough to win the award.

The VM technique of Risk modeling assists in identifying the potential risks involved with the project. These risks range from geotechnical concerns to construction labor and material availability. The VM team creatively explores mitigation strategies for each of the high risk areas.

Upon receipt of proposals from the D-B entities, the owner begins the process of selecting the one that provides the greatest value to the owner. A variety of selection processes are available to public and private sector owners. Each has been used successfully and each has merits. Following is a listing of the most common approach:

- Weighted Criteria
- Adjusted Low Bid
- Equivalent Design/Low Bid
- Fixed Budget/Best Design
- Meets Criteria/Low Bid
- Emergency (public safety or welfare threatened)

Whatever selection approach is used by the owner, it should be mentioned in the RFP document so as not to cause any possible disputes later. Explicitly describing the approach including any "weighting" of criteria will also help the D-B entity produce a better response. The VM technique of weighted evaluation assists the D-B entity in assessing their strengths and weaknesses. This analysis helps the firm to reinforce its weaknesses.

Several model D-B contract documents exist for owner use. These D-B contract documents can be obtained at the following U.S. organizations:

- American Institute of Architects
- Associated General Contractors of America
- Engineers Joint Contract Documents Committee, American Consulting Engineers Council
- Design-Build Institute of America (Contract under development)

DESIGN / CONSTRUCTION AND VM

Upon selection and award of the contract with the owner, the D-B entity begins the process of finalizing the design and construction documents. Because there are still a number of decisions yet to be resolved, the owner and the D-B entity must maintain good relations. In many cases a VM "partnering" exercise begins the

working relationship. VM can assist both D-B and the owner in continuing to seek best value solutions during the final design stage. Issues about design documentation, constructability, schedule, quality and life cycle cost effectiveness continue to be explored, during value workshops in which the owner and the D-B entity participate. After the project is built, a post-occupancy evaluation is conducted to obtain lessons learned about the relative success of the project.

Significant time savings can result using the D-B method because procurement and construction work can begin before all the construction documents are fully completed. This fast-track construction in time savings translates into lower costs and earlier utilization of the completed facility.

CONCLUSION

As the design-build form of delivery continues to expand in use, VM offers significant benefits for both the Owner and the D-B entity. VM offers help in:

- Assuring adequate project criteria and expectations have been defined.
- Assisting D-B entities in preparing competitive proposals which are responsive to owner needs.
- Optimizing project value during final design and construction.

Owners and D-B entities are encouraged to consider use of value management for their next project in order to improve quality and reduce costs.

REFERENCES

1. American Consulting Engineers Council, 1015 15th Street, N.W. Washington, D.C. 20005
2. American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006
3. The Associated General Contractors of America, 1957 E. Street, N.W., Washington, D.C. 20006
4. Design-Build Institute of America, 1010 Massachusetts Avenue, NW., Suite 350, Washington, DC 20001
5. Kirk, Stephen, "Quality Modeling: Defining Project Expectations," 1994 SAVE Proceedings
6. Kirk, Stephen & Alphonse Dell'Isola, Life Cycle Costing for Design Professionals, 2nd Edition, McGraw-Hill, New York, 1995
7. SAVE International, Value Methodology Standard, May 1997

International Benchmarking of Value Management: The Establishment of Best Practice

Steven Male¹, Marcus Grönqvist¹, John Kelly², Scott Fernie², Graham Bowles²

¹ School of Civil Engineering, University of Leeds

² Department of Building Engineering & Surveying, Heriot-Watt University, Edinburgh

Editorial Note: This paper was originally published in the 2nd International VM Conference organised by the HKIVM in 1997, and is reprinted here in order to address the need of a wider readership.

ABSTRACT

This paper presents a study of benchmarking value management primarily within the construction industry but also within manufacturing and process industries. The aim of the research project is to develop and implement a best practice Guidance Note for value management in construction, from the pre concept to post occupancy or the operational stages of a project. This also includes contributing to an agreed standard in the area. It is proposed to develop the best practice Guidance Note by investigating internationally the value management processes, procedures, tools and techniques used in construction and manufacturing. The study is aimed at improving project and business processes within client, design and construction team organisations. It is proposed to implement the best practice Guidance Note through regional workshops, seminars and the traditional routes of journals, conferences and a book.

The general background of benchmarking is outlined in the paper. The co-investigators to the project Steven Male and John Kelly have developed a value management methodology for use in the UK construction industry. It has been used on numerous live projects of different types, sizes and complexity and has been the datum for conducting benchmarking exercises. The outline Kelly and Male methodology is summarised in the paper and includes explaining the inputs required and the process itself. The value management workshop steps of pre-study information, information, creativity, evaluation, development and consensus building are set out as preliminary outcomes of the benchmarking process. Policy considerations from the study are also presented and discussed, including other important topics that have emerged from interviews internationally.

INTRODUCTION

This paper presents preliminary results from an EPSRC IMI funded project on benchmarking value management internationally. The paper assumes that the reader has a background understanding of value management.

Value Management, Engineering and Analysis

The terms Value Management (VM), Value Engineering (VE) and Value Analysis (VA) are still largely used interchangeably in the literature and it is not possible to isolate one area for investigation without reference to the others. A distinction between VM and VE is becoming evident in construction but there is inevitably still a large degree of overlap. However, value management in construction is increasingly being seen as the term to describe the total process of enhancing value for a client from a project through the phases of concept through to operation. Value engineering is increasingly being viewed as a subset of the value management process, where the focus is on improving value in the design and construction stages of a project. VE is the term favoured by the Society of American Value Engineers (SAVE) and as SAVE has considerable influence internationally in construction the term is in common use around the globe. VA is the term embraced by the EC Strategic Programme for Innovation and Technology Transfer (SPRINT) in publications that disseminate knowledge of the technique to all industry sectors across member states. VM would appear to be the most appropriate term in construction, encompassing as it does a wide problem area that has as much to do with the people involved in the process as a technical analysis of proposed projects. A literature review has indicated a number of standards are being developed internationally, including within Europe.

Kelly and Male⁷ have adopted the term value management since it encapsulates the contribution that a construction project makes to the ongoing business or organisational activity of a client. They see value management within a wider business context. Value management is defined in this paper as;

“a proactive, creative, problem-solving or problem seeking service which maximises the functional value of a project by managing its development from concept to use through structured, team-oriented exercises which make explicit, and appraise subsequent decisions, by reference to the value requirements of the client”

(Kelly & Male 1996)

A definition that is also being used by Kelly and Male in explaining the process of value management and value engineering to a broad range of different audiences is that;

“it is a process that makes explicit the package of benefits that a client is prepared to pay for an appropriate cost”

Value management, as part of the business or organisational delivery process of a project, can be seen as part of a review procedure or as a forward looking planning procedure on a project. VM, as a project intervention mechanism, attempts to solve or seek out problems using the creative skills of a team in an intensive, structured, workshop situation. Its greatest untapped potential lies in the forward planning of a project. This is contrary to its prevailing use currently as a review procedure, often for removing costs from a project rather than adding value per se.

THE BENCHMARKING PROCESS

Benchmarking and Related Management Practices

Benchmarking is one of the most popular quality tools used in management and the volume of literature is growing all the time. Investigation of this area was carried out for two purposes. First, to determine the extent of benchmarking knowledge and experience in the construction industry, and second to develop a method to carry out the process of benchmarking of value management from the theoretical framework that is evolving. In addition, many new management practices have emerged over the last 15 or so years and it was thought necessary to determine whether any of the techniques or characteristics of the VM process have been adapted, and perhaps developed, under a new banner. However, despite the burgeoning number of new management techniques VM remains a distinct discipline with its own identity due in the main to functional analysis and the structure provided by the Job Plan. The importance that the European Union SPRINT programme has attached to VM lends weight to this assertion.

*Background to Benchmarking*⁸

All the texts on benchmarking stress that it is nothing new. However, benchmarking conducted in a structured way is a more recent phenomenon. It is one of the most effective means to identify improvements that can make significant differences to how business processes are carried out. It is generally considered that there are six basic steps to benchmarking⁹:

1. Deciding what to benchmark.
2. Planning the benchmarking project.
3. Understanding your own performance.
4. Studying others.
5. Learning from the data.
6. Using the findings.

The value management benchmarking study used the above. It also adapted and adopted a benchmarking code of conduct with benchmarking partners to ensure confidential discussions could take place.

BENCHMARKING VALUE MANAGEMENT

Introduction

The first stage of benchmarking, internal benchmarking, has been carried out in outline by making explicit the Kelly and Male methodology. The metrics of a VM exercise were also developed. Live VM studies that had been conducted using their approach were compared using these metrics. However, this analysis, using the standard benchmarking approach provided little additional insight. The research team subsequently reoriented the research methodology towards benchmarking the VM process itself. The next section details more fully the methodology that the research team pursued in order to conduct the benchmarking analysis of value management internationally.

Which Activities to Benchmark?

To summarise, the activity to be benchmarked was the value management process itself. The EPSRC IMI projects aimed, therefore, to benchmark a proven methodology developed by Kelly and Male - the datum - against that used by value management consultants, clients to construction and also organisations in manufacturing industry. These are the benchmarking partners. The intention has been to explore, expose and highlight the strengths and weaknesses of workshop processes, tools, techniques and team compositions within a whole life view of a project. The VM process may be part of wider total quality management initiative within manufacturing or it may be project

specific for a client within construction. The results are also currently being cross-referenced back to clients through a client satisfaction survey.

From previous research studies conducted by the author and also through consultancy commissions, the value management process has been identified as an area where clients/users frequently question its relevance, especially if they possess no previous knowledge of the subject. The aim of the benchmarking exercise is to establish where, within the VM process, there is room for improvement, target these and increase dissemination of its potential for the benefit of clients to construction. A best practice guidance note and video is to be developed as the main deliverable indicating a generic process or framework that can be adapted to specific circumstances. A confidential benchmarking partners' manual is also to be produced.

THE KELLY AND MALE METHODOLOGY – THE BENCHMARKING DATUM

Introduction

This section outlines the VM process practised by Kelly and Male which has been outlined previously¹⁰. This was used as the datum to conduct the benchmarking studies. With the experience of applying it in many diverse projects, the methodology has evolved into a rich framework of tools and techniques. Not all the techniques presented are used on every project but, in practice, those that are most appropriate for the project in hand are selected. An analysis of a series of live project case studies conducted by Kelly and Male revealed that the actual tools and techniques applied in a workshop depend on a number of factors. These include the nature of the client and motives for carrying out the exercise, the type of project and its stage in the design process, the composition of the VM team, and practical constraints imposed on the workshop itself. Approximately a dozen different types of live project workshops conducted by Kelly and Male were analysed to make explicit their own methodology. This has been subsequently discussed with benchmarking partners.

The VM methodology

The process may be broken down into three main areas, the *inputs* required for a workshop, the *process* of VM during the workshop, and the *outputs* of VM in terms of what the client is left with when the workshop is over. At each stage of the workshop there are a number of steps to be worked through to satisfactorily progress through the Job Plan stage. For each step there is a

number of techniques available, the most appropriate depending upon the circumstances. It is not the intention to describe the classic Job Plan stages, as these have been well covered in the VM literature, but the following section expands on certain areas of the methodology where necessary.

Inputs (Pre-workshop)

An area that has not been given much consideration in the past is the work that is necessary before the VM workshop gets underway. There are a number of pre-requisites that must be satisfied to ensure a smooth running workshop, mainly relating to the involvement of people and the venue for the workshop

Pre-Workshop Information. There is potentially a mass of information for the facilitators to gather and collate for use during the workshop. This relates to the proposed project and could include a tour of similar facilities, interviews and questionnaires from building users and post occupancy evaluation reports. The culmination of pre-workshop information gathering will be an agenda for the workshop. This is an important control document since structuring the extremely limited resource of time is fundamental to VM and it provides a framework for guiding the workshop once the exercise is underway.

Process (the Workshop)

The process is structured round the traditional job plan stages described in depth elsewhere in the literature. All VM exercises contain activities that can be categorised under the enduring job plan headings. However, the time allotted to each stage and the techniques practised within them is quite fluid.

Information. In the first stage of the workshop all the information that that has been assembled and organised previously is shared amongst the team members. A synthesis of the material usually results in an exploration of the client's strategic issues. In particular, what has been the impetus for the project, what are the priorities in terms of timescale, budget and quality? Following the synthesis of information Function Analysis (FA) takes place. The approach to FA depends on the type of study. Kelly and Male identified four levels in their proposed UK methodology for a building project;

- Level 1 Task – the reason why the project exists, its *raison d'être*

- Level 2 Spaces – how the organisation uses space functionally
- Level 3 Elements – the technical framework of the building expressed functionally
- Level 4 Components – the function of individual components

The Levels are set out in the schematic below using the RIBA Plan of Work as the framework.

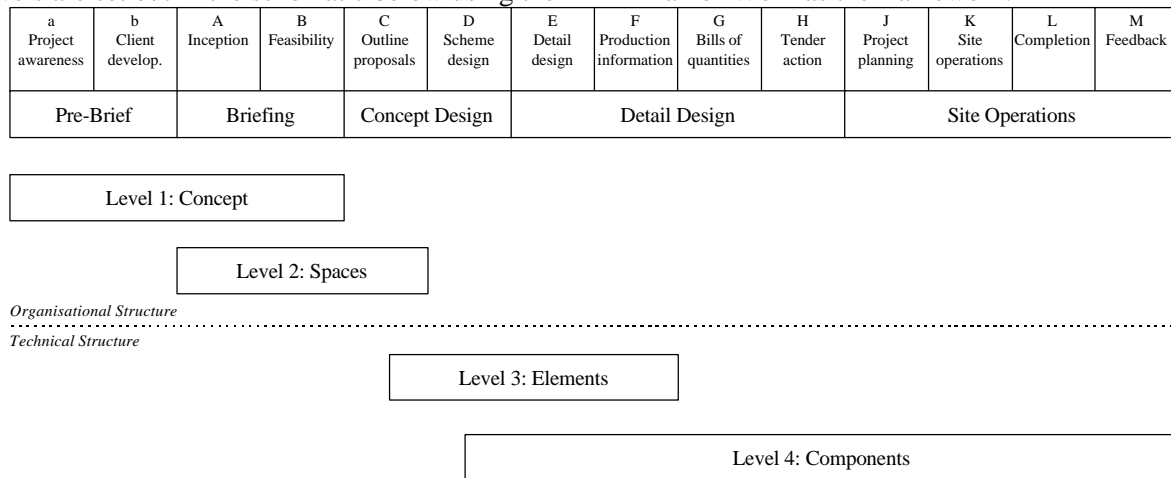


Figure 1 - The level of decision encountered in the project life cycle (Source: Kelly and Male 1993)

There are three possible approaches to FA, one of which will be appropriate for each of these levels. Levels 1 and 2 have distinct approaches, whilst approach to Levels 3 and 4 are very similar. Common to each of these is the way information is manipulated. There is an opening technique whereby the team explores the project and problem through analysis and discussion. The project parameters previously explored are always used subsequently as a reference point. At Level 1 the focus is on what the client's strategic aims actually are for the project. Options for achieving these aims, other than through a built facility, should not be ruled out. At Level 2 a built solution is usually a prerequisite and the organisation of space that most effectively supports the functions is considered. At Levels 3 and 4 the design process will be further advanced and technical solutions to more defined problems are explored.

Having opened up the problem at its most appropriate level, information is structured and presented using a closing technique. At Level 1 this will involve highlighting prime functions, at Level 2 a spatial adjacency matrix is an appropriate technique and at levels 3 and 4 function mismatches can be explored. The appropriateness of the Levels of Functional Analysis identified in Figure 1 will vary depending on whether the team are addressing a building or civil engineering project. Often a civil engineering or process project will tackle Levels 1, 3 and 4 whereas a building project will address Levels 1 to 4 at the various stages of its development process.

Creativity. Brainstorming is the most popular and well-known technique and has been found to be the most effective way of quickly harnessing team creativity.

Judgement. *There are generally two phases in the evaluation of ideas generated in the creativity phase. A crude sort will be used in the first instance to rule out those ideas having no potential for development. A refined sort is used to evaluate the remaining ideas with the potential to be worked up into proposals. The ease with which ideas can be incorporated into the proposed scheme will undoubtedly influence the decisions that VM team members make during the sorting process.*

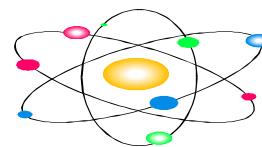
Ideas may be categorised according to ease of implementation as follows:

- Easy to implement - No major redesign required.
- Difficult to implement - Some redesign work required.
- Very difficult to implement - A shift of client emphasis in addition to redesign work is required.

There is a danger of ideas being discarded solely on the basis of perceived implementation difficulties or anticipated client/design team resistance. It is stressed in the literature that ideas in the "very difficult to implement" category can yield the greatest value improvements in the project.

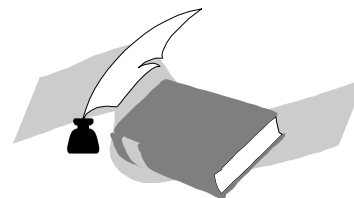
The next section presents preliminary results of the benchmarking study using the preceding VM methodology as the datum.

To be continued in the next issue.....



HKIVM NEWS

- ♣ On 28 September 1998, Director of Friends of the Earth, Ms. Mei Ng has been invited to give a presentation entitled "Managing a Value Added Environment" at our September lunch meeting at the Hong Kong Club. She addressed the audience on how her organisation attempts to re-invent a value added environment by proposing a module to challenge assumptions, remove impediments for change and empowering the community to search for possibilities. Over 20 HKIVM members and guests attended this stimulating talk.
- ♣ On 25 September 1998, on behalf of the HKIVM's executives and members, our President Mr. Tony Toy wrote to Mr. Kazutoshi Abe, Director and Secretary of the Society of Japanese Value Engineering (SJVE), offered our heartiest congratulations to the SJVE for their 31st International VE Conference. He wrote: "Since your last conference a year ago much has happened, not all of it good. Hong Kong, like the rest of the world, is now experiencing the economic turbulence that Japan has had to endure for so many years. The resource constraints that existed when Larry Miles developed the Value Methodology now abound, though the economic trend for the present is in the reverse. The values that existed then differ greatly from the values of today, and as this rate of change is accelerating at an unprecedented pace, your Society's initiative to focus on the future values and management functions is both appropriate and well timed."



FORTHCOMING EVENTS

- ◆ 3-4 Nov. 1998, "Value Engineering: Practical Applications" Seminar will be organised at the Sydney Marriott Hotel, NSW, Australia. For further details, please contact Donald Hannan, CVS (vmsdonh@ozemail.com.au).
- ◆ 1-5 March 1999, Graduate Certificate in Strategic Asset Management (for Value Management Facilitators), jointly organised by Hong Kong Construction Industry Training Authority and the University of Canberra.
- ◆ 5-6th May 1999, HKIVM will organise the 3rd International VM Conference in Hong Kong. Details will be announced when they are available.

HKIVM 3rd International Conference Update

Tony Wilson, HKIVM Conference Director

The third HKIVM International Conference is planned on the 5th and 6th May 1999, to be confirmed depending on venue availability.

As a result of the economic downturn, there are concerns that sponsorship may not be obtained and that we may not have enough delegates to cover our overheads. The paradox is that with the downturn, this is the best time to have a conference to publicise the benefits of Value Management in hard times. It is also 18 months after the last one and time to review the current trends.

First steps to obtain a major sponsor are in hand and members' assistance on any form of sponsorship or contacts would be of great assistance. The title for the Conference is not yet established, as the input of a major sponsor will be taken into account.

Dr. Geoffrey Shen is helping in determining a venue at the Polytechnic University, hopefully at minimal cost. If available, together with some sponsorship, we expect to contact our Conference planners to assist with sending out the first call for papers at the end of November 1998.

Any support/assistance members can give will be greatly appreciated.

Application for Membership of the Hong Kong Institute of Value Management

If you are interested in knowing or joining the HKIVM, please fill in the reply slip below and return it to the membership secretary of HKIVM, Mr Patrick Fong, c/o Department of Building and Real Estate, Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong. Fax: 2764 5131.

_____ Cut Here _____

Please send an application form for membership to the undersigned:

Full Name: _____

Company: _____

Address: _____

Position: _____

Tel: _____

Fax: _____

Signature: _____