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The Government of the Hong Kong Special Administrative Region

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**Environment, Transport
and Works Bureau
Government Secretariat**
Transport and Works Branch
Murray Building, Garden Road,
Hong Kong

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Group   :   5

13 August 2002

Environment, Transport and Works Bureau
Technical Circular (Works) No. 35/2002

Implementation of value management in public works projects

Scope

This Circular sets out the requirements and guidelines on the application of value management (VM) to the Public Works Programme (PWP). It has the support of the Secretary for Housing, Planning and Lands.

Effective Date

2.   This Circular takes immediate effect.

Effect on Existing Circulars

3.   This Circular supersedes Works Bureau Technical Circular (WBTC) No. 16/98.

Background

4.   An inter-departmental steering committee was set up in 1997 to set guidelines and monitor the implementation of VM. WBTC No. 16/98 was promulgated in September 1998 to introduce VM and its application to the PWP. It recommended departments to conduct VM studies for three projects each year but did not encourage VM studies for projects with estimated cost less than $100 million.

5.　　　The steering committee recently completed a review of the implementation of VM.　The review concluded that there are benefits in conducting VM studies and that there is scope for a wider use of the techniques. This conclusion is in line with the recommendations made by the Construction Industry Review Committee[1].

Policy

6.　　　In general VM studies shall be conducted whenever it is perceived that there are likely to be net benefits.　In other words, costs and benefits shall be the prime consideration.　In view of the likely benefits and the relatively low percentage cost involved, VM studies should be considered for every major project.　In this connection a project with an estimated project cost exceeding $200 million is deemed to be a major project.

7.　　　Environment, Transport and Works Bureau will continue to maintain a register of two Lists of VM facilitators, namely List A and List B. Both Lists contain qualified VM facilitators and those on List A are substantially experienced.　Departments can choose from the two Lists or other sources the most suitable facilitators according to the nature of the project, complexity of the problem and their own budgets.

8.　　　To provide a reference for project teams to select facilitators for future VM workshops, departments shall compile a simple report for every VM study and maintain a referencing system as described in the Appendix.　The guidelines in the Appendix, which covers various aspects in the implementation of VM studies, should also be followed.

Training

9.　　　Departments shall provide adequate VM training to their officers to ensure firstly that the project teams can organize and run workshops effectively and secondly that there are adequate trained officers to act as co-facilitators or internal facilitators if required.　The training plans shall be drawn up with these targets in mind.

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[1] The Construction Industry Review Committee published its report in January 2001.　The report recommended, inter-alia, wider use of VM technique in local construction with the public sector taking the lead.

Monitoring of implementation

10.   Environment, Transport and Works Bureau will continue to monitor the implementation of this Circular and to keep statistics on VM workshops conducted.

Queries

11.   All queries on this Circular or its contents should be directed to PAS(W)2, Environment, Transport and Works Bureau (Telephone No.: 2848 2045).

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(W S CHAN)
Deputy Secretary for the Environment,
Transport and Works (Transport and Works) W2

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INTRODUCTION TO VALUE MANAGEMENT AND GUIDELINES ON IMPLEMENTATION ISSUES

Purpose

1.   This set of guidelines provides guidance to departments in the implementation of value management.

Value management

2.   VM is an organized methodology applied to the analysis of functions, components, goods and services, from the point of view of the system as a whole, to satisfy the required functions of the project at the lowest total cost without compromising quality and standard of performance.

3.   The most fundamental ingredients to the VM study is the examination of 'function' on a system basis. This characterizes VM and differentiates it from other project management tools.

4.   Typically, the VM process involves the holding of VM workshops. A VM workshop is a tool which can be used to improve the definition of capital works projects, such as for the derivation of a Project Definition Statement or the preparation of a feasibility study report.   Alternatively it can also be employed in a specific manner, like comparing design options, evaluating construction methods, choosing sites, deciding on access points etc.   Contrary to common belief, a VM workshop can often be most useful when it appears that the problem encountered seems insurmountable or when the difference in opinion sounds irreconcilable.

Value management workshop

5.   Some of the most well known definitions of VM are:

> *"Structured and analytical process which seeks to achieve value for money by providing all the necessary functions at the lowest total cost consistent with required levels of quality and performance."*
>
> – ***Australian/New Zealand Standard for Value Management, AS/NZS 4183:1994***

"A structured process of dialogue and debate among a team of designers and decision makers during an intense short-term conference"; and

"The primary objective of value management is to develop a common understanding of the design problem, identify explicitly the design objectives and synthesize a group of consensus about the comparative methods of alternative course of action."

– ***Dr. S.D.Green***
University of Reading, U.K.

6.　　　　Based on the above, the key elements of a VM workshop are:
- well structured with set goals and objectives;
- multi-disciplinary, professional and specialist input;
- professionally facilitated;
- shared understanding;
- group decision and evaluation to create innovative solutions; and
- ownership and commitment.

7.　　　　At first sight, a VM workshop might appear to be costly and time consuming, costing some 20-50 professional-days on top of approximately $100,000 fees for the professional facilitator for a two-day workshop. However in the long run, these costs have proven to be well spent in terms of:
- updating standards, criteria and objectives;
- promoting innovation;
- optimizing resources;
- eliminating unnecessary items and costs;
- finding solutions that best fit the project objectives;
- breaking dead-lock situations;
- saving time; and
- ensuring ownership and commitment by all parties.

8.　　　　VM should however be understood as a tool and not a panacea. Therefore, it can co-exist with and supplement other management tools like cost planning, cost engineering, quality assurance, project auditing, process re-engineering, partitioning, risk management etc. It should best be seen as a useful tool in our overall assets management functions (in this case the delivery of PWP items).

Key Success Factors

9.　　　　One of the critical factors for a successful VM study is the commitment of those involved.　A VM team should comprise a disparate group of representatives from the client (policy bureaux and/or client departments), works agents (works departments and/or consultants), enabling agencies (e.g. PlanD, EPD and/or DLO), specialist consultant and other stakeholders.　A typical size of 15 to 20 people should be able to achieve the appropriate multi-stakeholder and multi-disciplinary representation on a major project.　Two points need to be noted though.　Firstly, it is essential to invite the correct level of representatives who can make both contributions with authority and recommendations with credibility.　Secondly, representative of the right bureau/department must be secured.　In particular, the participation of the representatives of policy bureaux could bring about a significant benefit in refining or redefining the project objectives.　Also, enabling departments like PlanD, LandsD and EPD's representatives usually have an irreplaceable role to play in providing input in respect of their own individual areas.

10.　　　　Adequate support from top management must be obtained before commencing any VM study.　Otherwise, should the findings and recommendations from a VM study is later to be vetoed by the top management of any individual party, the credibility of future VM workshops will be lost.

11.　　　　Thorough planning, good facilitation and also proper follow up actions are vital to the success of VM studies.　These are further elaborated in paragraphs 12 to 27 below.

Criteria of conducting VM workshops

12.　　　　Costs and benefits are the prime considerations.　With experience gained over the years in applying VM, the departments should by now have a better feel of the costs and benefits of VM workshops.　Since the benefits are mostly project specific, the project department is best placed to evaluate whether there would be net benefits and to decide whether a VM workshop should be conducted.

13.　　　　In general VM studies shall be conducted whenever it is perceived that there are likely to be net benefits.　In view of the commonly accepted fact that there should be net benefits for major projects and the relatively small cost of a VM workshop, departments should consider the suitability of conducting VM workshops for every major and complex project.　It should be noted that net

benefits (which may be in terms of time, cost or quality of solution) is the key consideration rather than the mere size of a project. For this purpose, a major project means one having an estimated project cost exceeding $200 million.

14.   With departments' recognition of the benefits of VM studies and the comparatively small cost of a VM workshop, it is expected that there would be a marked increase in the number of VM studies to be carried out. Departments should plan ahead and draw up yearly plans on the application of VM.

The form and duration of VM workshops

15.   The typical duration of a VM workshop from commencement, pre-workshop, workshop to conclusion is about 6 weeks to 4 months. The actual workshop itself varies according to its purpose and could range between one and five days. From the experience in its application to PWP projects, a VM workshop usually lasts between one and two days.

16.   There is no single preferred form. Workshops of longer duration allow more time for in-depth studies of the issues. They may, however, tend to discourage senior personnel of the stakeholders from attending. Departments may consider a two-stage approach with officers having in-depth knowledge making recommendations in the first stage and senior officers attending the second stage to ratify the recommendations. The choice of the form of a VM workshop depends on the particular needs of a project. It is up to a project team to select one which best suits its needs.

17.   Alternatively, departments may consider applying a shortened VM study to small scale projects. Similarly, a shortened VM study may be employed for the purpose of resolving specific problems or less complex issues.

Timing of conducting VM workshops

18.   VM studies can be conducted at any stage during the life cycle of a project. Obviously, there can be more than one study for a project. However, the most benefits would be derived if they are conducted as early as possible in the process.

19.   For a complex project, a feasibility study is likely to be required before preparation of a Technical Feasibility Statement (TFS). The feasibility study stage is the time when issues are to be identified, ideas generated, options selected and priorities set. The most benefits of a VM study will therefore be

derived if it is conducted at this stage. In those situations where a project steering group is to be set up for a proposal, it would be useful to turn the first "meeting" into a VM workshop, and logically to task the project steering group to follow up the recommendations and conclusions of the VM study.

20. For a less complex project which does not require a feasibility study before the preparation of a TFS, the four-month period and the no-consultancy support requirements for the TFS make it difficult for a VM study to be conducted within the same period. Since the project requirements for such projects are likely to be more straight forward, VM studies could be deferred to the earlier parts of the subsequent preliminary design stage. A VM study is still useful at this stage as it serves to refine or redefine requirements and to confirm the selected option.

Facilitation of a VM Workshop

21. The job plan for a VM workshop usually comprises five phases:
* information phase;
* analysis phase;
* creativity phase;
* judgement phase; and
* development phase.

22. A good VM facilitator will ensure the steering of the workshop team effectively through these phases. The choice of the facilitator will therefore be of fundamental importance to a successful study. In terms of practical qualifications, the facilitator should have:
* group management skills;
* communication skills;
* analytical skills;
* interpretation skills;
* questioning skills; and
* lateral thinking skills.

23. Environment, Transport and Works Bureau maintains two Lists of VM facilitators based on the advice given by the Hong Kong Institute of Value Management. Departments are at their discretion to choose the most suitable facilitators from either Lists or other sources. The experience and qualification of the candidates should be taken into account in choosing facilitators, particularly those not included on the Lists.

24.　　　In general, the employment of a facilitator not from the project department is preferred as a clear signal of independency. A drawback is that these external facilitators may not appreciate the implications of complex technical issues. This can be overcome by a pre-briefing by the project team. The employment of an internal co-facilitator can also help discussions under these circumstances and is encouraged for major projects and complex issues. Internal co-facilitation is also useful in providing experience and training to in-house officers toward the goal in becoming future VM manager or facilitators.

25.　　　With more and more in-house officers trained to become facilitators, the employment of "external" facilitators from another department could be considered. Departments should avoid relying solely on internal facilitators for major projects and complex issues.

Follow-up actions after VM workshops

26.　　　Follow-up actions mainly focus on how to ensure the implementation of an action plan which has been concluded in the last phase (i.e. development phase) of the VM workshop. The VM facilitator should prepare a report immediately after the workshop with the following items:

- study background,
- study findings,
- refined or redefined project rationale and objectives,
- summary outlines of key functions, with implications in terms of project scope, programme and cost,
- descriptions of value improvement options with implications,
- outline of action plan, and
- other information as necessary in relation to the action plan.

27.　　　Departments should set up their own procedures to monitor the progress of implementing the action plan. This is particularly relevant in order to ensure the realization of the perceived benefits. Departments have so far been unable to quantify the benefits derived from VM studies. It is recognized that some of the benefits are intangible and that it is not easy to put a percentage saving against them. In cases where it is possible to quantify the benefits, such as redefining project objectives through VM studies, it is useful to have a measure of the benefits in terms of percentage saving of the construction cost. In such cases, departments are advised to consider incorporating into the action plan some systems for measuring cost benefits.

Training of officers

28.   In formulating their training plans, departments should be aware that there are two levels of training : to run workshops more effectively and also to be facilitators and co-facilitators. As mentioned in paragraph 24, co-facilitation by an in-house officer provides valuable experience and training opportunities. Departments should maintain a list of officers who are qualified to act as a facilitator or co-facilitator.

Report on the use of VM facilitators

29.   To provide a reference for project teams in selecting facilitators, project teams shall compile a report for every VM study and departments shall maintain a referencing system. The reporting and referencing system shall work as follows: -

    (i)   Each department appoints a coordinator who will handle all reporting matters within the department.

    (ii)   Each project team submits to the departmental coordinator a report on the use of VM facilitator in a standard format as in **Annex A** within 28 days after each VM workshop.

    (iii)   Each departmental coordinator prepares a rolling list of value management workshops conducted in the preceding 36 months in a standard format as in **Annex B**. The departmental coordinator circulates the rolling list, by the seventh working day of each month, to other coordinators with a copy to Environment, Transport and Works Bureau. Until the 36th circulation, the rolling list will probably contain VM workshops conducted before the promulgation of this Technical Circular. Departments need not prepare retrospectively reports on the use of VM facilitator for these workshops.

    (iv)   When there is a need to obtain background information on a candidate, a project team can approach the coordinator of its own department to check whether the candidate has acted as a facilitator and, if necessary, ask the departmental coordinator concerned for a copy of the report.

    (v)   If required, the project team may approach the relevant departmental coordinator or the contact persons for particular reports for further details about the VM workshops conducted and the facilitators employed.

Report on use of value management facilitator

(1)   Department: _____

(2)   PWP No. or any other relevant
        reference no. (e.g. Block vote no. or
        contract no.):   _____

(3)   Project Title: _____

                                                                _____

(4)   Brief description and stage of project: _____

                                                                _____

(5)   Name of value management
        facilitator :   _____

(6)   Qualification and experience of
        facilitator: _____

                                                                _____

(7)   Name of co-facilitator (if any)   _____

(8)   Value management workshop held on: _____

(9)   Duration of workshop: _____

(10)   Cost of facilitator (including travel and
        other expenses, if applicable):   _____

(11)   Cost of venue: _____

(12)   Contact details:
                        Name :   _____

                        Designation: _____

                        Telephone No.:   _____

List of value management workshops

conducted in the past 36 months up to Month/Year

Department:

Serial No.	PWP No.	Project Title	Name of value management facilitator	Name of co-facilitator (if any)	Date of value management workshop