VM BODY OF KNOWLEDGE:

VM OPPORTUNITY POINTS

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Lecture Contents

- **The Best Practices Of VM Opportunity Points**
- **The Malaysian Government's VM Study Interventions**

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Lecture Objectives

- **Awareness** Of Best Practices Of VM Opportunity Points
- **Understand** VM Study Interventions in Public Projects of Malaysia

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Standards & Guides

SAVE International
Value Standard & Body of Knowledge

BS EN 12973:2000
British / European VM Standards

Australian / New Zealand Standard of Value Management (AS/NZS 4183)

Malaysia
Panduan Pelaksanaan Pengurusan Nilai dalam Projek/Program Kerajaan

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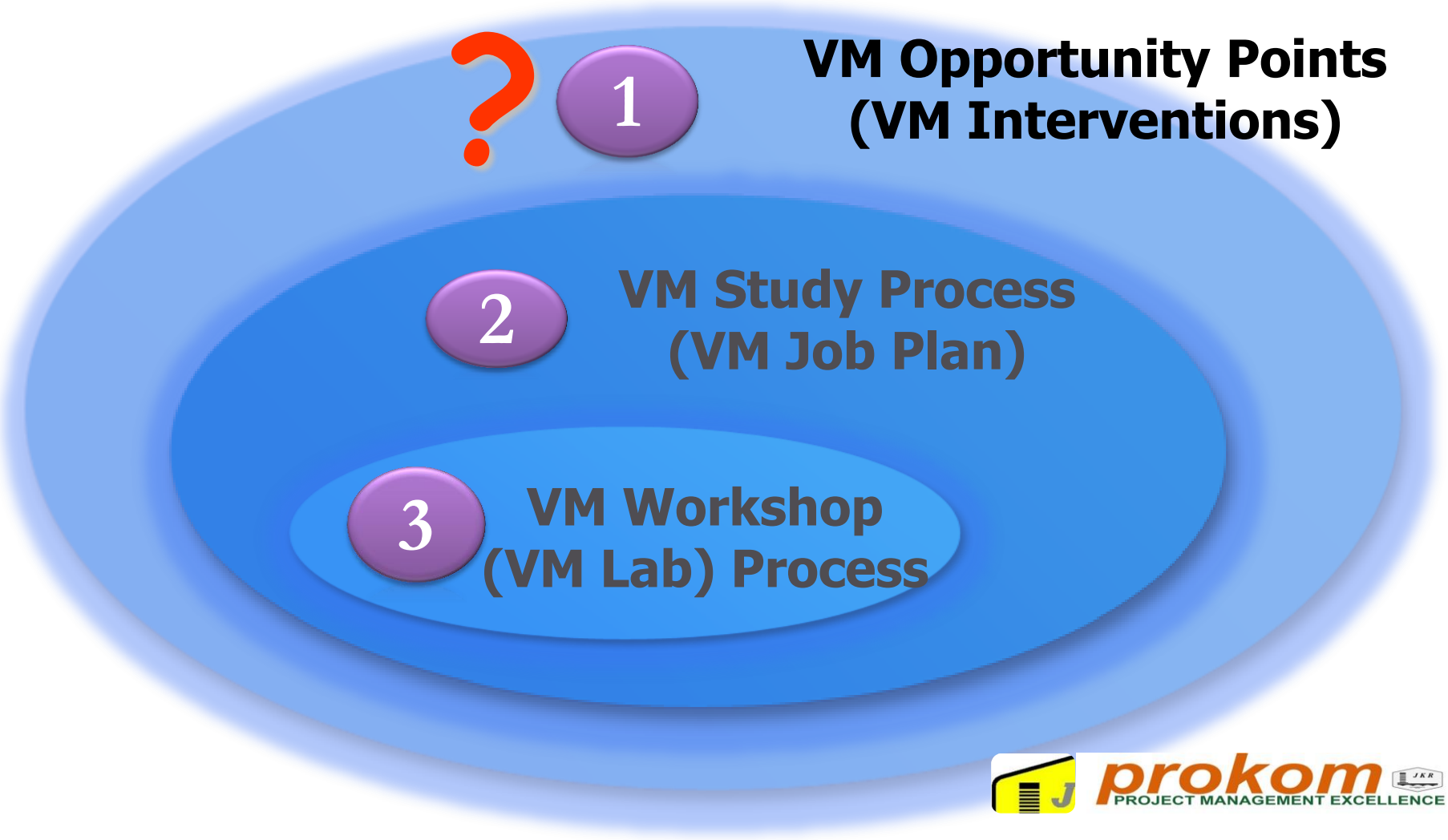
VM Body of Knowledge



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Definition

VM Opportunity Points

(VM Interventions)

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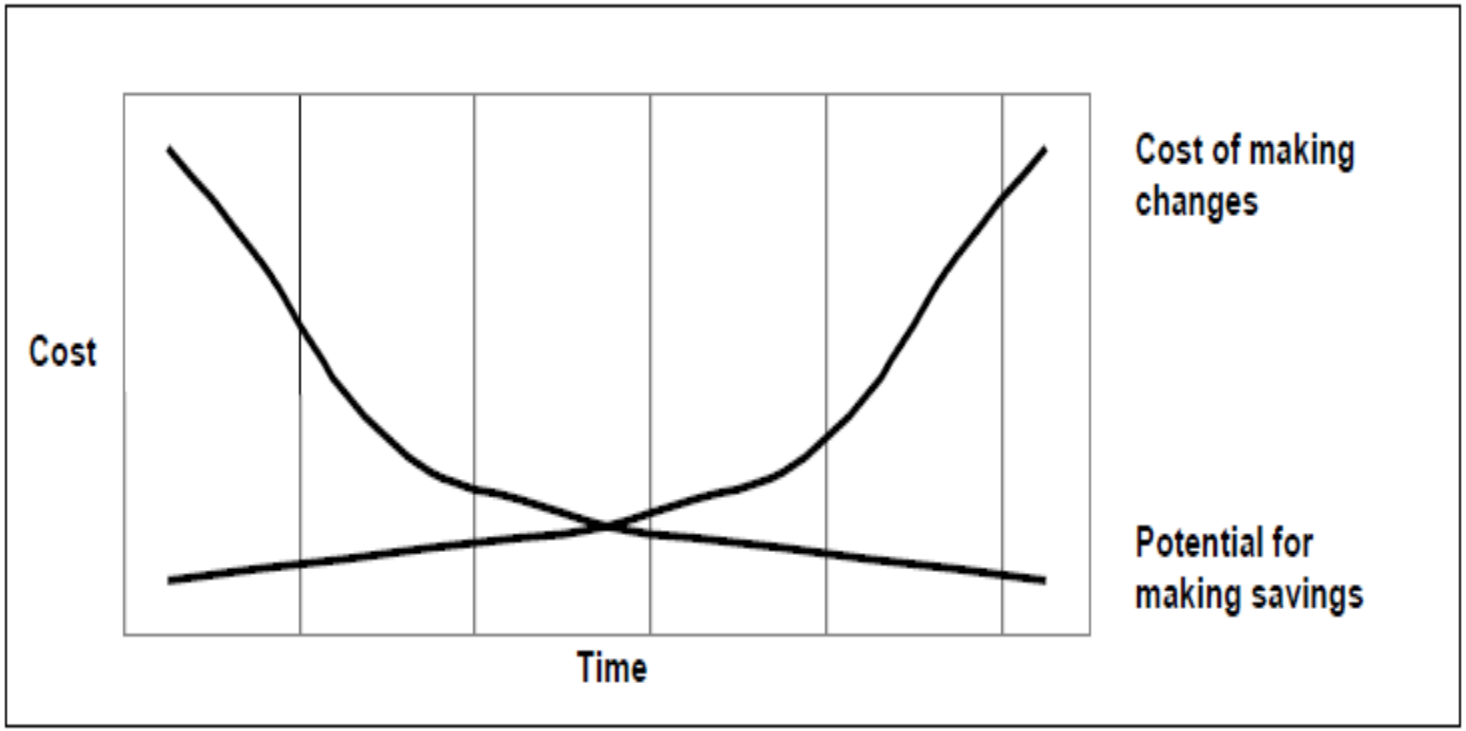
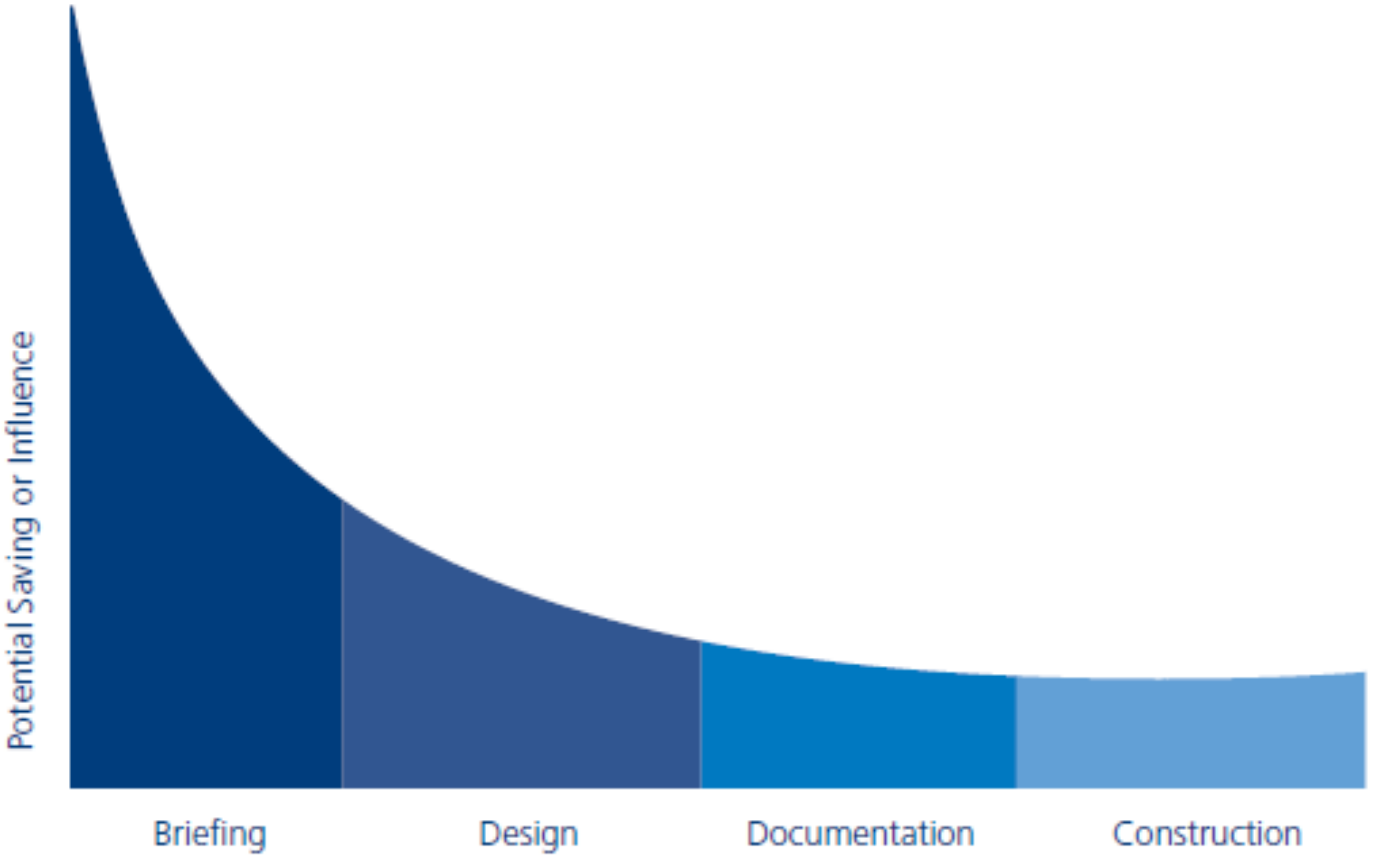
When is the most beneficial time to implement VM study along the project life cycle?

Value Potential (i)



Source: Total Asset Management : Value Management Guidelines
New South Wales Treasury

Value Potential (ii)



Source: Value Management Guidelines Department of Housing & Works, Government of Western Australia

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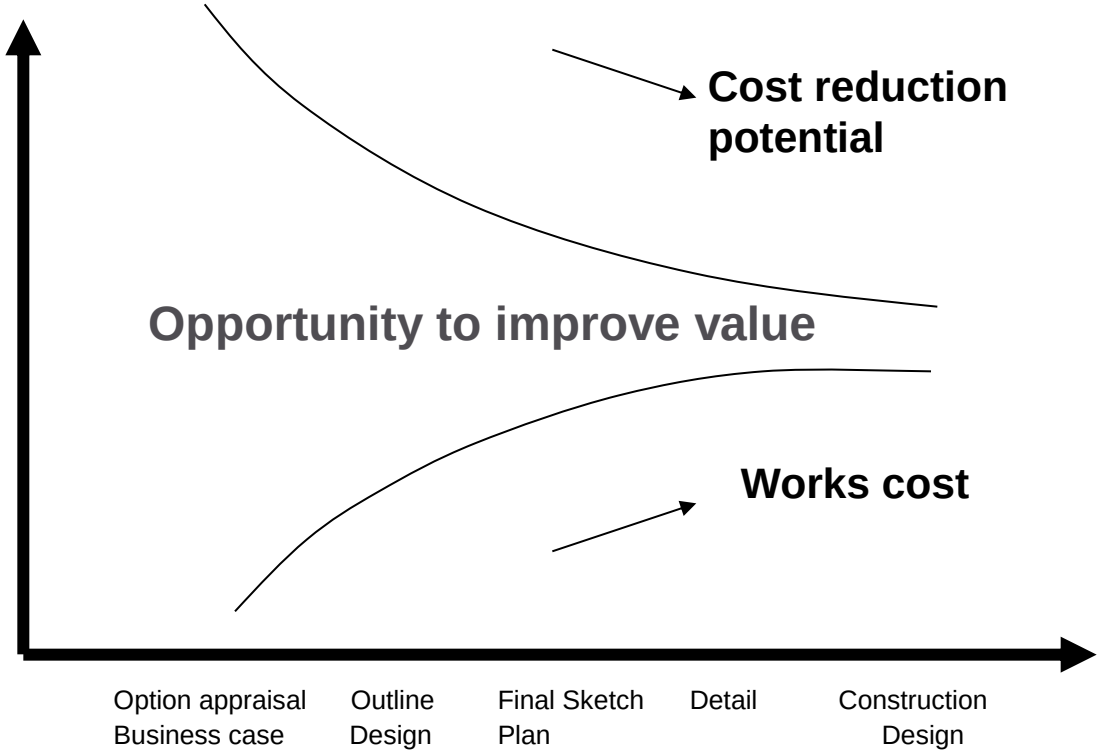
Value Potential (iii)



Source: Guidance No.54 of H.M. Treasury of UK (CUP, 1996)

Value Potential (iv)

Source: Panduan Pelaksanaan Pengurusan Nilai Dalam Program/Projek Kerajaan, Unit Perancang Ekonomi (EPU) JPM

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Principle of VM Intervention (i)

"VM (study intervention) can take place at any point in the project lifecycle and the numbers of value opportunities can and will vary from project to project…"

Source: The Value Management Benchmark by Male et al (1998)

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Principle of VM Intervention (ii)

Value opportunities arise at points in the project life cycle when there is (or are):

- Unstructured problems occurs
- Need for strategic commitment
- Convergence of information of different parties
- Project viability uncertainty
- Need for technical commitment (design optimization)
- Need for capital commitment (cost optimization)

Principle of VM Intervention (iii)

However, as VM study interventions are NOT RIGID (when and how many) hence in some circumstances the intervention(s) may depend on:

- Value study objectives as required by client
- Scope of value study as required by client
- Targeted critical stage of project life cycle for value audit study
- Strategic decision making points by client or stakeholders

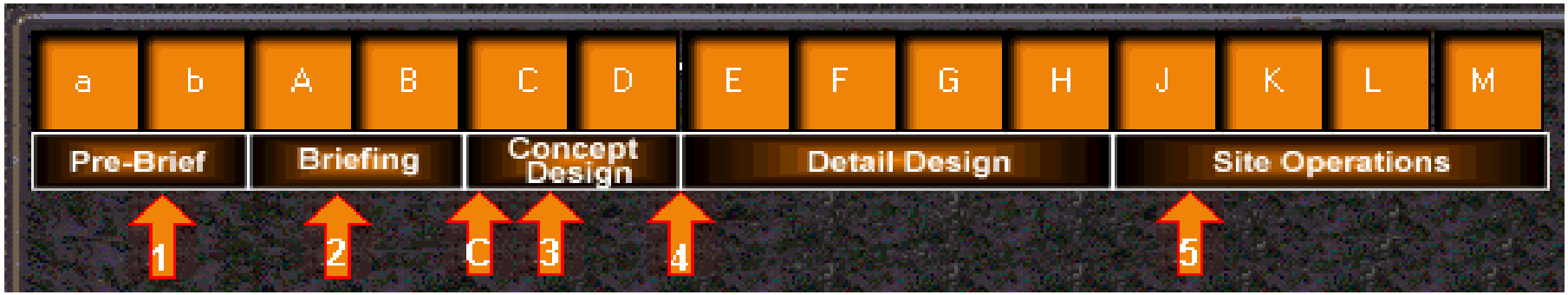
Rationale of VM Interventions

- **To maximize value**
- Clear client's mission of project; strategic needs & requirements
- Maximize potential saving or cost avoidance
- Continuous value improvement throughout project lifecycle
- **To avoid complication**
  - Lock in situation
  - Abortive efforts / resources / design
  - Cost of changes or Variation orders
  - Rejection or misconception about VM

VM Interventions References

- Re Appraisal of VM Methodologies in Construction (Male & Kelly, 2007)
- Value Management in Construction Projects, (Kelly, Male & Graham, 2004)
- The Value Management Benchmark (Male *et al*, 1998)
- Route Map for The Application of VM in Capital Projects, Institute of Value Management UK (IVM UK, *online* 2009)
- Prototype Guidelines of VM Application for The Malaysia Construction Industry (Aini Jaapar, 2007)
- Panduan Pelaksanaan Pengurusan Nilai dalam Program / Projek Kerajaan (EPU, 2011)

VM Interventions Benchmark



VM Interventions in the RIBA Plan of Work:

Point 1: Strategic Briefing Study (or Pre Brief Workshop)

Point 2: Project Briefing Study (or Briefing Workshop)

Point C: The *Charette* (in the place of 'Point 1, 2 and 3')

Point 3: Concept Design Study / Workshop (or Outline Sketch Design Workshop)

Point 4: Detail Design Worksyop (or Final Sketch Design Workshop)

Point 5: Operations Workshop

Sources of VM Interventions based on RIBA Plan of Works :

(i) Re-Appraisal of VM Methodologies in Construction, Male & Kelly (2007);
(ii) VM in Construction Projects, Kelly, Male & Graham (2004) &
(iii) The VM Benchmark, Male *et al* (1998)

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VM Interventions Benchmark

VM Interventions	Study Objectives
1. Strategic Briefing Study	Strategic Brief to set on broad scope, purpose, overall budget & programme
2. Project Briefing Study	Convert Strategic Brief into construction terms, outline budget & execution plan
C. The Charette	Audit the brief and Concept Design to align with the strategic value systems
3. Concept Design Workshop	Review the brief and test design options towards the Concept Design
4. Detail Design Workshop	Fine tune the design through functional performance of elements and components
5. Operations Workshop	Convert the design into the construction operational programme

References :
(i) Re-Appraisal of VM Methodologies in Construction, Male & Kelly (2007);
(ii) VM in Construction Projects, Kelly, Male & Graham (2004) &
(iii) The VM Benchmark, Male *et al* (1998)

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Point (1) Strategic Briefing Study

Intervention Point:	**1. Strategic Briefing Study** **(or earlier known as – Pre Brief Workshop)**
Objective:	Develop Strategic Brief to set on broad scope and purpose of project, overall budget and programme
Duration:	Half day to one (1) day (Pre Lab 1 – 4 days)
Potential participants:	10-20 people, all at senior level at client organization
Outputs:	• Strategic Brief - Objectives or mission of the “Business Project” • Project context • Client’s value system & the success measurement • Decision to build or factors being considered • Overall scope & purpose (functions) of the project • Overall budget of capital expenditure & cash flow • Strategic / high level Risk Management • Project programme including phasing • Whole Life Cost (WLC) @ LCC targets • Initial option(s) of procurement strategy

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Point (2) Project Briefing Study

Intervention Point:	**2. Project Briefing Study (or earlier known as – Briefing Workshop)**
Objective:	Convert Strategic Brief into construction “technical” terms, outline budget and execution plan
Duration:	One (1) to two (2) days (Pre Lab 1 – 4 days)
Potential participants:	10-20 people, representatives of the client’s managerial team, design and project management team
Outputs:	• Project brief (aligned with Strategic Brief & value systems) • Functions and activities of the clients & users • Site location, accessibility & planning • Size & configuration of the facilities • Cost Budget (for all project aspects & elements) • Key targets for quality, time and cost • Risk identification & management • Environmental (e.g. energy) and LCC policies • Project Execution Plan (PEP) • Procurement strategy

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Point (C) The Charette

Intervention Point:	**C. The Charette**
Objective:	Audit the Project Brief and Concept Design to comply with the client's value systems; a hybrid study between strategic & technical
Duration:	Two (2) to three (3) days (Pre Lab 1 – 4 days)
Potential participants:	10-15 people, including the design team, project management and clients representatives

Outputs:	• Validated Project Brief (aligned with value systems)
	• Validated Concept Design (aligned with value systems)
	• Deliverables as for interventions at Point 1, 2 & 3; among others:
	  • Client's value system & the success measurement
	  • Functions and activities of the clients & users
	  • Site layout, access, ground conditions & planning
	  • Outline specification for all systems
	  • Detailed cost plan & budget control
	  • Key Performance Indicators
	• Schedule of activities & key milestones
	• Risk identification & management
	• Updated PEP / PMP
	• Procurement process

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Point (3) Concept Design Workshop

Intervention Point:	**3. Concept Design Workshop** **(or earlier known as – Outline Sketch Design Workshop)**
Objective:	Review the Project Brief and test design options towards improving the Concept Design, prior to planning approval
Duration:	One (1) to two (2) days (Pre Lab 1 – 4 days)
Potential participants:	10-15 people, including the design tem, project management and clients representatives at managerial and operation levels
Outputs:	• Validated Concept Design (aligned with Project Brief) • Site layout, access, ground conditions & planning • Outline specification for all systems • Detailed cost plan & budget control • Key Performance Indicators • Schedule of activities & Key Milestones • Risk identification & management • Updated PEP / PMP • Procurement process

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Point (4) Detail Design Workshop

Intervention Point:	**4. Detail Design Workshop** **(or earlier known as Final Sketch Design Workshop)**
Objective:	Fine tune the design through functional performance of project elements and components
Duration:	Two (2) to three (3) days (Pre Lab 1 – 4 days)
Potential participants:	10-15 people, including the design and project management team and facilities manager
Outputs:	• Validated detail design (dimensioned drawings) • Statement of design specifications • Site detail information, planning approval & other permissions • Performance measures • Updated Cost Plan • Key milestones & targets • Further risk identification & management • Proposal for facilities maintenance & management • Updated PEP / PMP

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Point (5) Operation Workshop

Intervention Point:	**5. Operations Workshop**
Objective:	Convert the design into components and the construction operational sequences; involving supply chain and technical development issues
Duration:	One or more days (Pre Lab 1 – 4 days)
Potential participants:	6-10 people, contractor's production/work planning, purchasing, project management team, suppliers and/or subcontractor
Outputs:	• Extent of design (consistent with the procurement route) • Validated production / work programme • Key milestone & targets impacting following packages • Key Performance Indicators • A supply chain diagram • Updated Project Risk Management Plan • Updated PEP / PMP

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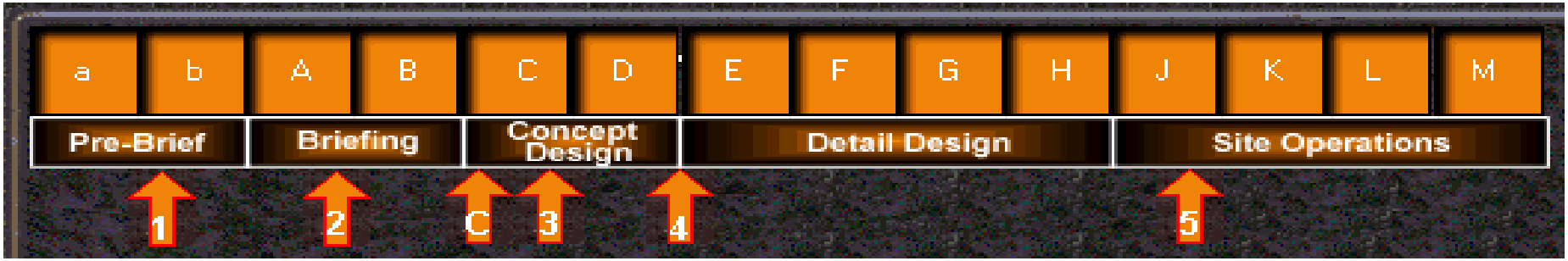
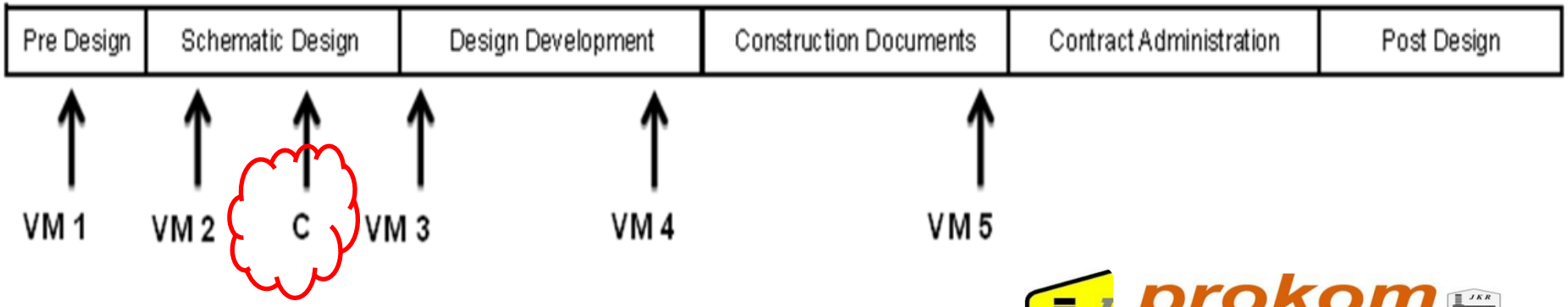
VM Interventions Comparison (i)

VM Interventions Benchmark (RIBA Plan of Work)



AIA (American Institute of Architects) Design Process (The VM Benchmark, 1998)



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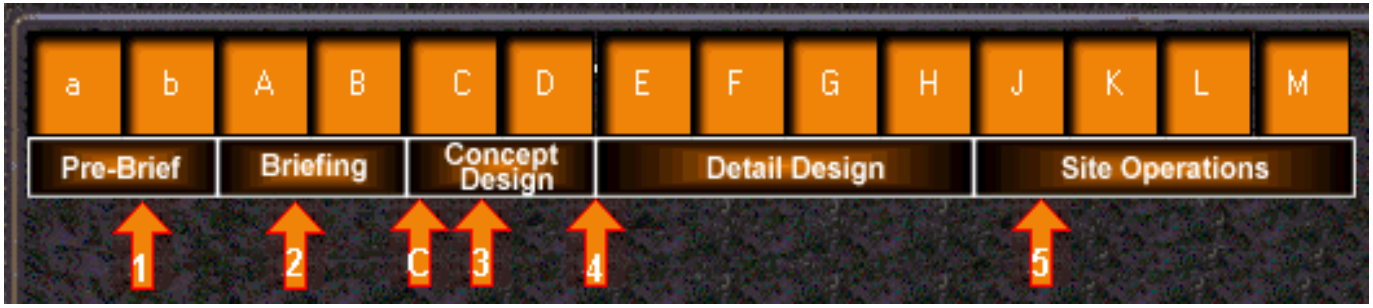
VM Interventions Comparison (ii)

VM Interventions Benchmark (RIBA Plan of Work)



Institute of Value Management United Kingdom (IVM UK, 2009)

Strategy & Inception	Briefing	Concept Design	Scheme Design	Detailed Design & Construction	Handover	Use
VM0	VM1	VM2	VM3	VM4	VM5	VM6

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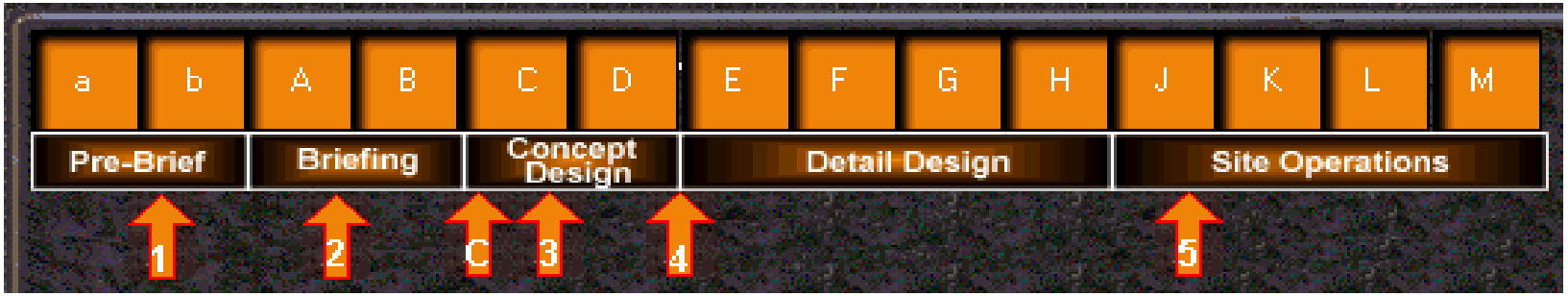
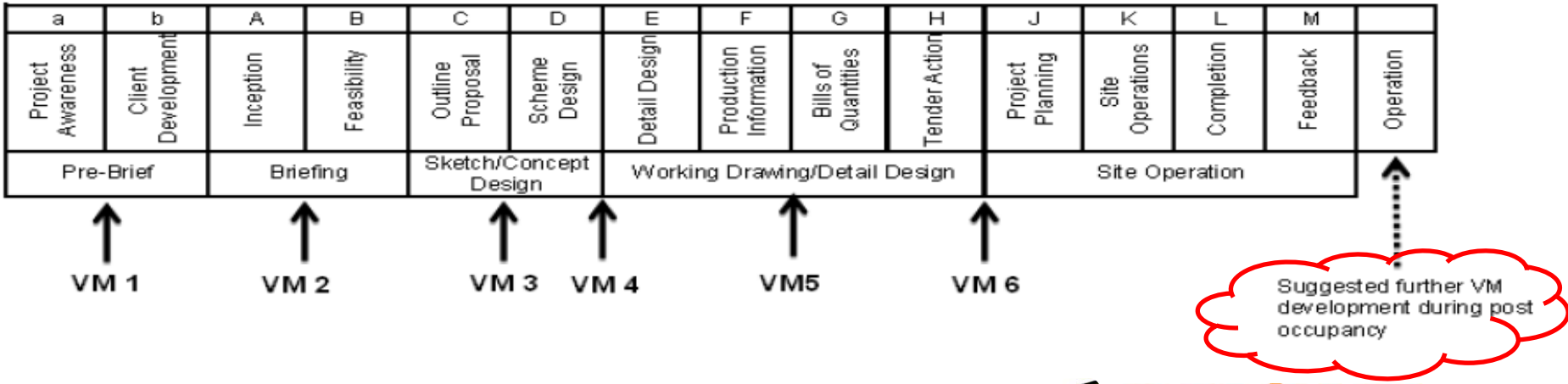
VM Interventions Comparison (iii)

VM Interventions Benchmark (RIBA Plan of Work)



Prototype Guidelines of VM Application for The Malaysia Construction Industry (Aini Jaapar, 2007)



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VM Interventions Comparison (iv)

VM Interventions Benchmark (RIBA Plan of Work)

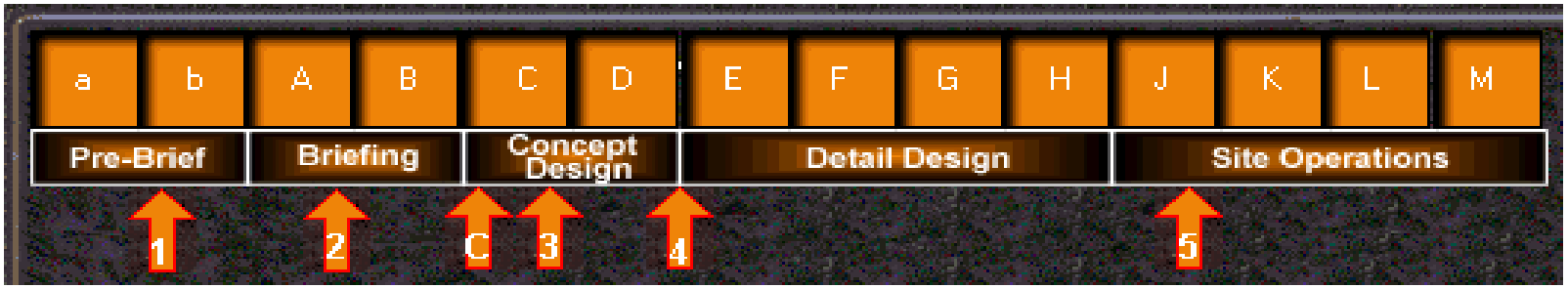

Figure illustrated from source: Panduan Pelaksanaan Pengurusan Nilai (EPU, 2011)

Strategic Brief	Project Brief	Concept Design	Detail Design	Tender	Construction	Use Stage
Value Assessment (VA)		Value Engineering (VE)				Value Review (VR)

VA

VE

VE

VR

[VE upon completion of Concept Design - *Reference: Pekeliling UPE Bil 3/2009*]

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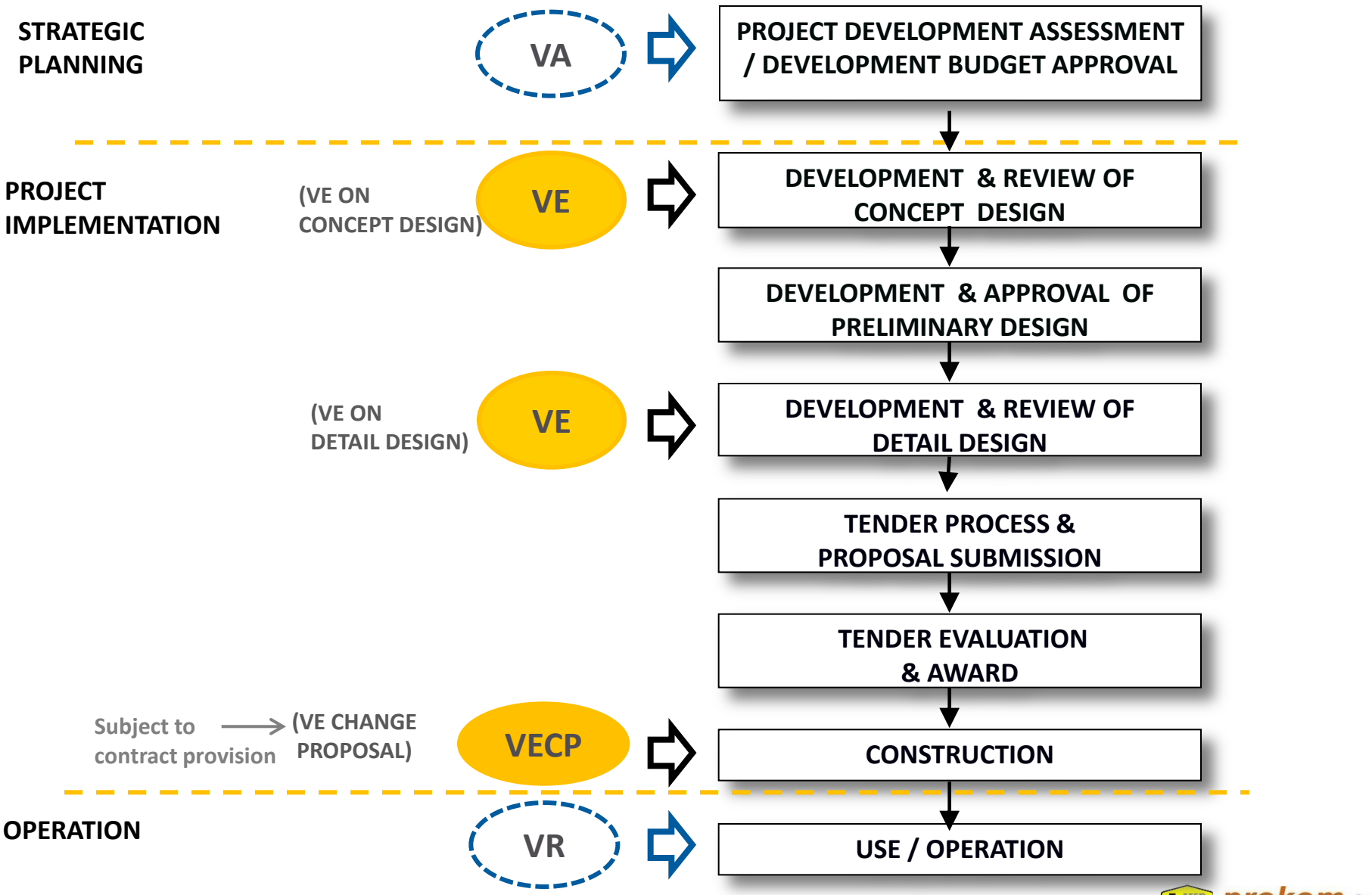
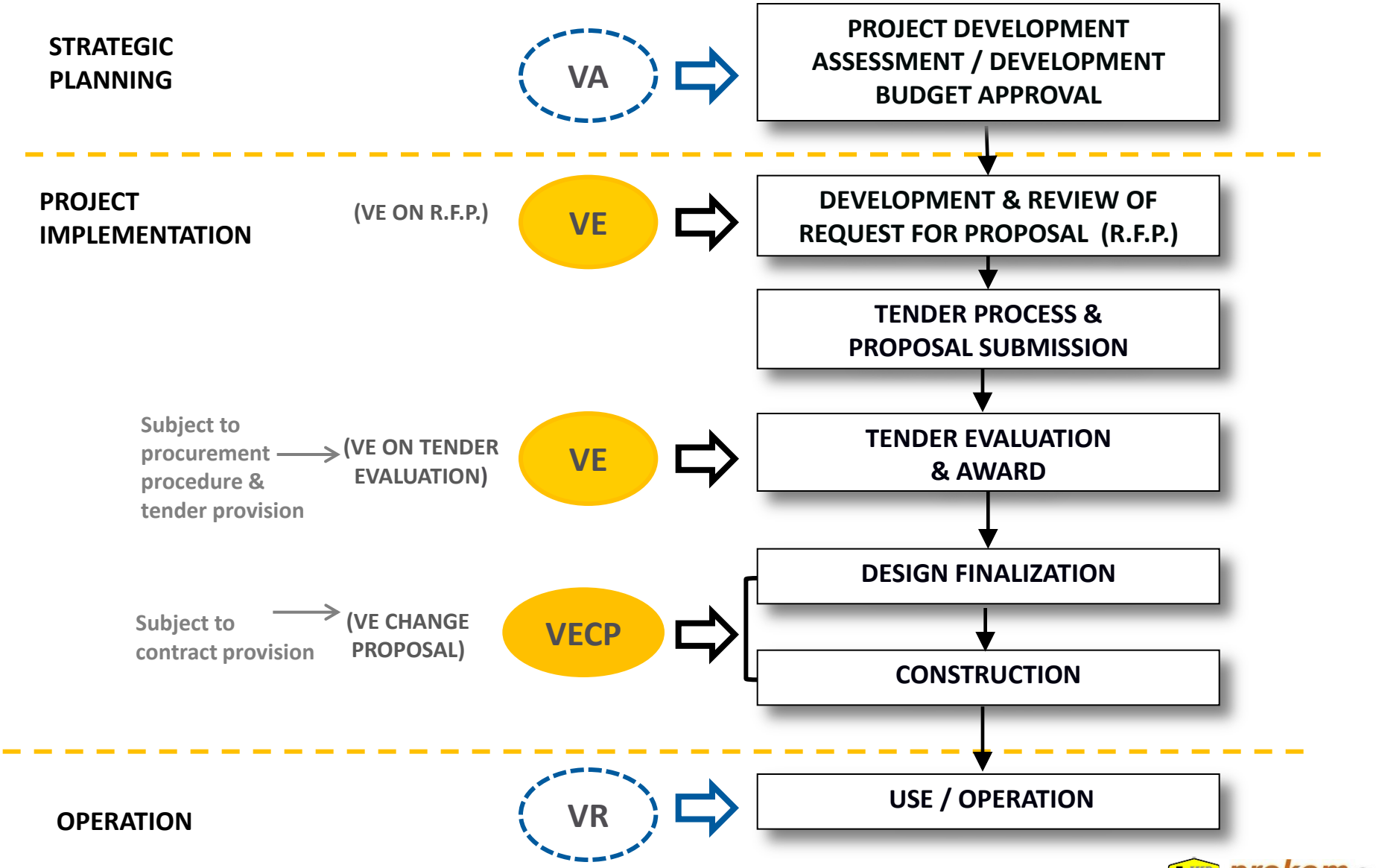
VE APPLICATION GUIDELINES FOR PUBLIC PROJECTS (JKR, 2013)

CONVENTIONAL PROCUREMENT ROUTE



VE APPLICATION GUIDELINES FOR PUBLIC PROJECTS (JKR, 2013)

D&B/ PPP/ PFI PROCUREMENT ROUTES



Value Assessment (VA)

AT STRATEGIC PLANNING (EPU)

- Establish / validate project business case
- Strategize asset creation
- Establish / define project scope
- Cap project budget allocation
- Determine expected benefits or project outcomes
- Establish project objectives
- Determine client's value criteria / value objectives
- Determine stakeholders' and users' needs
- Determine required project functions and deliverables
- Strategize project implementation
  (Timelines; Procurement; Risks etc)

Value Engineering (VE I)

AT CONCEPT DESIGN DEVELOPMENT (JKR/JPS)

- Verify project objectives and functions
- Establish / verify required functions and deliverables
- Optimize design to meet functional requirements
- Optimize project cost within capped budget
- Establish / verify client's value criteria / value objectives
- Establish design quality criteria
- Improve quality and efficiency of project performance
- Improve project implementation plan
  (Timelines; Procurement; Risks etc)

Value Engineering (VE II)

AT DETAIL DESIGN DEVELOPMENT (JKR/JPS)

- Review VE (I) study objectives
- Improve design of elements, components and systems
- Improve quality and buildability
- Enhance efficiency performance (LCC; GBI; EE)
- Further optimize project cost or capped budget
- Further improve project implementation plan (Timelines; Procurement; Risks etc)

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VECP

AT CONSTRUCTION STAGE (CONTRACTOR)

Contractor's Value Engineering Change Proposal (VECP)
(On voluntary basis; Subject to tender and contract provision; and requires Incentive Based Clause)

- Reduce cost of space, element, component and/or system
- Improve time, quality and/or buildability
- Improve facilities and energy efficiency
- Innovative construction and operational improvements
- Incentive return to both parties

Value Review (VR)

AT USE STAGE (AUDIT DEPARTMENT)

- Measure achievement of project objectives
- Review fulfilment of functions and deliverables
- Measure realization of project benefits or outcomes
- Review / improve quality and operational performance
- Assess project implementation performance
- Strategize continuous improvement of the build facility
- Identify and escalate lessons learned for future projects

Potential VM Study Interventions in Project Life Cycle

Strategic Brief	Project Brief	Concept Design	Detail Design	Tender	Construction	Use Stage
Value Assessment (VA)		Value Engineering (VE)				Value Review (VR)

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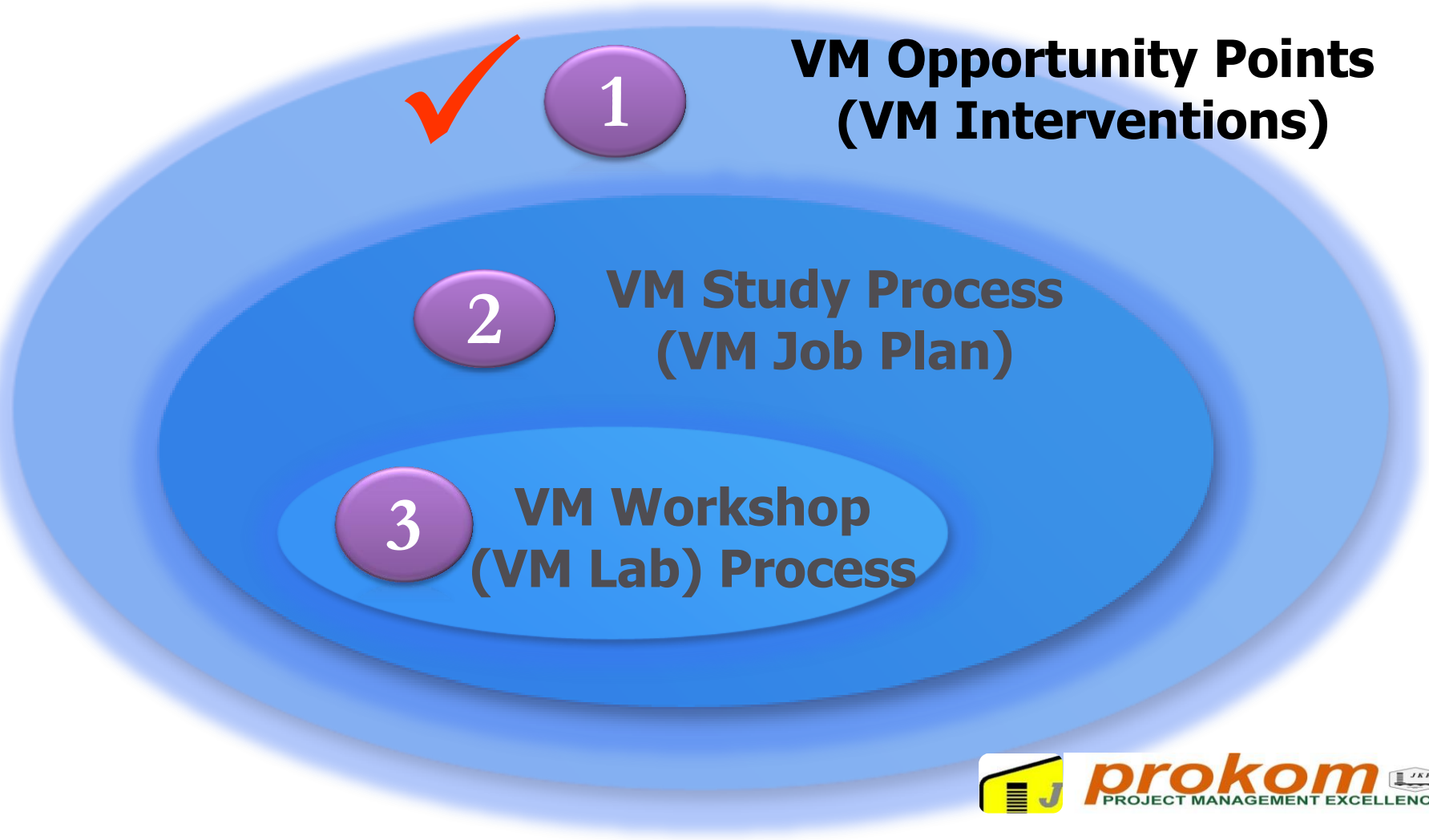
VM Body of Knowledge



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NEVER HOLD ON TO CURIOSITY…

THANK YOU

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