METHODOLOGY APPLICATION

APPLICATION NO: VM005

APPLICATION TITLE: Commercial Building: Sorting Facility

INDUSTRY: Construction

VALUE METHODOLOGY APPLIED: Value Management

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INTRODUCTION
A project team, incorporating the client and professionals was to design and construct a new green fields sorting facility for the XYZ Company.

The facility needed to be capable of sorting products within the required specifications and volumes. The project will have to be completed the final design by the end of April 200X, tender process and award by the end of May 200X and award site establish by the end of June 200X. Construction complete by end 200X and client fit out by mid 200X.

To ensure that the final design will be approved by the Project Office by the 09th May 200X a Value Management Study was initiated by the Project Team.
A VM Consultant / Facilitator was commissioned by the client to conduct the Value Management (VM) Study, with participation of selected stakeholders, to ensure functional conformity in order to achieve the objective. A Certified Value Specialist (CVS) was selected to lead the Value Engineering Workshop Activities, thus ensuring VM Process conformity.

VALUE METHODOLOGIES APPLIED
Value Management

PRE-VALUE MANAGEMENT WORKSHOP ACTIVITIES

Three (3) days external preparation and five (5) days at the Engineering Contractor / Architect Offices
Analysis of Data related to the Project

VALUE MANAGEMENT APPLICATION TOOLS

- Listing of Issues and Concerns
- Objective Matrix - Clearly stating the Goal and related environmental influences
- Results to Achieve / Functional Requirements (Verb / Noun Definitions) translated into established Priority and Level of Importance
- Recommendations
- Allocation of Responsibilities and Time Frame for Implementation

VM WORKSHOP REPORTING

- Preparation and Issue of VM Workshop Report
VM PARTICIPANTS:

Client:
- Technical Services Manager
- Audit
- Material Handling
- Project Manager
- Project Planner
- Project Manager
- Chief Environmental Officer
- Technical Specialist
- Chief Environmental Officer

Consultants:
- Quantity Surveyor
- Civil Engineer
- Structural Engineer
- Electrical Engineer
- Mechanical Engineer
- Architect
- Technical Specialist
- Architectural Assistant
- Project Manager
- Civil Engineer
- System Engineer
- VM Facilitator

VM WORKSHOP AGENDA:

Day 1
01.) Introduction & Project Briefing
    Project Manager
02.) VE Process Overview & Workshop Guidelines
    Facilitator
03.) Confirmation of Purpose Statement
    Team & Facilitator
04.) Issues / Concerns / Opportunities
05.) Objective Matrix
06.) Establish Functional Requirements
07.) Evaluate Functional Priorities

Day 2
09.) List recommendations
    Team & Facilitator
10.) Evaluate and prioritise recommendations
11.) Allocate responsibilities and time frame
12.) Where to from here?
    Facilitator
13.) Closure
    Project Manager
VALUE MANAGEMENT STUDY

ISSUES & CONCERNS
01.) Glass walls (internal partitions)
02.) Late design changes
03.) Late process changes (in-decision)
04.) Site services (timing)
05.) Rain water harvesting
06.) Renewable energy
07.) Environmental management plan
08.) Acid cleaning plant (location)
09.) Flatness of site (topography)
10.) Storage logistics
11.) Archive storage
12.) Colour sorting lighting
13.) Facilities management
14.) Interface
15.) Acid cleaning functionality
16.) Company strategy implication
17.) Operational readiness
18.) Stakeholder input on design affecting design process
19.) Means of escape
20.) Legacy
21.) Co-ordination of project team
22.) Quality management (operational / construction)
23.) Safety / security risk
24.) Orange furniture
25.) Local availability of resources (water, materials, labour etc.)
26.) Vibration analysis on long span
27.) Helipad
28.) Systems integration
29.) Lack of flexibility on new ideas (Resistance to change)
30.) Design of the sorting benches (ergonomics)
31.) Confinement
32.) Gray water
33.) Natural lighting, 3rd floor level
34.) Feed back
35.) End of day reconciliation
36.) Insurers
37.) Maintainability of new equipment
38.) Transport security
39.) Internal transportation
40.) Production planning
41.) Time scale of the projects
42.) Machine delivery
**OBJECTIVE MATRIX**

**Objective:**
Establish an action plan to ensure alignment of the Building Design to the XYZ System and obtain approval from Project Office by the 09th May 200X

<table>
<thead>
<tr>
<th>RESULTS TO ACHIEVE</th>
<th>RESULTS TO PREVENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.) Address Glass Partitioning Concerns</td>
<td>• Jeopardise Business Partners relationship</td>
</tr>
<tr>
<td>02.) Limit Design Changes</td>
<td>• Un-balanced view on the issues</td>
</tr>
<tr>
<td>03.) Optimal Alignment of Environmental Issues</td>
<td>• Preference engineering</td>
</tr>
<tr>
<td>04.) Confirm Archive Capacity</td>
<td>• Driving on cost only</td>
</tr>
<tr>
<td>05.) Alignment of Artificial Colour Light</td>
<td>• Un-planned cost over-runs</td>
</tr>
<tr>
<td>06.) Sizing of Facility</td>
<td>• Revise URV</td>
</tr>
<tr>
<td>07.) Appoint Operational Readiness Manager</td>
<td></td>
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<tr>
<td>08.) Address Fire Escape Procedure</td>
<td></td>
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<tr>
<td>09.) Assess Safety Risk</td>
<td></td>
</tr>
<tr>
<td>10.) Have a Quality Plan in Place</td>
<td></td>
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<tr>
<td>11.) Full Risk Assessment (Programme and Technical)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>AVAILABLE RESOURCES</th>
<th>CONSTRAINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Project Team</td>
<td>• RC Factor (Resistance to Change)</td>
</tr>
<tr>
<td>• Group expertise</td>
<td>• Time</td>
</tr>
<tr>
<td>• External specialists</td>
<td>• Money</td>
</tr>
<tr>
<td>• Other stakeholders</td>
<td>• Undefined Company Strategies</td>
</tr>
<tr>
<td></td>
<td>• Business Processes</td>
</tr>
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</table>
FUNCTIONAL ANALYSIS

Objective:
Establish an action plan to ensure alignment of the Building Design to the XYZ System and obtain approval from Project Office by the 09\textsuperscript{th} May 200X.

<table>
<thead>
<tr>
<th>Functions</th>
<th>Scr</th>
<th>Rnk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address Glass Partition Concerns</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Limit Design Changes</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Optimise Alignment of Environmental Issues</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Confirm Archive Capacity</td>
<td>0</td>
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<tr>
<td>Align Artificial Colour Light</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Size Facilities</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Appoint Operational Readiness Manager</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Address Fire Escape Procedure</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Assess Safety Implications</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Prepare Quality Plan</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Assess Risk (Programme / Technical)</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Finalise Vibration Design / Specifications</td>
<td>23</td>
<td></td>
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</tbody>
</table>

Basic Function(s): Limit Design Changes

Secondary Functions: Finalise Vibration Design / Specifications
Optimise Alignment of Environmental Issues
Size Facilities

Appoint Operational Readiness Manager
Assess Risk (Programme / Technical)
RECOMMENDATIONS

Example

<table>
<thead>
<tr>
<th>Functional Requirement</th>
<th>Issues &amp; Concerns</th>
<th>Recommendation</th>
<th>Rating</th>
<th>Responsibility</th>
<th>Time Frame</th>
</tr>
</thead>
</table>
| B.) Limit Design Changes | • Late design changes  
• Late process changes (in-decision)  
• Storage logistics  
• Company strategy implication  
• Stakeholder input on design affecting design process  
• Legacy & GDS  
• System integration  
• End of day reconciliation | 01.) Finalise Business Process (within the Building) and have it signed off.  
02.) Expedite HYT project and OPR  
03.) Finalise Vibration Report  
04.) URV to be signed off (amended)  
05.) Finalise & sign off logistics exercise  
06.) Finalise JTR requirements  
07.) Finalise decision on Helipad requirements (signed off) |        |                |            |

CONCLUSION

For this application we utilised the Value Management Process to optimise the design of a large commercial building allowing us to understand the actual requirements of the specified facilities and align the best cost effective option with the specification of what is actually required.

An additional benefit was the alignment between the various stakeholders across the Project on what is needed to ensure integrity of the design and how to ensure the implementation of the recommendation.