Training Routes for Marathon

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Supervisor: Sim Shyuan Jing

This project aims to develop training routes for marathon runners to meet their hydration and safety needs.

The students:
- Conducted survey to gather runners’ needs
- Collected different layers of maps provided by Singapore Land Authority (SLA)
- Collected water points, AED locations
- Used ArGis Software to map out training routes in Central Business District (CBD) area in Singapore.
- It uses the shortest path algorithm to map out the running routes

Deliverables:
- Training routes for 20km, 25km, 30km, 35km, 38km are mapped for runners training marathon.
- The routes consists of water points and AED to meet the needs.

The team received the First runners up, Best Presentation and Most Likes Awards for SLA Spatial Challenge Competition 2011.
Process Improvement for a SME

**Objective**
To assist YKL in achieving ISO 9001:2008 certification

- Review all existing documentation and work processes
- Develop forms for pre-certification checks
- Recommend improvements to the company current processes

**Methodology**

Mapping of the company's warehouse processes:
- Concept Map
- Detailed Flowchart
- Gap Analysis

Development and drafting of:
- SOPs
- Forms
- Quality Policy Manual
- Other documents required by the 3 levels of documentation

To work with the company on clauses missed, which includes but are not limited to:
- Standardizing and improving forms
- Training Manual
- Work Instructions
- Safety and instructions posters

**Recommendations**
- Company to have a continuous and lifelong quality improvement by implementing a fully-functional Quality Management System
- Company to train workers on the importance of carrying work according to the quality procedures developed to enhance worker safety and productivity
Green Initiatives
Sunshine Welfare Action Mission | Lim Shin Yi
Anthony Tan Bing Hong (85747), Lim Yun Qi (85827), Ang Wei Jen (85842), Erwin Tan Tao Kwang (85835), Lee Chang Fei (85836)

Introduction
Sunshine Welfare Action Mission (SWAMI) is a non-profit nursing home since the 1970s. To date, SWAMI requires 23%-79% for operations, and it has reliance on public support and government funding.

The Green Initiatives project aims to replace some existing SWAMI home facilities to solar-powered, thereby cutting down on electricity cost and consumption.

Objectives
- To source and install a solar water pump system on existing fishpond system
- To source and select suitable suppliers for water heater system based on Analytical Hierarchy Process (AHP)

Analytical Hierarchy Process
Factors to be considered

<table>
<thead>
<tr>
<th>Factor</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Cool</td>
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<tr>
<td>Tax Incentive</td>
<td>0.28</td>
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<td>Effectiveness of Panels</td>
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<td>Reliability</td>
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<tr>
<td>Inclusion of Back-Up heater</td>
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<tr>
<td>Availability of Spare Parts</td>
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<tr>
<td>Insulation</td>
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<tr>
<td>Design/Aesthetics</td>
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<td>Warranty</td>
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<tr>
<td>Circulation</td>
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<tr>
<td>Redundancy</td>
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</table>

AHP Calculations

After calculation done on the AHP, Sunpower is found to yield the highest score and was the supplier of choice.

Conclusion
We recommend SWAMI Home to continue using the solar water pump system as it can help cut down electricity consumption.