WM Group

Our Mission: To exceed your expectations

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17 July 2007

Mr. John McGuire,
State Manager – WA
Bassett Consulting Engineers
Level 9, The Victoria
14-16 Victoria Avenue
Perth WA 6000

Re: Fiona Stanley Hospital Western Australia Health Facility
Central Heating, Cooling and Cogeneration Plant Master Plan Study

Dear John:

Per our discussions, we are pleased to submit our proposal to perform master plan study for the central heating, cooling, and cogeneration system for the above referenced project.

A. Background and Project Objectives

The Australian Department of Housing and Works on behalf of the Department of Health is undertaking the development of the new Fiona Stanley Hospital in Perth, Australia. The proposed hospital will be constructed on a green acre site and is intended to be a world-class facility that will be a leader in clinical care, research and education. In order to meet the facility's heating, cooling, and power requirements, a central utility system will be constructed as part of the new hospital. The objective is to provide the utilities (heating, cooling and power) in an efficient, cost effective, and environmentally responsible manner.

Bassett has been awarded to be the MEP engineer for this project, and intends to retain WM Group Engineers to perform the study on the heating/cooling plant configuration and cogeneration feasibility.

B. Project Approach and Scope of Work

Our work will in general follow the requirements outlined in the RFP, dated April 27, 2007, issued by the Department of Housing and Works. Our approach to complete the studies is as follows:

Task 1 – Data Collection and Review of Requirements

- Review plans, studies, and other documentation for the new Health Facility
- Determine phasing plan for the growth of the facility
- Evaluate site services infrastructure and related future needs and requirements

- Evaluate heating, cooling, and power loads at each phase of the facility growth, with load profiles to be provided by Bassett
- Determine available space for a plant footprint
- Obtain copies of all design guidelines and other relevant documentation
- Coordinate requirements with other architecture and engineering firms involved with the project

Task 2 – Master Plan and Report

- Establish system parameters and basis of design
- Obtain typical annual hourly weather data for Western Australia
- Determine system configuration options for detail analysis for Heating and Cooling system with and without cogeneration
- Produce a computer model to evaluate the heating, cooling, and power requirements of the Western Australia Health Facility on an hourly basis for each phase of growth based on weather data
- Technologies to be considered for use to meet the utility requirements of the Western Australia Health Facility include the following:
  - Topping power generation cycle with gas turbine generators and/or reciprocating engine generators
  - Bottoming power generation cycle using condensing steam turbine generator and/or backpressure steam turbine generators
  - Combined cycle power generation
  - Other technologies such as natural gas fuel cells, micro-turbines for distributed power generation
  - Steam turbine centrifugal chillers, double-effect absorption chillers, and electric centrifugal chillers
  - Steam versus High Temperature Hot Water
- Perform a screening analysis for the suitability of the different technologies to specific conditions relevant to the site
- Evaluate selected technologies to determine appropriate system sizing
- Determine system redundancy requirements and firm capacity for phase I and ultimate build out
- Model each suitable option with computer software on an hourly basis to compare operating costs, efficiency, and electric and thermal load factors
- Generate annual operating costs for each option including cost of energy, maintenance, services, and staffing
- Estimate the first cost for each option
- Establish equipment life expectancy and estimate the replacement costs
- Perform a 50-year lifecycle cost analysis of each option factoring first cost, operating costs, replacement costs, inflation, discount rate, and other economic factors
- Evaluate subjective issues of each option
- Provide a recommended equipment configuration for the utility plant based on physical, economic, and subjective issues

- Provide a written report and PowerPoint presentation summarizing the findings

C. Schedule

	Tentative Milestone Date
• Authorization to proceed	July 23, 2007
• Data Collection (load profiles, utility rates, etc.)	August 3, 2007
• Preliminary report (65% complete)	August 31, 2007
• Pre-Final report (95% complete)	September 28, 2007
• Presentation to client	week of October 15, 2007
• Final report submission (100% complete)	October 29, 2007

D. Compensation

Our engineering fees for this project will be on a lump sum of **US$105,000**. The lump sum fee includes an allowance of **US$20,000** for the project related expenses for travel and living, document reproduction, and courier services. We have included two trips to Perth (in August and October). As discussed, the August trip will be combined with our visit to Dubai.

We appreciate this opportunity to offer our services to you. If you have any questions with regard to the above, please do not hesitate to contact us.

Very truly yours,

WM GROUP ENGINEERS, PC

Douglas Wen, P.E.
Vice President