



Contract 2928P

**Air Quality and Mechanical Systems Review - Richmond Aquatic Centre -
"Watermania"**

1. Introduction

The City of Richmond proposes to engage the services of a qualified Engineering Consultant Firm to undertake a substantial review of the mechanical HVAC systems installed in the Watermania Aquatic Centre and to conduct a series of Indoor Air quality and air distribution tests/studies to identify potential problems with airborne contaminants and to make recommendations with respect to the current pool operating conditions that will enhance the overall air quality and environment for pool patrons and staff. The objective of this request for proposal is to provide the City with qualified proponents capable of carrying out the work herein defined. The subsequent proponent submissions will form the basis for evaluation, interview and selection.

2. Submission Details

Three (3) copies of proposals marked "**Air Quality and Mechanical Systems Review - Richmond Aquatic Centre - "Watermania" Contract 2928P**" addressed to the Purchasing Section, will be received at the Information Counter, Main Floor, Richmond City Hall, 6911 No. 3 Road, Richmond BC V6Y 2C1, until 4:00PM, Local Time on Thursday, August 31, 2006. Submissions received after this time will be returned to the sender.

The City reserves the right to cancel this Request for Proposal for any reason without any liability to any proponent or to waive irregularities at their own discretion.

Proposals may be withdrawn by written notice only provided such notice is received at the office of the City's Purchasing Section prior to the date/time set as the closing time for receiving proposals.

Proposals shall be open for acceptance for 90 days following the submission closing date.

All proposals will remain confidential, subject to the Freedom of Information and Privacy Act.

Any interpretation of, additions to, deletions from, or any other corrections to the Proposal document, will be issued as written addenda by the City of Richmond. It is the sole responsibility of the potential Bidders to check with the City of Richmond's Website, and / or BC Bid to ensure that all available information has been received prior to submitting a bid.

3 Enquiries

3.1 Clarification of terms and conditions of the proposal process shall be directed to:

Purchasing

David Phipps, Supervisor - Purchasing
City of Richmond

Tel: 604-276-4287

E-mail: purchasing@richmond.ca

3.2 Technical clarification shall be directed to:

Technical

David Naysmith, P. Eng
Manager, Facility Planning and Construction
City of Richmond,

Tel: 604-233-3312

E-mail: dnaysmith@richmond.ca

The City, its agents and employees shall not be responsible for any information given by way of verbal communication.

Any questions that are received by City of Richmond Staff that affect the Proposal Process will be issued as addenda by the City of Richmond.

4. Project Background

Richmond Aquatic Centre was opened in 1997 as part of the Riverport Entertainment complex and presently receives almost 0.5 million public visits per year. The original HVAC systems were supplemented during final construction with a Hankin Ozone generating system and a McQuay dehumidifier chiller system.

The ozone generating system is no longer functioning and pool operations have reverted to traditional Chlorination of the water to meet health standards. As a result outdoor air has been increased to 100% year round.

The McQuay dehumidifier system has also failed with a reported seven compressors being replaced during the past 10 years. Preliminary analysis as to the compressor failure suggests that these failures are caused from its use as a heat recovery system and continued operation outside of the design parameters.

The existing Hot water boilers are considered to be inefficient and have shown signs of poor combustion, repeated refractory failures and blow back. As well it is believed the proximity of the boiler exhaust stacks and the air intake dampers have resulted in combustion air being drawn into the building resulting in reported nausea and dizziness by occupants

The combination of increased use of Chlorine, lack of dehumidification, inadequate heating has given rise to a number of public and staff related concerns as to the overall air quality of the building and the impact of the present operating parameters of the HVAC and pool operating systems.

5. Project Scope

5.1 Consultant Duties

The city requires the following objectives be considered as a result of the Study:

- Protection of Life, Health and Safety of all users of the Facility with respect to indoor air quality
- Determination of the limitations and operating constraints of the existing mechanical and HVAC systems and the impact to the interior environment by reverting to these
- Analyse and comment on the possible causes of the multiple compressor failures and the required modifications to remedy future failures.
- Evaluate the defunct Ozone generating system providing an analysis to repair or replace
- Present Options to improve the Indoor Air and Pool water quality and overall HVAC delivery.

5.2 Scope of Work

- Review Facility design drawings and operating manuals, (Architectural , Mechanical and Electrical)
- Document and review existing operating conditions for comparison with original design ASHRAE and other lower mainland jurisdictions.
- Coordinate the Air quality testing and balancing sub contractors to make measurements as required for the study analysis
- Identify the IAQ trending and sampling that will be performed for IAQ parameters including airborne products of incomplete combustion, chloramines, humidity, carbon monoxide and temperature trending.
- Identify measurement technologies and laboratory equipment used for analysis.
- Review the existing DDC control system operation to determine the present sequence of operation for the humidity and temperature control systems and the interaction of the heat recovery system.
- Interview Service providers (BC Comfort and Olympic International) and review technical correspondence with McQuay International with respect to the Chiller compressor failures
- Comment on current research and maximum recommended Chloramine levels in Swimming pool / natatorium environments

5.3 Deliverables

- Quantification of Indoor air quality parameters and comparison to recommended guidelines where they exist
- Report on the adequacy of the existing HVAC system with respect to ASHRAE guidelines

- Air balancing to meet design guidelines and natatorium negative pressurization
- Recommendations with respect to changes in operating practice under current conditions to improve air quality.
- Findings on possible entrainment of combustion air and Recommendations on resolution if determined.
- Report on the ability to rehabilitate the existing Ozone system or alternatively present replacement options
- Report on the findings on the Dehumidification system failures, Identifying probable causes, design and use
- Recommendations to abandon, repair or replace the Chiller dehumidification system
- Overall analysis on the adequacy of the existing systems to meet the increasing demands of 0.5 million visits /year and recommendations for immediate and long term upgrades including the potential of energy management improvements.
- Class C cost estimates to undertake work recommended as a result of this study.

6. Project Schedule

The study should commence immediately on award of the contract to the successful proposal and completed October/ November 2006. Due to summer operating conditions it may not prove possible to completely document "normal" conditions. In this event an extension may be considered to accurately quantify the gathered data.

7. Proposal Submissions

All proponents are required to provide the following information with their submissions, and in the order that follows:

- A Corporate profile of their firm outlining its history, philosophy and target market.
- A detailed listing of experience relating to the requirements of this Request for Proposal.
- A description of the Consultant's understanding of the project objectives/outcomes and vision, and how these will be achieved.
- A detailed project methodology explaining each project task including what will be expected of both the Consultant and the City with respect to each task.
- Team Composition – a complete listing of all key personnel who will be assigned to this project. This will include their relevant experience, qualifications for this project, roles and responsibilities, leadership, etc., in addition to their availability for this project.
- A detailed proposal of what will be delivered, including the expected outcome and benefits to the City of Richmond.

- A complete definition of the process that will be employed to meet the objectives of this project, eg., approach to be taken.
- A detailed schedule of all activities, including milestones, project meetings, interim reports and process reports as required for this project.
- Provision of a priced methodology complete with a time allotment for each identified task you propose to employ to carry out the work, this shall form the basis for payments to the successful proponent. Supplement this with a schedule of fees for staff to be assigned to the project. These rates shall be the basis for adjustments to the value of this contract in the event the scope of work varies from that proposed.
- A minimum of three (3) Client References from projects of a similar size and scope.

8. Working Agreement

The successful consultant team will enter into a standard ACEC – 31 agreement between Client and Engineer.

9. Evaluation Criteria

Proposals shall be evaluated to determine the best value offered to the City against conformance to the following criteria:

- Experience of the Consultant Organisation resources and project leader in HVAC design and evaluation with particular emphasis on indoor swimming pools.
- Experience of Consultants in Energy Management projects and obtaining supporting grant funding from organisations such as NRCAN, FCM, CBCIP, BC Hydro – Powersmart, etc.
- Experience of sub consultants in undertaking AIQ and air balancing/testing
- Project Deliverables
- Value for Money
- Ability to meet the desired time frame
- References from similar project undertakings
- Interview (if required)



Note: Receipt of this completed form will assist us in calling for future bids. Please complete and submit this form prior to the closing date and time as shown on the Request for Quotation/Proposal/Tender form.
Please remember to include Quotation/Proposal/Tender No. at right.

Quotation/Proposal/Tender No.
2928P

A Quotation/Proposal/Tender is not being submitted for the following reason(s):

- | | |
|--|--|
| <input type="checkbox"/> We do not manufacture/supply the required goods/services | <input type="checkbox"/> Cannot obtain raw materials/goods in time to meet delivery requirements |
| <input type="checkbox"/> We do not manufacture/supply to stated specifications | <input type="checkbox"/> Cannot meet delivery requirements |
| <input type="checkbox"/> Specifications are not sufficiently defined | <input type="checkbox"/> Cannot quote/tender a firm price at this time |
| <input type="checkbox"/> Insufficient information to prepare quote/proposal/tender | <input type="checkbox"/> Insufficient time to prepare quote/tender. |
| <input type="checkbox"/> Quantity too small | <input type="checkbox"/> We are unable to competitively quote/tender at this time. |
| <input type="checkbox"/> Quantity too large | <input type="checkbox"/> We do not have facilities to handle this requirement |
| <input type="checkbox"/> Quantity beyond our production capacity | <input type="checkbox"/> Licensing restrictions (please explain) |
| <input type="checkbox"/> Cannot meet packaging requirements | <input type="checkbox"/> Agreements with distributors/dealers do not permit us to sell directly. |
| <input type="checkbox"/> Cannot handle due to present plant loading | <input type="checkbox"/> Other reasons or additional comments (please explain below) |

I / We wish to quote / tender on similar goods / services in future <input type="checkbox"/> Yes <input type="checkbox"/> No	Authorized Company Official – Signature and Title	Date
This space for City of Richmond Comments		Firm Name
		Address
		City
		Province
		Telephone Number
		Postal Code