



# City of Richmond

July 10<sup>th</sup>, 2014  
File: N/A

Finance and Corporate Services Department  
Finance Division  
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**Attention: To All Proponents**

**Re: 5213P - Provision of Consulting Services for the Alexandra District Energy Utility  
Phase 3 - Addendum #2**

## **Clarifications:**

1. Replace all references to “*Associated Engineering Load Profiling and Capacity Expansion Update May 2014*” with “*Associated Engineering Alexandra NEU Expansion Options Analysis June 2014*”.
2. The following Record drawings are attached to this Addendum:
  - Architectural (10 sheets) A-1.1, 2.1, 3.1, 4.1, 4.2, 5.1, 6.1, 7.1, 7.2, 8.1
  - Civil (4 sheets) UC-13 sheets 1 through 3, 530750-10-12
  - Electrical (4 sheets) E000, 100, 200, 300
  - Mechanical (6 sheets) M-0.1, 1.1, 2.1, 2.2, 3.1, 4.1
  - Structural (1 sheet) S1
  - GHX (2 sheets) 11063 sheets 1&2
  - Electrical Service Information Form

## **Questions:**

**Q1:** Existing District Energy Plant:

- a. What are the heating and cooling capacities of the existing facility?
- b. What are the design supply and return temperatures?
- c. Should the same heating design temperature be utilized?
- d. Our understanding is that the addition of cooling towers and boilers was due to insufficient of the cooling and heating capacities from the GHX wells. Can you please provide a brief summary of the past year’s performance (monthly peak cooling and heating load levels, monthly total energy consumption for heating and cooling)?
- e. The existing geexchange system seems to be a closedloop system, how deep is it and what is the total pipe length?
- f. What type of control systems is used to communicate between the loads (buildings) and the district energy plant?

**A1:** a. Current capacities are 2.5MW heating and 1.2MW cooling.

- b. The system is designed for 30F supply winter and 90F supply summer.
- c. Yes.
- d. The current system is operating as expected. The DEU was designed to be expanded in tandem with development. Loading details will be provided to the successful proponent.
- e. Record drawings of the GHX field are included with this addendum.
- f. There is no direct control connection between the loads and the Energy Centre. The service connection valves are controlled by the in-building system, and the Energy Centre distribution pumps are controlled by monitoring the pressure loss across the system. More detailed information will be provided to the successful proponent.

**Q2:** Existing Buildings: Remy, Mayfair and Omega are currently existing buildings served by ADEU.

- a. Are they directly connected to the distribution network?
- b. Do the buildings have tertiary pumps and heat exchangers. If so, are the same heat exchangers used for cooling in the summer and heating in the winter?
- c. Is domestic hot water handled separately by each building's own independent heating system?
- d. Are a Mag Flow meter and an energy meter used to measure consumption in each building?
- e. Are readings of Flow, pressure, and temperature relayed back to the district energy plant's control system?

**A2:** a. No. There is an energy transfer station within each building.

- b. Heat exchangers are located within the buildings and are used for cooling and heating. No tertiary pumps are located on the City side of the heat exchanger.
- c. The energy transfer station provides preheat to domestic hot water.
- d. Yes.
- e. Yes.

**Q3:** Future Plant Expansion:

- a. Will the new facility be built at a distance (~5 metres) from the existing one in order not disrupt the existing operation? Or does it have to be built wallto wall?
- b. Can the cooling towers be placed on top of the new plant? This will require an additional height of 6 to 7 metres of roof parapet to hide the cooling towers. Or do the cooling towers have to be on ground level next to the plant?
- c. Is there a consideration for installing chillers or heat pumps for days when the cooling tower water is not sufficient to satisfy the load demand?

**A3:** a. Building offset is to be determined during detailed design.

- b. Yes. Sheet 2 of 3 Appendix C of the RFP shows a conceptual partial profile view of the Energy Centre with cooling towers on top.
- c. Not at the Energy Centre. Equipment installation is being phased to meet the load profiling provided by the developers as well as analysis of existing building loads.

**Q4:** New loads and buildings:

a. The smart centres south of Alexandra Rd. are intended to house data centres and or communication centres that may require chilled water cooling from the ADEU. Will these centres also have their own backup cooling source to comply with tier 3 or tier 4 design?

**A4:** a. Updated load profiling and plant requirements from Smart Centres will be provided to the successful proponent as the information becomes available to the City.

**Q5:** Overall design:

a. The future plant is based on adding boilers and cooling towers. Why are watertowater heat pumps not considered? These could significantly increase the plant's efficiency and allow for a smaller expansion to satisfy the plants new loads  
b. If the engineering team wishes to propose a significant change to the design that is more cost effective and energy efficient, how can a proponent submit an "alternative proposal and price"? Can it be included as part of the main proposal package? Or should it be a completely separate submission? Will two submissions from the same proponent be accepted?

**A5:** a.The conceptual design is based on analysis and recommendations provided by the City's consultants.

b. Alternative designs and fee schedules should be included in Part 2 of the proponent's submission (see Clause 13.1.e of the RFP document). Only one submission per proponent will be accepted.

**Q6:** Please provide a copy of the Peer Review of Load Profiling Report – The load profiling calculations contained in Associated Engineering Load Profiling and Capacity Expansion Update May 2014

**A6:** The Associated Engineering Alexandra NEU Expansion Options Analysis June 2014 report has been provided directly to the inquiring party.

**Q7:** It looks like there will be a lot of equipment to be added in the coming years until 2023. Is the existing electrical service already sized to serve all equipment until 2023?

**A7:** Electrical service sheet is attached. The successful proponent is to identify whether the service will need to be upgraded.

**Q8:** If the existing electrical service is not sized to serve the additions, do we need to size them for all equipment until 2023?

**A8:** Yes.

**Q9:** Are the existing electrical systems designed to serve the addition or do we need to upgrade any of them?

**A9:** Electrical as-builts are attached to this addendum. The successful proponent will be expected to determine if it would be more cost effective to perform full electrical system upgrades immediately or in phases to match equipment installation.

**Q10:** The Request for Proposal document does not appear to indicate a budget for ADEU Phase 3. Please could you confirm the anticipated budget for this project.

**A10:** Conceptual budgets are contained in the Associated Engineering Alexandra NEU Expansion Options Analysis June 2014 report.

**Q11:** We would like to clarify the project scope of specifically 8.1.b) South Loop Distribution Piping.

Is the entire loop of piping as shown in the Appendix B required for this phase of work?  
What would the main line distance be and length of service line?

Is 9311 Alexandra Road, the lot for Alexandra Court and is this the only connection to be made in this phase of work?

**A11:** For the civil design scope, assume the distribution piping extends from the Energy Centre to the west property line of 9311 Alexandra Road (approx 275m total). The piping is to be sized to accommodate full buildout of the south loop. Onsite service connection design will be done by others. 9311 Alexandra Road will be the only connection point to be designed under this RFP. The precise location has yet to be determined.

**Q12:** For the Energy Centre, do you have an estimated cost of construction?  
Do you have an area allocation (building size) for the expansion of the Energy Centre?

**A12:** Conceptual budgets are contained in the Associated Engineering Alexandra NEU Expansion Options Analysis June 2014 report. Conceptual building size of the expansion is approximately 19m x 10m as shown in Appendix C of the RFP. The Energy Centre is located within a City Park, and there is the possibility of increasing the size of expansion if a need is identified during the design process.

**Q13:** Are any structural drawings available for the original existing building? Year of construction?

**A13:** Construction was completed in 2012. Record drawings are attached to this addendum.

**Q14:** Any seismic upgrade to the existing building?

**A14:** No seismic upgrades are required to the existing building.

**Q15:** Any medications such as penetrations of new piping thru' walls, underground servicing, to the existing building?

**A15:** Record drawings are attached to this addendum. Connection details between the proposed and existing building are to be determined by the successful proponent.

**Q16:** Are new and old building regarded as post-disaster buildings?

**A16:** The building is not post-disaster. The extension is to be designed to meet current building code requirements.

**Q17:** We request the 2014 report by Associate Engineering for review. Conceptual layout drawing in Appendix C does not provide enough structural info.

**A17:** The Associated Engineering Alexandra NEU Expansion Options Analysis June 2014 report has been provided directly to the inquiring party.

**Q18:** Please provide the following information:

- Maximum allowable ambient noise levels (dBA)
- Distance of the sound receptors from the operating plant.

**A18:** Refer to Section 2.2 of Bylaw 8856, available on the City website [http://www.richmond.ca/\\_shared/assets/Bylaw\\_8856\\_0227201232440.pdf](http://www.richmond.ca/_shared/assets/Bylaw_8856_0227201232440.pdf)

The Energy Centre is located within an Intermediate Zone as defined in Bylaw 8856.

**Q19:** What is the anticipated area of the new addition?

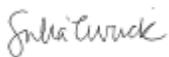
**A19:** Conceptual building size of the expansion is approximately 19m x 10m as shown in Appendix C of the RFP. The Energy Centre is located within a City Park, and there is the possibility of increasing the size of expansion if a need is identified during the design process.

**Q20:** Will there be any exterior pumping equipment.

**A20:** No exterior pumping equipment is included in the conceptual design.

**End of Addendum #2**

Regards,



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**Julia Turick**  
**Buyer II, City of Richmond**  
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