

SKEENA ICE ARENA ASSOCIATION

TERMS OF REFERENCE FOR AN ICE ARENA MECHANICAL FEASIBILITY STUDY

1.0 INTRODUCTION

These Terms of Reference pertain to consulting services for the mechanical installations required for a proposed community ice arena in Hazelton, BC

2.0 LOCATION

Hazelton is located in west central BC, approximately 70 kilometres northwest of Smithers. The site civic address is 2755 Highway 62, Hazelton. The legal description is Block 3, Plan 3, Plan 6613, DL 105, Cassiar Land District.

3.0 GENERAL INFORMATION

The existing facility is owned and operated by the *Skeena Ice Arena Association (SIAA)*, a registered non-profit organization, which generates revenues from facility usage fees and receives an annual operating grant from the Kitimat-Stikine Regional District. The existing facility was constructed with local labour in 1972; with the addition of the frontal structure in 1994 which contains dressing rooms, washrooms, meeting spaces and kitchens. The original ice plant, located in an adjacent block structure, has been well maintained and has been recently upgraded. The site is fully serviced from the Village of Hazelton and BC Hydro. The arena serves a population of about 6,000 people in twelve communities and outlying districts in the Upper Skeena area, between Terrace and Smithers.

4.0 OBJECTIVES

The SIAA is undertaking the construction of a new facility and requires technical advice from a professional engineering firm registered to practice in British Columbia. Our intention is to develop a specification leading to a design/build proposal call. We need to determine the most cost effective approach to providing the making and maintaining of the ice surface, arena public area and auxiliary spaces heating, hot water for public use and ice resurfacing, and the standard mechanical code requirements of a public building.

5.0 SCOPE OF WORK

The work of this contract comprises, but is not necessarily limited to, the following:

- 5.1** Review all relevant existing information including the existing plant and equipment, available technical and geotechnical information, reports and other information on file with the SIAA, some of which is listed in Appendix 1.
- 5.2** Review and discuss alternative methodologies, utilizing the latest proven technology for refrigeration plants and building mechanical systems, making ice and utilizing generated heat for general building space heating and domestic and service hot water, including:
 - 5.2.1** Review and recommend on the incorporation of all, or elements of, the existing equipment in the new facility;

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- 5.2.2** Review the potential for geothermal development and heat pump systems for utilization for the new facility (*including comment on the potential for possible off site sale of surplus heat*);
 - 5.2.3** Review and comment on mechanical system, refrigeration plant and ice temperature controls, building dehumidification controls, the potential for heat recovery from compressor cooling, direct digital controls and energy modelling which could include other options for optimum, cost effective arena operations;
 - 5.2.4** Comment on building envelope heat retention optimization, low emissivity ceilings cost effectiveness, ice resurfacing fill operations, and the potential for surplus heating to the snow pit for melting ice scrapings;
 - 5.2.5** Comment on Off Season equipment shut down and fuel consumption impacts.
 - 5.2.6** Comment on the potential of utilizing “heat recovery” of excess heat available from new arena installations (*a possible geothermal installation*), to heat, or supplement the heating, of the adjacent existing frame building (*the front portion of which will be retained for future multipurpose recreational uses - see drawings as per appendix.*)
- 5.3** Comment on Greenhouse gas reduction potential (*Greenhouse gas emissions analysis*) for the new facility (*as compared to the existing*) and possible grant opportunities in this regard;
- 5.4** Comment on possible grant opportunities from utilization of “new” technologies that may be applicable;
- 5.5** Provide “order of magnitude” capital costs and long terms operating costs for the various systems discussed, and make recommendations, utilizing cost/benefit analysis to produce the lowest life cycle costs, to the SIAA.
- 5.6** Comment on the BC Hydro fee structure and the potential for optimization of electrical energy in the controlled starting up and operating various equipment (*avoiding peak loads etc.*).
- 5.7** Provide a draft report with suitable schematics and specifications for the recommended systems for possible inclusion in a design/build bid package, and/or for inclusion in grant applications.
- 5.8** Review the potential for grants that may offset costs associated with this study and assist the SIAA with applications.
- 5.9** When the SIAA determines, based on the Consultant’s recommendations, the preferred mechanical concept, complete the brief mechanical specification suitable for inclusion in a Design/Build proposal call. Incorporate other comments and corrections in a final report, and, within two weeks, deliver one electronic and six bound copies to the project manager.

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6.0 PROPOSAL

The consultant is requested to submit two copies and one suitable for photocopying of his proposal which will include a:

- 6.1** proposed methodology,
- 6.2** time schedule for project completion,
- 6.3** personnel list including the principal in charge,
- 6.4** a list of relevant project experience,
- 6.5** a list of any sub-consultants proposed for the work, and their company resumes, and
- 6.6** a contract bid price for all components including disbursements, which shall be a fixed upset price.

7.0 TERMS OF PAYMENT

Payments, including disbursements at cost, will be made on a monthly basis to the maximum of the consultant's proposal, with the final payment made on receipt and acceptance of the completed report. Invoices are to be submitted through the project manager.

8.0 COST CONTROL

If at any time during the progress of the work, the Consultant considers the costs in his initial proposal will be exceeded due to changes in the scope of work, he shall provide the project manager with complete details and receive approval before incurring additional cost.

9.0 SCHEDULE

The work will start as soon as possible after agreement to proceed, and is expected to be completed within two months.

10.0 CONTRACT AGREEMENT

The consultant will be commissioned to the work by a duly authorized Contract Agreement with the Skeena Ice Arena Association.

11.0 GENERAL INSTRUCTIONS

The following instructions, terms and conditions apply to all proposals related to this Request for Proposals. The SIAA expressly reserves the right to:

- 11.1** to accept any qualified proposal, properly submitted;
- 11.2** to accept a proposal which is not necessarily the lowest cost proposal;
- 11.3** to work with the proponent whose proposal is, in the opinion of the Association, in the best interests of the SIAA;
- 11.4** to reject all proposals if the fees submitted exceed the estimated budget for this undertaking.

12.0 SITE VISIT

Site visits can be arranged at the convenience of the consultant with two days notice to the project manager.

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15.0 GENERAL INSTRUCTIONS

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- 15.1.1 to accept any qualified proposal, properly submitted;
- 15.1.2 to accept a proposal which is not necessarily the lowest cost proposal;
- 15.1.3 to work with the proponent whose proposal is, in the opinion of the Association, in the best interests of the SIAA;
- 15.1.4 to reject all proposals if the fees submitted exceed the estimated budget for this undertaking.

13.0 CONTACTS

Mr. Jeff Holland, 250 842-6981

jeff.holland@live.ca

14.0 CLOSING

Closing Date: Tuesday, October 12, 2010 at 3:30pm

Starting Date: TBA

15.0 Submit proposals to: Skeena Ice Arena Association
Attention: Project Manager
Box 330 Hazelton, B.C. V0J 1Y0
Fax: 250 842-6661

Electronic submissions forwarded to jeff.holland@live.ca