



**THE CITY OF WINNIPEG**

# **REQUEST FOR PROPOSAL**

**RFP NO. 220-2010**

**ICE PLANT REFURBISHMENT AT CENTURY ARENA – 1377 CLARENCE AVENUE**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

**B1.1 ICE PLANT REFURBISHMENT AT CENTURY ARENA – 1377 CLARENCE AVENUE**

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, April 12, 2010.

B2.2 Proposals determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

### **B3. SITE INVESTIGATION**

B3.1 Further to C3.1, the Contract Administrator or an authorized representative will be available at the Site from 1:30 pm to 3:00 pm on April 6, 2010 to provide Bidders access to the Site.

B3.2 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

### **B4. ENQUIRIES**

B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

B4.2 If the Bidder finds errors, discrepancies or omissions in the Request for Proposal, or is unsure of the meaning or intent of any provision therein, the Bidder shall promptly notify the Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B4.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Request for Proposal will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B4.5 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Request for Proposal will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B4.6 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

### **B5. CONFIDENTIALITY**

B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator.

B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Request for Proposals to the media or any member of the public without the prior written authorization of the Contract Administrator.

## **B6. ADDENDA**

- B6.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Request for Proposal, or clarifying the meaning or intent of any provision therein.
- B6.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B6.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B6.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B6.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 of Form A: Proposal. Failure to acknowledge receipt of an addendum may render a Proposal non-responsive.

## **B7. SUBSTITUTES**

- B7.1 The Work is based on the Plant, Materials and methods specified in the Request for Proposal.
- B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B7.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
  - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
  - (c) identify any anticipated cost or time savings that may be associated with the substitute;
  - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
  - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.

- B7.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B7.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B7.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B17.1.
- B7.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B7.10 Notwithstanding B7.2 to B7.9 and in accordance with B8.5, deviations inconsistent with the Request for Proposal document shall be evaluated in accordance with B18.1(a).

## **B8. PROPOSAL SUBMISSION**

- B8.1 The Proposal shall consist of the following components:
- (a) Form A: Proposal;
  - (b) Form B: Prices;
  - (c) Methodology and Experience.
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 All components of the Proposal shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Proposal.
- B8.3.1 Bidders should submit one (1) unbound original (marked “original”), two(2) copies.
- B8.4 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.5 Bidders are advised that inclusion of terms and conditions inconsistent with the Request for Proposal, including the General Conditions, will be evaluated in accordance with B18.1(a).
- B8.6 The Proposal should be submitted enclosed and sealed in an envelope clearly marked with the RFP number and the Bidder's name and address.
- B8.6.1 Samples or other components of the Proposal which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the RFP number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Proposal Submission.
- B8.7 Proposals submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B8.8 Proposals shall be submitted to:
- The City of Winnipeg  
Corporate Finance Department  
Materials Management Division  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1

## **B9. PROPOSAL**

- B9.1 The Bidder shall complete Form A: Proposal, making all required entries.
- B9.2 Paragraph 2 of Form A: Proposal shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
  - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
  - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
  - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B9.2.1 If a Proposal is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.
- B9.3 In Paragraph 3 of Form A: Proposal, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Proposal.
- B9.4 Paragraph 11 of Form A: Proposal shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
  - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
  - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
  - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B9.4.1 The name and official capacity of all individuals signing Form A: Proposal should be printed below such signatures.
- B9.5 If a Proposal is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Proposal and the Contract, when awarded, shall be both joint and several.

## **B10. PRICES**

- B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B10.1.1 Notwithstanding C11.1.1, prices on Form B: Prices shall not include the Goods and Services Tax (GST) or Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.
- B10.2 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B10.3 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

## **B11. QUALIFICATION**

- B11.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; and
  - (b) be financially capable of carrying out the terms of the Contract; and
  - (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- B11.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
  - (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>
- B11.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
  - (a) have successfully carried out work similar in nature, scope and value to the Work; and
  - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
  - (c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba);
- B11.4 Further to B11.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
  - (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
  - (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>)
- B11.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B11.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

## **B12. METHODOLOGY AND EXPERIENCE**

- B12.1 The Bidder shall provide, in his Proposal:
  - (a) A full description of their methodology and experience of their project team for the Work required with respect to the following:
    - (i) Project team approach;
    - (ii) Team organization-Provide a brief description of the team makeup and structure including responsibilities and qualifications of each team member;
    - (iii) Communication strategy with client;
    - (iv) Project quality assurance and control;
    - (v) Design experience with respect to Ammonia Ice Plants;



- (vi) Designing mechanical, lighting, water and building automation and control systems related to this project;
- (vii) Providing project management services for projects of similar complexity and size
- (viii) Demolition and Construction experience with respect to Ammonia Ice Plants;
- (ix) Commissioning and performance testing experience of Ammonia Ice Plants;
- (x) Training of employees and the development and implementation of occupant information programs;
- (xi) Identifying preventive maintenance approaches that will be recommended for the existing, modified and new equipment and systems;
- (xii) Determining approaches for training of the facility and the City staff in the proper operation and maintenance of all improvements.

### **B13. OPENING OF PROPOSALS AND RELEASE OF INFORMATION**

B13.1 Proposals will not be opened publicly.

B13.2 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

B13.3 To the extent permitted, the City shall treat all Proposal Submissions as confidential, however the Bidder is advised that any information contained in any Proposal may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

### **B14. IRREVOCABLE OFFER**

B14.1 The Proposal(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 of Form A: Proposal.

B14.2 The acceptance by the City of any Proposal shall not release the Proposals of the other responsive Bidders and these Bidders shall be bound by their offers on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any offer shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 10 of Form A: Proposal.

### **B15. WITHDRAWAL OF OFFERS**

B15.1 A Bidder may withdraw his Proposal without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B15.1.1 Notwithstanding C22.5, the time and date of receipt of any notice withdrawing a Proposal shall be the time and date of receipt as determined by the Manager of Materials.

B15.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Proposal or the Bidder's authorized representatives named in Paragraph 11 of Form A: Proposal, and only such person, has authority to give notice of withdrawal.

B15.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

- (a) retain the Proposal until after the Submission Deadline has elapsed;
- (b) open the Proposal to identify the contact person named in Paragraph 3 of Form A: Proposal and the Bidder's authorized representatives named in Paragraph 11 of Form A: Proposal; and
- (c) if the notice has been given by any one of the persons specified in B15.1.3(b), declare the Proposal withdrawn.

B15.2 A Bidder who withdraws his Proposal after the Submission Deadline but before his offer has been released or has lapsed as provided for in B14.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

## **B16. INTERVIEWS**

B16.1 The Contract Administrator may, in his sole discretion, interview Bidders during the evaluation process.

## **B17. NEGOTIATIONS**

B17.1 The City reserves the right to negotiate details of the Contract with any Bidder. Bidders are advised to present their best offer, not a starting point for negotiations in their Proposal Submission.

B17.2 The City may negotiate with the Bidders submitting, in the City's opinion, the most advantageous Proposals. The City may enter into negotiations with one or more Bidders without being obligated to offer the same opportunity to any other Bidders. Negotiations may be concurrent and will involve each Bidder individually. The City shall incur no liability to any Bidder as a result of such negotiations.

B17.3 If, in the course of negotiations pursuant to B17.2 or otherwise, the Bidder amends or modifies a Proposal after the Submission Deadline, the City may consider the amended Proposal as an alternative to the Proposal already submitted without releasing the Bidder from the Proposal as originally submitted.

## **B18. EVALUATION OF PROPOSALS**

B18.1 Award of the Contract shall be based on the following evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Request for Proposal or acceptable deviation therefrom:
  - (i) mandatory requirements (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B11:
  - (i) mandatory qualifications (pass/fail);
- (c) Total Bid Price; (30%)
- (d) Methodology and Experience (70%)
- (e) economic analysis of any approved alternative pursuant to B7;

B18.2 Further to B18.1(a), the Award Authority may reject a Proposal as being non-responsive if the Proposal Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Proposal, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.

B18.3 Further to B18.1(b), the Award Authority shall reject any Proposal submitted by a Bidder who does not demonstrate, in his Proposal or in other information required to be submitted, that he is responsible and qualified.

B18.4 Further to B18.1(c), the Total Bid Price shall be the lump sum price shown on Form B: Prices.

B18.4.1 The Total Bid Price shall be evaluated with a weighting of 30 points out of a total of 100 possible points. As such, the lowest bidder shall receive the full 30 points, and the second lowest Bidder and subsequent bidders shall be pro-rated accordingly.

- B18.5 Further to B18.1(d); the Methodology and Experience shall be evaluated with a weighting of 70 points out of a total of 100 possible points in accordance with B12.
- B18.6 This Contract will be awarded as a whole.
- B18.7 If, in the sole opinion of the City, a Proposal does not achieve a pass rating for B18.1(a) and B18.1(b), the Proposal will be determined to be non-responsive and will not be further evaluated.

**B19. AWARD OF CONTRACT**

- B19.1 The City will give notice of the award of the Contract, or will give notice that no award will be made.
- B19.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Proposals are determined to be responsive.
- B19.2.1 Without limiting the generality of B19.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
  - (b) the prices are materially in excess of the prices received for similar work in the past;
  - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
  - (d) only one Proposal is received; or
  - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B19.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the most advantageous offer.
- B19.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Proposal upon written request to the Contract Administrator.
- B19.4 Notwithstanding C4 and Paragraph 6 of Form A: Proposal, the City will issue a purchase order to the successful Bidder in lieu of the execution of a Contract.
- B19.5 The Contract Documents, as defined in C1.1(n) (ii), in their entirety shall be deemed to be incorporated in and to form a part of the purchase order notwithstanding that they are not necessarily attached to or accompany said purchase order.

## PART C - GENERAL CONDITIONS

### C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Supply of Services* (Revision 2007 04 12) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Supply of Services* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](http://www.winnipeg.ca/matmgt/gen_cond.stm)
- C0.2 A reference in the proposal to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Supply of Services*.
- C0.1 These General Conditions are applicable to the Work of the Contract.

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

#### **D1. GENERAL CONDITIONS**

- D1.1 In addition to the *General Conditions for Supply of Services*, these Supplemental Conditions are applicable to the Work of the Contract.
- D1.1 In addition to the *General Conditions*, these Supplemental Conditions are applicable to the Work of the Contract.

#### **D2. SCOPE OF WORK**

- D2.1 The Work to be done under the Contract shall consist of an complete Ice Plant refurbishment and at Century Arena 1377 Clarence Avenue with component relocation and installation to Roland Michener Arena 1121 Wabasha Street.
- D2.2 The major components of the Work are as follows:
- (a) Evaluation of the existing ice plant, related components and mechanical operation (not facility operation)
  - (b) Design a new complete refurbished ice plant utilizing new and existing components based on operating conditions provided for this facility;
  - (c) Constructive removal, demolition, design, construction, installation, and commissioning of all new and existing components for the completed ice plant replacement for Century Arena and Roland Michener Arena

#### **D3. CONTRACT ADMINISTRATOR**

- D3.1 The Contract Administrator is:  
Bruce Kazun C.E.T.  
Supervisor of Community Centre Maintenance  
4 th Floor, 185 King Street  
Winnipeg, Manitoba R3B 1J1  
Telephone No. (204) 794-4409  
Facsimile No. (204) 986-7311
- D3.2 At the pre-commencement meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

#### **D4. CONTRACTOR'S SUPERVISOR**

- D4.1 Further to C6.19, the Contractor shall employ and keep on the Work, at all times during the performance of the Work, a competent supervisor and assistants, if necessary, acceptable to the Contract Administrator. The supervisor shall represent the Contractor on the Site. The supervisor shall not be replaced without the prior consent of the Contract Administrator unless the supervisor proves to be unsatisfactory to the Contractor and ceases to be in his employ.
- D4.2 Before commencement of Work, the Contractor shall identify his designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.
- D4.2.1 Further to C5.5 Contract Administrator may give instructions or orders to the Contractor's supervisor and such instructions or orders shall be deemed to have been given to the Contractor.

## **D5. CONFIDENTIALITY AND OWNERSHIP OF INFORMATION**

- D5.1 Information provided to the Contractor by the City or acquired by the Contractor during the course of the Work is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator.
- D5.2 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City. The Contractor shall not disclose or appropriate to its own use, or to the use of any third party, all or any part thereof without the prior written consent of the Contract Administrator.
- D5.3 The Contractor shall not make any statement of fact or opinion regarding any aspect of the Contract to the media or any member of the public without the prior written authorization of the Contract Administrator.

## **D6. NOTICES**

- D6.1 Notwithstanding C22.3, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:
- The City of Winnipeg  
Chief Financial Officer  
Administration Building, 3rd Floor  
510 Main Street  
Winnipeg MB R3B 1B9  
Facsimile No.: (204) 949-1174

## **SUBMISSIONS**

### **D7. AUTHORITY TO CARRY ON BUSINESS**

- D7.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

### **D8. SAFE WORK PLAN**

- D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D8.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/safety/default.stm>

### **D9. INSURANCE**

- D9.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured; such liability policy to also contain a cross-liability clause, non-owned automobile liability and products and completed operations cover, to remain in place at all times during the performance of the Work;

- (b) if required, automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00), to remain in place at all times during the performance of the Work;

D9.2 Deductibles shall be borne by the Contractor.

D9.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D9.4 The Contractor shall not cancel, materially alter, or cause the policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

## **D10. PERFORMANCE SECURITY**

D10.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
- (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
- (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

D10.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D10.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award and prior to the commencement of any Work on the Site.

## **D11. DETAILED WORK SCHEDULE**

D11.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site.

D11.2 The detailed work schedule shall consist of the following:

- (a) a critical path method (C.P.M.) schedule for the Work;
  - (b) a Gantt chart for the Work based on the C.P.M. schedule; and
- all acceptable to the Contract Administrator.

D11.3 Further to D11.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:

D11.4 Further to D11.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

## **D12. SECURITY CLEARANCE**

- D12.1 Each individual proposed to perform Work under the Contract shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence.
- D12.2 The Criminal Record Search shall include a Vulnerable Sector Search. This can be obtained by completing and providing the following in person to the Winnipeg Police Service Bureau of Police Records, 4<sup>th</sup> Floor, 151 Princess Street:
- (a) Form P-612 Check the following boxes: Vulnerable Sector; and Other by inputting the Request for Proposal Number in the space provided. This form can be found on the website at:  
[www.winnipeg.ca/police/BPR/forms/Criminal\\_Record\\_Check\\_P612.doc](http://www.winnipeg.ca/police/BPR/forms/Criminal_Record_Check_P612.doc)
    - (i) Individuals will need to state in Section 2 of the form, that they may be working in City of Winnipeg pools, libraries and community centres;
    - (ii) Individuals will need to sign and date Section 3 of the form.
  - (b) Two (2) pieces of identification as stated in Bureau of Police Records on the website at:  
[www.winnipeg.ca/police/BPR/id.stm](http://www.winnipeg.ca/police/BPR/id.stm)
  - (c) Fee for each individual applying for a Criminal Record Search. Fee schedule can be found on the website at:  
[www.winnipeg.ca/police/BPR/fees.stm](http://www.winnipeg.ca/police/BPR/fees.stm)
- D12.2.1 The original Criminal Record Search Certificate (Form P-253) will be provided by the Winnipeg Police Service to the individual applicant. The original has a validation sticker from the Winnipeg Police Service in the top right hand corner. The applicant shall:
- (a) Provide the original Criminal Record Search Certificate (Form P-253) to the Contract Administrator.
- D12.3 Prior to the commencement of any Work, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform the Work.
- D12.4 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to property offences or crimes against another person, will not be permitted to perform any Work.
- D12.5 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- D12.6 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform any Work.

## **SCHEDULE OF WORK**

### **D13. COMMENCEMENT**

- D13.1 The Contractor shall not commence any Work until he is in receipt of a notice of award from the City authorizing the commencement of the Work.
- D13.2 The Contractor shall not commence any Work on the Site until:
- (i) the Contract Administrator has confirmed evidence of authority to carry on business specified in D7;
  - (ii) evidence of the workers compensation coverage specified in C6.14;



- (iii) the Safe Work Plan specified in D8;
- (iv) evidence of the insurance specified in D9;
- (v) the performance security specified in D10;
- (vi) the detailed work schedule specified in D11; and
- (vii) the security clearances specified in D12.

(b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

D13.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the notice of award.

#### **D14. WORKING DAYS**

D14.1 Further to C1.1(gg), the Contract Administrator's determination of whether or not atmospheric and Site conditions are such that a Working Day is deemed to have elapsed may be based at one time on one type of work while at another time a Working Day may be based on another type of work. When more than one type of major work is involved, the quantity of equipment that must be able to work in order to meet the requirements of a Working Day may vary considerably from that specified in the General Conditions.

D14.2 In the event that incidental work is behind schedule which, in the opinion of the Contract Administrator, should have been or could have been carried out by the Contractor in conjunction with or immediately following work of a major type, the City hereby reserves the right to charge Working Days on the incidental work until such time as it is up to schedule.

D14.3 When the major type of work involves restoration of the site to the condition it was prior to rainfall, Working Days shall not be charged.

D14.4 The Contract Administrator will furnish the Contractor with a daily record for each major type of work showing various information concerning the equipment, the time it worked, could have worked and Working Days charged. This report is to be signed each day by an authorized representative of the Contractor.

#### **D15. SUBSTANTIAL PERFORMANCE**

D15.1 The Contractor shall achieve Substantial Performance by August 10, 2010.

D15.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D15.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

#### **D16. TOTAL PERFORMANCE**

D16.1 The Contractor shall achieve Total Performance by August 16, 2010.

D16.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D16.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

#### **D17. LIQUIDATED DAMAGES**

D17.1 If the Contractor fails to achieve Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

- (a) Substantial Performance – One Thousand Five Hundred dollars (\$1500.00);
- (b) Total Performance - One Thousand Five Hundred dollars (\$1500.00);

D17.2 The amounts specified for liquidated damages in D17.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance or Total Performance by the days fixed herein for same.

D17.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

#### **D18. SCHEDULED MAINTENANCE**

D18.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Two complete start-ups and shutdowns of the systems (two season operation) for both facilities with scheduling to be determined by the Contract Administrator.

D18.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

#### **CONTROL OF WORK**

##### **D19. JOB MEETINGS**

D19.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

D19.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

##### **D20. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

D20.1 Further to C6.23, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

## **D21. SAFETY**

- D21.1 The Contractor shall be solely responsible for safety at the Site and for compliance with all laws, rules, regulations and practices required by the applicable safety legislation.
- D21.2 The Contractor shall be solely responsible for securing the Site, and any existing facility thereon, and for the proper care and protection of the Work already performed.
- D21.3 The Contractor shall do whatever is necessary to ensure that:
- (a) no person, property, right, easement or privilege is injured, damaged or infringed by reason of the Contractor's activities in performing the Work;
  - (b) the health and safety of all persons employed in the performance of the Work or otherwise is not endangered by the method or means of its performance;
  - (c) adequate medical services are available to all persons employed on the Work and at all times during the performance of the Work;
  - (d) adequate sanitation measures are taken and facilities provided with respect to the Work.
  - (e) pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted or endangered by the performance or existence of the Work or Plant;
  - (f) fire hazards in or about the Work are eliminated;

## **D22. SITE CLEANING**

- D22.1 The Contractor shall maintain the Site and the Work in a tidy condition and free from the accumulation of waste and debris, other than that caused by the City or by other contractors.
- D22.1.1 As the Work progresses, the Contractor shall remove any Plant and Material not required for the performance of the remaining Work. He shall also remove waste and debris other than that caused by the City or other contractors, and leave the Site and the Work clean and suitable for occupancy by the City unless otherwise specified.
- D22.1.2 Total Performance shall not be considered to have been achieved until the Contractor has cleaned up the Site and has removed all Plant, surplus Material, waste and debris, other than that left by the City or other contractors.

## **D23. INSPECTION**

- D23.1 Before beginning or resuming operations upon any portion of the Work, the Contractor shall notify the Contract Administrator so as to enable him to arrange for inspection. If the Contractor fails to notify the Contract Administrator, the Contractor shall, if and when required by the Contract Administrator, forthwith take down or expose and redo that portion of the Work required to facilitate inspection. The cost of such taking down or exposure, and redoing, if any, shall be borne by the Contractor.
- D23.2 If and when required by the Contract Administrator, the Contractor shall take down or expose forthwith any portion of the Work where the Contract Administrator determines that the Work is not in accordance with the Contract. The cost of such taking down or exposure, and redoing, if any, shall fall upon the City if the taking down or exposure indicates that the portion exposed was properly performed, but if otherwise the cost shall be borne by the Contractor.

## **D24. DEFICIENCIES**

- D24.1 Further to C10.5, the Contract Administrator may order the Contractor to alter or improve his methods, to increase or improve his Plant, to furnish additional or more suitable Material, or to employ additional or more qualified labour if, at any time, the Contract Administrator determines that:
- (a) the Work is not being, or will likely not be, performed satisfactorily; or

- (b) progress is not being, or will likely not be, maintained in accordance with the work schedule.
- D24.2 If the Work or any part thereof is taken out of the Contractor's control pursuant to C18.7, all Plant and Material, and the interest of the Contractor in all licences, powers and privileges acquired, used or provided by the Contractor under the Contract shall be assigned by the Contractor to the City without compensation to the Contractor.
- D24.3 The City shall have the right to take possession of and use any of the Contractor's material and property of every kind provided by the Contractor for the purpose of the Work, and to procure other Plant or Material for the completion thereof.
- D24.4 When the Contract Administrator certifies that any Plant, Material or any interest of the Contractor referred to in D24.2, is no longer required for the purposes of the Work, or that it is not in the best interest of the City to retain that Plant, Material or interest, it shall revert to the Contractor.

## **MEASUREMENT AND PAYMENT**

### **D25. PAYMENT**

- D25.1 Further to C11, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

### **D26. PAYMENT SCHEDULE**

- D26.1 Further to C11, payment shall be in accordance with the following payment schedule:
- D26.1 Further to C11, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice.

## **WARRANTY**

### **D27. WARRANTY**

- D27.1 Notwithstanding C12, the warranty period shall begin on the date of Total Performance and shall expire One (1) years thereafter unless extended pursuant to C12.3, in which case it shall expire when provided for thereunder.
- D27.2 Further to C12, if a defect or deficiency prevents the full and normal use or operation of the Work or any portion thereof, for purposes of calculating the warranty period, time shall be deemed to cease to elapse for the defective or deficient portion, and for any portion of the Work whose use or operation is prevented by such defect or deficiency, as of the date on which the defect or deficiency is observed or the use or operation is prevented and shall begin to run again when the defect or deficiency has been corrected or the Work may be used or operated to the satisfaction of the Contract Administrator.

**FORM H1: PERFORMANCE BOND**  
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

\_\_\_\_\_ ,  
(hereinafter called the "Principal"), and

\_\_\_\_\_ ,  
(hereinafter called the "Surety"), are held and firmly bound unto **THE CITY OF WINNIPEG** (hereinafter called the "Obligee"), in the sum of

\_\_\_\_\_ dollars (\$\_\_\_\_\_)

of lawful money of Canada to be paid to the Obligee, or its successors or assigns, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has entered into a written contract with the Obligee for

**RFP NO. 220-2010**

**ICE PLANT REFURBISHMENT AT CENTURY ARENA – 1377 CLARENCE AVENUE**

which is by reference made part hereof and is hereinafter referred to as the "Contract".

NOW THEREFORE the condition of the above obligation is such that if the Principal shall:

- (a) carry out and perform the Contract and every part thereof in the manner and within the times set forth in the Contract and in accordance with the terms and conditions specified in the Contract;
- (b) perform the Work in a good, proper, workmanlike manner;
- (c) make all the payments whether to the Obligee or to others as therein provided;
- (d) in every other respect comply with the conditions and perform the covenants contained in the Contract; and
- (e) indemnify and save harmless the Obligee against and from all loss, costs, damages, claims, and demands of every description as set forth in the Contract, and from all penalties, assessments, claims, actions for loss, damages or compensation whether arising under "The Workers Compensation Act", or any other Act or otherwise arising out of or in any way connected with the performance or non-performance of the Contract or any part thereof during the term of the Contract and the warranty period provided for therein;

THEN THIS OBLIGATION SHALL BE VOID, but otherwise shall remain in full force and effect. The Surety shall not, however, be liable for a greater sum than the sum specified above.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable as Principal, and that nothing of any kind or matter whatsoever that will not discharge the Principal shall operate as a discharge or release of liability of the Surety, any law or usage relating to the liability of Sureties to the contrary notwithstanding.

IN WITNESS WHEREOF the Principal and Surety have signed and sealed this bond the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ .

SIGNED AND SEALED  
in the presence of:

\_\_\_\_\_  
(Witness as to Principal if no seal)

\_\_\_\_\_  
(Name of Principal)

Per: \_\_\_\_\_ (Seal)

Per: \_\_\_\_\_

\_\_\_\_\_  
(Name of Surety)

By: \_\_\_\_\_ (Seal)  
(Attorney-in-Fact)

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT  
(PERFORMANCE SECURITY)**  
(See D10)

\_\_\_\_\_  
(Date)

The City of Winnipeg  
Internal Services Department  
Legal Services Division  
185 King Street, 3rd Floor  
Winnipeg MB R3B 1J1

RE: PERFORMANCE SECURITY – RFP NO. 220-2010

**ICE PLANT REFURBISHMENT AT CENTURY ARENA – 1377 CLARENCE AVENUE**

Pursuant to the request of and for the account of our customer,

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

WE HEREBY ESTABLISH in your favour our irrevocable Standby Letter of Credit for a sum not exceeding in the aggregate

\_\_\_\_\_ Canadian dollars.

This Standby Letter of Credit may be drawn on by you at any time and from time to time upon written demand for payment made upon us by you. It is understood that we are obligated under this Standby Letter of Credit for the payment of monies only and we hereby agree that we shall honour your demand for payment without inquiring whether you have a right as between yourself and our customer to make such demand and without recognizing any claim of our customer or objection by the customer to payment by us.

The amount of this Standby Letter of Credit may be reduced from time to time only by amounts drawn upon it by you or by formal notice in writing given to us by you if you desire such reduction or are willing that it be made.

Partial drawings are permitted.

We engage with you that all demands for payment made within the terms and currency of this Standby Letter of Credit will be duly honoured if presented to us at:

\_\_\_\_\_  
(Address)

and we confirm and hereby undertake to ensure that all demands for payment will be duly honoured by us.

All demands for payment shall specifically state that they are drawn under this Standby Letter of Credit.

Subject to the condition hereinafter set forth, this Standby Letter of Credit will expire on

\_\_\_\_\_  
(Date)

It is a condition of this Standby Letter of Credit that it shall be deemed to be automatically extended from year to year without amendment from the present or any future expiry date, unless at least 30 days prior to the present or any future expiry date, we notify you in writing that we elect not to consider this Standby Letter of Credit to be renewable for any additional period.

This Standby Letter of Credit may not be revoked or amended without your prior written approval.

This credit is subject to the Uniform Customs and Practice for Documentary Credit (1993 Revision), International Chamber of Commerce Publication Number 500.

\_\_\_\_\_  
(Name of bank or financial institution)

Per: \_\_\_\_\_  
(Authorized Signing Officer)

Per: \_\_\_\_\_  
(Authorized Signing Officer)



## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B7.

#### E2. DESIGN CRITERIA

- E2.1 The Ice Plant at Century Arena shall be designed to operate with normal programming from August 1 to April 30 inclusive. The plant shall have sufficient capacity to make ice within 72 hours of seasonal start-up to meet the August 1 programming requirements.
- E2.2 The normal ice surface temperature for this facility is 16°F - 18°F (Brine Temperature). Flooding intervals for this facility are hourly during regular programming schedule. The normal hours of operation are as follows:
- (a) Week Days 3:00 P.M. – 1:00 A.M.
  - (b) Saturday 7:00 A.M. – 1:00 A.M.
  - (c) Sunday 7:00 A.M. – 1:00 A.M.
  - (d) The normal ice thickness ranges from 1" to 1 ½".
  - (e) Ice maintenance is performed weekly with an ice edger and ice resurfer.
  - (f) The shed lighting comprises of 56 – 400W metal halide light fixtures
- E2.3 After a normal ice resurfacing flooding, ice surface shall be ready for use within 15 minutes. The ice surface shall be completely frozen with no wet patches.
- E2.4 The system shall be designed to operate on a single compressor from November 15 to February 20 rotating with the other compressor(s) to maintain even balance of usage.
- E2.5 The new ice plant shall be upgraded and designed to a minimum 90 ton plant utilizing screw compressor packages each sized for a minimum refrigeration capacity of 45 tons, at an operating condition 8 degree F evaporating temperature and 90 degree F condensing temperature.
- E2.6 The heat of rejection from the screw compressor oil coolers shall be recovered and directed into the ice shed and the front lobby area for heat recovery. An air cooled fluid cooler shall be provided to handle the oil cooling requirements when the heat recovery is not required.
- E2.7 The new evaporative condenser shall be an induced draft style capable of operating the compressors and be able to run on dry with no additional water below 42°F - 45°F outdoor air temperature, condenser fan motor to be inverter duty and operated by a VFD.
- E2.8 Heat recovery from the ice plant shall be used to heat the potable water and the ice shed.
- E2.9 The design of the Ice Plant shall be based on industry standards for this type of construction and utilizing "Best Practice" for maintenance and operation purposes with adequate provision for expansion of equipment to maintain a year round operation. As an example, provide sufficient ammonia shut off valves to isolate the screw compressors, condenser, and any serviceable components of the plant.
- E2.10 All material shall be new for both facilities except for equipment that is being re-used.

- E2.11 A Site survey for noise pollution shall be conducted and appropriate modifications and equipment shall be implemented to the design.

### **E3. POWER SMART INITIATIVE**

- E3.1 The City of Winnipeg has entered into a multi-year agreement with Manitoba Hydro to reduce consumption of utilities. As a result of this agreement, Manitoba Hydro has the right to review the design, specifications and drawings prior to construction. Manitoba Hydro may make a financial contribution to the project or may provide an alternative design with a financial contribution. Any additional design costs as a result of the Power Smart Initiative shall be borne by the Contractor.
- E3.2 The Ammonia Ice Plant design shall incorporate and reflect the City of Winnipeg's initiative to reduce consumption of natural gas, hydro electricity and water wherever practical, feasible and economical.

### **E4. EXISTING FACILITY AND EQUIPMENT**

- E4.1 The facility was constructed in 1967 and has an approximate area of 26,000 square feet with a seating capacity of 872 persons. The rink is a standard 85' x 200' surface on a structural concrete slab covered with Glu-lam arches.
- E4.2 The existing ice plant comprises of a Mycom N8WA-75 HP and a York 3069-50HP compressors and motors. The Mycom compressor shall be salvaged and delivered to a city facility. Storage site to be determined and contractor shall incur all related shipping and handling expenses to specified location within the city limits.
- E4.3 The existing brine chiller was replaced in 2008; provide a new high side float to meter the ammonia to the brine chiller.
- E4.4 Remove and dispose the existing heat recovery Thermastor and all related ammonia and water piping.
- E4.5 The existing steel Brine Header shall be removed and replaced. The new PVC header shall be located in the existing trench. The PVC header pipe and fittings shall be schedule 80 with ¾" PVC nipples with 4" center spacing. Provide double stainless steel clamps for connections to the existing slab and header. Fabricate galvanized steel supports, at maximum 6' intervals. The Brine System to be fully pressure tested, system to be flushed if contaminated, refilled to operation level, provide de-foaming agent when recovered brine is pumped back into the system, balanced for normal operating conditions. Verify concentration of brine and adjust mixture to recommended industry value. Provide lug type butterfly brine valves for the pump suction and chiller outlet to be located in the plant room, complete with 9" Vari-angle brine thermometers for supply and return temperatures.
- E4.6 Provide a new brine expansion tank and stand sized to suit system complete with piping to return brine main with isolating valve and new charging valves at the existing brine pump.
- E4.7 The existing main electrical distribution is a 600 AMP 600volt 3 Phase located adjacent to the basement furnace room with a pad mounted transformer located outside the facility. Evaluate the existing electrical distribution and sub-panels and provide replacement as required to the ice plant electrical system to incorporate new and existing equipment to meet current codes. New sub-panels shall have 25% additional capacity for future loads.
- E4.8 The existing Johnson Control "METASYS"/Cimco guarded status panel was installed in 2003. Contractor shall refurbish and incorporate this system into the new plant management operation system. Additional items to include multiple compressors and all new equipment.
- E4.9 Contractor shall conduct an inspection of all equipment that is not included in demolition to ensure that it will operate as intended with new systems and equipment.

- E4.10 The existing electric heaters and guarded status exhaust fan shall remain and be incorporated in new design.
- E4.11 The existing dehumidifier for the ice shed shall be replaced with 2 dehumidifiers with a minimum moisture removal capacity of 21 pounds of water at 50 degrees F entering dry bulb and an entering air 60% RH. Modify existing structure to suit new equipment.
- E4.12 Modify, reconstruct, and refurbish entire machine room to meet all current codes, Acts, By-laws and Regulations. Provide a permanent exterior lockable door and concrete stairs from the plant room to the parking lot to allow access for equipment replacement. Door shall be 16 ga., door frame 14ga. 2 deadbolts from interior only Exterior finishes shall be vandal and graffiti resistant. Paint to match. Locate new egress door near Condenser pad, modify or extend chain link fencing to suit. Provide site grading and sod as required to restore landscaping.
- E4.13 The existing Baltimore (BAC) evaporative condenser Model VCL209, water pump and glycol jacket pump was installed in the summer of 2001 and shall be removed from the site and relocated and installed at Roland Michener Arena 1121 Wabasha Street. Contractor shall incur all related shipping and handling expenses to specified location. The Contractor may re-use and modify the existing concrete columns and steel structure for new condenser. The Contractor shall verify existing condition and modify the existing stand to suit new equipment. Provide a new condenser water balance tank complete with a new water pump sized to suit the evaporative condenser.
- E4.14 Remove the existing main ice plant electrical control panel and associated ammonia controls and relocate to the Roland Michener Arena as part of the relocated condenser installation.

## **E5. DETAILED SCOPE OF WORK (ICE PLANT)**

- E5.1 The Ammonia Ice Plant refurbishment at Century Arena shall include the following as a minimum:
- (a) A thorough and professional examination and review of the facility's existing systems.
  - (b) Develop, design and prepare detailed working drawings, specifications, control schematics and related documents for the complete Ice Plant operation and related hot water boiler heating and storage tanks.
  - (c) The Contractor shall review the construction Work to ensure it meets the original intent, and will not depreciate the value of the buildings, and will not affect the safety of occupants or exceed the agreed impact on the City's operations at any time during or after construction.
  - (d) The Contractor shall ensure that all changes in design and operation meet the latest codes, standards and best practices (including, but not limited to, the current Provincial building code, WCB regulations, Provincial plumbing code, boiler and refrigeration regulations, electrical codes, IES Lighting Handbook (8<sup>th</sup> Edition), City By-Laws, ASHRAE and SMACNA Standards, and Manitoba Department of Labour Regulations.
  - (e) The Contractor shall provide all necessary demolition, removal of all equipment and materials and dispose in a certified disposal area or designated areas. Personnel shall be qualified and experienced to perform the demolition and construction. Any related damage to existing structure or alterations to the facility to assist demolition shall be restored to original condition at the Contractor's expense. Items to remain are noted in existing facility and equipment section E4.
  - (f) The new Ice Plant shall incorporate multiple screw compressors complete with a Glycol cooling system for compressor head cooling.
  - (g) All component selection shall be based on achieving optimum operation of the Ice Plant and maintaining energy efficiency.
  - (h) All compressor drive motors shall be a soft start function.

- (i) Design shall be based on ammonia (NH<sub>3</sub> R-717) type refrigeration. All Work shall be done in accordance with the requirements of CAN/CSA B52-1999 and the Manitoba Ozone Depleting Substances Act.
- (j) The ammonia refrigerant, brine and glycol may be recovered and reused with the new plant, provide all necessary storage tanks and recovery cylinders as required.
- (k) Provide all detailed design calculations for all equipment selection.
- (l) Design to include modifications to existing plant room for the installation of new equipment including mechanical ventilation, heating and electrical alterations. Design shall optimize existing space without structural modification.
- (m) All drawings shall be sealed and signed by a Professional Engineer registered and licensed and in good standing in the Province of Manitoba. The Contractor must hold, or be eligible to hold a Certificate of Authorization from the Association of Professional Engineers and Geoscientists of Manitoba.
- (n) Three (3) complete sets of construction drawings and specifications for review by the City of Winnipeg shall include as a minimum demolition and disposal of existing ice plant components, as well as structural, mechanical and electrical details, control wiring for the installation and/or construction of new ice plant components, including identification of asbestos or any other hazardous materials.
- (o) Provide three (3) complete sets of "as built" drawings showing all mechanical, electrical, wiring schematics and structural components of the new refrigeration room and header. All drawings shall be produced on Mylar and the entire document shall be on a CD.
- (p) All ammonia refrigeration piping shall be welded and in accordance with Department of Labour Regulations and ANSI B31. Brine piping and fittings shall be Schedule 80. All piping shall be labelled with service, pipe size and flow direction. Labelling shall be Capital Lettering using fire resistant interior latex paint, waterproof, heat resistant plastic marker tags. Upon completion of the Work all piping shall be cleaned and flushed of debris.
- (q) The Contractor shall submit for approval, at least five (5) sets of detailed shop drawings for all Work for which drawings are required. Approval of Shop Drawings will be general. It shall not relieve the Contractor of responsibility for accuracy of shop drawings, nor for proper fitting, construction of Work or Work required by contract and not indicated on Shop Prints. Shop Prints approval shall not be construed as approving departure from Contract's requirements.
- (r) Verify and calibrate the existing ammonia gas detection system upon completion of project.
- (s) Insulate all piping that is subject to condensation with "SM" type vapour saran wrap and white PVC jacketing.
- (t) Contractor shall clean, patch and apply one (1) coat of primer and two (2) coats of paint to entire machine room. Colour shall be determined on Site.

## **E6. ICE PLANT REPLACEMENT**

- E6.1 Provide all necessary demolition including all redundant piping, controls, electrical wiring, water piping, stands as required to complete the new installations
- E6.2 Provide two (2) screw compressor packages, rated for 48 tons each, connected to 75 HP motors, rated for 575 volt 3 phase 60 cycles, equipped with glycol oil cooling, 180,000 BTUH heat rejection, DDC control panel, electrical solid state motor starter, Phd vibration monitoring for both compressor and motor bearings, temperature actuated capacity control.
- E6.3 Provide an air cooled fluid cooler sized to handle the full compressor load when heating the facility is not required.
- E6.4 Provide fluid unit heaters of equal capacity sized to handle the full compressor oil cooling load, unit heaters to be located within the ice shed and front lobby to reject the heat. Location to be determined on site. An automatic diverting valve is required to divert the glycol cooling from the

air cooled fluid cooler to the unit heaters, located within the arena facility based on preset ambient temperatures.

- E6.5 Provide an ammonia desuperheater sized for the plant capacity, including a high temperature water circulating pump to circulate from the desuperheater to the domestic water storage tank with all necessary operating and safety controls.
- E6.6 Provide all new ammonia piping and fittings to interconnect the new screw packages to the new condenser and existing brine chiller.
- E6.7 Provide an electrical control panel to operate the new ice plant including all new and existing equipment.

## **E7. DOMESTIC HOT WATER BOILER REPLACEMENT**

- E7.1 Remove the existing hot water heating boiler, the 2 domestic water boilers and the 100 US gallon water storage tank including all related chimney breaching, circulating pumps, ballast tank, interconnecting piping and concrete bases.
- E7.2 Provide one (1) high efficiency commercial heating boiler with a minimum capacity of 409,000 BTUH, all stainless steel construction, integrated control system, complete with FS4-3 flow switch, low water safety cut out, 100 to 240 degree F operating thermostat, UPS43-100, 115v Grunfos pump, and one system MAGNA40-120 ½ HP circ. pump 230 volt, and venting as required. The new boiler to be connected to the existing facility hot water system loop.
- E7.3 Provide one (1) domestic high efficiency hot water boiler, with a capacity of 470,000 BTUH, complete with flow switch, tank sensor, stainless steel heat exchanger, integrated control system, UPS43-100SF SS Grunfos circulating pump 230 volt and venting as required.
- E7.4 Provide one (1) 200 gallon insulated ASME water storage tank complete with 40 XL 1" T & P relief valve complete with 4" concrete house keeping pad .
- E7.5 Provide one (1) ST25V THERM-X-TROL expansion tank.
- E7.6 The new hot water boiler shall be connected to the existing facility piping, storage tank, expansion tank and interconnected to the incorporated ice plant heat recovery system desuperheater.
- E7.7 All new water piping and fittings shall be copper type "L" refrigeration grade.
- E7.8 Provide new ½" fibreglass wrapped insulation with white PVC jacket of all areas affected for this work.

## **E8. ICE PLANT CONTROLS**

- E8.1 The compressor start-up/shut-down sequencing shall be based on the supply and return temperatures of the Brine Systems.
- E8.2 The system operation shall have a 2°F differential at 16°F for start stop sequencing operation with a variable set point adjustment.
- E8.3 Incorporate existing Johnson Control "METASYS"/Cimco guarded status panel. Ensure that adequate monitoring points are provided and that they are compatible with existing Johnson Control METASYS system.
  - (i) As a minimum, the following points shall be monitored: Ice Plant indication, Compressor status, Brine pumps status, condenser status, exhaust fan status, NH3 alarm status, (from gas monitoring system), CO Alarm status (from gas monitoring system), Propane Alarm status (from gas monitoring system, Brine temperature entering and leaving, ice surface temperature, average rink temperature (minimum four locations).

- (ii) Control Sequences: The following control sequences exhaust fan shall be interlocked with compressor controller so that the fan will be energized upon compressor being operational.
- (iii) Ammonia Spill Ventilation: Exhaust fan shall be energized upon NH<sub>3</sub> gas monitoring system status indicating alarm mode. Fan shall remain energized until sensor indicates non-alarm condition.
- (iv) New control panel to include compressor(s) condenser, brine pump, condenser water pump, glycol water pump operation, system control power and hour meters for compressors, condenser water pump, glycol water pump and positive indicator lights for a system operation and status of equipment.

## **E9. ROLAND MICHENER ARENA – CONDENSER INSTALLATION**

- E9.1 From Century Arena, ensure that the BAC Condenser, condenser water pump, glycol circulating pump, related ammonia valves, main electrical starter and electrical disconnects are delivered to site. Provide all necessary craning and rigging for the completion of the installation.
- E9.2 Prepare an engineered sealed support stand drawing for the new support stand to including concrete piles, structural steel support stand 8 feet above grade and condenser to be parallel to the facility, exact location to be determined on site.
- E9.3 Prepare an engineered sealed fence drawing around the condenser, fence shall be 12 feet in height with a lockable 3 foot man door, pre-finished metal siding shall be included for non climbable access.
- E9.4 Provide a new condenser water tank sized for the condenser capacity and connected to the water pump from Century Arena.
- E9.5 Recover the ammonia refrigerant and reuse for new installation.
- E9.6 Remove and dispose the existing roof mounted condenser, stand and related ammonia and water piping. Seal all opening caused by removal with insulated 24 gauge metal caps.
- E9.7 Removal and disposal of the existing condenser water tank and both water pumps for condenser and compressor jacket cooling.
- E9.8 Provide new safety controls to safeguard the compressors from glycol pump failure, provide new supply and return glycol thermometers at each compressor.
- E9.9 Prior to glycol filling, acid clean all compressor oil cooler coils and cooling jackets, and provide sufficient inhibited glycol mixed to 50% solution to each compressor cooling circuit to operating level.
- E9.10 Remove and dispose the existing electrical control panel and related sub panels and controls and install the electrical panel from Century arena salvage, modify motor starter overloads to suit the existing motor loads for the Roland Michener ice plant and all necessary wiring.
- E9.11 Provide SM pipe insulation with saran wrapped covered white PVC jacketing to all piping subjected to condensation.
- E9.12 Provide additional ammonia as required to maintain operational level.
- E9.13 Disconnect, remove the existing Thermastors and cap off piping to system.

## **E10. PRODUCTS**

- E10.1 Approved manufactures of equipment.
  - (a) Rotary screw compressors:

- (i) Frick
- (ii) Mycom
- (b) Plate Heat Exchangers:
  - (i) Alfa Laval
- (c) Evaporative condenser:
  - (i) Baltimore Air-coil
  - (ii) Evapco
- (d) Unit Heaters:
  - (i) Rosemex
  - (ii) Trane
- (e) Pumps:
  - (i) ITT Bell and Gossett
  - (ii) Grundfos
  - (iii) Armstrong
- (f) Valves:
  - (i) Bray
  - (ii) Grinnell
  - (iii) Toto
- (g) Electrical Components:
  - (i) Eaton
  - (ii) Schneider

## **E11. COMMISSIONING/TRAINING**

- E11.1 The Contractor shall implement the testing and commissioning procedures in accordance with all new and retrofitted systems to ensure that each component meets requirements, and building staff is trained in its use. Commissioning shall be in accordance with the Code of Practice for Commissioning Mechanical Systems in buildings.
- E11.2 Upon completion of commissioning, provide three (3) complete sets of performance testing protocols and reports to the Contract Administrator.
- E11.3 Provide all necessary training to City of Winnipeg personnel for entire Ice Plant operation. Training shall be conducted by approved manufacturer's representatives for each product installed.

## **E12. PREVENTATIVE MAINTENANCE**

- E12.1 At the completion of the project, the Contractor shall provide three (3) sets of preventive maintenance schedules including tasks and frequencies for all new, refurbished and existing components and systems.
- E12.2 The Contractor shall demonstrate to the City of Winnipeg personnel all techniques required to perform maintenance tasks.
- E12.3 Provide sufficient on-site lubricants such as, oils, refrigerant, glycol and brine for maintenance purposes for duration of the Contract.
- E12.4 Provide a recommended spare parts list for the package compressors.