Inuvialuit Regional Corporation

Request for Proposals

for the

Inuvik Housing Project

RFP Deadline:

14 May 2024

at 16:00 (4:00PM) MDT

Request for Proposal (RFP) for Manufactured Housing in Inuvik, Northwest Territories

Inuvialuit Regional Corporation

Mandate

The mandate of Inuvialuit Regional Corporation (IRC) is to continually improve the economic, social and cultural wellbeing of the Inuvialuit through the implementation of the Inuvialuit Final Agreement (IFA) and by all other available means.

Operating Philosophy

The mandate and corporate goals of IRC can only be met through a strong commitment by all directors, officers and employees of IRC to an operating philosophy of teamwork, dedication and coordination of both planning and action. The focus of all efforts must be the improved wellbeing of the Inuvialuit. This will be the core criterion by which all corporate activities are measured.

Definitions

"*Client Representative*" means Reimagine Architects, Ltd.

"*Contract*" means the written agreement(s) resulting from this RFP executed by the IRC and the selected Proponent to perform their respective duties, responsibilities and obligations as and represents the agreement between the parties. It includes but is not limited to the executed documentation and Supplementary Conditions, the RFP and the Proposal of the successful Proponent.

"IRC" or "Owner" means Inuvialuit Regional Corporation.

"Mandatory" means a condition that must be met for a Proposal to receive consideration.

"Project" means the scope of work described within this RFP and all associated activities required to implement this work.

"Proponent" or "Contractor" means an entity that submits a Proposal.

"Proposal" means all of the documentation, including technical and financial, submitted by a Proponent in response to this RFP.

"Request for Proposals" or "RFP" means this Request for Proposals including any and all schedules, appendices, forms, attachments and any addenda issued by the IRC.

"*Requirement*" means a condition that the Owner needs in order to complete a thorough evaluation.

"RFP Documents" means all documents posted under this opportunity including all addenda.

"Should" means a condition that the IRC would like the Proponent to address in its Proposal.

"Submission Deadline" means the time on the date set out on the cover of this RFP by which a prospective Proponent must submit the Proposal, as may be amended.

Invitation

The purpose of this RFP is to solicit proposals for the design, construction/fabrication and installation of homes in Inuvik, Northwest Territories. This will include the detailed design, supply and construction of completed housing units, associated site work, and commissioning of up to nine (9) manufactured homes, with the potential for additional homes to be constructed under the terms of this RFP at the discretion of the IRC.

Project Overview:

The project involves the construction of up to nine (9) housing units including units with three and four bedrooms in Inuvik, Northwest Territories. The homes must be designed to withstand the environmental conditions and logistical challenges of the remote location. This RFP intends to solicit responses that consider the unique challenges due to extreme weather conditions, logistical constraints, and environmental factors of building in Inuvik including:

Extreme Climate: The region experiences long periods of harsh weather conditions, including extreme cold temperatures, high winds, and snow accumulation. Houses must be designed to withstand these conditions and provide adequate insulation to maintain comfortable indoor temperatures.

Insulation and Energy Efficiency: Effective insulation is essential to prevent heat loss and reduce energy consumption in the Arctic climate. The homes will incorporate high-performance insulation materials and energy-efficient building envelopes to minimise heating requirements.

Structural Considerations: The contractor will be responsible for engaging a structural engineer licensed by the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG) for the structural design including wind loads, snow loads, foundation design for permafrost conditions, and other aspects of the structural design. The engineering design will be at the cost of the housing contractor.

Transportation and Logistics: Transportation logistics change throughout the year in Inuvik. The proponent is responsible for making themselves familiar with the transportation infrastructure and logistical challenges for delivering construction components or completed homes to site. Considerations include transportation of materials and equipment, as well as assembly and installation processes in location.

Connections to Utilidor: The contractor will be responsible for the connections to the municipal utilidor, including any testing and commissioning of the utility connections.

Cold Climate Materials: Selection of construction materials suitable for cold climates is crucial. Materials should be durable, resistant to frost damage, and capable of withstanding temperature fluctuations without compromising structural integrity.

Ventilation and Moisture Control: Proper ventilation and moisture control are essential to prevent condensation, mold growth, and indoor air quality issues. Mechanical ventilation systems with heat recovery will be necessary to maintain indoor air circulation and humidity levels.

Environmental Impact: The ecosystem is sensitive to human activities. Sustainable building practices and environmentally friendly materials should be prioritised to minimise the ecological footprint of house construction in the Arctic.

Community Engagement: Collaboration with the local community and the Inuvialuit Regional Corporation (IRC) and their Beneficiaries will be required during the design phases. The Client Representative will lead engagement activities and will involve the Contractor and the IRC and related interest holders.

Regulatory Compliance: Compliance with local building codes, regulations, and permitting requirements is required and the responsibility of the Contractor. This includes, but is not limited to

- CSA A277 Procedure for certification of prefabricated buildings, modules, and panels
- CSA Z240MH Series manufactured homes
- National Building Code of Canada 2020 (with local modifications)
- National Fire Code of Canada 2017 (with local modifications)
- National Plumbing Code of Canada 2020
- Canadian Standards Association Standard C22.1:24, Canadian Electrical Code Part I, 26th Edition, Safety Standard for Electrical Installations

Scope of Work:

- Detailed design and engineering of housing units suitable for use in Inuvik, Northwest Territories:
  - Design workshops with Reimagine Architects and representatives from the IRC for design modifications to meet the needs of the community with up to four distinct housing variations
  - Compliance with local building codes, regulations, and environmental standards.
  - Obtaining development approvals from local officials
  - Fabrication and assembly of housing units off-site
  - Transportation of housing units to site
  - Utilities and infrastructure connections (water, sewage, electricity, etc.) to local utilidor
  - Installation and assembly of housing units on-site, including foundations
  - Operational training and commissioning of homes
- Homes are intended to be constructed by any variety of means, ranging from completely site built units to manufactured homes and any variation between the two methods.

Functional Program

At least two different configurations will be required to meet the requirements of the project with variations to suit site conditions and orientations anticipated within each configuration:

- Three-bedroom home and a four-bedroom homes with the associated spaces:
  - Living space including kitchen, dining and living room
  - Bedrooms to include a minimum of 1500mm of linear storage space or equivalent for each bedroom.
  - Kitchen spaces to include a minimum of 3600mm (12') of countertop space and associated upper and lower storage, as well as a standard electric range, refrigerator, dishwasher, two basin sink and storage space suitable for pantry items and cleaning equipment and products such as a vacuum cleaner, mop, broom and related materials.
  - Laundry space and linen storage accessible from the corridor.
  - Approximately 1000-1200 square feet of total area ($93m^2$-$112m^2$)

Technical Design Criteria

Building envelope performance specifications for an extreme cold environment must address the unique challenges posed by low temperatures, heavy snowfall, and high winds. All performance criteria are subject to the local and national codes governing the various aspects of the design. All testing data to satisfy technical specifications require third-party verification to the satisfaction of the Client Representative and will require submittals to confirm conformance. The following specifications outline the minimum performance requirements for the building system.

Above-ground Opaque Building Assemblies: High-performance insulation materials to achieve an effective U-Value to minimise heat transfer through the building envelope to exceed National Energy Code of Canada (NECB 2017) requirements by a minimum of 20%. This can be achieved through prescriptive or performance paths but must be demonstrated through documentation on the building assemblies or through an energy model conforming to the NECB verification standards. Ensure continuous insulation to limit thermal bridging within the walls, floors, and roof.

Continuity of Thermal Barrier: The design of the walls, floors, and all connections to other building components must demonstrate minimal thermal bridging and be designed to limit the continuity of thermal bridges where they occur in the course of construction. This will potentially include secondary layers of insulation to maintain insulation continuity in areas such as window sills and structural support of openings.

Window and Door Performance: High-performance windows and doors with the following characteristics:

- **Doors:**
  - Full door system U-values including frame and door leaf: 1.4 W/m^2K
  - Fully adjustable thresholds and hinges to allow for control over airtightness
- **Windows:**

- Full window system U-values including frame and glass: 0.95 W/m²K
- Solar Heat Gain Coefficient (SHGC): Minimum 0.40
- Frames: Thermally broken fibreglass or demonstrated thermal equivalent.
- Provide low-E coatings, and minimum triple pane windows to retain passive solar heat, reduce heat loss and improve thermal comfort.

Ensure windows and doors are properly sealed and insulated to prevent air leakage, drafts, and condensation. Provide insulated frames, thermal breaks, and weatherstripping to enhance energy efficiency and cold weather performance. Provide window-to-wall connection details showing continuity of thermal and vapour barriers durable to withstand transportation, where applicable.

Roof Design and Snow Management: Design roofs with sufficient slope and structural support to shed snow and prevent accumulation. Specify snow retention systems, such as snow guards or snow fences, to prevent sudden snow slides and protect building occupants and surroundings. Roofing materials to provide a minimum 25-year warranty.

Air Tightness and Moisture Management: Require an airtight building envelope to prevent cold air infiltration and heat loss, as well as condensation, frost accumulation, and moisture damage within the building envelope. Provide effective air and vapour barrier materials and installation techniques to minimise air leakage around windows, doors, penetrations, and joints. Conduct blower door tests to verify air tightness and identify areas requiring additional sealing, before shipment, where applicable. Ensure proper ventilation and moisture removal systems to maintain indoor air quality and prevent mold growth.

Structural Integrity: Design building envelope components, including walls, roofs, and foundations, to withstand heavy snow loads and high wind pressures. Design foundations to maintain permafrost conditions.

Performance Testing and Verification: Provide building envelope performance testing, including thermal imaging, infrared scans, and blower door tests, to verify compliance with specified performance criteria. Ensure construction quality assurance and on-site inspections to monitor installation practices and identify potential deficiencies. Provide and execute commissioning procedures to verify building envelope performance and functionality under extreme cold conditions before occupancy.

Indoor Air Quality and Materials: The proponent will be required to use materials which have not been shown to affect human health in their manufacture, use or disposal. Materials used within the space will be limited to those that are not identified in the Living Building Institutes 'Red List' (https://living-future.org/red-list) including commonly-used materials such as vinyl/PVC, adhesives and others. All proposed building materials will be submitted to the Consultant during the design process.

Exterior Cladding: Materials used must be suitable for the location's climate and terrain. All cladding materials are to be durable at extreme low temperatures and will be limited to those that are not identified in the Living Building Institutes 'Red List' (https://living-future.org/red-list). All cladding materials must be able to be repaired in all weather conditions using mechanical attachment systems wherever possible.

Mechanical and Electrical Systems: All heating, ventilation, plumbing, electrical and communications equipment to be identified, including connections to local infrastructure and available fuel and power sources.

Schedule:

The Proponent is to base the schedule on the following project milestones:

Proponent Selection	May 2024
Design and Engagement	June 2024
Detailed Design and Documentation	July-August 2024
Construction Start*	August 2024
Completion	June 2025

Should this project schedule need to be modified to meet the budget or logistical concerns of the project, the Proponent should clearly identify these and provide an alternative project schedule targeting the completion date.

Proposal Format

Proposal Submission

- Proposals must be submitted electronically to the contact below no later than the deadline on the cover of this RFP or modified through an addendum.
- Include all required documentation, drawings, specifications, and cost estimates as outlined in the RFP.

Mandatory Submission Requirements

Safety documentation per the Northwest Territories *Safety Act* and OHS Regulations, including:

- Draft Health and Safety Plan or example of documentation from a similar project within the last five (5) years for all work intended to occur on-site and Health and Safety plans for off-site manufacturing facilities.
- Demonstrate compliance with the Workers' Safety and Compensation Commission and either documentation demonstrating being registered and in good standing or ability to register with the Commission.

- Demonstrate compliance with the applicable health and safety and worker compensation board or commission of the place of manufacture and documentation demonstrating being registered and in good standing, if units or significant components are manufactured in a different location.

The IRC reserves the ability to request additional safety documentation at any time.

Technical Specifications (Max 4 Pages)

- Demonstrate compliance with the requirements of this RFP
- Demonstrate compliance with the requirements in the Technical Design Criteria
- Outline a logistical plan for transportation and installation of units to be assembled on-site.

Indicative Design (Max 4 Pages)

- Provide drawings, renderings, images or other supporting documentation to demonstrate an indicative design that is representative of the technical specifications, costs and intent of the project outlined in this RFP.
- Demonstrate the flexibility in the design to orient entries for alignments to the local roadways and minimise localised snow drifting around the building.
- Provide information on proposed systems to meet a high-performance energy use standard including heat recovery, environmental protection of systems, minimal building penetrations and other elements to demonstrate efficient building systems with minimal impact on the building envelope integrity.

Project Timeline (Max 2 Pages)

- Provide a detailed schedule outlining key milestones from design and fabrication to installation and completion.
- Include timeframes for transportation, assembly, and commissioning of housing units.

Budget and Cost Proposal (Max 4 Pages)

- Submit a comprehensive cost proposal detailing all expenses associated with the project, including design, fabrication, transportation, installation, and any additional costs
- Provide a breakdown of costs for each phase of the project - construction, manufacture, transportation, installation, project closeout - as applicable to the method of construction.
- Costs must be shown per unit, however any reductions in cost due to cost efficiencies through providing all potential units should be noted in the cost breakdown.

Qualifications and Experience (Max 3 Pages)

- Provide information on the company's experience in designing and constructing housing projects in similarly remote locations, particularly challenging environments or locations with similar logistical concerns.
- Include details of relevant projects completed, references, and certifications.

Quality Assurance and Warranty (Max 2 Pages + Appendices)

- Outline quality control measures to ensure the integrity and longevity of the housing units.
- Specify any warranties or guarantees offered for materials and workmanship.

Evaluation

- Proposals will be evaluated based on factors such as cost, technical feasibility, design innovation, experience, and adherence to project timelines.
- The selection committee reserves the right to reject any or all proposals and to negotiate terms with selected bidders.
- Preference will be given to Inuvialuit owned businesses and/or proponents and proponents who can clearly demonstrate and agree that employment opportunities will be extended to beneficiaries of the Inuvialuit Final Agreement ("IFA"). This includes employment opportunities in the construction of the homes under this Agreement and shall use its commercially reasonable efforts to contract, as agent on behalf of the IRC, for unskilled and skilled labour in construction with those persons or businesses on the Inuvialuit Business List provided by Owner to Manager (in each case subject to Legal Requirements). This requirement to demonstrate benefits to the IRC beneficiaries will include construction activities conducted off-site. This can be demonstrated as a percentage of total project cost and/or as a dollar value of the work performed.

Questions and Clarifications

- All questions and requests for clarifications regarding the RFP must be submitted in writing to the contact listed below by 7 May 2024.
- Responses to inquiries will be provided to all bidders in writing.

Contractual Terms:

- The successful bidder will be required to enter into a formal contract with the Inuvialuit Regional Corporation outlining the terms and conditions of the project.
- Contract negotiations will commence following the selection of the preferred bidder.

Confidentiality:

- All information provided in response to this RFP is confidential and may not be disclosed to third parties without prior written consent.

Contact Information:

For inquiries and submission of proposals, please contact:

Kevin Mullin & Brendan Webb
Inuvialuit Regional Commission % Reimagine Architects
kmullin@reimagine.ca & bwebb@reimagine.ca

Appendices:

- Community Site Plan

This RFP is issued for the purpose of soliciting competitive proposals and does not constitute a commitment on the part of the Inuvialuit Regional Corporation to proceed with the project.