



**Dangisharan Rural Municipality**

**Office of the Rural Municipal Executive**

**Hekuli, Dang**

**Lumbini Province, Nepal.**

**TOR (Term of Reference)**

**Procurement of Consulting Services**

**For**

**"Detail Review Report of Constructed Cold Store Building at  
Dangisharan Rural Municipality, Dang"**

**April 2026**

## 1. Introduction / Background

Dangisharan Rural Municipality, Office of Rural Municipal Executive, Hekuli, Dang requires specialized consulting services to review an existing cold storage facility. The building has experienced a structural upliftment problem, which has affected the integrity of the cold store structure. The assignment is to diagnose the root cause of this issue, propose and design corrective measures, and subsequently complete the HVAC and electrical design, cost estimation, and detailed drawings for the facility.

## 2. Objectives

- Assess the **current condition of the cold storage structure**
- Identify causes of **upliftment or structural distress**
- Recommend **corrective and strengthening measures**
- Provide **complete HVAC system design**
- Provide **electrical system design and load analysis**
- Prepare **cost estimates, technical drawings, and specifications**

## 3. Scope of Work

### 3.1. Structural Review & Upliftment Problem Analysis

- Review existing **design documents and drawings** (Available in Municipal Office)
- Conduct **site inspection and structural evaluation**
- Identify specific causes of building upliftment. This involves checking of
  - Floor/soil heaving (frost heave, poor compaction, drainage issues)
  - wind uplift forces on the roof structure
  - insulation failure leading to ground freezing.
- Perform necessary **tests** (if required), such as:
  - Soil investigation
  - Material strength testing
- Provide a **diagnostic report** with findings



  
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### 3.2. Design of Corrective Measures

- Based on the findings of the structural review, the Consultant shall develop detailed engineering solutions to rectify the upliftment problem.

### 3.3. HVAC & Refrigeration System Design

The Consultant shall provide a complete HVAC and refrigeration system design for the cold store.

- Cooling Load Calculation: Perform detailed cooling load calculations based on the facility's volume, insulation properties, product type, and ambient conditions.
- Refrigeration System Selection: Design the refrigeration plant, including selection of compressors, condensers, evaporators, and appropriate refrigerants (considering environmental regulations).
- Air Distribution System: Design the ductwork, air handling units (AHUs), or evaporator layout to ensure uniform temperature distribution.
- Code Compliance: Ensure the design complies with standards such as the IOR Cold Store Code of Practice and local safety regulations.

### 3.4. Electrical System Design

The Consultant shall design a robust and safe electrical system for the entire facility.

- Power Supply & Distribution: Design the main power supply, panel boards, and sub-distribution to all mechanical equipment, lighting, and auxiliary systems.
- Material Selection: Specify electrical materials suitable for low-temperature environments, including IP65/IP66 rated vapor-tight LED lighting, cold-rated wiring, and weatherproof switches/receptacles.
- Lighting Layout: Prepare a lighting layout plan with lux level calculations as per industry standards (e.g., 30–50 foot-candles for case picking aisles, 5–10 foot-candles for bulk pallet storage).
- Backup Power & Control Systems: Design an emergency backup power system (generator/UPS) and specify advanced control and monitoring systems for the refrigeration plant.
- Safety Systems: Include design for fire detection, alarm systems, and emergency lighting.



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### 3.5. Drawings & Documentation

The Consultant shall produce a complete set of professional drawings and documents for construction and tendering.

- Drawings: Prepare detailed engineering drawings including:
  - Structural remedial drawings.
  - HVAC layout and schematic drawings.
  - Electrical layout, single-line diagrams, and lighting layout drawings.
- Technical Specifications: Provide detailed technical specifications for all materials and workmanship.
- Tender Documents: Compile a complete tender package, including the drawings, BOQ, specifications, and draft contract conditions, to facilitate the procurement of a construction contractor.

### 3.6. Cost Estimation (Detailed Estimate)

The Consultant shall prepare a comprehensive cost estimate for the entire project.

- Detailed Estimate: Provide a line-item cost estimate covering all structural remedial works, HVAC equipment and installation, electrical works, and associated civil/architectural finishes.
- Rate Analysis: Include market rates for materials, labour, and equipment.
- Total Project Cost: Summarize the total estimated project cost, including contingencies and escalation provisions.

## 4. Deliverables

The Consultant shall submit the following deliverables in both hard copy and editable digital format (e.g., .DWG, .PDF, .XLS):

- i. Inception Report: Work plan and methodology within 1 days of contract signing.
- ii. Structural Assessment & Root Cause Analysis Report: Within 3 days.
- iii. Detailed Engineering Drawings (Structural, HVAC, Electrical): Within 5 days.
- iv. Bill of Quantities (BOQ) & Cost Estimate: Within 6 days.
- v. Final Comprehensive Report & Tender Documents: Within 7 days



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## 5. Consultant's Team Composition

The consulting firm must demonstrate the following:

- Firm Experience: Proven track record in structural engineering, particularly in diagnosing and rectifying failures in cold storage or industrial buildings.
- Team Composition: The team shall include at a minimum:
  - Structural Engineer: Registered professional with expertise in frost heave and foundation issues.
  - Civil Engineer.
  - Geo-technical Engineer
  - Hydrologist

## 6. Timeline & Duration

The total duration for the completion of the assignment is 7 calendar days from the date of contract commencement.

## 7. Reporting & Coordination

- The Consultant will report to the designated Project Manager (Client's representative).
- Weekly progress meetings shall be held to review progress, address issues, and ensure alignment with project objectives.

## 8. Budget & Payment Schedule

The total budget for this consulting service is NRs.1,71,700.00/- Only (Without VAT). On the basis of budget consultant should propose their own rate for the consulting work. Payments shall be linked to the submission and approval of key deliverables.



  
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# Financial Proposal Submission Form

[Letterhead of Consultant in case of a Firm]

To: [Name and address of Client]

We, the undersigned, offer to provide the consulting services for [Title of consulting services] in accordance with your Request for Proposal dated [Date] and our Proposal. Our attached Financial Proposal is for the sum of [Amount in words and figures]. This amount is inclusive of all the applicable local taxes (excluding Value Added Tax).

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e., [Date].

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

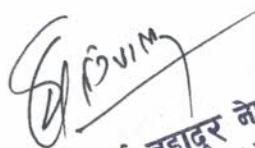
Authorized Signature:

Name and Title of Signatory:

Name of Consultant:

Address:



  
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