Request for Quotations

Item	**Solar Based Heating System/Solar Thermal System**
Project Name	**BUILDING Energy Efficiency in Nepal (BEEN)**
Funding Agency	**European Union under the SWITCH-Asia Grants Programme**
RFQ Calling Office	**MinErgy Private Limited**
Address	**Dakshinkali Chowk, Lagankhel-5, Lalitpur**

Request for Quotations- Solar Based Heating System/Solar Thermal System

1. Company Description

MinErgy Pvt Ltd (MinErgy) is a Nepal based consulting firm in operation since 2008. MinErgy is dedicated to improving clean energy access and energy efficiency at households and industries. Our core focuses are: i) Renewable Energy and Climate Change; ii) Brick and Built Environment and, iii) Water, Sanitation and Hygiene.

2. Project Description and Objective

University of Innsbruck (UIBK), Austria in partnership with MinErgy Pvt Ltd Nepal (MinErgy), Greentech Knowledge Solutions Pvt Ltd India and Asociación Española de Normalización (UNE) Spain, under the funding support from European Union's Switch Asia program, is implementing the Building Energy Efficiency in Nepal (BEEN) Project. BEEN aims to achieve low-carbon and resource-efficiency in the building sector by promoting climate-responsive building design and retrofitting, use of energy efficient space heating and cooling technologies, resource-efficient building materials and integration of renewable energy sources. BEEN is currently working in 60 local governments of Gandaki, Bagmati and Lumbini provinces.

With the aim of promoting energy efficiency and creating a comfortable working environment, BEEN is collaborating with Gharapjhong Rural Municipality of Mustang to retrofit one of its spaces. MinErgy is in the process of purchasing Solar Based Heating System/Solar Thermal System which is the proposed the heating system for the proposed retrofitted room.

3. Space and System Details

I. Space Details

The proposed Solar Thermal System, which is water/glycol based is designed to heat a 25m² room located on the ground floor, which is openable through a door to the corridor. The flat plate collector is planned to be installed on the roof of the building, with pipes circulating heated fluid down to the ground floor. The thermal system will then be connected to radiant pipes, effectively heating both the floor and ceiling.

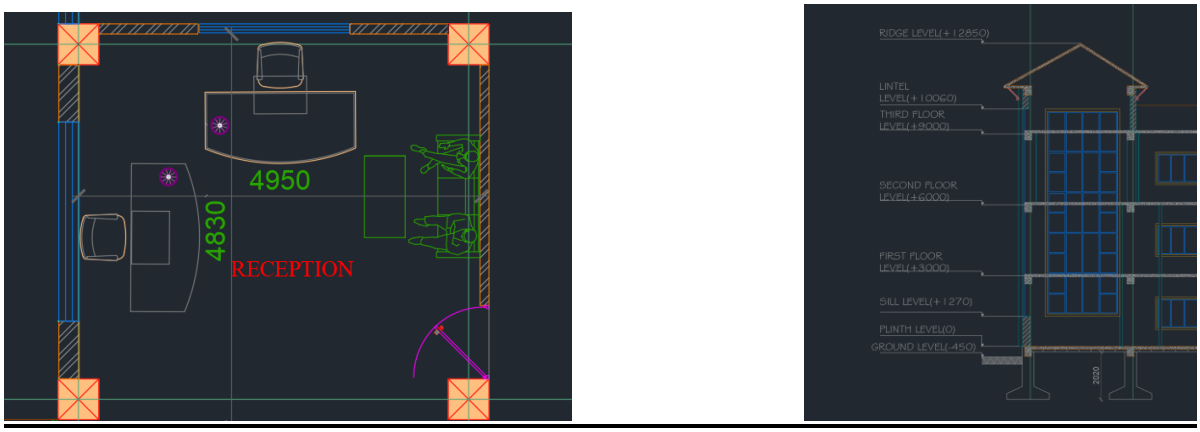


Figure 1 Space Details

II. System Details

A. Solar Thermal System Details

- Closed, pressurized System

- 7-8m² net area of collectors,
- Dimensions of pipes acc. to system size (max 1m/s, insulation of pipes with same as diameter
- 300-500l tank volume, 2 pairs of in/outlet (see graph, 2 top, 2 bottom), electric heater as backup (upper third)
- Solar pump station acc. to national standards with short circuit for pre heating the solar loop, pump, mano-, thermometer, safety devices, emptying, filling, etc.
- Pump group for heating with mechanical and mixing valve to set temp (temp. protection at 45°C), pump, metering devices, etc.
- Expansion vessel for entire system volume (safety valve at 6bar)
- Controller: solar field (sensors: temp collector, temp tank) & heating system (temp. room), if possible, monitoring of power (mass flow rates/dT for solar yield and heating system)
- Inclusion of safety measure to prevent overheated ceiling/floor heating systems (max. 45°C)

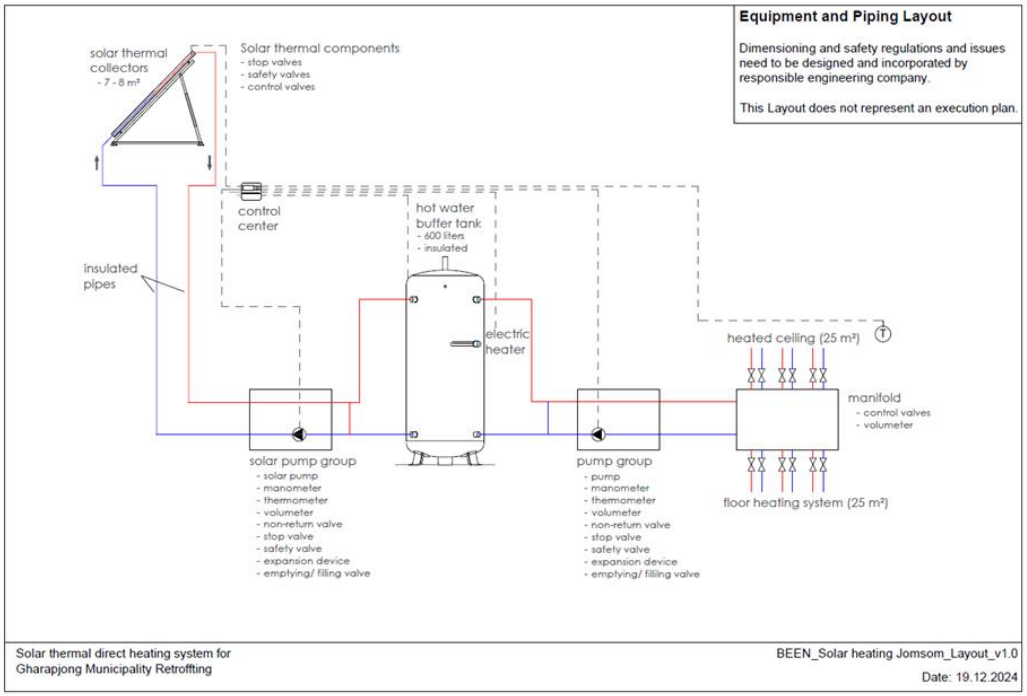
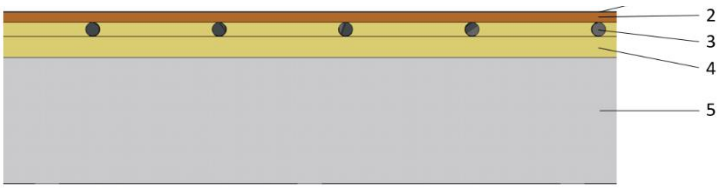


Figure 2 Schematic Diagram for Solar Thermal System (incl. solar, storage, heating, etc.) entirely filled with water/glycol (-20°C)

B. Floor Heating System

- 25m² heating system incl. insulation (5-6cm) and floor under construction
- Around 80-100W/m² heating power (10-15cm pipe distance)
- Final floor material to be decided
- Manifold incl. control values for flow rates (combined with ceiling or separated)
- Piping with 3-6 circuits, according pressure drop / diameter of pipes
- Pipes/system also filled with water/glycol

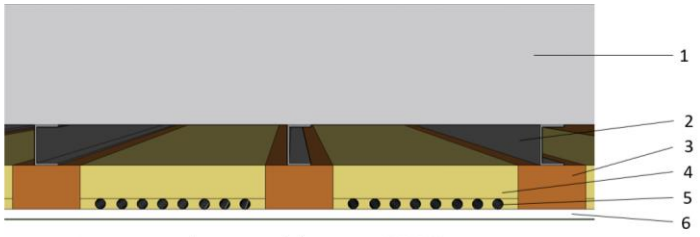


1	carpet optional	
2	parquet or other equalizing layer	15mm
3	pipes with insulation	20mm
4	insulation	30mm
5	armored concrete slab	150-200mm

Figure 3 Conceptual diagram for floor heating System (For Demonstration only)

C. Heated ceiling system

- 25m² heating system incl. insulation (5-6cm) and suspended ceiling construction
- Around 40-60W/m² heating power (10-15cm pipe distance)
- Final ceiling material to be decided
- Manifold incl. control values for flow rates (combined with ceiling or separated)
- Piping with 3-6 circuits, according pressure drop / diameter of pipes
- Pipes/system also filled with water/glycol



1	armored concrete slab	150-200mm
2	metal angle	50-100mm
3	wood molding	100x65mm
4	insulation	50mm
5	pipes with insulation	15mm
6	plasterboard or equal	15mm

Figure 4 Conceptual diagram for ceiling heating System (For Demonstration only)

4. Delivery Details

a. The product shall be delivered to and installed at the municipality office at Jomsom, Mustang.
b. Delivery should be made by the 3rd week of March 2025.

5. Evaluation of Quotations

Quotations will be evaluated on the basis of competitive pricing, compliance with specifications and delivery timeline.

6. Instructions for submission of quotes

a. The firm/company must submit the following documents for eligibility.
   - Firm/ company registration certificate
   - Copy of PAN/VAT registration certificate

- Tax clearance certificate of FY 2080-81
- Quotation with detailed pricing (unit cost, applicable taxes, delivery and installation cost) product specifications, delivery timeline, warranty clauses, payment terms.

b. The offer should be valid for the period of 60 days from the date of submission.

c. The quotations should be submitted in Nepali Rupees.

d. Applicants should ensure that quotations are devoid of calculation errors.

e. Applications with the documents and price quote should be submitted to **info@beenproject.org** no later than **4th March 2025.** Due to the urgency of this procurement, quotations will be reviewed on a rolling basis and purchase order may be placed before the final deadline, if suitable offer is received.