

Terms of Reference (ToR)

# Design and Construction of Demo Building using Cement Bamboo Frame Technology (Professional Service Contract Agreement)

**Project:** Impact – 26 Phase III Project

**Duration:** April 2026 – June 2026

**Date of Publication:** 13 March 2026

**Deadline:** 29 March 2026

<b>Nature of assignment</b>	Design and Construction of Demo building using Cement Bamboo Frame Technology
<b>Duration</b>	April 2026 – June 2026
<b>Location</b>	Saptari, Siraha and Dhanusha
<b>Published Date</b>	13 March 2026
<b>End date of application submission</b>	29 March 2026

## 1. About Habitat for Humanity Nepal

Habitat for Humanity Nepal is an international non-governmental organization that is driven by the vision that everyone deserves a decent place to live. Our partnership with communities, governments, private sector including entrepreneurs and financial institutions, youth networks, and academia, allows us to serve low-income families by improving habitability, tenure security, access to basic services and affordability of housing solutions. Our integrated programming serves to benefit 2.7 million people over the next three years, through direct and incremental construction, affordable housing finance, affordable construction technologies and services, and evidence-based policy advocacy for housing adequacy as a fundamental right. Responding to the root causes of inequity in the housing ecosystem, Habitat Nepal leads with a systems-strengthening approach, facilitating development of inclusive housing markets, removing key policy barriers and empowering communities through people-centered approaches, for a stronger and more equitable housing ecosystem.

## 2. Background

Cement Bamboo frame technology (CBFT) is a disaster resilient and green building technology that uses bamboo as the only structural element. It is a technology that was developed by the HILTI Foundation and BASE Bahay Foundation to build stronger houses in a shorter period.

The design and construction assignment is for a single story CBFT demonstration building. It will be constructed in the different location of the Siraha, Saptari and Dhanusha district to showcase the CBFT building in the communities. The major purpose of this project is to demonstrate the technology's potential, versatility, and scalability for replication.

## 3. Objective

The primary objective of these professional services is to:

- Design and construct the demonstration building in different location of Siraha, Saptari and Dhanusha using CBFT.
- The primary objective of these professional services is to design and construct Cement Bamboo Frame Technology (CBFT) demonstration facilities across selected locations in Siraha, Saptari, and Dhanusha to showcase evidence-based, disaster-resilient, and environmentally sustainable construction solutions. This initiative aims to strengthen local capacity, promote community-level adoption of CBFT, and support broader sectoral replication through tangible, field-based demonstration of the technology's effectiveness and scalability.

#### 4. Scope of Work

The Scope of the survey contains the following key components but not limited to:

1. Prepare the conceptual plan of the building using Cement Bamboo Frame Technology (CBFT) with site analysis considering the climatic condition, natural ventilation, and context-appropriate design considerations (socio-cultural adequacy)
2. Review the conceptual design of past projects, analyze design and structural documents, , including conceptual designs, architectural drawings, and structural documentation of Habitat Nepal's Bamboo projects for better understanding of CBFT technology.
3. Conduct site inspections to identify site conditions and recommend potential site-specific modifications.
4. Finalize the Architectural Design, drawing, finishing, structural design drawing in consultation with Habitat Nepal's technical team to ensure compliance with organizational standards and local building requirements.
5. Preparation of the detail BOQ and estimates for the training hall using cement frame bamboo technology., ensuring accuracy, transparency, and alignment with project specifications.
6. Provide detailed design and structural report as well as analysis file (dwg, skp, SAP2000 **.s2k** or the source file of the software used in analysis) and working drawings for construction.
7. Execute the construction of the demonstration Training Hall as per Manual for Design of Bamboo Structure in Nepal 2025 using prefabricated bamboo panels, in coordination with the habitat for humanity and District Forest office Dhanusa.

Engage and consult with selected Bamboo Treatment Centers, ensuring the supply of quality-treated bamboo materials and coordination with trained bamboo masons throughout the construction process.

#### 5. Methodology

The contractor may use finite element analysis software tools like SAP2000, or manual calculation for structural analysis of the proposed structure. The approach should adhere to accepted engineering standards and best practices related to bamboo construction and sustainable building design. The contractor should submit a workplan and work schedule for their service within the allocated timeline from conceptual to handover.

#### 6. Key Deliverables

The contractor will deliver both a hard and electronic copy of the following documents:

1. Analysis source file (e.g. **.s2k** of SAP 2000).
2. Architectural drawings
3. Structural Analysis Report, structural Drawing.
4. Working/construction Drawings – Floor plan, Roofing details (Rafter and purlin details), Panel details, Opening details, connections, and other details in pdf as well as in **.dwg** format. Moreover, if required, support the drawings with 3D views and **.skp** file.
5. A presentation summarizing the architectural and structural design, working drawings, implementation strategy.
6. A workplan and work schedule mentioning all the activities within the allocated timeframe.

#### 7. Workplan and indicative timeline

The Design and construction of the demo Bamboo training wall should be completed in 4 month from the contract award date. Below is the indicative timeline.

Deliverable	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15
EOI publication and contract award	■	■													
Architectural and Structural design approved and finalized			■	■	■										
Construction of the demo training hall completion				■	■	■	■	■	■	■	■	■	■		
Monitoring from Government				■	■	■	■	■	■	■	■	■	■	■	
Handover of the demo unit															■

Necessary meetings and consultations with Habitat Nepal and stakeholders will be conducted within the duration as per requirement.

### 8. Qualifications, Skills, and Experience

To complete the assignment successfully, multidisciplinary skill is needed; therefore, the firm and individual who will apply for the assignment will have the following knowledge, skills, and work experience requirements.

1. Team members should have a Degree in Architecture and Structural/Civil Engineering and value added with experience in Bamboo structural analysis (particularly Cement Bamboo Frame Technology) and construction.
2. Knowledge of building codes and structural safety standards.
3. Field investigation and on-site analysis expertise.
4. Knowledge of vernacular architecture of the terai region for architectural drawing modifications and working drawings.
5. To ensure quality assurance, technical compliance, and timely completion of the CBFT Demonstration Training Hall, applicants must demonstrate a formal collaboration or Joint Venture (JV)<sup>1</sup> arrangement between:
  - I. A recognized **Bamboo Treatment Center (BTC)** responsible for the supply and quality control of treated bamboo materials; and
  - II. An experienced **builder/contractor** with proven experience in construction.
6. Contractors having prior experience in construction using bamboo as structural components except for scaffolding will be preferred.

The JV or collaboration agreement must clearly define roles and responsibilities, including material supply, quality standards, construction execution, and supervision.

### 9. Evaluation Criteria and Budget

60% of the weightage is assigned to the technical proposal and 40% to the financial proposal. Technical proposals securing less than 40 out of the total possible 60 will be disqualified. The proposal that scores the highest based on the sum of technical and financial proposal scores will be selected.

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<sup>1</sup> Priority will be given to the bidder forming Joint Venture with the treatment center.

S.N.	Summary of proposal evaluation	Score weightage (%)
1	Technical Evaluation Criteria <sup>2</sup>	70%
2	Financial Evaluation Criteria	30%
	<b>TOTAL SCROE</b>	<b>100%</b>

Proponents shall submit in the Technical Proposal all information and support documentation required to perform a complete evaluation of the proposal according to the criteria described in the table below:

SN	Criteria	Score
<b>1</b>	<b>Technical approach</b>	
1.1	Area of expertise, team composition, and the ability to provide the whole set of services required.	10 points
1.2	Key personnel have sufficient knowledge and experience to conduct the nature of the assignment	10 points
1.3	The firm/team have successfully conducted similar work in the past; samples of reference can attest to this	5 points
1.4	The proposal reflects the clear understanding of the assignment and is clearly articulated	10 points
1.5	The proposed methodology is clear and aligned with the intent of the assignment. (Including the JV with the Bamboo Treatment Center)	20 points
1.6	The proposed methods integrate a quality management/control system	10 points
1.7	The proposed timeline is feasible and consistent in relation to the proposed method/s, activities, output and requirements of the assignment	5 points
	<b>TOTAL SCORE IN TECHNICAL PROPOSAL</b>	<b>70 points</b>
<b>2</b>	<b>TOTAL SCORE IN FINANCIAL PROPOSAL</b>	<b>30 points</b>

The financial proposal should include a detailed breakdown of all listed tasks and deliverables. The maximum number of points will be allotted to the lowest price proposal that is opened and compared among those invited bidders who obtain the **threshold points (50 points)** in the evaluation of the technical component. All other financial proposals will receive points inversely proportion to the lowest price, e.g.

$$\text{Score for Proposal A} = \frac{\text{Max Score for financial proposal} \times \text{Price of the lowest priced proposal}}{\text{Price of the proposal A}}$$

The total budget allocated for this assignment is NPR 1,200,000.00 (in words: One Million Two Hundred Thousand Nepali Rupees Only)

## 10. Coordination and supervision

Under the supervision of Technical Coordinator, the contractor will work closely with Habitat Nepal's Impact 2026-III Project Manager, MSD Coordinator, Technical Manager and Architect. The

<sup>2</sup> If necessary, Habitat Nepal will call all bidders for presentations on their technical approaches.

contractors will be required to undergo a session on Habitat's Safeguarding policies as part of the onboarding process.

### 11. Support from Habitat Nepal

- Provide all requirements with land details for the construction of the demonstration building
- Coordinate with required stakeholders at various project stages.
- Facilitate contractors' access to all necessary information

### 12. Mode of Payment

The assignment fee will be paid in three installments in the following manner:

**1st Installment:** 15% advance for starting construction after winning the proposal with details of inception report.

**2nd Installment:** 55% after completion of 70% of construction work and after verification and approval from the technical manager.

**3rd Installment:** 25% will be released after completion of the construction work and verification and approval of the construction work by Habitat Nepal technical person.

5% of the fund will be released after completion of the defect liability period, which is one year after the completion and approval of the construction work. Contractor is liable for maintenance and repair during this period.

### 13. Ethical Standards

In accordance with its foundational mission principles, Habitat for Humanity Nepal is committed to the highest ethical standards and opposes all forms of discrimination, exploitation, and abuse. We intend to create and maintain a work and living environment that is safe, productive, and respectful for our colleagues and for all we serve. We require that all staff and representatives (consultants, contractors, vendors/suppliers, interns, volunteers, agents, and implementing partner organizations) take seriously their ethical responsibilities to Safeguarding (Child Protection, Prevention of Sexual Exploitation Harassment, and Abuse) our intended beneficiaries, their communities (especially children), and all those with whom we work. Abiding with the organization, the consultancy service has responsibilities to maintain an environment that prevents harassment, sexual exploitation, and abuse, safeguards the rights.

### 14. Copyright

Copyright for the documents will remain with Habitat Nepal National Office and includes the right to distribute the material or parts of it to the Local Government and other partners in Nepal and abroad.

### 15. Application Requirements

- A Technical Proposal outlining the understanding of the TOR and work schedule, including at minimum the following information:
  - Detailed work plan and methodology.
  - Key deliverables.
  - A capability statement showing how the applicant meets the required qualifications and competencies, including one relevant sample of previous work.
  - Two reference details from former clients.
- A copy of the organization/institution registration certificate.

- A copy of the latest tax clearance certificate.
- VAT registration document.
- Copies of the Curriculum Vitae (CV) of all key team members as an annex. The team should include an experienced Team Leader along with Experts and other members as required.
- The entire proposal should be a maximum of five pages, including the financial proposal.
- Confidentiality of Information: All documents and data collected will be treated as confidential and used solely to facilitate analysis.
- 5% bid security needs to be submitted before the release of the advance.
- **Signed and stamped copy of the financial proposal in a separate sealed envelope/email** with details of all relevant costs including but not limited to fees, travel, transport, accommodation and all applicable taxes. The sample format for the financial proposal is presented below. Additional headings can be included as per the need.

S.N.	Particular	Quantity	Day	Rate	Amount	Remarks
A	Contractor: Design of the demonstration training Hall					
1						
2						
B	Materials Cost					
1	.....					
C	Equipment Cost					
1						
2						
D	Other Expenses					
1						
2						
E	Overhead cost					
F	Tax (VAT)					
	TOTAL Budget (A+B+C+D+E+F)					

## 16. Instructions to Submit the Proposal

Interested national reputed and qualified organizations/firms should submit their technical and financial proposal including testimonials/certificates in the form of hardcopies in a separate sealed/closed envelope.

A virtual session to address queries and provide clarifications will be conducted for interested bidders on 18 March 2026, from 10:30 AM to 11:30 AM. Interested bidders are invited to join using the link below:

[Q&A Session; CBFT Demo House Design and Construction | Meeting-Join | Microsoft Teams](#)

Please send the sealed proposal to administration department at Habitat for Humanity Nepal, House No. 126, New Colony Marg, Dhobighat, Lalitpur, Nepal. Contact: +977 1 5421182, 5454976

For any queries contact the following email address [info@habitatnepal.org](mailto:info@habitatnepal.org)

**Application deadline: 29 March 2026**



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