



NEPAL

Demonstration Unit

BUILDING WITH CONFINED STONE WALLS



Context

The department of Architecture of the Tribhuvan University - Institute of Engineering trains every year more than 130 students in the field of construction. After the earthquake of 2015, the university strengthened its curriculum on earthquake-resistant technology and allocated a part of its land for the demonstration of earthquake resistant prototypes in order to inspire students and professionals.

Architecture&Développement took part in this process and built a 6,60m by 4,95m (21,18 sq.m of usable ground space) demonstration house, inspired by traditional nepalese rural habitat.

The confined stone walls rises 2,5m above the ground. The upper attic floor is build with a lighter wooden structure, traditionally used as a storage for the crops (19,36 sq.m). The mud plaster, while providing a protection for the wire mesh, regulates the thermal confort inside the building.

The demonstration house will be used by the university as a students association's office. The CSW model demonstrates an efficient low-cost, low-tech, and safe solution for self-built reconstruction in rural Nepal with local materials.

Main Goals

- Promote sustainable solutions for a safe and adapted reconstruction in rural areas
- Help to develop and diffuse the CSW technology in Nepal by building a demonstration unit.
- Inform and create awareness among architecture and engineering students on alternative technologies
- Evaluate the capacity of this technology in Nepal in terms of social-economic reality in a context of reconstruction
- Train a team of labors to the CSW technology



Picture: Demonstration Unit - Pulchowk Engineering campus, Kathmandu, Nepal ©A&D

PROJECT CARD

April 2017

Intervention Type

- Research and Development
- Reconstruction post-earthquake in Nepal
- Construction of a demonstration unit

Operational Mode

- Construction of a demonstration Unit in Pulchowk Engineering Campus
- Training a team of workers on CSW construction technic
- Create a manual of construction
- Compression, in-plane and out-plane resistance test
- Building communitie centers in Dolakha district using the same technology

Key Numbers

- **229** sq.ft of living space on ground floor and **210** sq.ft of attic floor
- **1695** cu.ft of stones and **120** cu.ft of wood
- **1860** ru.ft of wire mesh equivalent to **3347** sq.ft of wire mesh
- **123** cages folded and assembled
- **3** days of work for **5** labors / row

A&D Staff

- Ludovic JONARD, Project Director, Architect
- Jérôme SKINAZI, Project Manager
- Patricia OCANA ALCOBER, Architect
- Louis GEISWILLER, Site supervisor
- Rahul PRADHAN, Architect

Project partners



ENGAR CONSULTANTS



TRIBHUVAN UNIVERSITY

Financing partners

