



H E A L T H A B I T A T
environmental health & design



Rotary Australia World Community Service Ltd
Nepal Village Development Project
Project number 66-2007 / 08



Rotary HH Nepal earthquake recovery – a summary of the actions, May 2015

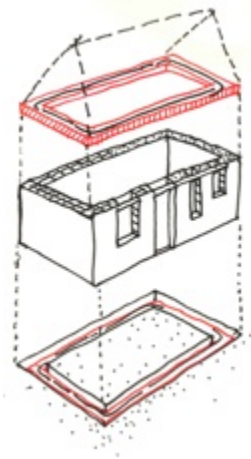
Following site visits to the three Villages that participated in the Nepal Village Sanitation Program and meetings with Village committee chairs, construction team members and families, Healthabitat and Rotary in partnership, and representing the donors to the earthquake recovery in Nepal, provide this report on the works done to assist the villagers.

The team also visited the current sanitation/dental project site at Shree Jalapadevi School in Bahunepati, where some immediate assistance was provided.



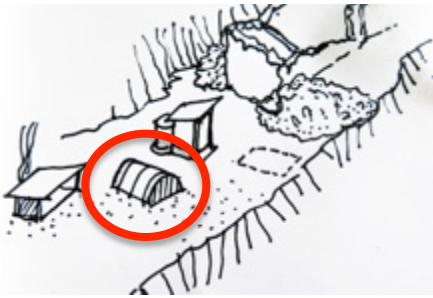
Immediate action

- **Shelter for families** before the wet season – the June, July monsoon rains.
- **Restore sanitation** – local water collection, storage and supply and the safe disposal of human waste.
- Building places for families to **store, prepare and cook food**.
- **Supplying personal health items** – bucket, jug, towels, soap, toothbrush and paste, food preparation items, mosquito nets and bed sheets.



Action for the long term

- **Demolition** of damaged houses, **clearing** of sites, **re-using** materials and **preparing** for rebuilding after the wet season.
- Providing families with **technical and financial support** to build earthquake resistant homes.



Safety: Shelter for families before the wet season

Temporary shelters for the wet season (June – July) in one village use a simple vaulted structure covered in corrugated iron (CI) sheet. Wire hold down fastening allows for re-use of the sheet when rebuilding the permanent house after the wet times. Each family uses local and salvaged materials to enclose each end.

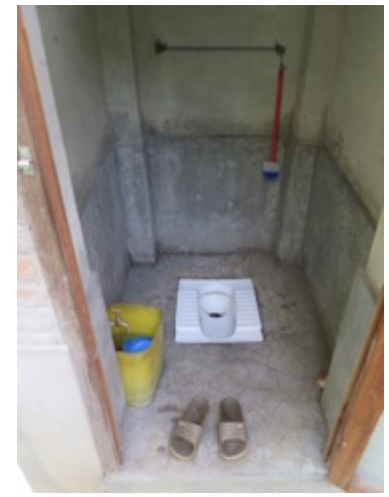
All the shelters are being built by the villagers with the support and materials supplied by a local Nepali NGO.

HH and Rotary are supplying 90 bundles of CI sheets to families in the other 2 villages, to build safe shelters.





Photos show minor damage to toilets caused by collapsing buildings. Most toilets were undamaged and are working well. No toilets were destroyed.



Restore sanitation – local water collection, storage and supply and the safe disposal of human waste.

Of the 133 toilets previously built in the 3 villages participating in the Sanitation Program, 50 toilet buildings tested showed;

- 3 need roof sheet repair (no structural damage)
- 16 need diverter valves checked (rock damage)
- 5 need tanks, tank lids or connections (to be repaired)
- 15 need taps (in side and outside) checked
- 1 needs render repaired

Rotary / HH will ensure any damage to toilets will be repaired.

Biogas and septic tanks were harder to assess due to fallen rubble but all septic tanks visible had lids intact and many of the biogas systems (where kitchens were not demolished) were still working.

The rainwater tank, diverter valves, working toilets and waste treatment systems will prove an invaluable asset to the village families during the wet season.



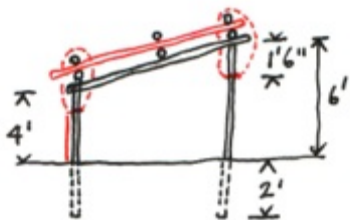
Building places for families to **store, prepare and cook food – temporary cooking shelter**

The temporary cooking shelters take the load off the main emergency shelters and dedicate an area for food storage, preparation and cooking. This will reduce the risk of fire and injury to children.

The shelter is made of locally available materials and supplied corrugated iron sheet that can be reused in the permanent house re-building.

A metal wood-fuelled stove, designed by engineering students at the local Kathmandu University, was tested by villagers and is now being produced to install into the shelters to reduce the risk of fire and improve cooking efficiency.

Rotary / HH are providing corrugated metal sheets, wire, tools, skilled local labour and the cooking stoves and the village is providing other materials and additional labour as needed.





Personal health items

Villagers lost many possessions during the quakes. Women have been using scraps of plywood for chopping and preparing food, a risky practice due to the chemicals found in plywood. The mosquitoes have already arrived and will increase once the rains start.

They requested some basic items to help with washing and hygiene generally, preparing food and safe sleeping. Each household, a total of 180, was supplied with a kit containing:

- plastic bucket
- plastic jug
- soap
- 2 toothbrushes
- toothpaste
- 2 towels
- chopping board
- cutting knife
- 2 large mosquito nets
- 2 bedsheets

The kits were assembled and distributed by the villagers, with a record kept of the families who received them.

These packs will help to reduce the risk of infections and diseases during the warm and wet months of the monsoon.



Safety - demolition of damaged houses, clearing of sites, reusing materials and preparing for rebuilding after the wet season.

Existing earthquake damaged or demolished houses have many materials that can be salvaged. Poor villagers will not be able to afford many new materials and will not be able to dispose of existing materials.

Land area is limited and essential for animals and crops.

Local villagers realise the value of the material and are already stockpiling material from the demolished houses for re-use.

Steep land makes building in the wet season impossible, but site clearing and the stock piling of materials such as stone, windows, doors and timber beams can commence.



Safety – Providing families with **technical and financial support** to build earthquake resistant homes.

Existing earthquake damaged or demolished houses leave many materials able to be salvaged and re-used locally.

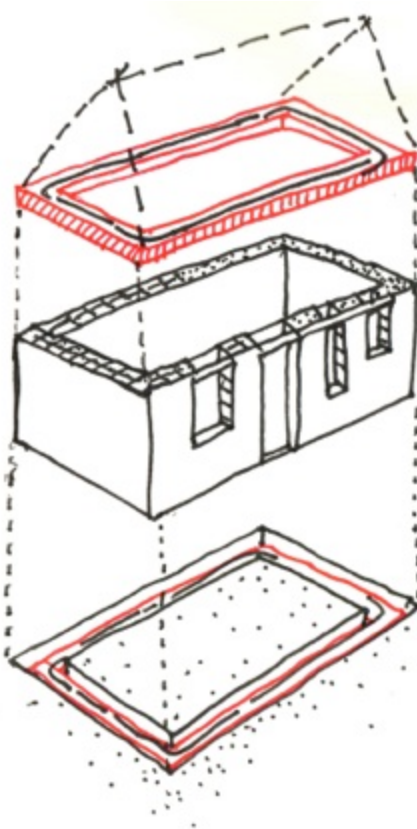
Sites can be cleared during the wet season.

Incentives and technical* help to rebuild key parts of the house to ensure it is earthquake resistant means that villagers can;

- decide the size and design of the house
- Build reusing existing materials
- agree to build key elements better and receive reimbursement incentives for better construction. The elements are noted on the drawing left.

This approach will;

- take many years to implement,
- allow key trades to observe the construction methods in the first village and repeat the work in many locations,
- distribute smaller amounts of donated funds to many households rather than large amounts to build a 'prototype house' that will be unaffordable to the villagers,
- allow existing materials, already on site, to be re-used and a minimum of new imported materials,
- emphasise and reward improved construction
- allow members of the previously completed Sanitation program construction teams to oversight the works.



Roof – **NO Subsidy**

Top of wall tie beam detail, construction material and reinforcing prescribed -

Subsidy

Wall and opening layout, size of house and general shape by villagers. (wall ties and cross wall information supplied) **NO subsidy**

Foundation – soil type, depth, construction material and reinforcing prescribed -

Subsidy

** NOTE Technical details such as concrete mix, reinforcing bar size and number, wall ties, opening sizes and cross wall positions etc will be supplied as per Nepal National Building Code NBC 202 : 1994 : Mandatory Rules of Thumb – Load Bearing Masonry*



Clockwise from top left: The old school buildings, the new school with lower wall cracks, the Deputy (L) and Principal (R) who received funds and tarpaulins, new toilet and wash works stopped by the earthquake that will recommence after the wet season.

Supporting Shree Jalapadevi School, Bahunepati, Sindulpachok District

The Shree Jalapadevi School, site of the next stage of the Sanitation/Dental program, was badly affected by the earthquakes. Six students were killed by the quakes and the buildings suffered varying degrees of damage.

The old school buildings are teetering on the edge of a huge earth mound, while the new building has visible cracks on the walls of the ground floor rooms.

The works commenced by the Program to install septic tanks for new toilet buildings were fine.

During the May visit HH/Rotary provided funds for the families who lost children, and additional funds were given to the Principal to help others with food and shelter. Funds were also provided for the building of temporary classrooms. The new school year is starting in the first week of June and the school needs adequate shelter for the students to attend classes during the wet season, and until such time as their existing facilities are repaired and deemed to be safe.

The return to school and some sense of routine is extremely important, for people have been severely traumatised by the recent events and there is a great need to feel some sense of "normal" again.