

Homes of Hope

Community-led reconstruction in Kalimpong



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The earth shakes



On the evening of September 18th, 2011, a 6.9 magnitude earthquake struck the border region between India and Nepal. Though the death toll was minimal, it left a trail of destruction across Sikkim and adjacent areas of West Bengal. Recurring landslides and heavy rainfall only aggravated the situation. CASA's efforts were concentrated on two of the most isolated villages in Kalimpong, West Bengal, where no aid had reached so far. The sheer remoteness of the villages meant that community involvement would play a major factor in the project's success.



Community takes the lead

How did this happen? A Central Procurement Committee was developed to oversee the purchase, transport and distribution of materials. This consisted of local volunteers, beneficiaries and members of the implementing agencies (CASA and DISHA). The members were given opportunities to debate the design further, offering their own suggestions (see back for details). They were also taught how to check and receive the materials. Considering the length of the treks required with head loads from the road, checking the materials first was a necessity.

It was decided that components like cement, steel, CGI sheeting and sand were to be transported from the nearest town; whereas timber, stone, aggregate and bamboo were to be procured locally by each family. Masons, carpenters and workers were also to be arranged by the community.

The communities also took the lead in the construction process. All able family members took part in material procurement, working as masons, labour or electricians. Training programmes taught the people how to create the strong foundations, properly cure the cement blocks for maximum strength and put together the entire structure. Innovation could be seen everywhere, including in the simple block making apparatus were fashioned locally out of timber – single and in sets of three.



Working through the monsoon!

“The water shortages are usually so intense that people had to carry jerry cans up the hills in order to cure their blocks. In that way, the monsoon was a blessing.” – Nalam Lepcha, Staff Member, DISHA

Expectations of a heavy monsoon onslaught in April 2012 meant that the project timeframe had already been extended. Yet, the spirit of the community and the strength of the local partners meant that work continued all through the monsoon! Everyone agreed that this would help secure and properly use the materials. Volunteers from within the community and from DISHA (local partner) supervised day-to-day construction. Fortnightly visits by CASA allowed for monitoring and payment distribution.

Homes spur livelihoods

The project offered immense scope to improve construction skills and gain additional livelihood avenues. In Longshel village, Manju Bahadur, a young driven 10th class student, is an inspiring story. She spends most of her time in Bakrakot (a town five hours away) since there is no high school nearby. Manju observed that there several families earn additional income by setting up a shop. So she used her own earnings from helping produce stone chips to start small shop for her parents. Once a week, they take the bus to a wholesale market in the closest towns to stock up on soaps, shampoos, candy and other small items. They can earn up to Rs 300 a week. It has also been a boon for the community at large; for being able to access day-to-day items at close range is a really new phenomenon.

Tailoring sizes to need

“Why do all the houses get built exactly the same and of the same size? Don't we need to vary it according to the family size and need?” – Nalam Lepcha, DISHA staff member

The varying family size and need means that larger families have already begun to expand their houses. At the same time, the smaller room which was designated as a kitchen has been mainly used as a store. People have reverted to a makeshift kitchen outside which is slowly being built up as permanent one. Incorporating such variation into the scope could help address these issues.

LEARNING CURVE

- A new view of ODR: Rather than looking at Owner Driven Reconstruction purely as a process where 'house owners' contribute to the building of their shelters; a sense of ownership by the community as a whole is often a better approach. Governments, NGOs and other actors need to create the space that will enable this ownership.
- Using local materials and skills: Banking on locally prevalent materials and skills can have several advantages. Cost, is of course, a factor. Overall the design has a minimal carbon footprint, with high thermal comfort. At the same time, it ensures that dependence on external support will not be increased manifold through the intervention.
- Greater training and simplified technology for community-led processes: In cases where the community is taking the lead, simplifying the technology to the extent that it is easily doable or having an engineer on-site throughout the entire process would be helpful. For example, the concept of pre-fabrication, in particular, was totally new for the community. Handling the heavy beams and joining the 16 iron rods together at once was very difficult for the community.
- Training over a longer period is also necessary for the community to truly comprehend and take on responsibility of day-to-day supervision. Longer-term mason training may also have prevented some of the deviations that took place from the original design, such as the use of nails instead of J-hooks.

Creating a hybrid design

"The old system of ekra was also good, but adding bricks has added strength against the water damage." - Jan Singh, Mistri and beneficiary

Traditional 'ekra' construction had sustained significantly less damage than modern RCC houses; making it a sustainable, cost-effective and practical reconstruction option. At first, the idea was to only strengthen the foundations. However, community modifications led to a hybrid design with ekra walling over 30" of concrete bricks for rain protection. Considering the location, a 'Shelter in a Kit' strategy was adopted. This meant that design could be assembled on site within just 5-6 days on a stable foundation and using a minimum number of masons. Pre-fabrication at a central location also helped ensure quality control.



From traditional ekra house with bamboo in-fill walls, mud plastering and straw thatch roofs to a hybrid design.

The final design therefore incorporated the following elements:

- A strong under-structure comprised of a Reinforced Cement Concrete foundation (appropriate to the prevailing soil conditions) and plinth beams to ensure structural support against earthquakes and landslides. It will also support all future modifications to the shelter.
- A stable and protected raised plinth on top of the RCC pillar and beam frame with a wooden platform that assures safety.
- 30 inches of cement brick blocks to protect the ekra walls from future flooding.
- Appropriate ekra walling structures complete with sill and lintel bands that will improve resilience against strong quakes and other future threats.
- A roof comprising of Corrugated Galvanised Iron (CGI) sheets on bamboo mats supported on a strong bamboo frame. Some families modified the bamboo to use timber instead.