

Build Back Better with Vernacular Methodologies

As the waters have receded, rehabilitation of displaced communities has been taken up by Heritage Foundation in Village Mohk Sharif in District Tando Allahyar. The village consists of about 150 houses and is largely populated by Hindu community belonging to different tribes such as the Kohlis etc.

The work was taken up on the request of the landlord Mr. Mahmood Shah. The work was begun by first undertaking a survey of the villages and to determine the causes of failures of locally built structures.

The survey was conducted by HF's Ar. Zulfi Noor and Mr. Naheem Shah, Project Manager, HF Humanitarian Works. This survey was essential to determine the kind of construction techniques available and the materials that could be used.

The surveys revealed several valuable findings. It became clear that the sun dried brick/adobe walls as well as burnt bricks walls that had survived were badly damaged due to the ill constructed roofs. The badly constructed roofs had caused the walls to either collapse or suffer from severe cracks. The use of rolled steel joists (RSJs) or girders as well as use of huge logs in roofs, in the hope to provide strong roofs were identified as the cause of failure of roofs as well as walls.

Initially it was thought to construct Green KaravanGhar sustainable shelters built with bamboo, mud and lime, as had been done in Khairpur, along with stone foundations, the cost of stone appeared prohibitive and other solutions had to be worked out.

Generally it was found that the adobe walls had been well constructed and due to the existing skills of women, they were well plastered and had survived well.

A detailed study of the defects and damage in adobe walls was carried out and in consultation with Engr. Amin Tariq, various solutions for rehabilitation of walls were worked out. The issue of the roof remained elusive, until we decided that the next roofs that are built must also withstand the load of at least 15 persons in order that it provides refuge to the families in case of floods.

After a great deal of study and discussion, it was decided to use the Karavan Roof composed of 4-bamboo or 6-bamboo joists that would be placed on a ring beam of lime concrete reinforced with split bamboo, at the top of adobe/brick walls. The bamboo joists would be bolted to the ring beam and the roof finished with mud lime layer as had been done in the case of the Green KaravanGhar built in Swat and elsewhere.

The first house thus built was tested on Wednesday 12 October and found to be satisfactory. The response of the community was heartening as, once 15 persons stood on the roof, they expressed complete confidence in the methodology.

Other methodologies for making the adobe wall strong in order to withstand flooding etc. are also being incorporated.

Build Back Better with Vernacular Methodologies has been developed as a philosophy for Disaster Risk Management for local communities by Ar. Yasmeen Lari. The concept is rooted in the necessity to save all surviving adobe wall structures with interventions for their improvement. The Karavan Roof composed of 4-bamboo or 6-bamboo joists with bamboo purlins placed on top of adobe walls provide safe haven during floods.

The rehabilitation of one room along with a Karavan Roof is being completed within one-and-a-half day at a cost of Rs. 16,000/per shelter unit. Those that



Almost completely collapsed burnt brick structure.



Destruction caused after flood.



Villagers participating in construction process, making mud toe at the base of the wall.



Rehabilitated house with strong DRR Driven Karavan Roof.



External and internal view of Training Centre.

have to be built from ground up require 3-4 days to complete, at a cost of Rs. 33,000.

A list of women and others belonging to the vulnerable groups was prepared. Initially HF committed to provide shelter for 30 families. However, because of great demand and requirements, altogether 35 one room rehabilitated units and another 10 complete units have been built. Thus, 45 families have been provided accommodation with DRR driven Karavan Roof, which can provide safe haven refuge during floods.

The community is highly mobilized and, where once there was despondency, there is hope, so that others have begun also to raise their adobe/mud walls themselves. Many are decorating their houses and have all begun to clean up the surrounding areas.

A green training centre consisting of a room size 16'x24' constructed with a bamboo frame structure and multiple bamboo joist assemblies have been completed. This is the largest size of room built so far by Heritage Foundation utilizing sustainable materials with zero carbon footprints. Other DRR driven arrangements consisting of elevated earthen platforms for ensuring safety for food rations, potable water, livestock and fodder are also being incorporated in village planning as part of disaster risk mitigation measures.

Out of a total of 45 beneficiaries in the village, the generous contribution by Gen. (Retd.) Dar of Rs. 500,000 provided shelter to 25 families consisting of 5 full units and 20 rehabilitated units, the contribution of Rs. 100,000 from Mr. and Mrs. Mahmood Shah provided 3 full units, and contribution of Rs. 65,000 by Mr. and Mrs. Muhammad Noman Baqai provided 2 full units, the remaining 15 units were built through individual contributions.

Village Mohak Sharif, UC Bukera Sharif Taluka, Tando Allahyar

Rehabilitated Unit with KaravanRoof

Beneficiary's Name	CNIC No.	Donor's Name
Gayani	41307-6817516-1	Gen. Dar
Wero	41307-3148781-3	Gen. Dar
Maano	41307-2868912-1	Gen. Dar
Chandar	41307-9395582-4	Gen. Dar
M Saleh	41307-5182811-5	Gen. Dar
Jaloo	41307-9687095-1	Gen. Dar
Tulsho	41307-6898087-2	Gen. Dar
Kanjee	41307-5457960-5	Gen. Dar
Fatan	41307-1388368-3	Gen. Dar
M. Zakrya	41307-9312307-5	Gen. Dar
Akbar Ali	41307-6952232-7	Gen. Dar
Asghar Ali	41307-0146077-5	Gen. Dar
Sadam	41701-0613186-5	Gen. Dar
Wasand Ali	41307-4491549-9	Gen. Dar
Lalee	41307-1051066-8	Gen. Dar
Paryal	41701-0612930-9	Gen. Dar
Tharoo	41307-3981774-1	Gen. Dar
Rejho	41307-1383954-3	Gen. Dar
Bashir	41307-1388345-5	Gen. Dar
Subhan	41307-5322429-3	Gen. Dar
Fateh Muhd.	41307-5523575-3	Individual Donor
Meerio	41307-7181520-4	Individual Donor
Lakho	41307-6309527-5	Individual Donor
Bewa Walayat	41701-0613186-5	Individual Donor
Jan Muhd.	41307-3991274-1	Individual Donor
Premom	41307-1387717-1	Individual Donor
Manzoor	41307-5267883-5	Individual Donor
Waryam	41307-9618523-1	Individual Donor
Seeto	41307-0798792-7	Individual Donor
Zulfiqar	41307-7183306-1	Individual Donor
Wasayo	41307-1389728-9	Individual Donor
Budda	41307-1486912-9	Individual Donor
Hussain	41307-9106137-1	Individual Donor
Humaid Ali	41307-9107143-1	Individual Donor
Wadr Ali	41307-0613428-7	Individual Donor

Full Unit 18' x 10' with KaravanRoof

Beneficiary's Name	CNIC No.	Donor Name
Nihal	41307-8201537-1	Mr. & Mrs. Mehmood Shah
Amro	41307-1377770-9	Mr. & Mrs. Mehmood Shah
Premom	41307-9019153-3	Mr. & Mrs. Mehmood Shah
Rayto	41307-799742-7	Mr. & Mrs. M.N. Baqai
Manjee	41307-2452722-1	Mr. & Mrs. M.N. Baqai
Kawal	454-870342285	Gen. Dar
Roopo	41307-1383949-3	Gen. Dar
Shankar	41307-1377807-9	Gen. Dar
Roopo	41307-1371936-7	Gen. Dar
Ramshee	41307-8232228-3	Gen. Dar