

### INTRODUCTION

The work on 5 villages in Makli was undertaken in February 2018. All the villages are populated by mendicant (beggar) communities and are poorest of the poor.

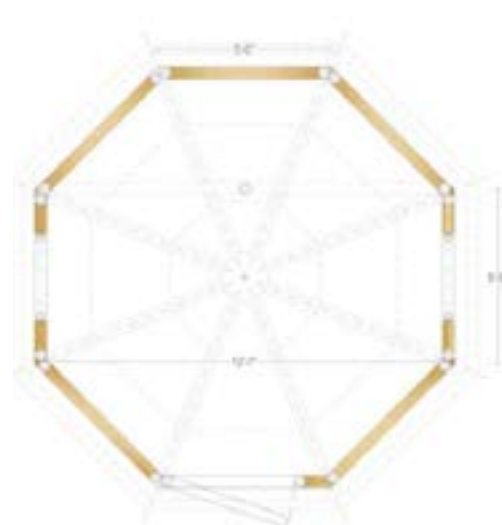
The following villages were selected under HF's 10,000 Green Shelters Program in Makli, Thatta District:

1. Shikari Goth
2. Sirki Goth
3. Ghulam Allah Goth 1
4. Ghulam Allah Goth 2
5. Yar Mohammad Goth

The objective of the Green Shelters program is to place maximum number of disadvantaged households on the path for attaining better quality of life by doing away from apathetic state of mind.

The program envisages the use of Lari OctaGreen (LOG), a prefabricated green construction technique that allows quick assembly of shelters and ease of transportation.

The vision is the guiding factor to make affordable shelter available for marginalized communities.



*Above. Plan and elevation of LOG.*



*Above. Completed LOG.*

**VISION:** Promoting socially just eco architecture for DRR-compliant universal shelter.

**MISSION:** To foster a spirit of enterprise among poor households to attain a better quality of life by replacing the cycle of dependency with a culture of self reliance.

### GUIDING PRINCIPLES

The Lari OctaGreen is a zero carbon structure, that is erected from prefabricated bamboo panels, which when assembled form an octagon. The octagonal shape itself has inherent stability and has been tested in both floods and seismic-prone areas which has proved to be DRR (Disaster Risk Reduction)-compliant.

Quality must be maintained by fabricating components under supervision and according to predetermined guidelines. As a starting point the production of bamboo panels is being executed in the workshop set up at ZC3 (Zero Carbon Cultural Centre) close to Makli Goths (villages) in the shadow of Makli World Heritage.

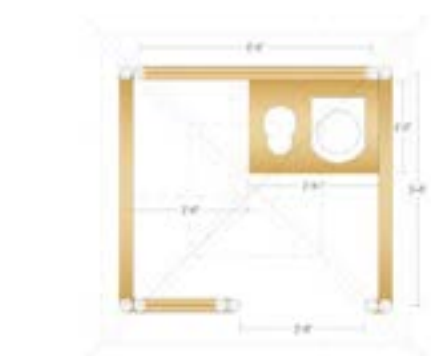
This has been done for the following reasons`;

- Checking of bamboo supplies to ensure that only the best quality bamboo is utilized in production.
- Provide livelihood to artisans belonging to the mendicant (beggar) communities, living in Makli Goths in order to wean them away from seeking alms.
- Ease of accessibility by villagers from surrounding areas.
- Provision of training for HF's Barefoot Entrepreneurs programs – trained workforce that provides guidance at a small fee to grantees for erection of structures.
- Assuring transparency and constant training to grantees and others as they are able to watch the production.

The most important aspect is that LOGs, toilet structures, hand-pumps etc. are provided to households as gifts. However, these are not provided free as every grantee household gives an undertaking that it would provide one month's voluntary work for community benefit and environmental improvement.



*Above. Octagonal LOG Shelter*



*Above. Plan and views of Eco-toilets*

*Left. Pakistan Chulah as family dining.*





## CHALLENGES

Among the most difficult tasks was to ensure that the communities would be able to get land to build. Since most of the land is owned by landlords, negotiations with them to allow the families to be able to build permanent shelters was an uphill task, even though they have been living in the place for decades.

In spite of the arrangements made, in some cases land is scarce and to accommodate all those needing shelter was difficult, especially as earlier they had occupied very little space. These matters were resolved but it took considerable time.

Some original villages were constrained because of the debris lying there or worse, the scrub used for boundaries, that was a fire hazard due to which many huts would be destroyed, also occupied a lot of space. It was only after debris was cleared and new boundary walls with bamboo and reeds plastered with lime/mud render, were built that a lot of space became available. This all took considerable time.

Another major issue was the lack of even small amounts of funds. Since the households were expected to finish their units themselves with matting and plaster, some initially found it difficult to carry out the work. However, surprisingly, where a literally no cost solution had been provided to them to procure thatch from the vicinity, they finally opted for purchasing good quality matting. They have been able to finish their shelters quite well and are very proud for having made the investment. The strategy of getting the households to begin working in order that they begin to earn in a productive manner, is working well, and most are now seeking honorable employment or working in the glazed tile product centre and Zero Carbon workshop.

## Progress

The following progress has been achieved so far. In all villages Pakistan Chulahs are in process. Chulah BEs are providing services for construction of stoves. Tibba BEs and Solar Water Rack BEs have started production of bamboo tibbas and supplying to the households..



*Tibba or platform for storing utensils.*



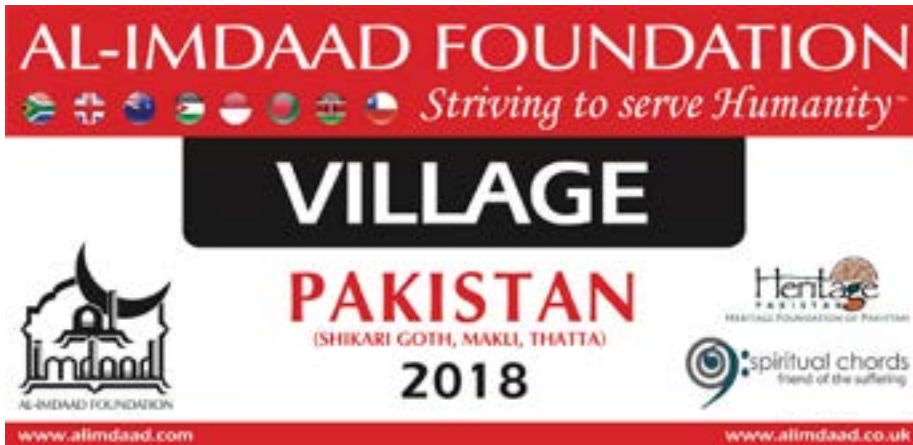
*Solar water stands for treating water according to SODIS method.*



*Left. A finished interior with loft and shelves.*

## SHIKARI GOTH, MAKLI

## ORIGINAL CONDITION



### CURRENT STATUS

**Lari OctaGreen Shelters: 40**

Erected and in the process of completion.

**Eco Toilets: 20**

Erected and in the process of completion.

**Hand pumps: 8**

Completed including platforms.

**Women's Centre: 1**

Structure in place, finishing to start.

**Pakistan Chulah, Tibbas, Solar Water Stands in progress.**





## SHIKARI GOTH, MAKLI

## AFTER INTERVENTION





## SIRKI GOTH, MAKLI

## ORIGINAL CONDITION



### CURRENT STATUS

**Lari OctaGreen Shelters: 45**

Erected and in the process of completion.

**Eco Toilets: 20**

Erected and in the process of completion.

**Hand pumps: 8**

Completed including platforms.

**Women's Centre: 1**

Work on plinth has begun.

**Pakistan Chulah, Tibbas, Solar Water Stands in progress.**





## SIRKI GOTH, MAKLI

## AFTER INTERVENTION







## 10,000 GREEN SHELTERS PROGRAM PROGRESS REPORT 2018/01 - MARCH 2018

### GHULAM ALLAH GOTH I , MAKLI

### ORIGINAL CONDITION



#### CURRENT STATUS

**Lari OctaGreen Shelters: 40**

Erected and in the process of completion.

**Eco Toilets: 20**

Erected and in the process of completion.

**Hand pumps: 8**

Completed including platforms.

**Women's Centre: 1**

Structure in place. Finishing will be started soon.

**Pakistan Chulah, Tibbas, Solar Water Stands in progress.**





## GHULAM ALLAH GOTH I , MAKLI

## AFTER INTERVENTION







## 10,000 GREEN SHELTERS PROGRAM PROGRESS REPORT 2018/01 - MARCH 2018

### GHULAM ALLAH GOTH 2, MAKLI

### ORIGINAL CONDITION



#### CURRENT STATUS

Lari OctaGreen Shelters: 40

Erected and in the process of completion.

Eco Toilets: 20

Erected and in the process of completion.

Hand pumps: 8

Completed including platforms.

Women's Centre: 1

Structure in place. Finishing will be started soon.

Pakistan Chulah, Tibbas, Solar Water Stands in progress.





## GHULAM ALLAH GOTH 2, MAKLI

## AFTER INTERVENTION





## 10,000 GREEN SHELTERS PROGRAM PROGRESS REPORT 2018/01 - MARCH 2018

### YAR MOHAMMAD GOTH, MAKLI

### ORIGINAL CONDITION



#### CURRENT STATUS

**Lari OctaGreen Shelters: 40**

Erected and in the process of completion.

**Eco Toilets: 20**

Erected and in the process of completion.

**Hand pumps: 8**

Completed including platforms.

**Women's Centre: 1**

Structure in place. Finishing will be started soon.

**Pakistan Chulah, Tibbas, Solar Water Stands in progress.**





## YAR MOHAMMAD GOTH, MAKLI

## AFTER INTERVENTION



Images above show the original condition on the left and the same owners with their new Lari OctaGreens on the right.





## TANGIBLE TRANSFORMATION

The transformation in the villages is phenomenal. The dirt and garbage from the area has been cleared through enormous hardwork.

Provision for basic needs has been accomplished: prefab shelter structures for each household, eco toilets shared by two families, raised hand pumps to provide water to 6 families, and self built fuel efficient stoves, the earthen Pakistan Chulah, are all designed to be DRR (Disaster Risk Reduction)-compliant and utilise local, sustainable materials of unfired clay, bamboo and lime. This zero carbon methodology has been earlier used by Heritage Foundation of Pakistan (HF) in helping build over 40,000 shelters in various parts of the country, placing Pakistan in the lead as the largest zero carbon shelter programme. The success of the self building activity is due to a host of Barefoot Entrepreneurs (BE), who are trained to provide assistance in erection and completion of the units at a small fee charged from the beneficiaries.

The results have been beyond expectation. The communities have got themselves mobilized to finish their structures, and also clean up the entire village of the garbage and filth that had accumulated over time. Hazards have been removed by raising the plinths according to drawings and instructions provided to prevent rain water entry, the perilous dry scrub boundaries have been removed and replaced with bamboo and reed walls covered with lime/mud render. The strong octagonal walls of shelters have been lovingly treated by women using mud/lime plaster, and the conical roofs, inspired by the traditional *chaura* of Thar, are neatly thatched to provide safety from rain at the same time maintain air flow for cooling. Eco-toilets are being completed according to instructions, and soon composting is in progress which will eventually provide a source of earning from organic fertilizer. Hand pumps are all raised on earth/lime platforms so that drinking water is accessible even during flooding. Fuel efficient stoves, the Pakistan Chulah, are being built by housewives for cooking at home with large elevated earth/lime platforms for dining and socializing.

The residents are keeping their villages clean by ensuring that no garbage clutters the environment, and now that water is available tree plantation has been taken up. Men and women are striving to find productive work and are eagerly taking up the livelihood opportunities that are being developed for them – from the production of glazed tiles to growing hydroponic fodder. As women begin to earn they are learning to sign their names to open bank accounts. The sight reading program being conducted in the evening on the big screen in the Zero Carbon Cultural Centre is inducing men, women and children to learn to read, encouraging families to begin sending their children to school.



*Discussion with university volunteers regarding zero carbon structures..*



*Community assembly at Zero Carbon Cultural Centre (ZC3).*



*Gathering at ZC3.*



*Cleaning and landscaping external street for improved environment.*