

C.I Honduras - 1998 - Hurricane Mitch

Case study: Transitional shelter

Project type:

Transitional shelter construction

Disaster:

Hurricane Mitch, 1998

No. of houses damaged:

33,000 houses destroyed and 55,000 damaged across Honduras

Project target population:

3,000 families (15,000 beneficiaries)

Occupancy rate on handover:

Very high

Shelter size

11.1m²

The shelter was targeted to a family of four to five people (two adults and up to three children).

Larger families were offered more than one shelter.



Summary

The programme provided materials and technical assistance for construction of a 3.05m x 3.65m wood-framed shelter in central and southern Honduras for victims of Hurricane Mitch. The roof was made of galvanized roof sheets that were reused when the families rebuilt their houses with more durable materials. The sides were made of reinforced good quality woven plastic sheeting. The shelter included a door and two windows with nets to provide both privacy and ventilation.

Project timeline



Strengths and weaknesses

X The project involved quick implementation, immediate community involvement, low costs, use of local material and labour, and was replicable.

- The shelter was rapidly accepted as a model by local authorities and beneficiaries.
- Logistics were sometimes tough in highly concentrated areas.

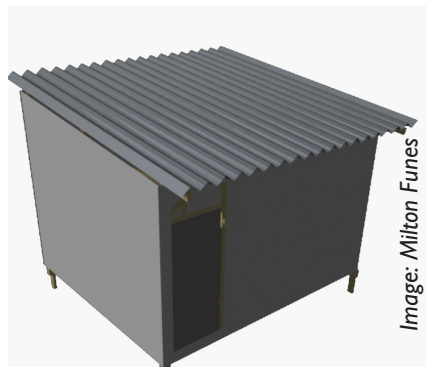
- There was confusion with the beneficiary lists given by local authorities.

W The provision of basic services such as water and electricity were slow and somehow chaotic.

W In highly concentrated areas sanitation was sometimes an issue if it was not addressed holistically.



Computer model of the timber frame of the shelter



Computer model of the shelter with a corrugated iron roof and plastic sheeting walls

The disaster

From 29 October to 3 November 1998, Hurricane Mitch dropped historic amounts of rainfall on Honduras, with unofficial reports of up to 1900mm of rain. Deaths due to catastrophic flooding made it the second-deadliest Atlantic hurricane in history: nearly 11,000 people were killed and over 8,000 were missing by the end of 1998.

The flooding caused extreme damage, estimated at over US\$ 5 billion in 1998 (equivalent to US\$ 6.5 billion in 2008 terms). Honduras was the worst-affected country, although Nicaragua, Guatemala and El Salvador were also severely effected.

Before the disaster

Before the hurricane, the organisation had a programme to assist the region's population to prepare for and mitigate disastrous events. This working relationship with communities in the area was very useful in helping the organisation work with the authorities to ensure that the beneficiary selection process was rapid, accurate and transparent.

Beneficiary selection

The transitional shelter programme first targeted the most vulnerable families in communities under the Departments of Francisco Morazan and Choluteca. Disabled and elderly

beneficiaries without resources were assisted first, followed by those without the financial resources to provide adequate shelter for themselves (the poor).

While 'the poor' are often difficult to define, the following types of families were prioritised: families that remained without adequate shelter two weeks after the disaster, and/or families identified by the municipality leadership as a poor family. This category was confirmed by a local social organisation or other reliable source.

Selected communities were asked to provide lists of the vulnerable families, according to standard local criteria for vulnerability.

Database

During the project, the organisation maintained an electronic database of approved beneficiaries, details of house/shelter location, family members, levels of vulnerability (age and disabilities), and status of shelter construction and beneficiary participation. This database was linked to systems for tracking the delivery of materials and shelter construction progress.



Marking out the site for a shelter



Prefabricating walls

Land and ownership

For those families who chose to stay near their destroyed home and had an area that was safe, flat and dry, the organisation helped them to erect a transitional shelter on their own land. Families were required to clear a spot in the ruins of their former home.

In some other cases where safe land was not available near the original site, the organisation coordinated with local authorities to define temporary relocation sites.

Technical solutions

The shelter model adopted was a timber-framed structure.

Implementation

Materials for one shelter were delivered to each beneficiary family. Many families, especially the most vulnerable, lacked the skills to build sound frames for the shelter without direction, although they could often provide construction labour.

For the families who needed it, instruction and supervision on construction was provided. In cases where the family had limited capacity to assist with construction labour, the programme provided supplemental construction labour. This support ensured that the shelter was erected quickly and correctly.

For the most elderly and disabled, all or most of the construction labour for the shelter was provided. Where possible, timber from the destroyed house was reused in the temporary shelter.

'Though it is not a big space, it feels like home for me, my husband and children'. - Beneficiary in Las Brisas, Tegucigalpa



Shelter assembly using prefabricated walls



Completing the frame

Photo: Milton Funes

Logistics

Beneficiaries signed for the material when it was delivered and were responsible for the material's security from that point onward. This requirement was made clear to each family at the onset of their involvement in the programme.

A senior staff member based in the country office was responsible for the procurement and transport of the materials required for the programme. Ensuring that all materials were procured and delivered according to schedule was challenging.

Materials list

In addition to the materials listed below, approximately 36m² of woven ribbon of international specification plastic sheet was provided by the donor organisation.

Materials	Quantity
Timber 50mm x 100mm x 3m	8
Timber 50mm x 100mm x 3.6m	4
Timber 50mm x 100mm x 4.3m	3
Timber 50mm x 100mm x 1.8m	1
Timber 50mm x 50mm x 2.4m	6
Timber 50mm x 50mm x 4.3m	5
Timber 25mm x 74mm x 2.4m	
Galvanized roof sheet 28 SWG - 0.8m x 2.7m	6
Galvanized roof sheet. 28 SWG - 0.8m x 1.8m	6
Nails 100mm	1.5kg
Nails 75mm	1.5kg
Nails 50mm	1.5kg
Roofing Nails 50mm	288
Staples 12mm	300
Diesel (to protect wood from termites)	2l
Cement (42.5 kg bag)	2.5 bags
Gravel	0.18m ³
Sand	0.15m ³
Plywood door / standard size	1
Plywood sheet (5mm x 1.2m x 2.2m) for corner reinforcements	1

List of tools needed to build 50 - 75 transitional shelters:

Materials	Quantity
Hole digger	10
Manual saw	10
Hammer	20
Tin snips (tin scissors)	10
Plumb	10
Tape measure	10
Level	10
Staple gun	10
Table saw	1
Portable saw	5
Diamond saw blades	5



Covering the roof with corrugated iron

Photo: Milton Funes



Covering the frame

Photo: Milton Funes

'Through this simple and quickly installed structure we have been able to provide an intimate family space for the victims of the hurricane'. - Jose Aleman, carpenter working on the project



Photo: Milton Funes

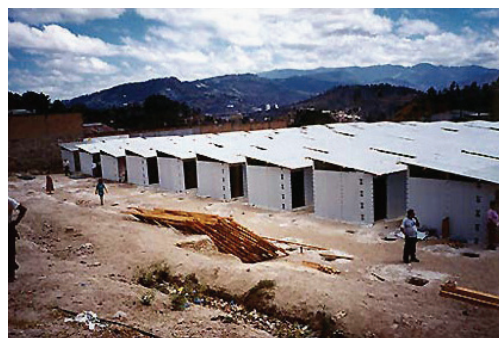


Photo: Milton Funes

Although the preferred option was to build shelters on people's own land, in some cases it was necessary to build shelters on a temporary relocation site.