

## C.19 Turkey, Caldiran - 1976 - Earthquake

### Case study: Shelter construction

Case study credit:  
UNDRO 1982

#### Disaster:

Earthquake Caldiran (Van)  
Turkey

#### Disaster date:

24 November 1976

#### Number of houses damaged or destroyed:

14,450

#### Number of people displaced:

51,000

#### Value of damage:

3.2 billion USD

#### Value of assistance:

17.4 billion USD for relief and reconstruction from external sources. Monetary value of assistance from inside Turkey unknown, but considerable in terms of prefabricated housing alone.

#### Occupancy:

95% occupancy for winterised tents; low for other tents  
100% occupancy for self built and improvised shelters



#### Project timeline

April to  
November  
1977 –

– 10,000 asbestos  
prefabricated  
houses constructed

2 months –

– Approximately 200  
families evacuated

6 weeks –

– Tents, including  
winterized models,  
were provided

24 November  
1975 –

– Earthquake

#### Emergency

Survivors were encouraged by the government to move away from the affected area. One designated area was the Aegean coast. Prefabricated frame houses built with asbestos panels and timber were constructed after winter.

Tents were provided to accommodate families during the harsh winter conditions until prefabricated housing could commence in April 1977. Building work was not possible during the winter. There were difficulties in obtaining winterized tents, as the entire world stockpile was inadequate.

#### Reconstruction

The Ministry of Reconstruction and Settlement provided prefabricated housing for all families made homeless by rockfalls. The housing policy was to provide prefabricated homes, and not to rebuild in local building tradition. The town of Lice was planned for an eventual population of 20,000, twice the pre-earthquake total. Some of the housing assistance from external sources, notably Libya, incorporated employment provision and shelter for animal shelters.

#### Strengths and weaknesses

- ✘ Advice was not provided for the improvement of traditional adobe or masonry dwellings.
- ✘ The government policy of relocating families in other parts of Turkey was interpreted by some critics as politically motivated. Few families took up the offer of removal costs, or provision of new land and livestock.
- In the worst winter earthquake in Turkey for 40 years, authorities feared that vast numbers of survivors would die of exposure to the harsh climate. Winterized tents, with heating and insulation were requested from world-wide sources. The assumed need was probably

incorrect, as is evidenced by the resourcefulness of surviving families, who improvised by half submerging makeshift shelters in the ground.

- The Government (as in Lice in 1975, page 112), adopted a policy to provide prefabricated housing, with plans to build 10000 units. No attempt was made to provide resources to train local builders in antiseismic construction of traditional buildings.
- The prefabricated housing policy was underpinned by the extensive aid provided by donor governments, with particular emphasis on aid from Arab countries.