Maharashtra, India, Quake of September 30, 1993

A view of a partially collapsed two-story building.

The Maharashtra earthquake in Central India occurred at 3:56 a.m. Indian Standard Time (+5 hrs 30 mins from GMT) on September 30, 1993. The epicenter was located at 18.2°N and 76.7°E, in the State of Maharashtra, near the village of Killari. The Richter magnitude of the event has been cited as between 6.0 and 6.5. The final death toll is expected to be between 12,000 and 30,000, including many whole families. Many thousands have been injured and made homeless. A quick survey of damaged and undamaged structures within the worst affected regions indicates that the severity of ground shaking was moderate (MMI VIII) or less and the duration of shaking was about 30 to 40 seconds.

Over 62 villages in the Latur and Osmanabad districts of Maharashtra took the brunt of the disaster. The walls of the village huts and other buildings are of random rock masonry, and are not tied to each other. The mortar is generally mud or occasionally lime, very rarely cement mortar, and the roof, a flat slab of between one to two feet of mud, is not tied at all with the walls. The construction of the houses is thus poorest in lateral load resistance. Even a slight improvement in the quality of construction or the quality of mortar protected huts from total collapse. The strong shaken region did have a few fully engineered structures—mainly factories, poultry farms, and agro-business related structures, and a large number of these structures survived the earthquake without noticeable damage.

The photograph and this report were contributed by Haresh C. Shah (EERI 1972), Stanford University. A fuller report by the EERI Reconnaissance Team will appear in the December Newsletter.