

## Concluding Remarks

This report has skimmed the surface of a very complex earthquake rebuilding project, which used different strategies for rebuilding, depending on the severity of damage—relocation (Figure 56) for the most devastated villages and repair and strengthening (Figure 57) for more moderately damaged villages. A direct effort was made to improve the housing stock and the standard of living of the affected area through improved construction techniques and the provision of civic amenities in the relocation villages. The project made an effort to address the particular needs of women, and to involve community-based organizations in providing education and training. The Government of Maharashtra took the opportunity to develop procedures and project management skills that will be useful in many other activities undertaken by state government.

A major emphasis was placed on mitigation of future risk throughout the project, explicitly incorporating mitigation into project objectives and then designing various aspects of the project to build on the concept of mitigation. Villagers and artisans were taught the importance of earthquake-resistant technology, undamaged buildings were strengthened, and a major initiative was directed toward preparing a comprehensive disaster management plan for a range of hazards. This planning process is ongoing and has received commitment from the highest levels of state government. A new institutional framework, the Earthquake Research and Mitigation Center, to monitor and interpret the ongoing earthquake activity in the state is being developed. The GOM has also made an extraordinary effort to document this project and to evaluate various aspects of effectiveness and beneficiary



**Figure 56** Community courtyard in a relocation village.



**Figure 57** A house in the poorer section of a repair and strengthening village.

satisfaction. These documents will prove useful to researchers, public officials, and recovery professionals throughout the world interested in learning more about the rebuilding process or faced with the need to design similar rebuilding projects. These documents also provide some of the detail that was not feasible to include in this report.

The Maharashtra Emergency Earthquake Rehabilitation Project (MEERP) is a notable successful example of an emerging emphasis on natural disaster risk reduction in development. Disaster-prone developing countries and development finance organizations are demonstrating a growing understanding and commitment to the principle of disaster mitigation. For example, under the terms of an Emergency Recovery Loan (ERL) program of the World Bank, financing is available for activities such as:

- Developing a national mitigation strategy.
- Establishing an adequate institutional and regulatory framework.
- Carrying out studies of vulnerability and risk assessment.
- Reinforcing vulnerable structures and adjusting building and zoning codes.
- Acquiring hazard-reduction technology.

Direct grant support for pre-event mitigation investment from intergovernmental and bilateral donors also is available in increasing volume. In the future it is anticipated that enlightened governments, consultants and lenders will replicate the successes of MEERP throughout the disaster-prone regions of the world.



*View of earthquake rubble through the arch of the earthquake memorial, under construction in summer 1998. This memorial, located in the center of the old village of Killari, has been designed as a place for learning and contemplation. It will contain an exhibit on earthquakes in general, and the 1993 earthquake in particular.*

