

LOCAL CONSTRAINTS ON AND OPPORTUNITIES FOR MODIFICATION

Without support, such as subsidies and training programmes, it is unrealistic to expect low-income families to make changes in the siting, construction or form of their homes. The risk of unforeseen disaster appears to weigh lightly against everyday needs and established customs. Everyday needs, for families living at subsistence levels, pose continual "hazards" to their survival. For example, the short-term risks of crop failure, animal disease, or loss of income will be regarded as infinitely more important than the risks posed by infrequent hazards. However, while the modification of *existing* buildings may present difficulties, there will be greater opportunities for improvement in *new* housing, either during reconstruction or in the normal context.

Post-disaster housing programmes are different from normal low-income housing to the extent that:

- In major disasters there is more money available for housing assistance;
- The need to modify housing to achieve hazard resistance is generally accepted;
- There are more agencies present than in normal conditions;
- The provision of post-disaster shelter for the poorest sections of the community is of special international interest; and
- The euphoric mood of the reconstruction period presents unusual opportunities for improvements.

THE RELEVANCE OF BYELAWS

Byelaws regulating land use and building construction, though they may be appropriate to middle-income

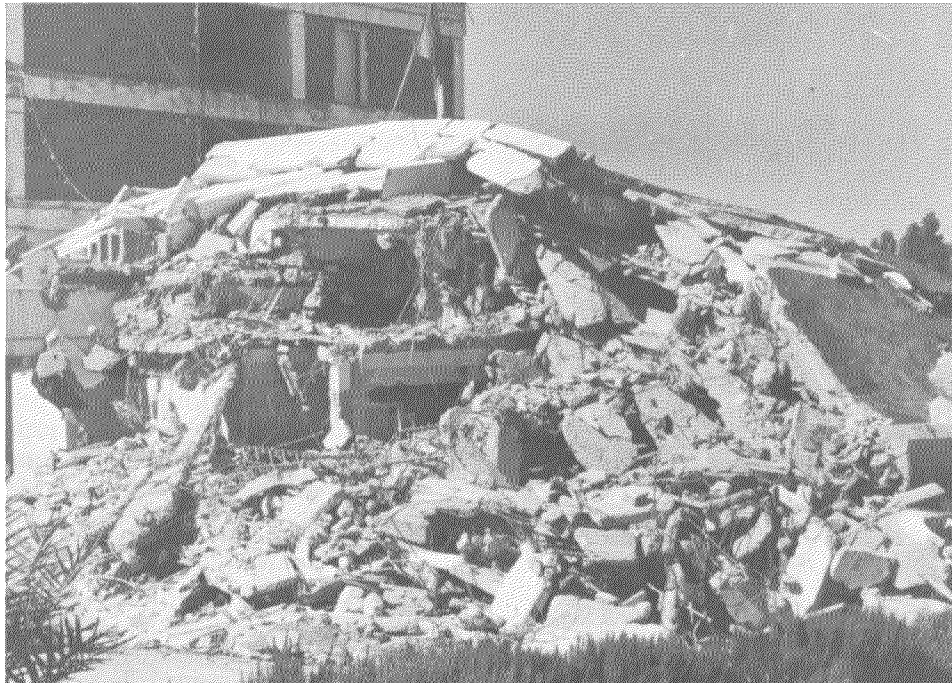
housing, have been found to be ineffective in the low-income sector where mitigation measures must be introduced through the local community structure, rather than simply introduced by legal and regulatory process. Reasons for this ineffectiveness include a lack of public awareness among those at whom the byelaws are aimed, a lack of accompanying funds to achieve the higher standard of materials and construction stipulated, and difficulties of enforcement.

OPPORTUNITIES FOR WHOLESALE REFORM

Disasters will inevitably be regarded as ideal opportunities to introduce wholesale reforms in housing, building and planning. In reality, reforms are costly, technically difficult and politically complex. Progress in reform is generally slow, and an incremental approach is therefore easier to adopt.

PRE-CONDITIONS REQUIRED FOR CHANGE

- Reforms in methods of housing reconstruction are dependent on a number of pre-conditions:
- The capacity to keep the cost of construction and maintenance within the reach of the occupants;
- The need to limit changes, respecting traditional values and housing forms;
- The assurance of the long-term availability, at controlled costs, of materials required by new building methods;
- The need for the confidence of survivors in those advocating change;
- The capacity to teach new technology in a way that will be understood by the users,



In both the southern Italian and Algerian (El Asnam), earthquakes of 1980 there was widespread damage to recently built, reinforced concrete buildings, despite the existence of aseismic building codes. This highlights the need for improved training of builders and the need for effective enforcement of building codes.