

## ATLAS of Local Seismic Cultures

### HOW TO REDUCE THE VULNERABILITY OF THE BUILT ENVIRONMENT BY RE-DISCOVERING AND RE-EVALUATING LOCAL SEISMIC CULTURES

#### CULTURAL HERITAGE, SEISMIC CULTURE AND VULNERABILITY

##### Hazards and Hazard Culture

It stands to reason that the local culture in areas which are regularly hit by disasters is affected by the idea of hazard, i.e. the occurrence of natural calamities such as earthquakes, floods etc. Yet not all types of hazard result in specific techniques being developed. Floods and avalanches, for example, would condition the choice of location for settlements or buildings rather than the actual construction techniques of the buildings themselves.

It thus follows naturally that the recurrence of earthquakes in seismic areas has led to specific construction techniques becoming firmly established. Indeed archaeologists and experts in vernacular architecture are fully aware that local building methods in seismic areas often include aseismic measures (fig. 1).

##### Safe (or almost safe) Monuments

In general, such measures can be seen in the "major" examples of cultural heritage (temples, churches, convents, palaces) or in large-scale works (bridges and aqueducts). In other words, constructions in which the system has made serious investments. If these measures are easy to spot nowadays it is because the monuments have been able to benefit, generally speaking, from maintenance on a permanent basis since any modifications have had to be approved by public bodies; it is also because they have been the subject of research projects which aim to identify and establish which techniques are most suitable.

In short, the general attitude of decision-makers was - and still is - such that monuments are relatively well protected

##### Minor Historical Constructions: an awkward category to protect

Minor examples of cultural heritage i.e. all those buildings which document the cultural identity of the local community,

cannot benefit from institutional protection because they are not classified, even if they were originally aseismic they are now in a very vulnerable position. These buildings are seldom the subject of routine maintenance and indeed are very often modified without respecting their original characteristics; the (limited) economic resources of their owners are frequently used to make the building more comfortable, if not just to make it look prettier, instead of actually re-inforcing the structure; furthermore, technicians are employed who can only be controlled and checked to a limited extent

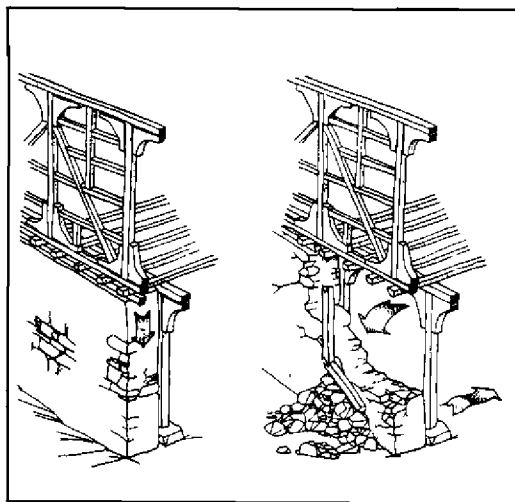


Fig 1 - Lefkas (Greece). In an island where frequent earthquakes cause destruction, a double structure saves human lives and enables damage to be rapidly repaired (Touliatos, 1993)

##### Why should we worry about the common built environment?

In actual fact, richer countries are nowadays rapidly developing technologies to rehabilitate buildings and are paying more and more attention to the cultural value of older buildings. In this context a (critical) re-evaluation of traditional