From Cultural Heritage Protection to the Culture of Protection

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Monuments and vernacular constructions

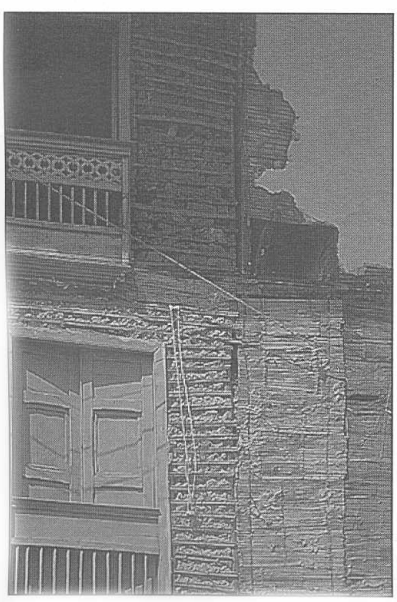
It is widely thought that cultural heritage protection is "luxury" which only a handful of countries can afford, and that the protection of human life and property should be given priority.

The following observation springs to mind: if we are faced today with protecting the cultural heritage of seismic areas, it is because monuments and historical inner-city areas have withstood all the earthquakes in those particular regions.

Ten years of research carried out by experts in a variety of disciplines and countries have shown that old buildings in areas regularly struck by earthquakes were often constructed using refined anti-seismic techniques. Or else restoration work was carried out using specifically established criteria following a serious earthquake.

These techniques are evident in monuments, as well as in vernacular architecture, i.e., common historical buildings constructed for domestic use.

The main point is this: monuments are public property, and any interventions are carried out by highly qualified scientific institutions. As a result, they are well protected. Vernacular constructions, on the other hand, are privately owned and therefore any interventions are carried out by local technicians who are not always properly qualified to do so. Thus, buildings constructed with traditional anti-seismic techniques undergo modifications which do not always respect the original plans, and techniques which are still valid today are completely ignored.



Old "bahareque"" building techniques using bamboo have been recovered,improved and used as a - seismic measures in Manizales, Colombia Photo: O. D. Cardona

Local seismic culture and the vulnerability of the system

The lack of knowledge about the origin and anti-seismic efficiency of many local building techniques has had a considerable effect on increasing the physical vulnerability of old, and also low-cost, constructions.

It may happen that construction features which have a specific anti-seismic function are removed because they appear to be purely decorative; or that "reinforcements" are built which turn out to worsen the dynamic behaviour of the building (for example the replacement of traditional lightweight roofing with a more "resistant" concrete roofing).

Following an earthquake, technicians, who are often unaware of local technical traditions, intervene. This can result in two possible scenarios: a risk of a building collapsing is underestimated because it shows little outward damage (thus increasing the risk factor if further quakes were to occur), or else it is considered unhabitable, when, in fact, it is not.

In the rebuilding phase, local technology is often replaced by imported materials which cannot be repaired. This results in the destruction of maintainance culture and paves the way for greater vulnerability in the future.

By carrying out a critical reappraisal of traditional anti-seismic technologies it may indeed be possible to make preventative action become more effective, improve the efficiency of rescue operations, and see that rehabilitation schemes cause less damage.

A six-day course, which will illustrate various traditional anti-seismic techniques used around the world, and instruct the participants about methods and instruments, which in turn can guide a multi-disciplinary team of experts instructing their local communities, will take place in Ravello. It does not propose a general catalogue of traditional anti-seismic techniques, but illustrates a selection of operational catalogues of various anti-seismic techniques.

In 1996 the European University Centre for Cultural Heritage will publish its report on ten years of research in this sector. In an attempt to widen the area of research and involve those interested in issues at hand, the Centre is offering to:

- encourage experts from seismic regions to take part in the courses organised at Ravello, so as to enable them to carry out