

UNHEEDED GEOLOGICAL WARNINGS FROM THE 1976 GUATEMALA EARTHQUAKE

Samuel Bonis

INTRODUCTION:

I was requested to give a geological paper understandable and of interest to an international earthquake symposium audience consisting of engineers, economists, reconstruction workers, government officials, financial officers, as well as earth scientists. Geologists spend so much of their time looking into the past that we tend to overlook their ability thus gained to look into the future. Our main problem in practical terms is to translate our predictions, couched in a geological time scale of thousands and millions of years, into an economically realistic span of tens and hundreds of years.

Earthquake reconstruction and ordinary construction go on in the face of geological misgivings because we cannot establish a clear and present danger, cannot predict an immediate disaster that would force us into making current sacrifices for future benefit.

The author realizes that life must go on, that neither government nor private initiative can remain paralyzed while geologists go through their well known vacillations of perhaps, possibly, maybe, and sometime. But, granted the means, earth scientists can give concrete answers which are economically viable. This, I believe is the key; if we do not have ready answers for earthquake problems, there must be investigation and research directed at solving these specific questions. Ignoring problems because there are no immediate answers, or because they require financial sacrifice for a delayed future benefit is a moral and professional blight.

Obviously, there are no ready, all-inclusive solutions to a complex geological, engineering and socio-economic phenomenon such as an earthquake. Investigation is the key to future practical solutions; ignoring problems is not.

THE PROBLEMS

I wish to mention several socially significant earthquake-related problems which are of critical engineering importance, but are not under major direct investigation with specific solutions in mind, at least as far as is publicly known to the local geological community. It should be pointed out here that land in the Guatemala valley, is extremely valuable, not only because of expanding population pressure, but because of its traditional use for investment and speculation.

The local geologists are few in number and mostly assigned to high priority projects that had to be continued after the earthquakes. None had earthquake experience or skills directly applicable to the problems. Few would be available for special training. Therefore, it is most likely that the studies called for here would mostly have to be made by foreign experts. It would appear that because of the inadvisability of embroiling foreign governmental missions in local controversy, it may be wisest to have the actual investigations done by non-governmental entities. The general background work, such as ages and amount of last fault movement and stability of slopes