

# ASSOCIATION OF ENGINEERING GEOLOGISTS

SOUTHERN CALIFORNIA SECTION

"Serving Professionals in Engineering, Environmental and Ground-Water Geology Since 1957"

April 1995

## THIS MONTH'S MEETING

April 11, 1995

### Geotechnical Assessment of Earthquake Damage for Insurance Claims and Advice on Remedial Treatments with Examples from the January 17, 1994, Northridge, California Earthquake

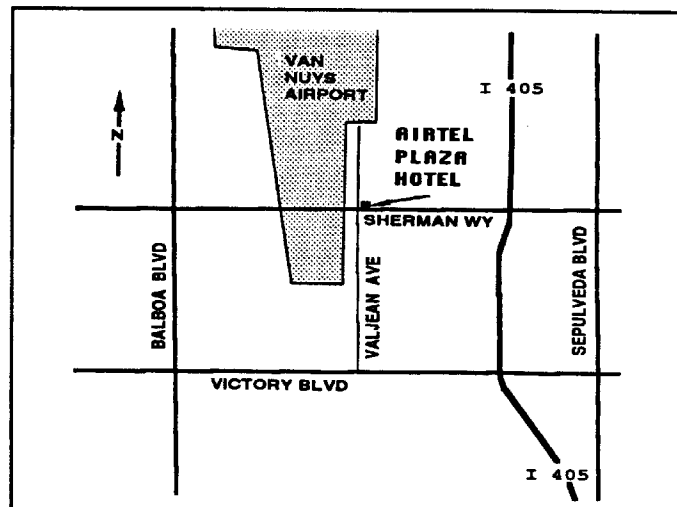
*presented by*

**Hugh S. Robertson**

Reservations must be made by **Friday, April 7!**  
 call GeoSoils at 818-785-2158  
 (leave your name and the number of people in your party)

Cost: \$25.00 (full-time students \$15.00)

Map to Meeting



The Airtel Plaza  
 Hotel Restaurant  
 7277 Valjean Avenue  
 Van Nuys

6:00 Social Hour  
 7:00 Dinner  
 8:00 Program

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This Newsletter is provided as part of your membership in the Association of Engineering Geologists. If you are not a member of AEG and would like to subscribe to this newsletter, send check or money order in the amount of \$35.00 (\$15.00 for full-time students), made out to "AEG Southern California Section", to the newsletter editor (see address on back page). **Deadline for submittal to the May newsletter: April 21**

## APRIL PROGRAM

### Geotechnical assessment of earthquake damage for insurance claims and advice on remedial treatments with examples from the January, 17, 1994, Northridge, California earthquake

by

Hugh S. Robertson

*Robertson Geotechnical, Inc.  
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The January 17, 1994 Northridge earthquake was the most costly natural disaster in United States history. Widespread damage of residential and commercial properties occurred in the Los Angeles area. Earthquake insurance policies carried by property owners provided a variety of coverages for damage. As insurance companies rushed to respond to their insured's claims, requests for geotechnical assessments of damaged properties skyrocketed. Adjusters wanted clear definitive answers as to the scope of the earthquake damage so that they could adjust the claims. Structural engineers sought support from other technical experts to help devise reasonable and prudent repair schemes. Contractors in a depressed construction industry were anxious to begin construction work. Owners wanted their earthquake insurance to completely cover adequate repair of their damage. Some owners received speedy adjustments only to find damages had been underestimated. Others used the earthquake as an opportunity to fund their remodel or to repair long-term settlement and instability problems. Others are still waiting for resolution of their claims as insurance companies wrestle with coverage questions.

The event offered engineering geologists and geotechnical engineers the challenge of properly responding to requests from insurance adjusters, structural engineers and contractors. Geotechnical consultants had to balance thoroughness, timely response, service, and adequate exploration. Business and professional ethics were tested. The geotechnical assessments took on a variety of forms as consultants tried to respond to their clients demands. Pressure to provide speedy, inexpensive, and comprehensive reports can lead to an incomplete assessment for the homeowner, adjuster, and the structural engineer. This can increase claims costs, short change owners, and not contribute to a proper adjustment if the insurance claim. The resulting repair schemes may not be focused on the earthquake damage.

Adequate geotechnical studies include interviewing the owner on site-specific effects and building performance.



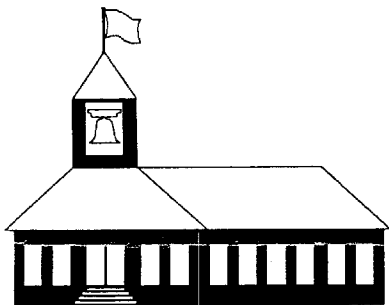
Information is needed to establish any pre-existing damage, the scope of the earthquake damage, and an assignment of a Modified Mercalli intensity level for the site. The consultant must address the question, "could this damage have been caused by the expected level of shaking at the site?" Building Department research provides information on past grading and development history. This helps establish the setting and anticipated building performance of the building since construction. Fill conditions, expansive soils, and the age of construction have an effect on the performance of the building before the earthquake. The past performance will influence the nature of the earthquake damage. The level of damage of a 1950's structure under going long-term settlement should be different than that of a modern home. Complete and thorough observation of damage patterns is imperative. A proper geotechnical assessment includes differentiation between pre-existing damage and new earthquake damage. It is necessary to draw your own conclusions concerning pre-existing conditions as owners tend not to be aware of long-term damage. The adjuster, structural engineer, and contractor will need advice on repair necessary to treat earthquake damage and restore the property to the condition existing prior to the earthquake. Policies may not cover improvements to stabilize the property or upgrade the foundation systems. These limitations may not eliminate the risk of future damage due to earth movement or future earthquakes. This limitation will need to be clearly explained in the report.

Hugh Robertson is president and principal geologist of Robertson Geotechnical, Inc. He received a Bachelor of Science in geology from USC in 1972, and a Master of Science in engineering geology from USC in 1981. From 1971 to 1978 Mr. Robertson was the Senior Project Geologist with Kovacs-Byer and Associates. He is a member of AIPG, GSA, EERI, and AEG, where he has served on and chaired numerous committees and held official positions including Chair of the southern California section. Mr. Robertson was

a part-time lecturer at USC (1991), and has authored numerous articles and publications. ϕ

## FIELD TRIP!

A field trip entitled "Engineering Geology of Thrust Faulting in the Northwestern Los Angeles Basin Area" is planned for September, 1995 with a tentative date of September 6. We are interested in papers and/or field trip stops regarding the northern San Fernando Valley, Simi Valley, and southwestern Soledad Basin areas. Papers and proposed field trip stops for topics related to the engineering geologic aspects of thrust faulting in these areas will be accepted until July 1. We particularly encourage topics regarding the January 17, 1994 Northridge earthquake, but are not limiting the trip to this event. Papers and proposed stops should be submitted to: Kim Bishop, Dept. of Geology, California State University, Los Angeles, 5151 State University Drive, Los Angeles, CA 90032. Phone: 818-343-2149. ϕ



## EDUCATION COMMITTEE VOLUNTEERS WANTED

The number of students entering the field of geology is down. Considering that the study of the earth is a fascinating subject, this is inexplicable! As practicing geological professionals we must assume some responsibility for creating interest in the field of geology. Can you imagine a future world comprised of no geologists, only civil engineers? We truly do need to pass on the fascination and love of geology to young people. The AEG education committee needs help in providing the personnel and tools for doing this.

The southern California AEG Education Committee needs volunteers to assist in setting up and running programs such as, but not limited to:

### Designated contact for various school districts, colleges, and universities

We need several people to serve as contacts to appropriate educational personnel. We need to publicize AEG and get the word out that we have the tools and personnel, if required, to support teachers in teaching geology. These people would establish dialogue with appropriate personnel to ascertain the needs of their respective educational system, be it elementary or university education, and work within the education committee or with other AEG committees

to satisfy those needs.

### Organizing, collecting, and possibly designing and making visual geologic aids

We need some (or a couple) detail-type people that would love to organize what we currently have. We need others that would be interested in collecting or creating additional visual aids.

### Creating short programs and organizing speakers

We need volunteers to prepare short lesson plans, organize speakers and topics, and coordinate their use.

I'm sure there are other educational tasks and functions you can think of in support of geology education. We need your help and your ideas. If you think you can spare even a little time and are interested in participating in this committee, please contact Kathy Williams as 714-229-4806. A committee meeting is tentatively scheduled prior to the April AEG meeting at the Airtel Hotel. Please call me for information. ϕ

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## GEOQUOTE OF THE MONTH

"Little boys who pick up rocks either go to prison or become geologists."

from *Oil On Their Shoes*  
by Ellen Sue Blakey

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## WRITE TO THE NEWSLETTER EDITOR

If you have a suggestion for "Geoquote of the Month", or if you have any news items, short articles (or long if space is available), commentary, suggestions, gripes, complaints, book reviews, software reviews, or whatever, and you would like to share them with your colleagues via the AEG Southern California Section Newsletter, send it to the Newsletter Editor at the address below, or on the internet at [ctnestle@aol.com](mailto:ctnestle@aol.com). Longer works are preferred on floppy disk, formatted by any DOS or Windows-based word processor (If you have a MAC, please save your work as an ASCII file or in a DOS format that I can retrieve). Diskettes will be

returned if requested. Please include your phone number in case I have a question.



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