# Fault Hazard Investigation

## Los Angeles Unified School District's

## Belmont Learning Center, Los Angeles, California

## PROJECT DESCRIPTION

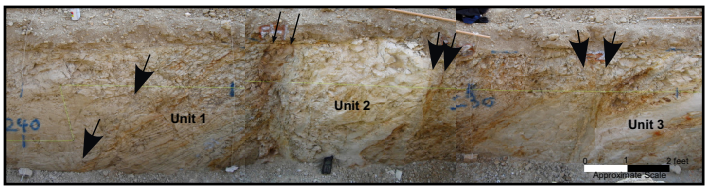
The Belmont Learning Center project experienced a myriad of geotechnical, geological, and environmental challenges. During a geophysical study as part of a methane investigation, a fault was interpreted underlying part of the school campus. Of concern to the District were two questions: 1) is there really a fault? and if so, 2) is it an active fault? *Earth Consultants International* was tasked by the LA Unified School District to resolve these issues. Because the site had already been extensively graded to bedrock, trenching would readily expose whether or not there was a fault through the site. Unfortunately, if a fault was found, it would be difficult to determine its recency of activity. Nevertheless, trenching was the method selected to confirm the geophysically interpreted fault.


Aerial photo of the nearly completed Belmont Learning Center showing with blue lines the locations of fault trenches.

Fault constraint map through the Belmont Learning Center.


## SOLUTION

We began the study by trenching across the fault that had been inferred from the geophysical survey. Trench 1 showed that there was no fault there. The project was then expanded to include all other areas of the campus in an attempt to preclude faults as a hazard anywhere within the school site. This resulted in the discovery of a prominent fault trending NNE and passing through the already constructed Administration and Academy House 1 buildings. Because all surficial deposits and soils at the school site had been removed by grading, we were unable to document when the fault moved last. Attempts to study the fault's displacement history offsite, in a property to the south of the school, were unfortunately also unsuccessful. Within the site, we were able to resolve the total slip across the fault, and make estimates of slip per event. Though it was our opinion that the fault was very likely not active, the LAUSD made the decision to demolish the buildings that had been built above the trace of the fault, and replace them with buildings off the fault. The Edward R. Roybal Learning Center, as it is now known, opened in 2008.




Trench exposure of the 7-meter wide fault zone through the site. Black arrows show faults.

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