



## DEPARTMENT OF CONSERVATION

**CALIFORNIA GEOLOGICAL SURVEY**

SCHOOL REVIEW UNIT • 801 K STREET, MS 12-32 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 324-7324 • FAX 916 / 322-4765 • TDD 916 / 324-2555 • WEB SITE [conservation.ca.gov/cgs](http://conservation.ca.gov/cgs)

Mr. Jose Nunez  
Vice Chancellor Facilities Planning, Maintenance and Operations  
San Mateo Community College District  
3401 CSM Drive  
San Mateo, CA 94402

November 5, 2010

**Subject: Second Engineering Geology and Seismology Review for  
Cañada College – Building 30  
4200 Farm Hill Boulevard, Redwood City, CA  
CGS Application No. 01-CGS0363**

Dear Mr. Nunez:

The California Geological Survey performed a second review of the engineering geology and seismology aspects of the consulting reports prepared for Canada College in Redwood City, California. This second review was performed in accordance with Title 24, California Code of Regulations, 2007 California Building Code (CBC) and followed CGS Note 48 guidelines.

We reviewed these consulting reports, which we received on October 20, 2010; sent in reply to our request for additional information:

3. **Response to Engineering Geology and Seismology Review, Cañada College Electrical Infrastructure Replacement, 4200 Farm Hill Road, Redwood City, California:** Cornerstone Earth Group, 1259 Oakmead Parkway, Sunnyvale, CA 94085; Project No. 177-1-7, report dated November 3, 2010, 2 pages.
2. **Response to Engineering Geology and Seismology Review, Cañada College Electrical Infrastructure Replacement, 4200 Farm Hill Road, Redwood City, California:** Cornerstone Earth Group, 1259 Oakmead Parkway, Sunnyvale, CA 94085; Project No. 177-1-7, report dated October 20, 2010, 4 pages, 1 figure.

In addition, we previously reviewed this consulting report:

1. **Geotechnical Investigation and Geologic Hazards Evaluation, Cañada College Electrical Infrastructure Replacement, 4200 Farm Hill Road, Redwood City, California:** Cornerstone Earth Group, 1259 Oakmead Parkway, Sunnyvale, CA 94085; Project No. 177-1-7, report dated April 23, 2010, 28 pages, 12 figures, 3 appendices.

CGS previously reviewed and submitted our findings regarding this project in our review letter dated August 16, 2010. Based on our first review, additional information was required regarding seismic ground motion parameters, the fill slope adjacent to the proposed structure, and the potential occurrence of naturally occurring asbestos (NOA) at the site. It is CGS' understanding the existing fill slope is to be "removed or relocated," therefore additional information regarding the fill slope, requested in our previous review letter, is no longer required. There is a possibility the underlying serpentinite bedrock may be encountered during construction, therefore **CGS recommends DSA have qualified personnel on-site during grading to monitor NOA. Additionally, if recommendations for asphalt concrete paving are changed, the potential for NOA to be exposed at the surface (from the serpentinite bedrock or from fragments of serpentinite within the fill) surrounding Building 30 should be addressed prior to construction.**

The discussion items below are keyed to CGS Note 48.

7. Geologic Cross Sections: Adequately addressed.
10. Geotechnical Laboratory Testing of Representative Samples: Adequately addressed.
11. Geologic Consideration of Grading Plans and Foundation Plans: See Item 34C.
14. Classify the Geologic Subgrade: Adequately addressed. The consultants classify the site as **Site Class C**.
15. Site Coefficients and Adjusted Maximum Considered Earthquake (MCE) Spectral Response Acceleration Parameters: Adequately addressed. The consultants report  $F_a = 1.0$ ,  $F_v = 1.3$ ,  $S_{MS} = 2.367g$  and  $S_{M1} = 1.502g$ .
16. Design Spectral Acceleration Parameters: Adequately addressed. The consultants report  $S_{DS} = 1.578g$  and  $S_{D1} = 1.001g$ .
18. Deaggregated Seismic Source Parameters: Not applicable.
19. Site-Specific Ground Motion Analysis: Marginally adequate. The consultants' site-specific ground motion analysis indicates the site-specific seismic design parameters are:  $S_{DS} = 1.829g$  and  $S_{D1} = 1.563g$ . The consultants' recommended design parameters appear reasonable based on CGS' internal analysis using the State-Wide Model (from Peterson and others, 2008). **In future projects, the consultants should include the data for the probabilistic MCE, 84<sup>th</sup> percentile deterministic spectra, and the deterministic lower limit.** Presenting these in both tabular and graphical formats will expedite the review process.
- 26-31. Slope Stability Analysis: Not applicable.

34. Conditional Geologic Assessment:

F. Naturally occurring asbestos (NOA): Adequately addressed. The consultants state the finished floor will be higher than the existing grade. The subject site is currently underlain by undocumented fill overlying the serpentinite bedrock which may contain NOA. The consultants recommend the upper 12 inches of fill overlying the serpentinite “should not be removed and only reworked in place.” The consultants also recommend **“all contractors engaged in soil disturbing activities comply with the Asbestos Airborne Toxic Control Measure requirements.”**

Additionally, the consultants state “the site will be covered by the new Building 3 or asphalt concrete (AC) paving. Therefore, we do not anticipate the underlying serpentinite will be exposed at the ground surface (finished grade).”

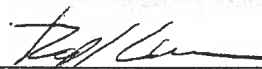
Because there is a possibility the serpentinite bedrock may be encountered during construction, **CGS recommends DSA have qualified personnel on-site during grading to monitor NOA. Additionally, if recommendations for asphalt concrete paving are changed, the potential for NOA to be exposed at the surface (from the serpentinite bedrock or from fragments of serpentinite within the fill) surrounding Building 30 should be addressed prior to construction.**

November 5, 2010

## Conclusions

Based on our review, **the engineering geology and seismology issues at this site are adequately assessed in the referenced reports**, and no additional information is requested of the consultants for this project. If you have any further questions about this review letter, please call (650) 688-6379.

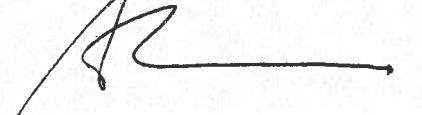
*Respectfully submitted,*



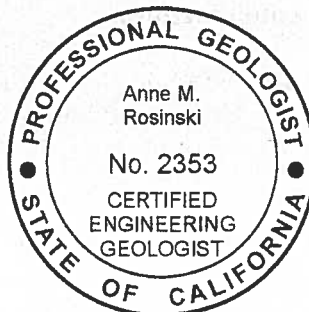
Roopl Chauhan  
*Engineering Geologist*  
PG 8754



*Concur:*



Anne M. Rosinski  
*Senior Engineering Geologist*  
PG 7481, CEG 2353



## **Copies to:**

Craig Harwood, *Certified Engineering Geologist*, and Scott Fitinghoff, *Registered Geotechnical Engineer*  
Cornerstone Earth Group, 1259 Oakmead Parkway, Sunnyvale, CA 94085

Christopher Noll/Merideth Marschak, *Architect in General Responsible Charge*  
Noll & Tam Architects, 729 Heinz Avenue, Berkeley, CA 94710

Ms Karen Van Dorn, *Senior Architect*  
Division of the State Architect, 1515 Clay Street, Suite 1201, Oakland, California 94612