

Rapid Visual Screening of Buildings for Potential Seismic Hazards
FEMA P-154 Data Collection Form

Level 1
VERY HIGH Seismicity



Address: 590 Gooding Way, Albany, CA Zip: 94706

Other Identifiers: CAAN: 2452 Campus Distribution Facility per Detail 20-A1.3

Building Name: Family Student Housing CD Facility

Use: University Village, Central Data Facility

Latitude: 37.884620 Longitude: -122.301810

Ss: 2.011g S_r: 0.771g

Screener(s): Bret Lizundia/Ayse Celikbas Date/Time: 11/13/2018 / 1.20 PM

No. Stories: Above Grade: 1 Below Grade: 0 Year Built: 2000 ☐ EST

Total Floor Area (sq. ft.): 600 Code Year: UBC 1994

Additions: ☒ None ☐ Yes, Year(s) Built: _____

Occupancy: Assembly ☐ Commercial ☐ Emer. Services ☐ Historic ☐ Shelter
Industrial ☐ Office ☐ School ☐ Government
Utility Warehouse Residential, # Units: _____

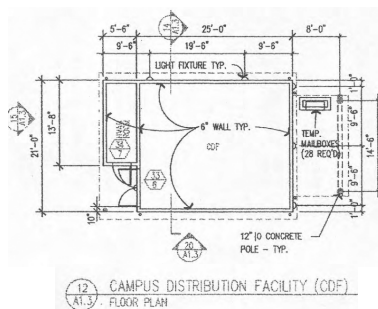
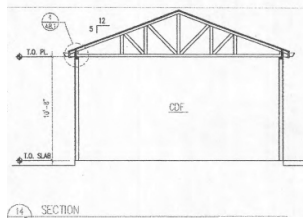
Soil Type: ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F ☐ DNK
Hard Rock Avg Rock Dense Soil Stiff Soil Soft Soil Poor Soil
If DNK, assume Type D.

Geologic Hazards: Liquefaction: Yes No/DNK Landslide: Yes No/DNK Surf. Rupt.: Yes No/DNK

Adjacency: ☐ Pounding ☐ Falling Hazards from Taller Adjacent Building

Irregularities: ☐ Vertical (type/severity) _____
☐ Plan (type) _____

Exterior Falling Hazards: ☐ Unbraced Chimneys ☐ Heavy Cladding or Heavy Veneer
☐ Parapets ☐ Appendages
☐ Other: _____



COMMENTS:

North-South direction forces will impose cross-grain bending in the girders which connect to the top of the concrete columns at the east side.

The concrete columns are cantilevered at the base, and they are 12" diameter circular columns with #3 ties at 12" O.C. They were found to be shear critical.

☒ Additional sketches or comments on separate page

BASIC SCORE, MODIFIERS, AND FINAL LEVEL 1 SCORE, S_{L1}

FEMA BUILDING TYPE	Do Not Know	W1	W1A	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3 (URM INF)	PC1 (TU)	PC2	RM1 (FD)	RM2 (RD)	URM	MH
Basic Score		<u>2.1</u>	1.9	1.8	1.5	1.4	1.6	1.4	1.2	1.0	1.2	0.9	1.1	1.0	1.1	1.1	0.9	1.1
Severe Vertical Irregularity, V_{L1}		-0.9	-0.9	-0.9	-0.8	-0.7	-0.8	-0.7	-0.7	-0.7	-0.8	-0.6	-0.7	-0.7	-0.7	-0.7	-0.6	NA
Moderate Vertical Irregularity, V_{L1}		-0.6	-0.5	-0.5	-0.4	-0.4	-0.5	-0.4	-0.3	-0.4	-0.4	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	NA
Plan Irregularity, P_{L1}		-0.7	-0.7	-0.6	-0.5	-0.5	-0.6	-0.4	-0.4	-0.4	-0.5	-0.3	-0.5	-0.4	-0.4	-0.4	-0.3	NA
Pre-Code		-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.2	-0.1	-0.1	-0.2	0.0	-0.2	-0.1	-0.2	-0.2	0.0	0.0
Post-Benchmark		<u>1.9</u>	1.9	2.0	1.0	1.1	1.1	1.5	NA	1.4	1.7	NA	1.5	1.7	1.6	1.6	NA	0.5
Soil Type A or B		0.5	0.5	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.1	0.3	0.2	0.3	0.3	0.1	0.1
Soil Type E (1-3 stories)		0.0	-0.2	-0.4	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	0.0	-0.2	-0.1	-0.2	-0.2	0.0	-0.1
Soil Type E (> 3 stories)		-0.4	-0.4	-0.4	-0.3	-0.3	NA	-0.3	-0.1	-0.1	-0.3	-0.1	NA	-0.1	-0.2	-0.2	0.0	NA
Minimum Score, S_{MIN}		0.7	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	1.0

FINAL LEVEL 1 SCORE, $S_{L1} \geq S_{MIN}$: 4.0

UCOP SEISMIC PERFORMANCE LEVEL (OR "RATING") IV

EXTENT OF REVIEW

Exterior: ☐ Partial ☒ All Sides ☐ Aerial
Interior: ☐ None ☐ Visible ☒ Entered
Drawings Reviewed: ☒ Yes ☐ No
Soil Type Source: Geotech Report
Geologic Hazards Source: Geotech Report/CGS website
Contact Person: John Winters

LEVEL 2 SCREENING PERFORMED?

☐ Yes, Final Level 2 Score, S_{L2} _____ ☒ No
Nonstructural hazards? ☐ Yes ☒ No

OTHER HAZARDS

Are There Hazards That Trigger A Detailed Structural Evaluation?

☐ Pounding potential (unless $S_{L2} >$ cut-off, if known)
☐ Falling hazards from taller adjacent building Liquefaction
☒ Geologic hazards or Soil Type F
☐ Significant damage/deterioration to the structural system

ACTION REQUIRED

Detailed Structural Evaluation Required?

☐ Yes, unknown FEMA building type or other building
☐ Yes, score less than cut-off
☒ Yes, other hazards present (Liquefaction)
☐ No

Detailed Nonstructural Evaluation Recommended? (check one)

☐ Yes, nonstructural hazards identified that should be evaluated
☐ No, nonstructural hazards exist that may require mitigation, but a detailed evaluation is not necessary
☒ No, no nonstructural hazards identified ☐ DNK

Where information cannot be verified, screener shall note the following: EST = Estimated or unreliable data OR DNK = Do Not Know

Additional Comments for University Village, Central Data Facility (CDF Building)

- The drawings for the building are available. Sheet A1.3 of University Village Development Step 1 architectural drawings by Fisher Friedman Associates (Architect) and Davis & Joyce Architects (Associate Architect) has architectural plans and elevations, and Sheets SMB.1 and SMB.2 of University Village Development Step 1 structural drawings by Dominic Chu Consulting Structural Engineer have structural plans and details. The drawings are dated 11/4/98 (revised on 3/23/01).
- The building is post-benchmark, since the benchmark code is the 1976 Uniform Building Code for W1 Buildings per Table 1 of the 12/12/18 UC Seismic Program Guidebook Version 1.1, and the building was designed using Uniform Building Code 1994 Edition with California Amendments as indicated on drawing Sheet S1.1.
- The geologic hazards information is obtained from the geotechnical report called “Geotechnical Study, University Village Development” by Geomatrix dated Sept 24, 1997 and CGS website (<http://maps.conservation.ca.gov/cgs/informationwarehouse/>). Although 1997 Geomatrix report based on 1985 methods of Seed and others indicates low liquefaction potential, the CGS website indicates the site is in a mapped Seismic Hazard Zone for Liquefaction per the Seismic Hazards Mapping Act (Oakland West Quadrangle – Feb 14, 2003).
- The site class is D per page 17 of the geotechnical report called “Geotechnical Study, University Village Development” by Geomatrix dated Sept 24, 1997.
- S_s and S_1 values are based on BSE-2N values as required per FEMA P-154. ASCE 41-17 BSE-2N values are as such: $S_s = 2.011g$, $S_1 = 0.771g$ per <https://hazards.atcouncil.org/>
- The building has a nominal L-shape in plan; therefore, a re-entrant corner deficiency is considered. However, since the projection is less than 20 ft, the re-entrant corner deficiency deemed to be not applicable.
- The building has a high P-154 Level 1 score of 4.0, good wall distribution, and light loads. An SPL rating of IV is assigned rather than III because the columns in front are shear critical and have a poor connection to the girders, and the site is in a mapped zone of liquefaction with the main building on a mat but the columns on flag pole footing, leading to the possibility of differential settlement.