

Psychology Building – Franz Hall

DATE: 10/30/2020

**ASCE 41-17 Tier 1 Seismic Evaluation
Minimum Building Report Information**

BUILDING DATA

Campus: [UCLA](#)

Building Name: [Psychology Building - Franz Hall](#)

CAAN ID: [4319C](#)

Auxiliary Building ID:

Address: [502 Portola Plaza, Los Angeles 90095](#)

Site location coordinates: Latitude [34.069667](#) Longitudinal [-118.441719](#)



ASCE 41-17 Model Building Type:

- a. Longitudinal Direction: [C2: Concrete Shear Wall](#)
- b. Transverse Direction: [C2: Concrete Shear Wall](#)

Site-specific Ground Motion Study? [No](#)

Seismic Design Acceleration Parameters of Interest:

- a. For BSE-1E [0.867g](#) and [0.508g](#)
- b. For BSE-2E [1.535g](#) and [0.936g](#)

Estimated Fundamental Period (seconds)

- a. Longitudinal: [0.32s](#)
- b. Transverse: [0.32s](#)

Gross Square Footage: 33,326
Number of stories *above* grade: 3
Number of basement stories *below* grade: 1

Year Original Building was Constructed: Circa 1938
Original Building Design Code & Year: UBC-1935
Retrofit Building Design Code & Code (if applicable): N/A

SITE INFORMATION

Site Class: D (Inferred)	Basis: L.R. Crandall & Associates - Ackerman Union, June 5, 1992, N/A
Geologic Hazards:	
Fault Rupture: No	Basis: L.R. Crandall & Associates - Ackerman Union, June 5, 1992, pg. 2
Liquefaction: No	Basis: L.R. Crandall & Associates - Ackerman Union, June 5, 1992, pg. 11
Landslide: No	Basis: L.R. Crandall & Associates - Ackerman Union, June 5, 1992, pg. 10

BUILDING COMPLEX KEY PLAN

The Psychology Department complex is composed of multiple buildings. Each building is separated by several seismic separations allowing the different segments of the complex to act independently of one another. Shown below is a key plan of the complex along with the distribution of CAAN #'s at the complex and the various seismic separations.



Figure 1 Key Plan of the Psychology Department Complex

UCOP SEISMIC PERFORMANCE RATING (OR "RATING"): IV

"BALLPARK" RETROFIT COST (if applicable)

- Minor (<\$50/sf)
- Moderate (~\$50-\$200/sf)
- Major (>\$200/sf)

SUMMARY TIER 1 SEISMIC EVALUATION STRUCTURAL NON-COMPLIANCES/FINDINGS SIGNIFICANTLY AFFECTING RATING DETERMINATION

Significant Structural Deficiencies, Potentially Affecting Seismic Performance Level Designation:

- Lateral System Stress Check (wall shear, column shear or flexure, or brace axial as applicable)
- Lateral System Detailing (reinforcement ratio, confinement, aspect ratio, etc)
- Load Path
- Adjacent Buildings
- Weak Story
- Soft Story
- Geometry (vertical irregularities)
- Torsion
- Mass – Vertical Irregularity
- Cripple Walls
- Wood Sills (bolting)
- Diaphragm Continuity
- Openings at Shear Walls (concrete or masonry)
- Liquefaction
- Slope Failure
- Surface Fault Rupture
- Masonry or Concrete Wall Anchorage at Diaphragm
- URM wall height to thickness ratio
- URM Parapets or Cornices
- URM Chimney
- Heavy Partitions Braced by Ceilings
- Appendages

BRIEF DESCRIPTION OF ANTICIPATED FAILURE MECHANISM

Geometric irregularities in the lateral system affect the dynamic response of the structure and may lead to unexpected higher mode effects and concentrations of demands. However, since the seismic demand on the existing lateral system was found to be low (DCR = 0.37, see shear

stress check on page 11), the increased local demands due to the geometric irregularity can be absorbed by the shear wall's residual capacity.

Building generally meets the seismic separation requirements except for a small ramp on the east side of the leading to the 1958 Franz Hall addition. The ramp aligns with the diaphragm of the Original Franz Hall building, per ASCE 41-17 section 7.2.13.2 when the diaphragms of adjacent buildings are aligned, they do not need to meet the minimum requirements for seismic separation.

COMMENTS AND RECOMMENDATIONS

While the Tier 1 evaluation revealed a lack of seismic separation between buildings and a Geometric irregularity in the lateral system the building can still be rated a IV.

POTENTIAL FALLING HAZARDS

- Heavy ceilings, features or ornamentation above large lecture halls, auditoriums, lobbies or other areas where large numbers of people congregate.
- Heavy masonry or stone veneer above exit ways.
- Unbraced masonry parapets, cornices or other ornamentation above exit ways.
- Unrestrained hazardous materials storage.
- Masonry chimneys.
- Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc.
- None of the above.

Due to current COVID-19 protocols, we did not verify in field that as-built documentation match current conditions or perform any condition assessment of the existing structure to identify falling hazards as required by the UCOP SSP.

Appendices

- A. ASCE 41-17 Tier 1 Checklists
- B. Quick Check Calculations