

### Campus Services Building 1

**DATE:** 10/29/2020

**ASCE 41-17 Tier 1 Seismic Evaluation**

**Minimum Building Report Information**



#### BUILDING DATA

Campus: **UCLA**

Building Name: **Campus Services Building 1 (CSB1)**

CAAN ID: **4233**

Auxiliary Building ID: **N/A**

Address: **741 Charles E. Young Drive, South; Los Angeles, CA 90095**

Site location coordinates: Latitude **34.06746005** Longitudinal **-118.44726864**



Aerial Photo



Exterior Elevation

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 **0.743g** and **0.516g**
- b. For BSE-2E **1.543g** and **0.945g**

Estimated Fundamental Period (seconds)

- a. Longitudinal: **0.243s**

b. Transverse: 0.243s

Gross Square Footage: 56,966

Number of stories *above* grade: 2

Number of basement stories *below* grade: 1

Year Original Building was Constructed: Circa 1974

Original Building Design Code & Year: UBC 1973

Retrofit Building Design Code & Code (if applicable): N/A

#### SITE INFORMATION

Site Class: D (Inferred) Basis: Inferred

Geologic Hazards:

Fault Rupture: Unknown Basis: Unknown

Liquefaction: Unknown Basis: Unknown

Landslide: No Basis: Inferred

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

"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**

Due to insufficient lateral system length and potentially increased seismic forces due to a torsion irregularity it is anticipated that the concrete shear walls will be overstressed in a seismic event and could lead to failure of the lateral system as a whole.

Per the Tier 1 evaluation there does not appear to be sufficient connection between shear walls and foundation elements and will likely require mitigation.

Lastly it was found that the seismic separation between CSB1 and the adjacent 1993 Cogen Building is less than the allowed limit per the Tier 1 evaluation. This could lead to the two buildings colliding in a seismic event providing unanticipated forces and damage.

### **COMMENTS AND RECOMMENDATIONS**

It is recommended for a Tier 2 and Tier 3 evaluations to be done. Further evaluation will allow development of a retrofit scheme that will likely consist of strengthening concrete walls and addressing the connection of shear walls to the foundations.

### **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