

Campus: [UCLA](#)
Building Name: [Rehab Center](#)
CAAN ID: [4594](#)
Auxiliary Building ID:



UNIVERSITY
OF
CALIFORNIA

Date: [April 30, 2021](#)

FORM 1
CERTIFICATE OF SEISMIC PERFORMANCE LEVEL

- UC-Designed & Constructed Facility**
 Campus-Acquired or Leased Facility

BUILDING DATA

Building Name: [Rehab Center](#)
Address: [1000 Veteran Ave, Los Angeles, CA, 90024](#)
Site location coordinates: Latitude [34.06064504](#) Longitudinal [-118.44908843](#)

UCOP SEISMIC PERFORMANCE LEVEL (OR "RATING"): [V](#)

ASCE 41-17 Model Building Type:

- a. Longitudinal Direction: [C1/C2: Concrete Moment Frame & Shear Walls](#)
- b. Transverse Direction: [C1/C2: Concrete Moment Frame & Shear Walls](#)

Gross Square Footage: [153,609](#)
Number of stories *above* grade: [4](#)
Number of basement stories *below* grade: [1](#)

Year Original Building was Constructed: [1965](#)
Original Building Design Code & Year: [UBC-1961](#)
Retrofit Building Design Code & Year (if applicable): [CBC-1995](#)

SITE INFORMATION

Site Class: [D](#) Basis: [Inferred](#)
Geologic Hazards:
Fault Rupture: [No](#) Basis: [CGS Earthquake Hazards Zone Application](#)
Liquefaction: [Yes](#) Basis: [CGS Earthquake Hazards Zone Application](#)
Landslide: [No](#) Basis: [CGS Earthquake Hazards Zone Application](#)

ATTACHMENT

Original Structural Drawings: ([Physical Rehabilitation Center - University of California Medical Center, Stacy & Skinner Structural Engineers, 3/1/1963](#))
Seismic Evaluation: ([Rehab Center - CAAN#4594, KPFF, 04/29/2020, ASCE 41-17 Tier 1](#))
Retrofit Structural Drawings: ([Rehabilitation Seismic Correction, Sato & Boppana Consulting Engineers, 5/1/1999](#))



CERTIFICATION & PRESUMPTIVE RATING VERIFICATION STATEMENT

I, **Mark Hershberg**, a California-licensed structural engineer, am responsible for the completion of this certificate, and I have no ownership interest in the property identified above. My scope of review to support the completion of this certificate included both of the following ("No" responses must include an explanation):

- a) the review of structural drawings indicating that they are as-built or record drawings, or that they otherwise are the basis for the construction of the building: Yes No
 - b) visiting the building to verify the observable existing conditions are reasonably consistent with those shown on the structural drawings: Yes No
- Due to COVID-19 protocols, observations were performed for exterior of building only.

Based on my review, I have verified that the UCOP Seismic Performance Level (SPL) is presumptively permitted by the following UC Seismic Program Guidebook provision (choose one of the following):

- 1) Contract documents indicate that the original design and construction of the aforementioned building is in accordance with the benchmark design code year (or later) building code seismic design provisions for UBC or IBC listed in Table 1 below.
- 2) The existing SPL rating is based on an acceptable basis of seismic evaluation completed in 2006 or later.
- 3) Contract documents indicate that a comprehensive¹ building seismic retrofit design was fully-constructed with an engineered design based on the 1997 UBC/1998 **or later** CBC, and (choose one of the following):
 - the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1E (or BSE-R) and BSE-2E (or BSE-C) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 CBC **or later** for EXISTING buildings, and is presumptively assigned an SPL rating of IV.
 - the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1 (or BSE-1N) and BSE-2 (or BSE-2N) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 **or later** CBC for NEW buildings, and is presumptively assigned an SPL rating of III.
 - the retrofit project was not completed by the UC campus following UC policies, and is presumptively assigned an SPL rating of IV.

¹ A comprehensive retrofit addresses the entire building structural system as indicated by the associated seismic evaluation, as opposed to addressing selective portions of the structural system.

Campus: [UCLA](#)
Building Name: Rehab Center
CAAN ID: 4594
Auxiliary Building ID:



UNIVERSITY
OF
CALIFORNIA

Date: April 30, 2021

CERTIFICATION SIGNATURE

Mark Hershberg
Print Name

Principal
Title

S5078
CA Professional Registration No.

6/30/2021
License Expiration Date


Signature

4/30/2021
Date

AFFIX SEAL HERE



KPFF Inc., (213) 418-0201, 700 S. Flower St., Suite 2100, Los Angeles, CA 90017

Firm Name, Phone Number, and Address



Table 1: Benchmark Building Codes and Standards

Building Type ^{a,b}	Building Seismic Design Provisions	
	UBC	IBC
Wood frame, wood shear panels (Types W1 and W2)	1976	2000
Wood frame, wood shear panels (Type W1a)	1976	2000
Steel moment-resisting frame (Types S1 and S1a)	1997	2000
Steel concentrically braced frame (Types S2 and S2a)	1997	2000
Steel eccentrically braced frame (Types S2 and S2a)	1988 ^g	2000
Buckling-restrained braced frame (Types S2 and S2a)	f	2006
Metal building frames (Type S3)	f	2000
Steel frame with concrete shear walls (Type S4)	1994	2000
Steel frame with URM infill (Types S5 and S5a)	f	2000
Steel plate shear wall (Type S6)	f	2006
Cold-formed steel light-frame construction—shear wall system (Type CFS1)	1997 ^h	2000
Cold-formed steel light-frame construction—strap-braced wall system (Type CFS2)	f	2003
Reinforced concrete moment-resisting frame (Type C1) ⁱ	1994	2000
Reinforced concrete shear walls (Types C2 and C2a)	1994	2000
Concrete frame with URM infill (Types C3 and C3a)	f	f
Tilt-up concrete (Types PC1 and PC1a)	1997	2000
Precast concrete frame (Types PC2 and PC2a)	f	2000
Reinforced masonry (Type RM1)	1997	2000
Reinforced masonry (Type RM2)	1994	2000
Unreinforced masonry (Type URM)	f	f
Unreinforced masonry (Type URMa)	f	f
Seismic isolation or passive dissipation	1991	2000

Note: This table has been adapted from ASCE 41-17 Table 3-2. Benchmark Building Codes and Standards for Life Safety Structural Performed at BSE-1E.

Note: UBC = Uniform Building Code. IBC = International Building Code.

^a Building type refers to one of the common building types defined in Table 3-1 of ASCE 41-17.

^b Buildings on hillside sites shall not be considered Benchmark Buildings.

^c not used

^d not used

^e not used

^f No benchmark year; buildings shall be evaluated in accordance with Section III.J.

^g Steel eccentrically braced frames with links adjacent to columns shall comply with the 1994 UBC Emergency Provisions, published September/October 1994, or subsequent requirements.

^h Cold-formed steel shear walls with wood structural panels only.

ⁱ Flat slab concrete moment frames shall not be considered Benchmark Buildings.

UCLA – Rehab Center

DATE: 5/7/2021

ASCE 41-17 Tier 1 Seismic Evaluation

Minimum Building Report Information

BUILDING DATA

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ASCE 41-17 Model Building Type:

- a. Longitudinal Direction: [No Model Building Type \(Combines C1/C2: Concrete Moment Frame & Shear Walls\)](#)
- b. Transverse Direction: [No Model Building Type \(Combines C1/C2: Concrete Moment Frame & Shear Walls\)](#)

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

Seismic Design Acceleration Parameters of Interest:

- a. For BSE-1E $S_{XS}=0.895g$ and $S_{X1}=0.514g$
- b. For BSE-2E $S_{XS}=1.847g$ and $S_{X1}=0.943g$

Estimated Fundamental Period (seconds)

- a. Longitudinal: 0.40s
- b. Transverse: 0.40s

Gross Square Footage: 153,609

Number of stories *above* grade: 4

Number of basement stories *below* grade: 1

Year Original Building was Constructed: 1965

Original Building Design Code & Year: UBC-1961

Retrofit Building Design Code & Code (if applicable): CBC-1995

SITE INFORMATION

Site Class: D Basis: Inferred

Geologic Hazards:

Fault Rupture: No Basis: CGS Earthquake Hazards Zone Application

Liquefaction: Yes Basis: CGS Earthquake Hazards Zone Application

Landslide: No Basis: CGS Earthquake Hazards Zone Application

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

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.

BRIEF DESCRIPTION OF ANTICIPATED FAILURE MECHANISM

Because the existing building did not fall into one of the “Model Building Types”, the prescriptive Tier 1 checks were not sufficient to determine anticipated failure mechanisms of the structure. More information will be available after a Tier 3 assessment has been completed.

COMMENTS AND RECOMMENDATIONS

Existing building type does not conform to any type listed in ASCE 41-17 Table 3-1, nor does it satisfy the conditions of Section 3.4.1.2.2.1. A Tier 3 assessment will be required in order to gain a more accurate understanding of structural behavior and performance.

Appendices

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