



FORM 1
CERTIFICATE OF SEISMIC PERFORMANCE LEVEL

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

BUILDING DATA

Building Name: [Moffitt Library](#)
Address: [Core Campus, Berkeley, CA 94720](#)
Site location coordinates: Latitude [37.8725](#) Longitudinal [-122.2606](#)

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

ASCE 41-17 Model Building Type:

- a. Longitudinal Direction: [C2: Reinforced Concrete Shear Walls – Stiff Diaphragms](#)
- b. Transverse Direction: [C2: Reinforced Concrete Shear Walls – Stiff Diaphragms](#)

Gross Square Footage: [149,923 sq. ft.](#)
Number of stories *above* grade: [5 \(3 are partially below grade\)](#)
Number of basement stories *below* grade: [0 \(3 partially below grade\)](#)

Year Original Building was Constructed: [1970](#)
Original Building Design Code & Year: [1964 Uniform Building Code](#)
Retrofit Building Design Code & Year (if applicable): [1992, CBC 1988](#)

SITE INFORMATION

Site Class: [C](#) Basis: [Geologic Hazards and Site Classification, Geomatrix Plate 2](#)
Geologic Hazards:
Fault Rupture: [No](#) Basis: [California Geological Survey website – Oakland West Quadrangle](#)
Liquefaction: [No](#) Basis: [California Geological Survey website – Oakland West Quadrangle](#)
Landslide: [No](#) Basis: [California Geological Survey website – Oakland West Quadrangle](#)

ATTACHMENT

Seismic Evaluation: [Moffitt Library Tier 3 Analysis Findings, Mar Structural Design, 2/25/2019, ASCE 41-17 Tier 3](#)



CERTIFICATION & PRESUMPTIVE RATING VERIFICATION STATEMENT

I, { David Mar }, 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

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.



CERTIFICATION SIGNATURE

AFFIX SEAL HERE

David Mar	President, MSD
Print Name	Title
S 3951	03/31/2020
CA Professional Registration No.	License Expiration Date
	07/12/2019
Signature	Date



Mar Structural Design
 510-991-1101
 2332 5th Street, Suite D
 Berkeley, CA 94710

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.