

**UC Seismic Evaluation – Science and Technology Research Building**

**Date:** 10/30/20  
**UC Campus:** UCLA  
**Building Name:** Science and Technology Research Building  
**Building Address:** 1040 Veteran Ave, Los Angeles, CA 90024  
**CAAN ID:** 4501  
**Auxiliary Building ID<sup>1</sup>:** N/A



**Summary of information provided by Evaluator:**

Nabih Youssef Associates Structural Engineers

**UCOP Seismic Performance Level<sup>2</sup> (or “Rating”) based on ASCE 41-17 Tier 1 - evaluation findings: IV**

*Plan Image or Aerial Photo*



*Exterior Elevation Photo*



**Site location coordinates (decimal):**

Latitude: 34.060792  
 Longitude: -118.448443

**Is this a “Partial” Building (i.e., a single structure in a complex building?) (Y or N): N**

**ASCE 41-17 Model Building Type<sup>3</sup>:**

**Longitudinal Direction:** East wall: from the foundation to the roof:  
 RM2 – Reinforced Masonry Bearing Walls (with Stiff Diaphragms)  
 West wall: from the foundation to the second floor:  
 C2 – Concrete Shear Walls (with Stiff Diaphragms)  
 West wall: from the second floor to the roof:  
 RM2 – Reinforced Masonry Bearing Walls (with Stiff Diaphragms)

**Transverse Direction:** North and South walls: from the foundation to the second floor:  
 C2 – Concrete Shear Walls (with Stiff Diaphragms)  
 North and South walls: from the second floor to the roof:  
 RM2 – Reinforced Masonry Bearing Walls (with Stiff Diaphragms)

<sup>4</sup> Assume a complete retrofit conforming to the current UC Seismic Safety Policy. Note this range includes all construction costs, including code upgrades (e.g., ADA, fire and life safety, mechanical, electrical, plumbing) triggered by the seismic retrofit. No specific estimate is required to be supplied at this time (i.e., provide an approximate cost to retrofit using Low, Medium, High or Very High cost-range categories). It is acknowledged that such a cost range is assumed to be based only on the engineer’s rough estimate and is not intended to require input from a professional cost estimator. For estimation purposes, CSEs may judgmentally determine an approximate cost range for seismic retrofits based on recent relevant experience, and then apply a multiplier to approximate total construction costs.

**Number of stories:**

Above grade: 3  
Below grade: 1

**Original Building Design Code and Year:** Uniform Building Code, 1991 Edition  
1992 California Building Code

**Retrofit Building Design Code and Year:** N/A

**Cost Range to Retrofit (if applicable)<sup>4</sup>:** N/A

“Low” cost-range corresponds to a complete retrofit cost less than \$50 per square foot (sf), “Medium” cost-range corresponds to a complete retrofit cost greater than \$50 per sf and less than \$200 per sf, “High” cost-range corresponds to a complete retrofit cost greater than \$200 per sf and less than \$400 per sf, and “Very High” cost-range corresponds to a complete retrofit cost greater than \$400 per sf.

**Building information used in this evaluation:**

Structural drawings by Albert C. Martin & Associates, “Science and Technology Research Building”, dated May 3, 1993

**Scope for completing this form:**

Reviewed structural drawings for original construction and performed ASCE 41-17 Tier 1 evaluation.

**Brief description of structure:**

The 3-story building has an area of approximately 66,193 square feet and was built in 1982. The building is regular in shape.

Foundation System: The typical foundation system consists of concrete piles with 24” to 36” diameter at perimeter basement wall and columns. The pile caps are tied with the concrete grade beams.

Structural System for Vertical (gravity) loads: The floor framing consists of metal deck with light weight concrete fill supported by steel wide flange beams spanning to steel wide flange girders. The girders are supported by steel wide flange columns that are encased in the perimeter concrete and reinforced masonry walls and are continuous to the foundations. The metal deck and steel girders are also connected to the perimeter concrete and reinforced masonry walls through the dowel reinforcements and anchors.

Structural System for Lateral (seismic/wind) loads: The metal deck with light weight concrete fill acts as diaphragms to transfer seismic forces to the perimeter concrete and reinforced masonry shear walls through the dowel reinforcements and anchors. The perimeter shear walls are continuous down to the foundations.

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## BACKGROUND INFORMATION

### Site Information:

Site Class (A-F): D; Default

Geologic Hazards (Y or N):

- Fault Rupture: N; EZRIM Beverly Hills
- Liquefaction: N; EZRIM Beverly Hills
- Landslide: N; EZRIM Beverly Hills

Site-specific Ground Motion Study? N

Site-modified Spectral Response (0.2s), Hazard Level BSE-1E,  $S_{XS}$ : 0.895

Site-modified Spectral Response (1.0s), Hazard Level BSE-1E,  $S_{X1}$ : 0.515

Estimated Fundamental Period (seconds):

- Longitudinal Direction: 0.37s
- Transverse Direction: 0.37s

Falling Hazards Assessment Summary: None observed.

### Summary of 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)
- 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 (Based on the existing drawings, the potential hazard of liquefaction should be mitigated as the building has deep pile foundations)
- Slope Failure
- Surface Fault Rupture
- Masonry or Concrete Wall Anchorage at Flexible 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:** N/A.

**Comments and Additional Deficiencies:** N/A.

**Seismic Retrofit Concept Sketches/Description (only if above-listed rating is V or greater):** N/A

**Appendices:**

- A. Seismic Design Map
- B. Quick Check Calculations