

UC Seismic Evaluation – West Medical

Date: 11/20/20
UC Campus: UCLA – off campus
Building Name: West Medical
Building Address: 1010 Veteran Avenue, Los Angeles, CA 90024
CAAN ID: 4328
Auxiliary Building ID¹: N/A



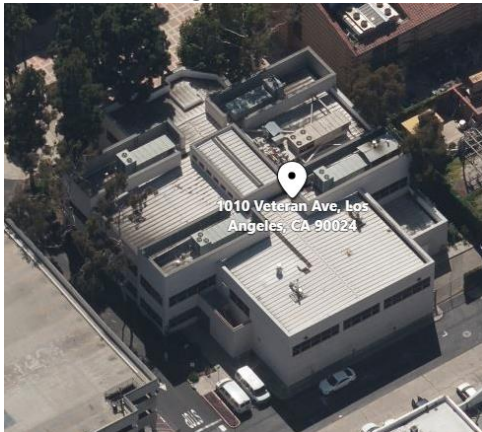
Summary of information provided by Evaluator:

Nabih Youssef Associates Structural Engineers

UCOP Seismic Performance Level² (or “Rating”) based on ASCE 41-17 Tier 1 evaluation findings: V*

*Tier 2 deficiency-based analysis is recommended to further evaluate moment frame and braced frame bracing, capacity and connections, and diaphragm composition and connections.

Plan Image or Aerial Photo



Exterior Elevation Photo



Site location coordinates (decimal):

Latitude: 34.060534
 Longitude: -118.447856

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

ASCE 41-17 Model Building Type³:

The building is most similar to the lightweight “S3 - Metal Building Frames” model building type with moment frames in both the transverse and longitudinal directions with end-plate bolted moment connections at the roof and flange plate welded moment connections at the mezzanine level. Additional braced frames are specified in the transverse direction. The building also includes an extensive mezzanine level, approximately 26,000 SF of building area.

¹ Applicable only for individual buildings that are structurally separate units within a building complex. Each auxiliary building shall be designated with the main building CAAN ID with a decimal number suffix (i.e. main building CAAN ID 5534; auxiliary building CAAN ID 5534.1). Auxiliary building ID is null for a single building or the main building in a building complex.

² The designated Seismic Performance Level shall be a Roman numeral associated with the most applicable performance description from Table A.1 in Appendix A of the UC Seismic Safety Policy.

³ If a building has multiple building types in one story, the model building type should be designated based on engineering judgement as the lateral system that would have the most predominantly negative effect on the seismic behavior of the building in that respective direction.

Number of stories:

Above grade: 1+Mezzanine
Below grade: 0

Original Building Design Code and Year: UBC - 1979 Edition (Metal Building)
UBC – 1985 Edition (Foundation and Radiographic Rooms)

Retrofit Building Design Code and Year: N/A

Cost Range to Retrofit (if applicable)⁴: Low

“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 Brian L. Cochran Associates, Inc., “West Campus Interim Staging Facility”, dated September 20, 1988

Partial Erection drawings by Varco Pruden Buildings dated September 1987.

Partial As-Built Plans by G&W Builders, Inc dated September 1988.

Scope for completing this form:

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

Brief description of structure:

The 1-story building with an extensive mezzanine has an area of approximately 26,000 square feet and was built in 1988. The building is irregular-shaped in-plan with re-entrant corners.

Foundation System: The foundation system consists of 24-in-diameter concrete piles typically 40-ft in length with concrete pile caps tied together by concrete grade beams.

Structural System for Vertical (gravity) loads: The roof and mezzanine floor framing consist of metal floor deck spanning to light gage purlins, lightweight built-up steel plate sections, and rolled steel beams and girders at select locations. The steel floor framing is supported by tube steel columns and lightweight built-up wide flange sections.

Structural System for Lateral (seismic/wind) loads: The metal roof and mezzanine deck act as diaphragms to distribute seismic forces to distributed moment frames with end-plate bolted moment connections at the roof and flange plate welded moment connections at the mezzanine and additional braced frames in the transverse direction. The exterior wall panels have not been considered as lateral elements.

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² The designated Seismic Performance Level shall be a Roman numeral associated with the most applicable performance description from Table A.1 in Appendix A of the UC Seismic Safety Policy.

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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: Y; CGS 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

Site-modified Spectral Response (0.2s), Hazard Level BSE-2E, S_{XS} : 1.85

Site-modified Spectral Response (1.0s), Hazard Level BSE-2E, S_{X1} : 0.944

Estimated Fundamental Period (seconds): 0.38s

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
- 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

Moment frames a combination of end-plate bolted and flange plate welded connections.

Brief Description of Anticipated Failure Mechanism: Moment frame beam and brace frame brace buckling, yielding failure is anticipated.

Comments and Additional Deficiencies:

The building is located within a “Liquefaction Zone” as per the California Geological Survey. This risk is mitigated by the deep foundations specified. The diaphragm composition and connections are unclear from the drawings.

Seismic Retrofit Concept Sketches/Description (only if above-listed rating is V or greater): Bracing and strengthening of moment frame beams and brace frame braces. Evaluation and strengthening of diaphragm composition and connections.

Appendices:

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