



**BUILDING REPORT REQUIREMENTS
ASCE 41-17 TIER 1 SEISMIC EVALUATIONS**

BUILDING REPORT

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|---|---|
| 1) UC Campus: Los Angeles | 5) Date of Evaluation: 10/2/2020 |
| 2) Building Name: Math Sci Bldg - Unit 1 (Original Construction including Seismic Upgrade in 1992) | 6) Evaluation by: Englekirk, TAS/JQ |
| 3) Building CAAN ID: 4359 | 7) Seismic Performance Rating and Basis of Rating: IV, ASCE 41-17 Tier 2 |
| 4) Auxiliary Building ID: | |

MATH SCIENCE BUILDINGS KEY PLAN



8) Plan Image or Aerial Photo



9) Exterior Elevation Photo

- 10) Site Location
- (a) Latitude Decimal Coordinates: **34.0695771**
 - (b) Longitude Decimal Coordinates: **-118.4427578**
- 11) ASCE 41-17 Model Building Type and Description
- (a) Longitudinal Direction: **C1: Reinforced concrete moment-resisting frame**
 - (b) **C2 and C2a: Reinforced concrete shear walls**
 - (c) Transverse Direction: **C1: Reinforced concrete moment-resisting frame**
 - (d) **C2 and C2a: Reinforced concrete shear walls**
- 12) Number of Stories
- (a) Above grade: **4**
 - (b) Below grade: **1**
- 13) Original Building Design Code & Year: **UBC-1952**
- 14) Retrofit Building Design Code & Year (if applicable): **UBC-1991**
- 15) Cost Range to Retrofit (if applicable): (Low, Medium, High or Very High):





Comments: 1992 strengthening added concrete moment frames and shear walls in both directions. Tier 2 evaluation conducted and raised rating from V to IV based on explicit consideration of contributions from seismic upgrade work. Bell shape caisson footings.

BACKGROUND INFORMATION

Site Information

16) Site Class (A – F) and Basis of Assessment

- (a) Site Class: **D**
- (b) Site Class Basis: **Unknown (Default)**
- (c) Site Class Company: **None**
- (d) Site Class Report Date: **None**
- (e) Site Class Ref Page No.: **None**

17) Geologic Hazards

- (a) Fault Rupture (Yes, No or Unknown) and Basis of Assessment: **No, CGS Maps**
- (b) Liquefaction (Yes, No or Unknown) and Basis of Assessment: **No, CGS Maps**
- (c) Landslide (Yes, No or Unknown) and Basis of Assessment: **No, CGS Maps**

18) Site-specific Ground Motion Study? (Yes or No) **No**

Seismic design acceleration parameters of interest:	
For BSE-1N	1.631 and 0.827
For BSE-1E	0.897 and 0.517

19) Estimated Fundamental Period (seconds)

- (a) Longitudinal: **0.47**
- (b) Transverse: **0.47**

20) Falling Hazards Assessment Summary: **None noted.**

21) Structural Non-Compliances/Findings Significantly Affecting Rating Determination Summary
Significant Structural Deficiencies, Potentially Affecting *Seismic Performance Rating* Designation:

- (a) Lateral System Stress Check (wall shear, column shear or flexure, or brace axial as applicable):
Based on Tier 2, a small number of shear wall piers have DCR >1.1, but other walls nearby have sufficient capacity to accept load redistribution.
- (b) Load Path: **No deficiency noted**
- (c) Adjacent Buildings: **Yes, deficiency noted. The gap provided between Unit 1 and Addition is 6" while the gap required per Tier 1 checklist is around 12".**
- (d) Weak Story: **No deficiency noted**
- (e) Soft Story: **No deficiency noted**
- (f) Geometry (vertical irregularities): **No deficiency noted**
- (g) Torsion: **No deficiency noted**
- (h) Mass – Vertical Irregularity: **No deficiency noted**
- (i) Cripple Walls: **Not Applicable**



- (j) Wood Sills (bolting): **Not Applicable**
- (k) Diaphragm Continuity: **No deficiency noted**
- (l) Openings at Shear Walls (concrete or masonry): **No deficiency noted. Diaphragm has sufficient capacity to distribute loads at shear walls adjacent to openings.**
- (m) Liquefaction: **No**
- (n) Slope Failure: **No**
- (o) Surface Fault Rupture: **No**
- (p) Masonry or Concrete Wall Anchorage at Flexible Diaphragm: **Not Applicable**
- (q) URM wall height to thickness ratio: **Not Applicable**
- (r) URM Parapets or Cornices: **Not Applicable**
- (s) URM Chimney: **Not Applicable**
- (t) Heavy Partitions Braced by Ceilings: **No deficiency noted**
- (u) Appendages: **No deficiency noted**

22) Brief Description of Anticipated Failure Mechanism

Shear failure of lightly confined concrete gravity columns due to deformation compatibility drift once stiffness of shear walls and moment frames reduces sufficiently. Shear failures of concrete shear walls.

23) Seismic Retrofit Concept Sketches/Description (only required for buildings rated V or worse)

None recommended.

Building Report Appendices

- A) ASCE 41-17 Tier 1 Checklists (Structural only)
- B) Quick Check Calculations