

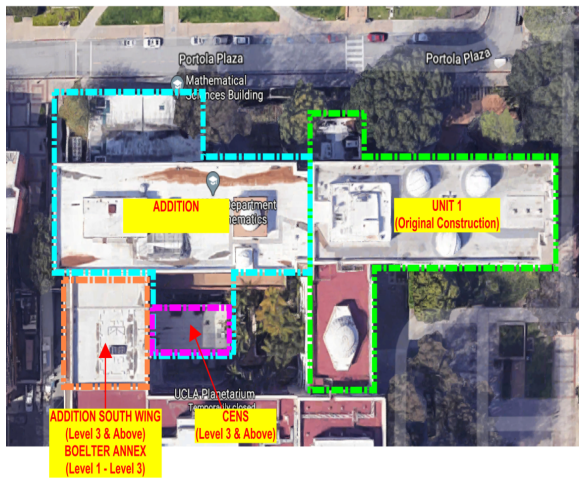


BUILDING REPORT REQUIREMENTS
ASCE 41-17 TIER 1 SEISMIC EVALUATIONS

BUILDING REPORT

- 1) UC Campus: Los Angeles
2) Building Name: Math Sci Bldg - Addition
3) Building CAAN ID:
4) Auxiliary Building ID: 4359.1
5) Date of Evaluation: 8/27/2020
6) Evaluation by: Englekirk, TAS
7) Seismic Performance Rating and Basis of Rating: V, ASCE 41-17 Tier 1

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: C2 and C2a: Reinforced concrete shear walls
(b) Transverse Direction: C2 and C2a: Reinforced concrete shear walls
12) Number of Stories
(a) Above grade: 5
(b) Below grade: 3
13) Original Building Design Code & Year: UBC-1964
14) Retrofit Building Design Code & Year (if applicable):
15) Cost Range to Retrofit (if applicable): (Low, Medium, High or Very High): Medium



Comments: Sloping site.



**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) **None**

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

19) Estimated Fundamental Period (seconds)

- (a) Longitudinal: **0.67**
- (b) Transverse: **0.67**

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):  
**Yes, wall shear stress deficiency noted**
- (b) Load Path: **No deficiency noted**
- (c) Adjacent Buildings: **Yes, deficiency noted.** The gap provided between Unit 1 and Addition as well as the main structure of Addition and South Wing is 6" while the gap required per Tier 1 checklist is around 12". There is no gap provided between the storage building floor and adjacent reactor room roof.
- (d) Weak Story: **No deficiency noted**
- (e) Soft Story: **No deficiency noted**
- (f) Geometry (vertical irregularities): **Yes, geometry deficiency and vertical irregularity 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: Yes, deficiency noted. There is a very narrow strip of diaphragm connection at Level 3 between the main building and storage building. The diaphragm may be overstressed during seismic event.
- (l) Openings at Shear Walls (concrete or masonry): No deficiency noted
- (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. Shear cracking and flexural compression failure of concrete shear walls.

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

Increase confinement of concrete columns, added shear walls, frames or energy dissipation to reduce drift and shear stress.

**Building Report Appendices**

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