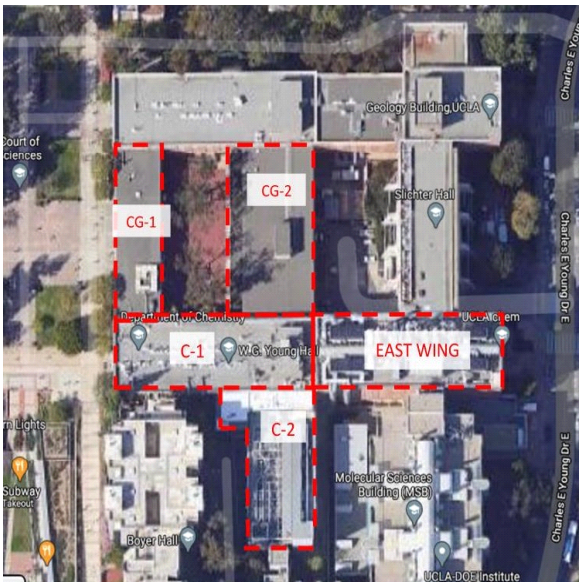
UNIVERSITY OF CALIFORNIA

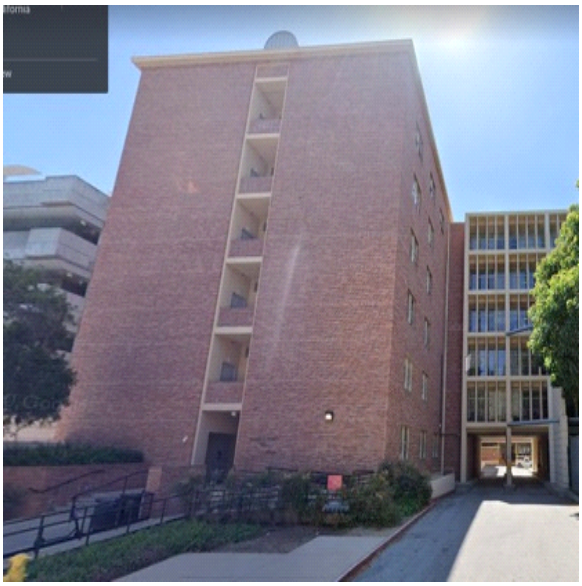
BUILDING REPORT REQUIREMENTS
ASCE 41-17 TIER 1 SEISMIC EVALUATIONS

BUILDING REPORT

1) UC Campus: Los Angeles
2) Building Name: Young Hall, East Wing
3) Building CAAN ID: 4228B
4) Auxiliary Building ID: 4228B.4
5) Date of Evaluation: 11/19/2020
6) Evaluation by: Englekirk, TAS / NAT
7) Seismic Performance Rating and Basis of Rating: V, ASCE 41-17 Tier 1



8) Plan Image or Aerial Photo


9) Exterior Elevation Photo

10) Site Location
    (a) Latitude Decimal Coordinates: 34.0688448
    (b) Longitude Decimal Coordinates: -118.441199
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: 6
    (b) Below grade: 1
13) Original Building Design Code & Year: UBC-1961
14) Retrofit Building Design Code & Year (if applicable): UBC-1988
15) Cost Range to Retrofit (if applicable): (Low, Medium, High or Very High): Medium

REGISTERED PROFESSIONAL ENGINEER
THOMAS ANDREW SABOL
SE 3175
STRUCTURAL
STATE OF CALIFORNIA

Comments: Young Hall consists of five separate buildings (see the plan view showing buildings CG-1, CG-1, C-1, C-2, and the East Wing). Separate reports have been prepared for each building.

East Wing Building: along the east-west direction, the lateral system consists of perimeter reinforced concrete shear walls at the lower levels and 10.5" thick reinforced brick shear walls at the upper levels. Along the north-south direction, the lateral system consists of perimeter reinforced concrete shear walls

except for 10.5" thick reinforced brick shear walls at the upper two levels. Refer to the calculations for the typical floor plan view. As part of the 1997 retrofit, two bays of steel braced frames were added along the North-South direction; however, the effectiveness of the braced frames in terms of lateral load resistance is relatively low per the Tier 1 evaluation, and further Tier 2/Tier 3 evaluation is recommended.

Structural deficiencies per the Tier 1 evaluation include overstressed shear walls in both orthogonal directions, overstressed braced frame columns, beams and welded connections, as well as insufficient confinement of secondary components for deflection compatibility.

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	1.633 and 0.828
For BSE-1E	0.897 and 0.517

19) Estimated Fundamental Period (seconds)
- (a) Longitudinal: 0.49
- (b) Transverse: 0.49

20) Falling Hazards Assessment Summary: There is a potential for spalling of the brick veneer.

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 as well as braced frame column and connection deficiencies noted.
- (b) Load Path: No deficiency noted
- (c) Adjacent Buildings: Yes, deficiency noted. The 4" gap provided between Building C-1 as well as Slichter Hall is less than the required separation of 13" per the Tier 1 checklist.
- (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): Yes, deficiency noted at the perimeter Wall Pier along Grid 14/C-D.
(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 cracking and flexural compression failure of shear walls. Shear failure of lightly confined concrete gravity columns due to deformation compatibility drift. Braced frame column failure may occur following a strong seismic event as well as other possible failure mechanisms for braced frames including, buckling and fracture of braces, gusset plate connection failure, column base plate fracture, and/or beam failure.

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

Increase confinement of concrete columns, added shear walls, or energy dissipation to reduce drift. Strengthening of braced frame columns, beams, and connections.

Building Report Appendices

A) ASCE 41-17 Tier 1 Checklists (Structural only)

B) Quick Check Calculations