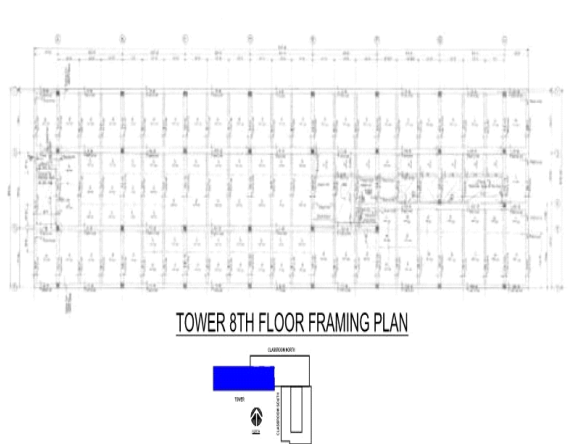




BUILDING REPORT REQUIREMENTS
ASCE 41-17 TIER 1 SEISMIC EVALUATIONS

BUILDING REPORT

- 1) UC Campus: Los Angeles
2) Building Name: Bunche Hall - Tower
3) Building CAAN ID: 4580
4) Auxiliary Building ID:
5) Date of Evaluation: 10/28/2020
6) Evaluation by: Englekirk, AB
7) Seismic Performance Rating and Basis of Rating: VI, ASCE 41-17 Tier 1



8) Plan Image or Aerial Photo



9) Exterior Elevation Photo

- 10) Site Location
(a) Latitude Decimal Coordinates: 34.0742539
(b) Longitude Decimal Coordinates: -118.4401283
11) ASCE 41-17 Model Building Type and Description
(a) Longitudinal Direction: C1: Reinforced concrete moment-resisting frame
(b) Transverse Direction: C1: Reinforced concrete moment-resisting frame
12) Number of Stories
(a) Above grade: 10
(b) Below grade: 0
13) Original Building Design Code & Year: UBC-1961
14) Retrofit Building Design Code & Year (if applicable): UBC-1991
15) Cost Range to Retrofit (if applicable): (Low, Medium, High or Very High): Medium



Comments: Building Lateral system composed of Concrete Moment Frame above 3rd Level (Transfer Level) and Concrete Shear Wall in the East-West Direction below 3rd Floor (1992 Retrofit). Per ASCE 41-17, given that lateral system is composed of multiple common building types C1 and C2, Tier 3 evaluation recommended for adequacy of results of building seismic behavior and accuracy to improve or confirm building Performance Rating. Because of the geometry of the building Tier 1 estimates result in highly



inaccurate forces on the floor given the higher modes effects on the structure and then heavier mass effect of the 3rd floor. Dynamic Analysis of the structure recommended to capture true effect and behavior of the floor above Transfer Level. Tier 1 Evaluation merely focus on the discontinuity of the frames. Frame columns rebar detailing appears to be adequate to develop required shear and flexural strength. Frame beams do not provide sufficient shear reinforcement and longitudinal rebar splice location is non-compliant per ASCE 41-17 Tier 1 Check.

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 | 1.624 and 0.824 |
| For BSE-1E | 0.896 and 0.516 |

19) Estimated Fundamental Period (seconds)

- (a) Longitudinal: **1.518**
- (b) Transverse: **1.518**

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, column shear/flexure deficiency noted
- (b) Load Path: **No deficiency noted**
- (c) Adjacent Buildings: **Yes, deficiency noted. Only 2.5" clearance given between Classroom North Building floors and Tower building columns.**
- (d) Weak Story: **No deficiency noted**
- (e) Soft Story: **No deficiency noted**
- (f) Geometry (vertical irregularities): **Yes, vertical irregularity noted. Typical concrete moment frame structure stops at 3rd Floor (Transfer Level)**



- (g) Torsion: No deficiency noted
- (h) Mass – Vertical Irregularity: Yes, vertical irregularity noted. 3rd Floor Level (Transfer Level) effective seismic mass is much higher than Tower stories above which can lead to unexpected higher mode effects and concentrations of demand.
- (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): Not Applicable
- (m) Liquefaction: No
- (n) Slope Failure: No
- (o) Surface Fault Rupture: No
- (p) Masonry or Concrete Wall Anchorage at Flexible Diaphragm: No deficiency noted
- (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 failure of concrete moment frame beams, shear failure of lightly confined moment frame columns. 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 moment concrete beams and columns, added shear walls, frames or energy dissipation to reduce drift.

Building Report Appendices

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

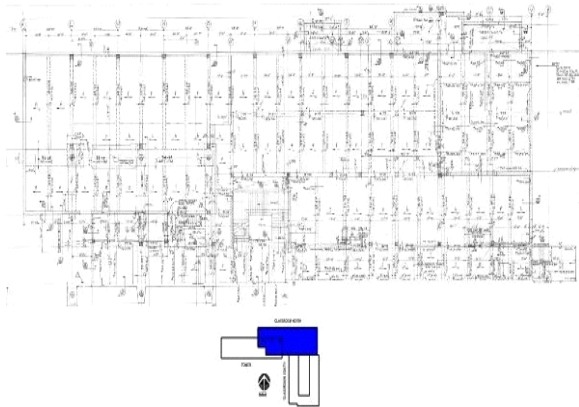
B) Quick Check Calculations



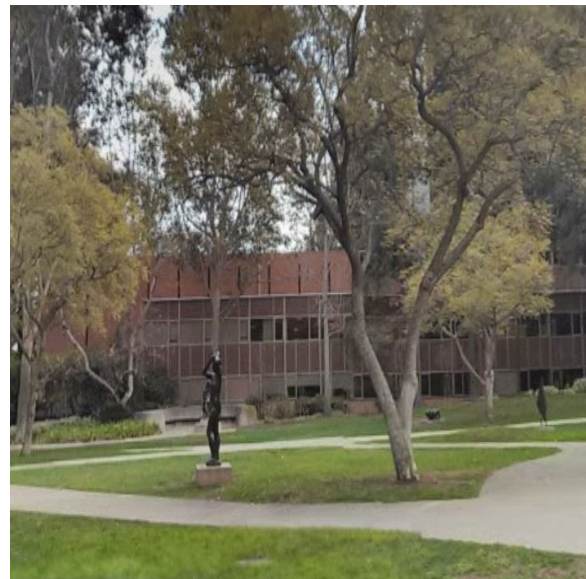
**BUILDING REPORT REQUIREMENTS
ASCE 41-17 TIER 1 SEISMIC EVALUATIONS**

BUILDING REPORT

- 1) UC Campus: **Los Angeles**
- 2) Building Name: **Bunche Hall - Classrooms (North Building)**
- 3) Building CAAN ID:
- 4) Auxiliary Building ID: **4580.1**
- 5) Date of Evaluation: **10/28/2020**
- 6) Evaluation by: **Englekirk, AB**
- 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: **34.0742539**
 - (b) Longitude Decimal Coordinates: **-118.4401283**
- 11) ASCE 41-17 Model Building Type and Description
 - (a) Longitudinal Direction: **RM1: Reinforced masonry**
 - (b) Transverse Direction: **RM1: Reinforced masonry**
- 12) Number of Stories
 - (a) Above grade: **4**
 - (b) Below grade: **0**
- 13) Original Building Design Code & Year: **UBC-1961**
- 14) Retrofit Building Design Code & Year (if applicable): **UBC-1991**
- 15) Cost Range to Retrofit (if applicable): (Low, Medium, High or Very High): **Medium**



Comments: Building Lateral system composed of Reinforced Masonry Walls and added Concrete Shear Walls (1992 Retrofit) above 1st Floor, and perimeter concrete shear walls between Ground Floor and 1st Floor. Per ASCE 41-17, given that lateral system is composed of multiple common building types RM1 and



C2, Tier 3 evaluation recommended for adequacy of results of building seismic behavior and accuracy to improve or confirm building Performance Rating.

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 | 1.624 and 0.824 |
| For BSE-1E | 0.896 and 0.516 |

19) Estimated Fundamental Period (seconds)

- (a) Longitudinal: **0.386**
- (b) Transverse: **0.386**

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. Only 2.5" clearance given between Classroom North Building floors and Tower building columns. Floor Classroom levels (North & South Building) align, pounding of floors not considered critical.**
- (d) Weak Story: **No deficiency noted**
- (e) Soft Story: **No deficiency noted**
- (f) Geometry (vertical irregularities): **Yes, vertical irregularity noted. 3rd Floor to Roof Masonry 13" Wall E-W is discontinuous below 3rd Level.**
- (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): **Not Applicable**
- (m) Liquefaction: **No**
- (n) Slope Failure: **No**
- (o) Surface Fault Rupture: **No**
- (p) Masonry or Concrete Wall Anchorage at Flexible Diaphragm: **No deficiency noted**
- (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. Shear cracking and flexural compression failure of lightly reinforced masonry shear walls.

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

Increase confinement of concrete columns via FRP overlay, added masonry shear walls strength using thickened cross-section or FRP overlay or energy dissipation to reduce drift.

Building Report Appendices

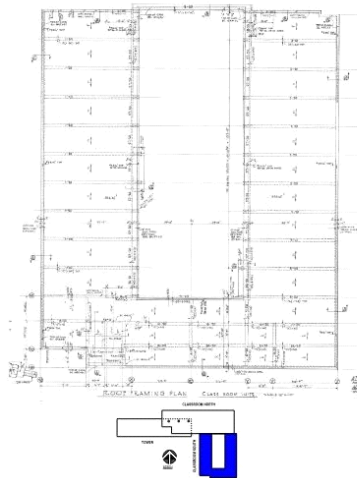
- A) ASCE 41-17 Tier 1 Checklists (Structural only)
- B) Quick Check Calculations



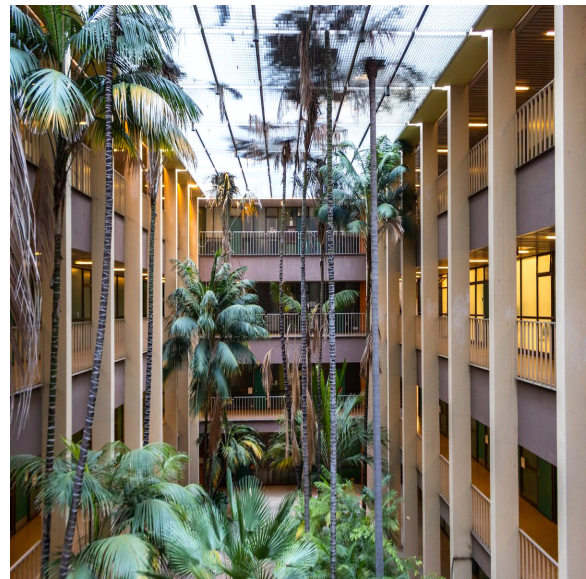
BUILDING REPORT REQUIREMENTS
ASCE 41-17 TIER 1 SEISMIC EVALUATIONS

BUILDING REPORT

- 1) UC Campus: Los Angeles
2) Building Name: Bunche Hall - Classrooms (South Building)
3) Building CAAN ID:
4) Auxiliary Building ID: 4580.2
5) Date of Evaluation: 10/28/2020
6) Evaluation by: Englekirk, AB
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: 34.0742539
(b) Longitude Decimal Coordinates: -118.4401283
11) ASCE 41-17 Model Building Type and Description
(a) Longitudinal Direction: RM1: Reinforced masonry
(b) Transverse Direction: RM1: Reinforced masonry
12) Number of Stories
(a) Above grade: 4
(b) Below grade: 0
13) Original Building Design Code & Year: UBC-1961
14) Retrofit Building Design Code & Year (if applicable): UBC-1991
15) Cost Range to Retrofit (if applicable): (Low, Medium, High or Very High): Medium



Comments: Building Lateral system composed of Reinforced Masonry Walls and added Concrete Shear Walls (1992 Retrofit) above 1st Floor, and perimeter concrete shear walls between Ground Floor and 1st Floor. Per ASCE 41-17, given that lateral system is composed of multiple common building types RM1 and C2, Tier 3 evaluation recommended for adequacy of results of building seismic behavior and accuracy to



improve or confirm building Performance Rating. A separate evaluation of the sunscreen found significant deterioration of connections supporting the sunscreen framing from the cables spanning the court.

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 | 1.624 and 0.824 |
| For BSE-1E | 0.896 and 0.516 |

19) Estimated Fundamental Period (seconds)

- (a) Longitudinal: **0.386**
- (b) Transverse: **0.386**

20) Falling Hazards Assessment Summary: **Sunshade over the courtyard is a falling hazard.**

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. All floor levels align with adjacent classroom building (North) floors, pounding of floors not considered critical.**
- (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): **Not Applicable**
- (m) Liquefaction: **No**
- (n) Slope Failure: **No**
- (o) Surface Fault Rupture: **No**
- (p) Masonry or Concrete Wall Anchorage at Flexible Diaphragm: **No deficiency noted**
- (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. Shear cracking and flexural compression failure of lightly reinforced masonry shear walls.

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

Increase confinement of concrete columns via FRP overlay, added masonry shear walls strength using thickened cross-section or FRP overlay or energy dissipation to reduce drift.

Building Report Appendices

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

B) Quick Check Calculations