

Campus: [UCLA](#)
Building Name: [DWP BLDG 2](#)
CAAN ID: [42157](#)
Auxiliary Building ID:



UNIVERSITY
OF
CALIFORNIA

Date: [April 13, 2021](#)

FORM 1
CERTIFICATE OF SEISMIC PERFORMANCE LEVEL

- UC-Designed & Constructed Facility**
 Campus-Acquired or Leased Facility

BUILDING DATA

Building Name: [DWP BLDG 2](#)
Address: [731 Charles E. Young Dr. S, Los Angeles CA 90095](#)
Site location coordinates: Latitude [34.0672582](#) Longitudinal [-118.4461552](#)

UCOP SEISMIC PERFORMANCE LEVEL (OR "RATING"): [V](#)

ASCE 41-17 Model Building Type:
a. Longitudinal Direction: [S3 \(Light metal building\)](#)
b. Transverse Direction: [S3 \(Light metal building\)](#)

Gross Square Footage: [2,228](#)
Number of stories *above* grade: [1](#)
Number of basement stories *below* grade: [0](#)

Year Original Building was Constructed: [1995](#)
Original Building Design Code & Year: [UBC-1988](#)
Retrofit Building Design Code & Code (if applicable): [N/A](#)

SITE INFORMATION

Site Class: [D](#) Basis: [Inferred](#)
Geologic Hazards:
Fault Rupture: [No](#) Basis: [CGS Earthquake Hazards Zone Application](#)
Liquefaction: [Yes](#) Basis: [CGS Earthquake Hazards Zone Application](#)
Landslide: [No](#) Basis: [CGS Earthquake Hazards Zone Application](#)

ATTACHMENT

Original Structural Drawings: ([N/A](#), [N/A](#), [N/A](#), [N/A](#)) or
Seismic Evaluation: ([DWP BLDG 2 Seismic Evaluation Tier 1, KPFF, 4/13/2021, FEMA 154 Rapid Visual Screening](#))
Retrofit Structural Drawings: ([N/A](#), [N/A](#), [N/A](#), [N/A](#))



CERTIFICATION & PRESUMPTIVE RATING VERIFICATION STATEMENT

I, [Mark Hershberg](#), a California-licensed structural engineer, am responsible for the completion of this certificate, and I have no ownership interest in the property identified above. My scope of review to support the completion of this certificate included both of the following ("No" responses must include an explanation):

- a) the review of structural drawings indicating that they are as-built or record drawings, or that they otherwise are the basis for the construction of the building: Yes No
- b) visiting the building to verify the observable existing conditions are reasonably consistent with those shown on the structural drawings: Yes No

No as-built drawings were available, so evaluation performed using FEMA 154 Level 2 Rapid Visual Screening protocol on visual observations only.

Based on my review, I have verified that the UCOP Seismic Performance Level (SPL) is presumptively permitted by the following UC Seismic Program Guidebook provision (choose one of the following):

- 1) Contract documents indicate that the original design and construction of the aforementioned building is in accordance with the benchmark design code year (or later) building code seismic design provisions for UBC or IBC listed in Table 1 below.
- 2) The existing SPL rating is based on an acceptable basis of seismic evaluation completed in 2006 or later.
- 3) Contract documents indicate that a comprehensive¹ building seismic retrofit design was fully-constructed with an engineered design based on the 1997 UBC/1998 **or later** CBC, and (choose one of the following):
 - the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1E (or BSE-R) and BSE-2E (or BSE-C) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 CBC **or later** for EXISTING buildings, and is presumptively assigned an SPL rating of IV.
 - the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1 (or BSE-1N) and BSE-2 (or BSE-2N) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 **or later** CBC for NEW buildings, and is presumptively assigned an SPL rating of III.
 - the retrofit project was not completed by the UC campus following UC policies, and is presumptively assigned an SPL rating of IV.

¹ A comprehensive retrofit addresses the entire building structural system as indicated by the associated seismic evaluation, as opposed to addressing selective portions of the structural system.

Campus: UCLA
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Date: April 13, 2021

CERTIFICATION SIGNATURE

Mark Hershberg
Print Name

Principal
Title

S5078
CA Professional Registration No.

6/30/2021
License Expiration Date


Signature

4/13/2021
Date

KPFF Inc., (213) 418-0201, 700 S. Flower St., Suite 2100, Los Angeles, CA 90017

Firm Name, Phone Number, and Address

AFFIX SEAL HERE





Table 1: Benchmark Building Codes and Standards

| Building Type ^{a,b} | Building Seismic Design Provisions | |
|---|------------------------------------|------|
| | UBC | IBC |
| Wood frame, wood shear panels (Types W1 and W2) | 1976 | 2000 |
| Wood frame, wood shear panels (Type W1a) | 1976 | 2000 |
| Steel moment-resisting frame (Types S1 and S1a) | 1997 | 2000 |
| Steel concentrically braced frame (Types S2 and S2a) | 1997 | 2000 |
| Steel eccentrically braced frame (Types S2 and S2a) | 1988 ^g | 2000 |
| Buckling-restrained braced frame (Types S2 and S2a) | f | 2006 |
| Metal building frames (Type S3) | f | 2000 |
| Steel frame with concrete shear walls (Type S4) | 1994 | 2000 |
| Steel frame with URM infill (Types S5 and S5a) | f | 2000 |
| Steel plate shear wall (Type S6) | f | 2006 |
| Cold-formed steel light-frame construction—shear wall system (Type CFS1) | 1997 ^h | 2000 |
| Cold-formed steel light-frame construction—strap-braced wall system (Type CFS2) | f | 2003 |
| Reinforced concrete moment-resisting frame (Type C1) ⁱ | 1994 | 2000 |
| Reinforced concrete shear walls (Types C2 and C2a) | 1994 | 2000 |
| Concrete frame with URM infill (Types C3 and C3a) | f | f |
| Tilt-up concrete (Types PC1 and PC1a) | 1997 | 2000 |
| Precast concrete frame (Types PC2 and PC2a) | f | 2000 |
| Reinforced masonry (Type RM1) | 1997 | 2000 |
| Reinforced masonry (Type RM2) | 1994 | 2000 |
| Unreinforced masonry (Type URM) | f | f |
| Unreinforced masonry (Type URMa) | f | f |
| Seismic isolation or passive dissipation | 1991 | 2000 |

Note: This table has been adapted from ASCE 41-17 Table 3-2. Benchmark Building Codes and Standards for Life Safety Structural Performed at BSE-1E.

Note: UBC = Uniform Building Code. IBC = International Building Code.

^a Building type refers to one of the common building types defined in Table 3-1 of ASCE 41-17.

^b Buildings on hillside sites shall not be considered Benchmark Buildings.

^c not used

^d not used

^e not used

^f No benchmark year; buildings shall be evaluated in accordance with Section III.J.

^g Steel eccentrically braced frames with links adjacent to columns shall comply with the 1994 UBC Emergency Provisions, published September/October 1994, or subsequent requirements.

^h Cold-formed steel shear walls with wood structural panels only.

ⁱ Flat slab concrete moment frames shall not be considered Benchmark Buildings.

UCLA – DWP BLDG 2

DATE: 4/13/2021

FEMA 154 Rapid Visual Screening Minimum Building Report Information

BUILDING DATA

Campus: UCLA

Building Name: DWP BLDG 2

CAAN ID: 42157

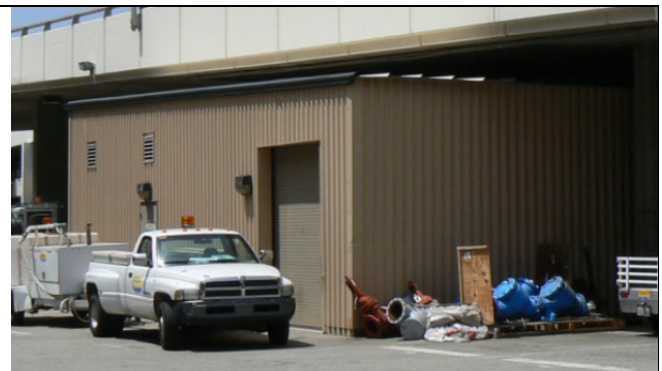
Auxiliary Building ID:

Address: 731 Charles E. Young Dr. S, Los Angeles CA 90095

Site location coordinates: Latitude 34.0672582 Longitudinal -118.4461552



Aerial Photo



Exterior Elevation

ASCE 41-17 Model Building Type:

- a. Longitudinal Direction: S3 (Light metal building)
- b. Transverse Direction: S3 (Light metal building)

Site-specific Ground Motion Study? No

Seismic Design Acceleration Parameters of Interest:

- a. For BSE-1E $S_{X5}=0.896g$ and $S_{X1}=0.516g$
- b. For BSE-2E $S_{X5}=1.544g$ and $S_{X1}=0.945g$

Estimated Fundamental Period (seconds)

- a. Longitudinal: Unknown
- b. Transverse: Unknown

Gross Square Footage: 2,228

Number of stories *above* grade: 1
Number of basement stories *below* grade: 0

Year Original Building was Constructed: 1995
Original Building Design Code & Year: UBC-1988
Retrofit Building Design Code & Code (if applicable): N/A

SITE INFORMATION

Site Class: D Basis: Inferred
Geologic Hazards:
Fault Rupture: No Basis: CGS Earthquake Hazards Zone Application
Liquefaction: Yes Basis: CGS Earthquake Hazards Zone Application
Landslide: No Basis: CGS Earthquake Hazards Zone Application

UCOP SEISMIC PERFORMANCE RATING (OR "RATING"): V

"BALLPARK" RETROFIT COST (if applicable)

- Minor (<\$50/sf)
- Moderate (~\$50-\$200/sf)
- Major (>\$200/sf)

SUMMARY 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)
- Lateral System Detailing (reinforcement ratio, confinement, aspect ratio, etc)
- 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 Diaphragm
- URM wall height to thickness ratio
- URM Parapets or Cornices
- URM Chimney
- Heavy Partitions Braced by Ceilings
- Appendages

POTENTIAL FALLING HAZARDS

- Heavy ceilings, features or ornamentation above large lecture halls, auditoriums, lobbies or other areas where large numbers of people congregate.
- Heavy masonry or stone veneer above exit ways.
- Unbraced masonry parapets, cornices or other ornamentation above exit ways.
- Unrestrained hazardous materials storage.
- Masonry chimneys.
- Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc.
- None of the above.

BRIEF DESCRIPTION OF ANTICIPATED FAILURE MECHANISM

COMMENTS AND RECOMMENDATIONS

A FEMA 154 Level 2 Rapid Visual Screening was performed in lieu of an ASCE Tier 1 evaluation due to construction type and lack of as-built documentation. The structure is below a bridge that has previously been seismically rated as an IV. Due to the essential equipment within the building, it is given a V rating.

Appendices

- A. FEMA 154 Rapid Visual Screening



Address: 731 Charles E. Young Dr. S
Los Angeles, CA Zip: 90095

Other Identifiers: _____

Building Name: DWP BLDG 2

Use: Utility

Latitude: 34.0672582 Longitude: -118.4461552

Ss: 2.032 s: 0.727

Screener(s): _____ Date/Time: 4/27/21, 9:30am

No. Stories: Above Grade: 1 Below Grade: _____ Year Built: 1995 EST

Total Floor Area (sq. ft.): 2,228 Code Year: UBC-1988

Additions: None Yes, Year(s) Built: _____

Occupancy: Assembly Commercial Emer. Services Historic Shelter
Industrial Office School Government
 Utility Warehouse Residential, # Units: _____

Soil Type: A B C D E F DNK
Hard Avg Dense Stiff Soft Poor
Rock Rock Soil Soil Soil Soil
If DNK, assume Type D.

Geologic Hazards: Liquefaction: Yes No/DNK Landslide: Yes No/DNK Surf. Rupt.: Yes No/DNK

Adjacency: Pounding Falling Hazards from Taller Adjacent Building

Irregularities: Vertical (type/severity) None
 Plan (type) None

Exterior Falling Hazards: Unbraced Chimneys Heavy Cladding or Heavy Veneer
 Parapets Appendages
 Other: _____

COMMENTS:
Equipment sits below a bridge previously rated as an IV structure. The building houses essential electrical equipment.

Additional sketches or comments on separate page



SKETCH

BASIC SCORE, MODIFIERS, AND FINAL LEVEL 1 SCORE, S_{L1}

| FEMA BUILDING TYPE | Do Not Know | W1 | W1A | W2 | S1 (MRF) | S2 (BR) | S3 (LM) | S4 (RC SW) | S5 (URM INF) | C1 (MRF) | C2 (SW) | C3 (URM INF) | PC1 (TU) | PC2 | RM1 (FD) | RM2 (RD) | URM | MH |
|--|-------------|------|------|------|----------|---------|---------|------------|--------------|----------|---------|--------------|----------|------|----------|----------|------|------|
| Basic Score | | 2.1 | 1.9 | 1.8 | 1.5 | 1.4 | 1.6 | 1.4 | 1.2 | 1.0 | 1.2 | 0.9 | 1.1 | 1.0 | 1.1 | 1.1 | 0.9 | 1.1 |
| Severe Vertical Irregularity, V_{L1} | | -0.9 | -0.9 | -0.9 | -0.8 | -0.7 | -0.8 | -0.7 | -0.7 | -0.7 | -0.8 | -0.6 | -0.7 | -0.7 | -0.7 | -0.7 | -0.6 | NA |
| Moderate Vertical Irregularity, V_{L1} | | -0.6 | -0.5 | -0.5 | -0.4 | -0.4 | -0.5 | -0.4 | -0.3 | -0.4 | -0.4 | -0.3 | -0.4 | -0.4 | -0.4 | -0.4 | -0.3 | NA |
| Plan Irregularity, P_{L1} | | -0.7 | -0.7 | -0.6 | -0.5 | -0.5 | -0.6 | -0.4 | -0.4 | -0.4 | -0.5 | -0.3 | -0.5 | -0.4 | -0.4 | -0.4 | -0.3 | NA |
| Pre-Code | | -0.3 | -0.3 | -0.3 | -0.3 | -0.2 | -0.3 | -0.2 | -0.1 | -0.1 | -0.2 | 0.0 | -0.2 | -0.1 | -0.2 | -0.2 | 0.0 | 0.0 |
| Post-Benchmark | | 1.9 | 1.9 | 2.0 | 1.0 | 1.1 | 1.1 | 1.5 | NA | 1.4 | 1.7 | NA | 1.5 | 1.7 | 1.6 | 1.6 | NA | 0.5 |
| Soil Type A or B | | 0.5 | 0.5 | 0.4 | 0.3 | 0.3 | 0.4 | 0.3 | 0.2 | 0.2 | 0.3 | 0.1 | 0.3 | 0.2 | 0.3 | 0.3 | 0.1 | 0.1 |
| Soil Type E (1-3 stories) | | 0.0 | -0.2 | -0.4 | -0.3 | -0.2 | -0.2 | -0.2 | -0.1 | -0.1 | -0.2 | 0.0 | -0.2 | -0.1 | -0.2 | -0.2 | 0.0 | -0.1 |
| Soil Type E (> 3 stories) | | -0.4 | -0.4 | -0.4 | -0.3 | -0.3 | NA | -0.3 | -0.1 | -0.1 | -0.3 | -0.1 | NA | -0.1 | -0.2 | -0.2 | 0.0 | NA |
| Minimum Score, S_{MIN} | | 0.7 | 0.7 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 1.0 |

FINAL LEVEL 1 SCORE, $S_{L1} \geq S_{MIN}$: 1.6

EXTENT OF REVIEW

Exterior: Partial All Sides Aerial
Interior: None Visible Entered
Drawings Reviewed: Yes No
Soil Type Source: _____
Geologic Hazards Source: CGS Earthquake Hazards App.
Contact Person: _____

OTHER HAZARDS

Are There Hazards That Trigger A Detailed Structural Evaluation?

Pounding potential (unless $S_{L2} >$ cut-off, if known)
 Falling hazards from taller adjacent building
 Geologic hazards or Soil Type F
 Significant damage/deterioration to the structural system

ACTION REQUIRED

Detailed Structural Evaluation Required?

Yes, unknown FEMA building type or other building
 Yes, score less than cut-off
 Yes, other hazards present
 No

Detailed Nonstructural Evaluation Recommended? (check one)

Yes, nonstructural hazards identified that should be evaluated
 No, nonstructural hazards exist that may require mitigation, but a detailed evaluation is not necessary
 No, no nonstructural hazards identified DNK

LEVEL 2 SCREENING PERFORMED?

Yes, Final Level 2 Score, S_{L2} 1.6 No
Nonstructural hazards? Yes No

Where information cannot be verified, screener shall note the following: EST = Estimated or unreliable data OR DNK = Do Not Know

Rapid Visual Screening of Buildings for Potential Seismic Hazards

FEMA P-154 Data Collection Form

Optional Level 2 data collection to be performed by a civil or structural engineering professional, architect, or graduate student with background in seismic evaluation or design of buildings.

Level 2 (Optional)
VERY HIGH Seismicity

| | | | |
|------------------------------|--|---|--|
| Bldg Name: Lab School | Final Level 1 Score: $S_{L1} = 1.6$ | <i>(do not consider S_{MIN})</i> | |
| Screener: | Level 1 Irregularity Modifiers: Vertical Irregularity, $V_{L1} = 0$ | Plan Irregularity, $P_{L1} = 0$ | |
| Date/Time: | ADJUSTED BASELINE SCORE: $S' = (S_{L1} - V_{L1} - P_{L1}) = 1.6$ | | |

STRUCTURAL MODIFIERS TO ADD TO ADJUSTED BASELINE SCORE

| Topic | Statement (If statement is true, circle the "Yes" modifier; otherwise cross out the modifier.) | Yes | Subtotals | |
|---------------------------------|---|---|-------------------------------|------|
| Vertical Irregularity, V_{L2} | Sloping Site | W1 building: There is at least a full story grade change from one side of the building to the other. | -0.9 | |
| | | Non-W1 building: There is at least a full story grade change from one side of the building to the other. | -0.2 | |
| | Weak and/or Soft Story (circle one maximum) | W1 building cripple wall: An unbraced cripple wall is visible in the crawl space. | -0.5 | |
| | | W1 house over garage: Underneath an occupied story, there is a garage opening without a steel moment frame, and there is less than 8' of wall on the same line (for multiple occupied floors above, use 16' of wall minimum). | -0.9 | |
| | | W1A building open front: There are openings at the ground story (such as for parking) over at least 50% of the length of the building. | -0.9 | |
| | | Non-W1 building: Length of lateral system at any story is less than 50% of that at story above or height of any story is more than 2.0 times the height of the story above. | -0.7 | |
| | | Non-W1 building: Length of lateral system at any story is between 50% and 75% of that at story above or height of any story is between 1.3 and 2.0 times the height of the story above. | -0.4 | |
| | Setback | Vertical elements of the lateral system at an upper story are outboard of those at the story below causing the diaphragm to cantilever at the offset. | -0.7 | |
| | | Vertical elements of the lateral system at upper stories are inboard of those at lower stories. | -0.4 | |
| | | There is an in-plane offset of the lateral elements that is greater than the length of the elements. | -0.2 | |
| | Short Column/Pier | C1,C2,C3,PC1,PC2,RM1,RM2: At least 20% of columns (or piers) along a column line in the lateral system have height/depth ratios less than 50% of the nominal height/depth ratio at that level. | -0.4 | |
| | | C1,C2,C3,PC1,PC2,RM1,RM2: The column depth (or pier width) is less than one half of the depth of the spandrel, or there are infill walls or adjacent floors that shorten the column. | -0.4 | |
| Split Level | There is a split level at one of the floor levels or at the roof. | -0.4 | | |
| Other Irregularity | There is another observable severe vertical irregularity that obviously affects the building's seismic performance. | -0.7 | $V_{L2} = 0$ (Cap at -0.9) | |
| | There is another observable moderate vertical irregularity that may affect the building's seismic performance. | -0.4 | | |
| Plan Irregularity, P_{L2} | Torsional irregularity: Lateral system does not appear relatively well distributed in plan in either or both directions. (Do not include the W1A open front irregularity listed above.) | -0.6 | $P_{L2} = 0$ (Cap at -0.7) | |
| | Non-parallel system: There are one or more major vertical elements of the lateral system that are not orthogonal to each other. | -0.2 | | |
| | Reentrant corner: Both projections from an interior corner exceed 25% of the overall plan dimension in that direction. | -0.2 | | |
| | Diaphragm opening: There is an opening in the diaphragm with a width over 50% of the total diaphragm width at that level. | -0.2 | | |
| | C1, C2 building out-of-plane offset: The exterior beams do not align with the columns in plan. | -0.2 | | |
| | Other irregularity: There is another observable plan irregularity that obviously affects the building's seismic performance. | -0.5 | | |
| Redundancy | The building has at least two bays of lateral elements on each side of the building in each direction. | +0.2 | $M = 0$ | |
| Pounding | Building is separated from an adjacent structure by less than 1.5% of the height of the shorter of the building and adjacent structure and: | The floors do not align vertically within 2 feet. (Cap total | | -0.7 |
| | | One building is 2 or more stories taller than the other. : pounding | | -0.7 |
| | | The building is at the end of the block. : modifiers at -0.9) | | -0.4 |
| S2 Building | "K" bracing geometry is visible. | -0.7 | | |
| C1 Building | Flat plate serves as the beam in the moment frame. | -0.3 | | |
| PC1/RM1 Bldg | There are roof-to-wall ties that are visible or known from drawings that do not rely on cross-grain bending. (Do not combine with post-benchmark or retrofit modifier.) | +0.2 | | |
| PC1/RM1 Bldg | The building has closely spaced, full height interior walls (rather than an interior space with few walls such as in a warehouse). | +0.2 | | |
| URM | Gable walls are present. | -0.3 | | |
| MH | There is a supplemental seismic bracing system provided between the carriage and the ground. | +0.5 | | |
| Retrofit | Comprehensive seismic retrofit is visible or known from drawings. | +1.2 | | |

FINAL LEVEL 2 SCORE, $S_{L2} = (S' + V_{L2} + P_{L2} + M) \geq S_{MIN}$: $1.6 + 0 = 1.6$ (Transfer to Level 1 form)

There is observable damage or deterioration or another condition that negatively affects the building's seismic performance: Yes No
If yes, describe the condition in the comment box below and indicate on the Level 1 form that detailed evaluation is required independent of the building's score.

OBSERVABLE NONSTRUCTURAL HAZARDS

| Location | Statement (Check "Yes" or "No") | Yes | No | Comment |
|----------|---|-----|----|---------|
| Exterior | There is an unbraced unreinforced masonry parapet or unbraced unreinforced masonry chimney. | | | |
| | There is heavy cladding or heavy veneer. | | | |
| | There is a heavy canopy over exit doors or pedestrian walkways that appears inadequately supported. | | | |
| | There is an unreinforced masonry appendage over exit doors or pedestrian walkways. | | | |
| | There is a sign posted on the building that indicates hazardous materials are present. | | | |
| | There is a taller adjacent building with an unanchored URM wall or unbraced URM parapet or chimney. | | | |
| | Other observed exterior nonstructural falling hazard: | | | |
| Interior | There are hollow clay tile or brick partitions at any stair or exit corridor. | | | |
| | Other observed interior nonstructural falling hazard: | | | |

Estimated Nonstructural Seismic Performance (Check appropriate box and transfer to Level 1 form conclusions)
 Potential nonstructural hazards with significant threat to occupant life safety →Detailed Nonstructural Evaluation recommended
 Nonstructural hazards identified with significant threat to occupant life safety →But no Detailed Nonstructural Evaluation required
 Low or no nonstructural hazard threat to occupant life safety →No Detailed Nonstructural Evaluation required

Comments: