**BUILDING REPORT REQUIREMENTS**

**ASCE 41-17 TIER 1 SEISMIC EVALUATIONS**

**Description:** This document describes the minimum reporting requirements for ASCE 41-17 Tier 1 seismic evaluation building reports. Please note, items (1) through (15) shall appear on the first page of building reports.

**BUILDING REPORT**

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| --- | --- |
| 1. UC Campus 2. Building Name 3. Building CAAN ID 4. Auxiliary Building ID[[1]](#footnote-1) | 1. Date of Evaluation 2. Evaluation by (Firm, Evaluator Name, Signature, Stamp) 3. Seismic Performance Rating[[2]](#footnote-2) and Basis of Rating |

|  |  |
| --- | --- |
| 1. Plan Image or Aerial Photo | 1. Exterior Elevation Photo |

1. Site Location
   1. Latitude Decimal Coordinates
   2. Longitude Decimal Coordinates
2. ASCE 41-17 Model Building Type and Description[[3]](#footnote-3)
   1. Longitudinal Direction
   2. Transverse Direction
3. Number of Stories
   1. Above grade
   2. Below grade
4. Original Building Design Code & Year
5. Retrofit Building Design Code & Year (if applicable)
6. Cost Range to Retrofit (if applicable)[[4]](#footnote-4) (Low, Medium, High or Very High)

Please assume a “Low” cost-range corresponds to a complete retrofit cost less than $50 per square foot (sf), a “Medium” cost-range corresponds to a complete retrofit cost greater than $50 per sf and less than $200 per sf, a “High” cost-range corresponds to a complete retrofit cost greater than $200 per sf and less than $400 per sf, and a “Very High” cost-range corresponds to a complete retrofit cost greater than $400 per sf.

**BACKGROUND INFORMATION**

**Site Information**

1. Site Class (A – F) and Basis of Assessment
2. Geologic Hazards
   1. Fault Rupture (Yes, No or Unknown) and Basis of Assessment
   2. Liquefaction (Yes, No or Unknown) and Basis of Assessment
   3. Landslide (Yes, No or Unknown) and Basis of Assessment
3. Site-specific Ground Motion Study? (Yes or No)

|  |  |
| --- | --- |
| Seismic design acceleration parameters of interest: | |
| For BSE-1N | SDS and SD1 |
| For BSE-1E | SXS and SX1 |

1. Estimated Fundamental Period (seconds)
   1. Longitudinal
   2. Transverse

1. Falling Hazards Assessment Summary

To comply with Seismic Safety Policy Section III.B.3, all building evaluations must include a survey of potential falling hazards that pose a significant life or safety hazard to occupants. Scope of falling hazard evaluations shall include representative building walk-through observations (including public access areas such as walkways, building perimeters, assembly areas, as well as ingress and egress pathways of travel) and reporting of features presenting a high potential life or safety hazard to occupants or hazardous materials that pose a safety hazard. Risk assessment should be based on engineering judgment, guided by observed past seismic performance of similar features and does not require completion of an ASCE 41 “Nonstructural Checklist”.  Such hazards may include, but shall not be limited to:

1. Heavy ceilings, features or ornamentation above large lecture halls, auditoriums, lobbies or other areas where large numbers of people congregate;
2. Heavy masonry or stone veneer above exit ways and public access areas;
3. Unbraced masonry parapets, cornices or other ornamentation above exit ways and public access areas;
4. Unrestrained hazardous materials storage;
5. Masonry chimneys; and
6. Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc.
7. Structural Non-Compliances/Findings Significantly Affecting Rating Determination Summary

Significant Structural Deficiencies, Potentially Affecting *Seismic Performance Rating* Designation:

1. Lateral System Stress Check (wall shear, column shear or flexure, or brace axial as applicable)
2. Load Path
3. Adjacent Buildings
4. Weak Story
5. Soft Story
6. Geometry (vertical irregularities)
7. Torsion
8. Mass – Vertical Irregularity
9. Cripple Walls
10. Wood Sills (bolting)
11. Diaphragm Continuity
12. Openings at Shear Walls (concrete or masonry)
13. Liquefaction
14. Slope Failure
15. Surface Fault Rupture
16. Masonry or Concrete Wall Anchorage at Flexible Diaphragm
17. URM wall height to thickness ratio
18. URM Parapets or Cornices
19. URM Chimney
20. Heavy Partitions Braced by Ceilings
21. Appendages
22. Brief Description of Anticipated Failure Mechanism
23. Seismic Retrofit Concept Sketches/Description (only required for buildings rated V or worse)

This sketch or description is intended to communicate the basic concept of a proposed retrofit. Sketches are not mandatory if a description suffices; however, if a sketch is used, it may be a simple manual sketch, electronic image, or other form of graphic representation with simple notations. The choice of either a sketch or a written description may be based on whichever method most efficiently communicates the retrofit concept.

**Building Report Appendices**

1. ASCE 41-17 Tier 1 Checklists (Structural only)
2. Quick Check Calculations

1. Applicable only for individual buildings that are structurally separate units within a building complex. Each auxiliary building shall be designated with the main building CAAN ID with a decimal number suffix (i.e. main building CAAN ID 5534; auxiliary building CAAN ID 5534.1). Auxiliary building ID is null for a single building or the main building in a building complex. [↑](#footnote-ref-1)
2. The designated Seismic Performance Rating shall be a Roman numeral associated with the most applicable performance description from Table 1 of the UC Facilities Manual, UC Seismic Program Guidelines. [↑](#footnote-ref-2)
3. If a building has multiple building types in one story, the model building type should be designated based on engineering judgement as the lateral system that would have the most predominantly negative effect on the seismic behavior of the building in that respective direction. [↑](#footnote-ref-3)
4. Assume a complete retrofit conforming to the current UC Seismic Safety Policy. Note this range includes all construction costs, including code upgrades (e.g., accessibility, fire and life safety, mechanical, electrical, plumbing) triggered by the seismic retrofit. No specific estimate is required to be supplied at this time (i.e., provide an approximate cost to retrofit using Low, Medium, High or Very High cost-range categories). It is acknowledged that such a cost range is assumed to be based only on the engineer’s rough estimate and is not intended to require input from a professional cost estimator. For estimation purposes, CSEs may judgmentally determine an approximate cost range for seismic retrofits based on recent relevant experience, and then apply a multiplier to approximate total construction costs. [↑](#footnote-ref-4)