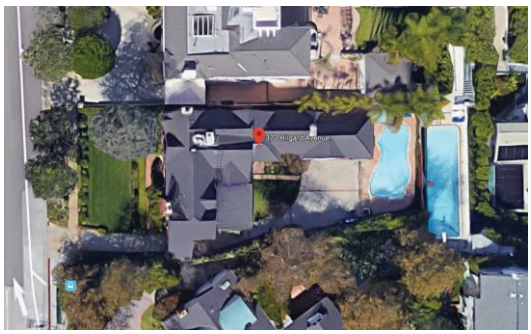
BUILDING REPORT

1) UC Campus: **UCLA**
2) Building Name: **Kneller House, 372 Hilgard Ave, Los Angeles**
3) Building CAAN ID: **N/A**
4) Auxiliary Building ID[1]: **N/A**
5) Date of Evaluation: **11/26/2018**
6) Evaluation by: **Englekirk Institutional, TS**
7) Seismic Performance Level (SPL)[2] Rating and Basis of Rating: **VI; ASCE41-17 Tier 1 Check. The exterior masonry walls are unreinforced and not properly braced in out-of-plane direction.**

8) 

9) 

10) Site Location
    a. Latitude Decimal Coordinates: **34.074460633648734**
    b. Longitude Decimal Coordinates: **-118.43807463624579**
11) ASCE 41-17 Model Building Type and Description[3]
    a. Longitudinal Direction: **The building consists of wood roof, wood attic walls and unreinforced masonry walls underneath. The wood portion of the building is type W1 and the masonry portion is type URM. The roof diaphragm and attic walls are sheathed with straight sheathing. The floor framing consists wood joist with sheathing. The sheathing was not observed during the site visit.**
    b. Transverse Direction: **Same as the longitudinal direction.**
12) Number of Stories
    a. Above grade: **2**
    b. Below grade: **0**
13) Original Building Design Code & Year: **1931 (based on city record from ZIMAS)**
14) Retrofit Building Design Code & Year (if applicable): **None shown on city record.**
15) Cost Range to Retrofit (if applicable)[4] (Low, Medium or High): **Medium**

[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 123; auxiliary building CAAN ID 123.1)
[2] The designated Seismic Performance Level shall be a Roman numeral associated with the most applicable performance description from Table A.1 in Appendix A of the UC Seismic Safety Policy.
[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.
[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., ADA, 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 or 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.

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

16) Site Class (A – F) and Basis of Assessment: **D; Default value assumed.**

17) Geologic Hazards

a. Fault Rupture (Yes, No or Unknown) and Basis of Assessment
No, based on CGS Zones of Required Investigation.

b. Liquefaction (Low, Moderate or High) and Basis of Assessment
No, based on city data on ZIMAS.
Landslide (Low, Moderate or High) and Basis of Assessment
No, based on city data on ZIMAS.

18) Site-specific Ground Motion Study? (Yes or No): **No**

The seismic design acceleration parameters of interest are S_{DS} and S_{D1} for BSE-1N and S_{XS} and S_{X1} for BSE-1E.

19) Estimated Fundamental Period (seconds)

a. Longitudinal: **0.22s**

b. Transverse: **0.22s**

20) 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:

a. Heavy ceilings, features or ornamentation above large lecture halls, auditoriums, lobbies or other areas where large numbers of people congregate;
b. Heavy masonry or stone veneer above exit ways and public access areas;
c. Unbraced masonry parapets, cornices or other ornamentation above exit ways and public access areas;
d. Unrestrained hazardous materials storage;
e. Masonry chimneys; and
f. Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc.

The exterior walls were built with unreinforced masonry including chimneys and arched vehicle entrance, which may pose significant potential falling hazards to the occupants.

21) Structural Non-Compliances/Findings Significantly Affecting Rating Determination Summary

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

a. Lateral System Stress Check (wall shear, column shear or flexure, or brace axial as applicable): **Masonry shear stress is checked and exceeds the limit given in ASCE41-17 Tier 1 checklist.**
b. Load Path: **No record drawing was provided and no structural connections including wood wall diaphragm connections were observed during the site visit. Based on the year built, assumption could be made that there is no anchorage between the sill plate and the brick wall. The load path may be incomplete.**
c. Adjacent Buildings: **No**
d. Weak Story: **No**
e. Soft Story: **No**
f. Geometry (vertical irregularities): **No**
g. Torsion: **No**
h. Mass – Vertical Irregularity: **No**
i. Cripple Walls: **No**
j. Wood Sills (bolting): **There was no bolt observed between the sill plates and the masonry wall below at attic.**
k. Diaphragm Continuity: **No**
l. Openings at Shear Walls (concrete or masonry): **The stair opening in the front of the building is larger than 8' and the masonry wall may not be properly braced at the stair opening.**
m. Liquefaction: **No**
n. Slope Failure: **No**
o. Surface Fault Rupture: **No, based on CGS Zones of Required Investigation.**
p. Masonry or Concrete Wall Anchorage at Flexible Diaphragm: **There is no anchorage observed during the site visit. Based on the year built, assumption is made that there is no wall anchorage.**
q. URM wall height to thickness ratio: **The brick wall thickness was measured as 8" at the garage. Assuming the brick wall thickness is 8" all over. The height to thickness ratio at upper floor exceeds the limit given in ASCE41-17 Tier 1 checklist.**
r. URM Parapets or Cornices: **N/A**
s. URM Chimney: **There are two chimneys. There is no anchorage observed during the site visit for the one on the north wall. For the one on the west wall, kicker braces were observed but sufficiency can't be determined.**
t. Heavy Partitions Braced by Ceilings: **N/A**
u. Appendages: **N/A**

22) Brief Description of Anticipated Failure Mechanism**:**
The masonry walls may experience in-plane shear failure and over deflect during a seismic event in in-plane direction.
The masonry walls may fall in out-of-plane direction since there is no anchorage between the wall and the diaphragm.

23) Seismic Retrofit Concept Sketches/Description (only required for buildings rated SPL 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.

Strengthen the masonry walls with FRP or other equivalent reinforcement. Add anchorage from the wall to the diaphragm to provide out-of-plane support for the masonry walls. Add positive support for the masonry chimneys.

Attachment 3 Appendices

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