



June 18, 2024

Mr. Aaron Iskowitz
420 5th St
Marysville, CA

Job#: 24-094

Dear Mr. Iskowitz,

Jackson & Sands Engineering, Inc. was contacted to provide an assessment of the condition of the building referenced above. The goal was to determine if the building is at risk of immediate failure given normal wind conditions and omit seismic activity. Our assessment was limited to a visual inspection of the exterior perimeter plus what could be seen through open windows and aerial drone footage. All aerial drone imagery was provided by Newageaerial.com. Recommendations set forth in this assessment letter do not constitute engineered plans. The opinions of the undersigned are subject to change should additional information come to light at a later time.

Background:

The building was originally built in 1926. This building consists of 5 stories with reinforced concrete frames and floor systems, brick infill along the exterior walls, a wood framed roof system, and lath and plaster over wood framed interior walls and drop ceilings.

Several fires, of varying magnitudes, have occurred within the structure in the past.

We understand a fire started within the building on the evening of June 15, 2024. Fire activity occurred on every floor within the building including a total loss of the wood framed roof system. It is currently unknown the extent of fire activity on each individual floor. It is believed that where the fire occurred, it consumed interior walls and drop ceilings as well as a total loss of the wood framed roof structure. Fire crews attempted multiple times to enter the building to fight the fire but were ultimately withdrawn due to safety concerns and fought the fire from outside the structure.

Drone imagery shows the building to be approximately 67' at the Southeast corner (which also shows a low point of the parapet).

A site visit was conducted on June 17, 2024. No entry was made into the structure during this site visit. Additionally, small fires were observed to be active through upper floor windows.

Jackson and Sands Engineering, Inc.
1250 East Ave., #10
Chico, CA 95926
info@jacksonandsandsengineering.com



Structural Assessment:

From the perimeter of the building we were able to see multiple spalled concrete columns and exposed reinforcing steel within these columns. These 2 items reduce the available strength of the column/girder assembly to resist vertical and horizontal loads. It is unknown how many columns were affected by the current fires as well as any other previous damages. It is also currently unknown what the column/girder assembly's pre damage structural capacity was.

Based on drone imagery it appears the concrete columns stop at the top floor window headers, leaving the remaining wall height and parapet wall as unreinforced brick masonry. Prior to the fire, these walls were braced by the roof diaphragm, however these walls are now unbraced with the loss of the roof diaphragm.

Past fires and other damaging events have previously left reinforcing steel exposed within a portion of the reinforced concrete columns/girders. These previously damaged areas offered less protection from the heat of the most recent fire and would likely be more affected than previously undamaged columns.

Based on evidence of materials burned and items remaining visible in the debris, it is believed the fire temperatures exceeded 700 degrees Fahrenheit within most of the active fire areas and exceeded 900-1100 degrees Fahrenheit near the light wells/vent shafts. (These estimates may be revised once the fire assessment is completed by the city fire department.) At these temperatures steel can become brittle and may even begin to lose strength and or bonding to the encasing concrete.

Lastly, an unknown amount of water was used to fight the fires. A portion of this water has likely been absorbed by the concrete members and remaining ash and material debris, all of which is adding weight to the overall structure. While the water is present it can lead to further deterioration of the reinforced concrete members.

Conclusions:

Based on the information known today, the building is at risk of failure given normal wind loading and current gravity loads. These failures may be brittle and catastrophic failures with little to no warning time.

Secondary failures include:

- The failure of the uppermost wall and parapet; and
- The failure of the facade near the top of the building.



Recommendations

A perimeter should be set up at 1.5 times the height of the building, in accordance with Cal O.E.S. recommendations, estimated to be 105'. Any buildings within this radius should be protected or vacated until further notice.

If the building is to be salvaged, additional assessments, testing, and analysis should be completed. It is possible this information will lead to deeming the building not at risk of immediate failure.

Whether the building is to be salvaged or demolished, proper safety plans should be developed and enforced when working in and around the building.

If there are any questions please feel free to contact me at the number below.

Thank You,

Sean Jackson, P.E.
President
Jackson and Sands Engineering, Inc
sean@jacksonandsandsengineering.com
(530)648-4232

Chris Rasmussen, EIT
Assistant Engineer
Jackson & Sands Engineering, Inc
Chris@jacksonandsandsengineering.com
(530) 715 7184