



**SAFETY ASSESSMENT PROGRAM EVALUATION OF 670 EAST H STREET.**

**4LEAF Job #: J1941**

**Initial Site Visit: 12/17/2015**

**Current Site Visit: 12/8/2016**

**Assessor: Fred Cullum**

California Office of Emergency Services ID#78844

International Code Council Certified Building Official and Commercial Plans

Examiner ID#151080

**SITE:**

The two buildings identified as the "Shipping Office" and the "Foundry Building" are located on a large single parcel located at the Southwest border of Benicia. The site, formerly owned by Yuba Industries, is presently owned by Amports, an automotive terminal management company.



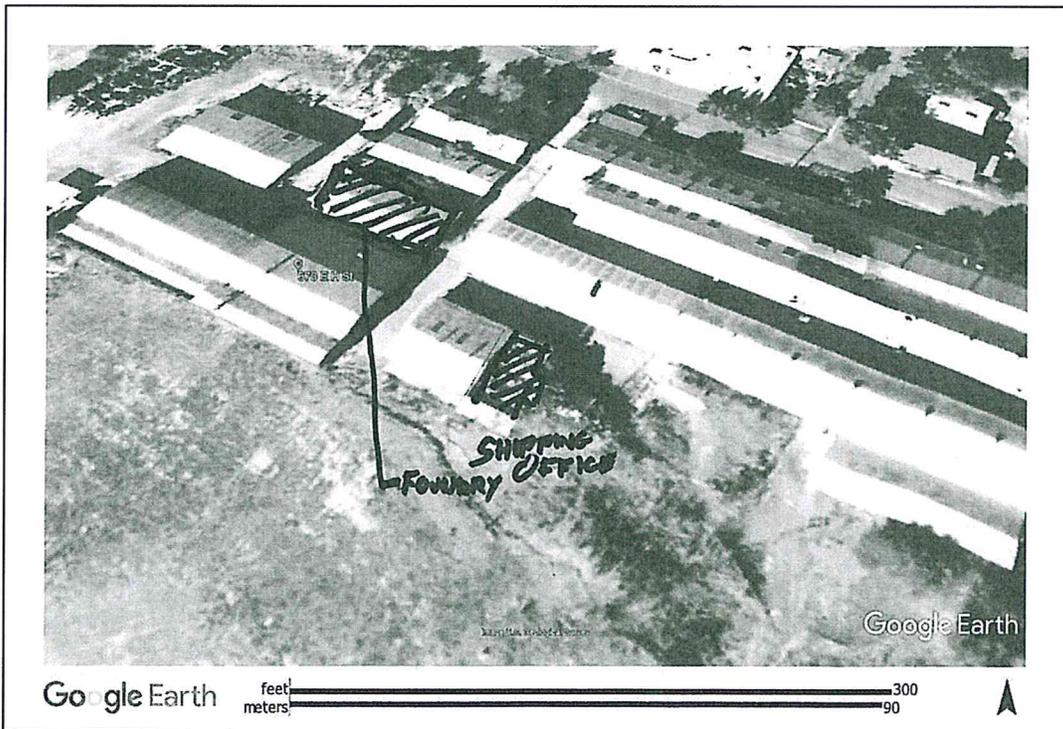
**THE SITE FROM EAST H-BAY TRAIL IN FAR DISTANCE  
SHIPPING OFFICE AT LEFT- FOUNDRY TO RIGHT**



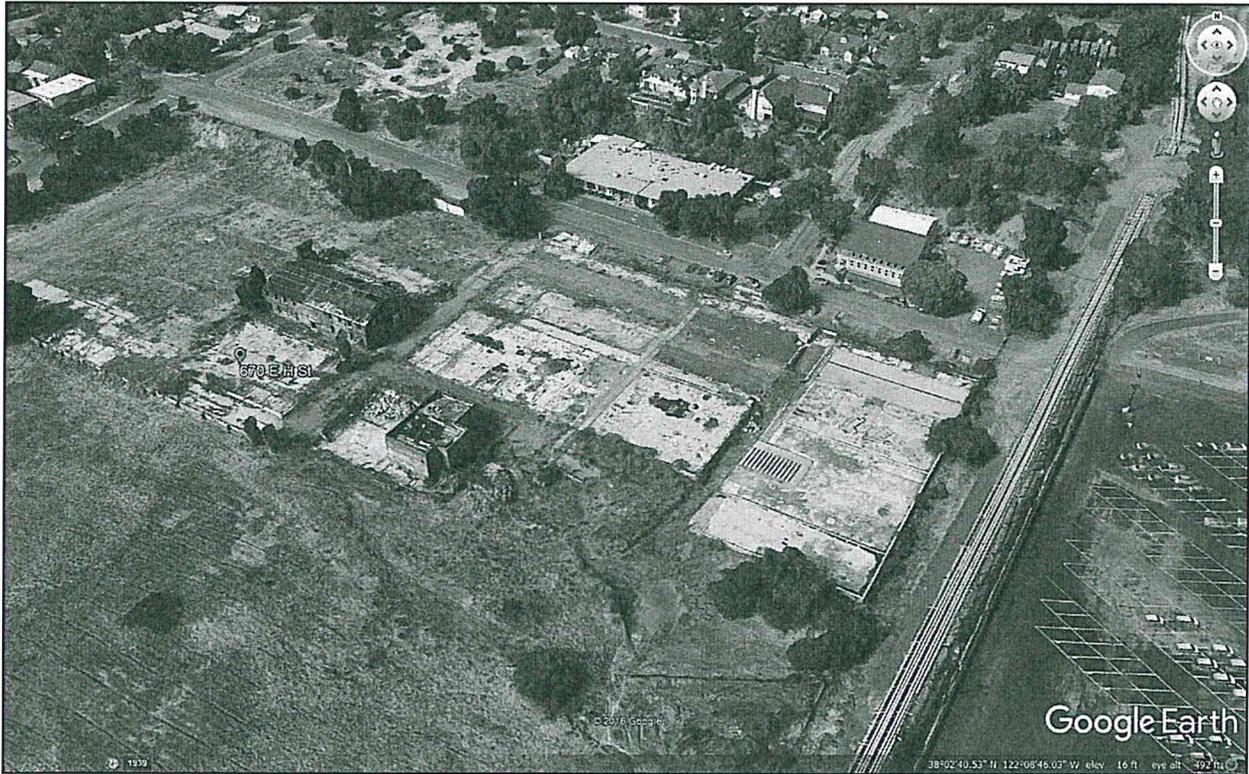
**4LEAF, INC.**



**YUBA INDUSTRIES 1939**



**670 EAST H STREET MARCH 2003**



**670 EAST H CURRENT GOOGLE EARTH**

**COMMENTS ON SITE:**

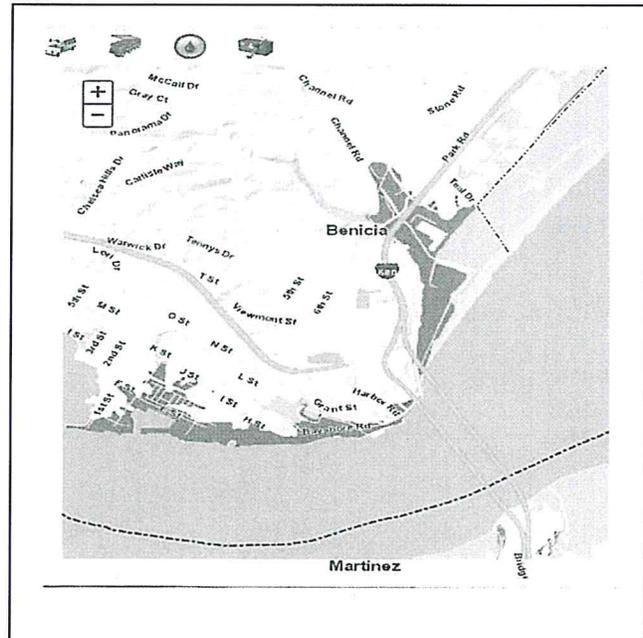
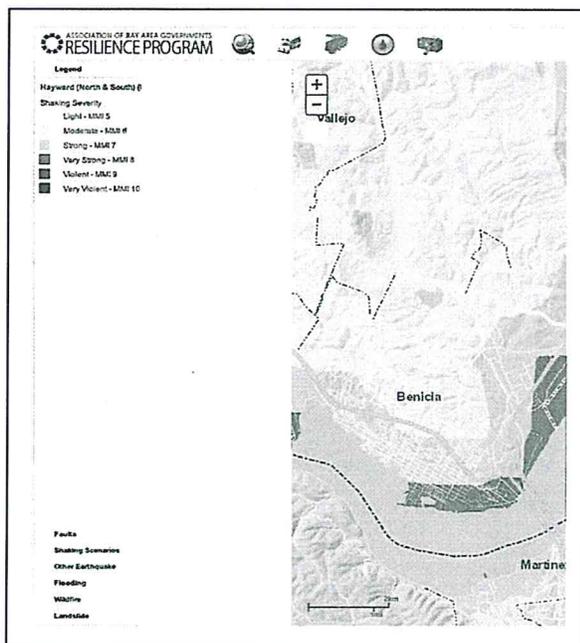
The overall site is very large and difficult to secure. The “Bay Trail” on the Bay side provides easy covert access and the fencing has been cut frequently. The interiors of both buildings show on-going and unauthorized use of the buildings with a great deal of graffiti, bedding, seating, and fires, some of which have caused structural damage since last year’s inspection. During this inspection, the body of a car was found in the Foundry that was newly cut into small pieces. The owners have fenced the individual buildings, but the fences are regularly cut. During this inspection a newly-placed ladder was found, tied to the structure, to provide access to a sleeping loft on the second floor; that floor has largely failed, but there was still a mattress being used on what little area was left.

The buildings do constitute an attractive nuisance and there are severe safety hazards due to the disrepair of the structures including the on-going collapse of roofs, floors, and interior structures. There is also the presence of friable flooring material, likely asbestos-based.

**SEISMICITY CONSIDERATIONS:**

According the United States Geologic Service (USGS) and the Association of Bay Area Governments (ABAG), this area of Benicia will experience very strong shaking and liquefaction of the soil in the event of a nearby earthquake. According to sources, the next most likely earthquake will take place on the Hayward Fault, with a potential strength of 7 on the Modified Mercalli Intensity (MMI) scale. The last event on this

fault was a magnitude 7 back in 1868 and was known as “The Great San Francisco Earthquake” prior to the 1906 San Andreas Fault event. The earthquake was only on the southern end of the fault, while the new prediction assumes the entire fault will be involved. This would place the epicenter closer to Benicia than the 1868 event. The illustrations below show the degree of shaking, amplified by the soil conditions, as well as the liquefaction potential, estimated at 73% of the area under consideration. The site is considered non-engineered fill. It is important to note that at the time of the Hayward event, the two structures under consideration were relatively new and structurally sound. Neither of these is true today.

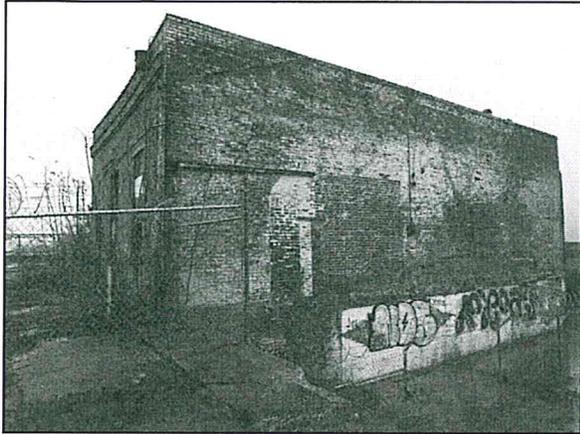


**SHAKING INTENSITY**  
**LIQUEFACTION POTENTIAL**

**SHIPPING OFFICE:**

The Shipping Office is more originally intact building than the Foundry. While a larger structure was built immediately to the northwest, it was not structurally attached. The Shipping Office is a two-story building over a basement. The building has all its original exterior walls, in contrast with the Foundry Building, which had its northeast long wall demolished to allow connection an adjacent structure. The interior shows a number of later wood-frame lofts and walls, all of which are in collapse and a source of flammable materials.

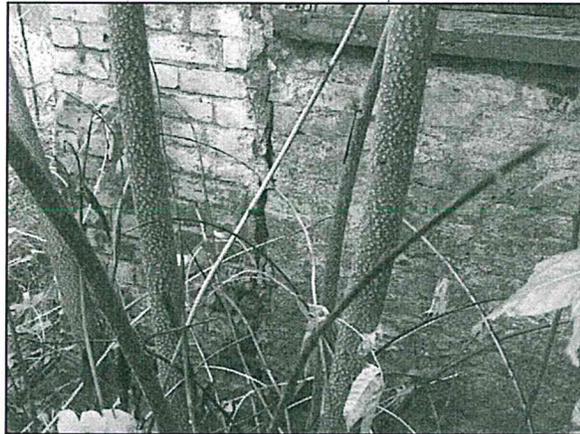
The building has suffered numerous natural and manmade insults. There are multiple structural failures in the walls caused by differential settlement of the soil. Lateral support for the walls is provided by the roof, which is in progressive collapse. The building has also suffered damage from several fires, set either intentionally or accidentally by trespassers. The roof and floor show a considerable increase in collapsed area compared with last year’s report. The roof failure can be tracked on Google Earth History.



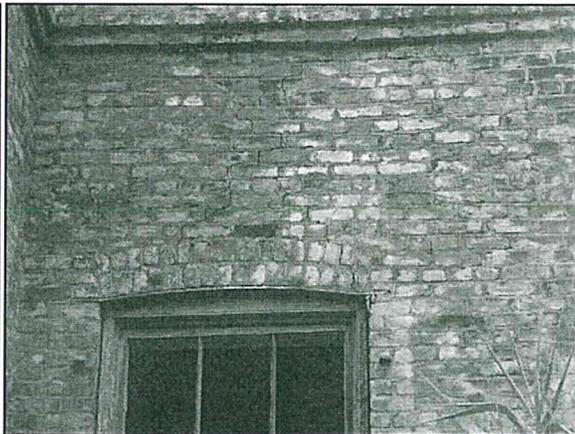
**NOTE CONCAVE DEFLECTION AT TOP**



**INTERIOR FLOOR FAILURE BURNT FLOOR JOISTS**



**MAJOR SETTLEMENT FAILURE**



**DIAGONAL CRACKS ABOVE WINDOW**



**ROOF FAILURE**



**INTERIOR-NOTE FIRE LOAD**



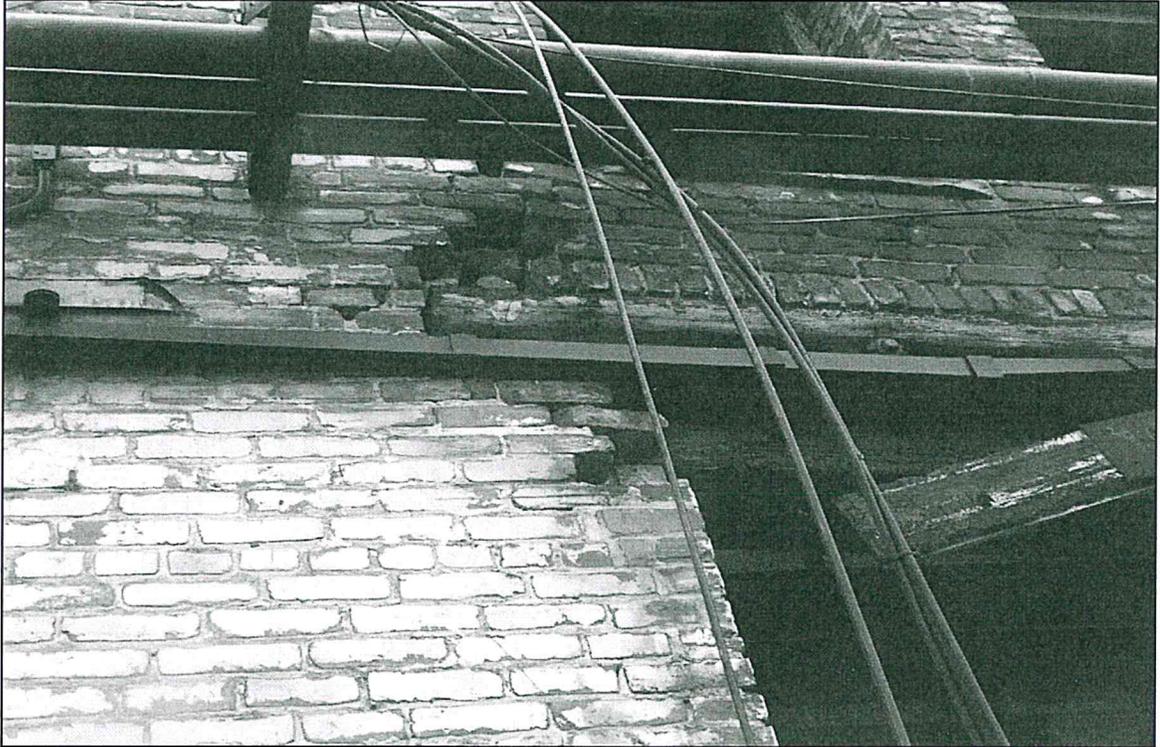
The Shipping Office was a pleasant, workmanlike, small, industrial structure. The low-arch widow openings were well done, and there is still a shelf at an outer window where clerks most likely took in bills of lading. Settlement and loss of lateral support at the roof has caused numerous lateral stress cracks above the openings and there are areas of complete failure of the multi-wythe brick walls. There were at least three sleeping areas inside. There was evidence of fires that occurred after last year's inspection.

**THE FOUNDRY:**

The Foundry, noted in the City's "Historic Context Statement" as the Pacific Steamship Company Foundry, has only three of its original walls. The fourth, northeast, long wall is wood frame with corrugated steel cladding. This framing is not adequate to resist loads imposed by brick wall opposite. The roof covering has failed, leading to the probable loss of trusses. This building is nearing total collapse from multiple deficiencies. It should have photo documentation followed by demolition.



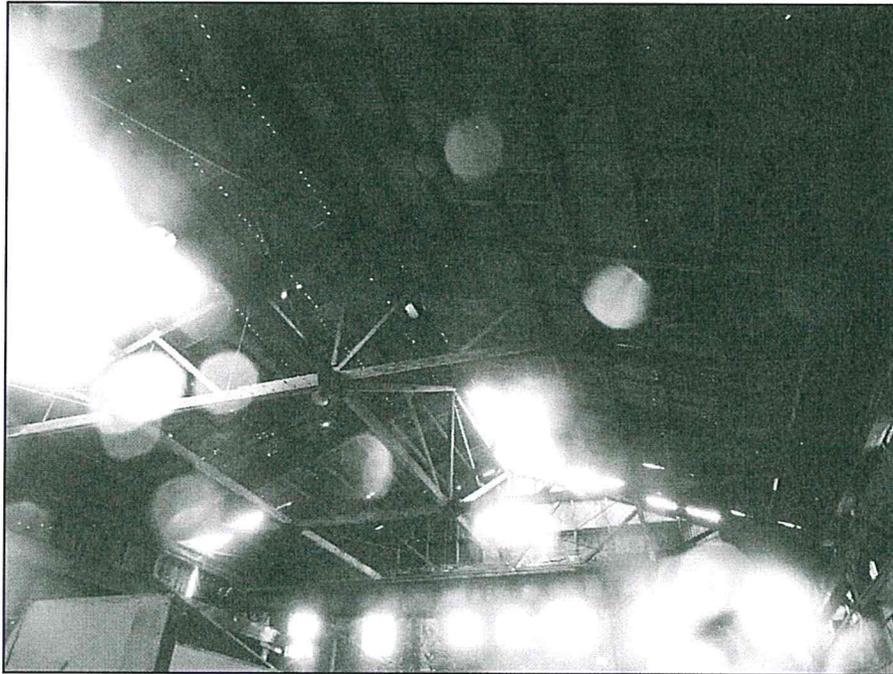
**NOTE DEFLECTION OF WALL ABOVE OPENING  
THIS IS CONSIDERABLY ADVANCED OVER LAST YEAR'S REPORT.**



**EXTREME FAILURE OF MULTI-WYTHE WALL-BRICKS BELOW CRUSHED BY DEFLECTION OF WALL ABOVE DUE TO FAILURE OF WOOD LINTEL DUE TO DRYROT AND FIRE-BRICKS ABOVE SIMILARLY DAMAGED DEFLECTION EXHIBITED IS MUCH GREATER THAN LAST YEAR. FAILURE OF BEAM WILL RESULT IN COLLAPSE OF THE WALL ABOVE, THUS PULLING THE LONG WALL OVER**



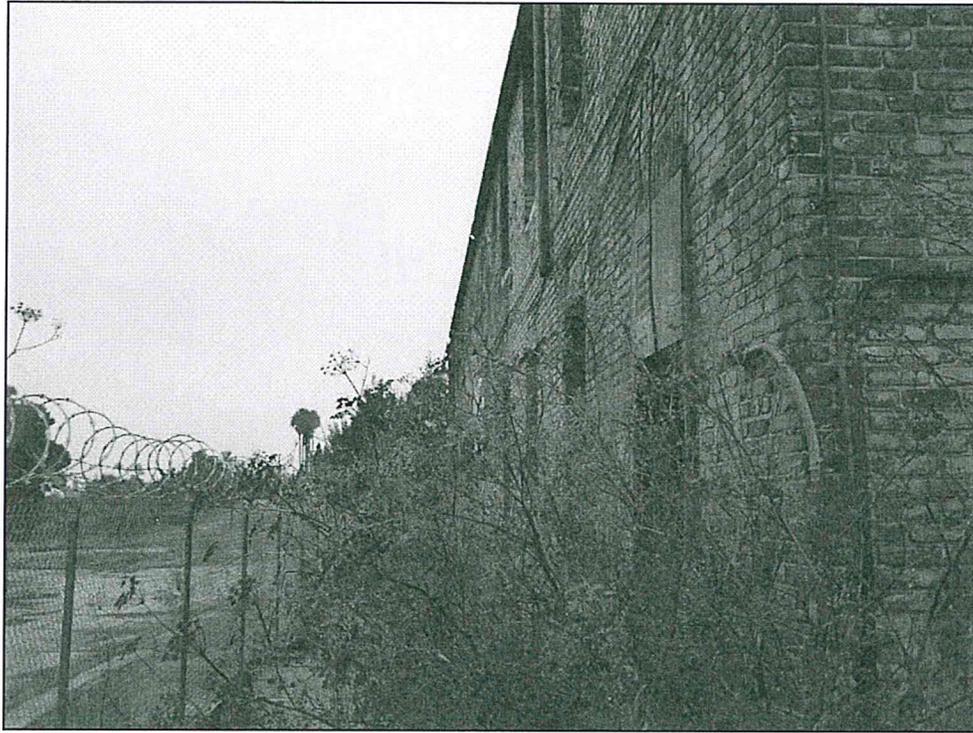
**CONCRETE REPAIR OF FAILED CORNER-NOTE LACK OF MORTAR ON EXPOSED BRICK**



**LIGHT WOOD TRUSSES-NOT CONTEMPORANEUS WITH ORIGINAL STRUCTURE**



**CUT UP CAR-NEW SINCE LAST REPORT**



**LEFT WALL BOWING OUTWARD AT TOP-LOW ARCH ON LOWER WINDOW FAILED-BRICKS DISPLACED**



**FRONT WALL: COMPLETE CORNER FAILURE-NOTE FAILURE OF FLAT ARCH-Left**



**EXECUTIVE SUMMARY:**

These conclusions are based on my seven years' experience as a Resident Inspector for the State of California, forty-six years as a Chief Building Official and more than forty years of teaching the industry in the interpretation and use of the building codes in California. I am a Certified Building Official and Commercial Plans Examiner and Office of Emergency Services Disaster Service Worker as a Safety Assessment Program Inspector.

As Building Official for the cities of San Mateo and Burlingame, I managed the adoption and enforcement of mandatory unreinforced masonry (URM) ordinances that resulted in complete compliance with minimum safety design levels preventing structural collapse in the case of an earthquake, thus allowing occupants to get out of a damaged building. Over that period of time we only had four demolitions of buildings not capable of an economically viable retrofit. It is important to note that all the retrofit buildings had originally been designed as commercial, not industrial buildings.

I have reviewed the December 2015 report and accompanying photos. The SAP Evaluator listed several bullet points, all of which I agree with, but have expanded upon below. The buildings continue to fail structurally and this is most notable in the Foundry. The wood lintel supporting the bricks above the large opening had cracked due to excessive deflection at some point in the past and had a crude repair to limit the crack. The failure now, due to recent fires, has markedly increased with more bricks falling out for the full depth of the wall and much more loss of bricks above the lintel. The added deflection over the last year appears to be approximately 4".

The complete failure of this building may happen from many different causes: failure of the overstressed trusses; additional fire damage to the lintel; final total structural failure of the fire-damaged and rotted lintel; loss of all or a portion of the wood framed long wall, due to fire, termites, rot or simple vandalism; added differential settlement due to added soil moisture, or earthquake. The collapse of the building WILL happen without heroic and hazardous remedial work, and that work would only be a temporary Band-Aid.

Both buildings are severe attractive nuisances. The internal structures are all in various stages of collapse with a strong likelihood of failing completely while occupied by one or more trespassers, leading to the exposure of first responders to unacceptable levels of risk. The rotten floors in the Shipping Office expose both first responders and trespassers to the possibility of falling into the existing basement.

One issue with both buildings, as pointed out in the 2015 report, is the lack of an adequate foundation to survive a seismic event which is very likely to occur at any time within the next thirty years, according to both state and federal agencies. Due to the non-engineered soil underlying this site, liquefaction is almost assured; the existing foundations are typical of older brick building with a very narrow footing width. Given the great weight of these buildings, differential settlement will occur, causing total structural failure in these already weakened buildings. These problems did not exist for the URMs retrofit in San Mateo and Burlingame. Those were well-maintained buildings with substantial concrete foundations founded on good soil. On many buildings, partial foundation replacement was required in order to take lateral loads



imposed by new moment frames. In many cases the moment frames were not needed, as roof and floor diaphragms could be used to distribute earthquake loads to the walls. The walls themselves were attached to new columns and cross-beams designed to reduce the effective span of the existing brick walls. In the case of these two buildings, the fabric of the walls has suffered total failure through multiple wythes of interlocked brick, and the roofs are not capable of resisting lateral loads..

Of the two buildings, only the Shipping Office retains all its original exterior walls, but these have failed and the roof has lost its ability to resist the lateral loads imposed by settlement and deflection of the brick walls. None of the interior is consistent with the age of the building and both the roof and floor are rotting and are in a continuing state of collapse.

The Foundry only has three of its original walls, the fourth wall was replaced with a mixed construction of steel and wood, and the roof trusses are not original to the building.

There is much evidence of continued occupancy and vandalism, including several fires, one of which extensively damaged the supporting lintel at the large opening at the Foundry, another further damaging floor joists in the Shipping Office. There is clear evidence of additional structural failure, with further stresses added as walls lean further in and out.

These buildings have historical significance to Benicia, and it is regrettable to lose them, but the fact is that they are economically impossible to save and, as attractive nuisances, present a hazard to trespassers and first responders. There is an obligation on the part of the City to protect all who may enter these buildings. Extending the poor existence of these buildings for an unknown, but short time, cannot justify the risk to the people of Benicia.

---

Fred Cullum, CBO