MKM & Associates
structural engineering

Larry Miyano ▪ Bud Malmanis ▪ Eric Kreager ▪ John Cook

March 30, 2017 MKM File # 170161

Paul Jeschke
77 Starbuck Drive
Muir Beach, CA

Re: Muir Beach Community Building
19 Seacape Drive
Muir Beach, CA

Dear Paul,

At your request, MKM & Associates visited the above referenced site on Thursday, March 9th, 2017 to review the general structural integrity and condition of the above referenced building, and provide recommendations for it's continued use. Our cursory site review was limited to a visual survey of exposed and accessible areas. Concealed spaces were not explored. Only general statements regarding the present structural condition and structural integrity can be made within these limitations. Present during our review was yourself, and Eric Kreager from MKM & Associates.

The building is a single story 2,000 square foot wood framed structure used as a Community Center situated on a sloping site from the north side to the south (short direction) toward the bay. The structure consists of a series of heavy wood timber bolted frames at 12'-0" on center in the north/south or short direction within the main hall (see picture 2). These wood frames support the roof vertically and brace it laterally in the short direction. The east/west or long direction of the structure is supported by exterior wood framed bearing walls. The main floor is framed with 2x joists and wood girders and the structure is supported on a concrete spread footing foundation. On the south side (or the ocean side) of the building, there is an elevated wood framed deck with a glass covered light wood framed roof structure.

The following was noted during our review:

1. The building lacks lateral strength on the southerly or ocean side. This side of the building is predominately windows and lacks bracing. We suggest adding new shear walls that are anchored to existing or new foundations below the exterior wall.

2. The lateral strength of the structure in the short direction depends on the heavy timber wood frames at 12 feet on center (see picture 2). The connections seem nominal and the wood post size (8x8) may be slightly undersized. We recommend strengthening these frames or adding additional wood shear walls.
3. The intermediate roof beams between the heavy timber wood frames need to be supported or connected to the timber frames with a hanger, clip angle or toe screws.
4. The under-floor we investigated was directly under the upper floor framing of the north side of the main meeting space. The earth within the portion of the crawl space we were in was generally dry and not well ventilated. We recommend a 15 mil stego vapor barrier be placed over the exposed earth to help mitigate vapor/moisture and aid in reducing the ventilation requirements.
5. The main floor sheathing appears to be a particle board. We recommend replacement or adding plywood if you are doing any interior flooring work (see picture 9).
6. The interior posts for the wood timber frame are supported on steel post bases that are not supported directly to the top of the footing. We recommend adding non-expansive grout under the post bases (see picture 10).
7. The steel rod cross bracing at the roof and between the steel frames appeared to be loose and sagging. We recommend that they be tightened (see picture 3).
8. The large window on the front north elevation may be leaking. Water was noted on the wall, carpet, and the floor sheathing under the window was water stained (see picture 9).
9. The roof sheathing appears to be a particle board. If a reroof is planned, the roof sheathing type should be verified. If particle board was used, we suggest removing and replacing the particle board with plywood sheathing.
10. Water damage was noted around the roof skylights. The roof skylights should either be removed and framed in, replaced, or flashed. The existing curb and ancillary framing may need replacement. We suggest that the existing curbs be raised to provide proper flashing.
11. The existing flashing around the metal roof chimney on the north side may be allowing water to penetrate and leak down the roof, and wall. There was evidence of an active leak in this area on the floor. We recommend that this be repaired as soon as possible.
12. On the east gable end wall near the fireplace there are indications of an active roof leak. We suggest that the water intrusion be repaired and the water damaged wood framing be repaired/replaced. (see picture 1)
13. There is a moss build up on the roofing on the north side. We recommend that this be removed (see picture 5).
14. The ends and tops of the exposed cantilevered rafters that extend past the roof have indications of water damage. We recommend that these rafters be repaired and protected (see picture 5).

15. The trellis over the south facing deck appears to be marginally supported vertically and laterally at the roof of the building. An improved connection should be developed at the existing roof interface. Possible replacement of the existing framing may be recommended to accommodate an adequate connection (see picture 4).
16. A portion of the trellis framing appears to be supported by the existing roof framing and cantilevered floor framing. We recommend that the existing roof framing support be strengthened to properly support the trellis roof and glazing (see picture 4).
17. The exposed hardware at the exterior deck is rusting and we recommend replacement with stainless steel connections or at least epoxy painting the existing hardware (see picture 7).
18. The exterior electrical junction box near the electrical service is starting to rust and should be replaced or epoxy painted.
19. There are some openings under the deck that access the crawl space. We recommend that these areas be sealed to prohibit rodent intrusion under the crawl space.
20. The deck framing is lacking some lateral bracing. We recommend that some cross bracing be installed to properly brace the deck for lateral loading as a result of seismic earth motion (see picture 6).
21. The downspouts at the back or south side of the deck dumps water adjacent to the lower deck pads. We recommend that all downspouts be connected to a closed discharge system that deposits the water away from the building foundation.
22. The mechanical flexible heating duct under the main floor has the outer cover and inner insulation ripped open. If the ducting is being used, we recommend that they should be replaced where the ducting has been compromised (see picture 8 and 12).
23. A mechanical duct has ripped insulation around the duct that is exposed under the exterior deck. This exterior ducting should be reviewed by a mechanical contractor and most likely be replaced or wrapped with insulation. In addition, these ducts should probably be enclosed (see picture 11).
24. Based on our limited observation, the foundation appeared to be in a good condition. No distress was noted.
25. We recommend adding additional mud sill anchors to the existing foundation as a seismic reinforcing option.

General Comment:

1. The priority of the work should be the maintenance items and potential water infiltration.

I hope this will provide you with the information you require. Please call if you have any questions or require additional information.

Sincerely,

MKM & ASSOCIATES
A California Corporation

Eric Kreager License No. SE3266

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ITEM	OBSERVATIONS / COMMENTS	PHOTOS
1.	On the east gable end wall near the fireplace there are indications of an active roof leak. We suggest that the water intrusion be repaired and the water damaged wood framing be repaired/replaced.	
2.	The structure consists of a series of heavy wood timber bolted frames at 12'-0" on center in the north/south or short direction within the main hall.	

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3.	The steel rod cross bracing at the roof and between the steel frames appeared to be loose and sagging. We recommend that they be tightened.	
4.	The trellis over the south facing deck appears to be marginally supported vertically and laterally at the roof of the building. An improved connection should be developed at the existing roof interface. Possible replacement of the existing framing may be recommended to accommodate an adequate connection.	

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6.	The deck framing is lacking some lateral bracing. We recommend that some cross bracing be installed to properly brace the deck for lateral loading as a result of seismic earth motion.	

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7.	The exposed hardware at the exterior deck is rusting and we recommend replacement with stainless steel connections or at least epoxy painting the existing hardware.	
8.	The mechanical flexible heating duct under the main floor has the outer cover and inner insulation ripped open. If the ducting is being used, we recommend that they should be replaced where the ducting has been compromised.	

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9.	The large window on the front north elevation may be leaking. Water was noted on the wall, carpet, and the floor sheathing under the window was water stained. The main floor sheathing appears to be a particle board. We recommend replacement or adding plywood if you are doing any interior flooring work.	
10.	The interior posts for the wood timber frame are supported on steel post bases that are not supported directly to the top of the footing. We recommend adding non-expansive grout under the post bases.	

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