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Bob Carey, Mitigation Bureau Chief  
John Crofts, Earthquake Program Manager  
USSC Committee  
SEAU Existing Buildings Subcommittee

RE: An Overview of updates for the proposed 2021 edition of the “Utah Guide for the Seismic Improvement of Unreinforced Masonry Dwellings” (the Guide).

To All,

We felt it may be helpful to those reviewing the proposed updates to the above referenced manual by offering them some comments in a partial outline of the various changes. Our proposed updates include the following items;

1. We cleaned up a lot of typos and little things throughout the Guide. We also have a new photo for the cover that is a Utah home that was damaged in the March 2020 earthquake.
2. We added some “Other Considerations” at the end of Chapter 1 to help people see that other things are also important for improvements to the dwellings involved. While Owners are structurally updating the homes, they can also improve safety in other ways as well as increasing comfort and cost saving on utility bills, sometimes without spending much more.
3. We added an “Intended Scope of Work” clarifier at the end of Chapter 2, as suggested in the SEAU committee meeting. The intent is to try and let the Owners know that it is a limited upgrade intent, and we do not yet have full evaluation and analysis data for how much the homes are seismically improved by these partial voluntary seismic improvements. We do not want people to think that we are suggesting that the seismic improvements to these URM homes can make it so the homes can go through any earthquake intensity without damage. We also want them to know that this method is intended only for small simple homes, and that they may want to bring in professional help if the home is tall or more complicated or if the Owner wants to upgrade more completely.
4. It is not done yet, but the intent is to update Figure 15 in Chapter 3 to include more recent earthquakes, particularly the March 2020 Magna earthquake.

5. In Chapter 5 we added a new Model Home Type H, a home with a wood box beam set on top of the exterior brick walls. An older photo of a home that is a Model Type H was found, which illustrates the home type, but is actually not a current likeness due to styling updates and remodeling. I feel this type of home may be more dangerous than some other types due to the box beam, and potential hinge action at the top of brick/bottom of wood beam.
6. Table 1 at the front of Chapter 5 has been notably updated. We have added Model Type H, and added a porch column-to-roof connection detail into the Special Features line. The third line of the old Table 1, “Floor to URM Wall and Foundation Wall Anchorage” has been split into two lines in the new table. This was done by separating the floor-to-wall connections on the main floor from the floor-to-foundation connections at the main floor. These details do typically apply along the same wall line, but the details are somewhat staggered in actual application. Our office has done a couple of projects with the concepts of the older combined details, and each time the Contractor struggled to understand the details very well until we broke it into two separate details – then they did fine. The change made use of the “60”’s numbering for details that deal with foundation wall anchorage.
7. Two new wall section details have been added at the end of Chapter 5 for the new Model Home Type H.
8. More significant changes have been included in the details at the end of Chapter 6. We tried to be more constant with putting helical anchor details first and epoxy bolt details second throughout the details, clarified the bracing spacing for chimney bracing, put back in an updated porch to roof connection detail that had spoken about long ago that had not been included by the publisher, included more details for Model Type H, and separated out the floor to foundation connection details into group numbers in the 60s..
9. A new “Glass” detail from FEMA has been added at the end of Chapter 7.

Overall I think the Guide will be much easier to use and understand. I think it will be a significant improvement, but the updates do not change the scope of being a user tool for simple partial voluntary seismic upgrades for the older small URM homes. I think the Guide will still fit well with the Fix-the-Bricks type of programs and upgrades. I think it is still very important to get some much better data on the actual amount of help it does for the various sizes of earthquakes that may hit the homes. With the better analysis and data gathered we can possibly better explain how much improvement is actually provided in these simple partial seismic upgrades for life safety!

Respectfully,  
Palmer Engineering, LLC

A handwritten signature in black ink that reads "Glen E. Palmer". The signature is written in a cursive style and is centered within a light gray rectangular box.

Glen E. Palmer, P.E., S.E  
Principal