

**City of Seattle**  
**Unreinforced Masonry Building Project**  
**Technical Committee**

MEETING NOTES  
September 12, 2008

**Attendance:** Terry Lundeen, Peter Somers, Mike Wright, Tom Pittsford, Marty Smith, Ira Gross, Bruce Helm, Joan Gomberg, Craig Weaver, Al Findlay, Vaughn McLeod, Tim Nordstrom, Scott Jones, Jon Siu, Steve Pfeiffer, Maureen Traxler

**Discussion of defining URM building:** After an explanation of the background of the URM project, the Committee began discussion of what characterizes an unreinforced masonry building. It was suggested that concrete masonry unit buildings are not, nor are masonry infill buildings. Several definitions can be found in California regulations; ASCE 31 has another. It was suggested that the Committee look at the problems to be solved to determine what building characteristics are pertinent. For example, the problems with concrete masonry units may be more similar to tilt-up concrete than to unreinforced masonry. It was agreed that a clear and precise standard is needed because mandatory regulations will apply to specific buildings.

**Actions:** The Committee will consider definitions used in California and the definition used in ASCE standards.

**Discussion of project goals:** The next topic discussed was the goal of the project. If the goal is protection of people on the street, then masonry veneer may be an issue, but masonry veneer does not make a building a URM. Other buildings with parapets may pose a hazard similar to URMs with parapets. Some hazards will be missed by focusing on unreinforced masonry bearing walls, such as buildings with infill wall and unreinforced masonry parapets. It will also be necessary to identify what type of earthquake we are concerned about. The choices for performance of URMs is either life safety or collapse prevention.

It was noted that, in an earthquake, URMs usually either collapse or survive mostly intact. In an earthquake with 10 percent chance of occurring in 50 years, life safety and collapse prevention produce the same result. Collapse means partial or full-floor collapse, or loss of load path.

Several possible goals were stated during the meeting:

- The goal of retrofits must be reduction, not elimination, of risk—it is not reasonable to expect that no bricks would fall from URMs.
- The goal could be simply stated as reduction of life loss.
- Life safety is the only justification for mandatory retrofits; reduction of economic losses should be the choice of the building owners.

- The retrofit requirement should not result in buildings being demolished or vacated.
- A possible way to state the goal is “There is a reasonable probability of no life-threatening injury in an earthquake with a reasonable probability of happening in X interval.”
- Nonstructural items such as sprinklers and gas lines will not be required to be retrofitted.

**Discussion of standards:** There are several standards that might apply to URM retrofits. ASCE 31 and ASCE 41 are current standards used for voluntary alterations to existing buildings. ASCE 31 is for evaluation of buildings, and is a traditional approach that is field tested; ASCE 41 is for rehabilitation of buildings. It is more scientific but is based on academic research and hasn't been tested. ASCE 41 allows more options including nonlinear analysis, but many engineers don't know how to use it. Another standard is the International Existing Buildings Code. It may be possible for the Seattle retrofit program to require that building designs address specified building elements according to a chosen standard.

**Conclusions:** Committee will focus on goal and scope of retrofit requirement before determining which standard to apply.

**Action:** The SEAW Existing Buildings Committee will provide the URM Technical Committee with a matrix of building elements correlated with seismicity.

**Next meeting:** October 7 at 9:00 am in Seattle Municipal Tower.