

Identification of URM buildings. Look for the following trademarks:

- Rafter tie plates. From the exterior, they can be in the form of a star, square plate (that when turned sideways will look like a diamond), straight bar, star, S-shaped rod, etc. One advantage of visible tie plates is that they are an indicator of the location of floor joists and roof rafters.
- Deeply recessed windows. In these buildings (and most masonry buildings), window frames are normally set to the inside of the exterior walls, exposing about 8" of wall.
- Concrete bond beam cap on top of the exterior wall. Bond beams may also be present over windows and between floors (for additional stability).
- King row. Within every four to seven rows of bricks, one row will have been laid on end for additional strength. From the exterior, you will see the king row as the "ends" of the bricks, not the sides of the bricks.
- Windows will have arched or straight lintels over the windows. Normally, the lintels are arched.
- The lime mortar between the bricks is often white, porous, and can be removed by a finger or knife. Additionally, some older URM buildings have what appears to be sloppy workmanship, resulting in bricks that have not been uniformly laid and uneven mortar joints.
- Note: In some URM buildings, the exterior walls have been "plastered" to give the building a newer look, or a higher quality brick was used on the front of the building. In these cases, the sides of the building do not normally use the "better brick" and the inset windows and/or lintels over the windows are still visible on plastered buildings.

Hazards

Originally, these buildings were designed so floor and roof joists would pull out from the walls during a fire (remember the fire cut?), thereby preventing wall collapse. When joists and rafters are tied to the exterior walls (remember the rafter tie plates?), collapse is more likely, and the collapse is normally outward a distance greater than the height of the wall. Another common hazard is the presence of arch type roofs on URM construction. If a collapsing arch truss is connected to hip rafters at the end of a building, the truss will push the hip rafter outward, also pushing the corresponding wall outward with considerable force. Additionally, if these buildings are old (built in the late 1800s or early 1900s), think about how many layers of roofing are on the roof. Then ask yourself if it is possible that the roof is carrying a severe dead load, and if so, does that fact make collapse more likely. Of course, the answer is yes.

Operational Considerations

Operational considerations are simple if you consider a floor and/or roof collapse will push the walls outward. With that thought in mind, remember the potential collapse zone may be outward to a distance greater than the height of the wall. The front and rear walls are at the highest risk, and the side walls pose a secondary risk. Safe areas for resources would then be located at the corners of a building and away from the building at least the distance of the height of the walls. Additionally, departments that conduct roof ventilation operations may

find metal straps across the roof and underneath the roofing material if the building has been retrofitted for earthquakes.

Remember there is a significant difference between URM masonry buildings, and masonry buildings constructed after 1935. Masonry buildings built after 1935 use cement for the mortar and rebar. Therefore, there is a significant difference between pre 1935 and post 1935 masonry buildings. Post 1935 masonry walls, particularly cinder block walls, do not have a tendency to collapse. Additionally, these buildings look different:

- A better quality of brick is used.
- Workmanship is superior.
- No lintels over the windows (unless the architecture is made to look older).
- Windows do not have as large an offset.
- No king row (unless the architecture is made to look older).
- No rafter tie plates.

Please Complete and submit HURMBA's membership form located in the membership section. Thank you!!!!!!!!!!!!!!!

Contact us at customerservice@hurmba.org or info@hurmba.org