

Post-Earthquake Advisory
Recommendations Regarding Chimney Damage
From the Virginia Department of Historic Resources

Safety first. Do not take chances when inspecting damaged portions of a building. Inspect the chimney stack from below or use a window opening if possible. If uneasy with heights, get someone else to do the inspection. Appropriate shoes and a hard hat are recommended. Ladders should rest solidly on the ground and against the wall; do not carry any equipment up the ladder. (No amateur should ever attempt these tasks.)

Chimney Lingo: A chimney has basically three components: a firebox, smoke chamber and flu. The fire box contains the fire. The smoke chamber is the funnel shaped area which is the both chimney foundation and the chamber where smoke begins its ascent through the flue to the atmosphere. It is at this point, (ceiling height) where most structural problems after an earthquake vibration will develop.

About Cracks: The crack width can be used as a guide to the severity of the chimney's problem. Small cracks up to 1/16th of an inch are of no concern structurally. Cracks wider than 1/16th of an inch or more should be a concern because water penetration will eventually lead to structural problems. Know that horizontal and vertical cracks of small size are rarely a cause for concern. It's the diagonal crack which indicates when a part of the building has shifted relative to another part.

Repairs: Repairing the masonry damage should be the first consideration. In many cases, cracks need only to be sealed or pointed to prevent the entry of water. While large cracks might require reconstruction of the affected area, dismantling and rebuilding a damaged chimney is typically unnecessary; new construction should only be considered as a last resort. In any case, decisions should only be made after consultation with a historical architect, structural engineer or mason experienced with historic masonry repairs. Generally, an architect or engineer will be most useful at advising you on what to do, while contractors will know most about how to do it. In both cases, try to find someone who has experience with historic buildings instead of new construction.

Be prepared: By being informed for consultations with contractors and masons. Read *Preservation Brief 2: Repointing Mortar Joints in Historic Masonry Buildings* available at <http://www.cr.nps.gov/hps/tps/briefs/brief02.htm>

Need a Contractor and/or Mason? DHR has posted a list of consultants and craftsmen on our website at www.dhr.virginia.gov