

6.5 Furniture, Fixtures, Equipment and Contents

6.5.6 Miscellaneous Contents

6.5.6.3 Fragile Artwork

Paintings, vases, glassware, ceramics, sculptures, or museum collections are often stored or displayed without any seismic restraints.

Typical Causes of Damage

- Loose items on shelves or hanging items may slide, bang, overturn or fall. Paintings or other wall hangings may fall. Sculptures may slide or fall due to shaking.

DAMAGE EXAMPLES



Figure 6.5.6.3-1 Fallen sculpture that collapsed in the 2010 Chile Earthquake (Photo by Natach Pisarenko, AP Photo).



Figure 6.5.6.3-2 Leaning fountain after the 2010 Chile Earthquake; corrosion was a factor (Photos courtesy of Eduardo Fierro, BFP Engineers).

Seismic Mitigation Considerations

- Many proprietary safety straps, mats, small enclosures, base isolation platforms and other devices are available to protect fragile or expensive art, collectibles and other artifacts. Check the internet for available devices.
- Items hanging on walls should be secured with a positive attachment such as an eyebolt with closed wire loops. Ceramics, glassware, and decorative items on shelves should be individually restrained or provide edge restraint for the shelves. Items hanging from the ceiling should be anchored to structural framing; heavy items should not be located where they can swing and impact a window, wall, or other object. Provide positive restraint for statuary and large vases. Items displayed outdoors must be protected from corrosion and weathering; mounting and connection hardware should be corrosion resistant.
- For protection of valuable items and museum artifacts, seek professional guidance. The J. Paul Getty Museum and Getty Conservation Institute in Los Angeles, California have published a number of references, such as *Advances in the Protection of Museum Collections from Earthquake Damage*, (Podany, 2006) and *Building an Emergency Plan, a Guide for Museums and other Cultural Institutions* (Dorge and Jones, 1999).

MITIGATION EXAMPLES



Figure 6.5.6.3-3a Seven foot tall marble statue located in the Archaeological Museum of Olympia, Greece (Photo courtesy of University at Buffalo).



Figure 6.5.6.3-3b Installation of base isolation devices to support reinforced concrete slab for statue (Photo courtesy of University at Buffalo).



Figure 6.5.6.3-3c Completed installation of statue on platform with base isolation (Photo courtesy of University at Buffalo, SUNY).



Figure 6.5.6.3-4 Seismic restraint of an object with artistic and historical value with nylon filament (fishing line) in the Tokyo Museum in Ueno Park (Photo courtesy of Robert Reitherman, CUREE).

MITIGATION DETAILS

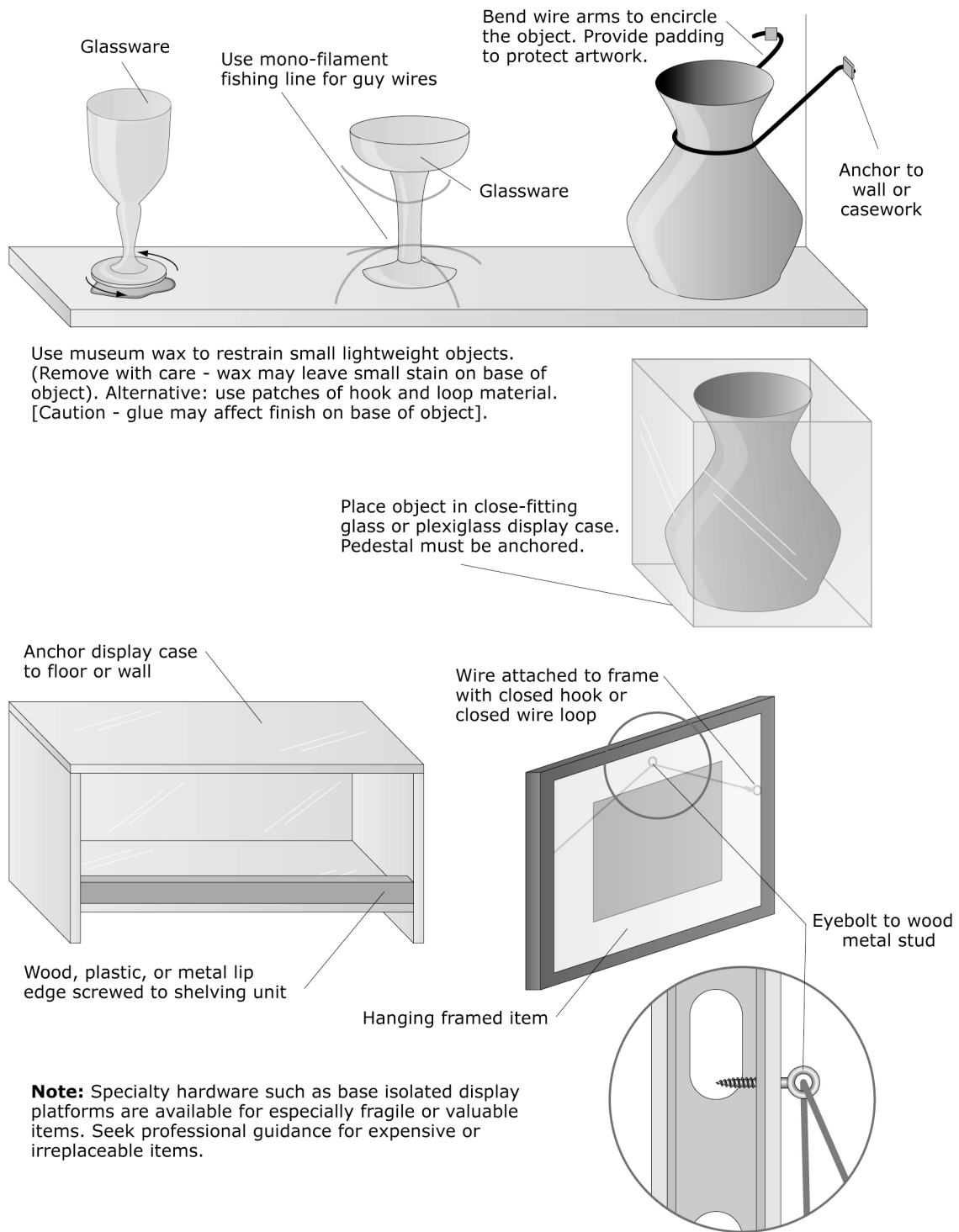


Figure 6.5.6.3-5 Fragile artwork restraints (NE).