Sesimic Mountmaking and 3-D Scanning

Over the past thirty years, the Getty Museum has gone to great efforts to define the nature of the seismic threat it faces by designing seismic mounting systems that will help mitigate the effects of an earthquake and to protect its collections by addressing the following questions:

- What is the worst-case seismic event that might occur within a reasonable risk level and time frame at the two Getty Museum sites?
- What would the overall response of the museum buildings be to that event and would any specific part of the building respond differently than any other part?
- How would the contents of the buildings respond to the earthquake forces?
- How any of these effects might be minimized to prevent damage to the collections?

In order to address these considerations, the parameters of mount designs at the Getty Museum not only fulfill the basic display requirements for an artwork, but also provide an increased level of resistance against the forces of an earthquake. Based on these principals, every object that goes on display is evaluated for some degree of seismic protection. Seismic mount designs range from simple methods of securing, such as microcrystalline wax and monofilament ties, to complex base isolation systems (fig. 1) that stabilize large, fragile sculptures. Learn more about the design of these intricate isolator systems in the video Protecting Art in an Earthquake: Seismic Isolator Technology.

Recently the Getty Museum has been researching the viability of 3-D scanning as a tool for mountmaking. Experimentation with various equipment and software has developed into a quick method of acquiring accurate information for three-dimensional objects. This has proven to be extremely helpful in preparing for temporary exhibitions. 3-D scans are made of loan objects before they arrive at the Getty. Sections of the scans are 3-D printed, allowing the mounts to be custom fitted to the printed facsimiles. With this process, the installation of large or complex exhibitions can be greatly streamlined 3-D scans of loan objects are also used to help design exhibition furniture and seismic isolators.