JORDAN SCHNITZER MUSEUM OF ART

THE PROBLEM:

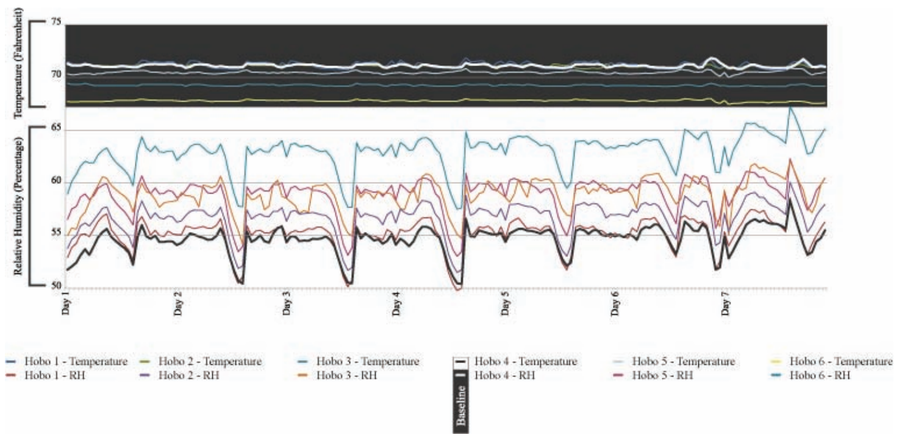
The users of the textile and small decorations vault in the original part of the Jordan Schnitzer Museum of Art (JSMA) noticed daily variations in the humidity and temperature of the vault. Humidity and temperature fluctuation can cause significant damage to art work.

HYPOTHESIS:

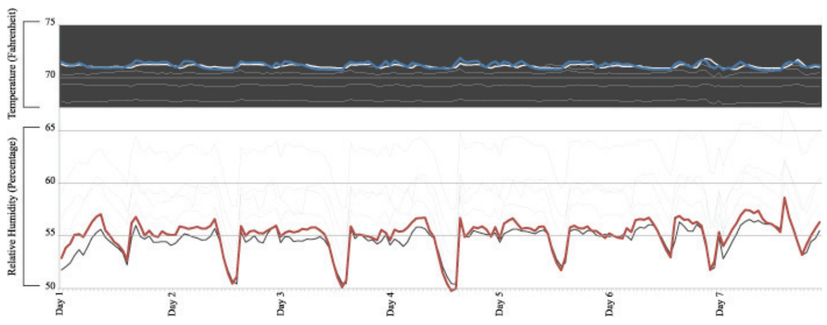
There is a 10% variation in humidity levels around the room. The averages of humidity readings taken over a one week period at various locations around the room will range from 5% lower than the humidity level at the thermostat to 5% higher than the humidity level at the thermostat.

DATA COLLECTION:

We collected data using Hobo data collectors strategically placed around the collections vault.

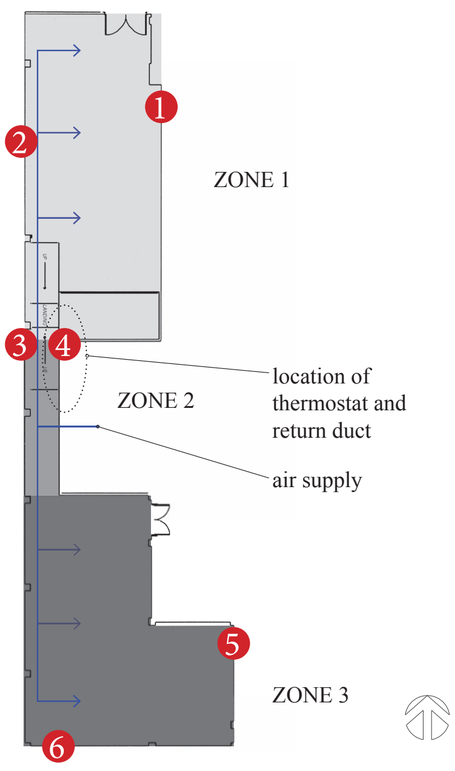


TEMPERATURE & HUMIDITY DATA RESULTS



HOBO 1 COMPARED TO BASELINE RESULTS

THE PLACE:



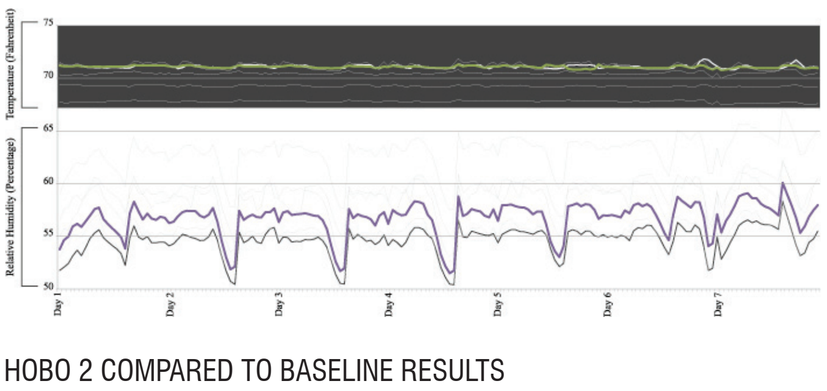
The Art vault in the basement of the Jordan Schnitzer Art Museum

CONCLUSION:

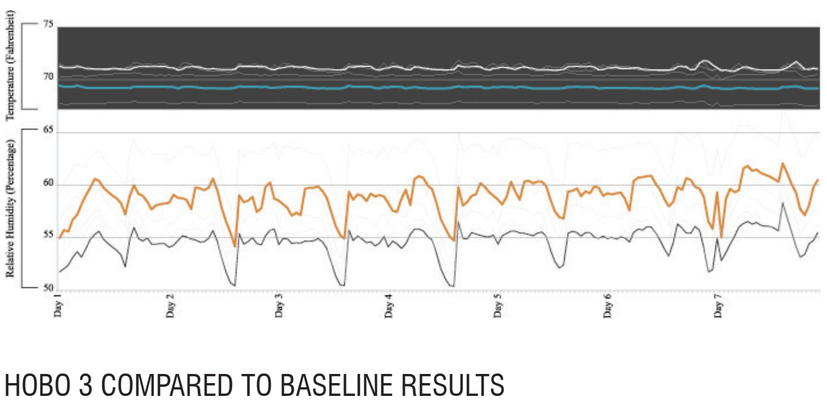
The data we recorded throughout the week indicated that fluctuations within any given 24 hour period and throughout the space as a whole are less than ideal for storing art. The data also indicates that one of the factors influencing conditions within the vault is the un-insulated, exterior masonry wall on the west edge of the space. This suggests that a possible solution to difficulties maintaining consistent and appropriate RH and temperature levels within the vault could be mitigated with changes to the exterior wall such as the addition of insulation and a vapor barrier.

The fact that all of the humidity data we collected was lower than the baseline RH levels measured at HOBO 4 indicates that the placement of the thermostat directly beneath the return duct is not ideal. Placing the thermostat farther away from any ducts would reflect more accurate measurements and therefore greater control of the environment.

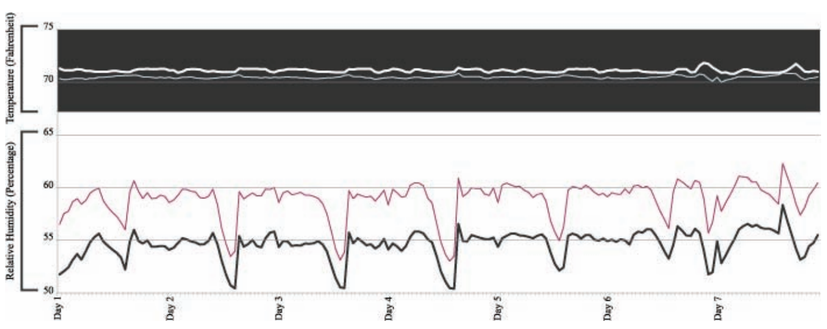
Because humidity levels throughout the space were up to 8% higher than those measured at baseline and recommended humidity levels for the storage of art, the RH could be set 8 -10% lower than the actual desired RH level.



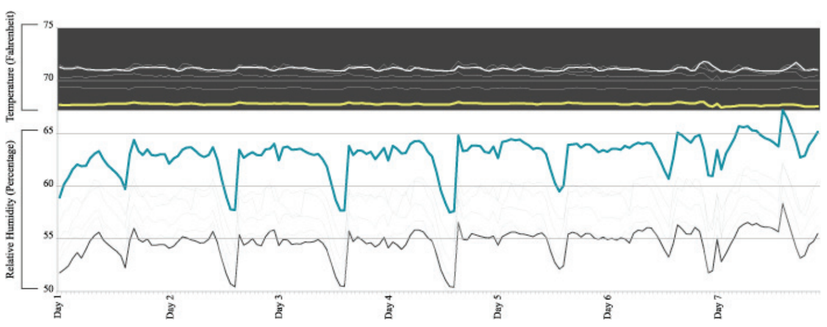
HOBO 2 COMPARED TO BASELINE RESULTS



HOBO 3 COMPARED TO BASELINE RESULTS

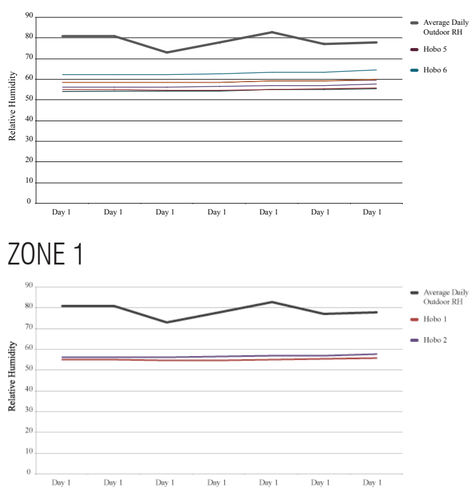


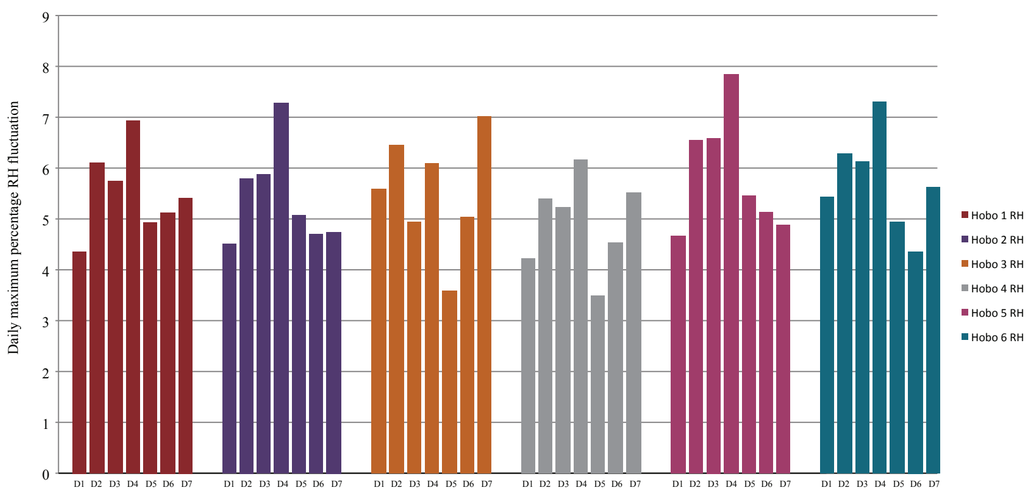
HOBO 5 COMPARED TO BASELINE RESULTS



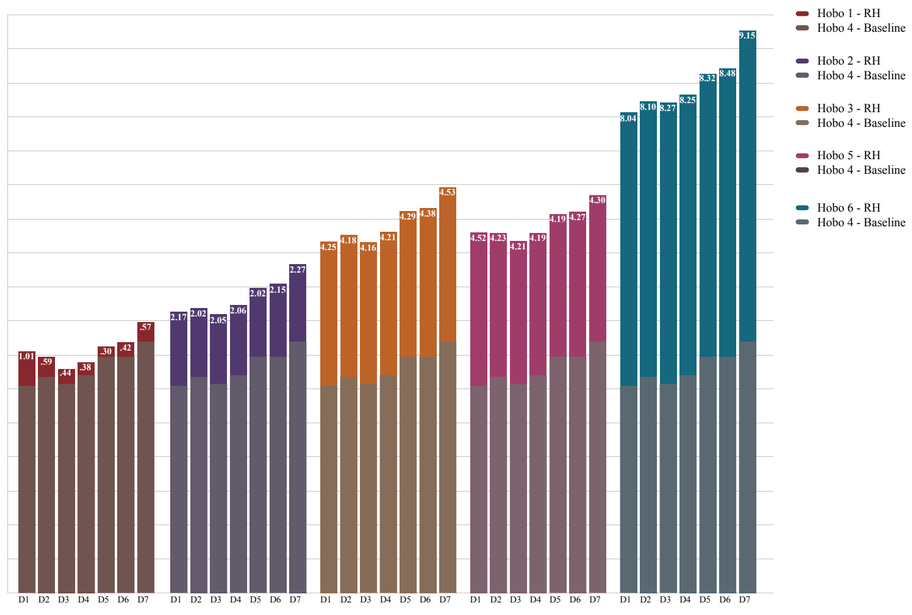
HOBO 6 COMPARED TO BASELINE RESULTS

INTERIOR/EXTERIOR RH COMPARISON PER ZONE





DAILY MAXIMUM RH FLUCTUATION



AVERAGE DAILY RH DIFFERENCE FROM BASELINE