

## REI Toolkit Workshop

14 July 2006

### GREEN TEAM - Participants:

Dianne Ahmann, University of Oregon  
Terri Boake, University of Waterloo  
Cliff Kotnik, Colorado Springs  
Jim Minner, Global Renewable Energy  
Jack Beal, Colorado Springs Dept of Corrections  
Rhett McNallie, Denver Colorado  
Jimmy Broomhall, Broomhall Brothers, Denver



GREEN TEAM

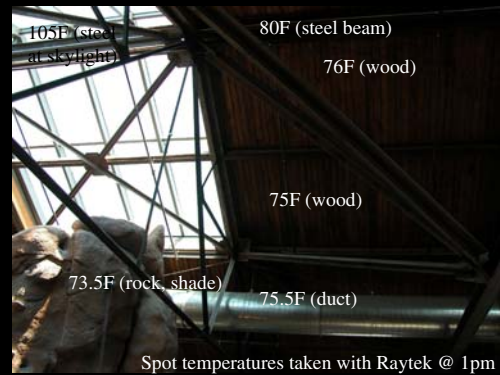
### HYPOTHESIS:

"This building today has no stratification in the main space from the bottom to the top adjacent to the climbing stone, greater than 1 degree F."

GREEN TEAM



GREEN TEAM



GREEN TEAM



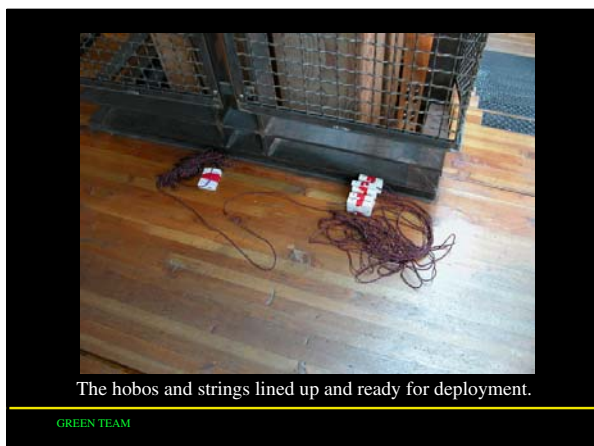
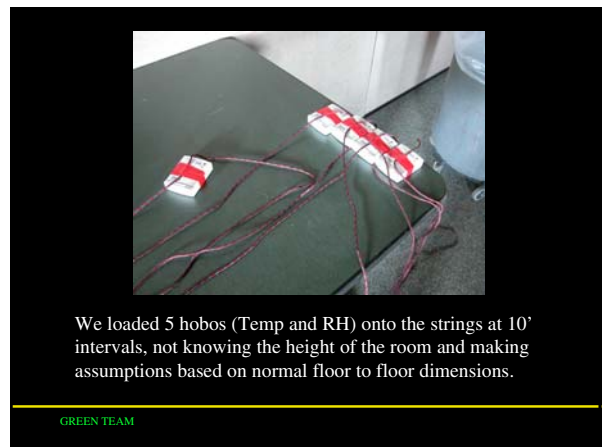
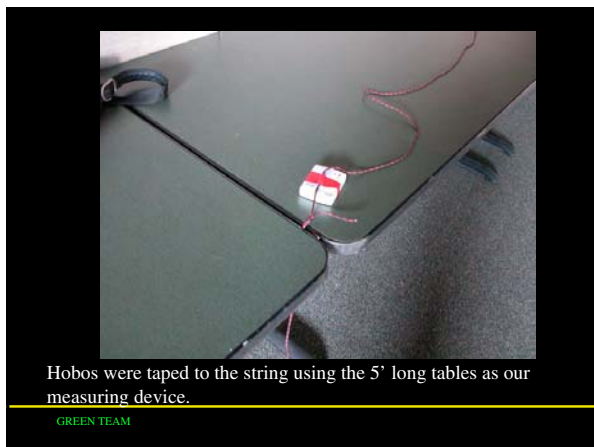
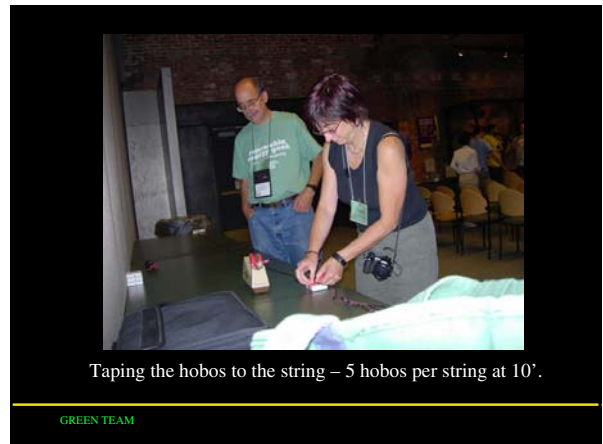
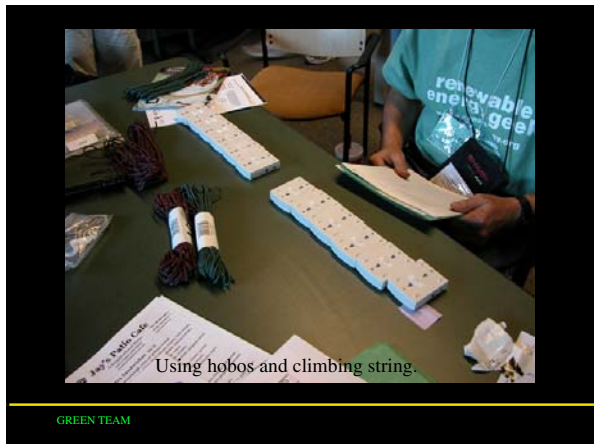
GREEN TEAM

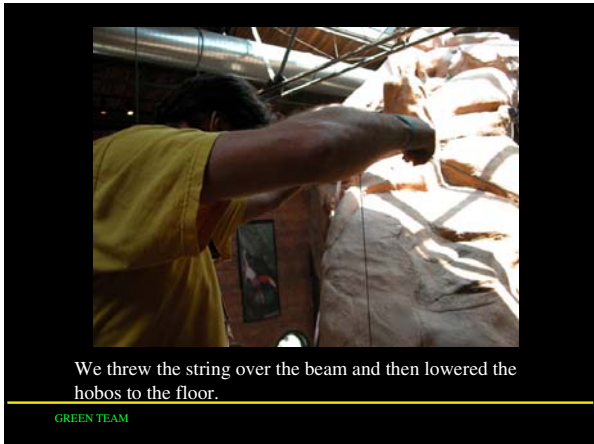
### METHODOLOGY:

Although the desire was to put the hobos on the rock, from the rock, it was not permitted (safety reasons!) so we decided to hang them in the space nearby by mounting them on strings and hanging them from the steel beams.



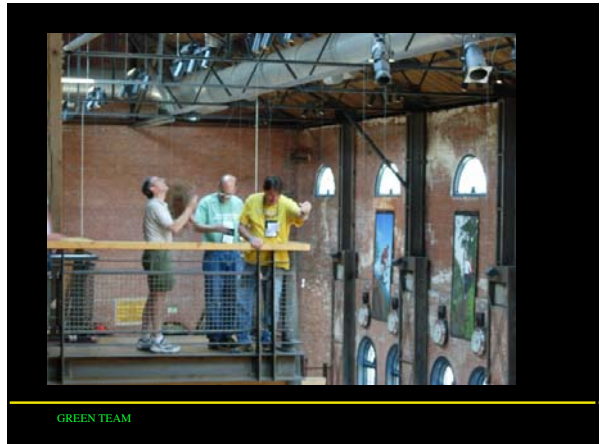
GREEN TEAM



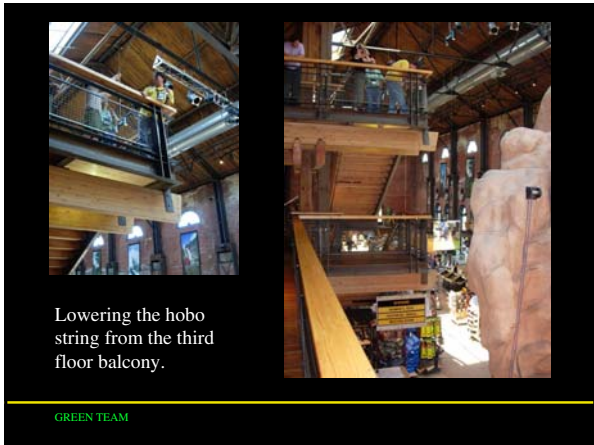


We threw the string over the beam and then lowered the hobos to the floor.

GREEN TEAM

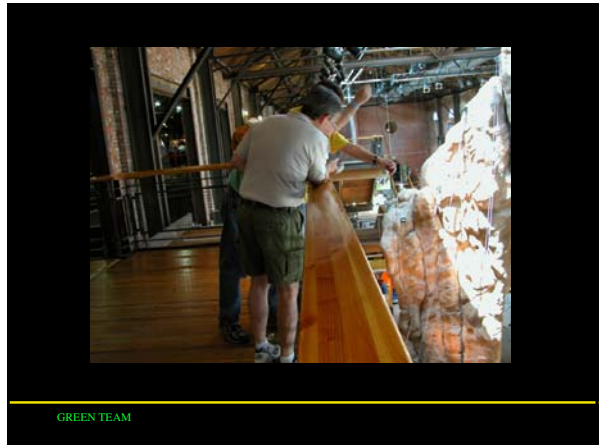


GREEN TEAM

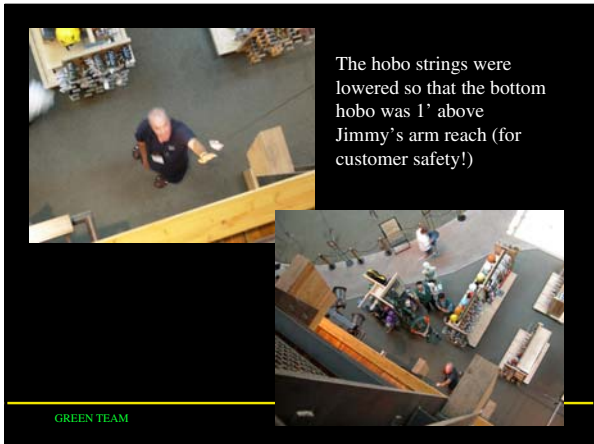


Lowering the hobo string from the third floor balcony.

GREEN TEAM

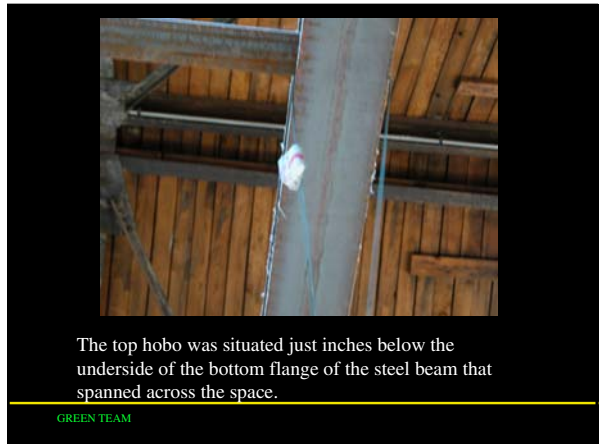


GREEN TEAM



The hobo strings were lowered so that the bottom hobo was 1' above Jimmy's arm reach (for customer safety!)

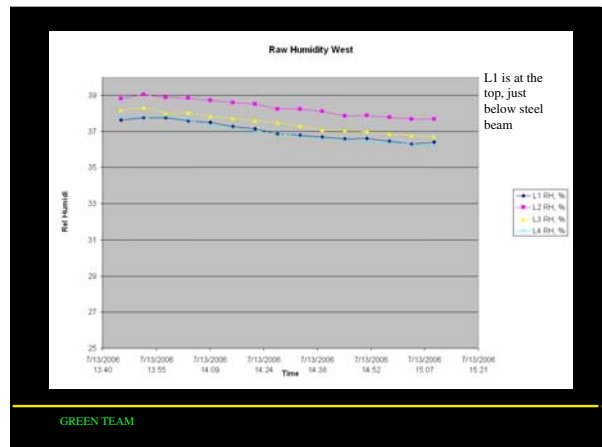
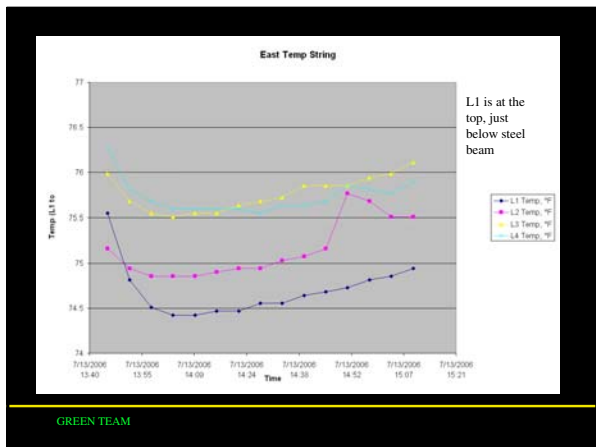
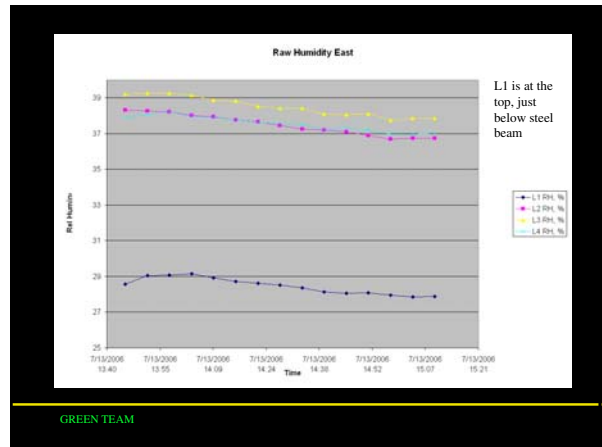
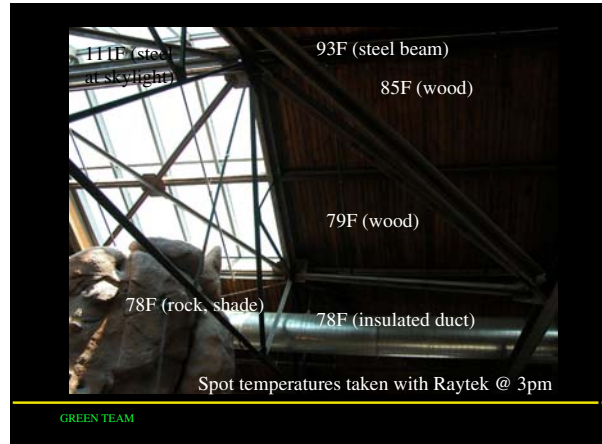
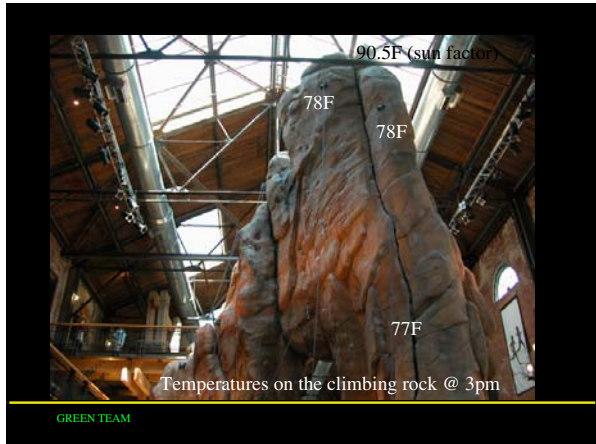
GREEN TEAM

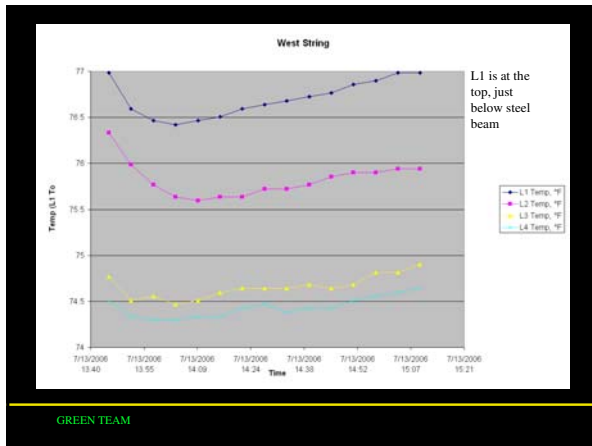


The top hobo was situated just inches below the underside of the bottom flange of the steel beam that spanned across the space.

GREEN TEAM





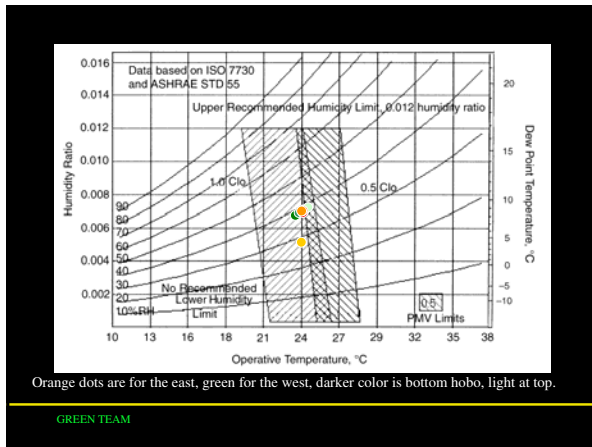


So... why do we think it was somewhat stratified??

Perhaps air movement from the A/C system blowing on the zone around the hobos modified the nature of the thermal environment.

So... check for air movement with bubbles!

GREEN TEAM



**CONCLUSION:**

The temperature was stratified by more than 1 degree F, BUT!!!

In checking the all important "comfort zone", none of the temperatures or RH factors were outside of acceptable measurements.

Lack of stratification is likely attributable to the high velocity of the A/C system and the movement of Tool Day participants running up and down the stairs adjacent to the hobos.

GREEN TEAM