Kresge roof has history of problems

Editor's note: A good deal of testing preceded the choice for the present domed roof on Kresge, as was reported in two articles in The Tech. The first ran in the October 11, 1961 issue and the second in the October 24, 1961 issue.

The egg is going to get a new shell!

However, "the egg" refers not to the product of a chicken, but to product of Eero Saarinen, who designed the unusual Kresge Auditorium. "The shell" refers to the projected new roof for Kresge. Or, more correctly, the new roof covering.

The original covering of the roof was a combination of stone and concrete, which had an unusual purpose. It seems that when you go down the Charles River for a short stay, you can line up the dome of the auditorium with the domes of building 7 and building 10. Because of this, the Institute wanted the three domes all the same color. Thus, the stone.

However, the roof, being one-eighth of a sphere, is subject to some unusual temperature conditions.

For example, in the winter, even though the temperature around it may be 20° or colder, the sun shining on the dome may raise the temperature to the vicinity of 80° to 100°F. In itself, this can produce some unusual effects if the other side of the roof is covered with snow.

Moreover, when the sun sets, the roof is subjected to a very sudden temperature change, causing it to contract suddenly, and often times cracking it. Thus, over the six years the dome has been in existence, it has weathered very much and is in very poor condition.

Before repairing the dome, the Institute went to test the prototype materials before putting them on and risking the waste of much money. Thus, two mockups have been built.

It may seem to some that the lead would make a very heavy roof, but the facts of the matter are that the concrete was so thick that the lead is actually lighter. Thus, not only will the new roof stand the weather better, but also will not put so much stress on its supports.

Contractors and Physical Plant officials are doubtful that the work on the dome of Kresge Auditorium will be finished by the time winter weather sets in. Dick Collins, administrative assistant to the director of the Physical Plant, said that at least two months with favorable weather would be needed to complete construction.

Workmen have been covering the dome with lead sheets since the middle of September. Expansion and contraction of its outer surface has been giving the Physical Plant trouble ever since Kresge was built in 1955.

Six months after the building was completed, the dome's concrete outer cup and outer coating began to crack. A new lead coating proved to be ineffective.

After five years of experimenting, Physical Plant experts and representatives of the architect and general contractor decided that lead sheets would provide the best covering.

Last year, the south corner of the dome was covered with a prototype of the present covering. At the same time, the corner facing Rockwell Cage was covered with a special type of lead shingle.

Now there is only one problem left. The building won't match the other domes.

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