

July 17, 1992

Mr. [REDACTED]
Building Systems Engineer
Construction Management
Primrose Hall, [REDACTED]
NCSU campus

Dear Mr. [REDACTED]:

Thank you for the opportunity to view some of the proposed materials to be used in the reconstruction of the main stairway at the entrance to D. H. Hill Library. As you probably know, I have had a professional interest in the problems posed by the earlier stairs, due to my research in human space perception and my involvement with the Ergonomics program in Psychology.

As I said during my visit to your office on Wednesday, July 15th, I believe that at least some of the difficulties with the earlier stairs may be traced to the unfortunate choice of tile used on the treads. The pattern (especially the joints between the tiles) would have contributed to a perceptual problem in identifying the edges of the individual treads. The addition of the small dots visually exacerbated the problem by creating an overly complex, "busy" pattern without providing significant improvement in definition. Furthermore, for those walking up the stairs, the open risers, combined with the long under-shot extension of each tread, may have resulted in misperceiving the height of the steps. This would, of course, have created the potential for tripping.

I believe that the closed-riser design which you showed me should provide a significant improvement in safety, although I also believe that some difference in color between the riser itself and the tread might be still better. What is critical is to provide enough visual information that library users can clearly perceive the amount by which they must lift their feet to avoid tripping when walking up the stairs. Although simply closing the risers is often sufficient, the lobby lighting (from the large windows to the south side of the stairway) is such that shadowing differences between the vertical risers and the horizontal treads may not be as strong as usual. With respect to the new tread surfaces, the type of material proposed seems well-chosen, although I cannot provide a final opinion since I was unable to look at a sample in the actual colors to be used.

I hope that the foregoing information is helpful. I am very pleased that you are moving to correct such a dangerous set of conditions as did exist.

Sincerely yours,

Donald H. Mershon, Ph.D.
Professor of Psychology