

Moisture Mitigation Using a Ceiling Plenum

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Forced-air ductwork system contains an inherent problem; the increased pressure in the duct increases the relative humidity (RH) of the conditioned air. Also, they tend to be noisy and localize the point of conditioned air. A recent alternative of using sealed crawl spaces as plenum eliminates the issues of noise and localization, but not completely insure against reduction in RH, which in turn increases the potential for bacterial problems. In the south building, a suspended ceiling, approximately one foot deep will be incorporated into the living room and master bedroom. This ceiling will consist of a wooden frame and screen inset panels. These panels will be made of Teflon-coated fabrics, initially supplied by the W.L Gore Corporation Architectural Fabrics Division. The porosity of the fabric will be evaluated with the intent of providing a uniform distribution of quiet, low RH conditioned air through out the rooms.

PROPOSAL



The MSU Southern Climatic Housing Research Team is a collaborative effort involving Architecture, Civil Engineering, Electrical Engineering, Forest Products, Landscape Architecture, and Mechanical Engineering. The MSU Southern Climatic Housing Research Team is affiliated with the Coalition for Advanced Wood Structures (CAWS) as a partnership with the USDA Forest Service, Forest Products Laboratory in Madison, Wisconsin. CAWS is a partnership between universities, industry and government to advance research for wood structures related to residential, non-residential and transportation uses.

