Chris Hoyman
Lighting/ Electrical

The School of Forest Resources Building
University Park, Pennsylvania

Thesis Proposal
December 12, 2005

Dr. Mistrick, Faculty Advisor

Breadth Executive Summary

Along with the Depth study on the lighting and electrical systems in The School of Forest Resources Building, a Breadth examination on structural and mechanical systems will take place. These analyses will be on systems relating to changes made during the Depth study, and will focus on the building's Atrium.

For the structural Breadth work, an assessment of the structural systems for the new Atrium skylights will be performed. These skylights are located in the ceiling of the four floor space. The existing roofing system in this area will be removed. Calculations will be performed to ensure the new system can support all loads, including the weight of the glazing and the trellis system used in the new lighting scheme.

In the mechanical breadth study, an evaluation of how the large amount of sunlight in the Atrium impacts the mechanical systems will be performed. A system to minimize or compensate for solar gain will be developed. Heating and cooling loads for the mechanical systems will be calculated, and resizing of equipment may be necessary. If different equipment is selected, electrical system sizes may be impacted, resulting in further branch circuit and panelboard changes.