

Breadth Studies

While completing the construction management analyses for the Integrated Science Center, I plan to investigate other area specialties of the Architectural Engineering program. The breadth studies I have selected are briefly explained below.

Mechanical Breadth

The Integrated Science Center is a state-of-the-art laboratory facility and it requires an elaborate mechanical system. During the humid summer months caused an excessive amount of condensation formed when the system was operating the system at 100% external air exchange. As a result moisture began to overflow the drain pans and flooded the penthouse floor. I would like to propose a new AHU system that could handle the building peak demands during Williamsburg's humid summers.

Architectural Breadth

The original design specified that all mechanical work was to be installed above the 1st and 2nd floor ceilings. However, it became apparent that the main exhaust duct for the Phase II facility could not be installed above the 2nd floor ceiling due to the inordinate amount of laboratory piping, electrical work, and fume hood connections crammed into the space. Therefore, the main exhaust duct, along with many of the main chilled, hot water and steam condensate lines were relocated from above the 2nd floor ceiling to the now crowded roof chase. The duct was then run to the new manifold which connected the exhaust to Phase I. I would like to reanalyze the mechanical room locations and equipment, and equipment positions and propose a way to install the main exhaust duct above the 2nd floor ceiling rather than in the roof chase.