

Q: Can you generally quantify how indoor air quality impacts costs?

A: There are several kinds of costs associated with poor indoor air quality: cost to the student's performance, additional maintenance costs, and when renovating-additional construction costs.

Student Performance can be affected through elevated levels of carbon dioxide as the children sit in their classrooms. During the day, if fresh outside air is not introduced into the breathing air of the students, CO2 levels can rise above recommended levels to the point of potentially making children and staff sleepy, restless or less attentive. It also permits levels of all airborne germs and contaminants to rise.

The current HVAC systems in the targeted renovation projects of CIP 2006 have heating and air conditioning systems that re-circulate the air without introducing any fresh air. One could open a window or provide an air-to-air heat exchanger, but if you cannot drop the humidity levels of the outside air as you bring it in, then excessive humidity will build up in the room, potentially leading to mold or mildew issues.

Over the years, we have addresses IAQ issues at Poe, Lacy, Powell, Hunter and all of projects listed in CIP 2006. Several individuals have had significant health issues that we immediately resolved through replacement of carpets with VCT, cleaning of units, new window units, or relocation of the students from the room to the media center or other non-traditional classroom spaces.

To permanently correct the issue, the HVAC system for those classrooms needs to be replaced. That cost is generally \$18-20/SF, but it creates another \$60-\$80/SF of other system replacement needs (electrical, ceilings, flooring). It could be more advantageous to demolish the building and start again. This is the case in many buildings where the ceiling height is so low that ductwork cannot be run.

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