

In support of *S. B. No. 376 (RAISED) AN ACT CONCERNING AUTHORIZATION OF STATE GRANT COMMITMENTS FOR SCHOOL BUILDING PROJECTS AND CONCERNING CHANGES TO THE STATUTES CONCERNING SCHOOL BUILDING PROJECTS.

Senator Gaffey, Representative Fleishmann, Representative Liddy, and other members of the Education Committee:

My name is Karen Carey Pierce and my address is 10 Chestnut Hill Road, Sandy Hook, CT 06482. As an educator I hold a Bachelor of Science Degree in Elementary Education, Master of Science Degree in Natural Science, a professional teaching certificate in the state of Connecticut and have been involved on the university level as an adjunct professor and supervisor of teaching candidates following State Department of Education guidelines.

I am requesting that you make specific changes to statutes concerning school building projects that would make the repair and replacement of school HVAC systems eligible for reimbursement. It is in strong support of these statute changes that I am submitting this testimony as:

- An educator with over thirty years classroom experience and extensive research in how children learn
- The parent of a child with asthma enrolled in Newtown Middle School, one of two school buildings identified as having significant increased CO2 levels impacting IAQ, raising the need to address HVAC systems
- As a Newtown resident who is requesting your support of passage of a bill that will impact the quality of education through improvement of the quality of the very air students and teachers breathe.

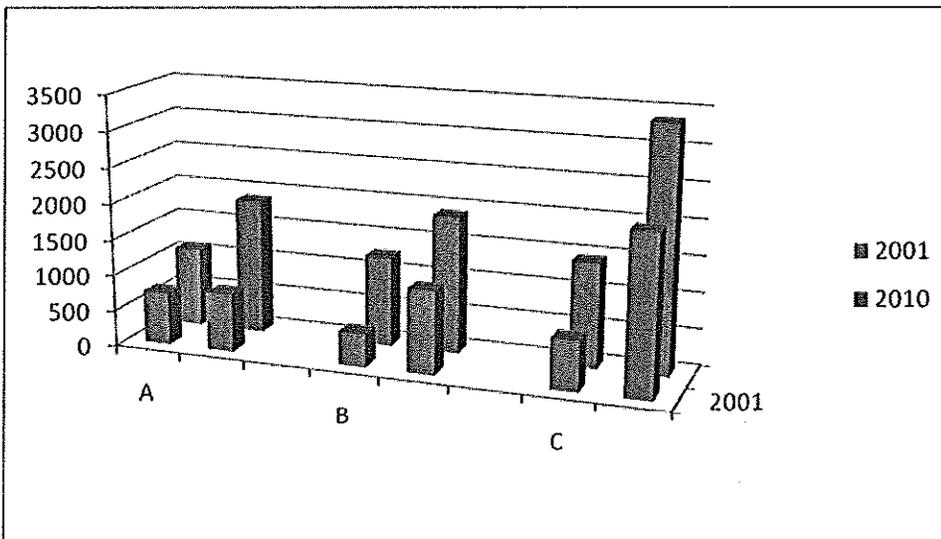
My youngest son has always been sensitive to the quality of air around him. David's respiratory system is the indicator that directs us to begin monitoring the Air Quality indices found on the local web sites to identify the particulate levels of David's triggers: pollens, mold, and mildew. Fatigue, labored breathing, dark circles under his eyes, would signal the need to visit the pediatrician to monitor blood O2 levels, respiratory function and inhaler use. Rarely is he deterred from enjoying soccer, swimming and hiking, as seasonal applications of medication kept his symptoms in check.

It wasn't until David entered fifth grade that Indoor Air Quality became a concern. Assigned a classroom at the basement level of the Intermediate School building, David's reliance on inhalers and oral medication increased to include the need for a back up inhaler to be located at the nurse's office for year round use. When the school ended, David's symptoms subsided. Sixth grade found David assigned to the same area of the school. Once again, visits to the pediatrician showed him at greater respiratory distress. David was placed on daily doses of Singulair, Advair, and inhaler as needed.

This year David transitioned to seventh grade and a different building. In an e-mail to the receiving school, I shared David's learning styles and a brief history of his asthma, requesting that building administration take this information into consideration for his placement. Their active consideration of his needs is evidenced by the subtle fact that, to date, David has not needed to be on his Singular or Advair. A testament to the fact that David's assigned wing is one of the better ventilated in the building, my son's current classroom is located in E-wing at our middle school: the only wing that has not been identified as having CO2 levels above those recommended for classroom use

CO2 Range Levels For Newtown Middle School

Wing	ppm 2001		ppm2010	
A	740	820	1110	1890
B	470	1160	1264	1913
UC	700	2200	1460	3375



The dedicated men and women serving on Newtown's Board of Education recognize the need to address this issue. However, the Board of Finance has called for a reduction of \$2.5 million dollars from the Board of Education, while requesting a budget reduction of \$288,000 from the Town Budget. Such a cut puts the BOE in the unenviable position of making a Sophie's Choice, sacrificing one child in order to save the other, regarding a quality of life issue: which school should receive the financial support to replace/repair the HVAC system. At the same time, CIP monies in the amount of over \$325,000 have been approved for a project that would move telephone lines that were erected only two years ago underground to improve the esthetics of the new Municipal Building.

When discussing IAQ issues related to CO2 levels, Board of Finance members quoted industrial standards, not ASHARE standards related to school and work environments, stating the numbers cited in the recent survey were acceptable. Comments made by BOF members regarding the fact that CO2 in and of itself is not a toxic gas demonstrate a lack of understanding of what the levels do signal: inadequate ventilation that is indicative of underlying problems that impact student availability to learn. Using computerized assessment tests, Bako-Biro were able to establish data to support the cause/effect relationship between adequate ventilation and school performance:

Student Performance and Ventilation: Bako-Biro et.al. 2008. Indoor Air 2008

8 schools - Reading, UK, Grade 5
Intervention study.

Portable mechanical outdoor air ventilation system installed through window non-mechanically ventilated classroom to provide a constant indoor temperature while outdoor air ventilation rates were changed. Computerized assessment tests administered to measure student performance.

Increasing outdoor air ventilation rates:

A factor of 4.25 per person 1.6 L/s (3.4 cfm) to 6.8 L/s (14.4 cfm):

Resulted in the following:

- 3% increase in reaction times
- 8% increase in picture recall
- 15% increase in word recognition

I share this information with you, ladies and gentlemen, to demonstrate the need for the passage of specific changes to statutes concerning school building projects that would make the repair and replacement of school HVAC systems eligible for reimbursement.

By the nature of our physiology, as members of the animal kingdom, we rely on our senses to warn us of danger. Our capability to create tools (technology) has empowered us with ability to detect threats to our health and safety that have gone unaddressed simply because our limited sensory design made us unaware of their existence. Today, the previously immeasurable components that define indoor air quality have become the subject of numerous studies and reports throughout industrialized nations. Recognizing that the future of their country's capacity to succeed in a global economy rests on their children's ability to be available to access the education that prepares them for the 21st Century; many of these nations, those who are our friends and competitors in the global market, have already taken the action that this bill would support.

Over the years educators and legislators have worked side by side to challenge habits of mind and action to facilitate positive change, knowing that what was identified as needs of the few would benefit the majority:

- Recognizing the impact of smoking and second hand smoke, school campuses are smoke free zones.
- Recognizing the need for students to be emotionally safe and secure in a learning environment, Anti-bullying legislation was passed.
- Recognizing that proper nutrition is important to a student's availability to learn, nutritional guidelines were published

Today we come together as a community of educators, parents, and legislators who appreciate the complexity of the human body as we strive to understand not only the stages of development of each system, but the intricate infrastructure that nurtures the cognitive development that drives each individual to explore and understand the world around them...to learn. **We recognize that the quality of the air we breathe impacts not only our quality of life but our physiological availability to access learning.**

Thank you for your time, consideration, and continued support of education as reflected by

S. B. No. 376.

Respectfully,

Karen Carey Pierce