

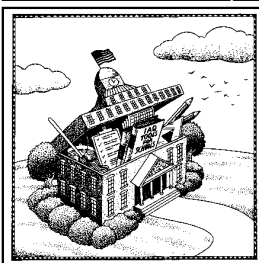


CASE STUDY

G.W. CARVER AND CHARLES DREW ELEMENTARY SCHOOLS

San Francisco Unified School District, California

Indoor Air Quality



Tools for Schools

G.W. Carver Elementary School, part of the San Francisco Unified School District (SFUSD), is located in the Bayview/Hunters Point community, a suburb of San Francisco near 3-COM Park. In early 1998, the principal at Carver Elementary was overwhelmed by the number of students coming to the main office for their asthma inhalers. The principal expressed her concern about the children's health to a friend working with Kaiser Permanente. As it happened, Kaiser, the American Lung Association (ALA), and the State of California were well aware that people living in San Francisco's Bayview/Hunters Point community had a much higher incidence of asthma and other respiratory illnesses than those living in other parts of the city. Carver Elementary was of particular concern because its students were reporting an even higher rate of asthma cases than at a nearby school.

Approach—Project Description

Getting Started

Through its *Open Airways* program, ALA was already working with the school nurse from Carver to provide asthma training courses. In March 1998, ALA hosted a roundtable discussion focusing on indoor air quality (IAQ). The event was well-publicized. Attendees included representatives of the Environmental Protection Agency (EPA), ALA, Kaiser Permanente, SFUSD staff including the Deputy Superintendent and the District's Facilities Manager, and others. Their discussion centered on the high asthma rates and kicked off a planning effort for assessing, prioritizing, and remedying IAQ problems in schools.

During the discussion, EPA offered technical assistance to SFUSD schools that would commit to pilot testing EPA's *Indoor Air Quality Tools for Schools (IAQ TFS)* Kit and program. Two schools were chosen as pilots, G.W. Carver and Charles Drew elementary schools, both of which were built in 1974. Carver has approximately 390 students in grades K-5, while Drew has approximately 240 in the same grades. The same nurse serves both schools.

IAQ Team

Following the recommendation in the *IAQ TFS* Kit, the two schools established a joint IAQ team. The team includes the school nurse (who is also the IAQ Coordinator), the facilities manager, maintenance supervisors, custodial supervisors, planners, architects, and representatives from the District's health program.

Problem Identification

EPA brought in an IAQ expert to conduct scientific analyses at the two schools, using state-of-the-art monitors/meters and walkthroughs to evaluate building performance and ventilation. Administrators, teachers, and custodians participated in the first walkthrough. Facilities Management staff participated in a second walkthrough that focused on the more technical aspects of the facilities.

The first walkthrough provided the team with the necessary training to implement the school district's new IAQ Policy, which is centered around the *IAQ TFS* Kit. They learned that various, and sometimes seemingly inconsequential, factors can combine to affect IAQ. For example, the ventilation system at one of the schools had been inadvertently shut off. Although they noticed the warm temperature, school staff were unaware that the system was not operating, and the problem went unreported. A timer, set to turn the ventilation system on and off each day, had been overridden due to miscommunication. A short discussion with the custodial staff remedied a long-standing problem. Other IAQ problems identified during the walkthroughs were addressed, and measures to control IAQ became a part of the schools' normal maintenance practices.

"As a school nurse, I can see from a medical standpoint how important good IAQ is to schools, but I have gotten a tremendous amount of education from using this Kit; especially from the walkthroughs."

- Marie Hoemke
School Nurse

(over)

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Lessons Learned

Short-term Results

Staff at both schools made low-cost improvements that provided immediate IAQ benefits—better learning and teaching conditions for the students and faculty without unduly taxing the district facilities staff. The health impact was almost immediate. In February 1999, the SFUSD School Health Programs Department reported, “We are already noting some positive effects from the building maintenance that resulted from the walkthroughs.” Some observations worth noting include:

- Visits to the office for the use of asthma inhalers were reduced by half.
- Fewer students keep asthma medicines/inhalers at school, and asthma episodes are less frequent even though the number of students with asthma has not changed.
- Airflow throughout the schools has been greatly improved.

Long-term Practices and Policies

Teachers and staff participate in the IAQ process by completing the *TfS* checklists on a regular basis, which helps school and district staff keep up with IAQ issues as they arise. The IAQ roundtable and the success of the two *IAQ TfS* pilot schools have had a positive, noticeable effect on SFUSD and the community at large. As a result,

- The Superintendent, with the support of EPA, agreed to author an **IAQ Policy** for SFUSD, based on the *IAQ TfS* Kit.
- SFUSD is currently implementing the same measures in 16 more schools, 8 of which have already had IAQ training and walkthroughs. Other schools in the district have attended the training and are anxious to be involved. A new group of schools is being formed for next year.
- Interest in IAQ among community members has skyrocketed. Today, more than 40 people regularly attend meetings to discuss IAQ issues and their potential health effects.
- An **Asthma Task Force** has been established involving school officials, EPA, ALA, University of California at San Francisco Medical Center, Stanford University, and the San Francisco City Health Department. The task force will provide resources to the public, including a telephone hotline and directory of resources.
- An **Implementation Committee**, formed by the school nurse/IAQ Coordinator and a member of the teacher's union, has been established to ensure that (1) the goals set forth at the roundtable and the IAQ problems found during the walkthrough are addressed, and (2) schools follow the IAQ Policy.
- A phone number is now available to school district staff to call for immediate response to IAQ problems (real or potential) such as odors and mold growth.
- The district established an **Integrated Pest Management (IPM)** program, committing to use non-toxic/least toxic methods of pest control.
- The San Francisco Health Department established the **Children's Environmental Health Department**. Staff, including industrial hygienists and nurses, will assess schools, homes, and other buildings for IAQ issues.
- The Mayor's office funded the development of the **Health and Environmental Resource Center**. The Center, which is now also supported by funds donated by the San Francisco (City and County) Board of Supervisors, holds evening training classes and will also train in schools, day care centers, and other sites about asthma and cancer. The Center, along with the Children's Environmental Health Department, is currently developing a partnership with local health care providers.

Direct involvement and support of SFUSD's Superintendent, Deputy Superintendent, and Facilities Manager have been and will continue to be key to the success of the IAQ program throughout the San Francisco Unified School District. The support of EPA, ALA, the City Health Department, and others is also important.

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