

# Implementing *IAQ TfS*: Resolving the Disconnect Between School Districts/Administration and School Personnel

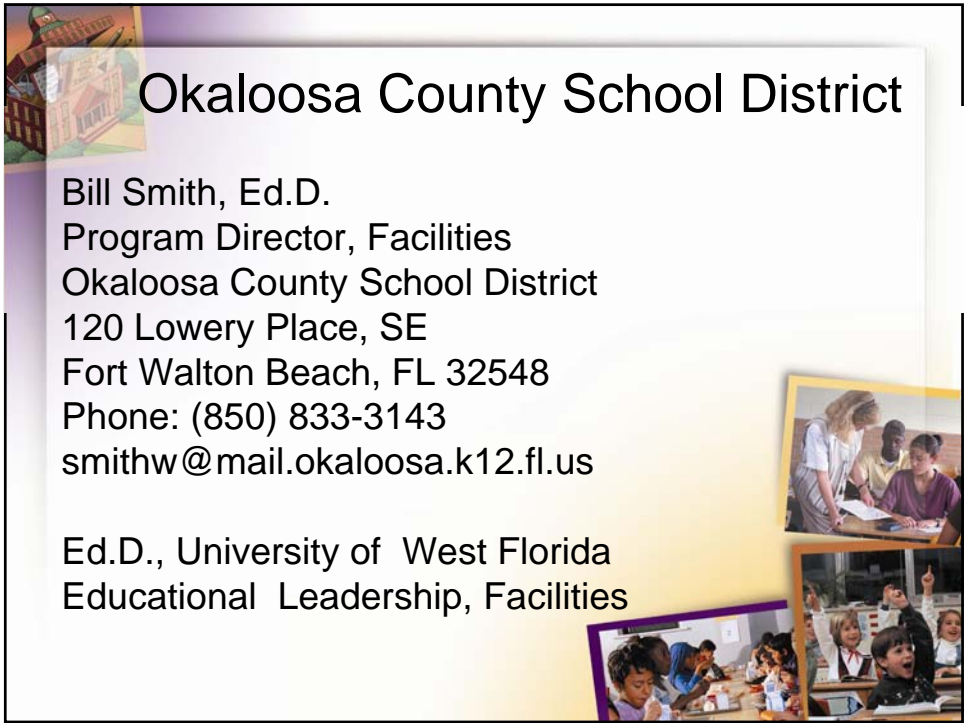
April 20, 2004



## Agenda


- Welcome and Introductions
- Presentations
  - Dr. Bill Smith, Program Director – Facilities, Okaloosa County School District, FL
  - Bruce Tretter, Parent and School Board member, Westborough Public Schools, MA; Sarah Gibson, Attorney
  - Gregg Smith, P.E., Director of Facility Services, Salt Lake City School District
- General Question & Answer Period
- Closing Remarks








# IAQ Tools for Schools



# Indoor Air Quality

- Objective: To Provide a Safe Comfortable School Environment Which is Conducive to Learning





## Improving IAQ in Schools

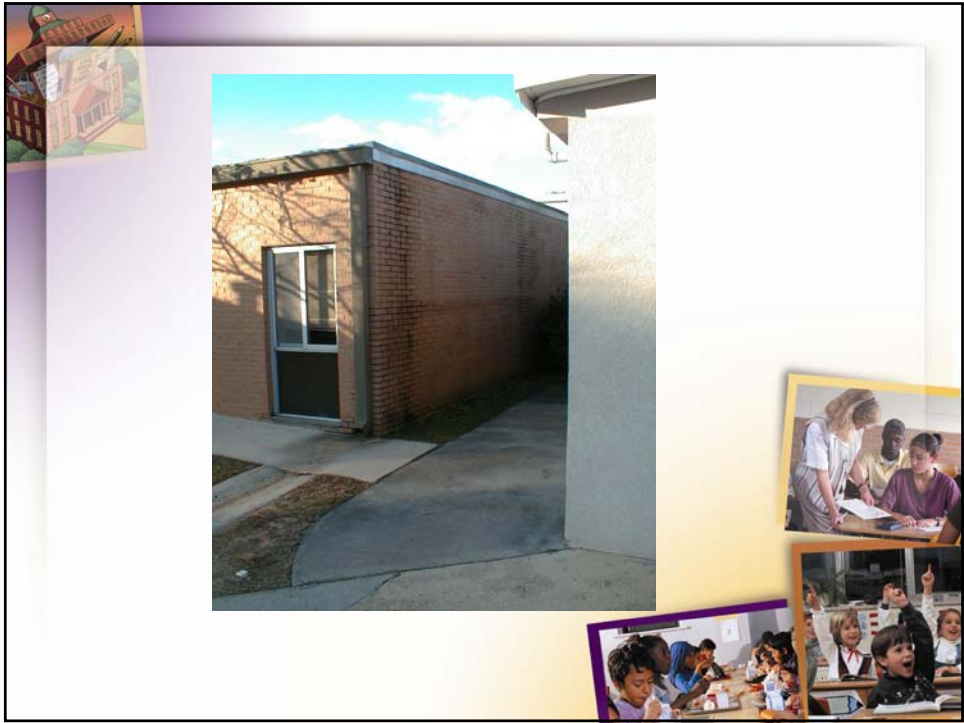
- Solving Problems With Solutions
  - Design Development
  - Remediation
  - Management



## Design Development New Construction

- Architect
  - Design Criteria
- Engineer
  - System Design
- Construction
  - Supervision







## Remediation Existing Facilities

- Investigative Process
  - Carbon Dioxide (CO<sub>2</sub>) / Carbon Monoxide (CO)
  - Particulates, Mold and Mildew
  - Radon and Volatile Organic Compounds (VOCs)
- Evaluation Process
- Correct or Repair



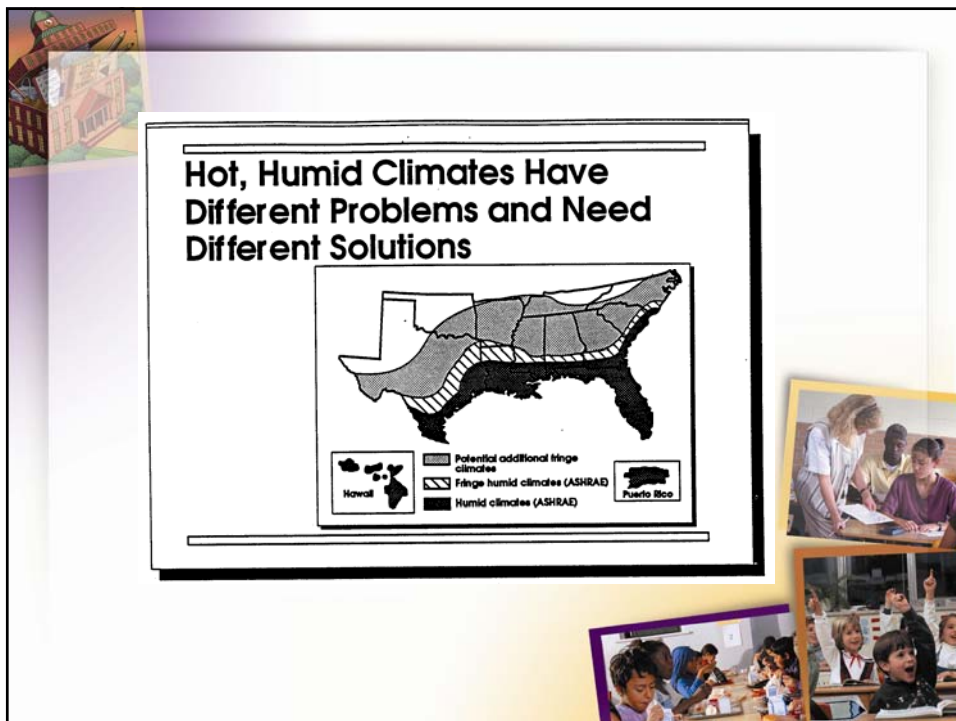
## Management of IAQ


- Approved District-Wide IAQ Program
  - Tools for Schools
- District IAQ Committee
  - Include All Facility Users
    - Teachers
    - Administrators
    - Non-Instructional
    - Health Department
    - Maintenance Department



# Management of IAQ




- IAQ Complaint Form
  - For All Users
- IAQ Consultants
  - Industrial Hygienist
  - Mechanical Engineer
- District IAQ Coordinator
  - Knowledgeable in the Field
- District IAQ Budget





## Suggestions

- Admit Your IAQ Problems
  - Listen to Your Users
- Follow Up On Complaints
  - Re-evaluate to Reduce Problems
- Do Damage Control
  - Facility Users
  - Media



## Must Do Items

- Make a Commitment to Improving IAQ
- Develop IAQ Program, [Tools for Schools](#)
- Support the IAQ Program Financially







# Review

- Design Development
  - Design Criteria
- Remediation
  - Investigate, Evaluate, & Repair
- Management
  - IAQ Coordinator
  - Commitment to Program
  - District-level Support




# Westborough Public Schools

Bruce Tretter  
School Board Member and Parent  
Westborough Public Schools  
45 West Main Street  
P.O. Box 1152  
Westborough, MA 01581-6152  
Phone: (508) 836-7702

Sarah Gibson  
Attorney (representing Westborough Teachers  
Association)  
6 Beacon Street, Suite 1100  
Boston, MA 02108  
sgibson@sgibsonlaw.com








# Where are we going?

Question: What is our goal?



Answer: The health and safety of everyone in our schools.




# Why, Who, How & What

**Why?**




- 1999 : IAQ = “New” words to Westborough
- Elementary School Closed
  - \$250K Repairs to HVAC System
- Community Reaction
  - Push for Monitoring Program
- Teacher Union Reaction
  - Push for remediation of problems, addressing employee health problems, and language in collective bargaining agreement





## False Starts



- Westborough Public Schools develops IAQ Manual in Fall of 2001
- Teachers' union vigorously objects to its implementation and demands to bargain over the Manual




## Why, Who, How & What

### Who?

- IAQ Subcommittee - 2002
  - School Committee Member
  - Assistant Superintendent
  - Facilities Director
  - District Nurse
  - School Administrator
  - Teacher
  - Parent Representative








## Why, Who, How & What

### How?



- Perseverance
- Find/create “template”
- Negotiated with teachers (collective participation)
- Flexible approach/lessons learned



## Why, Who, How & What

### What?

- IAQ Manual
  - Established School-Based Teams (Tools For Schools model)
  - Established Inspection and Report Protocol and Annual Schedule
  - Still a work in progress
- [www.westborough.org](http://www.westborough.org)
  - Click on “Westborough School District Indoor Air Quality Manual”





## Bottom Line

Improved Communications  
Collective Participation  
Established Protocols  
+ Flexibility  
Enhanced Community Credibility



## Salt Lake City School District

Gregg Smith, P.E.  
Director of Facility Services  
Salt Lake City School District  
440 East 100 South  
Salt Lake City, UT 84111  
Phone: (801) 578-8218  
[gregg.smith@slc.k12.ut.us](mailto:gregg.smith@slc.k12.ut.us)



## Why Did We Get Involved?

- We've had IAQ incidents in the past:
  - Smells or odors that were perceived by the occupants as IAQ issues
  - Mold problems
  - Health issues blamed on IAQ
  - Radon and asbestos concerns
- We'll continue to have them in the future
- We want to provide a safe and healthy environment for our staff, teachers and students
- We were already conducting inspections and performing some of the activities listed in the kit
- We wanted to be proactive!



## How We Implemented TfS?

- Adapted the TfS program to our District
- Trained our HVAC technicians about IAQ
- Conducted HVAC Inspections
- Performed ventilation checks & measurements
- Incorporated IAQ inspections and ventilation checks into our routine maintenance tasks
- Incorporated IAQ considerations into our Design Guide for new or remodel construction



## Adapting TfS To Our District

- We had limited resources that were already busy with other maintenance issues, so we “tailored” an approach that allowed us to achieve our goals
- While we generally followed the *Road Map* for IAQ TfS, we didn’t have time for stakeholder meetings or to organize IAQ Teams
- Except in problem situations, we didn’t distribute checklists to teachers, staff, administrators, nurses, etc.



## Rationale for our Approach and the Disadvantages

- Rationale
  - Allowed us to implement TfS quickly
  - Minimized the number of meetings held with stakeholders
  - Less potential for “confrontation” with stakeholders
- Disadvantages
  - No IAQ Team
  - Our efforts were “behind the scenes” and not as visible as they could have been
    - Limits the educational benefits for the stakeholders
    - Limits public relations value



## TfS Training

- Solicited support from EPA Region 8
- Completed hands-on training with EPA consultants during walk-thru inspections of HVAC systems
- EPA Region 8 also provided technical support with analyses of measurement data and checklist responses



## HVAC Inspections

- Performed visual inspections of building air handlers, filters, coils, outside air intakes, dampers, control linkages, etc.
- Reviewed data and trends from our Building Automation Systems to validate system performance
- Corrected problems as they were encountered





## Room Inspections

- HVAC technicians performed visual IAQ checks
- Performed and documented room-by-room CO<sub>2</sub> measurements to verify proper ventilation rates
- Performed CFM supply measurements as needed
- Used modified checklists to solicit input from occupants as needed
- Utilized resources from EPA Region 8 to interpret results and spot problems



## Associated Costs

- Approximately 300 man-hours to conduct initial inspections over a five month period
- \$4,000 for a handheld carbon dioxide monitor
- Material costs to correct problems
- Overall, over 1,800 man-hours have been invested in IAQ inspections and correcting problems since 2001



## Lessons Learned

- IAQ in General
  - There's more to IAQ than just air - it's about the total airborne environment
- Complaints
  - Don't assume that just because you're not hearing any complaints that everything is OK
- Ventilation Rates
  - Don't assume you won't have IAQ problems just because your ventilation rates are OK



## Lessons Learned (continued)

- Mold
  - Don't assume there are no mold problems in the West - it grows everywhere even in the desert
  - The more you learn about mold, the easier it will be to react when you have an incident
- Design Away Your Problems
  - Don't assume compliance with Building Codes eliminates IAQ problems
  - Be smart when building or remodeling buildings – avoid circumstances that will turn into IAQ problems later



## What Would We Do Different Today?


- Solicit support for IAQ from the Superintendent and Board
- Take a more “top down” rather than “bottom up” approach
- More collaboration with school nurses and local TfS Partners to:
  - Assist with educating stakeholders about IAQ and possible health concerns
  - Track health statistics to assess the impact of TfS
- Educate principals, teachers and staff about IAQ issues and rely more on the District website including:
  - IAQ information
  - Checklists or feedback forms






## Conclusions

- Involvement with the IAQ TfS program is simply good public relations in the sensitive environment of public education
- Being proactive has helped our departmental image and let us deal with IAQ problems much more effectively
- The TfS program is flexible and can be adapted to any District's needs





# Questions and Answers



# Closing Remarks

- E-mail additional questions to [IAQTraining@cadmusgroup.com](mailto:IAQTraining@cadmusgroup.com)
- Next Web Seminar
  - Proposed for July
  - Potential Topic: Proper Building Maintenance for Summer Months

