



# Indoor Air Quality

East Tennessee  
Tools for Schools



# Indoor Air Quality

We spend 90% of our time indoors.

Indoor air quality is worse than ambient air quality.

EPA ranks indoor air pollution as one of the top five environmental health risks to the public.

Children are especially vulnerable.



# Sources of Indoor Contaminants

Building Materials

Cleaning Agents

Pesticides

Printing/Copying Devices

Allergens

Molds

Bacteria

Radon

Lead



# Sources of Indoor Contaminants



## Environmental Tobacco Smoke

- \* Single largest source of indoor air pollution in the US
- \* Contains over 3800 compounds including carcinogens



# Adverse Health Effects

Headache

Fatigue

Shortness of Breath, Dizziness

Sinus Congestion

Coughing, Sneezing

Eye, Nose, Throat and Skin Irritation

Nausea

Allergic Reactions

Cancer



# Groups at High Risk

Those with

- . Asthma
- . Allergies
- . Sensitivity to Contaminants
- . Respiratory Disease
- . Suppressed Immune Systems
- . Heart Disease
- . Especially the Elderly and . . .



# Groups at High Risk

... The Children



# Groups at High Risk

Where do The Children spend the majority of their time?



# Groups at High Risk

*School*



# Indoor Air Quality

## PROBLEM

Sick Children

Sick Teachers and Staff

Rural Region/Few Resources

Worried/Concerned/Angry Parents ...



# Indoor Air Quality

Who call the Health Department!



# Indoor Air Quality

SOLUTION

Partnerships



# Indoor Air Quality

TDH

TDEC

UT Extension

TDE

Loudon County Schools



# Indoor Air Quality

A Case for Tools for Schools

# *Indoor Air Quality Tools for Schools Program*

## *Creating Healthy Indoor Air for America's Children*



Henry Slack/Lashon Blakely

U.S. Environmental Protection Agency



## Overview

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*Indoor Air Quality Tools for Schools (IAQ TFS)* is a hands-on, flexible Program designed to allow the School to maintain their indoor environment.

EPA offers partnerships, and provides incentives and recognition to schools implementing *IAQ TFS*.



# Consequences of Poor IAQ

Health Problems

Student and Teacher Performance

Loss of Public Trust

Liability Issues

Negative Media Coverage

Accountability to School Board and Other Officials





## Poor IAQ is Costly

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Absenteeism May Lead to Reduced Funding

Liability Issues and Lawsuits

Substitute Teachers and Staff

Lower Operating Efficiency of Equipment and Plant

Emergency Response to IAQ Problems

Consultants During an "IAQ Event"

Closing Schools and Relocating Students





# Schools are Unique

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**Tight Budgets**

**Densely Populated Space**

**Old Buildings/Deferred Maintenance**

**Special Sources of Pollution**

**“Inventive” Space Utilization**

**Additions/Temporary Space**



# Schools *Can* Improve Their Indoor Air Quality!

Many IAQ problems are easily identified and resolved by school staff.

It costs less to **prevent** IAQ problems than to fix them!

**Being proactive is KEY!**





# A Cluttered Classroom...





# Ceiling or Ecosystem?



Mold!

Algae!



# Classroom or Zoo?





# Time For A Garage Sale!





# This Filter Had Never Been Changed!

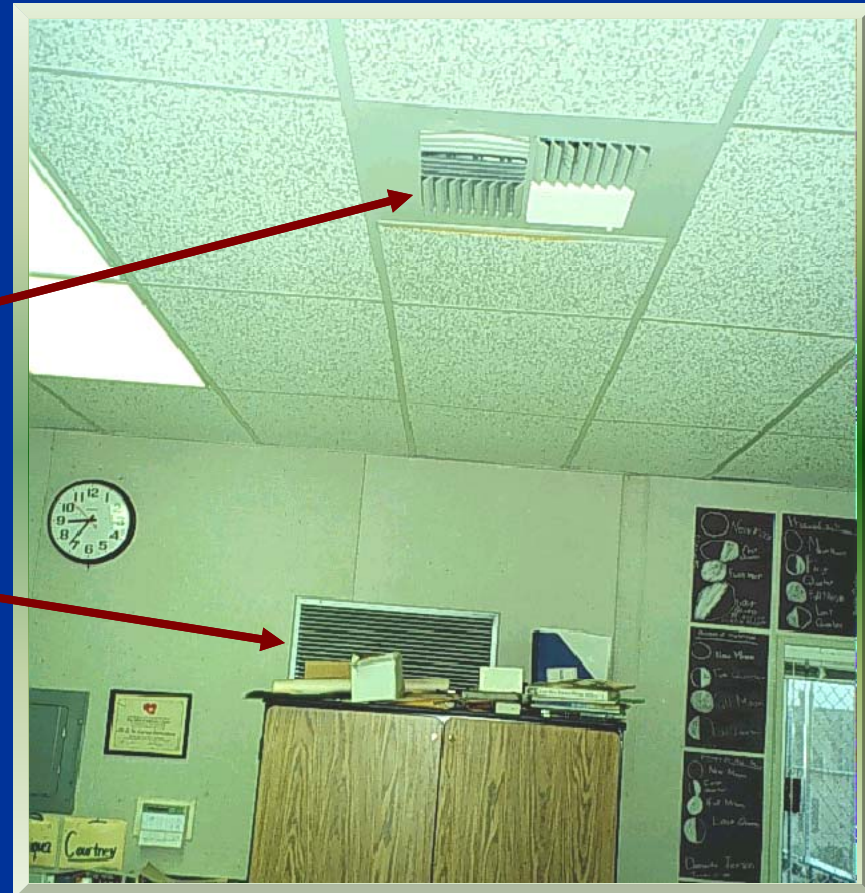




# Blocked Return Vent

For air to come  
out of *here*

It has to get in *there*





# What's That Odor?

Window

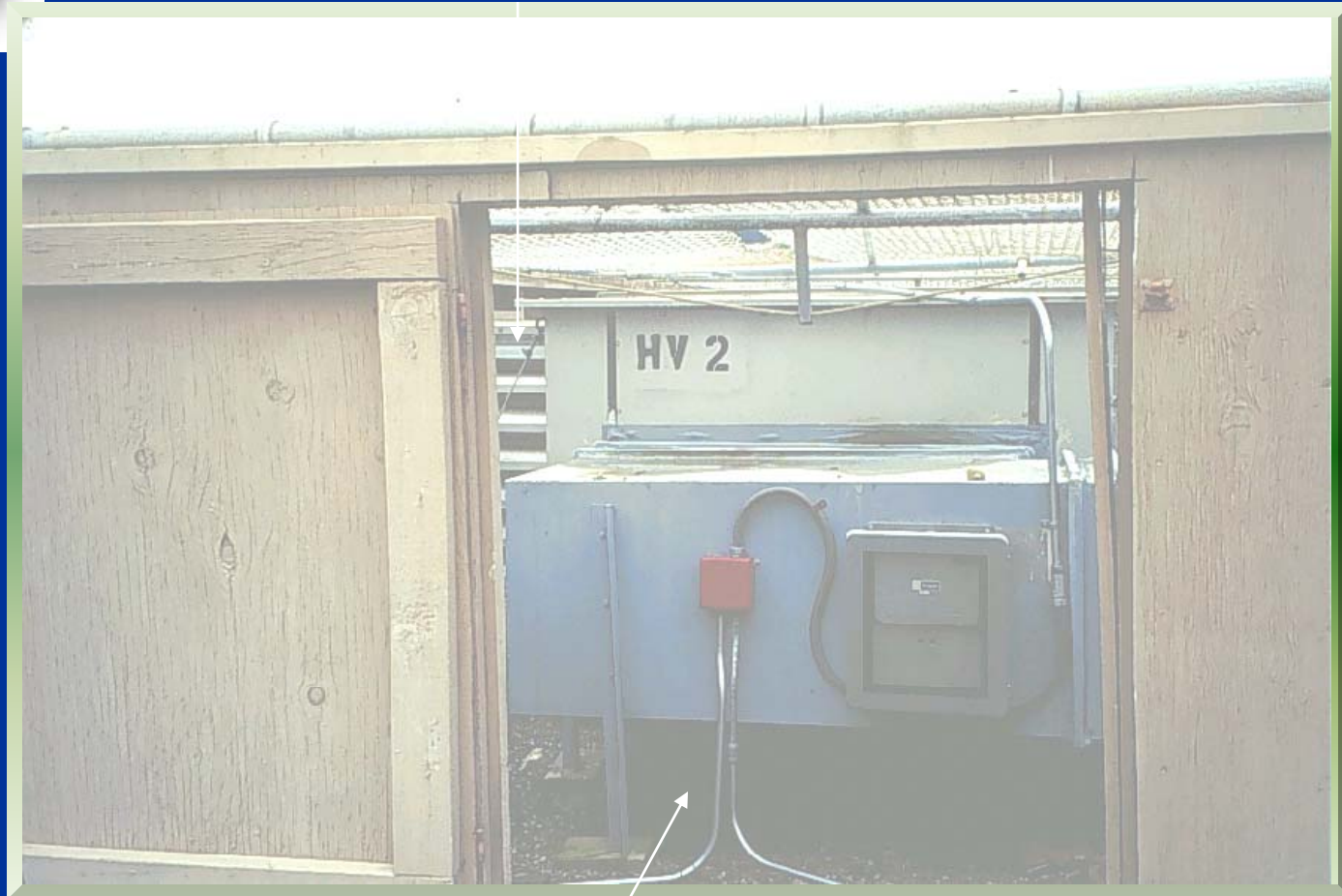
Dumpster





# How Did That Smell Get Back In Here?

*Outside Air Intake*



*Bathroom Exhaust*



# Key Features of the *IAQ Tools for Schools Kit*

**Low Cost**

**Adaptable to Individual  
School/School District Needs**

**No Specialized Training  
Required**

**Voluntary**

**Common Sense Approach**





# East Tennessee Tools for Schools

TDH

TDEC

UT Extension

TDE

Loudon County Schools



# East Tennessee Tools for Schools

TDH

Environmental Health/Epi

School Inspections

Mold

Radon

Lead



# East Tennessee Tools for Schools

TDEC

TfS

CENTS

TP3

Much, Much More....



# East Tennessee Tools for Schools

## UT Extension

Environmental Health

Radon

School Health

Integrated Pest Management



# East Tennessee Tools for Schools

TDE

Coordinated School Health



# East Tennessee Tools for Schools

Loudon County Schools

TfS

Coordinated SchoolHealth



# East Tennessee Tools for Schools

Others.....



# East Tennessee Tools for Schools

## Next Steps

Focus on Loudon Co Initially

Expand TfS

Educate Teachers/Staff

Emphasize Maintenance

Add Partners



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