Build it Right to Maximize Indoor Environmental Quality

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Carrollton - Farmers Branch
An Innovative Leader in Learning

Healthy School Environments Across Texas

Action Planning Guide

As you listen to this presentation, use the chart in your Action Planning Guide to write down any key strategies to install the Six Technical Solutions in your district.

Learning Objectives

- Identify at least three benefits realized by increasing IEQ at your school using key drivers.
- List at least three things that can be done while building and renovating schools to improve Indoor Environmental Quality within a traditional school budget.

Organize Set District IEQ Goals

- Comprehensive IEQ policy
- IEQ construction specifications includes architects and builders. Build green – new, additions, renovations, upgrades.
- Green purchasing policy – purchase only non-formaldehyde containing products
- Green purchasing policy – green cleaning

What Schools Say

"What if we could raise test scores by 3% to 7%?"
"What if we could decrease absenteeism by 5%?"
"Asthma affects 1 in 4 of our students and it’s getting worse" - North Texas School Districts
"We can’t afford not to address IEQ but we don’t know how" - Your School District

School Indoor Environmental Quality (IEQ) – What’s in it for me – the Facilities Staff?

- More durable materials
- Utility & water use reduced
- Use of fewer, less toxic cleaning products
- Savings of time and money
"We cut buses, we even cut some football (In Texas!) but we did not cut our IEQ Program."
- Frank DiNella, Director of Operations, Keller ISD
School IEQ – What’s in it for me – School Administrator?

• Fewer absences
• Higher test scores
• Savings on utility and water bills
• Lower O&M costs
• More durable finishes
• More money for education

Maximize IEQ in Pre-construction

• The more familiar your architect and builder are with IEQ protocol, the less it will cost.
• Involving your contractor in pre-construction to keep the design within budget will maximize IEQ.

Results from implementing IEQ Measures

Assess

• Test Scores Increased
  2007 2008 2009 2010 % INC
  79  82  85  87  10.1%

• Scholarships Increased (in millions)
  2007 2008 2009 2010 % INC
  $24.3 $30.7 $37.2 $40.2 65.4%

• Reduced Cost per Sq Ft (Operations)
  2006 2007 2008 2009 % DEC
  $23.4 $24.3 $22.7 $23.2 .008%

Act

Write IEQ into Plans and Specifications

• Require A/E/C to include occupant health plan in total project / contractor bid specs
• Make plan public
• Update emergency plan to account for construction zones
• Separate zones from occupants
• Use low-emissions interior finishes (paints, glues)
• Allow off-gassing time prior to re-occupancy
Construction for IEQ
(For success implement systems)

- IAQ
- Cleaning
- Noise
- Lighting
- Toxic Chemicals
- Mold

Construction of Nancy Strickland Elementary School

Where does the trash go

Need trash and recycling bins on the job

Trash in exterior walls

Watch for contraction debris

Vacuum is the start

Vacuuming track
Slab Penetrations

Be sure all slab penetrations are sealed.

Chases must be clean

Be sure all chases are clean and free of debris.

A proper seal

This is a proper penetration seal.

2nd floor penetrations unsealed

Seal all penetrations

2nd floor penetrations sealed

Foam works well for penetrations.

Chases

Clean and sealed.
What else needs to be done?

Your contractor should have a Quality Control plan that includes taking care of these tasks before closing up the walls.

Sweep before installing casework

Indoor Environmental Quality Plan

IEQ Plan for construction

IEQ Plan – Smoking

Your new building shouldn’t smell like a new building.

- Educate team on process & reasoning behind it
- Daily cleanup an internal policy
- Floor sweep & wet mop
- Floor prep with wet mop machine
- Specific protocol for interior finishes

Your building will never be cleaner than it is at the end of construction.

While under construction

- “No smoking in our buildings”
- “No smoking near our buildings”
- “No smoking on our campus”
We recommend paperless gypsum board (sheetrock)

IEQ Plan – VOC’s

Extensive review
- Paint materials
- Floor adhesives
- Caulking & sealants

IEQ Plan – VOC’s for Flooring

- Flooring selection
- VOC’s for flooring glues & materials review
- I see carpet removal in your future

IEQ Plan – Mechanical Systems

- Equipment & duct materials delivered wrapped & remained wrapped
- Duct installers wipe inside of each duct section
- As each section of duct installed, gets rewrapped

IEQ Plan – Mechanical Systems

- Diffusers & grilles wrapped to protect from dust as installed
- All return air vents covered with filter fabric / MERV 8 filters
- Before equipment start up each unit inspected & cleaned

IEQ Plan – Mechanical Systems

Building flush at completion of project
- Intent - move maximum amount of air through building
Build to maximize IEQ

- Spend money wisely
- Use 6 key drivers

Resources

- US Environmental Protection Agency Tools for Schools and Healthy SEAT [www.epa.gov/schools](http://www.epa.gov/schools)
- US Green Building Council [www.usgbc.org](http://www.usgbc.org) and Center for Green Schools
- North Texas Chapter USGBC and Green in a Box [www.northtexasgreencouncil.org](http://www.northtexasgreencouncil.org)
- National Association of School Nurses [www.nasn.org/Portals/0/education/flyermat.pdf](http://www.nasn.org/Portals/0/education/flyermat.pdf)