

LEARNING IN XXI CENTURY SCHOOLS - SECOND PHASE XI REGIONAL WORKSHOP ON SCHOOL INFRASTRUCTURE

HOW TO MANAGE SCHOOL MAINTENANCE

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BROKEN

WINDOW

THEORY

CLEAN SCHOOLS PROMOTE SUCCESS

- **STUDY CALLED “CLEAN SCHOOLS PROMOTE ACADEMIC SUCCESS”**
- **CONDUCTED BY THE ASSOCIATION OF HIGHER EDUCATION FACILITIES OFFICERS**
 - **88% COLLEGE STUDENTS SAID LACK OF CLEANLINESS IS A DISTRACTION**
 - **84% SAID CLEANLINESS WAS ESSENTIAL TO POSITIVE LEARNING ENVIRONMENT**
 - **78% SAID CLEANLINESS AFFECTED THEIR HEALTH**
 - **STUDENTS RATED CLEANLINESS 4TH MOST IMPORTANT ELEMENT IN PERSONAL LEARNING**

THE VIDEO

HOW DIRTY IS YOUR CHILD'S SCHOOL

**NOTES SOME ALARMING STATISTICS AND GERM
HOTSPOTS.**

REPORT FROM NEW YORK CITY

- **40% OF THOSE INTERVIEWED NOTED CONDITIONS IN THE SCHOOLS THAT COULD CAUSE COMPLICATIONS TO THEIR ALLERGIES AND ASTHMA**
- **39% WITH MEDICAL CONDITIONS SAID THE SCHOOL CONDITIONS MADE THEIR HEALTH WORSE**

PHILIP R LEE INSTITUTE FOR HEALTH POLICY

(2010)

- **REVIEWED THE CONDITION OF SCHOOLS AND ACHIEVEMENT IN CALIFORNIA**
 - **STUDENT HEALTH WAS DIRECTLY RELATED TO THE CONDITION OF THE SCHOOL BUILDINGS AND STUDENT ACHIEVEMENT**
 - **STUDENT HEALTH WAS DIRECTLY RELATED TO ATTENDANCE AND DROPOUT RATES.**

HEALTHY SCHOOLS NETWORK

- **REAL IMPACT**

- **NEARLY 22 MILLION SCHOOL DAYS ARE LOST ANNUALLY TO THE COMMON COLD**
- **THIRTY-EIGHT MILLION DAYS ARE LOST EACH SCHOOL YEAR TO INFLUENZA**
- **ELEMENTARY STUDENTS CONTRACT 8 TO 10 BOUTS OF COLDS OR FLU EACH SCHOOL YEAR**
- **STUDENT ABSENCES LEAD TO A HIGHER NUMBER OF DROPOUTS**

([HTTPS://WWW.YOUTUBE.COM/WATCH?V=_NF7FNOWUUS](https://www.youtube.com/watch?v=_NF7FNOWUUS))

IN ONE SMALL AREA OF MAINTENANCE

- **TEACHER ABSENCES COST SCHOOL DISTRICTS AN ESTIMATED \$4 BILLION A YEAR.**
- **LOCALITIES LOSE BILLIONS AND BILLIONS TO STUDENT ABSENCES, BECAUSE MOST STATE FUNDING FORMULAS ARE BASED ON STUDENT ATTENDANCE**

SOURCES OF PROBLEMS

MOLD	VERMIN	BUS/VEHICLE EXHAUST INTAKE
VENTILATION	BUILDING STRUCTURES	FRESH AIR INTAKE BLOCKAGE
MOISTURE	BUILDING AGE	ROOFS
HVAC SYSTEMS	WINDOWS	STORAGE
PLUMBING SYSTEMS	DOORS	CLIMATE CONTROL

WITHIN THESE PROBLEMS

	ITEMS	
LEAD	AIRBORNE PARTICLES	VERMIN ALLERGENS
NITROGEN DIOXIDE	AIR FRESHENERS	CARPETS
RADON	CLEANING SUPPLIES AND CLEANERS	ASBESTOS
POOR INDOOR AIR QUALITY	CARBON DIOXIDE	POLLUTED WATER

ROLE OF POLICIES



HOW POLICIES ARE DEVELOPED

- **ADDRESS THE PROBLEM TO BE DEFINED BY A POLICY**
- **ADMINISTRATION WORKS TO UNCOVER RELATED ISSUES AND INFORMATION**
- **DRAFT OF POLICY IS DISCUSSED WITH SCHOOL BOARD MEETINGS**

SCHOOL BOARD DISCUSSION

- **IS IT CONSISTENT WITH NATIONAL, STATE, AND LOCAL LAWS**
- **DOES IT AGREE WITH LOCAL MISSION AND GOALS**
- **IS IT A GOOD PRACTICE AND REASONABLE**
- **IS IT LIMITED TO ONE TOPIC**
- **DOES IS CONFLICT WITH OTHER POLICIES**
- **IS IT PRACTICAL AND AFFORDABLE**
- **CAN IT BE ADMINISTERED FAIRLY AND CONSISTENTLY**

HOW POLICIES ARE DEVELOPED

- ADDRESS THE PROBLEM TO BE DEFINED BY A POLICY
- ADMINISTRATION WORKS TO UNCOVER RELATED ISSUES AND INFORMATION
- DRAFT OF POLICY IS DISCUSSED WITH SCHOOL BOARD MEETINGS
- WRITE THE DRAFT IN FINAL FORM
- PROVIDE MULTIPLE READINGS
- EVALUATE AFTER PUT INTO PRACTICE

NEXT PRESENTATION

**WILL DISCUSS HOW TO IDENTIFY
MAINTENANCE PROJECTS?**

DEFERRED MAINTENANCE (DM) ... IS THE PRACTICE
OF POSTPONING MAINTENANCE ACTIVITIES SUCH AS REPAIRS ON BOTH
REAL PROPERTY (I.E. INFRASTRUCTURE) AND PERSONAL PROPERTY (I.E.
MACHINERY) IN ORDER TO SAVE COSTS, MEET BUDGET FUNDING LEVELS, OR
REALIGN AVAILABLE BUDGET MONIES.

PROBLEMS CAUSED BY DM

- **DESTROYS QUALITY OF EXISTING BUILDINGS**
- **CONTINUED BACKLOG SNOWBALLS CURRENT PROJECTS**

CAUSES OF DM

- **DOWNTURN OF 2008 CAUSED SCHOOL BOARDS TO CUT BUDGETS**
- **INSTRUCTION AND TEACHER SALARIES WERE PRIORITIZED**
- **INCREASED COST OF SERVICES AND MATERIALS TO MAINTAIN FACILITIES**
- **MAINTENANCE DIRECTORS HAD TO PRIORITIZE THOSE PROJECTS TO ONLY THOSE AFFECTING HEALTH AND SAFETY**

MAMMOTH PROBLEM

- **1800 SCHOOLS SAMPLED IN 50 STATES AND D.C.**
- **90% SURVEY RESPONSE RATE**
- **\$197 BILLION TOTAL FUNDING NEEDED**
- **\$4.5 MILLION PER SCHOOL**
- **MULTIPLY THAT BY THE NUMBER OF SCHOOLS IN AMERICA (95,000+)**

**SOURCE: *CONDITION OF AMERICA'S PUBLIC SCHOOL FACILITIES: 2012-13*
U.S. DEPARTMENT OF EDUCATION, NCES, REPORT 2014-022 (MARCH 2014)**

LET ME TELL YOU A STORY...

- **A MID-SIZE SUBURBAN COUNTY**
- **EVERY YEAR WENT TO GOVERNING BODY FOR APPROPRIATION**
- **PREVENTED PLANNING—NEVER KNEW HOW MUCH FUNDING WOULD RECEIVE**
- **DEVELOPED A WORKING RELATIONSHIP WITH FUNDERS**
- **LEADERS OF SCHOOL DISTRICT AND LOCAL POLITICIANS DISLIKED THE YEARLY BACK AND FORTH**

THE DILEMMA...

- **LOCAL AREA HAS NEEDS**
- **SCHOOL DISTRICT HAS NEEDS**

SET UP A COMMITTEE

- **ENGINEER**
- **MAINTENANCE**
- **CUSTODIAL GROUNDS**
- **PRINCIPAL**
- **KNOWLEDGEABLE CITIZEN**

CONTINUED...

- **EVERYONE WORKING TOGETHER TO IDENTIFY NEEDS**

DIFFICULT TO COMPUTE

- **MOST AUTHORITIES RECOMMEND 2% OF THE REPLACEMENT COSTS BE SPENT ON MAINTENANCE WORK EACH YEAR IN THE LIFE OF THE BUILDING**

HOW TO COMPUTE

- **COMPLETE AN ASSESSMENT**
- **IDENTIFY ALL DEFERRED MAINTENANCE ITEMS THAT MUST BE COMPLETED**
- **DETERMINE THE COST**

$$\frac{\text{INITIAL COST X INFLATION X LIFE EXPECTANCY}}{\text{LIFE EXPECTANCY}} = 5 \text{ YEAR PERIOD}$$

DEVELOP A 5 AND 10 YEAR PLAN

- **HVAC (INCLUDING ANY MOVING PARTS, LUBRICATION, FILTERS, AND SIMPLE CLEANING**
- **MAINTENANCE EQUIPMENT SUCH AS COMPRESSORS AND POWER EQUIPMENT**
- **SCHOOL FURNITURE**
- **PLAYGROUND SITES AND APPARATUS**
- **ROOFING, WATER, AND SEWER SYSTEMS**
- **PUMPS, LIGHTING FIXTURES, EMERGENCY AND CLOCK SYSTEMS, AND ANY SAFETY EQUIPMENT OR SYSTEMS**

LEADS TO PREVENTATIVE MAINTENANCE

- **A PLANNED PROGRAM OF CARE DESIGNED TO PREVENT WEAR AND TEAR ON EQUIPMENT, SYSTEM, OR ANY OPERATIONAL FACILITY COMPONENTS.**
- **THIS MAINTENANCE IS SCHEDULED**

USA IS BEHIND

- **A D+ BY AMERICA'S CIVIL ENGINEERS**

AMERICA SOCIETY OF CIVIL ENGINEERS

(ASCE)

- **GOVERNMENTS AT EVERY LEVEL SHOULD REGULARLY ASSESS THE NEEDS OF THEIR PUBLIC SCHOOL FACILITIES AND PUBLISH THE DATA.**
- **CONTINUE TO ENCOURAGE SCHOOL DISTRICTS TO ADOPT REGULAR, COMPREHENSIVE MAJOR MAINTENANCE, RENEWAL, AND CONSTRUCTION PROGRAMS, AND ESTABLISH PREVENTATIVE MAINTENANCE PROGRAMS TO EXTEND THE LIFE OF SCHOOL FACILITIES.**

ASCE

- **EXPAND FEDERAL AND STATE TAX CREDITS AND MATCHING FUNDS TO SUPPORT INCREASED USE OF SCHOOL CONSTRUCTION BONDS AND SIMPLIFY THE PROCESS FOR LOCAL SCHOOL DISTRICTS TO OBTAIN FACILITY CONSTRUCTION FINANCING FOR IMPROVEMENTS AND MODERNIZATIONS.**
- **EXPLORE ALTERNATIVE FINANCING, INCLUDING LEASE FINANCING, AS WELL AS OWNERSHIP AND USE ARRANGEMENTS, TO FACILITATE SCHOOL CONSTRUCTION PROJECTS.**
- **DEVELOP CAPITAL PLANNING FRAMEWORKS THAT CAN BE NIMBLE AND RESPONSIVE TO CHANGING TECHNOLOGIES AND CHANGING DEMOGRAPHICS, TO OPTIMIZE LEARNING ENVIRONMENTS AND CONSIDER THE HOLISTIC NEEDS OF THE COMMUNITY.**

[HTTP://WWW.EFC.GWU.EDU/](http://www.efc.gwu.edu/)

NEVER EVER
EVER
GIVE UP!



Keep at
It

Q Q Q Q
AAUGH!
Q Q Q



NEVER EVER
EVER
GIVE UP!

