



ENVIRONMENTAL STEWARDSHIP BMP



Reach Further

ASBO International Centennial Meeting
Orlando Florida
September 24, 2010

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Manager, Environmental Health and Safety
Charlotte Mecklenburg Schools

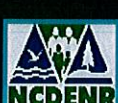


OBJECTIVES

To illustrate environmental management integration within CMS approach to performance excellence

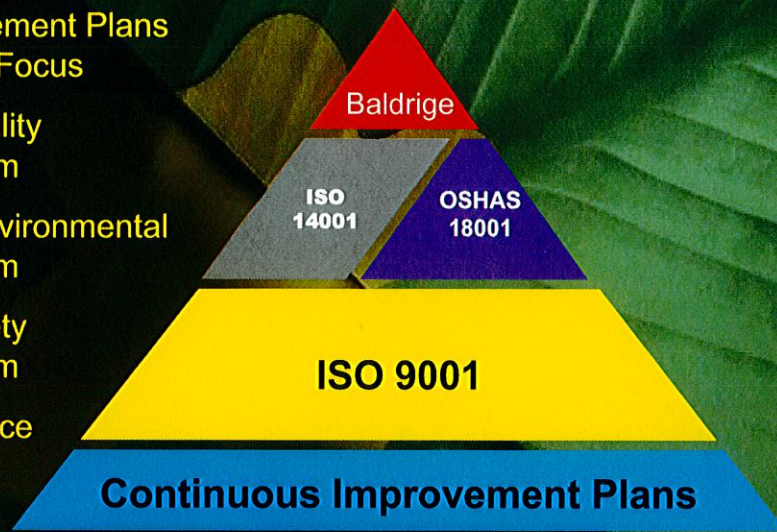
To characterize the CMS environmental footprint

To provide examples of CMS environmental best management practice



CMS PERFORMANCE EXCELLENCE MODEL

- ✓ Continuous Improvement Plans
Establish Business Focus
- ✓ ISO 9001:2008 Quality Management System
- ✓ ISO 14001:2004 Environmental Management System
- ✓ OSHAS 18001 Safety Management System
- ✓ Baldrige Performance Excellence Criteria



CMBOE POLICY ECF EXCERPT

The Board of Education believes that Charlotte Mecklenburg Schools must be an effective steward of our natural resources. The Board hereby commits that the district will continue and strengthen its efforts to operate in a manner that protects and conserves our air, water, and land resources, improves the environment, and promotes environmentally sound behavior.

- Environmental Compliance
- Pollution Prevention
- Resource Conservation
- Resource Recovery
- Sustainable Development
- Sustainable Purchasing
- Behavioural Change

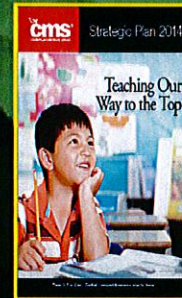
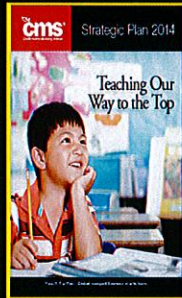


CMS STRATEGIC PLAN 2014

Objective : Reduce utility consumption 20%, solid wastes 5% and pollutants 20%

Key Strategy: Engage all stakeholders in conservation of resources

Tactics: 12 tactics aligned into 7 teams

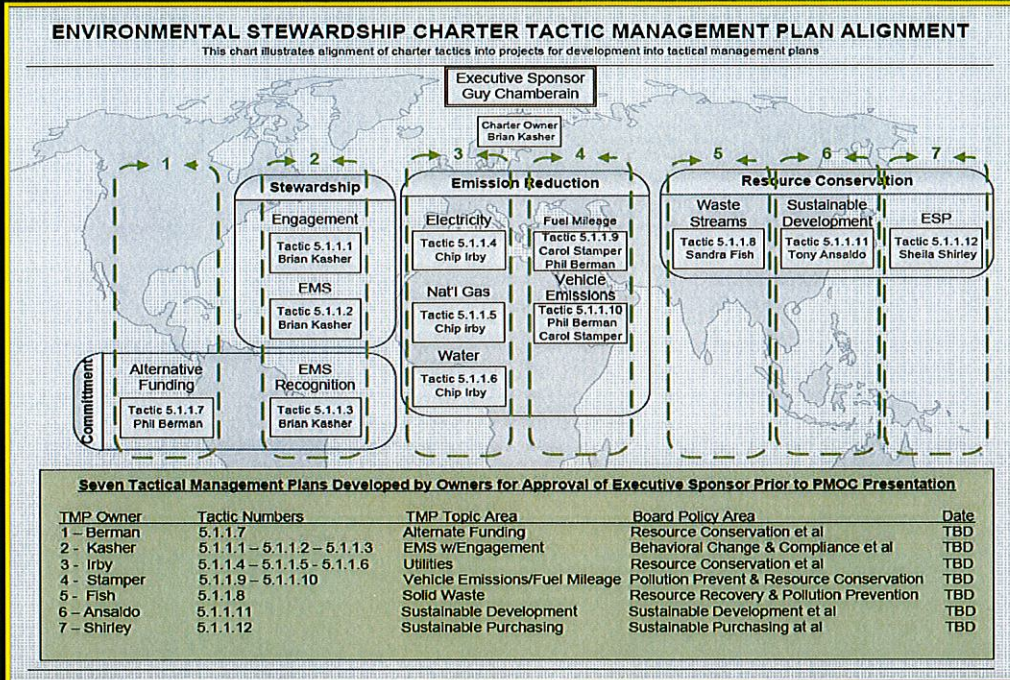


CMS ENVIRONMENTAL FOOTPRINT

- 181+ - schools, 649 buildings
- 1241 mobile classrooms
- 21.2 million square feet occupied space
- 4,892 acres of land
- 1451 utility accounts
- 206 million kilowatt hours electric
- 3.9 million therms natural gas
- 256 million gallons potable water
- 2.7 million gallons of diesel
- 290 thousand gallons of gasoline
- 22.1 million miles yellow bus fleet
- 23.5 million meals served
- 20 million pounds of solid waste
- 12 percent recycled solid waste stream



TACTIC MANAGEMENT PLAN TEAMS



ENVIRONMENTAL MANAGEMENT SYSTEM



INTERNATIONAL STANDARD ISO 14001

Second edition 2004-11-18

Environmental management systems — Requirements with guidance for use

Systemes de management environnemental — Exigences et lignes directrices pour son utilisation

Reference number ISO 14001:2004(E)

ISO

© ISO 2004



ISO 14001 17 ELEMENTS

4.2 Environmental Policy

4.3 Planning

- 4.3.1 Environmental Aspects
- 4.3.2 Legal & Other Requirements
- 4.3.3 Objectives & Targets
- 4.3.4 Environmental Mgt Programs

4.4 Implementation & Operation

- 4.4.1 Structure and Responsibility
- 4.4.2 Training, Awareness & Competence
- 4.4.3 Communication
- 4.4.4 EMS Documentation
- 4.4.5 Document Control
- 4.4.6 Operational Control
- 4.4.7 Emergency Preparedness & Response

4.5 Checking & Corrective Action

- 4.5.1 Monitoring & Measurement
- 4.5.2 Nonconformance, Corrective & Preventive Action
- 4.5.3 Records
- 4.5.4 EMS Audit

4.6 Management Review



SCHOOL ENVIRONMENTAL PARTNERSHIP

School principals sign commitment to environmental stewardship and provide key staff contact info:

- Energy coordinator
- Recycling coordinator
- IPM contact
- Sustainable Purchasing
- CSH Leader

School is then recognized as stewardship partner and becomes eligible for participation in the school stewardship incentive program.



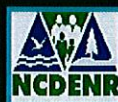
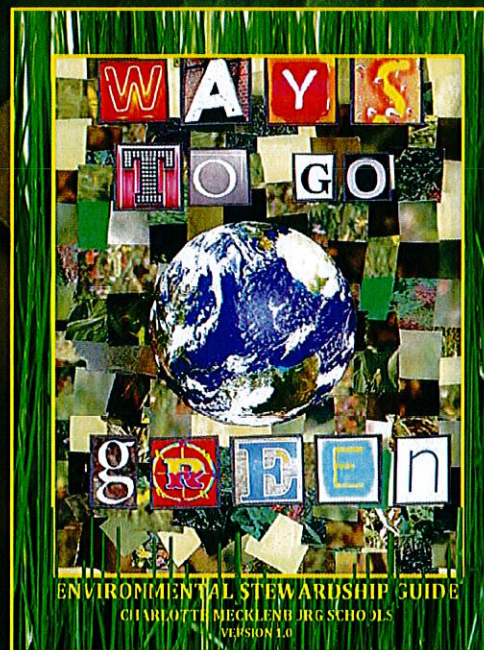
SCHOOL INCENTIVE PROGRAM

- Measures of School Stewardship Activity
- Recognition and Incentive Awards
- Focus Areas
 - Energy Conservation
 - Recycling
 - EMS Training
 - PTSA Engagement
 - Coordinated School Health
 - Student Modules



ENVIRONMENTAL STEWARDSHIP GUIDE

- Website PDF Download
- Hyperlink Distributed to Principals and Key Environmental Staff
- Chapters on
 - Stewardship Programs
 - School Success Stories
 - Grant Opportunities
 - Community Partnerships
 - Resources



CMS PARENT UNIVERSITY COURSE

“Going Green at CMS and Home”



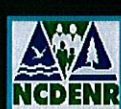
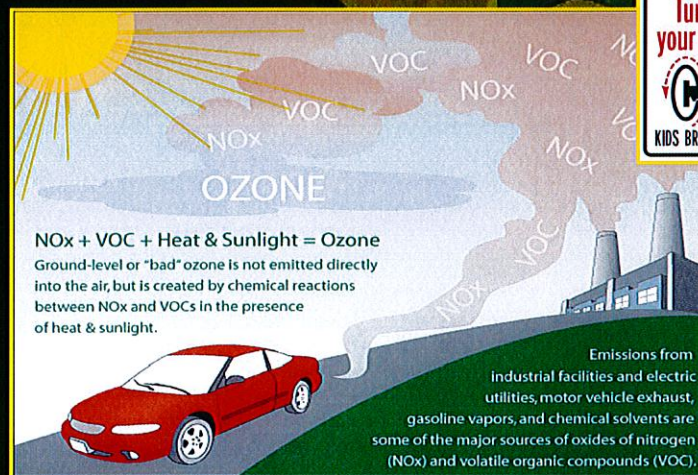
- History of Environmental Concern
- CMS Environmental Footprint
- Volunteer Stewardship Activities
- Environmental Stewardship Programs

September 16 Butler High School
September 14 South Mecklenburg High School
September 15 Vance High School
September 21 North Mecklenburg High School
September 23 Idlewild Elementary
September 30 Community House Middle



REGIONAL AIR QUALITY PRIORITY

Mecklenburg County is a non-attainment jurisdiction for not meeting ground level Ozone standards. Vehicle emissions are the largest contributor to ground level ozone impacting Mecklenburg County. This is bad for business and health.

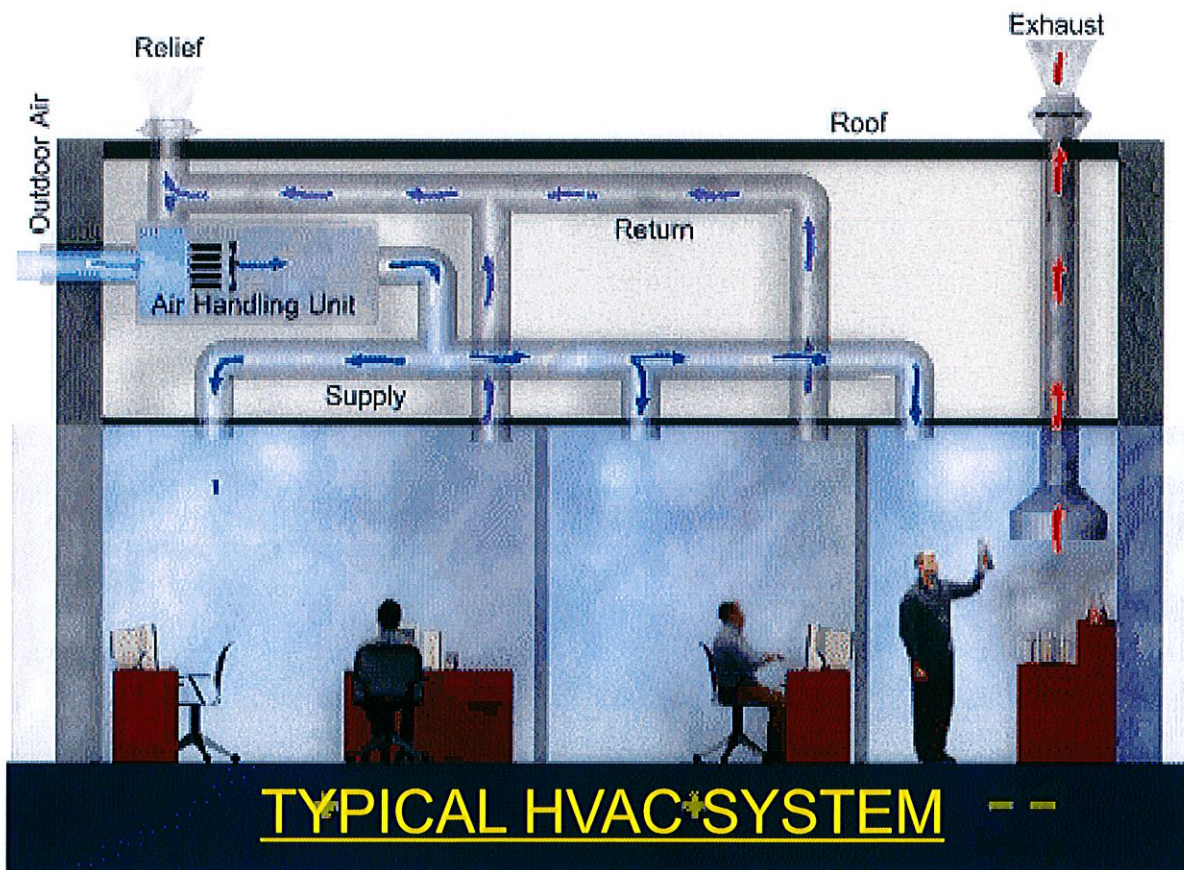


INDOOR AIR QUALITY

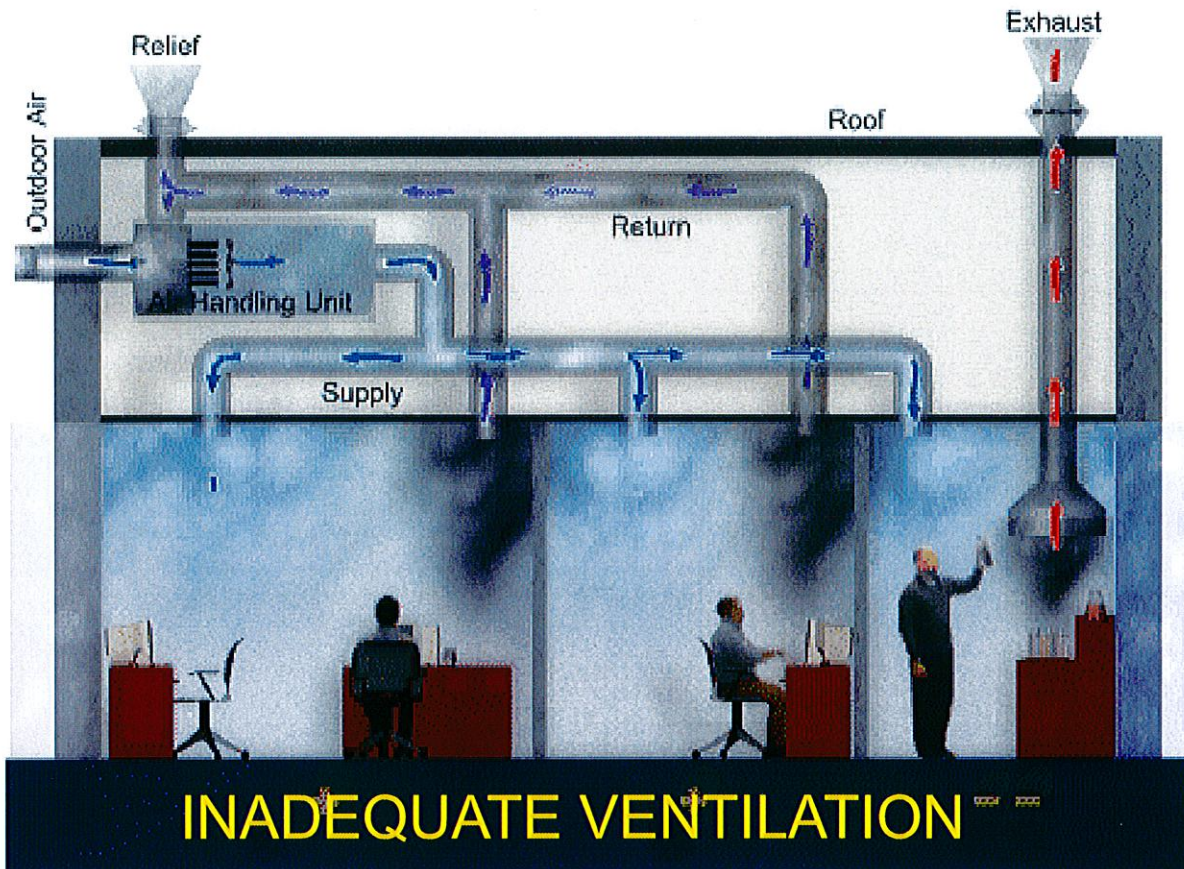
Studies indicate indoor air quality (IAQ) has the potential to assist or impede the education process.

CMS supports good IAQ through:

- Proactive Inspections
- Priority IAQ Response
- Documented Surveys
- Aggressive HVAC Cleaning
- Low VOC Materials Selection
- Integrated Pest Management
- Green Cleaning
- Anti-Idling Program
- ULSD Bus Fuels/GPS
- Tools For Schools



TYPICAL HVAC SYSTEM --



CLASSROOM AIR DELIVERY SYSTEMS



Squirrel Cage Fan

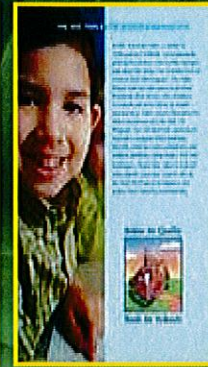
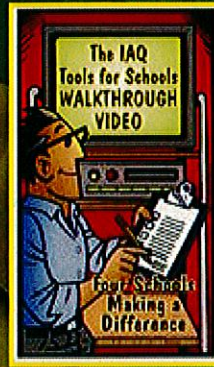
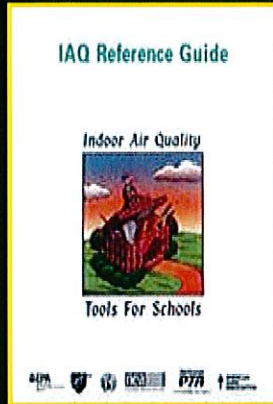
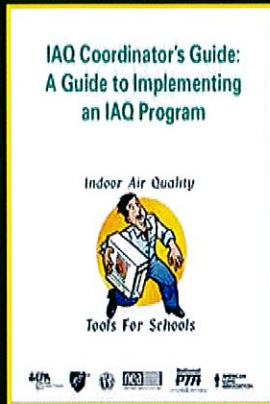


Coil System

Cleaning HVAC systems increases efficiency, reduces energy consumption and improves air quality



USEPA TOOLS FOR SCHOOLS PROGRAM



Informative Guides

Videos



Problem Solving Wheel

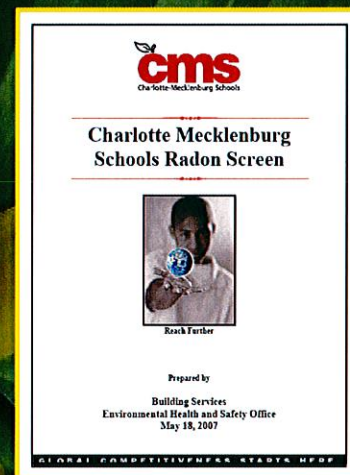


RADON

The Surgeon General has determined Radon to be the number two (2) cause of Lung Cancer in the US second only to cigarettes.

Schools may be a significant source of radon exposure for children and staff according to the United States Environmental Protection Agency (USEPA).

- Carcinogen
- CMS tested 76 random sites with no tests at or near 4 Pico curries limit of concern (2.4 max)



Radon Mapping Available through USEPA Radon Program



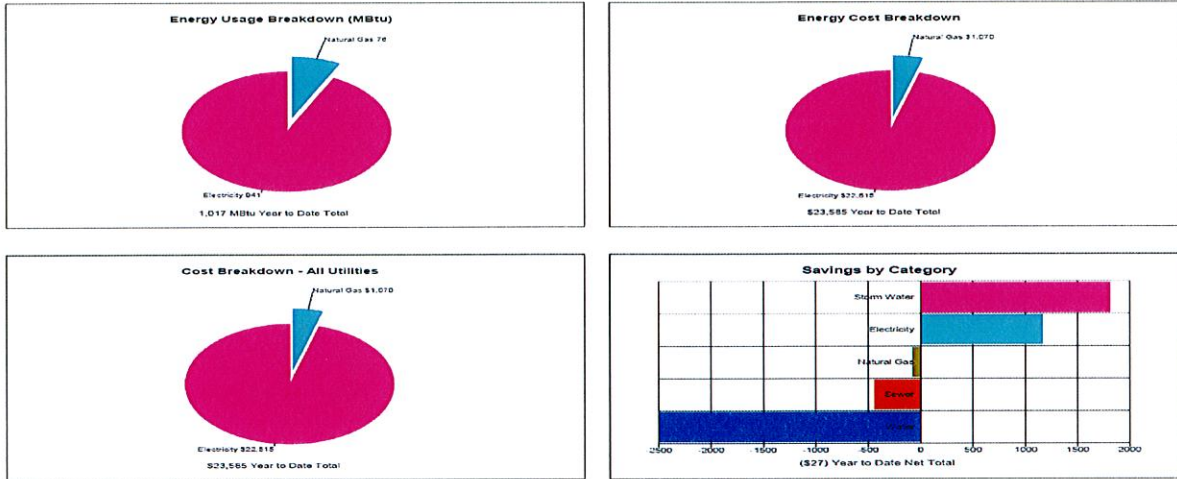
**Albemarle Road Elementary School
Utility Cost and Savings Summary**

Monthly Performance for 09/2009 Vs. 09/2007

| Utility Service | Current Usage | Comp Yr Level | % Chg | Current Cost | Comp Yr Cost | % Chg | Cost/SqFt/Yr | Cost/Student | Monthly Savings | YTD Savings |
|-----------------|---------------|---------------|-------|----------------|-----------------|-------|---------------|-----------------|-----------------|---------------|
| Electricity | 105,997 | 108,258 | -2.1 | \$8,711 | \$8,825 | +1.3 | \$0.86 | \$92.14 | \$186 | \$1,167 |
| Natural Gas | 305 | 343 | +0.4 | \$465 | \$468 | +3.7 | \$0.18 | \$19.27 | (\$29) | (\$71) |
| Water | N/A | 10 | N/A | N/A | \$33 | N/A | \$0.04 | \$4.79 | N/A | (\$2,496) |
| Sewer | N/A | 0 | N/A | N/A | \$33 | N/A | \$0.04 | \$4.24 | N/A | (\$439) |
| Storm Water | N/A | 0 | N/A | N/A | \$1,217 | N/A | \$0.11 | \$11.50 | N/A | \$1,813 |
| Totals | | | | \$9,196 | \$10,576 | | \$1.24 | \$132.01 | \$157 | (\$27) |

*Comparison Year ends 06/2008
Savings for Electricity based on current use vs. comp yr
Savings for Natural Gas based on current use vs. comp yr
Savings for Water based on current cost vs. comp yr
Savings for Sewer based on current cost vs. comp yr
Savings for Storm Water based on current cost vs. comp yr*

Year to Date Performance for 3-Month Period Ending 09/2009



Utility Cost and Savings Summary -- Printed Monday, November 30, 2009 at 1:59 pm
Data reported into calendar month according to billing from and thru dates -- N/A indicates missing data

**CMS, Cost Center: High Schools
Site Utility Cost Comparison -- Year to Date 03/2010**

| Site | Total Elec Cost | Total Fossil Fuels Cost | Total Energy Cost | % Chg | Water Cost | Irrigation Cost | Sewer Cost | Refuse Cost | Storm Water Cost | Total Utility Cost | % Chg | SqFt | Total Utility Cost /Student | Total Utility Cost | |
|--------------------------------------|--------------------|-------------------------|--------------------|--------------|------------------|-----------------|------------------|-------------|------------------|--------------------|--------------|------------------|-----------------------------|--------------------|-----------------|
| Myers Park High School | \$214,087 | \$78,600 | \$292,687 | -12.2% | \$10,882 | \$0 | \$21,318 | \$0 | \$21,535 | \$344,422 | -11.1% | 278,893 | \$1.23 | 2,828 | \$117.31 |
| South Mecklenburg High School | \$178,095 | \$98,378 | \$245,341 | +1.8% | \$18,923 | \$0 | \$34,833 | \$0 | \$19,283 | \$318,179 | +1.3% | 297,874 | \$1.08 | 1,868 | \$169.44 |
| Hopewell High School | \$218,978 | \$63,850 | \$270,826 | -2.4% | \$7,882 | \$11,611 | \$15,008 | \$0 | \$10,817 | \$316,843 | -3.8% | 316,842 | \$1.00 | 2,503 | \$128.23 |
| Butler High School | \$171,924 | \$38,417 | \$210,341 | -12.3% | \$21,887 | \$17,213 | \$42,889 | \$0 | \$11,488 | \$303,827 | +9.6% | 308,285 | \$0.99 | 2,339 | \$129.90 |
| Independence High School | \$211,036 | \$68,384 | \$269,479 | +4.1% | \$7,300 | \$0 | \$14,283 | \$0 | \$9,087 | \$300,169 | +1.3% | 320,314 | \$0.94 | 2,543 | \$118.04 |
| North Mecklenburg High School | \$180,223 | \$72,822 | \$263,145 | -1.3% | \$8,832 | \$0 | \$17,233 | \$0 | \$10,770 | \$299,879 | +1.8% | 291,183 | \$1.03 | 2,161 | \$139.48 |
| Garinger High School | \$204,403 | \$63,239 | \$267,642 | -6.7% | \$7,830 | \$0 | \$14,945 | \$0 | \$18,831 | \$289,847 | -2.2% | 281,114 | \$1.14 | 1,947 | \$181.80 |
| Phillip O. Berry Academy of Technol | \$180,888 | \$77,487 | \$268,045 | -16.3% | \$2,891 | \$3,288 | \$8,288 | \$9 | \$2,428 | \$271,848 | -18.8% | 337,254 | \$0.81 | 1,225 | \$221.78 |
| Mallard Creek High School | \$187,208 | \$61,791 | \$218,997 | -34.6% | \$7,820 | \$0 | \$14,888 | \$0 | \$20,857 | \$282,041 | -29.8% | 308,588 | \$0.85 | 1,874 | \$132.75 |
| Olympic High School | \$177,378 | \$30,649 | \$208,028 | -8.4% | \$12,968 | \$0 | \$16,223 | \$0 | \$18,440 | \$288,649 | -10.1% | 288,072 | \$0.95 | 1,887 | \$138.01 |
| Providence High School | \$181,157 | \$49,022 | \$230,180 | -2.9% | \$8,391 | \$10,888 | \$12,040 | \$0 | \$20,788 | \$280,297 | +1.8% | 280,037 | \$0.89 | 2,068 | \$121.03 |
| Andrey Kell High School | \$185,394 | \$48,814 | \$212,198 | -18.0% | \$4,648 | \$0 | \$8,862 | \$0 | \$22,215 | \$248,013 | -18.1% | 311,860 | \$0.80 | 2,069 | \$123.63 |
| East Mecklenburg High | \$141,334 | \$57,478 | \$198,812 | -8.4% | \$8,788 | \$0 | \$12,253 | \$0 | \$18,968 | \$238,859 | -10.8% | 282,251 | \$0.80 | 1,824 | \$112.64 |
| Harding University High School | \$142,601 | \$52,609 | \$195,408 | +24.9% | \$0,608 | \$0 | \$18,865 | \$0 | \$15,072 | \$238,829 | +30.4% | 237,749 | \$1.00 | 1,040 | \$227.53 |
| Vance High School | \$171,331 | \$40,874 | \$212,305 | -2.2% | \$7,873 | \$0 | \$16,800 | \$0 | \$0 | \$235,878 | -2.4% | 274,844 | \$0.88 | 1,775 | \$132.69 |
| Waddell High School | \$139,841 | \$35,588 | \$175,439 | -18.1% | \$5,011 | \$13,414 | \$9,367 | \$0 | \$22,887 | \$225,889 | -18.5% | 234,731 | \$0.96 | 941 | \$240.05 |
| West Mecklenburg High School | \$151,302 | \$38,483 | \$189,785 | -8.7% | \$5,085 | \$0 | \$9,724 | \$0 | \$17,021 | \$221,805 | -3.8% | 257,591 | \$0.88 | 2,173 | \$101.99 |
| West Charlotte High School | \$88,185 | \$74,403 | \$140,588 | -47.8% | \$12,748 | \$0 | \$24,710 | \$0 | \$17,872 | \$188,027 | -32.0% | 257,462 | \$0.78 | 2,040 | \$98.09 |
| Northwest School of The Arts | \$83,843 | \$27,241 | \$112,084 | -17.3% | \$5,351 | \$0 | \$10,208 | \$0 | \$8,296 | \$142,938 | -18.1% | 188,223 | \$0.77 | 1,088 | \$131.62 |
| Hawthorne High School | \$90,848 | \$18,935 | \$79,781 | -11.8% | \$2,680 | \$0 | \$4,973 | \$0 | \$8,582 | \$93,895 | -7.8% | 104,567 | \$0.90 | 247 | \$380.55 |
| Marie G Davis: Military/Global Acad. | \$47,212 | \$13,880 | \$61,092 | +12047.4% | \$3,141 | \$0 | \$4,813 | \$0 | \$8,880 | \$75,727 | +14667.4% | 101,990 | \$0.74 | 388 | \$188.18 |
| Midwood High School/late Parents Svc | \$28,235 | \$18,324 | \$44,580 | -22.4% | \$308 | \$0 | \$581 | \$0 | \$1,877 | \$47,337 | -21.2% | 45,087 | \$1.05 | 209 | \$228.40 |
| Performance Learning Center | \$14,604 | \$0 | \$14,604 | -14.5% | \$206 | \$0 | \$389 | \$0 | \$821 | \$18,020 | -9.3% | 13,078 | \$1.22 | 104 | \$154.04 |
| Rocky River High (Mtn Hill) | \$0 | \$0 | \$0 | N/A | \$188 | \$0 | \$368 | \$0 | \$0 | \$553 | N/A | 0 | N/A | 0 | N/A |
| William Amos Hough High (Bailey) | \$0 | \$0 | \$0 | N/A | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | N/A | 0 | N/A | 0 | N/A |
| High Schools Subtotals: | \$3,282,903 | \$1,065,450 | \$4,338,353 | -9.8% | \$176,017 | \$56,421 | \$327,584 | \$0 | \$300,114 | \$5,188,468 | -8.7% | 6,563,364 | \$0.84 | 37,480 | \$138.61 |

ENERGY STAR Ratings Report
Scores Generated on 07/23/2010 12:09 PM (data ending 05/31/2010)

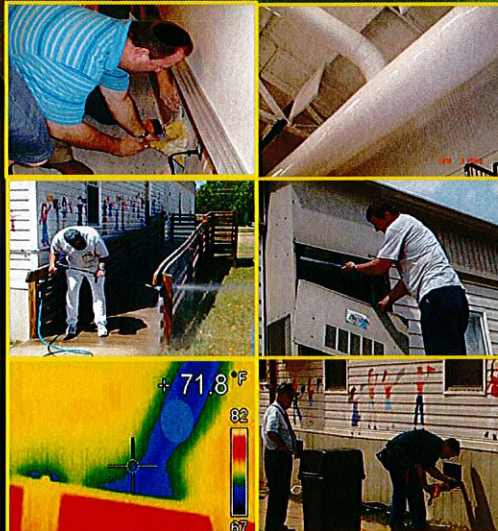
| Site Name | Space Type | Rating | kBtu Total | kBtu Total (Normalized) | kBtu/SqFt | kBtu/SqFt (Normalized) | kBtu/SqFt (To Rate 75) | Notes |
|--------------------------------------|-------------|--------|------------|-------------------------|-----------|------------------------|------------------------|-------|
| Right Choices at Bank Street | K-12 School | 100 | 2,173,490 | 1,919,085 | 22.69 | 20.04 | 61.92 | |
| Reid Park Elem. School | K-12 School | 93 | 3,485,980 | 3,199,160 | 39.99 | 36.68 | 64.02 | |
| Long Creek Elem. School | K-12 School | 92 | 3,448,447 | 3,210,589 | 40.29 | 37.51 | 53.55 | |
| Berewick Elementary | K-12 School | 90 | 4,188,024 | 4,030,717 | 43.42 | 41.79 | 54.97 | |
| Matthews Elem. School | K-12 School | 90 | 4,293,054 | 4,096,404 | 41.54 | 39.64 | 52.51 | |
| Whitewater Academy | K-12 School | 87 | 3,627,897 | 3,507,569 | 45.76 | 44.24 | 64.05 | |
| Irwin Avenue Open Elem. School | K-12 School | 86 | 4,294,213 | 4,219,578 | 41.05 | 40.34 | 48.22 | |
| Turning Point Academy | K-12 School | 86 | 3,001,281 | 2,887,141 | 46.52 | 46.67 | 56.99 | |
| Marie G Davis: Military/Global Acad. | K-12 School | 86 | 4,073,907 | 3,882,128 | 39.94 | 38.06 | 46.73 | |
| Clear Creek Elementary | K-12 School | 86 | 3,452,048 | 3,352,669 | 41.17 | 39.88 | 48.14 | |
| Winding Springs Elem. School | K-12 School | 85 | 3,519,505 | 3,359,627 | 40.33 | 38.50 | 47.84 | |
| Nathaniel Alexander ES | K-12 School | 85 | 3,564,803 | 3,564,803 | 29.86 | 29.86 | 35.09 | |
| First Ward Elementary | K-12 School | 85 | 3,899,740 | 3,809,177 | 41.83 | 40.86 | 48.25 | |
| Collinswood Dual Lang. Academy | K-12 School | 85 | 2,601,939 | 2,459,119 | 47.01 | 44.43 | 54.16 | |
| Bruns Avenue Elem. School | K-12 School | 85 | 4,008,846 | 3,639,357 | 41.77 | 40.00 | 49.14 | |
| Devonshire Elementary School | K-12 School | 85 | 3,905,597 | 3,681,304 | 42.90 | 40.43 | 49.42 | |
| East Mecklenburg High | K-12 School | 85 | 12,223,613 | 11,434,508 | 46.61 | 43.60 | 53.84 | |
| Pawtucket Elem. School | K-12 School | 85 | 2,168,975 | 1,952,767 | 48.05 | 43.26 | 55.66 | |
| Cornelius Elem. School | K-12 School | 84 | 3,610,450 | 3,486,870 | 44.39 | 42.62 | 50.21 | |
| Polo Ridge Elementary | K-12 School | 84 | 3,600,779 | 3,417,782 | 48.42 | 43.11 | 51.46 | |
| Croft Community School | K-12 School | 84 | 3,755,286 | 3,626,026 | 48.22 | 46.56 | 54.85 | |
| Performance Learning Center | K-12 School | 84 | 888,593 | 888,593 | 51.02 | 51.02 | 57.83 | |
| Lincoln Heights Elementary | K-12 School | 84 | 3,896,203 | 3,822,096 | 42.48 | 41.87 | 48.31 | |
| Greenway Park Elem. School | K-12 School | 83 | 3,490,318 | 3,340,743 | 41.62 | 39.83 | 48.06 | |
| Walter G. Byers Elementary | K-12 School | 83 | 3,147,304 | 3,155,891 | 34.71 | 34.80 | 38.84 | |
| Montclair Elem. School | K-12 School | 83 | 3,114,345 | 2,884,845 | 52.94 | 49.04 | 59.59 | |
| Barnette Elementary | K-12 School | 83 | 4,021,316 | 3,883,443 | 46.82 | 45.21 | 52.10 | |
| Statesville Road Elem. School | K-12 School | 82 | 3,342,323 | 3,187,562 | 46.97 | 44.37 | 51.99 | |
| University Meadows Elem. School | K-12 School | 82 | 4,358,985 | 4,244,474 | 43.33 | 42.19 | 47.51 | |
| Park Road Elem. School | K-12 School | 81 | 3,633,549 | 3,346,111 | 53.26 | 49.05 | 57.53 | |
| Providence High School | K-12 School | 81 | 13,694,746 | 12,969,520 | 48.55 | 46.31 | 52.39 | |
| Phillip O. Barry Academy of Technolo | K-12 School | 81 | 18,804,676 | 18,310,879 | 51.38 | 50.03 | 55.59 | |
| Quail Hollow Middle School | K-12 School | 81 | 5,888,505 | 5,519,370 | 42.86 | 40.90 | 46.37 | |
| Rama Road Elem. School | K-12 School | 81 | 4,032,476 | 3,900,646 | 45.94 | 44.44 | 49.85 | |
| Ballantyne Elementary | K-12 School | 81 | 3,732,967 | 3,644,727 | 47.95 | 45.53 | 51.79 | |
| McKee Road Elem. School | K-12 School | 81 | 3,405,751 | 3,250,653 | 53.34 | 50.91 | 58.38 | |
| Sterling Elementary | K-12 School | 80 | 4,108,023 | 3,825,417 | 43.71 | 41.77 | 46.89 | |
| Lake Wylie Elem. School | K-12 School | 80 | 3,898,068 | 3,813,042 | 43.02 | 42.03 | 46.13 | |
| Ashley Park Elementary School | K-12 School | 80 | 3,602,640 | 3,502,158 | 49.71 | 48.33 | 53.19 | |
| Arday Kell High School | K-12 School | 80 | 14,425,210 | 13,879,261 | 46.28 | 44.53 | 49.45 | |
| David Cox Rd. Elem. School | K-12 School | 80 | 4,263,086 | 4,064,506 | 44.69 | 42.70 | 47.94 | |
| Alexander Middle School | K-12 School | 80 | 8,244,903 | 7,656,738 | 49.32 | 45.26 | 52.58 | |
| Mallard Creek High School | K-12 School | 79 | 14,967,855 | 14,684,600 | 48.51 | 47.27 | 51.13 | |
| Torrence Creek Elementary | K-12 School | 79 | 5,412,875 | 5,253,897 | 43.64 | 42.35 | 46.14 | |
| Lansdowne Elem. School | K-12 School | 79 | 3,119,635 | 2,863,290 | 47.44 | 45.06 | 50.47 | |
| Spaugh Middle School | K-12 School | 79 | 5,451,675 | 5,098,225 | 55.52 | 50.33 | 56.84 | |
| Mallard Creek Elem. School | K-12 School | 79 | 4,347,900 | 4,108,231 | 51.70 | 49.83 | 54.96 | |
| Dilworth Elementary School | K-12 School | 78 | 5,186,415 | 4,965,677 | 51.35 | 49.17 | 53.28 | |
| Oaklawn Elem. School | K-12 School | 77 | 3,820,117 | 3,669,926 | 46.30 | 44.48 | 47.51 | |
| Crown Point Elem. School | K-12 School | 77 | 3,749,308 | 3,556,064 | 45.81 | 46.95 | 51.20 | |
| Annay James Montessori Elem. School | K-12 School | 77 | 2,020,704 | 1,896,293 | 58.20 | 52.74 | 67.64 | |
| Allenbrook Elementary School | K-12 School | 77 | 2,588,946 | 2,478,356 | 46.28 | 44.32 | 47.81 | |
| Davidson IB Middle School | K-12 School | 77 | 2,901,723 | 2,691,123 | 76.26 | 70.73 | 78.74 | |
| Beverly Woods Elementary School | K-12 School | 76 | 3,744,446 | 3,604,901 | 46.57 | 43.87 | 46.51 | |
| Bailley Road MS | K-12 School | 76 | 7,035,741 | 6,819,823 | 46.20 | 44.78 | 46.95 | |
| Butler High School | K-12 School | 76 | 14,041,459 | 13,741,007 | 46.07 | 45.08 | 47.07 | |
| Piedmont Open Middle School | K-12 School | 76 | 6,863,741 | 6,698,067 | 44.86 | 43.76 | 46.51 | |
| Northridge Middle School | K-12 School | 76 | 6,192,709 | 5,909,444 | 44.08 | 42.06 | 44.26 | |
| Winterfield Elem. School | K-12 School | 75 | 4,439,111 | 4,338,225 | 48.45 | 47.76 | 49.83 | |
| McAlpine Elem. School | K-12 School | 74 | 3,900,113 | 3,570,163 | 57.90 | 54.48 | 57.77 | |
| Oakdale Elem School | K-12 School | 74 | 3,799,441 | 3,660,564 | 49.73 | 47.91 | 49.69 | |
| Oakhurst Elem School | K-12 School | 74 | 4,710,732 | 4,609,156 | 49.13 | 48.07 | 48.92 | |

ENERGY STAR Ratings Report -- Printed by Utility Manager Pro Friday, July 23, 2010 at 12:09 pm

PREVENTIVE/PREDICTIVE MAINTENANCE

CMS maintenance shops, custodial services and engineering participate in the O&M program including: paint, grounds, carpentry, roofing, sheet metal, plumbing, electrical and HVAC

- Thermal Graphic Imaging
- Ventilation & HVAC Cleaning
- Exhaust Fan Updates w/DDC
- Quarterly HVAC Filter Changes
- Building Envelope Updates
- Roofing Maintenance
- Electrical System Updates



SPECIAL MAINTENANCE ASSIGNMENT RESPONSE TEAM

- In-house critical response beyond routine custodial and maintenance capability
- Cross departmental response team
- 24 / 7 / 365 facility support
- Asbestos O&M, mold and HAZCOM trained
- Medically cleared to don respirators
- Small-scale short-duration project focus
- Temporary containment of large scale projects pending outsource
- Written response protocols
- 3 signature project completion verification



SMART



CCA TREATED WOODS

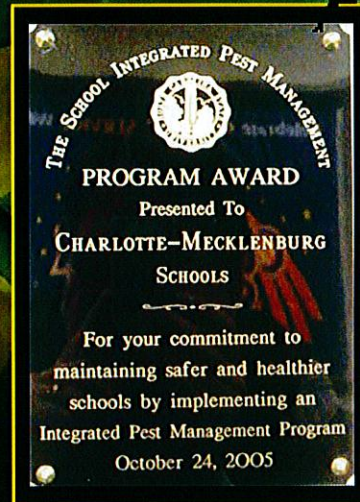
- CCA 22% Arsenic by Weight
- Used through 2003
- Play areas, walk ways, decking
- Bleachers, dug outs
- Remove or seal every 2 years
- Cover or remove soils
- Carcinogen
- CMS has aggressively removed CCA treated woods from playgrounds



INTEGRATED PEST MANAGEMENT (IPM)

Comprehensive approach to pest management combining biological, physical, chemical, and cultural tactics to prevent and solve pest problems. The emphasis of IPM is prevention.

- Reduces chemical load on buildings and their occupants



PLAYGROUNDS

CMS Maintains 248 Public Playgrounds at 118 Schools

- >1000 ASEP inspections plus annual audit
- ASTM/CPSC Public Playground Guidelines
- Recycled Pallets for Kid Cushion
- Recycled Plastic Components
- 338 playground work requests entered during 2009-2010 school year, a reduction of 183 work requests over 2008-2009
- Removed or Sealed CCA Treated Woods
- ISO 9001 Quality Management Process



GREEN CLEANING

Cleaning to protect health without harming the environment. Green cleaning programs go beyond chemical and equipment considerations and may include policies, procedures, training and “shared” responsibility.

- Reduced chemical types from 12 to 4
- Eliminated caustic emulsifier 17,200 gallons
- Conversion to HEPA Vacuums
- Conversion to battery operated burnishers
- 1.2 Million gallons green cleaners annually
- Aggressive internal inspection program



SINGLE STREAM RECYCLING



With the 2010-2011 school year an expanded recycling program begins for all CMS locations!

- Student designed recycling logo and slogan
- 12% recycled of 20 million pound waste stream
- Additional resource reclamation includes:
 - FFE salvage program
 - Textbooks salvage
 - Computers/electronics
 - Pallets recycling
 - Capital program demo/reno
 - Maintenance scrap metals



CUSTODIAL LAMP RECYCLING PROGRAM

Process all types of bulbs including CFL's

- 11,000 fluorescent lamps recycled in first year of program
- Recycle virtually all components of bulbs:
 - metal end caps
 - glass tubing
 - mercury
 - phosphor powder
- Crusher and HEPA filtered device sits atop of 45 gallon drum



DEMOLITION PROJECT RECYCLING



CMS contractors reclaim:

- Gypsum board
- Glass
- Ceiling tiles
- Hardware
- Cardboard
- Doors,
- Old machinery,
- Asphalt,
- Rubber and
- Many more products.

Two small demolitions this summer salvaged:

- Over 10,000 square feet of ceiling grid,
- 750 tons of ferrous and non-ferrous metal
- 650 tons of masonry

This effort generated a 78% reclamation rate.



STORM WATER SW3P



CMS voluntarily joined in the Mecklenburg County National Pollutant Discharge Elimination System (NPDES) joint permit. The NPDES permit covers storm water discharge directly to creeks and lakes.

CMS staff participate in:

- Storm water training
- Inspecting and labeling storm water drains
- Implementing storm water pollution prevention plans (SW3P) including spill response
- Manage storm water at construction sites
- Maintain storm water BMP's e.g. rain gardens
- Distribute storm water information through schools



STUDENT TRANSPORTATION

- Operating HYBRID school bus
- Board vehicle idling policy
- Daily GPS monitoring of bus idling
- Retrofitted over 225 older buses with diesel oxidation catalysts (DOCs), diesel particulate filters (DMFs), and repowered engines (over \$1M in various grant awards)
- Reduction of >11,000 bus stops in the morning and afternoon
- Carolinas Clean Air Coalition Airkeeper Award
- Reduced daily miles traveled over 2M annually
- Reduced operating fleet by 100 buses
- Using biological based parts cleaner
- Operating 4 natural gas buses



ENVIRONMENTALLY SUSTAINABLE PURCHASING

"...products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose..."

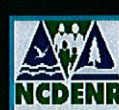
U.S. Federal Executive Order 13101

- ✓ Procure in excess of 1.2 million gallons of green cleaning products annually
- ✓ Procure in >5400 cubic yards of recycled playground fall protection material
- ✓ Piloting alcohol and biological parts cleaners
- ✓ Participate in friends of the farmer local produce program



CMS CHEMICAL HYGIENE PLAN

- Outlines information which protects those working in school laboratories from health hazards associated chemicals
- Details processes and precautions to minimize chemical exposure
- Establishes chain of command to handle specific safety responsibilities within CMS and specific school sites
- Protects the environment from contamination with hazardous chemicals utilized in the school laboratory.
- Ensures appropriate management of chemicals in CMS.



HAZARD COMMUNICATION

Hazard Communication Standard



Enforcement of MSDS Requirement

Material Safety Data Sheets (MSDS) for ~480 chemicals used by Building Services supporting facilities available for download through CMS MSDS on-line library. Additional departments initiating participation.

MSDS CONTENTS

- Section 1. Product Identity
- Section 2. Hazardous Ingredients and Exposure Limits
- Section 3. Chemical Characteristics
- Section 4. Fire and Explosion Information
- Section 5. Reactivity
- Section 6. Health Effects
- Section 7. Handling and Storing Instructions
- Section 8. Control Measures



ASTHMA EDUCATION PROGRAM

ASTHMA CAN'T STOP A PRO.
"GET CHECKED! GET FIT"

- Chris Draft, #52 Carolina Panthers
CMS Asthma Education Program
980-343-0367

Asthma is the number 1 chronic disease among students in CMS. Over 6,500 students have been diagnosed with asthma. Asthma also is the number one reason for school absence for children with chronic diseases nationally. On average there can be between 1-3 asthmatic students or teachers expected in every classroom.



ISO 9001 ASBESTOS PROCESS

Each Process includes:

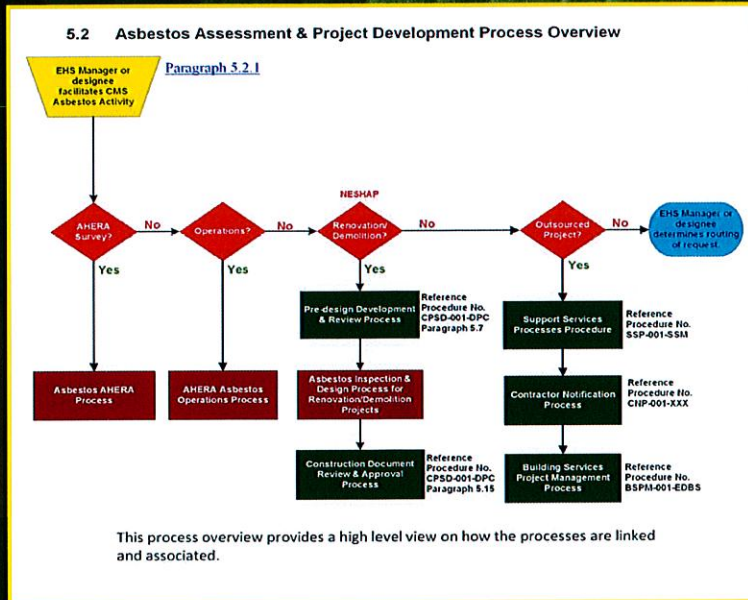
- Objective & Scope
- Responsibility
- Documentation Listing
- Equipment
- Procedure
- Process Overview
- Hyperlinked Process Charts

| UNCONTROLLED | | |
|-----------------------------------|---|----------------------------|
| Date issued: 3/30/00 | Standard Operating Procedure | Procedure No.: CSP-001-01W |
| Page 1 of 1 | Tier 3 Documentation | Rev: 00 |
| | Auxiliary Services | Written by: |
| | Charlotte-Mecklenburg Schools | Approved By: |
| | Charlotte, NC | |
| Subject: | Custodial Service Processes Procedure | |
| 1.0 Objective & Scope: | This procedure covers the processes associated with Custodial Services to include but not limited to: Custodial Payroll Management Process. | |
| 2.0 Responsibility: | Executive Director of Building Services, Custodial Services Manager, Operations Supervisor, Area Leader, Head Custodian I, Head Custodian II, Head Custodian III, Custodian, Administrative Assistant. | |
| 3.0 Documentation: | Procedure No. MWOP-001-03M, Maintenance Work Order Process Procedure Procedure No. CPA-001-02P, Corrective & Preventive Action Procedure Form No. WPC-001, Work Request Classification Form No. MCT-001, Head Custodian I Recommended Task List & Schedule - Openwork Form No. MCT-002, Head Custodian II Recommended Task List & Schedule Form No. MCT-003, Head Custodian III Recommended Task List & Schedule Form No. CRT-001, Custodian Recommended Task List & Schedule Form No. CSM-001, Custodial Services Monthly Quality Audit Form No. CSW-001 (English), Custodial Services Weekly Quality Audit Form No. CSW-002 (Spanish), Custodial Services Weekly Quality Audit Form No. CSD-001 (English), Custodial Services Daily Turnover Audit Form No. CSD-002 (Spanish), Custodial Services Daily Turnover Audit | |
| 4.0 Equipment: | Cleaning Supplies: Materials: Chemicals, Wet Mops, Mop Buckets, Dust Mops, Rags, Brooms, Janitorial Cans Cleaning Equipment: Electric Floor Scrubbers, Auto Scrubbers, Riding Scrubbers, Electric Floor Brushes, Pusher Floor Brushes, Riding Floor Brushes, Carpet Extractors, Waste Extractors, Leaf Blowers, Floor Fans, Upright Vacuum Cleaners, Back Pack Vacuum Cleaners | |
| | Procedure No. CSP-001-01W | Rev. 00 |



ISO 9001 ASBESTOS PROCESS

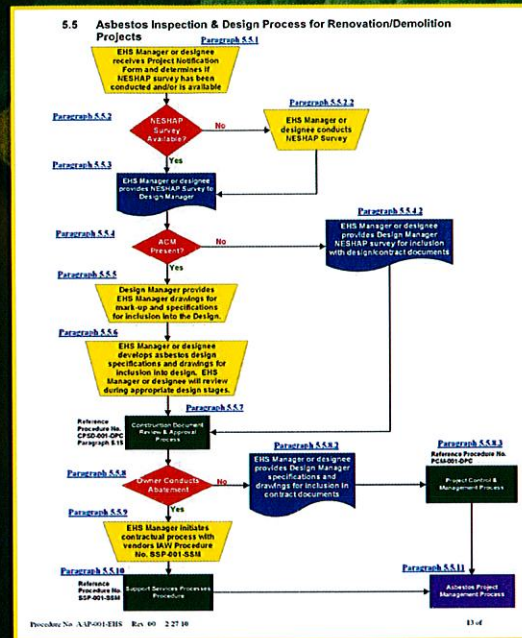
The overview process is high level; has initial decision tree and is hyperlinked to lower level process



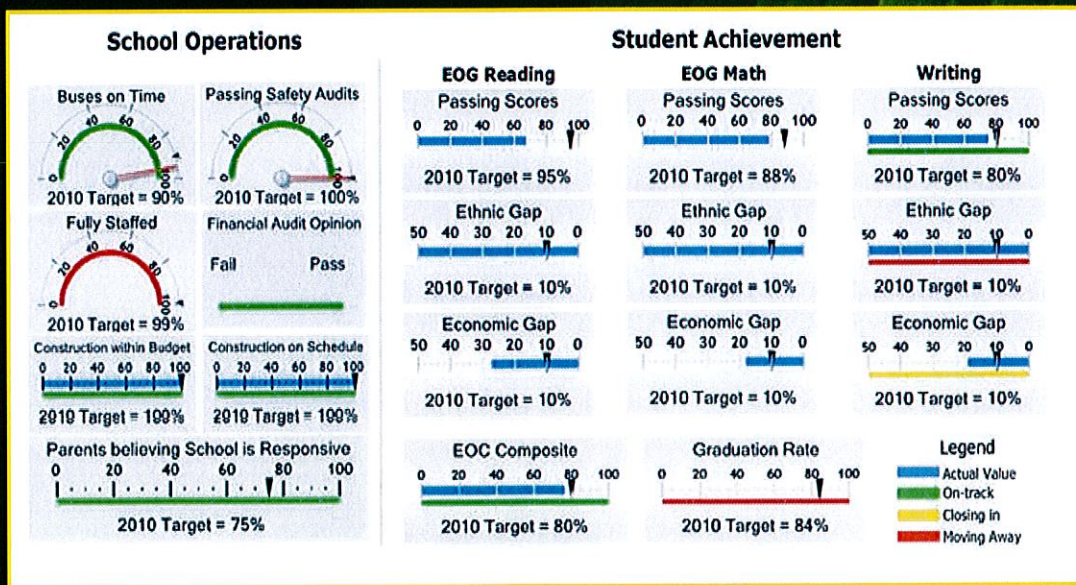
ISO 9001 ASBESTOS PROCESS

Each process shows key steps taken from beginning to end including decisions made and links to subordinate or parallel processes.

Every box on the process chart is detailed to include narratives, forms or other details to assist the end user.



DATA DASHBOARD



To include normalized utilities; fuel consumption; emissions, solid waste and more; being deployed at this time



