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PROTECTING THE INVESTMENT: SCHOOL FACILITIES INSPECTION AND MAINTENANCE

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SCHOOL FACILITIES IN THE SOUTH

In 2005, there were roughly 35,000 public school facilities and nearly 19 million students in the South. Schools in the region range from the 5,060-student Cypress Bay High School in Weston, Florida (one of the largest schools in the country) to the nine-student Plainview Elementary School in Texhoma, Oklahoma. At the national level, America's 49 million students were served by 97,000 schools that made up 6.6 billion square feet and included more than 1 million acres of land.

According to the National Center for Education Statistics, almost half of all the public schools in the United States were built in the school construction boom of the 1950s and early 1960s as communities struggled to keep pace with the entry of Baby Boom children into schools. These buildings contrast sharply from the more solidly built schools of the 1930s, 1940s, and early 1950s (which account for about one-quarter of all school buildings) in that they tend to reflect the demand for swift construction and cost constraints, thus limiting their functional lifespan. Typically, school buildings are used far longer than their original design intended, and often at greater capacity, which combine to increase wear and tear and decrease long-term functionality. While renovation extends the functional life of a building, numerous schools built in the last construction boom are entering a period of tenuous functional existence as costs for renovations and repairs begin to eclipse the cost of replacement.

According to the U.S. Census Bureau, states and local school districts spent \$45 billion on school facilities construction and acquisition in the 2005 school year, \$5 billion on land acquisition and an additional \$13 billion on debt service. In the South, states and local governments spent \$22 billion on capital outlays, including \$16.5 billion in construction costs, \$1.8 billion in lands costs and nearly \$5 billion in debt service. Most of this money comes from local sources, mainly

property taxes, with a few states providing school systems with additional resources for construction or maintenance.

Historically, state governments have not been directly involved in school construction, which has been funded primarily out of local obligation bonds and tax revenues. However, this is not universally the case. A handful of states have made investments in school facilities, particularly recently. These investments have mostly addressed what are seen as discrepancies in the quality or capacity of school facilities among districts. State funding for facilities may be either one-time investments designed to clear a building backlog or ongoing funds to encourage planning, measured construction or ongoing maintenance.

This major investment in school facilities is an important part of creating and maintaining world-class learning environments for students. It also is driven by rising enrollment, which has grown to more than 55 million pupils nationally with nearly 19 million in the South. This represents an increase of 6 percent over a five-year period, with projections for future growth expected to match and, in some states, even exceed this trend. According to projections from the National Center for Education Statistics, near- and mid-term growth in school population is expected to be in excess of 10 percent for Florida, Georgia, and Texas, with higher than average growth anticipated for North Carolina as well.

In many fast growing areas, school systems already are feeling the pinch, with systems such as Georgia's Gwinnett County Schools and Florida's Flagler County building several new schools a year to keep up with enrollment. Schools in many areas also are being used beyond designed capacity, both in high-growth districts and in areas where growth is slower and student populations are not quite sufficient to require a new facility or local tax rolls do not allow for the acquisition of a new facility. After new school projects come online and as increasing numbers of students fill older buildings, wear and tear on these facilities begins to show. A

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major factor in keeping both old and new buildings in good order is a program of preventative maintenance.

The maintenance challenges for school facilities can vary significantly by a range of factors, including the age of the building, level of use, the time since last renovation or major systems overhaul, local climate, and the type of building. Nonetheless, there is a universal need for school administrators and facilities staff to monitor the condition of school buildings. The reality, however, is that maintenance is often inconsistent or occasional, and monitoring of building conditions is irregular.

Whether newly constructed or of less recent vintage, school buildings experience more wear and tear than almost any other public facility. Newer schools are often built with an eye toward reducing the amount of maintenance required, but older buildings, as well as those that have undergone renovations and expansions several times throughout their history, can often have extensive and complex maintenance requirements. Whether the building is new or old, the maintenance challenge is complicated by increased demands on buildings from new technology and pedagogical strategies, increased wear due to schools exceeding their designed capacity, and rising awareness of the impacts of how the condition of a school facility can affect the performance of the students it serves.

For many school districts, fully maintaining school facilities is beyond their fiscal means. This leads to considerable deferred maintenance. It is difficult to gauge how widespread the problem of deferred maintenance for school facilities is, however, since only very limited data is available on the subject from a small sampling of school systems. A survey of what research has been published in the recent past is not encouraging. A 1995 Government Accountability Office (GAO) report indicated that one-third of public schools in the United States needed extensive repair or replacement, and half of schools reported unsatisfactory environmental conditions. Within the same report, three in five schools noted at least one major building feature in disrepair, needing replacement, repair or overhauling.

A follow up report by the National Center for Education Statistics in 1999, created from a survey of school administrators, provided a fuller view of schools. This report indicated that while a majority of school buildings were reported to be in at least adequate condition, half of all schools reported at least one feature that was in less than adequate condition, with one-fifth of schools reporting less than adequate conditions for life safety features, roofs, and electric power. Three in 10 schools reported less than adequate heating, ventilation and air conditioning.

Perhaps most distressing of all was a 2005 public infrastructure report card by the American Society of Civil Engineers (ASCE) showing that schools had risen to a “D” grade, up from the debut grade of “F” in 1998, but still woefully poor considering the investments made and the long-term con-

sequences of poor conditions in school facilities. Among the concerns that ASCE raised in its report is the absence of comprehensive data to draw from, which adds to uncertainty about the scope of an infrastructure problem, a concern echoed elsewhere. ASCE also noted that school facilities are being challenged to keep pace with new instructional mandates and class size reductions in an era of declining construction expenditures.

Coupled with the lack of up-to-date data on school conditions, there is a deficiency in data on the cost for bringing schools up to date. The 1995 GAO report set the cost of this work at \$112 billion. The 1999 NCES report estimated costs for repair, renovation and replacement at \$127 billion. A National Education Association report released in 2000 projected a much higher figure of \$322 billion. Maryland, when it recently reviewed its school facilities and needs, estimated a total cost of \$3.85 billion to bring all of the state’s public school buildings up to standards, with the costs split relatively evenly between funding for new construction to provide additional capacity and money to repair or replace building systems and improve site conditions.

A considerable percentage of the inadequacies in school facilities is caused or exacerbated by deferred maintenance. Funding for maintenance and operations of schools has been declining over recent years as fiscal pressures force school systems to choose between cutting funding to academic programs or support services. The *American School and University Magazine’s* 2007-2008 survey of school maintenance and operating (M&O) expense budgets indicated a slight drop from the previous year, with schools spending less than 9 percent of their total budget on maintenance and operations, and have until just recently been spending less than 8 percent, considerably less than was being spent 20 years ago. The bulk of the recent increases in M&O spending is due to increased fuel and utility costs, which have further eroded available funding for maintenance and regular repairs and redirected funding from other areas to cover energy expenditures. As a result of the shrinking maintenance budget, the magazine notes that the total square footage maintained per full-time custodial worker has increased 14 percent over the previous year to 26,786 as schools cut back on maintenance staff to cover utility costs.

The estimated costs of deferred maintenance to schools has risen considerably, from an estimated \$25 million in 1983 to \$100 million in 1991, with a 2003 cost estimate from an engineering consultant set at \$300 million. Deferred maintenance is costly in part because it creates the potential for small deficiencies to lead to larger and more costly problems. For the most part, however, schools seldom are able to fund their full slate of maintenance and may only “clear the boards” of existing maintenance needs following a bond issue for updating or replacing aging systems and schools.

Typically, state policies favor new construction over maintenance. This is not universally the case, and a handful of states have policies in place that promote and encour-

age building maintenance. Among these policies are state maintenance allotments and building inspection programs, particularly tied to school and district school facility plans. Requiring schools to set aside a percentage of their budget for maintenance and repair is a more active step in ensuring school facilities investments are cared for over the long haul.

CHECKING UP: SCHOOL BUILDING INSPECTIONS

In most jurisdictions, schools initially are inspected (that is, during and upon completion of construction or renovation) under the same terms as other public structures, and are required to meet (but not exceed) the standards established for other buildings. Schools must comply with the American's with Disabilities Act, which mandates specific adaptations related to physical handicaps, and local and state fire, sanitation, health, and safety requirements. Responsibility for compliance and enforcement generally is not separately defined for school facilities, which indicates that they would, in most instances, be handled as any other building that is open to the public.

Some communities require schools and other buildings to meet specialized standards because of the special populations they serve. In general, school construction is inspected by local building inspectors who are responsible for code enforcement. Some areas, particularly rural communities, may lack local building inspectors, which places the burden most typically back on the contractor for ensuring code compliance.

Once the construction is complete, however, buildings may sit for years or even decades without comprehensive reviews of their condition. Regular inspection of school buildings often is the purview of school custodians and school district facilities staff. In the course of their daily routine, these individuals may identify needs that can be addressed through a program of maintenance and general upkeep, but they may well observe conditions which are beyond the scope or budget of the school system to accommodate. The reporting of these conditions is not necessarily conducted in a systematic and coordinated manner that would allow school systems and the state to understand the scope of repair needs.

A course of preventative maintenance helps to extend the life of public investments in new and renovated school facilities and reduces the need for costly repairs in the future. While local school systems have primary responsibility for school facilities, states may make significant investments in district capital outlay, and all states have a need to ensure that students attend healthy, safe and functional schools. Thus, it often is seen as a state interest to guide and monitor local systems' progress with ongoing maintenance plans and implementation.

Typically, it is only when a major bond issue or other large amount of capital funds become available that a state under-

takes a "status check" of the conditions and needs of school facilities. While such occasional assessments provide a useful comprehensive review of needs, it also can unearth extensive amounts of deferred maintenance that has become, over the years, considerably more costly to correct and poses a potential hazard to school children and staff. State monitoring and public reporting of local district maintenance plans and needs provides state governments as well as taxpayers with a more predictable and transparent process by which facilities needs can be determined.

WHY DOES IT MATTER?

The connection between school building conditions and student achievement has been established in several studies. From more than three decades of research there is enough evidence to conclude that the condition of the building in which students spend much of their time affects their performance in school as well as their health. Students in poorer quality schools score between 5 and 10 percentile ranks lower than students in functional buildings, although the range of performance "drag" can be even greater. As Dr. Glen Earthman of Virginia Tech has pointed out, while these observations measure a "snapshot" of student performance, there is sufficient cause to conclude that poor quality buildings have a cumulative effect on student performance, worsening as students remain in substandard buildings.

Poor indoor air quality in particular has been linked to poor student performance. Students in buildings with inadequate ventilation suffer from decreased concentration, drowsiness, headaches and other adverse health effects. Because children breathe a greater volume of air in proportion to their body weight, and because schools are more densely utilized than most commercial buildings, schools have a greater demand for adequate ventilation. A key need is the introduction of adequate outdoor air, but many school heating, ventilation and air conditioning (HVAC) systems limit outdoor air as a means of controlling humidity or costs, thus allowing indoor air pollutants to build up throughout the day. In some areas, the outdoor air may include a host of air pollutants requiring pre-filtering, including particulate matter from idling school buses and delivery vehicles, further discouraging schools from increasing air exchange. Particularly in older buildings that have been retrofitted with newer, more energy efficient windows and doors, outdoor air exchange can be a significant problem as tighter seals and sashes exclude fresh air from the building.

Energy efficiency is another increasingly important aspect of school building conditions. As energy prices have skyrocketed, schools have been facing difficulties with rising utility costs cutting into other aspects of the budget. As has been noted, a vast number of American public schools were constructed during the 1950s and 1960s, a period when energy was inexpensive and efficiency was a costly afterthought. In fiscal 2003, schools spent \$8 billion on energy, a figure that has likely grown dramatically in recent years. The U.S. Department of Energy estimates that as much as 25

percent of schools' energy demand could be cut through the use of energy efficient technologies. Many of these changes also would introduce changes to the school environment, such as increased daylight and improved ventilation systems, that would positively affect student performance.

School building conditions are important for other reasons as well, specifically cost management for facilities' construction, repair, and renovation. Ongoing and regular inspections can provide school districts and states with valuable information on the overall condition of school facilities and what the potential needs are for capital investment. When schools are not inspected regularly, items that potentially could be manageable maintenance concerns become costly renovation projects. Similarly, deferring maintenance on school facilities inevitably increases costs and can complicate repairs.

WHAT IS INVOLVED?

SAFETY AND STUDENT HEALTH

There are several key areas of facilities management and maintenance that are essential to the operation of a school. Chief among them is the need for the school to be free from conditions which threaten the health and safety of the students and staff. Such conditions include lead paint and pipes, asbestos insulation, faulty wiring, mold, structural defects, and more. Schools typically recognize the importance of remedying these deficiencies, although it may take a trained specialist or costly inspection to identify the problems or their causes. For this reason, schools most often are dependent upon county and state services for identifying and assessing many hazards beyond obvious physical structural deficiencies.

COMFORT

Maintaining a comfortable environment for students is a key ingredient for student success. Poorly functioning heating and air conditioning results in uneven climate control and classrooms that are uncomfortably cold or hot and can have a significant drag on student learning and performance. Older buildings in which heating and air conditioning have been later additions or whose ventilation systems have not been updated following the installation of newer, better insulating windows and doors, often have difficulty regulating indoor temperatures and balancing hot and cool areas in the building.

Properly installed and maintained heating, ventilation and air conditioning systems should eliminate most problems related to climate control. School buildings that are renovated often require considerable attention to remedying problems with air flow. Portable classrooms should be fully compliant with standards for climate control and ventilation appropriate for the region.

INDOOR AIR QUALITY

According to the GAO, an estimated 8.4 million students attend schools with poor indoor air quality. Studies have indicated that students attending schools with poor indoor

air quality perform lower on standardized tests and are most subject to absenteeism and illness.

Indoor air quality is becoming an issue of increasing concern for schools. Children's exposure to indoor air pollutants such as carbon dioxide, molds, particulates and volatile organic compounds is generally believed to have increased over the past several decades. As older schools are retrofitted to improve energy efficiency and new schools are built to higher standards, there is less transfer between inside and outside air and lower ventilation rates. Increased prevalence of synthetic materials in buildings and furniture and increased use of chemical cleaning products also have contributed to decreasing indoor air quality. While indoor air pollution is an issue in most buildings, it is of special concern for schools because children are more susceptible to the negative health effects of poor air quality. Schools tend to have higher occupancy levels than most buildings, thus placing greater demands on often outdated, inadequately designed and maintained ventilation systems.

Sources of indoor air pollution can include polluted outdoor air entering the building (such as vehicle exhaust and pesticides), underground sources (notably radon), and indoor sources (such as floor coverings, furnishings, and cleaning products). Concentrations of indoor air pollutants can vary with location and time (such as is the case with painting and science storerooms, as well as carbon dioxide buildup later in the school day) or can develop continuously (as is the case with molds growing in HVAC systems). Significantly, indoor air quality may be affected by a variety of pollutants, no one of which may cross a threshold for concern individually, but together may pose serious health problems.

There are no standards for indoor air quality that correspond to the National Ambient Air Quality Standards developed by the United States Environmental Protection Agency (EPA) for outdoor air quality. The U.S. Occupational Safety and Health Administration has established standards for specific indoor air pollutants, but these are primarily of an industrial nature and may not provide schools with an appropriate benchmark for clean indoor air. Although the American Society of Heating, Ventilating and Air Conditioning Engineers (ASHRAE) has developed standards for ventilation which are intended to ensure good indoor air quality, measures of acceptable levels of indoor air pollutants are uncommon, particularly for settings involving children and youth.

The EPA established the Indoor Air Quality Tools for Schools program to provide a comprehensive resource to help schools identify, correct and prevent indoor air quality problems. The program provides a toolkit for schools on the subject and guidance on how to implement district-wide programs to address indoor air quality, but again focuses on procedures and not standards, which leaves schools and districts in a quandary when it comes to measuring progress in terms of actual improvements in air quality. While some improvements can be indirectly measured through a decline in the number of students and staff reporting asthma epi-

sodes, there are a wide range of other significant pollutants which are not noted by such a metric.

WATER

A startling number of school districts across the country are confronting intractable water quality problems related to lead in the water coming from drinking fountains. Frustratingly, in many instances drinking fountains that were replaced because of lead and passed water quality tests have subsequently failed. In Baltimore this caused the school system to replace drinking fountains with bottled water in November 2007, an expensive solution that other school systems have been forced to explore as well. More disconcerting is that in many districts, lead-tainted water may have been present in drinking fountains for years before detection.

Water quality tests are not typically a part of a sanitation inspection, beyond the confirmation that the connections are intact and up to code and the drinking fountains are being maintained in a sanitary condition. Testing for waterborne contaminants, particularly lead, is primarily a concern for older schools and schools in older neighborhoods. Such tests need to be conducted periodically, since there have been numerous instances of drinking fountains which have tested clear for contaminants later testing positive.

KITCHENS AND SANITATION

Federal law mandates that any school lunch program receiving federal support (which translates to essentially every program nationally) have its cafeterias inspected for health and sanitation violations twice annually. In practice, this degree of frequency holds for perhaps six out of 10 schools according to data from the United States Department of Agriculture (USDA), which administers the school lunch program, analyzed in March of 2007 by the Associated Press. Thirty percent of schools were inspected only once. Congress increased the required inspections from annually to biannually starting with the 2005-2006 school year, but did not provide additional resources to fulfill this obligation. State and local health officials, who have the responsibility to inspect these facilities, often are chronically understaffed, particularly in small towns and rural areas, and are unable to satisfy the new requirements. Reporting requirements for school cafeterias and kitchens also may be inadequate. The USDA requires states to report the number of schools which are inspected twice annually, and further requires schools to post the results of the most recent inspection in a publicly visible location and provide a copy of the inspection report upon request by a member of the public.

Generally, sanitation rules for school cafeterias are the same as for restaurants and other food establishments, with county or local health departments having jurisdiction over inspections and enforcement. Nonetheless, enforcement actions on school cafeterias and kitchens has a somewhat uneven history, as evidenced by the request by the USDA for the number of school kitchens that comply simply with the mandate to inspect. Federal law does not extend to the enforcement of any standards for school kitchens and sani-

tation, and local officials often are caught in awkward political and power dynamics in acting against schools, which generally are semi-autonomous entities with respect to local governments.

INSPECTIONS: HOW CAN IT BE DONE?

FREQUENCY

While there is little consensus on frequency of inspections for school facilities (with the exception of school kitchens, as noted previously), it seems self-evident that building inspections for schools should be conducted regularly. Some states leave the decision on frequency to the discretion of the local school systems. Other states require some inspections continuously, annually, biannually or on a schedule similar to other commercial buildings. Annual fire inspections are generally mandated, with health, safety and sanitation inspections required to take place biannually or annually.

State and local agencies experiences with the increase in frequency of health inspections for school food service facilities are instructive when giving consideration to increased frequency of building inspections or greater enforcement for existing mandates. When the federal inspection requirement for kitchens increased from annual to biannual inspections, the capacity of local health departments to comply was in many instances severely overtaxed, leading to low compliance rates and strained relationships with local partners. States that have implemented regular or ongoing inspection programs typically have either assumed responsibility for conducting these inspections or provided support to local education agencies to complete them.

SCOPE

Because schools are special purpose buildings, the scope of inspection for school facilities could extend beyond basic fire, safety and sanitation reviews conducted for other publicly accessible properties. For example, because children are more susceptible to illnesses and respiratory conditions resulting from poor indoor air quality, including regular assessments of indoor air quality would seem to be an important part of any inspection regimen. Other environmental factors, from lighting quality to the water flowing in the drinking fountains, also can have an impact on both student well-being and performance.

Most state and local health departments have the infrastructure in place to conduct sanitation and health inspections and, in many cases, are expected to run annual checks on the conditions of school facilities for any violations of standards. Environmental health risks are the responsibility of a range of state agencies, depending on the state, and are less likely to be included in an inspection program. Nonetheless, including regular monitoring or inspections for indoor air quality, particularly for older buildings, is considered an essential part of any school health inspection.

REPORTING

While schools now report a constellation of information back to parents and the community at large on how well they are educating the children in their charge, they seldom report on the physical conditions of the building. This is of particular concern for parents of children with asthma or other respiratory conditions, but also is important information for all parents and community members. Schools often are a significant public asset, and their conditions and need for repair, renovation or demolition should be a matter of public record. Many states require reports on school conditions to local school boards, and by local education agencies to the state school board, but do not stipulate any further public disclosure or notice.

Public disclosure of building conditions has a long history. An 1873 report from the *New York Times* lists selected schools in New York City and their conditions, including any deficiencies as well as those areas in which the school was considered up to standards. Numerous states have requirements for public reporting of food service establishment's health inspections, with the assumption made that the public will sufficiently censure poorly performing restaurants to provide strong incentives for them to meet health codes.

PULLING IT TOGETHER

When establishing or reforming standards for school health, safety and maintenance, it is important to bring the full range of interested parties to the table. Doing so can reduce friction, ensure accountability, and provide opportunities to minimize redundancy. For a state-level plan, this would include representatives from the state departments of education, health, environmental quality and the state building authority, members of the legislature, and representatives of the governor's office. Additionally, representatives from local education agencies, parents, and local health officials should be included in these discussions.

Having standards established at the state level provides a benchmark for schools, which allows for comparisons across jurisdictions. One potential drawback is that any benchmark set by the state would need to have a high degree of specificity to be useful. This specificity could be interpreted as establishing a state obligation to provide for facilities up to the level established by the state. In low-wealth districts, the ability to provide for adequate buildings is essentially as limited as the ability to provide for improvements in tech-

nology, teacher quality or any other educational expense. Thus, the establishment of a state standard of facilities' adequacy does open the door to potential future litigation on school facilities. (In South Carolina, eight rural school districts sued the state on these grounds in 2003, arguing that the structural inadequacy of schools in rural parts of the state were an impediment to providing an adequate education. While a judge acknowledged that the facilities were not "optimal," he did not view them as being a detriment to the education of the students who attended them.)

Nationally, there are a handful of examples of school safety and inspection programs, some of which are detailed in the next section. Perhaps the most notable example comes from Ohio, which in 2005 enacted a comprehensive school safety inspection program known as Jarod's Law after 6-year-old Jarod Bennett, who was killed when an improperly-stored cafeteria table fell on him. Alabama and Maryland both have extensive and well-developed programs of inspection and review. Massachusetts and Michigan both have issued guidance in recent years to schools urging compliance with their state laws.

While some states or communities have in place policies on building maintenance, it is more often the norm that school districts and individual schools conduct ad hoc inspections. It is in the interest of the state and local systems to have in place on-site survey procedures and checklists for staff. These could include an evaluation instrument, a definition of terms, the frequency of inspections, reporting procedures (both internal and public), procedures for corrective action and follow up from any repairs identified. In some instances it is good practice to conduct annual inspections of school buildings, while other components, such as roofs and HVAC systems, should be inspected at least twice per year. States also often conduct periodic reviews of district reports and selected facilities to assess maintenance and reporting quality.

State technical support to schools and districts on comprehensive maintenance plans is of great value. Providing technical assistance on plan development and implementation will result in greater levels of compliance, increased information sharing, and quicker implementation, particularly in districts with limited staff and expertise. State department of education staff and state building authority experts are valuable resources for districts and schools, as is the state chapter of the School Plant Managers Association.

SELECTED EXAMPLES OF STATE FACILITY INSPECTION REQUIREMENTS

ALABAMA

Since 1999, Alabama has required schools systems to submit facilities assessment and numeration reports to the state Department of Education. Inspections and maintenance of school buildings by staff trained by the Office of the School Architect and Facilities in the Department of Education are expected to be conducted continuously throughout the year. Districts are expected to update information on their schools' conditions in the state-operated database at least once annually. The reports are submitted through an on-line database that covers 25 keystone components, including the conditions of the roof, exterior and interior walls, doors and windows, lighting, kitchen equipment, plumbing and electrical. Schools rate conditions of these components as either good, moderate or severe. Items are considered to be in moderate condition if they have five more years of serviceable use. Severe items are further scored as to the degree of severity (by percentage), which allows for problem conditions which are limited in scope (such as an isolated hole in a roof) to be distinguished from more comprehensive problems (such as a flat roof that leaks at multiple seams).

The Alabama Legislature annually appropriates some capital funds for local school systems, in general between \$150 million to \$160 million in recent years. To be eligible for aid from the state capital fund, school systems must submit five-year capital plans for all of their current and planned facilities. The facilities database established by the state is a tool that school districts can, and most often do, use to develop these plans. The state uses the database in their reviews of district capital plans to confirm that local plans are aligned with identified needs. The funding from the state, while available for any capital outlay purpose, is particularly useful in helping school systems avoid deferred maintenance.

As noted, the state Department of Education provides training to school system employees on using the database and conducting building inspections. Both the training and the database are offered to school systems at no cost. Due to its complexity, the database is not available to the public, although the information therein would be considered part of the public record. There is no requirement for the public reporting of school conditions in the state.

Plans for new buildings, additions and major renovations, regardless of the type of funding, must be approved by the state Department of Education and the Alabama Building Commission.

ARKANSAS

As a component of the settlement of Arkansas' Lakeview school funding litigation, the state has made a significant investment in school facilities. While the condition and adequacy of school facilities was not a component of the original litigation, the court found that the state needed to address

this issue in order to resolve the adequacy and equity issues found through the lawsuit. The state initiated a comprehensive statewide facilities and equipment study in 2004 to determine the condition and characteristics of school facilities. The study was part of a larger effort that included the development of a school facility manual to delineate how school districts should proceed with planning, construction, renovation, maintenance, and furnishing school buildings. The task force charged with reviewing school facilities looked at each of Arkansas' 1,205 schools and 5,766 permanent buildings. Each building was reviewed on a range of factors, with deficiencies graded and ranked depending on their impact on the ability of the school to accomplish its mission of educating children. The task force then established costs for each factor, settling on a total cost for bringing the state's school facilities up to current standards at just under \$2.27 billion. Elements seen as critical to the school's mission accounted for \$86.6 million, with those having an impact on the function of the school adding \$1.67 billion. The greatest single cost area for the state was in the area of heating, ventilating and air conditioning, which was estimated at \$574 million.

In response to the court decision in the school finance case, the General Assembly appropriated \$20 million in fiscal 2005 for school facilities, followed by \$54 million in fiscal 2006. The General Assembly also created a new state division, the Division of Public School Academic Facilities and Transportation, which provides guidance to local districts and reports to the governor and General Assembly on the state's progress. Prior to 2005 and the state Supreme Court decision, school facilities were strictly a local responsibility, with no state investment in construction or maintenance. Projections for state appropriations for school facilities increased to \$85 million in fiscal 2007 and \$493 million in fiscal 2008. Subsequent years will see state expenditures decline as the Immediate Repair Program, the state's major effort to bring the most critical elements of deficient schools up to standards, is completed and the state enters a period of maintenance. Nonetheless, the expected state appropriation for school facilities is projected to be substantial and ongoing.

School districts are required to set aside 9 percent of their foundation funding for the payment of utilities and the costs of custodial staff, maintenance, repairs and renovations. The state's facilities and custodial maintenance manuals provide highly detailed information for schools and school systems on developing and implementing custodial plans, which must be created for each school. The custodial maintenance manual also includes a detailed (six-page) list of inspections for various aspects of school facilities. The manual lists frequencies and scope for various system inspections as well as standards and expectations.

The Division of Public School Academic Facilities and Transportation is required to submit an annual report to the governor on the progress school districts have made on school

facilities and the current status of any continuing deficiencies. The report details conditions in 12 general building and design areas as well as the disposition of state facilities funds. School districts participating in one of three school facilities programs submit the information for the report as part of their biennial facilities master plans, which provides the state with both a status report on the ongoing activities to resolve deficiencies in school facilities and a perspective on the overall condition of schools in the state.

FLORIDA

Florida provides guidance to school districts on facilities inspection and maintenance. In the state, maintenance and operations departments are accountable for code compliance on construction and renovation. With the exception of fire inspections (which are governed and at the discretion of the state fire marshal), local school boards must provide for the annual inspection of school facilities to determine compliance with standards of sanitation and “casualty safety” established by the state Board of Education. Fire safety inspections are conducted annually by an inspector certified by the state fire marshal, with a schedule for correction of any reported deficiencies filed by the board. If immediate life-threatening problems are identified, the board must act promptly to correct it or shutter the facility until the problem has been corrected.

Safety and sanitation inspections of educational facilities may be conducted at any time by the Department of Education or any other state or local agency authorized or required to conduct these inspections. When conducting these inspections, the standards used are those adopted by the commissioner of education, which supersede those of the other agencies. Reports of these findings must be submitted to the board.

KENTUCKY

Kentucky schools are required to develop school facilities plans every four years. A principle purpose of these procedures is to assess the current needs for school facilities in the district and to formalize plans to address these issues. Plans are developed by local planning committees and submitted to the state for review. One factor these plans often include is reviews of existing building capacity and conditions. However, the state does not specify or require regular inspections or the reporting of conditions to either the public or the state. Administrative authority for school facilities is exclusively a local responsibility.

MARYLAND

As a result of legislation in 2002, Maryland established the state Task Force to Study Public School Facilities, which was charged with reviewing, evaluating and making recommendations regarding the adequacy of public school facilities in the state. The Task Force identified fundamental standards of a public school facility, developed a survey tool to measure school facilities’ conditions, and conducted a statewide survey to gather information on the condition of the state’s

schools. In 2003, the state surveyed 1,342 schools, scoring each against 31 standards for new construction. A second phase of the survey provided cost estimates for bringing public schools up to the standards.

Subsequent to this survey, the state initiated a regular program of school inspections, initially set at 100 schools per year (which would have taken 14 years to complete). Following legislative action in 2006, inspections were brought under the purview of the state Public School Construction Program and increased to 240 per year, which will inspect every school on a six-year cycle. State inspectors (there are two) review schools against 35 standards, with new standards added as needed. The original list of 31 standards has been expanded in part to include new reviews, mostly for safety issues.

Inspections can take from as little as three hours for a small elementary school to more than a day for a large high school. Each standard is graded on a scale that runs from superior, good, adequate, inadequate to poor. Schools with components that rate either inadequate or poor have 60 days to take corrective action and bring their score up to adequate.

Schools and school districts receive inspection reports, which also are maintained by the state Public School Construction Program. School information is available to the public online, including the year of the most recent inspection and the school’s overall score. More detailed information is not yet available online, although the program has plans to make more information publicly available.

MISSISSIPPI

Mississippi recommends that schools establish inspection plans for maintenance, safety and sanitation, but does not have specific mandates on frequency. The state Department of Education does offer considerable assistance and guidance to school systems on developing and implementing comprehensive, preventative maintenance procedures to ensure a healthy and safe environment within the building and on school grounds.

MISSOURI

Because the state does not fund school facilities, there is no policy on school inspections or maintenance. The state does have a facilities checklist it uses as part of the Missouri School Improvement Program, but the information collected is principally for use by local administrators and not intended for state use. The checklist is largely focused on issues of safety and is limited in scope.

NORTH CAROLINA

Schools in North Carolina must be inspected for fire safety and sanitation compliance at least once annually. Fire safety inspections are the purview of the state fire inspector. Sanitation inspections are conducted by representatives of the state Department of Environmental Health and Natural Resources. School buildings and school kitchens are inspected separately. Schools are assigned a letter grade

based upon their sanitation inspection, both generally and for school kitchens. Letter grades for kitchens are posted in plain view, as is done with restaurants in the state, but state rules expressly prohibit the posting of grade cards in schools. Violations of sanitation standards which pose an imminent hazard or threat to student health are reported to the local superintendent immediately. State rules do not stipulate specific corrective action or accountability for remedying these or other deficiencies. Kitchens can be closed, as with commercial establishments.

Further, state rules do not stipulate inspections for environmental hazards such as indoor air quality, or physical defects and safety concerns, which fall outside the purview of a sanitation inspection. In addition, state rules do not mandate any public notification or disclosure. Local boards of education are not mandated to publicly report school conditions. Because sanitation inspections are conducted by representatives of a state agency, records are kept at the state level, but there is no mandate for them to be transmitted to the state Department of Education, and no reporting at the local or state level is currently done.

TENNESSEE

In 2005, Tennessee passed Senate Bill 641, which encourages school districts to conduct air quality inspection and evaluation programs. The legislation further requires the state Department of Education to survey each local education agency for air quality conditions. Language in the original bill (later amended) would have required air inspections once every three years. The final bill only encouraged districts to become involved in the EPA Indoor Air Quality Tools for Schools program. No other inspection policy exists.

WEST VIRGINIA

West Virginia has an independent agency, the School Building Authority (SBA), which has managed the state's investment in school facilities since 1990. A component of state support for school facilities is a requirement that each district develop a 10-year Comprehensive Educational Facility Plan (CEFP), which is submitted to the state and provides the basis for the prioritization of state funding. The SBA provides planning grants to school districts to offset some of the costs associated with developing a plan. Plans are submitted to the state Board of Education for approval and the SBA for final approval.

West Virginia has made a substantial long-term investment in school facilities. Perhaps as many as 80 percent to 90 percent of new schools built since 1990 have been constructed with SBA funds. There also is a considerable share of existing schools that have been renovated with state funds.

Facilities built or renovated with SBA funding support must be inspected annually by the SBA. While the authority for the SBA to inspect is technically limited to the building component supported by state funding, annual inspections in practice are typically comprehensive. Inspections are conducted by the SBA, with any deficiency reported to the

school system, which must either correct the condition or put in place a plan to remedy it (in the case of larger-scale issues) within six weeks.

As part of any SBA funded construction or renovation project, districts are expected to create preventative maintenance plans. These plans are created at the local level, with the SBA providing guidance and recommendations when needed. In practice, this requirement provides incentives for school systems to develop maintenance plans for all school facilities, regardless of whether they have been built or renovated with SBA funds. The Authority is considering changes to its policy regarding maintenance planning to encourage the use of standardized maintenance recommendations from specific national organizations, such as the ASHRAE proposed maintenance policies for climate control systems.

STATES WITHOUT EXPLICIT SCHOOL BUILDING POLICIES

Presently the Southern states of Georgia, Louisiana, Oklahoma, South Carolina, Texas, and Virginia have no policy in place.

OUTSIDE THE REGION

CALIFORNIA

School districts receiving state funds for school construction must establish a facilities inspection program to ensure that buildings are in good repair, which is defined by the state as clean, safe and functional, as determined by an evaluation instrument developed by the Office of Public School Construction. Furthermore, information on the repairs needed to bring a school up to the "good repair" standard is to be included on state accountability report cards annually. Schools also must establish a uniform complaint process for parents if they feel facilities are not clean, safe or in good repair, with resolution of the complaint required within 30 days.

IDAHO

Idaho has a code section dedicated to this issue. In general, the statute calls for adherence to specific national or international building standards. Inspections of school buildings by the administrator of the division of building safety or designated representative are conducted annually. The code does include requirements for action on imminent hazards, and outlines responsibilities for follow up, which often is a missing link in other state facilities plans.

MAINE

In 1998, the Legislature passed legislation to implement the recommendations of the governor's Commission on School Facilities. In part, the legislation authorized the state Department of Education to require school systems to develop and implement maintenance and capital improvement programs for school buildings. These programs include routine, preventative maintenance, capital improvements and upgrades. School systems were encouraged to designate a percentage of their budgets toward maintenance and capital improvement programs. The department extends support

to school systems on this front in the form of technical and financial assistance.

The state also established a capital asset management database to operate in conjunction with a revolving renovation fund. The fund provided partial funding for school systems to conduct initial evaluation of their assets and record those evaluations into the database. The state requires school systems to use the database in order to be considered for further state funding, with about two-thirds of school districts in the state using the database.

The state also has developed Internet-based templates for local schools to use in crafting school maintenance programs. These templates, developed by stakeholder groups, help schools evaluate and assess their facilities with respect to custodial, operational, and maintenance needs. Furthermore, the state has established a budgeting guideline for school systems for building maintenance: 2 percent of a building's replacement cost must be set aside to ensure that adequate funds are available for ongoing, regular maintenance. School systems are asked, but not required, to appropriate at least this amount annually.

OHIO

Ohio has a very comprehensive set of rules and regulations relating to the protection and improvement of health and safety in schools. Jarod's Law, named for 6-year-old Jarod Bennett who was killed when an improperly-stored cafeteria table fell on him, requires annual inspections for health, safety and sanitation concerns; publicly available reports for each school; written remediation plans for each item found upon inspection to be out of compliance; review of these plans for the state department of health; and outside auditing and review by the state auditor's office to ensure the integrity of the program.

PENNSYLVANIA

The Department of Health has issued indoor air quality guidelines for schools. In addition to recommending compliance with ASHRAE standards, the Department suggests monitoring for carbon dioxide as a rough indicator of how effective the ventilation system is at pulling in outdoor air. The state's guidelines provide some minimum standards for indoor air quality for schools, although they do not provide suggestions on monitoring or inspection. The Department of Health also does not mandate or otherwise recommend a schedule of health and safety inspections for schools.

RESOURCES

HEALTHY SEAT (HEALTHY SCHOOL ENVIRONMENTS ASSESSMENT TOOL)

The EPA has developed a software tool to help school districts evaluate and manage their school facilities for key environmental, safety and health issues. The software can be used by districts to conduct self-assessments of their facilities and keep a record of environmental conditions school by school. The software is available free from the EPA and can be customized to suit local systems' needs.

Healthy SEAT is designed to help school districts identify potential hazards and collect important data on school- and hazard-specific data necessary to assess the need for renovation, repair, and maintenance. The software reviews risks across a wide array of school areas and potential hazards, and includes information on health, safety and injury prevention from the Occupational Safety and Health Administration, Centers for Disease Control and Prevention, and the U.S. Department of Education. The software is intended to provide a macro review of a district's facilities as well as track specific hazards or schools.

The Planning Guide for Maintaining School Facilities

The U.S. Department of Education has produced a fairly comprehensive guide to school facilities maintenance, which is available for download from the National Center for Education Statistics website (<http://nces.ed.gov/pubs2003/2003347.pdf>). The report was produced by the collaborative efforts of the School Facilities Maintenance Task Force. The document provides checklists, information on procedures and practices, and useful how-to discussions on auditing facilities. The report also contains detailed information on standards and practices which lead to safe and healthy school environments and is a very useful starting point for establishing state standards.

OTHER RESOURCES

There are numerous resources available on healthy and efficient school facilities. A sampling includes the Illinois Resource Guide for Healthy, High Performing School Buildings, available at <http://www.cdb.state.il.us/schools/HealthySchoolsGuide.pdf>, by the Illinois Department of Education; Building Healthy, High Performance Schools: A Review of Selected State and Local Initiatives, available at http://www.elistore.org/reports_detail.asp?ID=10925 by the Environmental Law Institute; and Renovation & Construction in Schools: Controlling Health and Safety Hazards, available at <http://www.state.nj.us/health/eoh/peoshweb/schoolsren.pdf>, by the New Jersey Department of Health and Senior Services.

REFERENCES

“Building Inspection,” *The New York Times*, February 14, 1873.

Joe Agron, “37th Annual Maintenance and Operations Costs Study,” *American School and University Magazine*, Kansas City, Kansas, April 1, 2008.

American Association of School Administrators, *Schoolhouse in the Red (2004 Edition)*, Arlington, Virginia, 2004.

American Society of Civil Engineers, *Public Infrastructure 2005 Report Card: Schools*, Washington, D.C., 2005, accessed from the Internet page: <http://www.asce.org/report-card/2005/index.cfm> on March 25, 2008.

Bradford Chaney, Bernard Green, and Laurie Lewis, *Public School Principals Report on Their School Facilities: Fall 2005*, U.S. Department of Education, National Center for Education Statistics, Washington, D.C., January 2007.

Environmental Law Institute, Indoor Air Quality Database, Washington, DC, 2008.

Environmental Protection Agency, IAQ Tools for Schools, from the Internet site <http://www.epa.gov/iaq/schools>, accessed on January 18, 2008.

Linda Frazier, “Deteriorating School Facilities and Student Learning,” *ERIC Digest*, Number 82, ERIC Clearinghouse on Educational Management, Eugene, Oregon, May 1993.

Barbara Kent Lawrence, Ed.D., *Save a Penny, Lose a School: The Real Cost of Deferred Maintenance*, The Rural School and Community Trust, Washington, D.C., June 2003.

Laurie Lewis, Kyle Snow, Elizabeth Farris, Becky Smerdon, Stephanie Cronen, and Jessica Kaplan, and Bernie Greene, *Condition of America’s Public School Facilities: 1999*, U.S. Department of Education, National Center for Education Statistics, Washington, D.C., June 2000.

Kent McGuire, “School Facilities and Deferred Maintenance,” *Issuegram No. 43*, Education Commission of the States, June 1983.

National Trust for Historic Preservation, *Building Educational Success Together*, Washington, D.C., May 2005.

Cassandra Rowand, “How Old Are America’s Public Schools?” *Education Statistics Quarterly*, Volume 1, Issue 1, U.S. Department of Education, National Center for Education Statistics, Washington, D.C., 1999.

Additionally, interviews with the school facilities director or state school architects for the 16 member states of the Southern Legislative Conference were conducted to confirm program details and assess state activities with regard to school facilities.

TOTAL FACILITIES EXPENDITURES—LAND AND BUILDINGS FISCAL YEAR 2006

State	Total Expenditures	Per Pupil Expenditures
Alabama	\$34,665,566	\$46.73
Arkansas	\$251,696,203	\$530.77
Florida	\$411,615,345	\$153.87
Georgia	\$185,162,091	\$115.84
Kentucky	\$35,517,677	\$52.24
Louisiana	\$59,031,405	\$90.19
Maryland	\$3,436,011	\$4.00
Mississippi	\$15,599,430	\$31.52
Missouri	\$23,017,040	\$25.08
North Carolina	\$67,829,840	\$47.89
Oklahoma	\$39,801,102	\$62.70
South Carolina	\$63,108,010	\$89.96
Tennessee	\$52,500,337	\$55.04
Texas	\$239,341,235	\$52.89
Virginia	\$274,942,004	\$226.39
West Virginia	\$4,890,246	\$17.41
SLC Total/Average	\$1,762,153,542	\$93.61
U.S. Total/Average	\$4,884,387,447	\$99.45

Source: National Center for Education Statistics, *NCES Common Core of Data National Public Education Financial Survey (NPEFS), School Year 2005–06*, U.S. Department of Education, Washington, D.C., April 2008.

PUBLIC ELEMENTARY AND SECONDARY SCHOOLS, BY TYPE AND STATE OR JURISDICTION

State	Total, all schools 1990-91	Total, all schools 2000-01	Number of schools 2005-06			Combined elementary/ secondary Total	Alternative	Special ed.	Charter
			Total	Elementary	Secondary				
Alabama	1,297	1,517	1,585	951	428	206	93	65	0
Arkansas	1,098	1,138	1,138	747	378	13	7	5	19
Florida	2,516	3,316	3,723	2,622	699	402	513	133	342
Georgia	1,734	1,946	2,389	1,847	396	146	214	54	58
Kentucky	1,400	1,526	1,409	994	313	102	148	10	0
Louisiana	1,533	1,530	1,390	925	294	171	108	43	26
Maryland	1,220	1,383	1,430	1,104	263	34	75	49	15
Mississippi	972	1,030	1,051	599	328	115	62	0	1
Missouri	2,199	2,368	2,361	1,549	650	162	79	23	23
North Carolina	1,955	2,207	2,347	1,805	447	95	71	22	99
Oklahoma	1,880	1,821	1,788	1,203	579	6	0	0	14
South Carolina	1,097	1,127	1,152	858	276	18	12	9	27
Tennessee	1,543	1,624	1,700	1,267	364	67	27	16	12
Texas	5,991	7,519	8,517	5,418	2,088	1,011	1,277	0	319
Virginia	1,811	1,969	2,079	1,699	356	24	122	52	3
West Virginia	1,015	840	784	582	174	26	30	8	0
SLC total	29,261	32,861	34,843	24,170	8,033	2,598	2,838	489	958
United States	84,538	93,273	97,382	67,291	23,800	5,707	6,448	2,128	3,780

Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), *Public Elementary/Secondary School Universe Survey, 1990-91, 2000-01, and 2005-06*.