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ABSTRACT

This document presents findings of a study to be used as a basis for determining the condition of the nation's school facilities. This report presents information on the amount of funding the nation's schools report is needed to improve inadequate educational facilities, and on the overall physical condition and prevalence of schools that need major repairs. Data were obtained from: (1) a survey of school officials in a nationally representative random sample of about 10,000 schools in over 5,000 school districts, which elicited a 78 percent school response rate; and (2) site visits at 41 schools in 10 school districts. The data project that the nation's schools need about \$112 billion to repair or upgrade facilities. Of this, \$11 billion (10 percent) is needed over the next 3 years to comply with federal mandates that require schools to make all programs accessible to all students and to remove or correct hazardous substances. About one-third of the schools, which were distributed nationwide, reported the need for extensive repair or replacement of one or more buildings. Almost 60 percent of the schools reported at least one major building feature in disrepair, requiring extensive repair or replacement. Most of these schools had multiple problems. In addition, about half reported at least one unsatisfactory environmental condition in their schools. Some district officials attributed the declining physical condition of schools to decisions by school districts to defer vital maintenance and repair expenditures due to lack of funds. Appendices contain 10 district profiles, photographs of the worst conditions, a list of project advisors, a copy of the questionnaire, data points for the report findings, acknowledgements, and GAO contacts. (LMI)

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GAO

February 1995

ED 378 703

# SCHOOL FACILITIES

## Condition of America's Schools



U.S. DEPARTMENT OF EDUCATION  
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EA026 488

**Health, Education, and  
Human Services Division**

B-259307

February 1, 1995

The Honorable Carol Moseley-Braun  
The Honorable Edward M. Kennedy  
The Honorable Claiborne Pell  
The Honorable Paul Simon  
The Honorable Paul Wellstone  
United States Senate

The nation has invested hundreds of billions of dollars in school infrastructure to create an environment where children can be properly educated and prepared for the future. Almost exclusively a state and local responsibility, this infrastructure requires maintenance and capital investment. However, public concern is growing that while laws require children to attend school, some school buildings may be unsafe or even harmful to children's health. Recently, for example, a federal judge would not allow the schools in our nation's capital to open on time until thousands of life-threatening fire code violations were corrected. Similarly, noncompliance with asbestos requirements kept over 1,000 New York City schools closed for the first 11 days of the 1993 school year. Although such situations may be well publicized, little information exists documenting the extent to which the nation's schools may lack the appropriate facilities to educate their students.

Widely quoted studies<sup>1</sup> conducted in recent years report that school facilities are in poor condition. While these studies documented some problems and provided much anecdotal information, they had different methodological problems limiting their usefulness. Further, the Department of Education has not assessed the condition of the nation's school facilities since 1965. Accordingly, you requested that we conduct a study that could be used as a basis for determining the condition of the nation's school facilities.

In response to your request and subsequent discussions with your office, this report presents national information on (1) the amount of funding that the nation's public elementary and secondary schools report needing to improve inadequate facilities and (2) the overall physical condition and prevalence of schools that need major repairs. Another report is forthcoming shortly that will report the location of and other demographic

<sup>1</sup>Education Writers Association, Wolves at the Schoolhouse Door: An Investigation of the Condition of Public School Buildings (Washington, D.C.: 1989); American Association of School Administrators, Schoolhouse in the Red: A Guidebook for Cutting Our Losses (Arlington, Va.: 1992).

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analyses for schools that need major repairs. These reports are the first in a series responding to your request.<sup>2</sup>

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## Results in Brief

Based on estimates by school officials in a national sample of schools, we project that the nation's schools need about \$112 billion<sup>3</sup> to repair or upgrade America's multibillion<sup>4</sup> dollar investment in facilities to good overall condition.<sup>5</sup> Of this, \$11 billion (10 percent) is needed over the next 3 years to comply with federal mandates that require schools to make all programs accessible to all students and to remove or correct hazardous substances such as asbestos, lead in water or paint, materials in underground storage tanks (UST), and radon or meet other requirements.

About two-thirds of America's schools reported that all buildings were in at least overall adequate condition, at most needing only some preventive maintenance or corrective repair. However, about 14 million students attend the remaining one-third of schools that reported needing extensive repair or replacement of one or more buildings.<sup>6</sup> These schools are distributed nationwide. Also, problems with major building features, such as plumbing, are widespread even among those schools reported in at least adequate condition. Almost 60 percent of America's schools reported at least one major building feature in disrepair, needing to be extensively repaired, overhauled, or replaced. Most of these schools had multiple problems. In addition, about half reported at least one unsatisfactory environmental condition in their schools, such as poor ventilation, heating or lighting problems, or poor physical security. Most of these schools also had multiple unsatisfactory environmental conditions. Some district officials we spoke to told us that a major factor in the declining physical condition of the nation's schools has been decisions by school districts to defer vital maintenance and repair expenditures from year to year due to lack of funds.

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<sup>2</sup>Subsequent reports will address (1) the capability of schools to meet education reform goals and the needs of 21st century education, (2) state role in school facilities, and (3) the relationship of facility conditions to select school and staffing data.

<sup>3</sup>Sampling error is  $\pm$  6.61 percent.

<sup>4</sup>No complete national data has been compiled for current replacement value of school buildings. Researchers have used the \$422 billion estimate made by the Education Writers Association in Wolves at the Schoolhouse Door.

<sup>5</sup>"Good" condition means that only routine maintenance or minor repair is required. "Overall" condition includes both physical condition and the ability of the schools to meet the functional requirements of instructional programs.

<sup>6</sup>Any one school may have more than one building.

## Background

Elementary and secondary education, the nation's largest public enterprise, is conducted in over 80,000 schools in about 15,000 districts. America's public schools serve over 42 million students. About 70 percent of schools serve 27 million elementary students; 24 percent serve 13.8 million secondary students; and 6 percent serve 1.2 million students in combined elementary and secondary and other schools.

America's traditional one-room school houses have been replaced by larger facilities that may have more than one building. Comprising classroom, administrative, and other areas like gymnasiums and auditoriums, a school may have an original building, any number of permanent additions to that building, and a variety of temporary buildings—each constructed at different times. Buildings that have been well maintained and renovated at periodic intervals have a useful life equivalent to a new building.

A number of state courts as well as the Congress have recognized that a high-quality learning environment is essential to educating the nation's children. Crucial to establishing that learning environment is that children attend school in decent facilities. "Decent facilities" was specifically defined by one court as those that are "...structurally safe, contain fire safety measures, sufficient exits, an adequate and safe water supply, an adequate sewage disposal system, sufficient and sanitary toilet facilities and plumbing fixtures, adequate storage, adequate light, be in good repair and attractively painted as well as contain acoustics for noise control...."<sup>7</sup> More recently, the Congress passed the Education Infrastructure Act of 1994,<sup>8</sup> in which it stated that "improving the quality of public elementary and secondary schools will help our Nation meet the National Education Goals."<sup>9</sup> Despite these efforts, studies and media reports on school facilities since 1965 indicate that many public elementary and secondary schools are in substandard condition and need major repairs due to leaking roofs, plumbing problems, inadequate heating systems, or other system failures.

<sup>7</sup>Pauley v. Kelly, No. 75-C1268 (Kanawha County Cir. Ct., W. Va., May 1982); Edgewood Independent School District v. Kirby, N. 362, 516 (259th Dist. Ct. Travis Cty., Tex., June 1, 1987), rev'd. 761 S.W. 2nd 859 (Ct. App. Tex., 1988), rev'd. 777 S.W. 2nd 391 (1989).

<sup>8</sup>The Education Infrastructure Act of 1994 was introduced by Senator Carol Moseley-Braun and was passed as part of Improving America's Schools Act (P.L. 103-382, Oct. 20, 1994).

<sup>9</sup>The National Education Goals are set forth in Goals 2000: Educate America Act (P.L. 103-227, March 31, 1994). The goals concern (1) school readiness; (2) school completion; (3) student achievement and citizenship; (4) teacher education and professional development; (5) math and science achievement; (6) adult literacy and lifelong learning; (7) safe, disciplined, and alcohol- and drug-free schools; and (8) parental participation.

Although localities generally finance construction and repair, with states playing a variety of roles,<sup>10</sup> federal programs have monies to help localities offset the impact of federal activities, such as Impact Aid,<sup>11</sup> improving accessibility for the disabled, and managing hazardous materials. However, these programs do not totally offset all costs. For example, prior GAO work found that federal assistance provided for asbestos management under the Asbestos School Hazard Abatement Act of 1984 did not meet the needs of all affected schools. From 1988 through 1991, the Environmental Protection Agency (EPA) received 1,746 qualified applications totaling \$599 million but only awarded \$157 million to 586 school districts it considered to have the worst asbestos problems. EPA was aware of the shortfall in federal assistance but believed that state and local governments should bear these costs.<sup>12</sup>

Because of the perception that federal programs—as well as current state and local financing mechanisms—did not begin to address the serious facilities needs of many of America's schools, the Congress passed the Education Infrastructure Act of 1994. The Congress then appropriated \$100 million for grants to schools for repair, renovation, alteration, or construction.

## Scope and Methodology

To determine the amount of funding needed to improve inadequate facilities and the overall physical condition and prevalence of schools that need major repairs, we surveyed a national sample of schools and augmented the survey with visits to selected school districts. We used various experts to advise us on the design and analysis of this project. (See app. III for a list of advisers.)

We sent the survey to a nationally representative stratified random sample of about 10,000 schools in over 5,000 school districts. The sample was designed for the Department of Education's 1994 Schools and Staffing Survey (SASS), which is sponsored by the National Center for Educational Statistics.

<sup>10</sup>School Construction Specification and Financing, National Survey Data 1994, MGT of America, Inc., prepared for Hawaii's State Department of Education (Tallahassee, Fla.: 1994). See also our forthcoming report on state role in school facilities.

<sup>11</sup>The Impact Aid program is administered by the Department of Education and provided \$12 million in fiscal year 1994 for constructing and renovating schools in districts that educate "federally connected" children, such as those whose parents live and/or work on military installations and Indian reservations.

<sup>12</sup>Toxic Substances: Information on Costs and Financial Aid to Schools to Control Asbestos (GAO/RCED-92-57FS, Jan. 15, 1992).

We asked about (1) the physical condition of buildings and major building features, such as roofs; framing, floors, and foundations; exterior walls and interior finishes; plumbing; heating, ventilation, and air conditioning (HVAC); and electric power; (2) the status of environmental conditions, such as lighting, heating, and ventilation; (3) the amount districts and schools had spent in the last 3 years or plan to spend in the next 3 years due to federal mandates that require managing or correcting hazardous materials problems and providing access to all programs for all students; and (4) an estimate of the total cost of needed repairs, renovations, and modernizations to put all buildings in good overall condition. (See app. IV for a copy of the questionnaire.)

We directed the survey to those officials who are most knowledgeable about facilities—such as facilities directors and other central office administrators of the districts that housed our sampled school buildings. Our analyses are based on responses from 78 percent of the schools sampled. Analyses of nonrespondent characteristics showed them to be similar to respondents. Findings from the survey have been statistically adjusted (weighted) to produce nationally representative estimates. All of the data are self-reported, and we did not independently verify their accuracy. (See the forthcoming report on location and demographic analyses of schools in need of major repair for a detailed description of our data collection methods and analysis techniques, confidence intervals, and the like.)

In addition, we visited 41 schools in 10 selected school districts varying in location, size, and minority composition. During these visits, we observed facility conditions and interviewed district and local school officials to obtain information on facilities assessment, maintenance programs, resources, and barriers encountered in reaching facility goals. (See app. I for profiles on the districts visited.)

We conducted this study from April 1994 to December 1994 in accordance with generally accepted government auditing standards.

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## Principal Findings

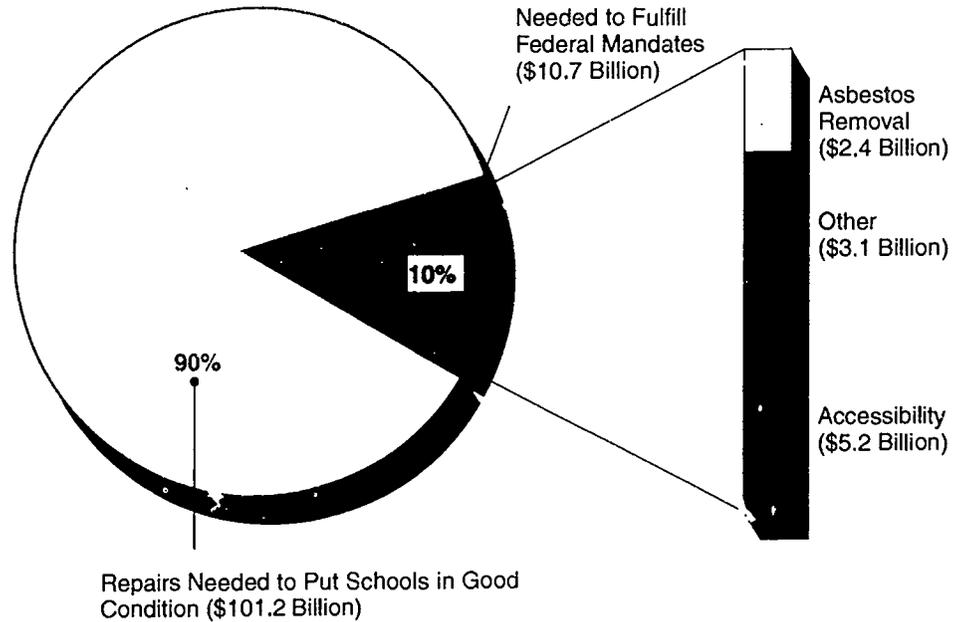
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### Schools Report Needing Billions to Improve Facilities

On the basis of our survey results, we estimate that the nation's schools need \$112 billion to complete all repairs, renovations, and modernizations required to restore facilities to good overall condition and to comply with

federal mandates. (See fig. 1.) This amount includes \$65 billion—about \$2.8 million per school—needed by one-third of schools for which one or more entire building needs major repairs or replacement. Another 40 percent of schools (those in adequate or better condition) reported needing \$36 billion—about \$1.2 million per school—to repair or replace one or more building features,<sup>13</sup> such as the plumbing or roof, or to make other corrective repairs.

**Figure 1: School Officials Report Billions Needed for Repairs and to Comply With Federal Mandates in the Next 3 Years**



Note: "Other" includes lead in water/paint, underground storage tanks, radon, and other mandated requirements.

Almost two-thirds of the schools reported needing \$11 billion—an average of \$.2 million per school—to comply with federal mandates over the next 3 years. Of this amount, about \$5 billion (54 percent) is needed to correct or remove hazardous substances, such as asbestos, lead in water or paint, materials contained in UST, and radon or meet other requirements while

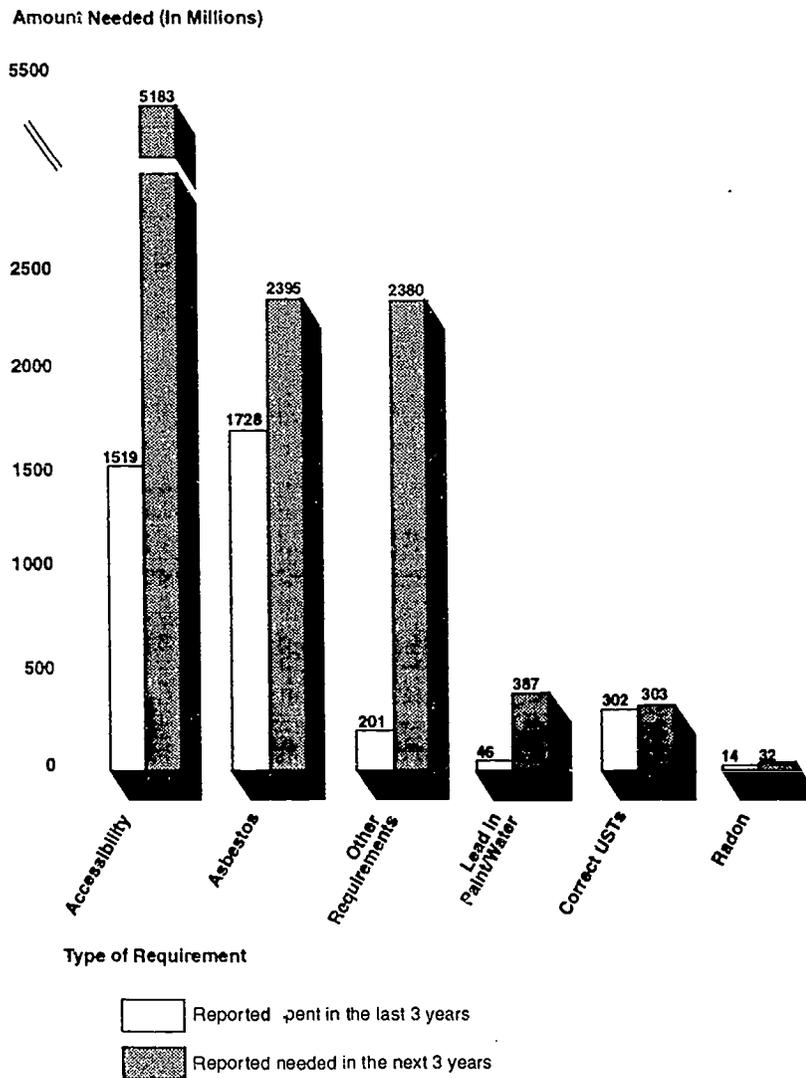
<sup>13</sup>Building features include roofs; framing, floors, and foundations; exterior walls, finishes, windows, and doors; interior finishes and trims; plumbing, heating, ventilation, and air conditioning; electrical power; electrical lighting; and life safety codes.

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about \$6 billion (55 percent) is needed by schools to make programs accessible to all students. (See fig. 1.)

This \$11 billion is in addition to the \$3.8 billion reported spent by three-quarters of all schools in the last 3 years to comply with federal mandates. (See fig. 2.) Of the money schools reported that they spent to comply with federal mandates, \$2.3 billion (60 percent) went to correct or remove hazardous substances—primarily asbestos—while \$1.5 billion (40 percent) went to make all programs accessible to all students.

**Figure 2: Amount Schools Reported Spending Over the Last 3 Years and Need in the Next 3 Years to Fulfill Federal Mandates**



Note: Other mandated requirements may include those governing pesticides or other chemicals and the like.

District officials we spoke with reported that they must also comply with many state and local mandates. For example, one urban district reported

how federal, state, and local regulations govern many of the same areas such as hazardous materials management and some aspects of indoor air quality. In addition, officials cited numerous state health and sanitation codes, state safety inspections for building features, as well as city zoning ordinances, local building codes, and historic preservation regulations. By 1992, the enormity of the requirements as well as decades of capital needs underfunding have resulted in only the 2 newest of their 123 schools complying with all current codes.

The district further described how these regulations and the accompanying cost could apply to the installation of air conditioning. For example, air conditioning could be installed in a building for \$500,000. However, this may also require an additional \$100,000 in fire alarm/smoke detection and emergency lighting systems as well as \$250,000 in architectural modifications for code compliance. Additionally, the location of outside chillers may be regulated by zoning and historic preservation ordinances.

In our visits to selected districts, officials from major urban areas reported needing billions to put their schools into good overall condition. (See table 1.)

**Table 1: Major Urban School Districts Report Needing Billions to Bring Schools Into Good Overall Condition**

Dollars in billions	
Urban school district	Amount needed
New York City	\$7.8
Chicago	2.9
Washington, D.C.	0.5
New Orleans	0.5

### Two-Thirds of Schools Adequate but Millions of Students Must Attend Other One-Third

School officials reported that two-thirds of the nation's schools are in adequate (or better) condition, at most needing only some preventive maintenance or corrective repair. However, about 14 million students must attend the remaining one-third (25,000 schools), in which at least one building is in need of extensive repair or replacement. Even more students, 28 million, attend schools nationwide that need one or more building feature extensively repaired, overhauled, or replaced or that

contain an environmentally unsatisfactory condition,<sup>14</sup> such as poor ventilation. (See tables 2 and 3.) These schools are distributed nationwide.

**Table 2: Millions of Students Attend Schools With Less-Than-Adequate Physical Conditions**

Building feature	Number of schools	Estimate of students affected
Roofs	21,100	11,916,000
Framing, floors, foundations	13,900	7,247,000
Exterior walls, finishes, windows, doors	20,500	11,524,000
Interior finishes, trims	18,600	10,408,000
Plumbing	23,100	12,254,000
Heating, ventilation, air conditioning	28,100	15,456,000
Electrical power	20,500	11,034,000
Electrical lighting	19,500	10,837,000
Life safety codes	14,500	7,630,000

Notes: See appendix IV for survey question.

Ranges for building or building feature condition were excellent, good, adequate, fair, poor, or replace. A building or building feature was considered in less-than-adequate condition if fair, poor, or replace was indicated.

**Table 3: Millions of Students Attend Schools With Unsatisfactory Environmental Conditions**

Environmental condition	Number of Schools	Number of students affected
Lighting	12,200	6,682,000
Heating	15,000	7,888,000
Ventilation	21,100	11,559,000
Indoor air quality	15,000	8,353,000
Acoustics for noise control	21,900	11,044,000
Physical security	18,900	10,638,000

Note: See appendix IV for survey question.

## Physical Condition

Specifically, about one-third of both elementary and secondary schools reported at least one entire building—original, addition, or temporary—in need of extensive repairs or replacement. (See fig. 3 and pictures in app. II.) About 60 percent (including some schools in adequate condition)

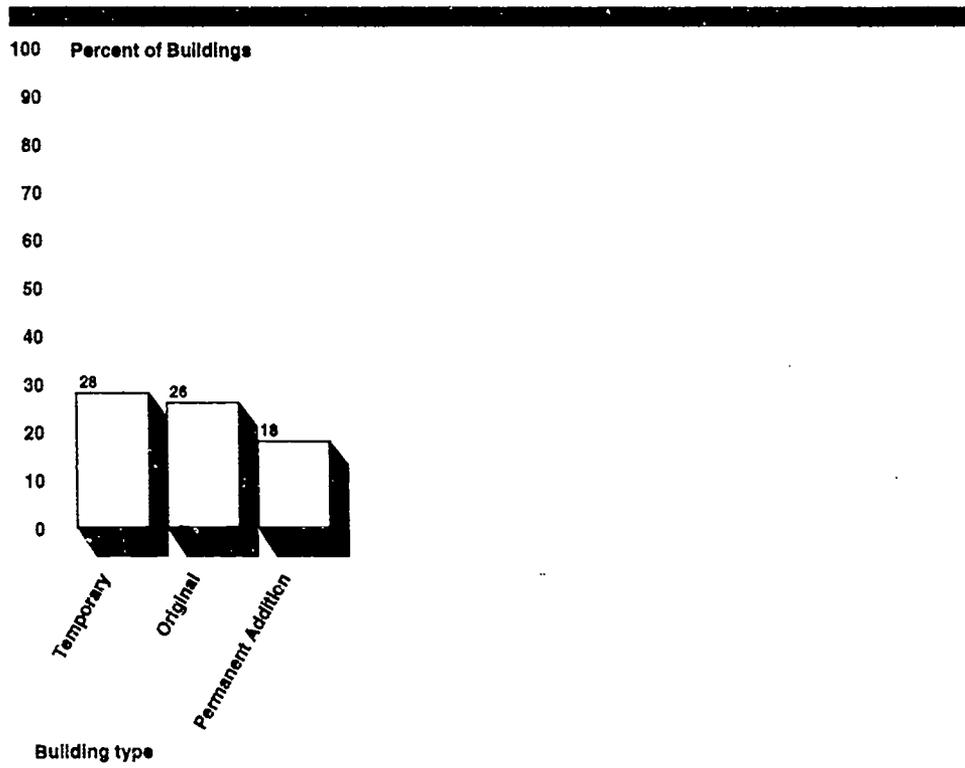
<sup>14</sup>Environmental factors include lighting, heating, ventilation, indoor air quality, acoustics for noise control, energy efficiency, and physical security of buildings. Although flexibility of instructional space is included as an environmental factor in our questionnaire (see app. IV), we are not addressing those issues in this report. They will be addressed in a forthcoming report.

reported that at least one building feature needed extensive repair, overhauling, or replacement; and three-quarters of those schools needed multiple features repaired. Features most frequently reported in need of such repairs were HVAC; plumbing; roofs; exterior walls, finishes, windows, and doors; electrical power; electrical lighting; and interior finishes and trims. (See fig. 4 and pictures in app. II.) Further, while 41 percent of all schools reported unsatisfactory energy efficiency, 73 percent of those schools with exterior walls, windows, and doors and 64 percent of those with roofs in need of major repair reported unsatisfactory energy efficiency. These unrepaired features not only reduce energy efficiency but may also have an adverse environmental effect on students. As one Chicago elementary school principal told us, "Heat escapes through holes in the roof; the windows leak (the ones that are not boarded up) and let in cold air in the winter so that children must wear coats to class." Following are some other examples:

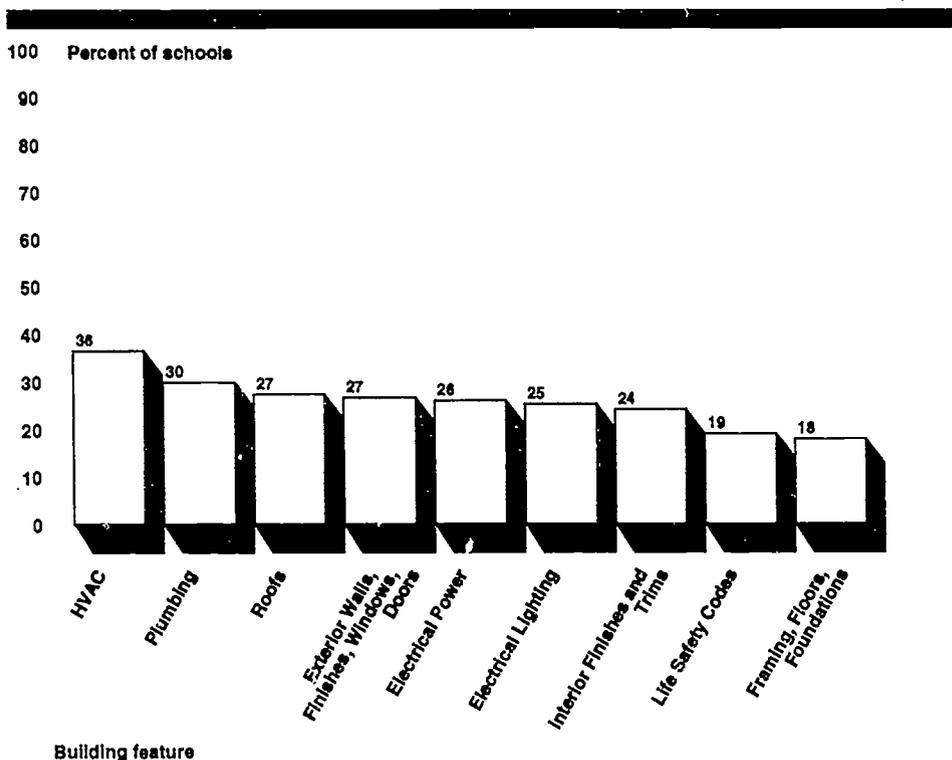
- In New Orleans, the damage from Formosan termites has deteriorated the structure of many schools. In one elementary school, they even ate the books on the library shelves as well as the shelves themselves. (See app. II.) This, in combination with a leaking roof and rusted window wall, caused so much damage that a large portion of the 30-year-old school has been condemned. The whole school is projected to be closed in 1 year.
- At a Montgomery County, Alabama, elementary school, a ceiling weakened by leaking water collapsed 40 minutes after the children left for the day.
- Water damage from an old (original) boiler steam heating system at a 60-year-old junior high school in Washington, D.C., has caused such wall deterioration that an entire wing has been condemned and locked off from use. Steam damage is also causing lead-based wall paint to peel.
- Raw sewage backs up on the front lawn of a Montgomery County, Alabama, junior high school due to defective plumbing.
- A New York City high school built around the turn of the century has served as a stable, fire house, factory, and office building. The school is overcrowded with 580 students, far exceeding the building's 400 student capacity. The building has little ventilation (no vents or blowers), despite many inside classrooms, and the windows cannot be opened, which makes the school unbearably hot in the summer. In the winter, heating depends on a fireman's stoking the coal furnace by hand.
- In Ramona, California, where overcrowding is considered a problem, one elementary school is composed entirely of portable buildings. It had neither a cafeteria nor auditorium and used a single relocatable room as a library, computer lab, music room, and art room.

- Last year, during a windstorm in Raymond, Washington, the original windows of an elementary school built in 1925 were blown out, leaving shards of glass stuck in the floor. The children happened to be at the other end of the room. This wooden school is considered a fire hazard, and although hallways and staircases can act as chimneys for smoke and fire, the second floor has only one external exit.
- In rural Grandview, Washington, overcrowded facilities are a problem. At one middle school, the original building was meant to house 450 students. Two additions and three portables have been added to accommodate 700 students. The school has seven staggered lunch periods. The portables have no lockers nor bathrooms and are cold in the winter and hot in the spring/summer.
- In a high school in Chicago, the classroom floors are in terrible condition. Not only are floors buckling, so much tile is loose that students cannot walk in all parts of the school. The stairs are in poor condition and have been cited for safety violations. An outside door has been chained for 3 years to prevent students from falling on broken outside steps. Peeling paint has been cited as a fire hazard. Heating problems result in some rooms having no heat while other rooms are too warm. Leaks in the science lab caused by plumbing problems prevent the classes from doing experiments. Guards patrol the outside doors, and all students and visitors must walk through metal detectors before entering the school. (See app. II and fig. 6.)

**Figure 3: Percent of Buildings Reported in Less-Than-Adequate Condition**



**Figure 4: Building Repairs Reported Needed in America's Schools**



Note: Life safety codes could include such things as stairwells, adequate exits, panic hardware, fire extinguishers, rated corridor doors, fire walls, sprinkler systems, and the like.

During our school visits, we found wide disparities between schools in the best or even average condition and schools in the worst condition, and these schools were sometimes in the same district.

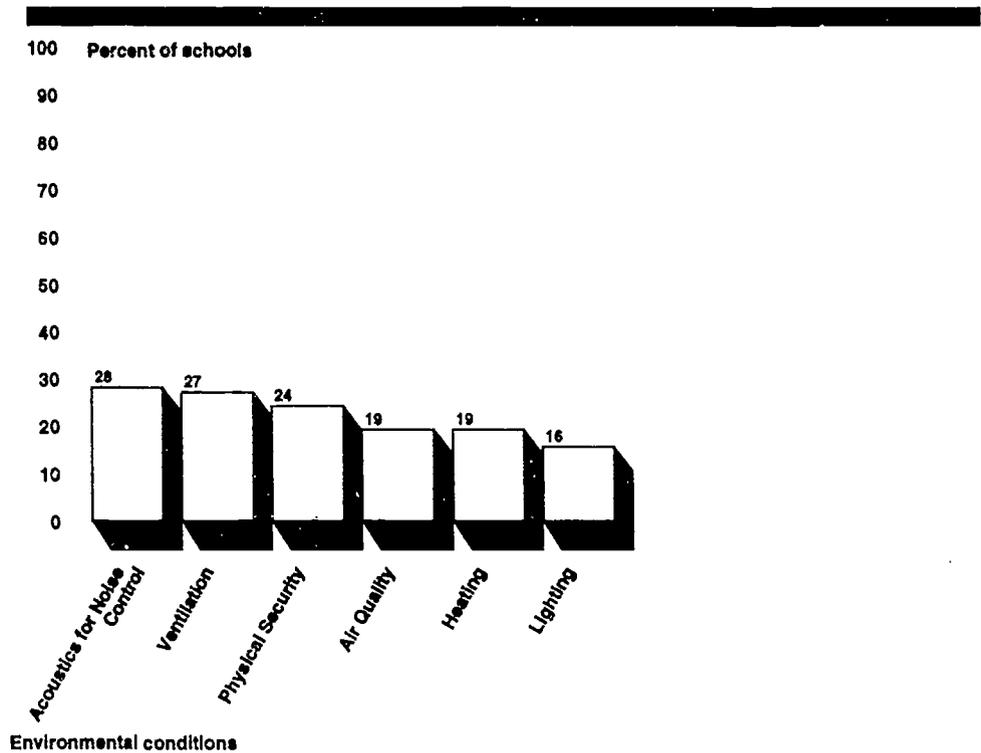
**Environmental Conditions**

About 50 percent of the schools reported at least one unsatisfactory environmental condition; while 33 percent reported multiple unsatisfactory conditions. Of those, half reported four to six unsatisfactory conditions. Those conditions most frequently reported to be unsatisfactory were acoustics for noise control, ventilation, and physical security. (See fig. 5.) Additionally, three-quarters of schools responding had already spent funds during the last 3 years on requirements to remove or correct hazardous substances such as asbestos (57 percent), lead in water or paint



(25 percent), materials in USTs such as fuel oil (17 percent), radon (18 percent), or other requirements (9 percent). Still two-thirds must spend funds in the next 3 years to comply with these same requirements—*asbestos* (45 percent), *lead* (18 percent), *UST* (12 percent), *radon* (12 percent), or *other requirements* (8 percent).

**Figure 5: Percentage of Schools Reporting Unsatisfactory or Very Unsatisfactory Environmental Factors**



We saw numerous examples of unsatisfactory environmental conditions during our school visits:

- In the Pomona, California, school district, the student body has increased 37 percent over the last 10 years. Some schools must have five staggered lunch periods to accommodate all students. As a result of overcrowding, in one elementary school, students are housed in temporary buildings installed in 1948 that are unattractive, termite ridden, dark, and under-equipped with electrical outlets. The temporary buildings get very hot as well as very cold at times because of poor insulation.

- A Raymond, Washington, high school—a three-story structure with walls of unreinforced concrete with roof and floor not adequately secured to the walls that may not withstand earthquakes—contains steam pipes that are not only extremely noisy but provide too little or too much heat from room to room.
- In Richmond, Virginia, schools in the district close early in September and May because the heat, combined with poor ventilation and no air conditioning, creates health problems for students and teachers, especially those with asthma.
- A Chicago elementary school, built in 1893 and not painted for many years, has walls and ceilings with chipping and peeling lead-based paint, asbestos, and several boarded-up windows. Some rooms have inadequate lighting due to antiquated lighting fixtures that are no longer manufactured, so bulbs could not be replaced when burned out. One section of the school has been condemned due to structural problems. However, the auditorium and gym in this area are still used. The school was scheduled for closure in 1972 but remained open due to community opposition to the closure with promises of renovation by the district. (See app. II.)

### Insufficient Funds Contribute to Declining Physical Conditions

District officials we spoke to attributed the declining physical condition of America's schools primarily to insufficient funds, resulting in decisions to defer maintenance and repair<sup>16</sup> expenditures from year to year. This has a domino effect. Deferred maintenance speeds up the deterioration of buildings, and costs escalate accordingly, further eroding the nation's multibillion dollar investment in school facilities. For example, in many schools we visited, unrepaired leaking roofs caused wall and floor damage that now must also be repaired. New York school officials told us that, while a typical roof repair is \$600, a full roof replacement costs \$300,000, and painting and plastering 10 rooms on a top floor that has been damaged by water infiltration costs \$67,500 plus \$4,500 to replace damaged floor tiles. In other words, for every \$1 not invested, the system falls another \$620 behind. In addition, unrepaired roofs cause energy costs to increase as heat escapes through holes, further depleting already limited funds. Further, due to lack of routine maintenance in the Chicago district, many schools have not been painted since they were painted 20 years ago with lead-based paint.

<sup>16</sup>We are referring to maintenance as the upkeep of property and equipment while repair is work to restore damaged or worn-out property to a normal operating condition.

- In an elementary school in New York City, repair problems had not been addressed since the school was built 20 years ago. Problems that could have been addressed relatively inexpensively years ago have now caused major problems such as sewage leaking into the first grade classrooms, a leaking roof that is structurally unsound, and crumbling walls.
- Similarly, in Chicago, we visited an elementary school whose roof, the principal told us, had needed replacement for 20 years. Because it had only been superficially patched, rather than replaced, the persistent water damage had caused floors to buckle and plaster on the walls and ceilings to crumble. It had also flooded parts of the electric wiring system. One teacher in this school would not turn on her lights during rainstorms for fear of electrical shock; in another classroom the public address system had been rendered unusable. Buckets had to be placed on the top floor of the school to catch the rain.

Some district officials we spoke with reported that they had difficulty raising money for needed repairs and renovation due to an anti-tax sentiment among voters resulting in the failure of bond issues as well as passage of property tax limitations. About one in three districts reported that they have had an average of two bond issues fail in the past 10 years. Further, school officials told us that often bond proceeds are far less than needed for repairs. For example, in Pomona, California, a \$62.5 million bond issue was submitted to the voters after a survey indicated that the \$200 million needed for repairs would be rejected. At the time of our survey, 6 percent of districts had a bond issue before the electorate. However, as one survey respondent commented, "the current public attitudes about the economy and education are generally so negative that passing a bond referendum is a fantasy." Other states have reduced school funding by passing property tax limitations. One survey respondent reported, "The state's contribution to local schools has dropped by 40 percent over the last few years..." According to another survey respondent, "This is a 1913 building which many of the taxpaying citizens feel was good enough for them...it is looked at as a monument in the community. Unless some form of outside funding is arranged, the citizens may never volunteer to replace this building since it will require raising their taxes."

Further, districts reported a lack of control over some spending priorities as they must fund a large portion of federal mandates for managing or correcting hazardous materials as well as making all programs accessible to all students. A recurring theme in comments from survey respondents was, "Unfunded federal and state mandates are one of the prime causes of

lack of funds for replacing worn-out heating and cooling equipment, roofs, etc...." Another survey respondent stated, "The ADA requirements were a major reason we had to replace two older schools. These costs, when added to other costs for renovations and modifications, resulted in overall costs for repairs which exceeded the costs for new facilities." On the other hand, Chicago school officials told us that due to limited funds and the installation of one elevator costing \$150,000, very few schools are able to provide program access to all students.

In looking at the uses of bond proceeds in the districts, the average amount of the most recently passed bond issue was \$7 million. While about 3 percent was provided for federal mandates, 54 percent was provided for school construction and 38 percent for repairing, renovating, and modernizing schools. The remaining 5 percent was spent for purchases of computers and telecommunications equipment.

Districts also said that they must sometimes divert funds initially planned for facilities maintenance and repair to purchase additional facilities due to overcrowding. This has resulted from both demographic and mandated changes. For example, additional funds were required for construction and purchase of portables due to large immigrant influxes as well as population shifts in districts or climbing enrollment due to overall population increases. Further, some mandated school programs, such as special education, require additional space for low pupil-teacher ratios.

One survey respondent described the competing demands on limited funds as follows: "Our school facilities are not energy efficient or wired for modern technology. Our floor tile is worn out and the furniture is in poor shape. Our taxpayers don't want to put any more in schools. Our teachers want better pay. Our students and parents want more programs and technology. HELP!!!"

### Building Age—by Itself—Is Not Significant

While some studies cite building age as a major factor contributing to deteriorating conditions, older buildings often have a more sound infrastructure than newer buildings. Buildings built in the early years of this century—or before—frequently were built for a life span of 50 to 100 years while more modern buildings, particularly those built after 1970, were designed to have a life span of only 20 to 30 years. A study of English school facilities found that the schools built during the 1960s and 1970s were built quickly and cheaply and have caused continuing maintenance

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problems.<sup>16</sup> As one survey respondent commented, "the buildings in this district are approximately 20 years old, but the exterior siding was inferior from the beginning...it has deteriorated and ruptured extensively...." A principal in Chicago stated about her 1970s building, "Our most pressing problem is that the school is crumbling down around us.... From the beginning, this building has had serious roof problems. Water leaks throughout the building from the roof and from the walls. Pools of water collect in the floors of the classrooms. One wall has buckled and is held in place with a steel stake. The windows leak and let cold air in...." According to some school officials, the misperception about the age factor has been reinforced because older buildings are sometimes not maintained but allowed to deteriorate until replaced.

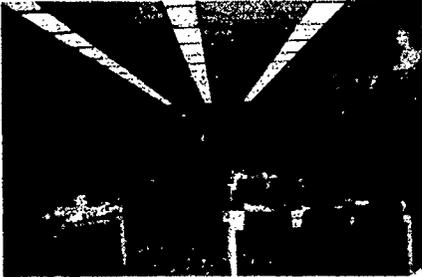
Three schools we visited in Chicago presented a good example of the difficulty of using age to define condition. All three were built between 1926 and 1930 and had the same design and basic structure. Today, their condition could not be more different. One school had been allowed to deteriorate (had received no renovation since the 1970s) until it reached a point where local school officials classified it as among those schools in the worst physical condition. The second school had received some recent renovation because of community complaints about its condition and was classified as a typical school for the school district. The third school had been well maintained throughout the years, and now school officials classified it as a school in the best physical condition. (See pictures contrasting the three schools in fig. 6.)

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<sup>16</sup>Repair and Maintenance of School Buildings, National Audit Office, Report by the Controller and Auditor General, London, England, Ordered by the House of Commons to be printed July 25, 1991.

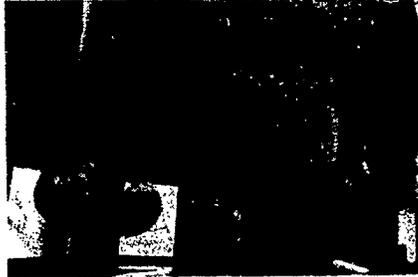
Figure 6: Same Age (60+), Same Design; Now Examples of Best, Typical, and Worst of Chicago Schools

Best



Multi-Media Room

Typical



Library Ceiling Damage Caused by Leaking Roof

Worst



Library Ceiling and Wall Damage Caused by Leaking Roof



First Floor Hallway



Major Ceiling Damage From Leaking Roof Causing Crumbling Plaster in Classroom

## Conclusions

Two-thirds of America's schools report that they are in adequate (or better) overall condition. Still, many of these schools need to repair or replace one or more building feature, manage or correct hazardous materials, or make all programs accessible to all students. Other schools have more serious problems. About 14 million students are required to attend the remaining one-third of schools that have one or more entire buildings in less-than-adequate condition, needing extensive repair or replacement. These schools are distributed nationwide.

Our survey results indicate that to complete all repairs, renovations, or modernizations needed to put school buildings into good overall condition and comply with federal mandates would require a projected investment of \$112 billion. Continuing to delay maintenance and repairs will defer some of these costs but will also lead to the need for greater expenditures as conditions deteriorate, further eroding the nation's multibillion dollar investment in school infrastructure. In addition, if maintenance continues

to be deferred, a large proportion of schools that are in only adequate condition and need preventive maintenance or corrective repair will soon deteriorate to less-than-adequate condition.

As one survey respondent observed, "It is very difficult to get local communities to accept this burden (facilities construction/renovation). Our district, one of the wealthiest in the state, barely passed a bare bones budget to renovate. It must be a national crisis."

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## Agency Comments

We spoke with Department of Education officials at the National Center for Educational Statistics who reviewed a draft of this report and found the report well done and generally approved of the approach. In addition, staff from the Office of the Undersecretary provided us with technical comments that we incorporated into our report. They did not comment, however, on our methodology, reserving judgment for the detailed technical appendix in our forthcoming report.

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Copies of this report are also being sent to appropriate House and Senate committees and all members, the Secretary of Education, and other interested parties.

If you have any questions about this report, please contact Eleanor L. Johnson, Assistant Director, who may be reached at (202) 512-7209. A list of major contributors to this report can be found in appendix VII.



Linda G. Morra  
Director, Education and  
Employment Issues

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**Abbreviations**

EPA	Environmental Protection Agency
HVAC	heating, ventilation, air conditioning
SASS	Schools and Staffing Survey
UST	underground storage tank

# District Profiles

We visited 41 schools in 10 selected school districts that varied by location, size, and ethnic composition. During these visits, we observed facility conditions and interviewed district and local school officials to get information on facilities assessment, maintenance programs, resources, and barriers encountered in reaching facilities goals. We asked officials to show us examples of “best,” “typical,” and “worst” schools and verified the reliability of these designations with others. In some small districts, we visited all schools.

## Chicago, Illinois

### Overview

Table I.1: Chicago, Illinois

Enrollment	400,000
Number of schools	553
Racial composition	56% black 30% Hispanic 14% other
Students on free or reduced lunch	67%
Type	Urban
Minimum estimated to make all repairs	\$2.9 billion

Chicago is a large urban district whose school officials rated their school facilities, overall, as in fair to poor condition. Widespread disparities exist, however, between schools in the best and worst condition. About 15 percent of the schools were built before 1900, and over half are more than 50 years old. Slightly more than 25 percent were built during the fifties and sixties to handle the baby boom, and 20 percent were built during the last 25 years. However, a number of the newer structures are temporary buildings or “demountables” (large sections of prefabricated frames put together on a cement slab). These buildings now show major structural damage, and the seams of the buildings are splitting apart. Permanent buildings also have structural damage. For example, we visited two schools that had chained exit doors to prevent students from either being hit by debris from a cracking exterior brick wall—in a “typical” Chicago school—or falling on collapsing front steps—in a “worst” school.

Schools in the worst condition need new exterior building envelopes (roofs, tuck pointing, windows, and doors), have asbestos or lead-based paint, suffer ceiling and floor problems from leaky roofs, and need to replace outdated electrical and plumbing systems. Schools in the best condition tend to be newer, need few or no repairs, have a more flexible space design, contain electrical systems capable of housing new technology, have air conditioning, and offer brightly colored walls and low ceilings. However, condition does not depend on age alone; three schools we visited typifying best, worst, and typical were all over 60 years old.

Officials report that their biggest facility issues are deferred maintenance and overcrowding. They say that a shortage of funds, caused by a lack of taxpayer support, hinders the district from either upgrading or maintaining its facilities. About 30 to 40 percent of needed repairs have been deferred from year to year for decades with priority given to repairs that ensure student safety. Additionally, some federal mandates—particularly lead and asbestos removal abatement programs—have caused major expenditures as most schools built between 1920 and 1979 contain asbestos, and all schools were painted with lead paint before 1980.

Overcrowding began in the seventies with a great increase in the Hispanic population. However, in some instances, individual schools may be overcrowded, while neighboring schools remain underenrolled. One official told us that this is due in part to the problems caused by gang “turf” and the threat of extreme violence or even death to individuals who wander into “enemy” territory. School officials are reluctant to reassign students if the receiving schools are in territory controlled by a different gang than that of the overcrowded school the children presently attend.

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## Facilities Financing

Officials estimate that they need \$2.9 billion to put schools in good overall condition. While the primary source of school funding is local property taxes, smaller amounts of state and federal funds are also used. Although the 1994 school facilities budget is \$270 million (10 percent of the total education budget), only about \$50 million is used for maintenance and repair. To obtain funds for building and renovating, the district relies on bonds, we were told, as politicians hesitate to ask anti-tax voters for even a minimal increase in taxes.

## Grandview, Washington

### Overview

Table I.2: Grandview, Washington

Enrollment	2,800
Number of schools	5
Racial composition	67% Hispanic 32% white 1% other
Students on free or reduced lunch	65%
Type	Small town, rural
Minimum estimated to make all repairs	\$24.5 million

This small agricultural town in rural Washington has five schools. While the high school, built in 1978, is in excellent condition, the other four schools, built between 1936 and 1957, need to be totally renovated or replaced over the next 10 to 20 years. In addition, a student population increasing annually at about 4 percent since 1986 has resulted in overcrowding. Although Grandview's middle school was built to house 475 students, current enrollment stands at about 700. One elementary school designed for 375 students now has 464. Another crowded elementary school converted the gymnasium into two classrooms. The district currently has 14 portable classrooms in use and anticipates needing 4 more in the next 3 years.

### Facilities Financing

Grandview schools have an annual budget of \$13.5 million, about 2 percent of which goes for maintenance. They receive funding from local tax levies and from the state and general apportionment of about \$4,000 per student. They are also eligible for state equalization funding contingent on passing their levy. New construction and renovation are funded by bond issues and state funding assistance contingent on passing the bond issue. An \$11 million bond issue to build a new middle school to alleviate crowding failed in February 1994 and again in the fall of 1994. Funding problems include public resistance to raising taxes and decreased state assistance

due to a reduction in the timber sales on the public lands that support school construction funding.

## Montgomery County, Alabama

### Overview

**Table I.3: Montgomery County,  
Alabama**

Enrollment	35,000
Number of schools	54
Racial composition	45% black 55% white
Students on free or reduced lunch	58%
Type	Urban
Minimum estimated to make all repairs	\$150 million

Many of Montgomery County school facilities are old but are generally in fair condition. However, approximately 10 percent of the schools need to be replaced. In the last 20 years, about 8 schools were built. The oldest building is a portion of an elementary school built in 1904.

Schools built during the early 1900s are not air conditioned and need new roofs. At one elementary school we visited, a ceiling recently collapsed just 40 minutes after the children left for the day. Some schools have had students in "temporary" buildings for years. In addition, many repairs and renovations are needed to maintain schools, accommodate overcrowding and comply with federal mandates.

Overcrowding problems have resulted in the use of 284 portable buildings to house students. In the 1980s, Montgomery County's student population increased, creating the need for new elementary schools. Court-ordered desegregation also increased student populations at some schools through voluntary student movement, through a minority to majority transfer process. This process allowed minority students to attend any school in the county with a more than 50-percent majority of white students. Primarily, we were told, minority students chose to attend schools on the

east side of town because the school facilities were better equipped and nicer. To provide adequate instructional space for the influx of children at the east side schools, portable rooms were added.

### Facilities Financing

Lack of money prohibits the district from making needed facilities repairs. The operations and maintenance budget has dropped 10 percent in the past 3 to 4 years. The current facilities budget is \$1 million of a \$6 million total education budget. The district has no capital improvement budget. On June 28, 1994, voters defeated a local tax referendum for bond money the county had planned to use to remove all portable buildings, make all needed repairs and renovations, and build new schools located so that children from the west side of town would not have to travel so far for better school accommodations.

## New Orleans, Louisiana

### Overview

Table I.4: New Orleans, Louisiana

Enrollment	85,000
Number of schools	124
Racial composition	90% black 10% other
Students on free or reduced lunch	85%
Type	Urban
Minimum estimated to make all repairs	\$500 million

New Orleans' public schools are rotting away. Suffering from years of neglect due to lack of funds for repair and maintenance, New Orleans students attend schools suffering from hundreds of millions of dollars' worth of uncorrected water and termite damage. Fire code violations are so numerous that school officials told us, "We don't count them—we weigh them."

Most of the buildings have no air conditioning, though the average morning relative humidity in New Orleans is 87 percent. One high school recently had an electrical fire that started in the 80-year-old timbers in the roof. No one was hurt but the students were sent to other buildings for the rest of the year. An elementary school, built in 1964, was condemned and closed in 1994 due to water and termite damage.

### Facilities Financing

New Orleans uses local property taxes and federal asbestos loans to upgrade its buildings. The district has submitted five bond issues to the voters in the last 20 years, for a total of \$175 million, but only two of the bond issues have passed. The school facilities annual budget in 1994 is \$6 million or 2 percent of the total education budget. This has decreased in the past 10 years from \$9 million (4 percent of the education budget).

## New York, New York

### Overview

Table I.5: New York, New York

Enrollment	700,000
Number of schools	1,229
Racial composition	38% black 36% Hispanic 19% white 7% Asian
Students on free or reduced lunch	64%
Type	Urban
Minimum estimated to make all repairs	\$7.8 billion

New York has extremely diverse school facilities—while conditions are generally bad, some schools are models for 21st century learning. The “best” school we saw—a \$151 million state-of-the-art science high school—was only blocks away from an example of the “worst”—another high school in a 100-year-old building that had served as a stable, fire house, factory, and office building. This high school’s elevators do not work, its interior classrooms have no windows, it has little ventilation and

no air conditioning, and its heating depends on a fireman's stoking the coal furnace by hand.

Overcrowding and generally poor condition of the school buildings—many over 100 years old and in need of major renovation and repair—are New York's main facilities problems. Since the fiscal crisis in the 1970s, maintenance and repair of the city's school buildings have been largely neglected. Twenty years of neglect compound problems that could have been corrected much more cheaply had they been corrected earlier. As the city seeks the funds for repairing leaking roofs, plumbing problems that cause sewage to seep into elementary school classrooms, and ceilings that have caved in, its school enrollment is dramatically increasing. After losing more than 10 percent of its population in the sixties, a vast migration of non-English speaking residents in the last 3 years has resulted in overcrowding in 50 percent of New York's schools. One school is operating at over 250 percent of capacity. Because classrooms are unavailable while under repair, in some cases improvements are postponed.

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## Facilities Financing

The New York City schools' maintenance, repair, and capital improvement budget is approved annually by the city council. While the state provides some loan forgiveness, the city is largely responsible for all of the costs.

Each school is allocated a maintenance and repair budget based solely on square footage. As a result, schools—even new schools—frequently cannot repair problems as they arise, which often leads to costly repairs in the future. In 1988, the estimated cost of upgrading, modernizing, and expanding the school system by the year 2000 was over \$17 billion. The total capital backlog at that time was over \$5 billion. The capital plan for fiscal year 1990 through fiscal year 1994 was funded at \$4.3 billion—barely 20 percent of the amount requested.

## Pomona, California

### Overview

Table I.6: Pomona, California

Enrollment	29,000
Number of schools	35
Racial composition	67% Hispanic 13% black 12% white 8% Asian-Pacific
Students on free or reduced lunch	70%
Type	Suburban
Minimum estimated to make all repairs	\$200 million

Although district officials generally describe their school facilities overall as “adequate to fair,” some individual schools are excellent while others have severe problems. The oldest school was built in 1932. The worst schools were built in the mid-1950s to early 1960s and face many repair problems—poor plumbing, ventilation, lighting, leaking roofs, and crumbling walls. In contrast, one new school that opened last fall is state of the art. Only three schools have been built in the last 20 years.

Like many school districts in California, Pomona’s biggest facilities issue is overcrowding. Because the student body has increased 37 percent in the last 10 years, the district relies on what school officials call “God-awful” portables—bungalows that are ugly, not air conditioned, termite-ridden, dark, and have too few electrical outlets. The portables generally provide sufficient classroom space but leave schools suffering from a severe lack of common-use areas and space for student movement. For example, some schools have to schedule five lunch periods to handle overcrowded campuses.

### Facilities Financing

In 1991 the district passed a \$62.5 million bond measure—significantly short of the \$200 million it says it needs to put its schools in good overall condition. Officials attribute their facilities’ financial problems to state cutbacks, the passage of Proposition 13 in 1979, which greatly reduced local tax revenues, and unfunded federal mandates that drain the district’s

budget. As a result, the district must function without enough facilities staff and continue to defer maintenance and repair while using temporary "band-aid" measures. However, the passage of Pomona's 1991 bond measure and two 1992 state bond measures increased the district's capital improvement budget to \$14 million or about 16 percent of the district's \$85 million education budget. Pomona's maintenance and repair budget is usually about 2 percent of the education budget.

## Ramona, California

### Overview

Table I.7: Ramona, California

Enrollment	6,500
Number of schools	9
Racial composition	78% white 18% Hispanic 4% other
Students on free or reduced lunch	35%
Type	Small town, rural
Minimum estimated to make all repairs	\$4 million

Ramona is a small but growing rural community in central San Diego County. Four of its nine schools are more than 25 years old; its oldest was built over 50 years ago. Although Ramona's oldest schools tend to be well constructed, they suffer from seriously deteriorating wiring and plumbing and inadequate or nonexistent heating, ventilation, air conditioning, and communications systems. The school district also suffers from the lack of an adequate, stable funding source that would allow it to modernize and expand its facilities. Consequently, most of Ramona's schools are underbuilt and must rely on portables for overcrowding. One elementary school we visited consisted only of portables, with no cafeteria nor auditorium. One portable served as a library, computer lab, music room, and art room. In contrast, two new schools built in the last 5 years are bright, have flexible space, and are wired for the latest technology. The portables are difficult to maintain, and repair costs are higher in the long run than if real additions had been built in the first place. The most

common repair needs in Ramona's schools are roofs, signal systems (alarms, bells, and intercoms), and paving.

## Facilities Financing

Officials attribute its facilities' funding problems to the community's inability to pass a bond issue—two attempts in the past 8 years have failed—their small rural district's competitive disadvantage in applying for state funds, and the state's emphasis on building new schools rather than retrofitting.

The district's facilities budget varies each year but comprises (1) a new building program that uses matching state funds, (2) a routine maintenance budget that is about 2 percent of the district's \$30 million education budget (\$600,000), and (3) a deferred maintenance budget that is 0.5 percent of the education budget (\$150,000) and is supposed to be matched by the state but rarely is in full.

## Raymond, Washington

### Overview

Table I.8: Raymond, Washington

Enrollment	760
Number of schools	3
Racial composition	69% white 21% Asian 5% Hispanic 5% Native American
Students on free or reduced lunch	50%
Type	Small town, rural
Minimum estimated to make all repairs	\$14 million

Raymond is a western Washington town that has not recovered from the timber industry downturn of the early 1980s. The town and student populations have declined, and the demographics have changed dramatically. All three Raymond schools are old and two may be unsafe. The high school was built in 1925. It is a three-story structure of unreinforced concrete that may not safely withstand the possible

earthquakes in the area. In addition, the building's systems are old and inadequate. Steam pipes are noisy and provide too little or too much heat from room to room. One 1924 elementary school is built of wood—a potential fire hazard—and will be closed in 2 years. A third school was built during the 1950s and will receive a major remodeling and new addition next year.

### Facilities Financing

Raymond recently passed its first bond issue since the 1950s to fund the remodeling of and addition for an elementary school. A bond issue proposed in 1990 to build a new facility for grades kindergarten to 12 failed. The public does not want to spend money on school maintenance and construction, and the tax base is too low to raise adequate funding. According to the school superintendent, the Columbia Tower (a Seattle skyscraper) has a higher assessed value than the entire district of Raymond. The district's budget is \$4 million, which is made up of local levies and state funding. Over the next 2 years, they will ask for a levy increase of \$75,000, specifically for needed repairs.

## Richmond, Virginia

### Overview

Table I.9: Richmond, Virginia

Enrollment	28,000
Number of schools	58
Racial composition	88% black 12% other
Students on free or reduced lunch	68%
Type	Urban
Minimum estimated to make all repairs	\$100 million

Renovation presents the biggest facility issue for the Richmond schools. Their 58 buildings are visually appealing yet old-fashioned compared with 21st century learning standards. Many, if not most, of the district's renovation needs are due to the buildings' age: The average building was built around the time of World War II. Ninety percent of the buildings lack

central air conditioning; many schools close early in September and May/June because the heat and poor ventilation creates breathing problems for the children.

In the past 20 years, 20 schools have been closed; only 2 new schools have opened.

### Facilities Financing

Richmond is a poor city: the average family income is \$17,700. The facilities director says he usually asks for \$18 million but only gets \$3 million and about 3 percent of the education budget for maintenance. He says city planners and voters view the buildings as architectural landmarks and think of them in terms of 1950s standards of learning. Also, the money he would have used for renovations has been spent on meeting "federal codes."

The district has tried twice to get the state to match funds for deferred maintenance but was rejected each time. New construction gets funded through bond issues.

## Washington, D.C.

### Overview

Table I.10: Washington, D.C.

Enrollment	85,000
Number of schools	164
Racial composition	89% black 12% other
Students on free or reduced lunch	62%
Type	Urban
Minimum estimated to make all repairs	\$460 million

With a capacity of 110,000 students, many of Washington's school facilities are old and underused. Only 22 schools of 164—mainly elementary—have been built in the last 20 years. According to the district's facilities manager, the average age of Washington's schools is 50 years. While

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structurally sound, these older buildings house old—sometimes original—systems, such as the heating and air conditioning or electrical systems, which have major repair problems.

Washington schools have many urgent repair needs, according to the district facilities manager. Old boiler systems have steam leakages causing such infrastructure erosion that whole school wings have been condemned and cordoned off; leaky roofs are causing ceilings to crumble on teachers' and students' desks; fire doors are warped and stick. In addition, the district was under court order to fix the most serious of an estimated \$90 million worth of fire code violations by the start of the 1994-95 school year. These violations included locked or blocked exit doors, defective or missing fire doors, broken alarms, malfunctioning boilers, and unsafe electrical systems. Some of the schools also lack air conditioning and are so poorly insulated that children must wear coats to keep warm in winter weather.

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## Facilities Financing

From the school district's total operating and capital budget of about \$557 million in fiscal year 1994, about \$100 million (18 percent) was allocated to school maintenance and capital improvement. Of this, approximately \$25 million (including salaries) goes to the district's facilities office, with the balance given directly to the schools for their on-site maintenance and operations. The building maintenance budget has declined from about 18 percent to 14 percent of the total school budget in the past 10 years.

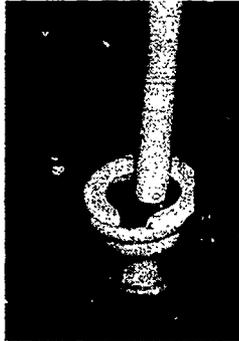
Funds for school maintenance and repair and capital improvements come from the District of Columbia's general budget, over which the Congress has authority. Until 1985, the District's capital improvement program was financed only through money borrowed from the U.S. Treasury. After 1985, the District was given authority to sell general obligation bonds in the capital markets. From 1985 through 1994, the schools received \$314 million to finance capital improvements: \$232 million through general obligation bond issuances, \$59 million borrowed from the U.S. Treasury, and \$23 million from District tax revenue.

# The Worst of the Worst

## Plumbing



**Teachers Lounge**  
Chicago Elementary



**Toilet Used to Redirect Sewage From Broken Pipe in Wall**  
District of Columbia High School



**Student Bathroom**  
Chicago Elementary School



**Lavatories and Graffiti**  
New Orleans High School



**Home Economics Sink**  
New Orleans Junior High School

External



**Chained Front Door So Students Will Not Be Injured by...**



**Structural Damage**  
Chicago Elementary School



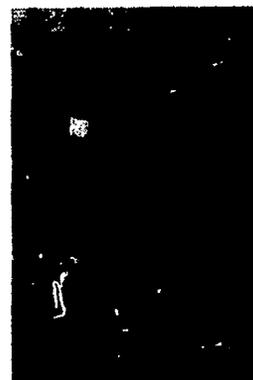
**Crumbling Sidewalk**  
Chicago High School



**...Holes in Crumbling Front Steps**  
Chicago High School



**30-Year-Old Portable Classroom (Built to Last 10 Years)**  
New Orleans High School



**Coming Apart at the Seams:  
Cracked Demountable Classrooms Held in Place by Steel Plate; Wall Crumbling Under Windows**  
Chicago Elementary School

Classrooms



**Science Lab**  
Chicago High School



**Peeling, Lead-Based Paint,  
Burned Out Lights  
(Not Replaceable)**  
Chicago Elementary School



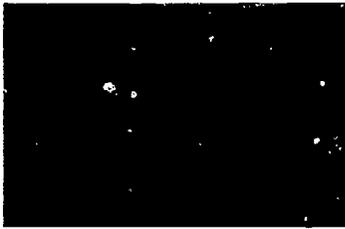
**Unrepaired Fire  
Damage** Chicago  
High School



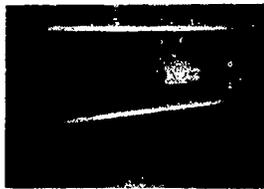
**Water Damage Caused  
Buckling Floors and Missing  
Tiles** Chicago High School



**Peeling Lead-Based Paint,  
Burned Out Lights (Not  
Replaceable)**  
Chicago Elementary School



**Basement**  
Chicago Elementary School



**Termites Eating the  
School Library** New  
Orleans Junior High School



**Water Damage**  
Raymond High School

# Project Advisers

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The following individuals advised this report either by (a) serving on our expert panel on January 31, 1994; (b) helping with the development of our questionnaire; or (c) reviewing a draft report.

Allen C. Abend<sup>abc</sup>  
Chief  
School Facilities Branch  
Maryland State Department of Education.

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# GAO Questionnaire for Local Education Agencies

Dear Survey Respondent:

The U. S. General Accounting Office (GAO) has been asked by the United States Congress to obtain information about school facilities, such as physical condition and capacity. While several limited studies have been done recently, no comprehensive national study of school facilities has been done in 30 years.

The Congress needs this information to shape the details of federal policy, such as funding for the School Infrastructure Act of 1994. All responses are confidential. We will report your data only in statistical summaries so that individuals cannot be identified.

This questionnaire should be answered by district level personnel who are very familiar with the school facilities in this district. You may wish to consult with other district level personnel or with school level personnel, such as principals, in answering some questions.

We are conducting this study with only a sample of randomly selected schools, so the data on your school(s) is **very important** because it represents many other schools. **Please respond even if the schools selected are new.** If you have questions about the survey, please call Ms. Ella Cleveland (202) 512-7066 or Ms. Edna Saltzman (313) 256-8109.

Mail your completed questionnaire in the enclosed envelope **within 2 weeks** to:

Ms. Ella Cleveland  
U.S. General Accounting Office  
NGB, Suite 650  
441 G St., NW  
Washington, DC 20548

Thank you for your cooperation in this very important effort.

Sincerely yours,

Linda G. Morra  
Director  
Education and Employment

INSTRUCTIONS FOR COMPLETING THIS QUESTIONNAIRE

1. Sometimes you will be asked to "Circle ALL that apply." When this instruction appears, you may circle the numbers next to more than one answer.

EXAMPLE:

If any of the following statements are true for this school, please circle the number of the appropriate answer.  
 Circle ALL that apply.

This school teaches only postsecondary (beyond grade 12) or adult education students..... 1

This school is no longer in operation..... 2

This school is a private school, not a public school..... 3

This institution or organization is not a school.....4

If your answers are "teaches only postsecondary" and "a private school," circle the numbers 1 and 3.

2. Sometimes you will be asked to "Circle one." When this instruction appears, circle the number next to the one best answer.

EXAMPLE:

Does this school currently house any of its students in instructional facilities located off of its site, such as rented space in another school, church, etc.? Circle one.

Yes.....1

No.....2

If your answer is "No," circle the number 2.

3. Sometimes you will be asked to write in a number. Please round off to the nearest whole number. Do not use decimals or fractions. Please be sure your numbers are clearly printed so as not to be mistaken for another number.

EXAMPLE:

What is the total amount of this most recently passed bond issue?

\$ \_\_\_\_\_ .00  
 total amount of most recently passed bond issue

If your answer is \$8,500,435.67, write 8,500,436 in the space provided.

SECTION I. DISTRICT INFORMATION

1. What would probably be the total cost of all repairs/renovations/modernizations required to put all of this district's schools in good overall condition? Give your best estimate. If all of this district's schools are already in good (or better) overall condition, enter zero.

*Overall condition includes both physical condition and the ability of the schools to meet the functional requirements of instructional programs. Good condition means that only routine maintenance or minor repair is required.*

\$ \_\_\_\_\_ .00

2. On which of the sources listed below is this estimate based? Circle ALL that apply.

Does not apply -- all schools already in good (or better) overall condition.....0

Sources

Facilities inspection(s)/assessment(s) performed within the last three years by licensed professionals.....1

Repair/renovation/modernization work already being performed and/or contracted for.....2

Capital improvement/facilities master plan or schedule.....3

My best professional judgment.....4

Opinions of other district administrators.....5

Other (specify: \_\_\_\_\_ ).....6

Appendix IV  
 GAO Questionnaire for Local Education  
 Agencies

3. During the last 3 years, how much money has been spent in this district on the federal mandates listed below? Include money spent in 1993-1994. If exact amounts are not readily available, give your best estimate. Enter zero if none. Circle "1" if spending was not needed.

<u>Federal Mandates</u>	<u>Spending Not Needed</u>	<u>Amount Spent</u>
Accessibility for student with disabilities	1	\$ _____ .00
Managing/correcting:		
Asbestos	1	\$ _____ .00
Lead in water/paint	1	\$ _____ .00
Underground storage tanks (USTs)	1	\$ _____ .00
Radon	1	\$ _____ .00
Other (specify: _____ _____)	1	\$ _____ .00

2

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**4. How much money will probably need to be spent in this district during the next 3 years on these federal mandates? If exact amounts are not readily available, give your best estimate. If spending will not be needed, circle "1." If unknown, circle "2."**

<u>Federal Mandates</u>	<u>Spending Will Not Be Needed</u>	<u>Amount Unknown</u>	<u>Probably Needed</u>
Accessibility for students with disabilities	1	2	\$ _____ .00
Managing/correcting:			
Asbestos	1	2	\$ _____ .00
Lead in water/paint	1	2	\$ _____ .00
Underground storage tanks (USTs)	1	2	\$ _____ .00
Radon	1	2	\$ _____ .00
Other (specify: _____ )	1	2	\$ _____ .00

**5. Are these spending needs for federal mandates included in your answer to question 1? Circle one for each mandate listed.**

<u>Federal Mandates</u>	<u>Does Not Apply-- Not Needed/ Unknown</u>	<u>Yes-- Included</u>	<u>No--NOT Included</u>
Accessibility for students with disabilities	1	2	3
Managing/correcting:			
Asbestos	1	2	3
Lead in water/paint	1	2	3
Underground storage tanks (USTs)	1	2	3
Radon	1	2	3
Other (specify: _____ )	1	2	3

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

6. In what year was a bond issue most recently passed for this district? Enter the last two digits of the year.

19 \_\_ \_\_

7. What was the total amount of this most recently passed bond issue?

\$ \_\_\_\_\_ .00

8. How much money did this most recently passed bond issue provide for the items listed below? Enter zero if none.

<u>Items</u>	<u>Amount Provided</u>
Construction of new schools	\$ _____ .00
Repair/renovation/modernization of existing schools	\$ _____ .00
Asbestos removal	\$ _____ .00
Removal of Underground Storage Tank (USTs)	\$ _____ .00
Removal of other environmental conditions	\$ _____ .00
Purchase of computers	\$ _____ .00
Purchase of telecommunications equipment	\$ _____ .00
Access for students with disabilities	\$ _____ .00

9. During the last 10 years, how many bond issues have failed to pass?

\_\_\_\_\_ bond issues failed to pass

10. Do you currently have a bond issue before the electorate? Circle one.

Yes..... 1

No..... 2

SECTION II. SCHOOL INFORMATION

This section asks about the *first* school shown on the Instruction Sheet enclosed with this survey.

1. NAME OF SCHOOL: Please enter the name of the first school shown on the Instruction Sheet.

SCHOOL'S SURVEY IDENTIFICATION NUMBER:  
 Please enter the Survey Identification number of the first school shown on the Instruction Sheet.

2. If any of the following statements are true for this school, please circle the number of the appropriate answer. Circle ALL that apply.

- This school teaches only postsecondary (beyond grade 12) or adult education students 1
- This school is no longer in operation 2
- This school is a private school, not a public school 3
- This institution or organization is not a school 4

**STOP! IF YOU MARKED ANY OF THE ABOVE STATEMENTS GO TO THE NEXT SCHOOL INFORMATION SECTION.**

3. Which of the following grades did this school offer around the first of October, 1993? Circle ALL that apply.

- Grade 1.....1
- Grade 2.....2
- Grade 3.....3
- Grade 4.....4
- Grade 5.....5
- Grade 6.....6
- Grade 7.....7
- Grade 8.....8
- Grade 9.....9
- Grade 10.....10
- Grade 11.....11
- Grade 12.....12
- Pre-kindergarten.....13
- Kindergarten.....14
- Ungraded (including ungraded special education students).....15

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**4. What was the total number of Full Time Equivalent (FTE) students enrolled in this school around the first of October, 1993?**

\_\_\_\_\_ total FTE students

**5. Does this school house any of its students in instructional facilities located off of its site, such as rented space in another school, church, etc.? Circle one.**

Yes.....1

No.....2----> GO TO  
QUESTION 8

**6. How many of this school's Full Time Equivalent (FTE) students are housed in off-site instructional facilities?**

\_\_\_\_\_ FTE students housed off-site

**7. How many total square feet of off-site instructional facilities does this school have? If exact measurements are not readily available, give your best estimate.**

\_\_\_\_\_ total square feet off-site

**8. How many original buildings, attached and/or detached permanent additions to the original buildings, and temporary buildings does this school have on-site? If this school does not have any permanent additions or any temporary buildings on-site, enter zero for these categories.**

<u>On-Site Buildings</u>	<u>Number</u>
Original buildings	_____
Attached and/or detached permanent additions to original buildings	_____
Temporary buildings	_____

**9. How many total square feet do the original buildings, the attached and/or detached permanent additions, and the temporary buildings have? If exact measurements are not readily available, give your best estimate. If this school does not have any permanent additions or any temporary buildings on-site, enter zero for these categories.**

<u>On-Site Buildings</u>	<u>Total Square Feet</u>
Original buildings	_____
Attached and/or detached permanent additions to original buildings	_____
Temporary buildings	_____

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**10. What is the overall condition of the original buildings, the attached and/or detached permanent additions, and the temporary buildings? Refer to the rating scale shown below, and circle one for EACH category of building. If this school does not have any permanent additions or any temporary buildings on-site, circle "0."**

*Overall condition includes both physical condition and the ability of the buildings to meet the functional requirements of instructional programs.*

**Rating Scale**

**Excellent:** new or easily restorable to "like new" condition; only minimal routine maintenance required.

**Good:** only routine maintenance or minor repair required.

**Adequate:** some preventive maintenance and/or corrective repair required.

**Fair:** fails to meet code and functional requirement in some cases; failure(s) are inconvenient; extensive corrective maintenance and repair required.

**Poor:** consistent substandard performance; failure(s) are disruptive and costly; fails most code and functional requirements; requires constant attention, renovation, or replacement. Major corrective repair or overhaul required

**Replace:** Non-operational or significantly substandard performance. Replacement required.

<u>On-Site Buildings</u>	School does <u>not have</u>	<u>Excellent</u>	<u>Good</u>	<u>Adequate</u>	<u>Fair</u>	<u>Poor</u>	<u>Replace</u>
Original buildings	N/A	1	2	3	4	5	6
Attached and/or detached permanent additions to original buildings	0	1	2	3	4	5	6
Temporary buildings	0	1	2	3	4	5	6

**11. What would probably be the total cost of all repairs/renovations/modernizations required to put this school's on-site buildings in good overall condition? Give your best estimate. If this school's on-site buildings are already in good (or better) overall condition, enter zero.**

\$ \_\_\_\_\_ .00

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**12. On which of the sources listed below is this estimate based? Circle ALL that apply.**

Does not apply -- already in good (or better) overall condition 0

Sources

Facilities inspection(s)/assessments(s) performed within the last three years by licensed professionals 1

Repair/renovation/modernization work already being performed and/or contracted for 2

Capital improvement/facilities master plan or schedule 3

My best professional judgment 4

Opinions of other district administrators 5

Other (specify: \_\_\_\_\_) 6

**13. During the last 3 years, how much money has been spent on the federal mandates listed below for this school's on-site buildings? Include money spent in 1993-1994. If exact amounts are not readily available, give your best estimate. Enter zero if none. Circle "1" if spending was not needed.**

<u>Federal Mandates</u>	<u>Spending Not Needed</u>	<u>Amount Spent</u>
Accessibility for students with disabilities	1	\$ _____ .00
Managing/correcting:		
Asbestos	1	\$ _____ .00
Lead in water/paint	1	\$ _____ .00
Underground storage tanks (USTs)	1	\$ _____ .00
Radon	1	\$ _____ .00
Other (specify: _____)	1	\$ _____ .00

8

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**14. How much money will probably need to be spent during the next 3 years on these federal mandates for this school's on-site buildings? If exact amounts are not readily available, give your best estimate. If spending will not be needed, circle "1." If unknown, circle "2."**

<u>Federal Mandates</u>	<u>Spending Will Not Be Needed</u>	<u>Unknown</u>	<u>Amount Probably Needed</u>
Accessibility for students with disabilities	1	2	\$ _____ .00
Managing/correcting:			
Asbestos	1	2	\$ _____ .00
Lead in water/paint	1	2	\$ _____ .00
Underground storage tanks (USTs)	1	2	\$ _____ .00
Radon	1	2	\$ _____ .00
Other (specify: _____ )	1	2	\$ _____ .00

**15. Are these spending needs for federal mandates included in your answer to question 11? Circle one for each mandate listed.**

<u>Federal Mandates</u>	<u>Does not apply-- Not Needed/ Unknown</u>	<u>Yes Included</u>	<u>No-NOT Included</u>
Accessibility for students with disabilities	1	2	3
Managing/correcting:			
Asbestos	1	2	3
Lead in water/paint	1	2	3
Underground storage tanks (USTs)	1	2	3
Radon	1	2	3
Other (specify: _____ )			

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**16. Overall, what is the physical condition of each of the building features listed below for this school's on-site buildings? Refer to the rating scale shown below, and circle one for EACH building feature listed.**

Rating Scale

**Excellent:** new or easily restorable to "like new" condition; only minimal routine maintenance required.

**Good:** only routine maintenance or minor repair required.

**Adequate:** some preventive maintenance and/or corrective repair required.

**Fair:** fails to meet code or functional requirement in some cases; failure(s) are inconvenient; extensive corrective maintenance and repair required.

**Poor:** consistent substandard performance; failure(s) are disruptive and costly; fails most code and functional requirements; requires constant attention, renovation, or replacement. Major corrective repair or overhaul required.

**Replace:** Non-operational or significantly substandard performance. Replacement required.

<u>Building Feature</u>	<u>Excellent</u>	<u>Good</u>	<u>Adequate</u>	<u>Fair</u>	<u>Poor</u>	<u>Replace</u>
Roofs	1	2	3	4	5	6
Framing, floors, foundations	1	2	3	4	5	6
Exterior walls, finishes, windows, doors	1	2	3	4	5	6
Interior finishes, trims	1	2	3	4	5	6
Plumbing	1	2	3	4	5	6
Heating, ventilation, air conditioning	1	2	3	4	5	6
Electrical power	1	2	3	4	5	6
Electrical lighting	1	2	3	4	5	6
Life safety codes	1	2	3	4	5	6

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**17. Do this school's on-site buildings have sufficient capability in each of the communications technology elements listed below to meet the functional requirements of modern educational technology? Circle one for EACH element listed.**

<u>Technology Elements</u>	<u>Very Sufficient</u>	<u>Moderately Sufficient</u>	<u>Somewhat Sufficient</u>	<u>Not Sufficient</u>
Computers for instructional use	1	2	3	4
Computer printers for instructional use	1	2	3	4
Computer networks for instructional use	1	2	3	4
Modems	1	2	3	4
Telephone lines for modems	1	2	3	4
Telephones in instructional areas	1	2	3	4
Television sets	1	2	3	4
Laser disk players/VCRs	1	2	3	4
Cable television	1	2	3	4
Conduits/raceways for computer/computer network cables	1	2	3	4
Fiber optic cable	1	2	3	4
Electrical wiring for computers/communications technology	1	2	3	4
Electrical power for computers/communications technology	1	2	3	4

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**18. How many computers for instructional use does this school have? Include computers at both on-site buildings and off-site instructional facilities.**

\_\_\_\_\_ computers for instructional use

**19. How well do this school's on-site buildings meet the functional requirements of the activities listed below? Circle one for EACH activity listed.**

<u>Activity</u>	<u>Very Well</u>	<u>Moderately Well</u>	<u>Somewhat Well</u>	<u>Not Well At All</u>
Small group instruction	1	2	3	4
Large group (50 or more students) instruction	1	2	3	4
Storage of alternative student assessment materials	1	2	3	4
Display of alternative student assessment materials	1	2	3	4
Parent support activities, such as tutoring, planning, making materials, etc.	1	2	3	4
Social/Health Care Services	1	2	3	4
Teachers' planning	1	2	3	4
Private areas for student counseling and testing	1	2	3	4
Laboratory science	1	2	3	4
Library/Media Center	1	2	3	4
Day care	1	2	3	4
Before/after school care	1	2	3	4

**Appendix IV  
GAO Questionnaire for Local Education  
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**20. How satisfactory or unsatisfactory is each of the following environmental factors in this school's on-site buildings? Circle one for EACH factor listed.**

<u>Environmental Factor</u>	<u>Very Satisfactory</u>	<u>Satisfactory</u>	<u>Unsatisfactory</u>	<u>Very Unsatisfactory</u>
Lighting	1	2	3	4
Heating	1	2	3	4
Ventilation	1	2	3	4
Indoor air quality	1	2	3	4
Acoustics for noise control	1	2	3	4
Flexibility of instructional space (e.g., expandability, convertability, adaptability)	1	2	3	4
Energy efficiency	1	2	3	4
Physical security of buildings	1	2	3	4

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**21. Does this school have air conditioning in classrooms, administrative offices, and/or other areas? Circle ALL that apply.**

- Yes, in classrooms 1
- Yes, in administrative offices 2
- Yes, in other areas 3
- No, no air conditioning in this school at all 4 ---> GO TO QUESTION 23

**22. How satisfactory or unsatisfactory is the air conditioning in classrooms, administrative offices, and/or other areas? Circle one for EACH category listed.**

<u>Air Conditioning in:</u>	<u>Very Satisfactory</u>	<u>Satisfactory</u>	<u>Unsatisfactory</u>	<u>Very Unsatisfactory</u>
Classrooms	1	2	3	4
Administrative Offices	1	2	3	4
Other areas	1	2	3	4

**23. Does this school participate in the National School Lunch Program? Circle one.**

- Yes 1
- No 2

**24. Regardless of whether this school participates in the National School Lunch Program, around the first of October, 1993, were any students in this school ELIGIBLE for the program? Circle one.**

- Yes 1
- No 2-----> GO TO QUESTION 27
- Don't Know 3-----> GO TO QUESTION 27

**25. Around the first of October, 1993, how many applicants in this school were approved for the National School Lunch Program? Enter zero if none.**

\_\_\_\_\_ applicants approved

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

26. Around the first of October, 1993, how many students in this school received free or reduced lunches through the National School Lunch Program? *Enter zero if none.*

\_\_\_\_\_ recipients

27. How many students in this school were absent on the most recent school day? *If none were absent, please enter zero.*

\_\_\_\_\_ students absent

28. What type of school is this? *Circle one.*

- |  |   |
|--|---|
| REGULAR elementary or secondary  | 1 |
| Elementary or secondary with SPECIAL PROGRAM EMPHASIS--<br>for example, science/math school, performing arts high school,<br>talented/giftedschool, foreign language immersion school, etc.            | 2 |
| SPECIAL EDUCATION--primarily serves students with disabilities   | 3 |
| VOCATIONAL/TECHNICAL--primarily serves students being<br>trained for occupations   | 4 |
| ALTERNATIVE--offers a curriculum designed to provide alternative<br>or nontraditional education; does not specifically fall into the<br>categories of regular, special education, or vocational school | 5 |

29. Does this school offer a magnet program? *Circle one.*

Yes.....1

No.....2

**IF THIS IS THE LAST SCHOOL LISTED ON YOUR INSTRUCTION SHEET,  
PLEASE GO DIRECTLY TO THE LAST PAGE OF THIS QUESTIONNAIRE.**

**Appendix IV  
GAO Questionnaire for Local Education  
Agencies**

**COMMENTS**

**Do you have any comments you would like to make about school facilities? *Circle one.***

Yes 1 -----> PLEASE USE THE SPACE BELOW

No 2

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# Data Points for Report Figures

Tables in this appendix provide data for the figures in the report.

**Table V.1: Data for Figure 1: School Officials Report Billions Needed for Repairs and to Comply With Federal Mandates in the Next 3 Years**

<b>Amount needed to</b>	<b>All schools</b>
Make all repairs required to put schools in good overall condition	\$101,200,000,000
Provide accessibility for disabled students	5,183,407,780
Manage/correct asbestos	2,395,445,006
Manage/correct lead in water and paint	386,647,141
Manage/correct underground storage tanks	303,004,301
Manage/correct radon	31,521,318
Manage/correct other requirements	2,380,065,108

**Table V.2: Data for Figure 2: Amount Schools Reported Spending Over the Last 3 Years and Need in the Next 3 Years to Fulfill Federal Mandates**

<b>Federal mandate</b>	<b>Reported spent in the last 3 years</b>	<b>Reported needed in the next 3 years</b>
Accessibility for students with disabilities	\$1,519,755,380	\$5,183,407,780
Manage/correct asbestos	1,728,277,353	2,395,445,006
Manage/correct other requirements	200,885,750	2,380,065,108
Manage/correct lead in water/paints	46,241,652	386,647,141
Manage/correct underground storage tanks	302,014,949	303,004,301
Manage/correct radon	13,854,263	31,521,318

**Table V.3: Data for Figure 3: Percent of Buildings Reported in Less-Than-Adequate Overall Condition**

<b>Type of building</b>	<b>Percentage of less-than-adequate buildings</b>
Temporary buildings	27.9
Original buildings	26.2
Attached and/or detached permanent additions to original buildings	17.9

Appendix V  
Data Points for Report Figures

Table V.4: Data for Figure 4: Building Repairs Reported Needed in America's Schools

Type of building feature	Percentage of schools reporting less-than-adequate building features
HVAC	36.4
Plumbing	29.8
Roofs	27.3
Exterior walls, finishes, windows, doors	26.6
Electrical power	26.4
Electrical lighting	25.4
Interior finishes, trims	24.1
Life safety codes	19.0
Framing, floors, foundations	17.9

Table V.5: Data for Figure 5: Percentage of Schools Reporting Unsatisfactory or Very Unsatisfactory Environmental Factors

Type of environmental condition	Percentage of schools reporting unsatisfactory or very unsatisfactory environmental conditions
Acoustics for noise control	28.1
Ventilation	27.1
Physical security of buildings	24.2
Indoor air quality	19.2
Heating	18.9
Lighting	15.6

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# GAO Contacts and Staff Acknowledgments

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