2013 Annual | SCHOOL CONSTRUCTION REPORT

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18th Annual School Construction Report

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18TH ANNUAL REPORT

School Renovations Led Increase in Spending

Total school construction rose slightly, to nearly $13 billion in 2012.

by **PAUL ABRAMSON**

FIFTY YEARS AGO, the "baby boom" was in full swing and new schools were being constructed at a rapid rate. Districts raced to get schools built, get them open and worry about such things as maintenance later. There were kids knocking at the door and the door had to be built.

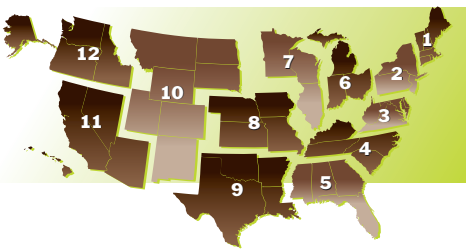
At the time, based on experience of the past, it was assumed that the average life span of a new school building was 50 years. Under the circumstances, 2012 should have been a boom year for school construction as districts moved to replace all of those 50-year-old structures.

As the Gershwin brothers put it, "It ain't necessarily so." As a matter of fact, 2012 was a relatively slow year for school construction, and a very slow year for construction of new schools that might have replaced the 50-year-old ones. Total dollars spent on constructing new buildings in 2012 was the lowest since 1996 and, in terms of actual rather than inflated dollars, the lowest since 1990.

Of course, there are a number of reasons for this. Three quickly come to mind.

- Many of the 1962 schools did not last 50 years — they were built cheaply and torn down and replaced.
- Many of those school buildings that are still in operation were significantly upgraded particularly in the late '70s and early '80s when federal money was available to help insulate and close up schools to save on energy.
- There has been far less growth of new communities in the last several years — existing schools are upgraded and expanded to house new students.

SCHOOL CONSTRUCTION REGIONS



1 SCHOOL CONSTRUCTION IN THE U.S. *($000'S)*

	2012 Completed	2013 Projected to Be Completed	2013 Projected to Start
New School	$6,176,632	$5,504,729	$4,663,408
Additions	$3,137,020	$3,411,816	$3,463,625
Renovation	$3,663,241	$2,775,068	$2,432,969
Total	**$12,976,893**	**$11,691,613**	**$10,560,002**

Be that as it may, the bottom line on school construction in 2012 is that total spending edged up slightly from the previous year, (to $12.9 billion from $12.2 billion), but the spending for new schools declined from $6.9 billion to $6.177 billion. The increase in overall spending was attributable to more spending for additions and a major increase in spending for renovations and upgrading to existing buildings.

These are among the major findings and conclusions to be drawn from *School Planning & Management's* 18th Annual School Construction Report, covering activity completed in 2012 and expected to be completed or started in 2013 (see **Table 1**).

To prepare this report, *School Planning & Management* received information on school construction completed and underway during 2012 and planned to start in 2013 from Market Data Retrieval (MDR), a company of Dun and Bradstreet (D&B). MDR contacts school districts throughout the United States seeking information on their construction plans — new buildings, additions to existing buildings and major renovation, retrofit or modernization projects. (The three terms are used interchangeably throughout this report.) We take that project information and use it to estimate construction on a national and regional basis, and to report on how dollars are being spent on new schools.

All of the figures published are "annual in nature." That is, they do not accumulate ongoing construction, but rather compile information on what was completed or expected to be completed or started in a given calendar year. School districts may be involved in more construction, but work started or completed outside the targeted years is not included.

The national scene

School districts in the United States spent just under $13 billion ($12,976,893,000) on construction projects completed during the 2012 calendar year. Only $6.2 billion of that was spent on new schools, accounting for 47.6 percent of the construction dollars. The balance was split between additions to existing buildings (accounting for $3.1 billion) and retrofit and modernization of existing structures that accounted for almost $3.7 billion (see **Table 2**). This is the first time in 12 years that spending for new buildings was less than spending on existing ones.

The percentage of construction dollars being spent on new buildings has been dropping over the past several years. What was interesting this year was the increase in spending for retrofit projects — up more than $1 billion from 2011.

The percentage of construction dollars being spent on new buildings has been dropping over the past several years. What was interesting this year was the increase in spending for retrofit projects — up more than $1 billion from 2011. It is only speculation on my part, but twice in the last three years schools were put on alert to get their retrofit projects "shovel ready" because the president was asking Congress to provide funds for attacking the nation's infrastructure problems, including deteriorating schools.

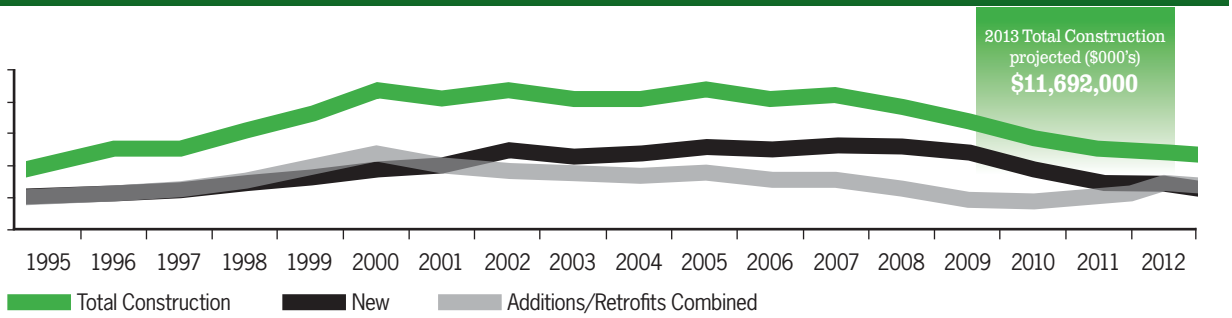
When Congress failed to act, those plans were in place and the projects ready to go. Many districts may have chosen to move ahead on their own with local money, hoping, perhaps, that federal dollars might still come their way.

Table 2 shows the national construction picture in 2012. It also shows how much school districts in each of 12 regions of the nation spent on construction and how they spent it. (See map on previous page. A more detailed account of regional activity begins on page CR11.)

In 2012, school districts in four of the 12 regions spent more than $1 billion on school construction. (In previous years, as many as 10 regions had exceeded that threshold.)

Region 9, including Texas, Louisiana, Oklahoma and Arkansas, was the highest spending region with almost $2.6 billion put in place. Schools in that region were responsible for 19.7 percent of the nation's total construction spending. Region 9 not

SCHOOL CONSTRUCTION COMPLETED, 1995 THROUGH 2012



In the 18 years since 1995, school districts in the United States have put almost $310 billion worth of construction in place, including $174 billion for new schools, $72.5 billion to add space to existing schools and $63 billion to upgrade existing buildings. In 2012 more money was spent adding to and upgrading existing buildings than was spent on new construction, the first time that occurred since 2000. Indications are that this emphasis will continue for at least another year or two.

2 SCHOOL CONSTRUCTION COMPLETED IN 2012 *($000'S)*

Region	New Schools	Additions	Renovation	Total	% OF SPENDING FOR New	Addition	Renovation	% of Nation
1	$515,636	$190,624	$198,887	$905,147	57.0%	21.1%	22.0%	7.0%
2	$564,373	$267,465	$423,403	$1,255,240	45.0%	21.3%	33.7%	9.7%
3	$648,140	$181,558	$304,157	$1,133,854	57.2%	16.0%	26.8%	8.7%
4	$435,177	$129,908	$215,692	$780,777	55.7%	16.6%	27.6%	6.0%
5	$519,011	$166,519	$290,824	$976,354	53.2%	17.1%	29.8%	7.5%
6	$430,282	$203,718	$364,621	$998,621	43.1%	20.4%	36.5%	7.7%
7	$274,938	$197,025	$205,189	$677,151	40.6%	29.1%	30.3%	5.2%
8	$303,067	$250,959	$275,811	$829,837	36.5%	30.2%	33.2%	6.4%
9	$1,072,157	$881,965	$599,284	$2,553,406	42.0%	34.5%	23.5%	19.7%
10	$180,595	$86,576	$118,623	$385,795	46.8%	22.4%	30.7%	3.0%
11	$877,874	$411,558	$368,117	$1,657,548	53.0%	24.8%	22.2%	12.8%
12	$355,385	$169,146	$298,632	$823,163	43.2%	20.5%	36.3%	6.3%
Nat'l	**$6,176,632**	**$3,137,020**	**$3,663,241**	**$12,976,893**	**47.6%**	**24.2%**	**28.2%**	**100.0%**

To read this table: Public schools in Region 1 (New England) completed new buildings worth more than $515 million in 2012. They also put in place $190 million in additions to existing buildings and spent $199 million on renovations. School districts in Region 1 completed about $905 million of school construction in 2012, with 57 percent of those dollars spent on new buildings, the balance on adding to and upgrading existing buildings. Region 1 accounted for 7 percent of all school construction dollars spent on projects completed in the United States in 2012.

only put more construction in place than any other region, it also led the way in spending for new school buildings, with $1.07 billion going for that purpose. But, for the first time in the 18 years this report has been compiled, school districts in this still-growing region put more money into adding to existing buildings ($882 million) and fixing them up ($600 million) than it put into entirely new schools.

Construction spending in Region 11, including Arizona, California, Hawaii and Nevada, totaled almost $1.66 billion, making it the second highest spending region. Much of that activity is taking place in California where, despite budget woes, state funding for school construction has continued. With $878 million spent on new schools, this is one of five regions where spending for new buildings exceeded spending on existing ones.

School districts in Region 2, including New York, New Jersey and Pennsylvania, put $1.26 billion of school construction in place in 2012 — a significant rebound from the previous year. It was the third highest region in terms of overall spending. The bulk of the additional money went into retrofit of existing buildings, not surprising in an area where, for more than a decade, most construction dollars have gone for ensuring that existing buildings have sufficient space and are in proper shape to provide their educational programs.

Region 3 (Delaware, District of Columbia, Maryland, Virginia and West Virginia) raised its spending to $1.134 billion last year — a one-year increase of more than $100 million. The surge in Region 3 may have been caused by the completion of several large new schools. Districts in that region spent a larger percentage of their dollars on new schools (57.2 percent) than did districts in any other region.

Districts in Region 6 (Indiana, Michigan and Ohio) reported almost $1 billion in completed work, an increase from previous years with retrofits and additions of existing schools leading the way.

Region 5, including Florida, Georgia, Alabama and Mississippi, completed construction worth $976 million. This region

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3 CONSTRUCTION EXPECTED TO BE COMPLETED IN 2013 *($000'S)*

Region	New Schools	Additions	Renovation	Total	% OF SPENDING FOR New	Addition	Renovation	% of Nation
1	$339,991	$310,409	$330,162	$980,562	34.7%	31.7%	33.7%	8.4%
2	$570,717	$199,677	$328,617	$1,099,011	51.9%	18.2%	29.9%	9.4%
3	$450,227	$149,279	$51,753	$651,259	69.1%	22.9%	7.9%	5.6%
4	$262,310	$101,621	$104,124	$468,055	56.0%	21.7%	22.2%	4.0%
5	$427,193	$282,187	$64,358	$773,738	55.2%	36.5%	8.3%	6.6%
6	$463,199	$296,128	$211,720	$971,046	47.7%	30.5%	21.8%	8.3%
7	$178,292	$188,835	$119,105	$486,232	36.7%	38.8%	24.5%	4.2%
8	$380,095	$177,682	$142,794	$700,571	54.3%	25.4%	20.4%	6.0%
9	$605,000	$696,974	$679,453	$1,981,427	30.5%	35.2%	34.3%	16.9%
10	$266,432	$360,212	$354,017	$980,660	27.2%	36.7%	36.1%	8.4%
11	$90,430	$473,809	$152,471	$716,710	12.6%	66.1%	21.3%	6.1%
12	$1,470,845	$175,002	$236,494	$1,882,341	78.1%	9.3%	12.6%	16.1%
Nat'l	**$5,504,729**	**$3,411,816**	**$2,775,068**	**$11,691,613**	**47.1%**	**29.2%**	**23.7%**	**100.0%**

To read this table: In 2013, public schools in Region 1 (New England) are expecting to complete new buildings worth almost $340 million. They also expect to complete additions worth $310 million and renovations valued at $330 million. Total spending in Region 1 is projected at $980 million, with 34.7 percent of the dollars for new buildings, the balance for additions and renovations. New England is projected to account for 8.4 percent of all school construction dollars spent in the nation on schools to be completed in 2013.

almost always crosses the billion-dollar mark. The fall below that benchmark may reflect the fact that districts in the southeast are not seeing the increases in student population that have been regular for more than two decades. As a matter of fact, some Florida districts have reported losing students. Most of the construction dollars are still going to providing new school buildings, but a larger slice than ever before is being spent on fixing and enlarging existing buildings.

Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont) increased total spending to $905 million, with 57 percent going to new schools. Several rather large buildings were reported as completed last year.

School districts in Region 4 (North Carolina, South Carolina, Kentucky and Tennessee) spent only $781 million in 2012, indicating a significant lessening of school construction work in the region. Projections for the future indicate that Region 4's years of strong spending on, and concern about, public education may be coming to a close.

Region 12 (Alaska, Idaho, Oregon and Washington), which in 2010 was the nation's lowest spending region, has increased its spending in each of the last two years, putting $823 million in place last year. If Seattle is successful in passing a massive construction levy, the region should continue to be a major school builder for many years.

Region 7 (Illinois, Minnesota and Wisconsin) spent $677 million in 2012, bouncing back to a level it reached two years ago. It appears that more attention is now being paid in the region to additions and retrofits, rather than new schools.

Region 8 (Iowa, Kansas, Missouri and Nebraska) reported spending over $829 million on work completed in 2012. That's a major step-up from previous years. Its spending is almost equal among new buildings, additions to existing buildings and renovation projects.

An examination of the data as presented indicates that there are a number of projects that are moving more slowly than had been projected previously, largely because expected money has not been made available.

Region 10 (Colorado, Montana, New Mexico, North Dakota, South Dakota, Utah and Wyoming) districts spent less than $400 million on school construction — the third year in a row that regional spending has fallen. (More detail on regional spending is shown in "A Closer Look at Regions" on page CR11.)

What's underway now?

Table 3 examines construction that school districts say they will complete in calendar year 2013. If these projections are accurate, total construction this year will fall more than a billion dollars below what was spent in 2012. An examination of the data as presented indicates that there are a number of projects that are moving more slowly than had been projected previously, largely because expected money has not been made available. If legislators reverse this trend, construction projects already underway or just waiting for the go-ahead may yet be completed in 2013. On the other hand, Region 12 districts projected an unexpectedly high figure for new buildings expected to be completed in 2013. If their goals are not met, the national total may fall.

4 SCHOOL CONSTRUCTION PROJECTED TO START IN 2013 *($000'S)*

Region	New Schools	Additions	Renovation	Total	% OF SPENDING FOR New	Addition	Renovation	% of Nation
1	$304,723	$212,071	$250,485	$767,279	39.7%	27.6%	32.6%	7.3%
2	$604,567	$306,176	$369,216	$1,279,959	47.2%	23.9%	28.8%	12.1%
3	$698,403	$318,156	$188,800	$1,205,359	57.9%	26.4%	15.7%	11.4%
4	$196,488	$192,165	$91,401	$480,055	40.9%	40.0%	19.0%	4.5%
5	$231,108	$321,976	$101,507	$654,590	35.3%	49.2%	15.5%	6.2%
6	$225,234	$273,195	$158,469	$656,898	34.3%	41.6%	24.1%	6.2%
7	$343,857	$357,962	$175,356	$877,175	39.2%	40.8%	20.0%	8.3%
8	$158,000	$142,890	$130,999	$431,889	36.6%	33.1%	30.3%	4.1%
9	$842,573	$596,143	$259,503	$1,698,219	49.6%	35.1%	15.3%	16.1%
10	$238,350	$233,006	$207,139	$678,494	35.1%	34.3%	30.5%	6.4%
11	$468,057	$329,811	$340,422	$1,138,290	41.1%	29.0%	29.9%	10.8%
12	$352,048	$180,074	$159,671	$691,793	50.9%	26.0%	23.1%	6.6%
Nat'l	**$4,663,408**	**$3,464,624**	**$2,432,969**	**$10,560,002**	**44.2%**	**32.8%**	**23.0%**	**100.0%**

To read this table: In the year 2013, school districts in Region 1 (New England) expect to start construction on new buildings worth $304 million. They also project starting work on $212 million in additions to existing buildings and on renovations valued at $250 million. Altogether, school districts in Region 1 predict they will start $767 million worth of school construction in 2013, with 39.7 percent of the dollars devoted to new schools, the balance to additions and renovations. Region 1's spending will be about 7.3 percent of all school construction spending projected to start in 2013.

Looking ahead

Table 4 reports on construction that is projected to start this year. It is perhaps the truest picture of the mood of the school construction market, with districts across the board wondering if they will have the dollars necessary to get their needed construction underway. The total shown, $10.56 billion, is more than $2 billion lower than what was completed in 2012, and $1 billion below what is projected to be completed in 2013.

That's pretty scary — an indication perhaps that public education has been taking a big hit from politicians who control the purse strings (and, perhaps, would like to see more of the public money put into private hands). The good news is that polling indicates a continuing strong support for public education among parents and the rest of the voting public. Public opinion sometimes plays a role in determining what politicians will do.

The bottom line for the moment, is that Tables 3 and 4 are projections, not facts, and they can change and be wrong. Experience shows that there are many school districts that prefer not to talk about their construction plans until the work is completed. Many others protect their information by lumping all possible construction together. My own reading of the data on hand is that the projected figures are on the low side, and that when we count what has been accomplished in the next few years, the totals will be somewhat higher.

New schools completed in 2012

Table 5 provides a profile, on a national basis, of new schools that were completed in 2012. The figures shown in Table 5 are medians. That means, for example, that among elementary schools built and reported during 2013, half of them cost $205 per square foot or more, and half cost $205 per square foot or less. By using medians rather than averages, we are able to minimize the influence of special schools that may be extremely expensive or inexpensive, or cases where reporting is faulty.

Table 5 shows that in 2012, the median elementary school in the United States cost $204.79 per square foot to build. Median spending was $24,677 per pupil, and the median elementary school provided 136.7 square feet for each student. The median elementary school reported was designed for 451 students and provides 72,500 square feet at a total cost of $14,488,337. (Note that in finding medians, each variable is looked at separately so that the school that cost $205 per square foot is not necessarily the same one that spends $24,677 per pupil or that was planned for 451 students.)

Looking at middle schools, the median cost is $193.33 per square foot. Median spending per pupil was $29,286 and the median middle school provides 152.8 square feet per student. The median number of students in middle schools completed in 2012 is 650 and the building size is 117,300 square feet. The cost is $23.4 million.

The median high school cost $38.2 million and provided 200,000 square feet. It was designed to accommodate just fewer than 900 students. The median high school provides 172.1 square feet per student at a cost of $36,859 for each student. The cost per square foot was $214.37.

Median costs for schools completed in 2012 are generally lower than those found

5 PROFILE OF NEW SCHOOLS COMPLETED IN 2012

National Medians	$/Sq. Ft.	$/Per Student	Sq. Ft./ Per Student	No. of Students	Building Size (Sq. Ft.)	Building Cost
Elementary Schools	$204.79	$24,677	136.7	451	72,500	$14,488,337
Middle School	$193.33	$29,286	152.8	650	117,300	$23,400,000
High Schools	$214.37	$36,859	172.1	891	200,000	$38,200,000
Low Quartile	**$/Sq. Ft.**	**$/Per Student**	**Sq. Ft./ Per Student**	**No. of Students**	**Building Size (Sq. Ft.)**	**Building Cost**
Elementary Schools	$160.38	$20,400	114.6	361	59,223	$11,000,000
Middle School	$163.52	$24,710	127.4	500	80,000	$15,000,000
High Schools	$164.60	$25,721	140.3	500	105,000	$21,644,556
High Quartile	**$/Sq. Ft.**	**$/Per Student**	**Sq. Ft./ Per Student**	**No. of Students**	**Building Size (Sq. Ft.)**	**Building Cost**
Elementary Schools	$266.42	$46,125	158.1	574	90,000	$20,000,000
Middle School	$236.08	$44,308	186.1	850	150,000	$30,000,000
High Schools	$257.14	$66,901	215.7	1,269	277,000	$60,000,000

To read this table: The national median cost per square foot for construction of an elementary school completed in 2012 was $204.79. Cost per student was $24,677 and the median school provides 136.7 square feet per student. One quarter of all school districts (the low 25 percent) spent $160.38 per square foot or less for its elementary school construction, while one quarter of all districts spent $266.42 per square foot or more. The median high school completed in 2012 cost $38.2 million. *(Based on data from 204 elementary schools; 69 middle schools; 127 high schools.)*

a year ago, probably because the schools tend to be smaller. Neither of these facts should be seen as trends. Rather, they are a reflection of where the completed buildings were located and, which ones provided full information.

Finding your fit

The median figures found in the first section of Table 5 may be significant to your district. (Caution: Though they are shown as exact numbers, they are based on estimated costs, size and students, and should be used only as estimates.) But depending on your location, your district's aspirations, the labor market in your area and many other factors, the median may not apply to you.

If your district is in a high-cost area

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6 WHERE THE MONEY GOES, BY BUILDING TYPE *($000'S)*

2012 Completions	Elementary	Middle	High	District	Total
New	$2,475,903	$1,316,853	$2,383,876	$0	$6,176,632
Additions	$728,945	$730,230	$1,672,425	$5,420	$3,137,020
Renovations	$1,552,740	$725,346	$1,365,574	$19,580	$3,663,241
Total	$4,757,589	$2,772,430	$5,421,875	$25,000	$12,976,893
% of Year's Dollars	36.7%	21.4%	41.7%	0.2%	100.0%

2013 Expected Completions	Elementary	Middle	High	District	Total
New	$1,567,110	$1,129,809	$2,650,386	$157,424	$5,504,729
Additions	$1,066,697	$472,003	$1,791,202	$81,913	$3,411,816
Renovations	$840,995	$439,334	$1,398,928	$95,810	$2,775,068
Total	$3,474,803	$2,041,147	$5,840,516	$335,147	$11,691,613
% of Year's Dollars	29.6%	17.5%	50.0%	2.9%	100.0%

2013 Projected Starts	Elementary	Middle	High	District	Total
New	$1,716,316	$1,170,275	$1,755,945	$20,872	$4,663,408
Additions	$1,222,229	$530,596	$1,683,260	$27,539	$3,463,624
Renovations	$889,613	$441,354	$1,094,212	$7,790	$2,432,969
Total	$3,828,159	$2,142,224	$4,533,418	$56,201	$10,560,002
% of Year's Dollars	36.3%	20.3%	42.9%	0.5%	100.0%

Total	Elementary	Middle	High	District	Total
New	$5,759,330	$3,616,937	$6,790,207	$178,296	$16,344,770
Additions	$3,017,872	$1,732,829	$5,146,888	$114,872	$10,012,461
Renovations	$3,283,349	$1,606,034	$3,858,714	$123,180	$8,871,277
Total	$12,060,551	$6,955,800	$15,795,809	$416,348	$35,228,508
% of Year's Dollars	34.3%	19.7%	44.8%	1.2%	100.0%

To read this table: Of the $6.176 billion spent on new buildings in 2012, $2.476 billion was for new elementary schools, $1.3 billion was spent on middle schools and $2.384 billion on high schools. There were no reports of spending for such new buildings as maintenance sheds, bus garages and administrative centers completed in 2012.

or feels that it is a high-quality district in terms of how it spends its money and how it builds its buildings, you may want to look at the high quartile numbers, at least in terms of cost and space per student. They show that 25 percent of new elementary schools being built cost $266.42 per square foot or more. One-quarter of the elementary schools completed last year provided 158 square feet or more per student. At the high school level, 25 percent of the districts will spend $66,901 per student or more, and one-quarter of all the new high schools completed last year cost more than $60 million, housed more than 1,200 students and were larger than 277,000 square feet.

The low quartile, also shown in Table 5, is the point at which 75 percent of the reporting schools are higher and 25 percent are lower. Thus, 25 percent of elementary schools were completed for $160 per square foot or less. Twenty-five percent of the new elementary schools provided fewer than 115 square feet per student, and the low quarter of all reporting school districts built their elementary school for $11 million or less.

Once again, it must be emphasized that these are not necessarily the same school building, but the point at which, in looking at total cost or square feet per student or cost per student, one-quarter of the reporting districts are spending that amount or less.

Being in the low quartile does not necessarily suggest that the school is behind others. It may simply indicate that it is in an area with lower construction costs. Or, for example, in looking at the number of students in the school, the fact that one-quarter of all elementary schools are built for 361 or fewer students may be a factor of location (that's all the students there could be) or a mark of distinction (the school was kept small for educational purposes).

The figures shown in Table 5 are based on reports from 204 elementary schools, 69 middle schools and 127 high schools either completed in 2012 or substantially finished and scheduled to open early in 2013. Keep in mind that the figures

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shown in Table 5 are meant as comparison points, not as arbiters of right and wrong, cheap or expensive.

Where to put the money

Most school districts have multiple construction needs. Whether caused by an expanding student population, need for technology, questions of safety and accessibility or the need to upgrade schools built in another time, school boards are often faced with multiple demands for construction dollars.

Table 6 takes a look, in terms of dollars, at how some of those questions are being answered. It shows the school level at which construction is taking place (money is being spent) and the type of construction that was undertaken. For example, among school construction projects completed in 2012, 36.7 percent of the money was spent on elementary schools, while 21.4 percent went to middle schools. High schools received 41.7 percent of the dollars spent. The balance was spent on "district projects," which are generally transportation and/or maintenance buildings, or sometimes football stadiums or administrative headquarters.

Table 6 also shows the purpose for which construction dollars were spent at each level. For example, of the $4.758 billion spent last year on elementary schools, less than $2.5 billion was for new buildings. More than $1.552 billion was for renovations to existing buildings and the balance ($729 million) was for added space in existing buildings.

Table 6 also shows how districts are expecting to spend their dollars in projects being completed or starting in 2013. In general, high schools get the lion's share of the dollars.

Among school construction projects completed in 2012, 36.7 percent of the money was spent on elementary schools, while 21.4 percent went to middle schools. High schools received 41.8 percent of the dollars spent. The balance was spent on "district projects," which are generally transportation and/or maintenance buildings, or sometimes football stadiums or administrative headquarters.

Providing facilities

New school buildings have great similarities. **Table 7** records the percentage of new schools completed in 2012 or expected to be completed this year that include specific facilities.

All have classrooms and offices. Some kind of a nurse's station is a regular feature. Libraries are in all buildings, though in some they may be listed as media centers. In elementary schools this year, 93 percent included a gymnasium, but 8.7 percent list a "multipurpose room," indicating that in some of the new schools, children will have to share their gym space, usually with food service.

Table 8 details information collected on additions to existing schools. It shows the facilities most often included by school type in 2012.

Classrooms and lavatories were the top two facilities added at every school level, not a surprise since the impetus for adding to a school is usually the need to accommodate more students. Gymnasiums also ranked high. Other than classrooms, academic space does not often appear high on the list of added facilities, but it is encouraging to see that more than a quarter of middle school additions will include science labs, as will 16 percent of high schools.

Perhaps it is not the case, but the high priority indicated in secondary schools for added bleachers is probably a reflection of the growing emphasis on teams and competition. With more bleachers, more students can sit and watch rather than participate.

With the emphasis this year on projects designed to upgrade existing buildings, for the first time, we examined what tasks are most often undertaken when schools are modernized. The results (**Table 9**) were not surprising. HVAC work is needed in more than half the schools being renovated. Overhauling electrical systems is a key objective in almost as many projects (48 percent), followed by plumbing, lighting and roofing. Sixteen different categories of repair are involved in more than 10 percent of total projects with a strong emphasis on upgrading the ability to use technology through fiber optic cables, LANs and WANs.

7 WHAT NEW SCHOOLS COMPLETED IN 2012 AND 2013 WILL PROVIDE

(Percent of new schools that reported facility, by grade)

		Elementary	Middle/JHS	High School
Core Facilities	Classrooms	100.0%	100.0%	100.0%
	Library	97.0%	91.8%	92.2%
	Media Center	82.9%	96.9%	98.7%
	Computer Lab	96.0%	100.0%	98.1%
	Science Lab	15.1%	100.0%	97.4%
	Music	96.3%	96.9%	96.8%
	Arts/Crafts	99.3%	99.0%	92.2%
	Gymnasium	93.0%	89.7%	94.8%
	Multipurpose Room	8.7%	2.1%	4.5%
	Stage	12.0%	35.1%	82.5%
	Auditorium/Theater	7.0%	20.6%	80.5%
	Special Ed/Resource	93.3%	100.0%	94.8%
	Fine Arts	1.3%	2.1%	22.7%
	Home Arts	0.0%	14.4%	43.5%
	Industrial Tech.	0.0%	7.2%	14.3%
	Vocational Shops	0.0%	2.1%	32.5%
	Photo Lab	0.0%	0.0%	60.0%
	TV/Radio Studio	0.7%	5.2%	21.4%
Support Facilities	Offices	100.0%	100.0%	100.0%
	Infirmary/Clinic	98.7%	95.9%	99.4%
	Cafeteria	95.0%	90.7%	99.4%
	Kitchen	94.0%	92.8%	98.7%
	Hall Lockers	15.7%	100.0%	97.4%
Technology Support	LANs	99.7%	100.0%	99.4%
	Fiber Optics/Cable	99.7%	100.0%	99.4%
	Technology Lab (Digital)	1.3%	3.1%	20.8%
	Language Lab	1.0%	7.2%	16.9%
	WANs	99.0%	100.0%	99.4%
Athletic Support	Locker Rooms	3.7%	82.5%	94.2%
	Bleachers	14.4%	88.7%	94.2%
	Track	1.0%	5.2%	21.4%
	Field House	0.0%	0.0%	3.9%
	Fitness Center	0.0%	3.1%	30.5%
	Tennis	0.0%	1.0%	7.1%
	Pool	0.0%	1.0%	2.6%
	Stadium	0.0%	0.0%	7.8%
	Athletic Fields	7.7%	66.0%	81.8%
	Playground	83.9%	6.2%	3.2%
Other Facilities	Day Care/Nursery	16.7%	0.0%	0.0%
	Elevators	13.7%	21.6%	50.0%

8 THE TOP TEN ADDITIONS BY SCHOOL TYPE

(Percent of school additions reported to contain facility)

		Percentage included
Elementary	Classrooms	69.1%
	Lavatories	31.4%
	Gym	14.7%
	Library	11.5%
	Office	10.5%
	Special Ed	7.9%
	Cafeteria	7.3%
	Media	7.3%
	Parking	7.3%
	Playgrounds	6.8%
Middle/JHS	Classrooms	49.2%
	Lavatories	40.0%
	Science Labs	26.2%
	Gym	24.6%
	Bleachers	23.1%
	Cafeteria	13.8%
	Locker Rooms	13.8%
	Offices	12.3%
	Computer Lab	10.8%
	Kitchen	10.8%
	Music	10.8%
High School	Classrooms	42.9%
	Lavatories	40.5%
	Bleachers	24.6%
	Gym	19.0%
	Cafeteria	17.5%
	Kitchen	15.9%
	Locker Rooms	15.9%
	Science Labs	15.9%
	Stage	14.3%
	Office	14.3%

To read this table: 69.1 percent of additions to elementary schools contained classrooms. Classrooms were in almost 43 percent of high school additions; science labs in 15.9 percent.

9 WHAT TASKS ARE MOST OFTEN UNDERTAKEN WHEN SCHOOLS ARE MODERNIZED

(Percent included in retrofit projects)

HVAC	51%
Electrical Overhaul	48%
Plumbing	38%
Lighting	31%
Roofing	30%
Flooring/Carpet	26%
ADA Upgrades	24%
Parking Lots	22%
Security	22%
Bathroom Repairs	21%
Tile	21%
Fiber Optics Upgrade	20%
Fire Alarms	20%
LANs Upgrade	19%
WANS	19%
Windows	17%

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FOR THE LOCAL ADMINISTRATOR

A Closer Look at Regions

What your neighbors are doing.

NATIONAL FIGURES ARE ALWAYS INSTRUCTIVE, but from the point of view of the local school administrator or school board, it may be more important to know what your neighbors are doing. *School Planning & Management's* regional figures are designed to help you do that.

On the following pages, figures are given for new school activity for each of 12 regions of the United States. In each region, the median is shown for each school type in terms of cost per square foot, cost per student and space per student. Also shown in the median school capacity reported, the building size and the building cost.

The purpose of this section is to provide data that can help you understand not only what your own district needs, but also what others are doing and how much their projects cost. The national tables allow comparison with districts with similar aspirations. Thus, if districts in your region on average tend to provide minimal space per student, but your district aspires to a variety of programs that need space, you may want to look at the space per pupil provided in the high quarter of the nation's schools (Table 5).

But the regional tables allow you to measure yourself against your neighbors. With this information, you will have data necessary to make your own plans and, in many cases, to help the public understand what you are building, why you are doing it and what it is likely to cost. Remember, there is no right or wrong — these are guidelines that need to be applied to your own local needs.

REGION 1 MEDIANS NEW SCHOOLS *(CT, ME, MA, NH, RI, VT)*

	Elementary	Middle	High
$/sq. ft.	$306.34	$213.33	$303.03
$/student	$50,791	$42,667	$69,119
Sq. ft./student	165.4	189.7	223.2
Students	475	750	945
Size (sq. ft.)	84,054	150,000	211,772
Total cost *($000)*	$24,183	$29,000	$59,222

The median elementary school in Region 1 spent $306.34 per square foot or $50,791 for each of 475 students accommodated. Middle schools cost less, something of a surprise. High schools cost $59.2 million for 945 students.

REGION 2 MEDIANS NEW SCHOOLS *(NJ, NY, PA)*

	Elementary	Middle	High
$/sq. ft.	$245.38	$216.86	$244.64
$/student	$40,000	$37,896	$55,328
Sq. ft./student	161.9	178.3	216.7
Students	505	740	874
Size (sq. ft.)	86,000	133,500	202,500
Total cost *($000)*	$18,230	$28,250	$53,950

The median elementary school in Region 2 spent $245.38 per student or $40,000 for each of the 505 students accommodated. The median middle school cost $28.3 million and housed 740 students. The median high school in the region cost $54 million.

REGION 3 MEDIANS NEW SCHOOLS *(DC, DE, MD, VA, WV)*

	Elementary	Middle	High
$/sq. ft.	$247.62	$177.27	$231.82
$/student	$47,588	$37,500	$49,485
Sq. ft./student	186.6	198.8	201.7
Students	430	692	1,149
Size (sq. ft.)	73,773	132,000	251,700
Total cost *($000)*	$20,852	$26,585	$57,540

The median elementary school in Region 3 cost $247.62 per square foot or $47,588 for each of the 430 students accommodated. The median high school with 1,149 students was 252,000 square feet and cost more than $57 million.

REGION 4 MEDIANS NEW SCHOOLS *(KY, NC, SC, TN)*

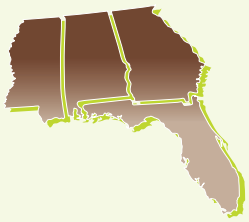
	Elementary	Middle	High
$/sq. ft.	$200.20	$204.11	$189.00
$/student	$29,000	$37,976	$36,311
Sq. ft./student	162.5	168.1	191.3
Students	510	710	1,188
Size (sq. ft.)	80,000	115,000	217,000
Total cost *($000)*	$15,000	$26,500	$36,600

The median elementary school in Region 4 cost $200 per square foot or $29,000 for each of 510 students. The median middle school houses 710 students in 115,000 square feet. The region's median new high school housed 1,188 students and cost $36.6 million.

REGION 5 MEDIANS NEW SCHOOLS *(AL, FL, GA, MS)*

	Elementary	Middle	High
$/sq. ft.	$166.67	$165.53	$163.68
$/student	$23,567	$32,297	$32,923
Sq. ft./student	139.9	186.0	193.2
Students	461	828	1,008
Size (sq. ft.)	65,500	120,257	235,000
Total cost *($000)*	$12,000	$22,000	$38,518

The median elementary school in Region 5 cost $166.67 per square foot or $23,567 for each of the 461 students. The median high school cost $38.5 million and encompassed 235,000 square feet. Middle schools were half that size and housed 180 fewer students.



REGION 6 MEDIANS NEW SCHOOLS *(IN, OH, MI)*

	Elementary	Middle	High
$/sq. ft.	$202.31	$209.86	$189.00
$/student	$31,446	$36,177	$45,622
Sq. ft./student	156.5	183.3	229.5
Students	474	600	600
Size (sq. ft.)	70,598	117,000	173,748
Total cost *($000)*	$14,452	$26,000	$28,673

The median elementary school in Region 6 cost $202.31 per square foot or $31,446 for each of the 474 students. The median middle and high schools house just 600 students, a surprise in this region of large schools and may be a reporting error.

REGION 7 MEDIANS NEW SCHOOLS *(IL, MN, WI)*

	Elementary	Middle	High
$/sq. ft.	$173.96	$222.73	$191.79
$/student	$30,076	$44,545	$64,000
Sq. ft./student	191.0	186.1	305.3
Students	439	360	402
Size (sq. ft.)	73,000	67,000	160,000
Total cost *($000)*	$12,950	$10,350	$29,900

The median elementary school in Region 7 cost $173.96 per square foot or $30,076 for each of 439 students. The median high school cost under $30 million and houses only 400 students, but provides 305 square feet per student, indicating the initial enrollment will be increased.

REGION 8 MEDIANS NEW SCHOOLS *(IA, KS, MO, NE)*

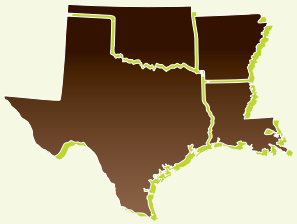
	Elementary	Middle	High
$/sq. ft.	$196.83	$164.17	$209.81
$/student	$29,474	$28,710	$30,205
Sq. ft./student	157.2	186.3	141.9
Students	430	564	834
Size (sq. ft.)	68,000	110,000	141,000
Total cost *($000)*	$13,454	$19,700	$25,000

The median elementary school in Region 8 cost $196.83 per square foot or $29,474 for each of the 430 students. The median high schools cost $25 million and provide 141,000 square feet. Middle schools provide 186 square feet per student and cost $19.7 million.

REGION 9 MEDIANS NEW SCHOOLS *(AR, LA, OK, TX)*

	Elementary	Middle	High
$/sq. ft.	$199.73	$201.58	$201.98
$/student	$33,028	$31,958	$40,556
Sq. ft./student	158.8	177.5	227.3
Students	457	505	900
Size (sq. ft.)	72,500	88,500	180,850
Total cost *($000)*	$15,130	$20,850	$27,000

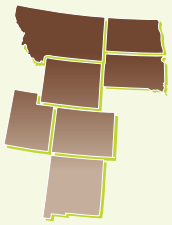
The median elementary school in Region 9 cost $199.73 per square foot or $33,028 each for 457 students. Elementary schools allocated 159 square feet per student. High schools provide 227 square feet. The high schools cost $27 million; middle schools $20.8 million.



REGION 10 MEDIANS NEW SCHOOLS *(CO, MT, ND, NM, SD, UT, WY)*

	Elementary	Middle	High
$/sq. ft.	$150.11	$208.17	$163.30
$/student	$24,576	$37,102	$54,766
Sq. ft./student	137.8	191.3	279.8
Students	297	575	863
Size (sq. ft)	50,000	109,522	209,091
Total cost *($000)*	$8,250	$1,569	$34,979

The median elementary school in Region 10 cost $150.11 per square foot or $24,576 for the 297 students. The high schools cost almost $35 million apiece and provide a median 280 square feet per student at a cost of $54,766 apiece.



REGION 11 MEDIANS NEW SCHOOLS *(AZ, CA, HI, NV)*

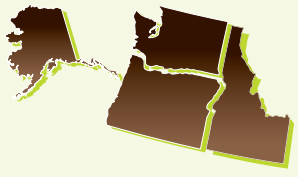
	Elementary	Middle	High
$/sq. ft.	$209.30	$221.32	$319.42
$/student	$32,639	$20,756	$86,375
Sq. ft./student	142.9	129.3	276.3
Students	470	468	900
Size (sq. ft.)	70,000	84,500	120,000
Total cost *($000)*	$12,250	$35,400	$46,000

The median elementary school in Region 11 cost $209.30 per square foot or $32,639 for each of 470 students. The schools reported this year are largely from districts outside the large metropolitan areas, which may skew the numbers down from normal.

REGION 12 MEDIANS NEW SCHOOLS *(AK, ID, OR, WA)*

	Elementary	Middle	High
$/sq. ft.	$216.19	$219.33	$239.26
$/student	$33,516	$35,141	$44,318
Sq. ft./student	154.3	182.0	172.1
Students	393	740	683
Size (sq. ft.)	66,000	130,000	140,000
Total cost *($000)*	$11,718	$26,730	$39,000

The median elementary school in Region 12 cost $216.19 per square foot or $33,516 for each of the 393 students. The median high school cost $39 million at $239.26 per square foot. Middle schools provide 182 square feet per student and cost almost $27 million.



THE OVERALL PICTURE

Trends Since 1995

A look at medians for elementary, middle and high schools.

This is the 18th year that *School Planning & Management* has collected and published data on costs of new schools in the United States. Reporting is done based on medians. The number shown is more than what one-half of schools constructed cost and less than the cost for the other half (see Table 5 for more on national medians and Tables 10 for regional medians).

In 1995, as **Graph A** shows, the median school district was paying about $104 per square foot to construct high schools, $99 for middle schools and $93 per square foot for elementary. Costs remained reasonably close to those numbers for the next four years, rising slightly but still staying close to $100 a square foot — a little above that in high cost parts of the nation, a little below in areas where all costs tended to be lower.

And then things changed. By 2003, high school construction costs had risen to $132 per square foot — a 25-percent increase. Four years later, in 2007, the median high school was being constructed for $171 per square foot. In 2011 median costs for constructing a high school reached $219. Last year the cost of constructing a new high school was estimated at $214 per square foot — a slight decline from the year before.

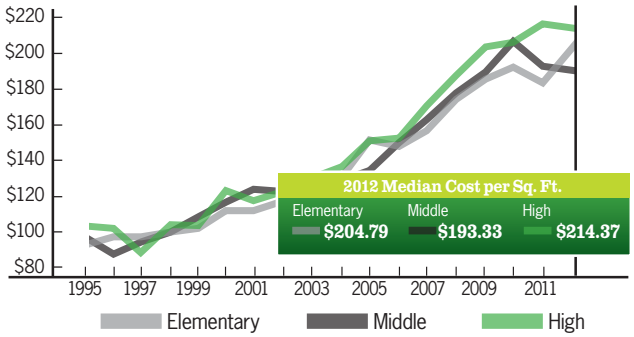
The middle school picture was similar. From 1999 (when costs were $108 per square foot), the price rose steadily to $130 in 2003 and $162 in 2007. In 2009, the median cost for a new middle school was $187.50 per square foot — a 73-percent increase over a decade. In 2010, reported costs surged to better than $215 per square foot, but in 2011, it fell back to a more reasonable $195 — more in line with the previous rate of increase. Last year it fell a little more to $193 per square foot.

The cost of constructing an elementary school has more than doubled since 1985, going from $93 to $205 today.

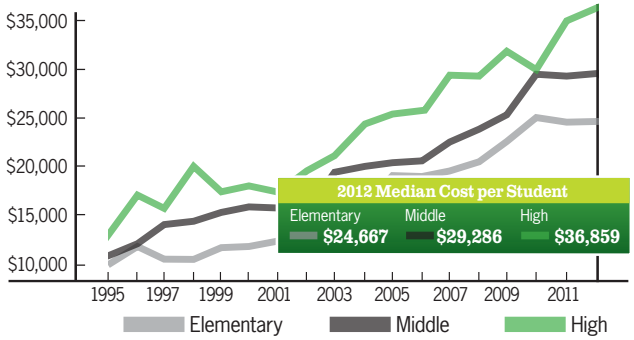
Graph B examines the history of construction cost per student over the same period of time. Cost per square foot is essentially controlled by outside forces. Cost per student, to some extent, can be controlled by the school district. The simple act of increasing the announced number of students who will be served by a new school, after all, will lower the cost per pupil. It is assumed that school districts do not do this, but with the economy robbing schools of operating funds, some districts are increasing the number of students allowed per class and that, in turn, can affect the cost per student if the new standards are applied to a building under construction. Cost in 2012 for the median high school was $36,859 per student, but as has been noted the high schools reported this year tend to have smaller student bodies. The median school in 2011 divided its total cost by 1,100 students. In 2012, the median high school was designated for fewer than 900 students.

Graph C shows the amount of space each school type is allocating per student. This is an area where schools can control costs. Compared to 1995, elementary schools are providing about 27 square feet more for each pupil. In that same period, high schools have provided about 22 additional square feet for each student. Middle schools also added an extra 18 square feet per student over the last 18 years. SPM

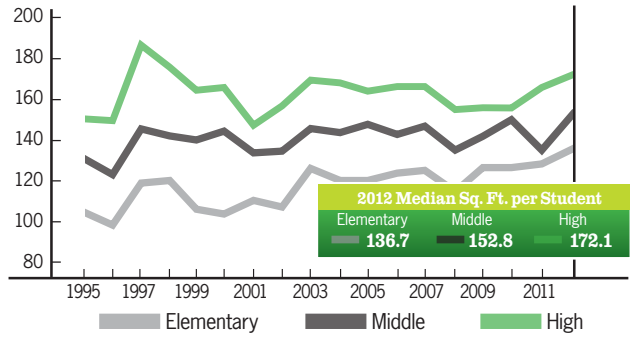
Graph A: Median Cost per Sq. Ft., 1995-2012



Graph B: Median Cost per Student, 1995-2012



Graph C: Median Sq. Ft. per Student, 1995-2012



>> This Construction Report and the accompanying tables, etc., was compiled by **Paul Abramson**, education industry consultant for *School Planning & Management* magazine and the president of Stanton Leggett & Associates, an education consulting firm based in Mamaroneck, N.Y. He can be reached at *intelled@aol.com*.

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