



The 2008 Annual College

Construction Report

A Supplement to
COLLEGE
Planning & Management

Answering the Student Surge With a New Building Surge

■ Paul Abramson

College construction increased significantly during the first six years of the 21st century, going from under \$10B in 2001 to more than \$15B in 2006. It dropped back somewhat in 2007 (to \$14.5B), but it is interesting to note where the cutbacks apparently took place.

In 2001, colleges, seemingly aware of the deteriorating state of many of their buildings, had shifted almost 40 percent of their construction dollars into upgrading and enlarging existing structures. That was in sharp contrast to most previous years when more than 70 percent of construction dollars went into opening new buildings and seemed to signal recognition of the need to bring existing buildings into conformity with modern needs and codes.

But in the last six years, the emphasis has shifted back again to putting the bulk of the institution's construction dollars into new buildings. In 2007, for the first time in a decade, new buildings accounted for more than 70 percent of the construction dollars spent. Total spending fell by about half a billion dollars. Virtually all of that was the result of less money being put into building additions and renovation.

Obviously, with large high-school graduating classes and an emphasis on going to college as the only viable option after high school, the demand for space in colleges is surging. Colleges are answering that surge with a surge in new buildings. That's fine, so long as the flip side does not become neglect of buildings that already exist.

A Short Construction History

I have been tracking college construction for *College Planning & Management* magazine since 1995, when \$6.1B worth of construction was put in place (see Table 1). Construction stayed on a relatively even keel through 1997, when the total was just under \$5.8B. More and more of the construction dollars were going into new buildings.

At that time, I pointed to two obvious reasons. One was an increase in students. The second was the source of funding — largely from state legislatures and large donors, all of which wanted to see their names or those of their supporters prominently displayed on a brand-new building. The idea of providing dollars for a major roofing project was not nearly as sexy, and

so dollars poured in to build new, rather than to fix the old.

That emphasis shifted slightly as total construction spending took off. During the relatively good economic times of the late '90s and early part of this century, the amount spent on new buildings was able to stay steady, and even increase, while dollars to expand and fix up existing buildings were also increasing. Public colleges particularly, with state coffers relatively full, were able to put their money where their buildings already were.

In 2006, colleges in the United States put \$15.1B worth of construction in place and there appeared to be no end in sight. College planners were predicting that construction would remain at or close to \$15B annually at least through 2009, driven by a need to accommodate more students, demands for better facilities for student living (recreation, living, and foodservice), better security, improved and additional technology, and upgraded facilities to allow sophisticated research and maintain top faculty.

A year later, there are signs that this may not happen. The slight drop to \$14.5B in completed construction in 2007 is probably not significant. But with difficult economic times upon us, the projections for major cuts in construction spending in 2008 may be a sign of significant belt-tightening and even cutbacks.

These are among the findings of this 13th Annual Survey of College Construction prepared for *College Planning & Management*

■ Regional Definitions

Region 1:	CT, ME, MA, NH, RI, VT
Region 2:	NJ, NY, PA
Region 3:	DE, DC, MD, VA, WV
Region 4:	KY, NC, SC, TN
Region 5:	AL, FL, GA, MS
Region 6:	IN, OH, MI
Region 7:	IL, MN, WI
Region 8:	IA, KS, MO, NE
Region 9:	AR, LA, OK, TX
Region 10:	CO, MT, ND, NM, SD, UT, WY
Region 11:	AZ, CA, HI, NV
Region 12:	AK, ID, OR, WA

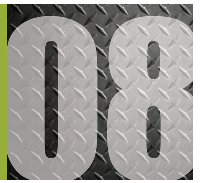
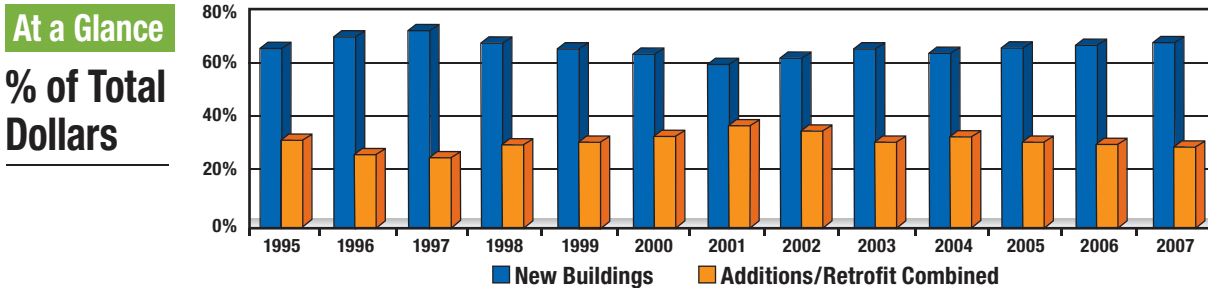
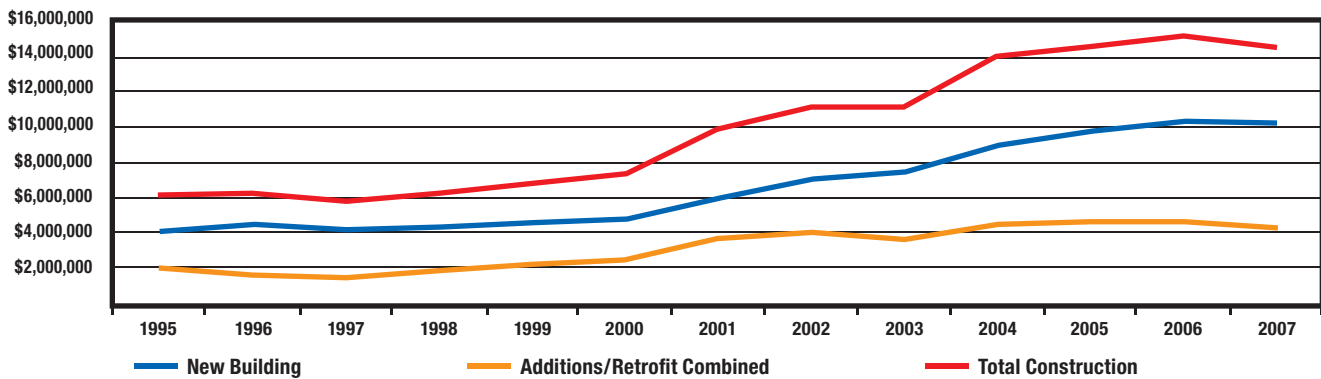


Table 1 College Construction Completed (\$000s), 1995 through 2007

	1995	% Of	1996	% Of	1997	% Of	1998	% Of	1999	% Of
	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>
New Bldgs	\$4,131,972	67.7%	\$4,528,792	72.4%	\$4,260,969	73.8%	\$4,384,893	69.3%	\$4,567,166	67.3%
Additions	\$507,809	8.3%	\$541,697	8.7%	\$529,013	9.2%	\$857,051	13.5%	\$986,864	14.5%
Retrofits	\$1,463,373	24.0%	\$1,181,310	18.9%	\$986,993	17.1%	\$1,090,206	17.2%	\$1,239,307	18.2%
TOTAL	\$6,103,154		\$6,251,799		\$5,776,975		\$6,332,150		\$6,793,337	
	2000	% Of	2001	% Of	2002	% Of	2003	% Of	2004	% Of
	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>
New Bldgs	\$4,780,898	65.6%	\$6,029,621	61.8%	\$7,050,533	63.8%	\$7,453,511	67.4%	\$9,024,829	66.0%
Additions	\$1,039,178	14.3%	\$1,586,614	16.2%	\$1,732,084	15.6%	\$1,761,110	15.9%	\$2,151,836	15.8%
Retrofits	\$1,467,785	20.1%	\$2,147,947	22.0%	\$2,272,794	20.6%	\$1,843,611	16.7%	\$2,491,079	18.2%
TOTAL	\$7,287,861		\$9,764,182		\$11,055,411		\$11,058,232		\$13,667,744	
	2005	% Of	2006	% Of	2007	% Of				
	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>	<u>Cost</u>	<u>Total</u>				
New Bldgs	\$9,792,474	67.4%	\$10,327,086	68.6%	\$10,186,254	70.3%				
Additions	\$2,067,987	14.3%	\$2,109,843	14.0%	\$1,774,674	12.2%				
Retrofits	\$2,662,689	18.3%	\$2,615,611	17.4%	\$2,539,088	17.5%				
TOTAL	\$14,523,150		\$15,052,540		\$14,500,016					

At a Glance History of College Construction College Construction Completed, 1995 through 2007



magazine in conjunction with Market Data Retrieval, a company of Dun and Bradstreet (D&B). Representatives of Market Data Retrieval sent survey forms and made follow-up telephone calls to every college in

the United States, seeking information on their construction programs. As projects are identified, often in the very early stages, contacts are continued in order to add detail and accuracy to the reports and the

projections. These reports are grouped into 12 regions (see list on page C2) by year construction is expected to be completed and started, and are analyzed and used by the author to project construction totals.

Table 2 College Construction Completed in 2007, Nationally and by Region

Region	New	Add	Renovate	Total	% Of Spending For			% Reg Is Of Nation
					New	Add	Renovate	
1	\$566,367,000	\$235,273,500	\$228,705,500	\$1,030,346,000	55.0%	22.8%	22.2%	7.1%
2	\$1,123,505,160	\$178,110,000	\$230,945,841	\$1,532,561,001	73.3%	11.6%	15.1%	10.6%
3	\$736,038,480	\$46,759,000	\$217,416,246	\$1,000,213,726	73.6%	4.7%	21.7%	6.9%
4	\$744,761,974	\$97,953,400	\$212,848,024	\$1,055,563,398	70.6%	9.4%	20.2%	7.2%
5	\$863,053,100	\$99,569,913	\$121,161,009	\$1,083,784,022	79.6%	9.2%	11.2%	7.5%
6	\$678,075,055	\$333,311,076	\$303,244,629	\$1,314,630,760	51.6%	25.4%	23.0%	9.1%
7	\$836,800,000	\$100,824,500	\$271,429,032	\$1,209,053,532	69.2%	8.3%	22.5%	8.3%
8	\$619,754,186	\$195,290,000	\$252,766,497	\$1,067,810,683	58.0%	18.3%	23.7%	7.4%
9	\$926,600,715	\$68,935,000	\$95,999,622	\$1,091,535,337	84.9%	6.3%	8.8%	7.5%
10	\$716,826,078	\$37,113,483	\$71,200,063	\$825,139,623	86.9%	4.5%	8.6%	5.7%
11	\$2,193,648,386	\$278,134,501	\$489,877,215	\$2,961,660,101	74.1%	9.4%	16.5%	20.4%
12	\$180,823,700	\$103,400,000	\$43,494,575	\$327,718,275	55.1%	31.6%	13.3%	2.3%
National	\$10,186,253,834	\$1,774,674,372	\$2,539,088,252	\$14,500,016,458	70.3%	12.2%	17.5%	100%

To read this table: Colleges in Region 1 (New England) spent \$566M on new buildings completed in 2007, \$235M on additions to existing buildings, and \$228M on retrofit of existing buildings, for a total of \$1.03B on all construction. Fifty-five percent of Region 1's college construction dollars were spent on new buildings. Region 1 colleges spent 7.1 percent of all the money spent on college construction last year.

Construction Activity, Nationally and By Region

College construction completed in 2007 totaled \$14.5B. Of that amount, \$10.2B (70.2 percent) was spent on entirely new buildings. The balance went into adding space to existing structures (\$1.8B) and renovating existing space (\$2.5B). Less than one-third of all the nation's colleges report that they are currently in a construction mode. When asked about construction completed in 2007, expected to be completed in 2008, or projected to start in 2008, 71 percent of all colleges contacted said that they had no construction activity of any kind planned.

To better understand and estimate how and where construction is taking place, the nation was divided into 12 regions and construction plans and programs of each region's colleges were examined.

In terms of construction put in place in 2007 (see Table 2), colleges and universities in Region 11 — including California, Arizona, Nevada, and Hawaii — were the largest spenders, with a total of almost \$3B put in place. Seventy-four percent of that

(\$2.2B) was for new buildings and another \$278M was spent on providing additional space in existing buildings. Close to half a billion dollars went to renovating existing structures. Colleges and universities in Region 11 were responsible for one out of every five college construction dollars spent on work completed in 2007.

While spending in Region 11 increased significantly last year, colleges in Regions 4 and 5 — each of which put almost \$2B in place in 2006 — appear to have cut back. Region 5 (Florida, Georgia, Mississippi, and Alabama) reported putting just under \$1.1B worth of construction in place in 2007, with almost 80 percent of it going into new buildings. Colleges in Region 4 (North Carolina, South Carolina, Tennessee, and Kentucky) also spent just over \$1B.

While these two southeast regions completed less construction in 2007, colleges in some other regions increased their activity.

Region 1's colleges completed more than \$1B worth of construction in 2007, with slightly more than half of that on new buildings and the rest on additions and retrofit to existing facilities. A year

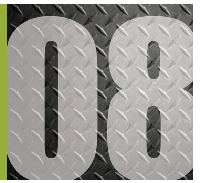
ago colleges in that region completed just \$870M worth of construction.

Region 7 (Illinois, Minnesota, and Wisconsin) spent just under \$900M in 2006 but reported \$1.2B in completions a year later. Almost 70 percent of this money went into new buildings.

Region 8 (Nebraska, Iowa, Missouri, and Kansas) increased its spending spectacularly. After completing projects worth less than \$500M the previous year, in 2007 colleges from those four states reported that they completed projects worth over \$1B. Less than 60 percent of those dollars resulted in new buildings.

Region 2 (New York, New Jersey, and Pennsylvania) was another area where construction increased. Colleges in these three states completed more than \$1.5B worth of construction with almost three of four dollars invested in new buildings. During 2007, Region 2 was second only to Region 11 in terms of dollars spent.

Region 6, including Ohio, Michigan, and Indiana, was the third-highest spending region at \$1.3B, but this actually represented a decline from a year earlier.

**Table 3** College Construction Projected to Be Completed in 2008, Nationally and by Region

Region	New	Add	Renovate	Total	% Of Spending For			% Reg Is Of Nation
					New	Add	Renovate	
1	\$525,413,259	\$127,837,500	\$155,142,890	\$808,393,649	65.0%	15.8%	19.2%	6.0%
2	\$1,125,896,070	\$154,699,801	\$333,524,177	\$1,614,120,048	69.8%	9.6%	20.6%	12.1%
3	\$486,401,664	\$141,691,177	\$193,935,973	\$822,028,815	59.2%	17.2%	23.6%	6.2%
4	\$933,185,092	\$190,272,905	\$176,849,528	\$1,300,307,525	71.8%	14.6%	13.6%	9.7%
5	\$754,664,129	\$172,200,665	\$162,016,555	\$1,088,881,349	69.3%	15.8%	14.9%	8.2%
6	\$510,987,586	\$244,115,890	\$196,420,525	\$951,524,001	53.7%	25.7%	20.6%	7.1%
7	\$346,929,000	\$229,522,000	\$146,287,000	\$722,738,000	48.0%	31.8%	20.2%	5.4%
8	\$612,529,233	\$70,613,143	\$142,190,290	\$825,332,666	74.2%	8.6%	17.2%	6.2%
9	\$1,644,946,292	\$473,077,424	\$163,068,130	\$2,281,091,846	72.1%	20.7%	7.2%	17.1%
10	\$444,120,780	\$38,898,000	\$62,962,957	\$545,981,737	81.4%	7.1%	11.5%	4.1%
11	\$1,759,717,846	\$164,142,314	\$145,526,585	\$2,069,386,745	85.0%	8.0%	7.0%	15.5%
12	\$200,464,604	\$76,924,500	\$42,768,300	\$320,157,404	62.6%	24.0%	13.4%	2.4%
National	\$9,345,255,554	\$2,083,995,321	\$1,920,692,910	\$13,349,943,785	70.0%	15.6%	14.4%	100.0%

To read this table: Colleges in Region 1 (New England) expect to spend \$525M on new buildings to be completed in 2008, \$128M on additions to existing buildings, and \$155M on retrofit of existing buildings, for a total of over \$808M on all construction. Sixty-five percent of Region 1's college construction dollars will go for new buildings. Region 1 colleges are projected to spend 6.1 percent of all the money spent on college construction to be completed this year.

Table 4 College Construction Projected to Start in 2008, Nationally and by Region

Region	New	Add	Renovate	Total	% Of Spending For			% Reg Is Of Nation
					New	Add	Renovate	
1	\$417,583,622	\$45,846,000	\$305,538,898	\$768,968,520	54.3%	6.0%	39.7%	6.0%
2	\$1,104,807,462	\$398,429,550	\$188,207,564	\$1,691,444,575	65.3%	23.6%	11.1%	13.2%
3	\$652,079,280	\$20,468,640	\$216,821,508	\$889,369,428	73.3%	2.3%	24.4%	6.9%
4	\$725,796,518	\$223,196,250	\$216,851,758	\$1,165,844,525	62.3%	19.1%	18.6%	9.0%
5	\$690,262,800	\$155,930,903	\$126,451,758	\$972,645,461	71.0%	16.0%	13.0%	7.6%
6	\$459,764,194	\$172,505,860	\$263,905,289	\$896,175,343	51.3%	19.3%	29.4%	7.0%
7	\$363,602,628	\$99,661,500	\$169,533,032	\$632,797,160	57.5%	15.7%	26.8%	4.9%
8	\$335,756,906	\$161,590,283	\$137,672,279	\$635,019,468	52.9%	25.4%	21.7%	5.0%
9	\$1,850,008,752	\$93,621,292	\$172,821,955	\$2,116,452,000	87.4%	4.4%	8.2%	16.5%
10	\$379,058,120	\$13,188,000	\$46,786,404	\$439,032,524	86.3%	3.0%	10.7%	3.4%
11	\$1,227,702,204	\$394,859,696	\$667,494,027	\$2,290,055,927	53.6%	17.2%	29.2%	17.9%
12	\$160,370,000	\$55,720,000	\$111,877,000	\$327,967,000	48.9%	17.0%	34.1%	2.6%
National	\$8,366,792,485	\$1,835,017,973	\$2,623,961,473	\$12,825,771,932	65.2%	14.3%	20.5%	100.0%

To read this table: Colleges in Region 1 (New England) expect to spend \$417M on new buildings being started in 2008, \$45M on additions to existing buildings, and \$305M on retrofit of existing buildings, for a total of \$769M on all construction. More than 54 percent of Region 1's construction dollars are destined to be spent on new buildings. The projected construction plans of Region 1 colleges starting in 2008 account for 6.0 percent of all college construction projects projected to start this year.

What's Underway?

Construction completed in 2007 is history. Construction expected to be put in place in 2008 is underway right now. Colleges report that they expect to complete \$13.3B worth of construction this year (see Table 3), a drop from the 2007 total. Of that amount, \$9.3B (70 percent) will go into

new buildings. Another \$2B will be used to provide additional space in existing buildings. A little less than \$2B is being used to retrofit, renovate, and upgrade existing structures. Colleges in Region 9 (Arkansas, Louisiana, Oklahoma, and Texas) say they will complete almost \$2.3B worth of work in 2008. That would make that region the

highest spending, exceeding the expected \$2.1B spending of Region 11.

Looking Ahead

What is coming next? Colleges were asked about construction they were planning to start during calendar year 2008 (see Table 4). The total projected is \$12.8B,

Table 5 Profile of New Buildings Currently Underway

Building Type	Median Size (Sq. Ft.)	Median Cost	Cost Per Square Foot			Buildings in Sample
			Low Quartile	Median	High Quartile	
Academic	51,125	\$14,000,000	\$191.18	\$260.00	\$366.92	77
Child Care	16,000	\$4,600,000	\$209.43	\$325.00	\$469.62	9
Library	81,000	\$21,400,000	\$204.00	\$283.75	\$346.67	16
Office	48,287	\$9,000,000	\$147.26	\$262.48	\$394.50	14
Performance	55,000	\$16,000,000	\$221.75	\$409.79	\$567.78	15
Physical Education	57,000	\$21,500,000	\$221.28	\$311.40	\$417.71	18
Residence Halls	100,000	\$20,000,000	\$165.79	\$203.70	\$245.09	47
Science	75,000	\$24,000,000	\$270.27	\$337.49	\$451.53	48
Student Union	41,000	\$10,000,000	\$192.52	\$233.21	\$292.86	23
Technology	54,500	\$13,607,500	\$188.41	\$240.53	\$328.60	22

To read this table: The median academic building in this sample of buildings currently being constructed will contain 51,125 sq. ft. and will cost \$14M. The median cost will be \$260 per sq. ft. One quarter of the academic buildings will cost \$191.18 per sq. ft. or less. At the other end of the scale, one out of four academic buildings will cost \$366.92 per sq. ft. or more. This information was gathered from a sample of 77 academic buildings currently under construction.

signifying another decline in activity, possibly mirroring the difficult economic times in which we are living. Region 11 is expecting the most activity in terms of dollars expended.

While the total figures in Tables 3 and 4 indicate that college construction will decrease over the next few years, our experience has been that projections of completions and starts tend to be somewhat low, both because of when contacts are made (sometimes three and four years before the project is to be completed or started) and because of reluctance on the part of some colleges to reveal plans that are not yet concrete. On the other hand, the projections for 2007 (\$14.4B to be completed) were right on target. Actual completions totaled \$14.5B.

What's In a Building?

Every college that plans and constructs a new building designs that building for its own specific needs and purposes. An academic building at one institution will have a different mix of classrooms, labs, and offices than one at another. Some colleges will put science labs in their academic buildings; others construct buildings strictly for science. Similarly, student

unions run the gamut from simple gathering and foodservice areas to theaters, fitness centers, bowling alleys, and the like.

Nevertheless, when a college says that it is building a science building, an academic building, a library, or performance building, there is a certain commonality of facilities that we all expect. That commonality allows some comparison from campus to campus in terms of cost and size. **Table 5** provides information on ten building types that were identified by colleges. In each case it is assumed that the function that was named is the dominant one in the building, although other facilities may also be included.

Information was gathered on 77 new academic buildings that were underway when the reports were made. Among those 77, the median size was 51,125 sq. ft. and the median cost was \$14,000,000. In terms of cost per sq. ft., the academic building right in the middle is being constructed for \$260 per sq. ft. One-quarter of the academic buildings are being constructed for \$191 or less while one-quarter at the other end of the scale cost \$367 or more per sq. ft.

Looking at some of the other building types identified, the median among 16 new library buildings was 81,000 sq. ft.,

and cost, \$21.4M. Among 15 performance venues, the median size was 55,000 sq. ft. and the cost \$16M. Cost per sq. ft. exceeded \$409. Forty-eight science buildings were reported, with the median 75,000 sq. ft. and costing \$24M. The median cost per sq. ft. for science buildings was more than \$337, and one-quarter of these buildings cost \$451 per sq. ft. or more. (See **Graphs A through D** for the history of costs for four key building types.)

What's Being Renovated?

With better than \$2.5B being spent in 2007 on the renovation of existing buildings, it seemed important to know what kinds of work are most often undertaken. The list in the **box at right** shows that when renovation projects are started on a college campus, more than half of them involve overhauling the building's electrical and HVAC systems. Lighting and plumbing are involved in better than four of ten projects, and flooring and carpeting in 39 percent.

Beyond that, the focus of renovation spreads to a number of different, though often interrelated, concerns. ADA compliance is included in 30 percent of the projects, along with upgrading of alarm

systems. Installation of fiber optics and cable are in one of four.

That old bugaboo, lack of storage, was addressed in one of five projects. Other retrofit projects frequently included are LANs (17.7 percent) and WANs (16.7 percent), and installation of security equipment (17.2 percent). Although energy savings and green concerns are not mentioned as such, controls (17.2 percent), roofing projects (14.2 percent), and windows (9.2 percent) certainly help colleges to button up their buildings and make them run more efficiently.

Rising Costs

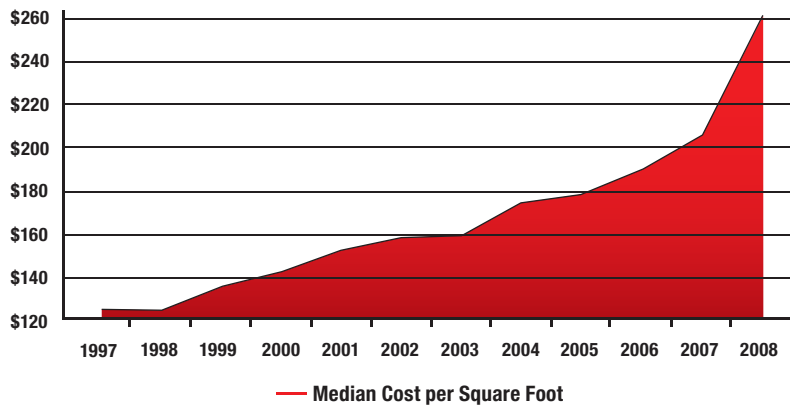
We have been publishing cost information on various building types since 1997. In the four graphs on this page, we have tracked the median cost of construction per sq. ft. for four building types through that period of time. The four were chosen because we receive more reports on those than other types, and they are constructed on virtually every college campus.

The median cost per sq. ft. for academic buildings was just over \$120 in 1997 and stayed closed to that mark in 1998. Since then (see **Graph A**), it has risen significantly. Last year, for the first time, the median cost for academic buildings rose above \$200 per sq. ft. This year the cost has accelerated significantly, to \$260 per sq. ft. Based on the 77 buildings sampled, only 25 percent of all college academic buildings currently underway are expected to cost less than \$191 per sq. ft.

It is important to understand that each year a different set of buildings (and colleges) is involved. Conceivably, one year all buildings of a particular type could come from major universities and the next year from small community colleges. However, with a sampling as large as this one, that's unlikely. A better explanation is that academic buildings are including more and more sophisticated equipment (specifically, technology) and, most important, that prices for everything are going up.

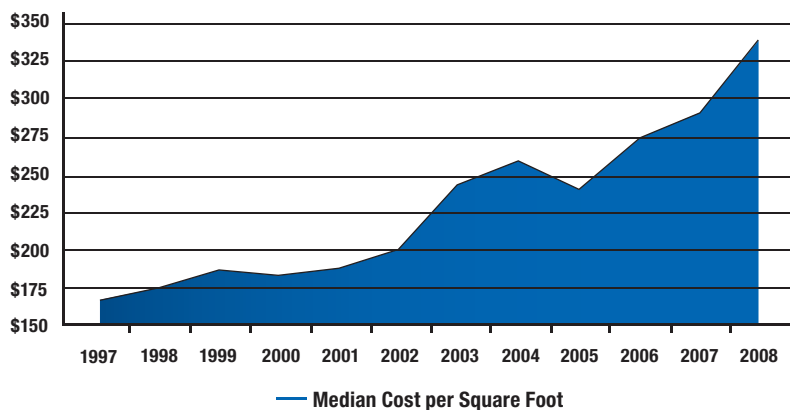
■ Graph A

Median Cost per Square Foot for Academic Buildings, 1997 - 2008



■ Graph B

Median Cost per Square Foot for Science Buildings, 1997 - 2008



■ RETROFIT
When Colleges Renovate a Building, Here is the Work They Most Often Undertake* (% of projects)


HVAC	55.6%
Electric Overhaul	54.6%
Lighting	45.6%
Plumbing	40.1%
Flooring/Carpeting	39.2%
ADA Compliance	30.7%
Alarms	30.4%
Fiber Optics/Cable	24.9%
Storage	22.2%
LANs	17.7%
Controls	17.2%
Security Equipment	17.2%
Tile	16.7%
WANs	16.7%
Bathrooms	15.2%
Roofing	14.2%
Offices	12.5%
Classrooms	12.5%
Code Violations	11.7%

* Retrofit undertaken in at least 10% of reported projects

Science buildings (Graph B) always cost more than academic buildings. In 1997, they cost \$170 per sq. ft. By 2004 the cost had risen above \$250 per sq. ft. and now stands at \$337 per sq. ft., a one-year increase of 16 percent. Forty-eight buildings provided cost information.

The cost for library buildings (Graph C) has risen to almost \$283 per sq. ft., jumping \$30 per sq. ft. during the past year. However, only 16 buildings are included in this sample.

Graph D looks at the median cost per sq. ft. for residence hall buildings. The days of inexpensive housing for students has obviously passed. A decade ago, in 1997, the median residence hall was being constructed for about \$75 per sq. ft. Today the median cost among 47 residences was over \$203. Only one of four cost less than \$165 per sq. ft.

A more thorough study of residence hall costs and amenities is now underway and will be reported in the May issue of *College Planning & Management*. 

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