

The **2011** College

Construction Report

16TH ANNUAL REPORT

COLLEGE
Planning & Management

NATIONAL STATISTICS

WHAT HAPPENED IN 2010?
WHAT'S PROJECTED FOR 2011?

BUILDING TRENDS

HOW ARE CONSTRUCTION
DOLLARS BEING USED?

MEDIAN COSTS

HOW DO COSTS DIFFER
FOR BUILDING TYPES?

Building Confidence

The news is not all bad as college construction exceeds projections in a recovering economy.

BY PAUL ABRAMSON

Is there a pattern to college construction today? The numbers indicate that in 2010, colleges spent \$11B on new buildings, additions, and renovation of existing buildings. That was slightly more than was put in place the year before but far below the \$13 to \$15B annually from 2004 through 2008. On the other hand, it was more than had been projected, meaning that colleges actually accomplished more than

they had expected.

That may be because endowments increased last year, giving colleges more confidence that they will be able to attract more donations. Trustees of the University of Washington, for example, are betting on that, having authorized spending of \$250M to renovate the football stadium on the assumption that most of it can be raised through private donations.

But many colleges depend on state legislatures for their funding, and most states are broke. Western Michigan University may stand as a cautionary tale. The University started work last year on a \$60M academic building with only part of the spending in place. The balance was to come from the state, but the legislature left the project out of its funding package.

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A LOOK BACK

CONSTRUCTION COMPLETED (\$000's), 1995 THROUGH 2010

	1995 Cost	% of Total	1996 Cost	% of Total	1997 Cost	% of Total	1998 Cost	% of Total	1999 Cost	% of Total
New	\$4,131,972	67.7%	\$4,528,792	72.4%	\$4,260,969	73.8%	\$4,384,893	69.2%	\$4,567,166	67.2%
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 Cost	% of Total	2001 Cost	% of Total	2002 Cost	% of Total	2003 Cost	% of Total	2004 Cost	% of Total
New	\$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	15.7%	\$1,761,110	15.9%	\$2,151,836	15.7%
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	

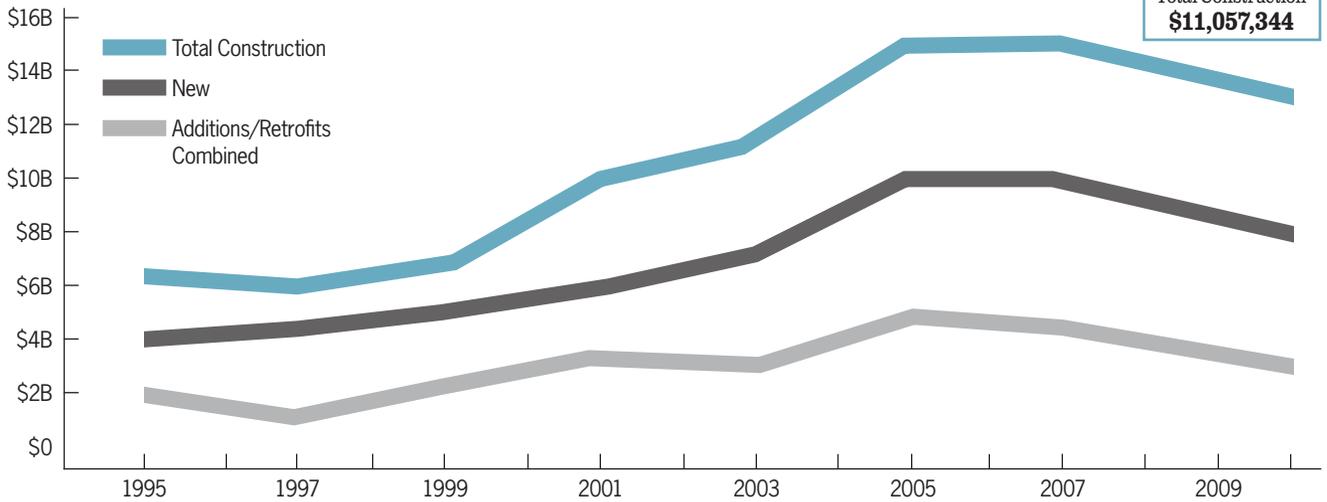
	2005 Cost	% of Total	2006 Cost	% of Total	2007 Cost	% of Total	2008 Cost	% of Total	2009 Cost	% of Total
New	\$9,792,474	67.4%	\$10,327,086	68.6%	\$10,186,254	70.2%	\$9,345,152	70.3%	\$8,087,132	75.5%
Additions	\$2,067,987	14.2%	\$2,109,843	14.0%	\$1,774,674	12.2%	\$1,981,866	14.9%	\$1,254,902	11.7%
Retrofits	\$2,662,689	18.3%	\$2,615,611	17.4%	\$2,539,088	17.5%	\$1,972,920	14.8%	\$1,370,462	12.8%
TOTAL	\$14,523,150		\$15,052,540		\$14,500,016		\$13,299,939		\$10,712,496	

	2010 Cost	% of Total
New	\$7,913,650	71.6%
Additions	\$1,440,304	13.0%
Retrofits	\$1,703,390	15.4%
TOTAL	\$11,057,344	

Charting construction costs: Between 1995 and 2010, annual costs of completed construction on campuses across the United States has risen from just over \$6B to just over \$11B. By 2005, annual construction was up above \$13B, and in 2006 it topped \$15B. After 2006, totals began to decline and continued to do so through 2009 as the depressed economy took its toll. In 2010, however, things turned around, and a modest gain of about \$300M over 2009's numbers is a hopeful sign that a steady recovery is underway.

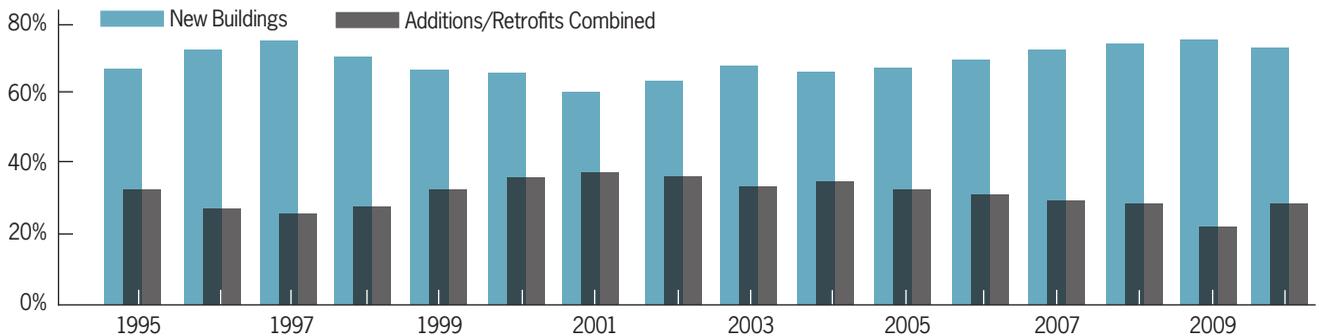
HISTORY OF COLLEGE CONSTRUCTION

COLLEGE CONSTRUCTION COMPLETED (\$000's), 1995 THROUGH 2010



PERCENTAGE OF TOTAL DOLLARS

COLLEGE CONSTRUCTION COMPLETED, 1995 THROUGH 2010



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

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** on pg. CR2). Construction stayed close to \$6B per year from 1995 through 1999, when it reached \$6.8B.

Starting in 2000, college construction began to shift into a higher gear. In 2000 it broke the \$7B barrier for the first time, then jumped to \$9.8B and \$11B the next two years, largely in response to a growing demand for seats in college classrooms and beds in residence halls.

By 2005 annual construction was up above \$13B, and in 2006 it topped \$15B, before falling back slightly to \$14.5B in 2007.

The next year there was a further decline to just \$13.3B, and in 2009, just \$10.7B was completed, a drop of more than \$3.4B (22 percent) in three years as the depressed overall economy took its toll.

In 2010, college construction put in place had a mild rebound to almost \$11.1B, an increase of just \$300M, but hopefully a sign of the times as college endowments began their own rebound from the worst effects of the recession.

These are among the findings of this 16th Annual Survey of College Construction prepared for *College Planning & Management* magazine in conjunction with Market Data Retrieval, a company of Dun and Bradstreet (D&B). Market Data Retrieval sends survey forms and makes

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NATIONALLY AND BY REGION

COLLEGE CONSTRUCTION COMPLETED IN 2010 (\$000's)

Region	New	Additions	Renovation	Total	% OF SPENDING FOR			% of Nation
					New	Addition	Renovation	
1	\$246,600	\$60,650	\$107,950	\$415,200	59.4%	14.6%	26.0%	3.8%
2	\$667,104	\$187,363	\$143,120	\$997,586	66.9%	18.8%	14.3%	9.0%
3	\$555,555	\$47,131	\$73,393	\$676,079	82.2%	7.0%	10.9%	6.1%
4	\$495,647	\$132,270	\$124,314	\$752,232	65.9%	17.6%	16.5%	6.8%
5	\$788,781	\$197,078	\$198,440	\$1,184,299	66.6%	16.6%	16.8%	10.7%
6	\$482,185	\$156,819	\$244,571	\$883,575	54.6%	17.7%	27.7%	8.0%
7	\$411,429	\$139,994	\$170,860	\$722,282	57.0%	19.4%	23.7%	6.5%
8	\$494,034	\$108,500	\$85,345	\$687,879	71.8%	15.8%	12.4%	6.2%
9	\$1,574,021	\$181,994	\$167,326	\$1,923,341	81.8%	9.5%	8.7%	17.4%
10	\$464,629	\$30,248	\$41,816	\$536,693	86.6%	5.6%	7.8%	4.9%
11	\$1,539,664	\$147,608	\$235,782	\$1,923,054	80.1%	7.7%	12.3%	17.4%
12	\$194,000	\$50,650	\$110,473	\$355,123	54.6%	14.3%	31.1%	3.2%
Nat'l	\$7,913,650	\$1,440,304	\$1,703,390	\$11,057,344	71.6%	13.0%	15.4%	100%

To read this table: Colleges in Region 1 (New England) spent \$246M on new buildings completed in 2010, \$60M on additions to existing buildings, and \$107M on retrofit of existing buildings, for a total of \$415M on all construction. 59 percent of Region 1's college construction dollars were spent on new buildings. Region 1 colleges spent 3.8 percent of all the money spent on college construction last year.

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. These reports are grouped into 12 regions (see list on pg. CR3) by year construction is expected to be completed and started, and are analyzed and used by the author to project construction totals.

Construction Activity, Nationally and by Region

College construction completed in 2010 totaled \$11.1B (SEE TABLE 2, above), a slight increase over 2009. Of that amount, \$7.9B (71.6 percent) was spent on entirely new buildings. The balance went to adding space to existing structures (\$1.4B) and renovating existing space (\$1.7B).

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 2010, colleges and universities in Region 9 (Arkansas, Louisiana, Oklahoma, and Texas) and Region 11 (including California, Arizona, Nevada, and Hawaii) were the largest spenders, each with almost identical totals (\$1.923B). Each spent its money essentially in the same way, with better than 80 percent going into new buildings, but Region 11 institutions put more emphasis on upgrading existing buildings than did those in Region 9. Both regions spent more in 2010 than they had a year earlier.

Colleges in Region 5 (Alabama, Florida, Georgia, and Mississippi) made up the only one other region to put as much as \$1B in place last year. Region 2 (New Jersey, New York, and Pennsylvania) colleges spent almost as much, but fell just short. It's interesting to note that in each of these two regions, one-third of the dollars were spent on enlarging and fixing up existing buildings.

Region 6, including Ohio, Michigan,

and Indiana, put almost \$900M into work completed in 2010, almost half being spent on existing buildings.

Region 4 (Kentucky, North Carolina, South Carolina, and Tennessee), with \$752M in construction, and Region 7 (Illinois, Minnesota, and Wisconsin), with \$722M, were the only other regions spending more than \$700M this year.

What's Underway?

Construction completed in 2010 is history. Construction expected to be put in place in 2011 is underway right now. Colleges report that they expect to complete almost \$11.6B worth of construction this year (SEE TABLE 3), a slight increase from 2010. Of that amount, \$8.5B (73.1 percent) will go into new buildings. Almost \$2B will be used to retrofit, renovate, and upgrade existing structures.

Despite budget cuts, colleges in Region 11 project that they will continue as the nation's most active construction region, at \$2.2B. Colleges in Region 9, on the other hand, report a significant drop in

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NATIONALLY AND BY REGION

CONSTRUCTION PROJECTED TO BE COMPLETED IN 2011 (\$000's)

Region	New	Additions	Renovation	Total	% OF SPENDING FOR			% of Nation
					New	Addition	Renovation	
1	\$608,801	\$49,350	\$183,863	\$842,015	72.3%	5.9%	21.8%	7.3%
2	\$421,118	\$153,923	\$225,015	\$800,056	52.6%	19.2%	28.1%	6.9%
3	\$823,977	\$66,089	\$218,217	\$1,108,283	74.3%	6.0%	19.7%	9.6%
4	\$1,043,085	\$36,850	\$434,428	\$1,514,363	68.9%	2.4%	28.7%	13.1%
5	\$1,071,880	\$11,150	\$91,367	\$1,174,397	91.3%	0.9%	7.8%	10.2%
6	\$423,940	\$150,422	\$189,504	\$763,867	55.5%	19.7%	24.8%	6.6%
7	\$183,126	\$64,259	\$108,767	\$356,152	51.4%	18.0%	30.5%	3.1%
8	\$119,600	\$10,200	\$26,976	\$156,776	76.3%	6.5%	17.2%	1.4%
9	\$1,116,300	\$106,150	\$65,950	\$1,288,400	86.6%	8.2%	5.1%	11.1%
10	\$726,463	\$83,685	\$77,045	\$887,193	81.9%	9.4%	8.7%	7.7%
11	\$1,658,507	\$289,600	\$250,248	\$2,198,355	75.4%	13.2%	11.4%	19.0%
12	\$262,940	\$100,650	\$116,208	\$479,798	54.8%	21.0%	24.2%	4.1%
Nat'l	\$8,459,737	\$1,122,328	\$1,987,587	\$11,569,653	73.1%	9.7%	17.2%	100%

To read this table: Colleges in Region 1 (New England) expect to spend \$608M on new buildings to be completed in 2011, \$49M on additions to existing buildings, and \$183M on retrofit of existing buildings, for a total of \$842M on all construction. 72 percent of Region 1's college construction dollars will go for new buildings. Region 1 colleges are projected to spend 7.3 percent of all the money spent on college construction to be completed this year.

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NATIONALLY AND BY REGION

CONSTRUCTION PROJECTED TO START IN 2011 (\$000's)

Region	New	Additions	Renovation	Total	% OF SPENDING FOR			% of Nation
					New	Addition	Renovation	
1	\$605,900	\$95,650	\$235,650	\$937,200	64.7%	10.2%	25.1%	7.5%
2	\$646,600	\$71,363	\$62,650	\$780,612	82.8%	9.1%	8.0%	6.3%
3	\$663,270	\$93,312	\$316,411	\$1,072,993	61.8%	8.7%	29.5%	8.6%
4	\$813,947	\$42,720	\$236,695	\$1,093,362	74.4%	3.9%	21.6%	8.8%
5	\$770,475	\$72,721	\$150,166	\$993,363	77.6%	7.3%	15.1%	8.0%
6	\$375,742	\$71,682	\$171,084	\$618,508	60.7%	11.6%	27.7%	5.0%
7	\$692,269	\$73,074	\$112,559	\$877,901	78.9%	8.3%	12.8%	7.0%
8	\$180,300	\$76,330	\$114,720	\$371,350	48.6%	20.6%	30.9%	3.0%
9	\$1,678,738	\$81,190	\$619,001	\$2,378,929	70.6%	3.4%	26.0%	19.1%
10	\$609,192	\$97,228	\$156,441	\$862,861	70.6%	11.3%	18.1%	6.9%
11	\$1,414,846	\$211,160	\$120,750	\$1,746,756	81.0%	12.1%	6.9%	14.0%
12	\$652,100	\$65,650	\$35,650	\$753,400	86.6%	8.7%	4.7%	6.0%
Nat'l	\$9,103,380	\$1,052,079	\$2,331,777	\$12,487,235	72.9%	8.4%	18.7%	100%

To read this table: Colleges in Region 1 (New England) expect to spend \$937M on new buildings being started in 2011, \$95M on additions to existing buildings, and \$235M on retrofit of existing buildings, for a total of \$937M on all construction. Over 64 percent of Region 1's projected construction dollars are destined to be spent on new buildings. The construction cost of Region 1 colleges starting in 2011 accounts for 7.5 percent of all college construction spending projected to start this year.

5 PROFILE OF NEW BUILDINGS CURRENTLY UNDERWAY

Building Type	Median Size (Sq. Ft.)	Median Cost	COST PER SQ. FT.			Buildings in Sample
			Low Quartile	Median	High Quartile	
Academic	76,480	\$25,200,000	\$246.12	\$339.08	\$434.00	74
Health Related	63,000	\$20,000,000	\$258.06	\$350.00	\$460.00	39
Library/Media	57,564	\$24,500,000	*	\$346.29	\$481.82	10
Performance	83,000	\$25,039,820	\$161.29	\$323.51	\$416.67	11
Physical Education	65,000	\$20,000,000	\$200.00	\$400.00	\$700.00	19
Residence Halls	102,099	\$23,000,000	\$156.86	\$187.67	\$259.79	28
Science	88,650	\$42,250,000	\$342.86	\$503.43	\$626.79	54
Student Center	67,000	\$21,000,000	\$258.24	\$300.00	\$380.60	25
Technology	43,332	\$11,200,000	\$190.48	\$236.04	\$620.00	8
Vocational	33,000	\$8,950,000	\$140.91	\$287.95	\$439.56	8

To read this table: The median academic building in this sample of buildings recently completed or currently being constructed will contain 76,480 sq. ft. and will cost \$25.2M. The median cost will be \$339.08 per sq. ft. One quarter of the academic buildings will cost \$246.12 per sq. ft. or less. At the other end of the scale, one out of four academic buildings will cost \$434 per sq. ft. or more. This information was gathered from a sample of 74 academic buildings completed in 2010 or currently under construction.

RETROFIT

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

HVAC	44.8%
Electric Overhaul	41.2%
Plumbing	34.8%
Lighting	33.8%
Flooring/Carpeting	31.4%
Fire Alarms	25.4%
ADA Compliance	24.0%
Fiber Optics/Cable	20.3%
Storage	17.0%
Tile	16.9%
Bathrooms	16.3%
Security Equipment	15.6%
WANs	15.4%
LANs	15.2%
Controls	14.2%
Windows	11.6%
Roofing	11.5%

* Retrofit undertaken in at least 10% of reported projects

projected activity. There is no obvious reason for this, so it may be more a matter of willingness to report than lack of activity.

Looking Ahead

What is coming next? Colleges were asked about construction they were planning to start during calendar year 2011. **TABLE 4** (on pg. CR5) shows the results. The total projected is \$12.5B, indicating, perhaps, that college construction is rebounding from the depths of despair and that donors with open check books are back in spending mode. Certainly reports that college endowments rose last year are encouraging, but for the many institutions that depend on state legislatures for the bulk of their construction dollars, difficult times may still be ahead.

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 col-

leges 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 including amenities such as theaters, bowling alleys, fitness centers, and the like.

Nevertheless, when a college says that it is building a science building, an academic building, a library, or performing arts 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 **10 building types** that were identified relatively frequently by college spokespersons. 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 74 new academic buildings completed in 2010 or underway now. Among those, the median size was 76,480 sq. ft. and the median cost was \$25,200,000. In terms of cost per sq. ft., the academic building right in the

middle is being constructed for \$339.08 per sq. ft. One-quarter of the academic buildings are being constructed for \$246 or less, while one-quarter at the other end of the scale cost \$434 or more per sq. ft. (It should be noted that the median for each variable was found independently. The 76,480 sq. ft. library building was not necessarily where the cost was \$339.08 per sq. ft.)

Looking at some of the other building types identified, the median among 10 library buildings was 57,564 sq. ft.; the median cost \$24.5M. Among 11 performance venues, the median size was 83,000 sq. ft. and the cost \$25M.

Physical education and athletic facilities ranged from field houses to natatoriums and from gymnasiums to locker rooms to stadiums. Nineteen facilities falling into this category had a median cost of \$20M. Reports on 25 student centers showed the median size to be 67,000 sq. ft. and the cost per sq. ft. at \$300.

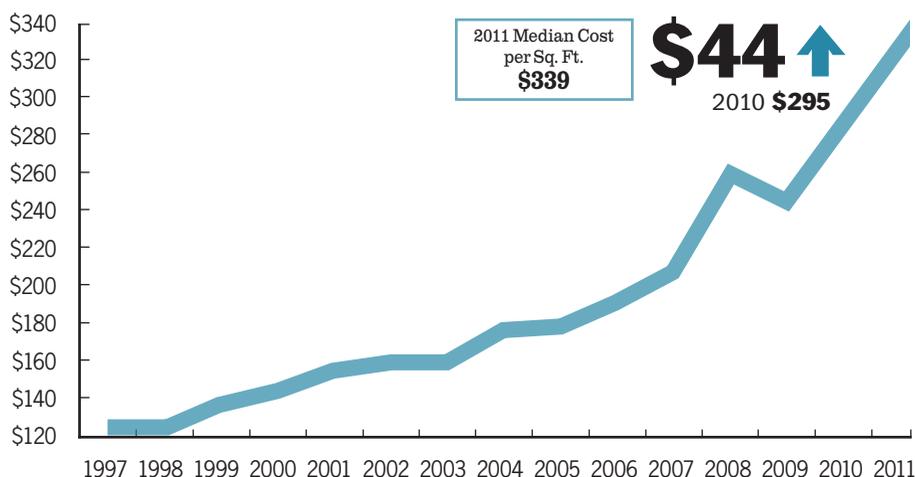
The median cost per sq. ft. among 54 science buildings was more than \$500, and one-quarter of these buildings cost \$626 per sq. ft. or more. (SEE GRAPHS A THROUGH D for the history of costs for four key building types.) At a median size of 88,650 sq. ft., these were not necessarily the largest buildings on campus, but at \$42,250,000 they were easily the most expensive.

The largest reported were the 28 residence halls, with a median size of better than 102,000 sq. ft. These buildings, however, are built much less expensively, costing \$23M but with the median built at \$187.67 per sq. ft.

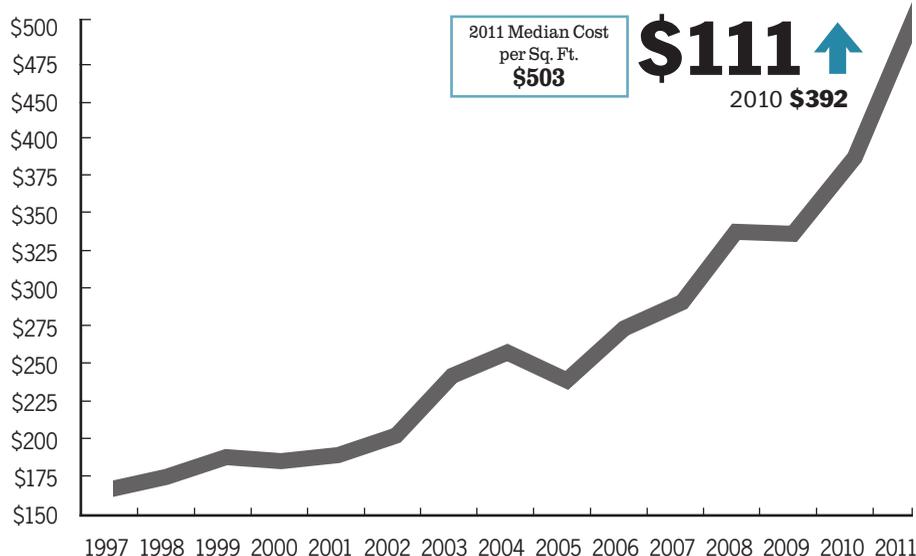
This year, for the first time, eight colleges reported they were constructing vocational buildings of various types, providing education for job opportunities in health care, technology, and law enforcement, among others. All but one are on community college campuses. The median among them is 33,000 sq. ft. and the median cost is less than \$9M.

Two other building types ought to be

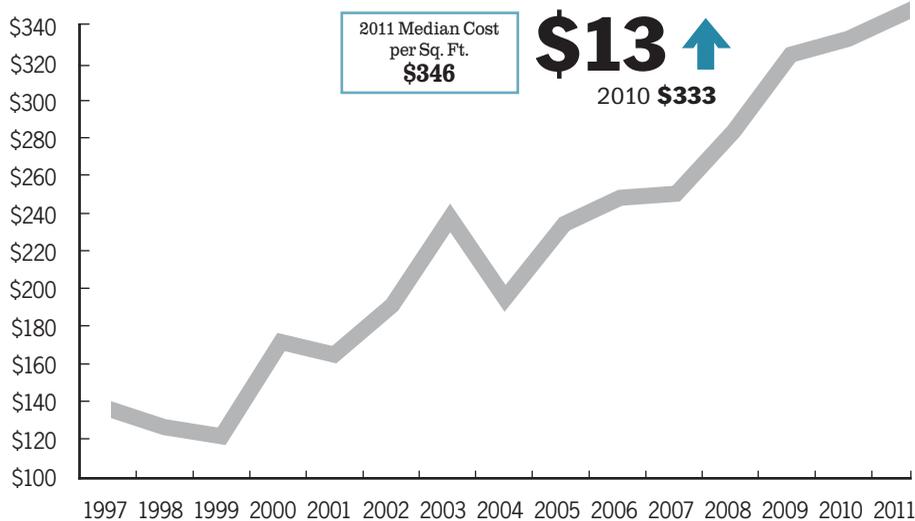
Graph A: Median Cost per Sq. Ft. for Academic Buildings



Graph B: Median Cost per Sq. Ft. for Science Buildings



Graph C: Median Cost per Sq. Ft. for Library Buildings



mentioned. Early childhood facilities have been mentioned before, but the number constructed this year fell to just four. There was mention of maintenance buildings constructed to house and/or organize the maintenance and facilities operations of college. The median among the five identified was just under \$5M.

What's Being Renovated?

With \$1.7B spent in 2010 on renovation of existing buildings, it seemed useful to learn what kinds of work are most often undertaken in these projects. The list in the box on pg. CR6 shows that when renovation projects are started on a college campus, overhauling the building's electrical and HVAC systems comes first. Plumbing and lighting are also frequently involved, along with carpeting.

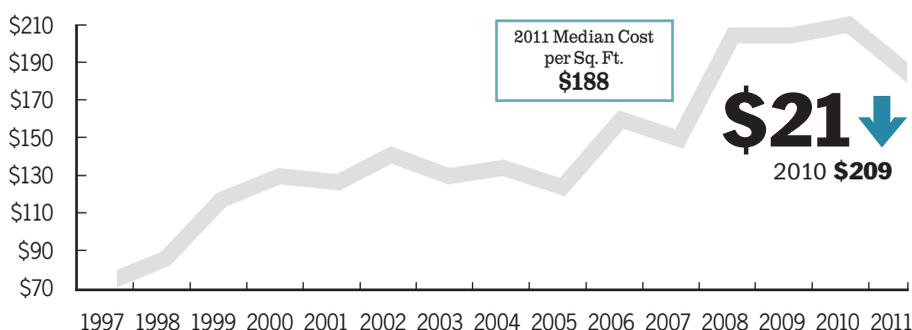
Rising Costs

We have been publishing cost information on various building types since 1997. In the four graphs on pgs. CR7 and CR8, we have tracked the median cost of construction per sq. ft. for four building types. The four were chosen because we receive more reports on those than other types and they are constructed on virtually every college campus.

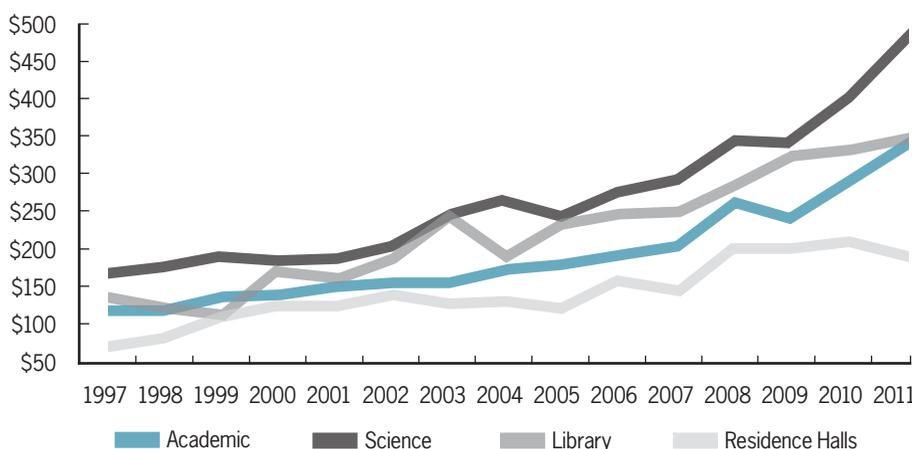
The median cost per sq. ft. for academic buildings was just over \$120 in 1997 and stayed close to that mark in 1998. Since then (SEE GRAPH A) it has risen significantly. In 2007, the median cost for academic buildings rose above \$200, but since then, despite a one-year dip, the cost has risen quickly, standing at \$339 per sq. ft. this year.

Of course, it is important remember 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, the fact that all but the lowest quarter of academic buildings cost more than \$258 per sq. ft. in 2010 indicates that the rise in costs is real. One likely reason for the increase is the growing value of technology in these buildings.

Graph D: Median Cost per Sq. Ft. for Residence Hall Buildings



Graph E: Median Cost per Sq. Ft. for College Buildings



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 just over \$500. One quarter of the 54 buildings included in the sample cost more than \$626 per sq. ft.

The cost for library buildings (GRAPH C) has risen to \$346 per sq. ft., a very small rise over the past year. Of course, the buildings we call "libraries" today are quite different from those constructed even 10 years ago. The real question concerning college libraries is how they will function in an era when students do not necessarily use them for research. It may be that fewer and smaller structures will be needed.

GRAPH D looks at the median cost per sq. ft. for residence hall buildings. The days

of inexpensive, minimally furnished housing for students has obviously passed. In 1997, the median residence hall was being constructed for about \$75 per sq. ft. It rose a decade later to a little more than \$200 per sq. ft. but has fallen back this year to \$188.

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

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



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