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DECEMBER 2009

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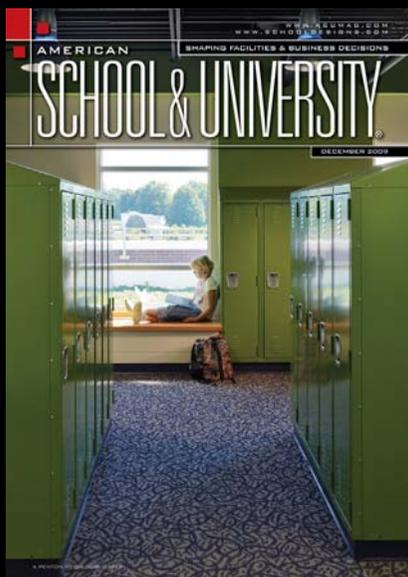
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On the Cover:

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GREEN CLEANING AWARD FOR SCHOOLS & UNIVERSITIES

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A Perfect 10



For more than a decade, *American School & University* has compiled its "Top 10" issue highlighting the biggest, best and most popular in education facilities and business. The issue has proven to be a favorite with readers; and one thing heard time and again is "give us more."

While the issue in your hands has a variety of Top 10 features, lists, products and more, we've added extra emphasis to the "more" by providing additional Top 10 lists in our Web 101 Exclusive section on ASUmag.com.

This issue also includes the annual Green Cleaning Award for Schools & Universities (p. 28). Now in its third year, the competition has showcased some of the most innovative programs at education institutions nationwide. This year is no exception, and those institutions featured are setting the bar—and have created programs that other schools and uni-

versities can emulate and build upon to create more healthful, sustainable environments for learning.

Speaking of green and the Top 10, the U.S. Green Building Council recently compiled a list of the Top 10 states with the most LEED- (Leadership in Energy and Environmental Design) registered K-12 school and higher-education projects. The states that are leading the way:

K-12 schools

Ohio	184
California	106
Pennsylvania	92
Texas	73
Illinois	71
Maryland and Virginia	59
New York	56
Florida	55
New Mexico	51
Washington, D.C.	43

Higher education

California	388
New York	195
Virginia	133
Florida	130
Texas	112
Massachusetts	107
Washington	103
Pennsylvania	98
North Carolina	89
Illinois	84 ■

jagron@asumag.com

WEB 101

H1N1 in schools

Schools are ground zero in the battle against H1N1. Understanding this, *American School & University* and Healthy Schools Campaign will present an exclusive one-hour free webinar on January 20 at 2 p.m. EST on how effective cleaning and maintenance practices can help keep H1N1 out of schools.

The webinar is part of a continuing series of virtual education sessions, conferences and exhibits presented by *AS&U* to help you provide the most effective and conducive environments for learning.

For more information on how to register for this free webinar, visit ASUmag.com or email jagron@ASUmag.com.

To access past education sessions on everything from school security, cost recovery, green cleaning and more (including the groundbreaking GREEN School & University Virtual Conference & Expo—which will be held again on June 24, 2010, with new sessions, a larger trade-show floor and improved social networking opportunities), click on the "ASU Webinars" icon on the *AS&U* homepage. All the sessions are on demand and free.





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10 Steps for Success in 2010

While enduring severe financial setbacks, schools and universities must continue to deliver high-quality education to students.

BY MIKE KENNEDY

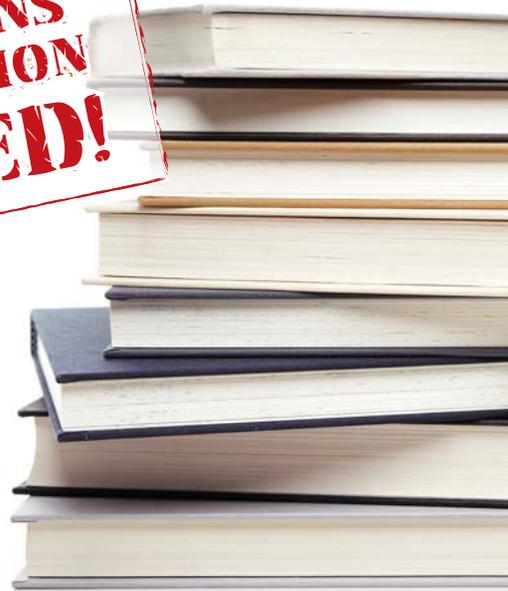
Tax bases eroding. Jobs disappearing. Endowments shrinking. Aid evaporating. That's been the story in 2009 for many schools and universities across the nation. Education institutions have had to cope with the worst economic conditions in generations. Yet the product they provide has never been more critical to a society looking to rebound from financial catastrophe. Even with their resources depleted, schools and universities must press on in their efforts to provide a high-quality education to millions of students.

So when administrators, facility managers and educators envision the path to a successful 2010, they may have to redefine what constitutes a success in such challenging conditions. In a climate of cutbacks, doing more with less may be unattainable, but education institutions should strive to do as much as they can with the resources they do have:

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H1N1

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10 Steps for Success in 2010

1 BUDGET MANAGEMENT

For most schools, the question is not whether they have to cut spending, but by how much. The revenue streams for public schools—property taxes and state aid—are flowing more slowly. Public colleges and universities also are suffering from the drop in state funding, as well as the losses from shrinking endowments and fewer donations. Money from the federal stimulus has eased the pain for some institutions, but at this point, the funding has not sparked a recovery as much as it has prevented even more disastrous consequences for education.

Schools and universities have had to scale back their ambitions and try to cut spending in a way that doesn't damage the quality of education. Institutions facing such financial difficulties in 2010 may have to adopt some of the approaches other schools and universities have already taken.

Several states have raised the possibility of consolidating smaller districts in an effort to use resources more efficiently. Some districts have looked at shortening the school day or increasing the average class size to conserve funds. Arizona has cut funding for textbooks and classroom supplies. Michigan State University has proposed eliminating two departments to save money. In Los Angeles and St. Louis, workers are taking unpaid furlough days to ease budget deficits.

One cutback that has not gone over well is cutting instructional time. Hawaii decided to cancel classes on 17 Fridays to save money, but the action drew criticism from many, including U.S. Education Secretary Arne Duncan. State officials soon came up with a plan to restore most of the instructional time.

2 TECHNOLOGY

If the 2010 theme for budget-conscious schools and universities is

to try to do more with less, technology will be a key element to make that possible. In the 1990s, politicians talked about computers and Internet connections as integral elements in building a bridge to the 21st century. Now, nearly a decade after that bridge was crossed, technology has become an inescapable component of the education experience in elementary, secondary and post-secondary classrooms.

When designed well and used properly, new technologies can provide students with a better learning experience: easier access to more information delivered in more stimulating ways. Many classrooms are equipped with interactive whiteboards that soup up the age-old concept of the chalkboard with the depth of worldwide resources found on the Internet. Personal response devices, known more commonly as "clickers," enable teachers to solicit immediate answers and feedback on lessons from students.

Technology is second nature to most of today's students, and schools and universities can take advantage by providing materials and instruction using the systems and gadgets familiar to students.

The Pew Internet & American Life Project, in a 2008 survey, estimated that 71 percent of U.S. teenagers had a cell phone. Some schools still restrict student use of cell phones because of the potential for misuse and classroom disruption, but other educators, noting how integral cell phones have become in the life of the typical teenager, are embracing the devices to aid in school work.

Success building

- Budget management.
- Technology.
- Sustainability.
- Health & Safety.
- Energy.
- Maintenance.
- Security.
- Strategic planning.
- Ergonomics/Furniture.
- Building community.

In addition to sending and receiving voice and text messages to communicate with teachers and among each other, students can use the many features of the cell phones to take photographs, record sound or, in some cases, conduct Internet searches. Lectures and other class notes can be recorded for students to download onto their iPods and mp3 players.

3 SUSTAINABILITY

The push to build and operate education facilities more efficiently continues to gain momentum, spurred by concerns about the environment and a desire to spend money in a way that benefits schools most effectively in the long term. The pursuit of sustainable, high-performance schools can influence numerous decisions involving facilities and operations.

Many state and local governments have adopted design standards for new facilities that call for the use of sustainable strategies. Education

Even with their resources depleted, schools and universities must press on in their efforts to provide a high-quality education to millions of students.

institutions that seek Leadership in Energy and Environmental Design (LEED) certification from the U.S. Green Building Council for their buildings or follow the best practices put forth by the Collaborative for High Performance Schools are able to produce facilities that use less energy and less water, and provide spaces that are more suitable for learning.

Higher-education institutions that are seeking ways to become more sensitive to how their campuses interact with the environment and the threats of global warming can join the more than 660 institutions that have signed The American College & University Presidents Climate Commitment. Those schools have a goal of reducing the greenhouse gas emissions they produce and, in the long term, achieving climate neutrality.

4 HEALTH & SAFETY

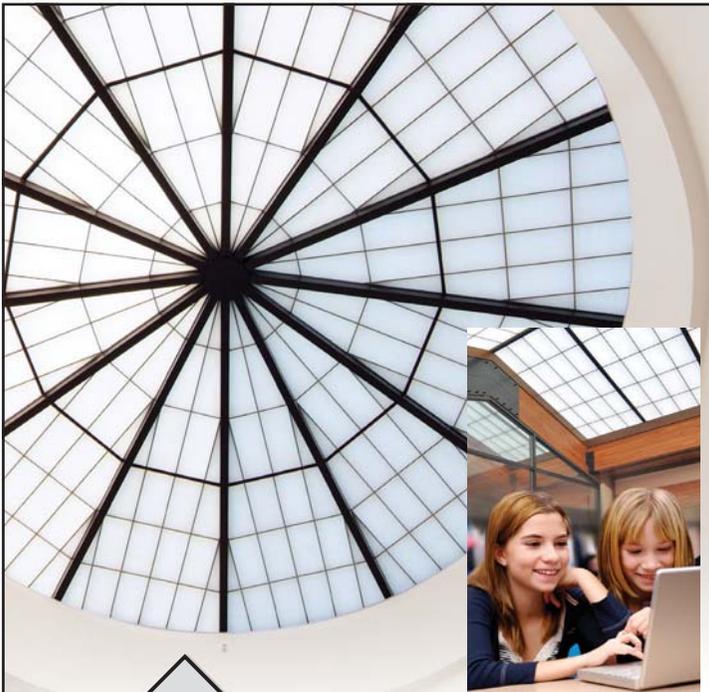
Schools and universities must continue to be vigilant about protecting the health and safety of their students and staff. That means designing instructional spaces that have good acoustics, appropriate lighting and suitable ventilation. It also means using materials low in volatile organic compounds (VOCs) so that potentially dangerous emissions are not released into the air.

The way schools clean their facilities can become a problem if the process of cleaning introduces chemicals or other materials that can imperil the health of building occupants. Green-cleaning programs that use environmentally safe materials and equipment can help schools and universities maintain sanitary conditions without harming the indoor environmental quality.

CONTINUED...

Schools and universities must continue to be vigilant about protecting the health and safety of their students and staff.

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10 Steps for Success in 2010

Education institutions also can help students improve their health by offering more nutritious food in cafeterias and dining halls. Many schools and universities have improved their menus by offering more fruits, vegetables and other healthful items. The Center for Disease Control and Pre-

vention reported that the consumption of candy, chips and soda pop in schools had declined as schools have adopted better nutritional guidelines for the items they offer.

vention reported that the consumption of candy, chips and soda pop in schools had declined as schools have adopted better nutritional guidelines for the items they offer.

5 ENERGY

Conserving energy has been a growing priority for education institutions for many years. In a depressed economic climate, eliminating wasteful consumption of resources is even more critical for schools and universities trying to direct the maximum amount of funding to instruction.

Numerous state and federal programs are in place to help education institutions cut energy costs and switch to more efficient and environmentally friendly ways of providing the power needed to run their facilities. In California, the state's energy commission has created the Bright School Program to help K-12 schools find ways to use energy more wisely. Also in California, the Alliance to Save Energy has established a Green Campus Program at 13 campuses

and carry out energy-saving opportunities on campuses. The companies' efforts are paid for with the savings generated.

6 MAINTENANCE

Budget managers facing the difficult task of cutting spending may be tempted to put off facility maintenance. Deferring work may be unavoidable in times of tight budgets, but schools and universities should be vigilant that short-term decisions don't ossify into long-term policies that result in insurmountable backlogs and deteriorating facilities.

Computerized maintenance-management systems enable workers to keep accurate records of maintenance cycles, which jobs have been scheduled and when they have been completed, and which work should have priority. Such systems enable maintenance departments to make job decisions based on objective data, rather than who is complaining the loudest or who has the right political connections.

7 SECURITY

Regardless of the state of the economy, millions of students fill the classrooms and hallways of the nation's schools, and the threat of crime and violence is present, just as it is in

society at large. Parents send their children to school with the expectation that officials are vigilant about protecting them from harm.

Education institutions can address campus safety through a combination of prevention and awareness programs, the visible presence of police and security officers, design strategies that can deter crime, and technological aids that expand the school administration's ability to watch over students, staff and school property.

Methods once thought of as extravagant, such as installing a comprehensive array of security cameras on the grounds of a campus, have become more sophisticated, yet more affordable than the ungainly equipment available a few years ago. Most schools and universities have technological networks already in place that can accommodate video surveillance functions.

8 STRATEGIC PLANNING

Financial limitations may prevent a school or university from reaching the heights it envisions for itself, but administrators should make sure they have a plan in place when more resources are available. As the Philadelphia school district stated in a five-year strategic plan it unveiled earlier this year, "One important constraint on 'blue-sky thinking' is the prospect of 'red ink' in the school district budget."

Philadelphia's strategic plan, "Imagine 2014," is based on five goals: student success, quality choices, great staff, accountable adults and world-class operations.

The last section addresses facilities. It calls for the district to ensure that "all buildings and grounds are clean, attractive, and properly maintained in a manner conducive to effective teaching and learning," and that the district has "the right number of facilities, in the right locations ... with

the appropriate instructional layouts that ensure efficiency, effectiveness, and a positive learning environment.”

9 ERGONOMICS/FURNITURE

Students in the typical classroom no longer just sit passively and listen to an instructor. They may gather at tables in small groups, or tap away on keyboards at computer stations or laptop machines. School administrators need to take into account the changing configurations of learning spaces as they choose furniture and equipment.

Students and workers forced to use ill-fitting furniture over time can be subject to problems such as eye strain, backaches and repetitive stress injuries. Because the size of students assigned to a classroom can vary greatly,

schools need to have furniture that can be adjusted to accommodate the dimensions of many users.

10 BUILDING COMMUNITY

When a person is going through hard times, it's helpful to reach out to friends that can provide help. Education institutions that are having to make do with less and the communities they serve each can benefit by sharing resources with each other. Schools and universities that have already established these connections with their neighbors are more likely to have the relationships in place that can lead to mutually beneficial sharing of facilities and resources.

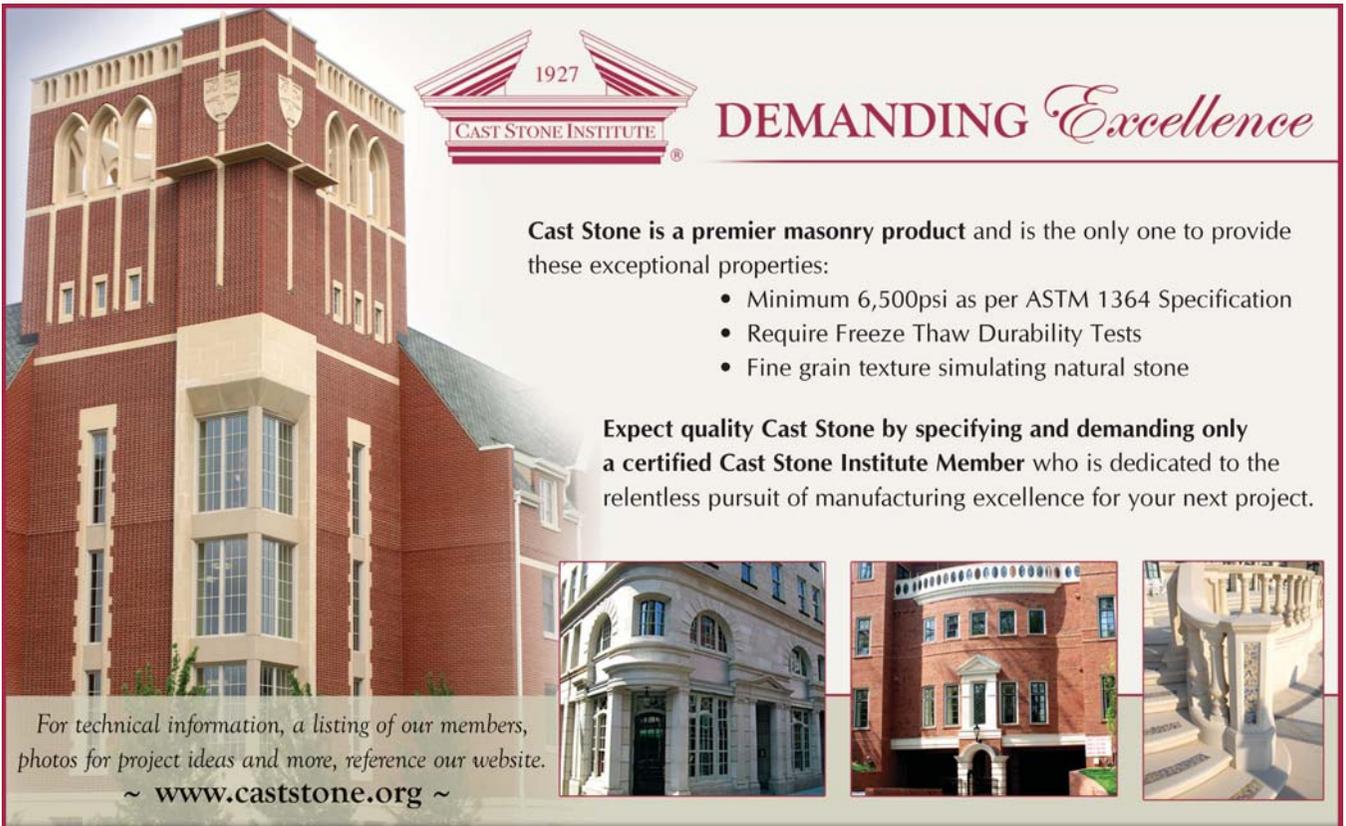
Many school systems have de-

signed their facilities so that community members have access to gymnasiums, media centers or auditoriums when classes are not in session. Others have saved their taxpayers money by constructing joint facilities with cities or counties. ■

Kennedy can be reached at mkenedy@asumag.com.

WEB 101

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10 STIMULATING IDEAS

BY MIKE KENNEDY

The federal government's economic recovery package provides many avenues for schools and universities to receive financial help for their facilities.



This fall, the Los Angeles Unified School District sold about \$2 billion in bonds to finance more projects in its massive school construction program. But the cost of repaying that debt won't be as burdensome as it could have been.

Los Angeles took advantage of two federal programs available to school systems through the American Reinvestment and Recovery Act—Qualified School Construction Bonds (QSCB) and Build America Bonds. The bonds issued through those programs offer tax credits that reduce a borrower's interest costs. For someone borrowing \$2 billion, the savings can be substantial. The Los Angeles district estimates that it will save \$648 million as it pays off those bonds in the coming years.

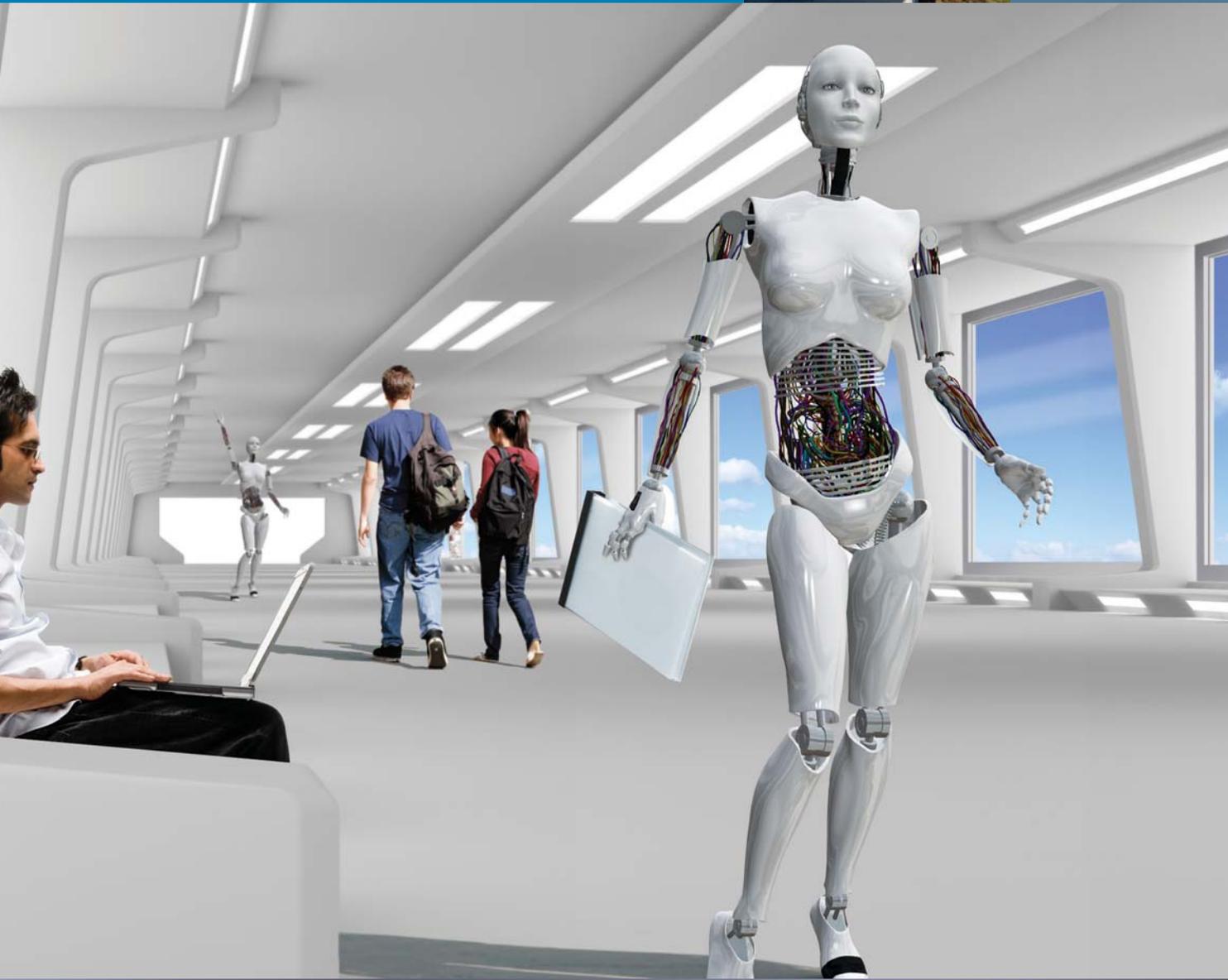
The numbers aren't always as eye-popping as the billions available through those bond programs, but the Recovery Act has included many ways for schools and universities to lay claim to federal funds to help build, renovate or maintain their facilities. Here are 10 federal stimulus programs that offer education institutions an opportunity to upgrade their infrastructure and stimulate the economy:

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1. QUALIFIED SCHOOL CONSTRUCTION BONDS

This program is the part of the stimulus act that has provided the greatest amount of direct federal assistance for education facilities. These bonds provide tax credits that enable school systems to construct facilities without having to pay interest on the bonds. That makes it affordable for school districts such as Detroit to borrow the money to rebuild aging facilities. A \$500 million bond proposal approved in November by voters in the Detroit school district includes \$246 million in QSCBs. In the Clark County (Nev.) school district, officials will use \$104 million in QSCBs to carry out already approved construction projects whose funding was in jeopardy because of declining sales tax revenues and state budget cuts. The Recovery Act authorized \$11 billion in bonds for 2009 and the same amount in 2010.

2. BUILD AMERICA BONDS

Under this program, which can be used for education facilities as well as other public infrastructure projects, the federal government provides a subsidy for 35 percent of the interest costs for bonds issued by state or local government entities. About \$1.4 billion of the Los Angeles district's \$2 billion bond sale in October were Build America Bonds, and \$254 million of November's Detroit school bond proposal will be Build America Bonds.

3. BUREAU OF INDIAN AFFAIRS

The federal stimulus package included \$277 million for replacing or repairing school facilities that are under the auspices of the Bureau of Indian Affairs. One project to benefit from the funding is the Rough Rock Community School on the Navajo Reservation in northeastern Arizona. The K-12 school, which opened in 1966 and serves about 440 students in day and residential programs, needs

significant facility upgrades.

The bureau has allocated \$52.5 million to carry out two phases of upgrades at the school. The first phase calls for constructing a replacement student residence for grades K to 8. The second phase will replace a K-8 academic building and two student residence halls.

Other school facilities slated for replacement include Crow Creek Tribal School in Stephan, S.D., and the Pueblo Pintado Community School in Cuba, N.M.

4. NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

Higher-education institutions and non-profit organizations will find out in early 2010 whether they will receive grants from the National Institute of Standards and Technology for the construction of new or expanded scientific research buildings. As part of the federal economic stimulus, NIST plans to award about \$120 million, which will help pay for eight to 12 projects. Possible projects, the institute says, include laboratories, test facilities, measurement facilities, research computing facilities and observatories.

In addition, the stimulus package enabled NIST to award \$55.5 million in grants for four construction projects that previously were approved, but unfunded. The University of Miami received \$15 million to help pay for a \$43 million Marine Technology and Life Sciences Seawater Research Building; Auburn University in Auburn, Ala., got \$14.4 million to cover half the cost of building a Center for Advanced Science, Innovation and Commerce; Rice University in Houston was awarded \$11.1 million to

10 for the money

1. Qualified School Construction Bonds.
2. Build America Bonds.
3. Bureau of Indian Affairs.
4. National Institute of Standards and Technology.
5. Race to the Top.
6. Research facilities.
7. Qualified Zone Academy Bonds.
8. Lunch program equipment.
9. Qualified Energy Conservation Bonds.
10. Rural Community Facilities Program.

help pay for a \$44 million Brockman Hall for Physics; and the University of North Carolina, Wilmington received \$15 million to build a \$30 million facility for the Marine Biotechnology in North Carolina program.

5. RACE TO THE TOP

The stimulus package has put \$4 billion in competitive grant funds in the hands of U.S. Education Secretary Arne Duncan. The education department says Duncan will award the grants to states that have "raised student performance in the past and have the capacity to accelerate achievement gains with innovative reforms."

CONTINUED...





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10 **STIMULATING IDEAS**

“We will award grants to the states that have led the way in reform and will show the way for the rest of the country to follow,” says Duncan.

The education department notes that to qualify for Race to the Top funds, states must have no legal barriers to linking student growth and achievement data to teachers and principals for the purposes of evaluation. This has prompted states such as California to work on legislation that will remove those barriers in their regulations. Some states with a

record of indifference or hostility to reforms such as charter schools are reconsidering their stance so they can have a better chance at receiving the grant funds.

U.S. Education Department officials hope to announce the first of the Race to the Top grants in Spring 2010.

6. RESEARCH FACILITIES

The National Center for Research Resources, part of the National Institutes of Health, has received \$1

billion in stimulus funds that it will award through a grant program to higher-education institutions for renovating, repairing or improving their core facilities for biomedical or behavioral research. In another program, “Academic Research Infrastructure Program: Recovery and Reinvestment,” the National Science Foundation (NSF) will award \$200 million in grants to update existing research facilities at institutions of higher education and other non-profit research organizations.

“In 2005, NSF estimated that academic institutions had at least \$3.6 billion in deferred projects to repair and renovate science and engineering research facilities,” the grant summary states. “This investment will advance the science and engineering research enterprise at many institutions.”

The federal stimulus package included \$277 million for replacing or repairing school facilities that are under the auspices of the Bureau of Indian Affairs.

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The stimulus package has put \$4 billion in competitive grant funds in the hands of U.S. Education Secretary Arne Duncan.

7. QUALIFIED ZONE ACADEMY BONDS

The Recovery Act included \$2.8 billion in funding (\$1.4 billion in 2009 and \$1.4 billion in 2010) for this program. Schools or districts that have 35 percent or more of their students eligible for free or reduced-price lunches can issue zero-interest bonds. They cannot be used for constructing new schools, but they can be used for school renovations, equipment and technology upgrades, teacher training and curriculum development

8. LUNCH PROGRAM EQUIPMENT

As part of the stimulus package, the U.S. Department of Agriculture allocated \$100 million to states, which issued grants to help schools improve their equipment for providing school lunches. Priority was given to schools in which at least 50 percent of the students are eligible for free or reduced-priced meals. The equipment purchased had to meet one of the following goals: improves the quality of school food-service meals that meet the dietary guidelines. (e.g., purchasing an equipment alternative to a deep fryer); improves the safety of food served (e.g., cold/hot holding equipment); improves the energy efficiency of the school food-service operations; and expands participation in a school meal program.

9. QUALIFIED ENERGY CONSERVATION BONDS

The stimulus package allocated \$3.2 billion for this program. It provides tax credits for capital projects that reduce energy consumption in a public building, including schools and universities, by 20 percent. In

addition, the U.S. Department of Energy has energy-efficiency block grants and a State Energy Program for which schools and universities may be eligible. In July, the Energy Department awarded Texas \$87.5 million through the State Energy Program. Texas will use some of that allocation for grants to state agencies, communities, schools and hospitals "to install and demonstrate solar, wind, biomass, and geothermal energy technologies," the energy department says.

10. RURAL COMMUNITY FACILITIES PROGRAM

Schools and colleges are eligible to apply for \$1.1 billion in loans and \$61 million in grants for constructing or upgrading facilities. Woodstock Academy in Woodstock, Conn., received \$1.4 million through the program to install a sewer line to connect the school to the public sewer system. The program provided the McFarland Unified School District in Kern County, Calif., with a \$29,700 grant to buy security cameras. ■

Kennedy, staff writer, can be reached at mkennedy@asumag.com.

WEB 101

For more on funding, visit the article archives at ASUmag.com and read "Aid for Facilities" from the June 2009 issue.

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Pete Sussman	Records Room	03/20/2007 07:58:15 AM	Out of Schedule
John Michaels	Computer Room	03/20/2007 08:00:03 AM	Key Authorized
Evelyn Lefler	West Entrance	03/20/2007 08:12:16 AM	Key Authorized
Hunka Banks	Computer	03/20/2007 08:34:03 AM	Denied
Andy Dunsmore	Computer	03/20/2007	



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THE TOP 10 PRODUCTS

In 2009, AS&U showcased some of the hottest products in the industry. Following are the 10 most requested, as determined by readers.

1



Energy recovery

Greenheck. The VersiVent Model VER energy-recovery unit features a total energy wheel, a centrifugal plenum supply fan, 2-inch double-wall construction and hinged access. Cooling options include Chilled Water, Split System DX and Packaged DX with environmentally friendly R410a refrigerant. Hot water, indirect gas or electric heating options are available.

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3



Daylighting controller

Watt Stopper/Legrand. The LS-102 Daylighting Controller provides closed-loop, single-zone, on/off switching of most types of lighting in response to daylight contributions. It automatically calibrates itself, eliminating the need for repeated manual calibrations to capture changing light levels as room reflectance levels change. This reduces setup requirements automatically.

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5

Cleaning systems training

ProTeam. Cleaning Systems Training Group helps organizations improve the quality and productivity of their on-site cleaning and maintenance practices. The program gives leaders a systematic approach for improving cleaning quality, establishing control of supply costs and maximizing labor while minimizing overall costs. The program provides concrete tools for leaders to address opposition from a resistant workforce in positive, constructive ways. All training is done on-site and customized to each institution.

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2



Green hand dryer

Bradley. The Aerix is an adjustable-speed hand dryer that suits any application. Multiple speeds give facility managers the option of turning up for fast drying in settings such as recreation centers and schools, or turning down for quiet operations such as museums or libraries. Aerix series hand dryers are a green solution because they use 80 percent less electricity than other dryers.

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4



Data collector

Videx. The iBR9000 is the newest addition to the data-collection family. Small and lightweight, the iBR9000 portable, handheld data collector is a miniature-sized reader of iButtons. This tough data collector measures 2¾ inches in length, weighs less than 2 ounces, and easily fits on a keyring or in a user's pocket. It can store at least 9,000 reads before the next download of data.

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6



Basket lockers

Salsbury Industries. Constructed of 12-gauge steel frames that are powder-coated black, basket lockers are an excellent addition to recreation facilities. Measuring 40 inches wide and 31 inches high, basket lockers are 13 inches deep. Each basket locker features nine 12-inch-wide by 8-inch-high by 12.5-inch-deep zinc-plated steel and wire baskets. Each of the individual baskets contains a hasp and can accommodate padlocks. Basket lockers are available as unassembled or assembled units.

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7

Solid-surface systems

Sloan Valve Company.

The new Drain Deck and Bio-Deck style SloanStone solid-surface lavatory systems match water-efficient and durable electronic faucets with vandal-resistant sinks. New Bio-Deck lavatory styles are made from bio-material: Ground-up corn cobs replace the petroleum-based material that typically is used in solid-surface systems. Bio-Line lavatories come with oval-shaped, drop-in stainless-steel bowls or undermount porcelain bowls.

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8

Dual-motor vacuum

Electrolux/Sanitaire.

The Dura-Lux dual-motor vacuum cleaner features an extra-large intake to handle clog-prone items. Its independently controlled twin motors and a durable chromed steel brush roll with an automotive-style V belt pulley enable it to tackle many commercial floor-cleaning challenges. Its sealed HEPA filtration system captures 99.97 percent of allergens and pollen down to 0.3 microns.

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9



Multifunctional table

SICO. The new 3-in-1 convertible table can be reconfigured easily to meet various applications: bench mode for auditorium seating; a single-unit bench with tabletop for testing and seminar applications; and a cafeteria table by linking two tables together. Front-mounted wheel locks engage easily, keeping tables securely in place when in use.

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10

(tie)



Online video recorder

Brivo Systems. A new addition to the Software-as-a-Service (SaaS) access-control solution is available: an integrated, online video recorder (OVR) that streams IP video from customer locations to a secure Web hosting facility. Developed in partnership with Axis Communications, the new video service requires only an Axis network camera to be located at a site. From the ACS WebService application, customers can view live and event-tagged video remotely using a standard Web browser.

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10

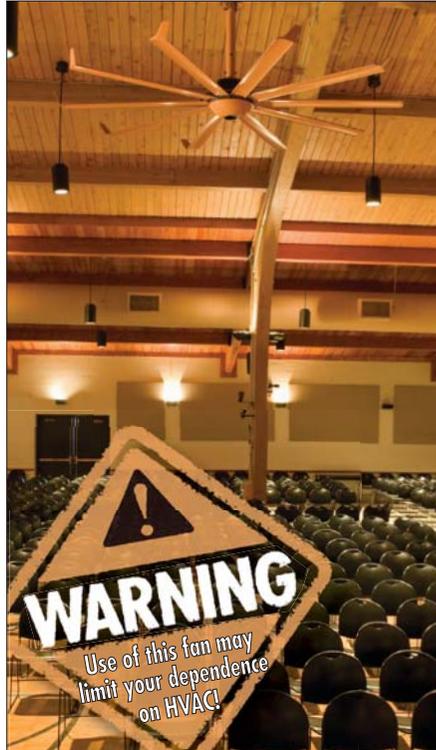
(tie)



UVC kit

Steril-Aire. The new UVC Kit for Unitary Air Conditioners provides economical and long-lasting ultraviolet C performance. Designed for easy installation in unitary systems of less than 5 tons, the kit can be used with mini-split and ductless systems, split systems, packaged terminal air-conditioning (PTAC) units, heat pumps and window units with coil sizes up to 15 inches high by 26 inches wide. ■

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THE TOP 10 LISTS

Districts with highest percentage of public school enrollment in charter schools, 2008-09

■ Orleans Parish, La.	57%
■ Washington, D.C.	36%
■ Detroit	32%
■ Kansas City, Mo.	29%
■ Dayton, Ohio	27%
■ Youngstown, Ohio	26%
■ St. Louis	25%
■ Flint, Mich.	24%
■ Gary, Ind.	23%
■ (tie) Phoenix Union HSD	22%
■ (tie) Minneapolis	22%

Source: National Alliance for Public Charter Schools

States with most students in K-12 public schools, 2007-08

California	6,343,471
Texas	4,674,832
New York	2,765,435
Florida	2,666,811
Illinois	2,112,805
Ohio	1,827,184
Pennsylvania	1,801,971
Michigan	1,692,739
Georgia	1,649,589
North Carolina	1,489,492

Source: National Center for Education Statistics

States with highest graduation rates, 2006-07 (percentage of entering freshman class that graduated in 4 years)

Vermont	88.6%
Wisconsin	88.5%
Iowa	86.5%
Minnesota	86.5%
Nebraska	86.3%
New Jersey	84.4%
North Dakota	83.1%
Pennsylvania	83.0%
South Dakota	82.5%
Missouri	81.9%

Source: National Center for Education Statistics

States with lowest graduation rates, 2006-07 (percentage of entering freshman class that graduated in 4 years)

■ Nevada	52.0%
■ Washington, D.C.	54.9%
■ South Carolina	58.9%
■ New Mexico	59.1%
■ Louisiana	61.3%
■ Mississippi	63.6%
■ Georgia	64.1%
■ Florida	65.0%
■ Alabama	67.1%
■ North Carolina	68.6%

Source: National Center for Education Statistics

States with the most school districts, 2007-08

■ Texas	1,033
■ California	1,026
■ Illinois	870
■ New York	697
■ New Jersey	616
■ Ohio	614
■ Michigan	552
■ Oklahoma	539
■ Missouri	524
■ Pennsylvania	501

Source: National Center for Education Statistics

States with most public school staff members (FTE), 2007-08

Texas	635,715
California	583,625
New York	374,080
Florida	329,726
Pennsylvania	254,476
Ohio	243,579
Georgia	235,083
Illinois	214,459
Michigan	208,987
Virginia	204,384

Source: National Center for Education Statistics

Colleges and universities that have purchased the most green power (as of October 2009, in kilowatt hours)

■ University of Pennsylvania, Philadelphia	192,727,000
■ Pennsylvania State University, University Park	83,600,000
■ Oregon State University, Corvallis	66,782,000
■ University of California, Santa Cruz	57,000,000
■ University of Phoenix	47,000,000
■ Texas A&M University System	43,350,000
■ Auraria Higher Education Center, Denver	40,367,932
■ Northwestern University, Evanston, Ill.	40,000,000
■ Western Washington University, Bellingham	40,000,000
■ University of Utah, Salt Lake City	38,333,000

Source: U.S. Environmental Protection Agency

Schools and school districts that have purchased the most green power (as of October 2009, in kilowatt hours)

Austin, Texas	65,640,000
Round Rock, Texas	16,996,468
Rochester, N.Y.	9,900,000
Bullis School, Potomac, Md.	3,400,000
The Dalton School, New York City	2,530,000
Greenwich Academy, Greenwich, Conn.	2,336,589
Norwood School, Bethesda, Md.	1,608,300
Hotchkiss School, Lakeville, Conn.	1,550,000
Spirit Lake, Iowa	1,500,855
Kent Place School, Summit, N.J.	1,100,000

Source: U.S. Environmental Protection Agency

CONTINUED...

College campuses with largest fall enrollment, 2007

University of Phoenix-Online Campus	224,880
Miami Dade College	54,094
Ohio State University	52,568
University of Florida	51,725
Arizona State University	51,481
University of Minnesota	50,883
The University of Texas	50,170
University of Central Florida	48,398
Texas A & M	46,542
City College of San Francisco	46,411

Source: National Center for Education Statistics

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WEB EXCLUSIVE

- Top 10 districts with most students attending charter schools, 2008-09
- Top 10 states with most charter school students, November 2009
- Top 10 states with most operating charter schools, November 2009
- Top 10 states with most districts of 10,000 students or greater, 2007-08
- Top 10 states with most public high school graduates, 2006-07
- Top 10 states with most public school teachers (FTE), 2007-08
- Top 10 highest per-pupil expenditures among public school districts

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States with highest percentage of students in K-12 public schools who are Hispanic

■ New Mexico	55.6%
■ California	50.2%
■ Texas	47.2%
■ Arizona	41.6%
■ Nevada	36.4%
■ Colorado	27.9%
■ Florida	25.7%
■ New York	21.0%
■ Illinois	20.4%
■ New Jersey	19.4%

Source: National Center for Education Statistics

States with highest percentage of students in K-12 public schools who are non-Hispanic blacks

Washington, D.C.	83.2%
Mississippi	50.6%
Louisiana	46.4%
South Carolina	39.3%
Georgia	39.2%
Maryland	37.9%
Alabama	35.6%
Delaware	33.0%
North Carolina	29.0%
Virginia	26.6%

Source: National Center for Education Statistics

States with lowest public school student-teacher ratio, 2007-08

■ Vermont	10.7
■ North Dakota	11.8
■ Maine	11.9
■ Washington D.C.	12.4
■ New Jersey	12.4
■ New Hampshire	13.0
■ New York	13.1
■ Rhode Island	13.1
■ Kansas	13.2
■ Nebraska	13.3

Source: National Center for Education Statistics

Colleges and universities with highest total price per year, 2008-09 (in-state students living on campus)

Landmark College, Putney, Vt.	\$55,400
Sarah Lawrence College, Bronxville, N.Y.	\$54,854
Georgetown University, Washington, D.C.	\$54,200
University of Chicago, Chicago, Ill.	\$53,310
George Washington University, Washington, D.C.	\$52,692
Washington University, St. Louis, Mo.	\$52,464
Middlebury College, Middlebury, Vt.	\$52,460
Vanderbilt University, Nashville, Tenn.	\$52,303
Northwestern University, Evanston, Ill.	\$52,120
Drew University, Madison, N.J.	\$52,106

Source: National Center for Education Statistics

U.S. college campuses with the most international students, 2008-09

■ University of Southern California	7,482
■ New York University	6,761
■ Columbia University	6,685
■ University of Illinois at Urbana-Champaign	6,570
■ Purdue University	6,136
■ University of Michigan—Ann Arbor	5,790
■ University of Texas—Austin	5,703
■ University of California—Los Angeles	5,590
■ Boston University	5,037
■ Michigan State University	4,757

Source: Open Doors Report

Nations with the most students attending college in the United States, 2008-09

India	103,260
China	98,510
South Korea	75,065
Canada	29,697
Japan	29,264
Taiwan	28,065
Mexico	14,850
Turkey	13,263
Vietnam	12,823
Saudi Arabia	12,661

Source: Open Doors Report

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Perris, CA*



*Pictured above:
Standing, third from left: Julie Zierold, Principal,
Standing, fourth from left: Peter Arballo, Custodian
Kneeling, first from left: Anthony Stafford, Plant Supervisor
Kneeling, center: James Kelly, Custodian*



*Pictured right:
Standing (left to right):
Arthur Fritz, Director of Maintenance, Operations & Transportation
Hector Gonzalez, Maintenance and Operations Supervisor
Seated (left to right):
Armando Cadena, Plant Supervisor
Christi Curtis, Assistant Principal
Jeffrey Perez, Plant Supervisor*



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31 **MEET THE JURY**
A closer look at the expert jury that chose this year's award winners.

32 **SCHOOL DISTRICTS: GRAND AWARD**
Blackhawk Intermediate School, Beaver Falls, Pa.



33 **SCHOOL DISTRICTS: GRAND AWARD**
Montgomery County Public Schools, Rockville, Md.

34 **SCHOOL DISTRICTS: HONORABLE MENTION**
East Meadow Union Free School District, Westbury, N.Y.



35 **SCHOOL DISTRICTS: BEST NEW PROGRAM**
LaPorte Community School Corporation, LaPorte, Ind.

36 **HIGHER EDUCATION: GRAND AWARD**
Western Washington University, Bellingham, Wash.



37 **HIGHER EDUCATION: HONORABLE MENTION**
University of Georgia, Athens

38 **HIGHER EDUCATION: BEST NEW PROGRAM**
Purdue University, West Lafayette, Ind.

POSITIVE STEPS

Like most other departments in education institutions, the maintenance department often is challenged to do more with less. This year's entrants of the 2009 Green Cleaning Award for Schools & Universities have shown that they are doing just that—and making a positive impact on the environment as well.

The entries were diverse: some were in their first few years of green-cleaning programs; others had been going green for more than a decade. They all had one thing in common: green cleaning was a priority in their everyday jobs.

In this special awards program, an expert jury of green-cleaning professionals (see p. 31) chose seven education institutions whose green-cleaning programs went above and beyond just using green products to protect health without harming the environment. The jury named two Grand Award winners in the school district category and one Grand Award winner in the higher-education category. It also gave one Honorable Mention in each category. A new category this year, Best New Program, recognizes those programs that are just getting off the ground, but in a commendable way.

Judging criteria were based on the comprehensiveness and quality of the program, and how well each education institution followed the following five steps, as outlined in the second edition of *The Quick & Easy Guide to Green Cleaning in Schools*:

- Use green-cleaning products.
- Use green equipment and supplies.
- Adopt green-cleaning procedures.
- Use green paper and plastic products.
- Share the responsibility.

The seven winners showcased in the following pages show how much one education institution, district or campus can accomplish—often in a short amount of time. ■

For a more comprehensive look at each entrant's efforts, visit the Green Cleaning Award page at ASUmag.com/green_cleaning_award.

The Green Cleaning Award for Schools & Universities is sponsored by *American School & University*; the Green Cleaning Network, a non-profit clearinghouse that shares information and educates the marketplace in order to accelerate the adoption of green cleaning; and the Healthy Schools Campaign, a non-profit that advocates for policies and model programs that enable students and staff members to learn and work in a healthful school environment.

MEET THE JURY

GREEN CLEANING AWARD FOR SCHOOLS & UNIVERSITIES



STEPHEN ASHKIN

**Founder and Executive Director,
Green Cleaning Network, Bloomington, Ind.**

Steve is a writer, speaker and advocate of green-cleaning issues. He is the author of *Green Cleaning for Dummies*, *The Business of Green Cleaning* and *The Quick & Easy Guide to Green Cleaning in Schools*. He also writes a monthly column for *American School & University* magazine. Steve was recognized as a 2006 Excellence Award Winner by the U.S. Environmental Protection Agency for his work to protect children from environmental threats. He has been a member of the U.S. Green Building Council since 1994 and serves on the core committee for LEED for Existing Buildings and the corresponding committee for LEED for Schools.



MARK BISHOP

**Deputy Director,
Healthy Schools Campaign, Chicago**

As deputy director of the Healthy Schools Campaign, Mark was instrumental in bringing the Green Clean Schools Act to Illinois, now the second state in the nation to require green cleaning in schools. Mark has a strong background working on indoor air quality issues, with five years at the American Lung Association of Eastern Missouri as Director of Environmental Programs. At the association, Mark directed statewide environmental health education campaigns and policy initiatives. He also was instrumental in developing *The Quick & Easy Guide to Green Cleaning in Schools*.



ROCHELLE DAVIS

**Founding Executive Director,
Healthy Schools Campaign, Chicago**

Rochelle directs the Healthy Schools Campaign's effort to promote green cleaning in schools, which includes the national distribution of *The Quick & Easy Guide to Green Cleaning in Schools* and passage of legislation requiring green cleaning in schools. She also served as the principal investigator for the Partnership to Reduce Disparities in Asthma and Obesity in Latino Schools, where she works closely with community organizing for environmental justice around children's health disparities. She is a member of the EPA's committee for the Protection of Children's Health and a founding member of the Green Cleaning Network. In addition to judging AS&U's 2008 and 2009 Green Cleaning Award for Schools & Universities, she also was a judge for *Health Magazine's* Healthiest Schools Contest. ■

GRAND AWARD

SCHOOL DISTRICTS

➤ BLACKHAWK INTERMEDIATE SCHOOL BEAVER FALLS, PENNSYLVANIA



PROGRAM INFORMATION

Number of students: 567

Square footage maintained: 92,000

Number of full-time custodians: 5

Annual cleaning budget: less than \$50,000

Green cleaning team members: Jim Perlik, Supervisor of Building and Grounds; Andi Lee-Marnicio, Head Custodian; Janet Girting, Jerry Richael, Tracy Sams, Nancy Tinney, Custodians; Janitor's Supply, Janitorial Product Distributor; Pitt Chemical & Sanitary Supply, D.H. Bertenthal & Sons

In 2003, Blackhawk Intermediate School (BIS) volunteered to test Green Seal-certified products introduced by several janitorial product distributors. After several months of testing, BIS switched to Green Seal-certified products for its everyday cleaning. The products are concentrated and blended with cold water only through a dispensing system, thus eliminating excessive waste and product use.

Over the next several years, BIS custodians gave up their "rags" and paper towels for microfiber cleaning cloths. Now, microfiber products are used not only for wiping, but also for mopping, dust mopping and cleaning chalkboards/whiteboards. Microfiber applicator pads are used with a backpack dispensing system to apply floor finish, eliminating even more waste. Color-coded mop handles are used to prevent cross-contamination.

A battery-operated auto-scrubber now replaces damp mopping in as many areas as possible. Carpets are dry-extracted on a bi-monthly schedule using a Green Seal-certified product. Matting is used at all entrances, vacuumed daily and extracted regularly using white vinegar and cold water to remove the ice-melt residue in the winter.

In the restrooms, Green Seal-certified foaming hand soap is used, along with hands-free paper-towel dispensers; some restrooms have auto-sinks installed. The custodians clean the restrooms using a no-touch cleaning system and biobased renewable products.

All paper products used in the restrooms are Green Seal-certified and made from 100 percent recycled fibers. Waste-can liners also are made from recycled materials. Workers use a black light when inspecting restrooms and other areas for cleanliness.

Most recently, BIS has gone from zone cleaning to team cleaning. All hard-surface floors and carpets are vacuumed using CRI Green Label-certified backpack vacuums. Less equipment, less water and less product are being used with team cleaning, therefore saving the district money. ■

To learn more about Blackhawk's winning green ways, visit ASUmag.com/green and click on its link.

STORY OF INNOVATION—ENGAGING STUDENTS AND THE COMMUNITY: The head custodian engages students, staff and public in the responsibility of not only green cleaning, but also the process of being green. A large banner outside the custodial office depicts the custodial staff using green procedures and products, and "The Green Wall" lists the green word of the week.



GRAND AWARD

SCHOOL DISTRICTS

>> MONTGOMERY COUNTY PUBLIC SCHOOLS ROCKVILLE, MARYLAND



PROGRAM INFORMATION

Number of students: 142,000

Square footage maintained: 23,462,694

Number of full-time custodians: 1,333

Annual cleaning budget: \$58,263,320

Green cleaning team members: Joe Lavorgna, Director, Department of Facilities Management; Dianne Jones, Director, Division of School Plant Operations; Larry Hurd, June Achamorfaw, John Colmes, Building Service Trainers

Montgomery County Public Schools' (MCPS) Division of School Plant Operations (DSPO) began its transition to green cleaning in 1997 when it changed from oil-based wood floor finish to a water-based product. However, high standards for evaluation and approval of cleaning chemicals to be used in the school system long have been evaluated by a certified industrial hygienist, certified hazardous-materials managers, and occupational safety and health experts in the Department of Systemwide Safety and Environmental Services/Indoor Air Quality (IAQ) team. Factors that are considered are low volatile organic compounds (VOCs), non-carcinogen chemicals, low concentrate, flammability and exposure control. Any cleaning chemical to be used in the school system is evaluated by staff prior to its use. The product evaluation team in the DSPO also conducts effectiveness testing on products prior to use in schools.

The DSPO began using concentrated, Green Seal-certified (GSC) products in recyclable packaging in 2006. DSPO was able to replace five other products with the introduction of one GSC product.

Changes in the type of custodial equipment began in 2002. The DSPO purchased energy-efficient battery-operated scrubbers that dry floors faster, uses only clean water to capture dust particles from hard floor surfaces to prevent dust from being released into the air and changed from using mops and buckets. As a result, productivity doubled. In 2005, DSPO purchased high-speed burnishers to replace buffers. These burnishers are safer; are equipped with skirts and vacuums so they operate more cleanly, eliminating dust; are energy-efficient; eliminate the need to use a spray buffing chemical; and reduce the frequency of floor polishing. Consequently, productivity increased while the impact on the environment was reduced. To replace less efficient upright vacuums, brooms and dust mops, DSPO purchased backpack vacuums, which are certified by the Carpet and Rug Institute. Indoor air quality and the longevity of air filters was improved through the use of these vacuums, as they capture and retain more dust particles through a four-stage filtration system. ■

To learn more about Montgomery County's winning green ways, visit ASUmag.com/green and click on its link.

STORY OF INNOVATION—TRAINING: The DSPO requires that all building service employees complete 24 hours of basic skills training, which includes instruction in green cleaning procedures and safety. Employees responsible for mechanical systems are required to complete 160 hours of mechanical skills training. Online safety training focuses on the use and storage of chemicals.



HONORABLE MENTION

SCHOOL DISTRICTS

>> EAST MEADOW UNION FREE SCHOOL DISTRICT WESTBURY, NEW YORK



PROGRAM INFORMATION

Number of students: 7,210

Square footage maintained: 1.34 million

Number of full-time custodians: 89

Annual cleaning budget: \$305,500

Green cleaning team members: Patrick Pizzo, Director of Facilities & Operations; Dan Pletenycky, Head Custodian, Clarke MS/HS; Bob Callan, Head Custodian, Parkway Elementary; Mike Ewald, Head Custodian, Campo Center; Kevin McVey, Knight Marketing Corp. of N.Y., Janitorial Product Distributor

Although the East Meadow School District began to use green cleaning methods in 2005, the program grew substantially in spring 2008 with the appointment of Patrick Pizzo as director of facilities and operations. Shortly after his appointment, Pizzo met with the district's cleaning committee to explore additional methods to be introduced. The committee moved immediately to replace all ammonia-based cleaning products with green-certified products, and replace products containing bleach. Soon after, Pizzo met with students, head custodians and local government officials to begin a bottle-recycling program throughout the district. During spring 2009, the district introduced the use of ionized water spray cleaners. This past spring, the district also began using diamond pads for maintaining terrazzo floors in corridors. This system eliminates the use of chemicals such as strippers and wax, yet leaves floors with a high shine.

The district considers the safety and well-being of students and staff to be of the utmost priority. Inasmuch as the district's efforts are funded by taxpayer money, the district is conscientious about its obligation to be fiscally responsible while ensuring the safety and well-being of students and staff. Fortunately, the district has been able to realize substantial savings while simultaneously reducing its impact on the environment.

Pizzo meets on a monthly basis with all head custodians in the district. In addition to discussing custodial procedures and issues and providing training in topics such as boiler maintenance, CPR and safety, vendors are invited to demonstrate new cleaning products and methods. Recently, one vendor demonstrated a steam cleaner that kills bacteria and germs without the use of any chemical. This equipment is being used in a number of buildings in the district. During summer 2009, the district changed over to hands-free soap dispensers, using foaming hand soap, a green-certified product packaged in sealed cartridges to prevent product contamination. Another recent change has been discontinuing the use of pre-treated dust mops and replacing them with microfiber mops. ■

To learn more about East Meadow's winning green ways, visit ASUmag.com/green and click on its link.

STORY OF INNOVATION—GREEN OUTDOORS: Immediately after his appointment, Pizzo halted the use of weed killers on district fields, instead using rechargeable line trimmers. Turf treatments for playing fields are organic, using products such as compost tea, corn gluten, black strap molasses, feather meal and bone meal.



BEST NEW PROGRAM

SCHOOL DISTRICTS

>> LAPORTE COMMUNITY SCHOOL CORPORATION LAPORTE, INDIANA



PROGRAM INFORMATION

Number of students: 6,300

Square footage maintained: 1,258,000

Number of full-time custodians: 51

Annual cleaning budget: \$250,000

Green cleaning team members: Marc Cizewski, Director of Facilities; KSS Enterprises, TEPE Supply, Cleaning Contractors



The LaPorte Community School Corporation began a green cleaning program in 2009 with summer custodial cleaning. Although the program is in its infancy, custodians have provided positive feedback on the cleaning supplies and microfiber products. This is the first step in a long-term comprehensive green cleaning program. The district will continue to invest in Green Seal- or CRI-certified cleaning equipment (auto-scrubbers, vacuums, burnishers, etc).

The district has partnered with the cleaning contractor to develop a long-term cleaning strategy. Together, they initiated a program called CCAP (Custodial Cleaning Assessment Program), a software program designed to identify specific cleaning levels and areas to be cleaned. The program accounts for product fixtures (dispensers); identifies floor types and square footages; evaluates the staff level and determines level of appropriateness; creates balanced workloads; and establishes standardized processes. The program assists with equipment needs, evaluates new cleaning procedures, and identifies the exact amount of products it should take to clean the facilities and the labor required.

The district has established a strategy that has heightened the level of cleanliness by standardizing restroom and classroom cleaning. "High-touch" surfaces such as light switches, door knobs, telephones, computers, desks and chairs are cleaned regularly. The district also established a disinfecting procedure with school buses. The district encourages students, staff and the public to wash hands on a regular basis.

The district introduced innovative equipment that cleans with 70 percent less water and uses no chemicals. Also, the district has invested in new carpet extractors, which have a "ready space" feature that enables carpet to dry in 30 minutes or less. This will improve indoor air quality and extend carpet life, and uses less water than typical extraction methods.

A building cleanliness checklist evaluation form is used by administrators, building principals, directors and head custodians. The checklist provides a cleanliness guideline and an assessment of each facility's cleaning program. ■



To learn more about LaPorte's winning green ways, visit ASUmag.com/green and click on its link.

STORY OF INNOVATION—COLOR CODING: The district has introduced a microfiber cleaning system using a color-coded procedure, which prevents cross contamination; ensures employee safety; provides a healthful environment; reduces water consumption; reduces chemical usage; increases productivity; is lightweight; has less potential for injury; and is easy to use.



GRAND AWARD

HIGHER EDUCATION

>> WESTERN WASHINGTON UNIVERSITY BELLINGHAM, WASHINGTON



PROGRAM INFORMATION

Number of students: 14,000 (FTE)

Square footage maintained: 1.8 million

Number of full-time custodians: 50 staff, 25 student aides

Annual cleaning budget: \$190,000

Green cleaning team members: Tim Wynn, Director of Facilities Management; Michael B. Smith, Departmental Supervisor; Don Bakkensen, Building Services Manager; Greg Keeler, John Timmerman, Heather Dodd, Roberto Lim, Team Coordinators; Coastwide Labs, Waxie Sanitary Supply, Janitorial Product Distributor; WWU Office of Sustainability, Community Group

WWU Academic Custodial Services (ACS) began its green cleaning program nine years ago. In 2000, ACS reduced its chemical cleaning product inventory from 60-plus non-sustainable products to three main daily-use products, all of them green-certified. It eliminated the use of solvent-based products in 2001 and eliminated all petro-chemical based products in 2003. In 2002, ACS started using microfiber products for all wiping, dusting, dry and wet mopping, as well as finish applications.

All cleaning products are dispensed in closed-ratio portioning systems. Staff training in product usage process and safety takes place twice a year, led by the ACS cleaning educator. The ongoing ACS goal is to clean without any chemical products, using only water and or dry steam vapor for all standard processes. Recently, ACS has been using "electrolyzed" water-sprayer units and auto-scrubbers, which use only water to clean and sanitize. ACS has returned to using a quaternary ammonium disinfectant cleaner, in limited use, on disease transfer points only, reducing any possible affects of using "quats." ACS regularly tests and evaluates new product lines.

ACS uses only CRI-certified upright/backpack and wide-area vacuums and were early users of high-filtration backpack systems. Vacuuming is performed on a schedule in which areas lower in the buildings receive more frequent attention, and frequency of service deeper or higher into the building is reduced. ACS also uses barrier matting at entrances to assist in preventing materials from entering the buildings and concentrate vacuuming at the entry areas.

ACS reduces health impacts and improves client workplace quality by eliminating the use of products with high levels of volatile organic compounds (VOCs). It cleans and damp wipes with water and microfiber cloths to avoid leaving health-affecting residues. ■

To learn more about Western Washington's winning green ways, visit ASUmag.com/green and click on its link.

STORY OF INNOVATION—GREEN FOOD SERVICES: WWU Dining Services recycles 100 percent of post-consumer food waste originating from dining halls, amounting to more than 150,000 pounds of food waste per year. A tray-less dining program initiated in the dining halls four years ago has decreased food waste by 45 percent.



HONORABLE MENTION

HIGHER EDUCATION

>> UNIVERSITY OF GEORGIA, ATHENS



PROGRAM INFORMATION

Number of students: 38,000
(undergraduate/graduate/professional students)

Square footage maintained: 9.5 million

Number of full-time custodians: 320

Annual cleaning budget: \$20 million

Green cleaning team members: Kimberly Thomas, Assistant Director, PPD Services Department; Jerry Heninger, Superintendent-Building Services; Leo Billups, Adam Hayes, Roy Faust, Assistant Superintendents; Deb Massey, Tom Link, Training Specialists; Hope Thomas, Safety Coordinator; Kevin Liu, HazMat Specialist; Athens Janitor Supply, Grainger, Janitorial Product Distributors; UGA Physical Plant Departments: Support Services, Grounds, Energy Services, Operations & Maintenance, Engineering, Human Resources Office

In August 2005, the physical plant department (PPD) introduced green cleaning as a pilot program in Old College. The pilot program was so successful that it moved toward formalizing the green cleaning program to include each building in the initial 28-building North Campus Quad “Green Corridor.” The main focus of the new program was to improve indoor air quality in some of the oldest campus buildings, substitute hazardous chemicals with safer products, reduce employee workplace accidents and standardize employee work practices. UGA realized that its building service workers regularly were using chemicals with dangerous health, flammable and/or reactive characteristics. Over the past year, more than 500 hazardous cleaning chemicals have been eliminated from inventory stock and replaced with just three daily cleaners with environmentally friendly compounds.

The green cleaning program is focused on intensive employee and inhabitant training and certification that include a partnership in green training from UGA PPD and a local OSHA trainer. Employees are taught proper use of green cleaning products, equipment and tools; techniques to reduce cross-contamination; procedures for universal waste-handling; bloodborne pathogens; and inventory-control measures. The disinfectant program is designed to reduce student, faculty and staff exposure to harmful diseases or contaminants by use of a hospital-grade quad-disinfectant. Employees are responsible for disinfecting in all public access points daily—telephone receivers, door handles, electrical light faceplates/switches, restrooms, hallway touch points and keyboards—with a wipe method to reduce VOC exposures. ■

To learn more about Georgia’s winning green ways, visit ASUmag.com/green and click on its link.

STORY OF INNOVATION—GREEN ACADEMY: The Building Service Worker Academy is a required two-week training program to establish a consistent method of training and prepare eligible employees for advancement. To date, 93 employees and supervisors have completed the academy. The program covers business processes, training, and a defined emphasis on IAQ and sustainability.



BEST NEW PROGRAM

HIGHER EDUCATION

>> PURDUE UNIVERSITY, WEST LAFAYETTE, INDIANA



PROGRAM INFORMATION

Number of students: 40,000

Square footage maintained: 9.7 million (gross)

Number of building maintained: 132

Number of full-time custodians: 315

Green cleaning team members: Bob Morman, General Manager; Steve Benner, Howard Byers, Kristal Clark, Richard Crawford, Terri Delp, Jason Lipscomb, Chad Houston, Ed Knoth, Dave Miskin, Danny Montoya, Mike Hibbs, Supervisors; Tom Clark, Carl Carie, Maintenance; Don Blackburn, Vivian Scott, General Managers

Purdue University began researching green cleaning products and processes during summer 2007. After 18 months of testing and evaluation, in partnership with its residence halls and memorial union, it began phasing in the program in January 2009. By September 2009, it had converted the entire central West Lafayette campus, a process it originally had envisioned taking more than a year.

The green program is holistic in its approach. Every product used or dispensed undergoes a cradle-to-grave evaluation of its environmental impact. Similarly, when the university looks for companies to partner with, it looks for ones who have taken significant steps to reduce their ecological footprint. Simply having third party-certification for their products is not enough.

The cleaning products must be readily biodegradable and come in 100 percent recycled or recyclable packaging. All of the consumables (janitorial paper and can liners) exceed the federal government's procurement guidelines (CPG) for post-consumer recycled content. Tools and supplies are all made from recycled materials or biorenewable resources—things such as mop heads made from recycled PET (soda bottles) and rapidly regrown bamboo mop handles. New capital equipment uses less water, is energy-efficient, quieter and reduces the use of chemicals. Purdue is testing electrolyzed water technology in floor care and in handheld sprayers for effective, widespread disinfection and sanitizing. The program includes hard floor care where it reduced product inventory by two-thirds, uses zinc-free finish and is focused on eliminating the use of caustic finish removers entirely.

The university has eliminated the use of butyls, phenols, solvents, aerosols and CFCs and continues to look for new products to improve or enhance effectiveness. The program has cut its chemical inventory by one-half, supply costs by one-third, and reduced solid-waste disposal and toxic effluent discharge by significant amounts. ■

To learn more about Purdue's winning green ways, visit ASUmag.com/green and click on its link.

STORY OF INNOVATION—OUTREACH: Purdue has taken its program on the road to reach out to other schools and help them jump-start their own programs. It addressed a Big Ten and Friends conference held at Michigan State University and the Midwest APPA conference held at the University of Iowa.



Winning Ways

Lessons learned from this year's GCA award winners.

This is the third year for the Green Cleaning Award for Schools & Universities sponsored by the Green Cleaning Network, Healthy Schools Campaign and *AS&U* magazine.

There have been some exciting changes. The number of nominations and overall quality has increased. There were so many excellent nominations that we wish we could recognize everyone, but the real beneficiaries are the students and staff who spend their days in facilities that now are more healthful, with reduced negative impacts on the environment.

Another change was that nominees were using all green products, which is an indication of the mainstreaming of green cleaning. Manufacturers, along with distributors and service providers, all are embracing green cleaning. As a result, products are widely available, performance has improved, and costs have declined.

Nominees indicated their focus was on training and effective cleaning procedures and not simply the use of green products. Thus, it is hoped that the use of green products and staff training will become the standard for schools and universities, not the exception.

What set the winners apart was how their programs have progressed beyond green products. Some of the most notable activities by the winners included their focus on outreach in an effort to not only inform them of their green cleaning efforts, but also enlist their participation.

Many of the best programs used materials provided by vendors that make it relatively easy and inexpensive for others to emulate. In the near future, purchasers may require vendors to provide these educational tools, just as they require Material Safety Data Sheets (MSDS) or dispensers for hand towels and concentrated cleaning chemicals.

Innovative measurement of cleanliness was another trait of the winners. Many used automated quality-control and assessment devices to measure performance. These devices, historically used in the food industry, provide objective information and are relatively inexpensive. This appears to be part of the future of cleaning, as measurements will help improve performance and focus limited resources on delivering cleaner and more healthful buildings.

A couple of "firsts" for this year's awards: The University of Georgia repeated this year as the Honorable Mention in the higher-education category. It continued to improve its award-winning program from last year, and it is a lesson that no matter how good we are, we can get better.

Also this year, a new award category, "Best New Program," recognizes programs that were less than one year old, because it is hard to compare new programs with those that have been operating for five, 10 or more years. Thus, we hope the award will create opportunities for those new to green cleaning to be recognized for great work that is underway. ■

STEPHEN ASHKIN



Ashkin is executive director of the Green Cleaning Network, a 501(c)3 not-for-profit educational organization.
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Sound Off

The latest trends in classroom sound amplification.

C. WILLIAM DAY



Day is senior analyst at KBD Planning Group, Young Harris, Ga., a firm specialized in education facilities and technology planning. He can be reached at bday@kbdplanning.com.
www.kbdplanning.com

When introduced a few years back, classroom sound-amplification systems filled a void that enabled teachers to be heard better. But they did not have rechargeable batteries or docking stations, which made it expensive and cumbersome. Frequencies were limited because the systems were based on FM-, VHF- and UHF-type microphones normally used in public-address systems. The microphones were heavy and not reliable for everyday use. They also lacked an equalizer, which enables a user to eliminate feedback or change the dynamics of a voice. But even with all the negatives, the systems provided a way for students to hear more clearly and comprehend better.

Now, improved technologies are providing teachers even more flexibility so a message can be heard with much less effort. The newer systems are ultra-light, easy-to-use, pendant-style wireless solutions that give a teacher control over the system from the pendant microphone. This feature enables a teacher to roam about a classroom and control volume from anywhere. The microphone can be worn comfortably around a teacher's neck, or used as a handheld for student use. Additional microphones can be added easily so that students and teachers can use the classroom sound-amplification system for presentation and discussions.

These new amplification systems

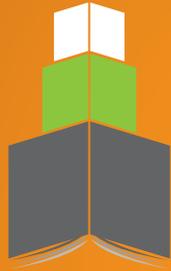
come with charging docking stations that are easy to use. A comprehensive equalizer eliminates feedback. The microphones are equipped with NiMH rechargeable batteries that last 10 hours on a charge. The microphones are responsive, lightweight and use infrared technology.

Another new feature is designed for integration with other classroom audio sources. For example, a teacher can comment while a DVD is playing, and the DVD audio volume is lowered automatically. When the teacher finishes speaking, the volume automatically returns to the previous level.

Some states, prompted by research, are insisting that new schools built with state funds include sound amplification. With multiple audio sources, a powerful, wireless tool such as a classroom sound amplification system makes a lot of sense.

Why is sound amplification important? Young children require a more favorable acoustical environment than adults: Children cannot listen like adults because the auditory neurological network is not fully developed until about 15 years of age. Also, children do not bring 30-plus years of listening and life experience to a learning situation; hence, they cannot perform the automatic "auditory-cognitive closure" of missed information.

The results of independent research continue to reinforce the benefits of classroom audio for students and teachers. Put simply, the more students hear, the better they learn. ■



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Sometimes, experience is the best teacher. From 2001 to 2008, I became acutely sensitive to architectural barriers and appreciative of accessibility laws. My wife developed a neurological degenerative disease of the nervous system, and I became her full-time caregiver. My experience made me aware of the lack of design sensitivity for accommodating physically impaired individuals, especially seniors attending events for grandchildren in their schools.

The Architectural Barriers Act (ABA) of 1968 was one of the first efforts to ensure access to the built environment. ABA mandated that facilities designed, built, altered or leased with federal funds be accessible. Since then, architectural design standards have evolved slowly, usually addressing the minimums.

The Americans with Disabilities Act (ADA) of 1990 required places of public accommodation and commercial facilities (private sector) to follow specific architectural standards in the construction and alteration of buildings.

On July 23, 2004, the U.S. Access Board issued updated accessibility guidelines for new or altered facilities covered by the ADA and the ABA.

Building codes and zoning ordinances identify the required number of handicapped parking spaces. Unfortunately, the space often is not sufficient. Parking lots that have only two handicapped parking stalls with a center access aisle are not adequate.

Each handicapped parking stall must have a 5-foot-wide access aisle adjacent to and on the right side—the passenger side.

The parking space and access aisle should not have a slope greater than 2 percent in any direction. Parking on a steeper slope and transferring a disabled person from a car to a wheelchair or transport chair is difficult and dangerous.

The access aisle must be connected to an accessible route to the appropriate accessible entrance of a building. The parking access aisle must either blend with the accessible route or have a curb ramp complying with ADA regulations. The access curb must be designed with a smooth transition from the parking lot surface.

Too many exterior ramps exist that are designed in the ratio of 1:12 (one foot of vertical rise in 12 feet). They are difficult to maneuver regardless of weather conditions. Exterior ramps must be designed to the ratio of 1:20 (one foot of vertical rise in 20 feet of horizontal length).

A canopy covering the walkway should extend from the building to beyond the curb, enabling a vehicle to discharge the handicapped individual in a protected area. The canopy should cover and shield the exterior ramp.

My experience as a caregiver taught me new insights and sensitivities to the architectural barriers that exist in schools—schools should go beyond the minimum. ■

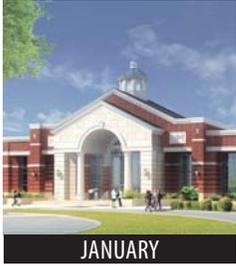
JAMES E. RYDEEN



Rydeen, FAIA, is an architect/facility planning specialist and former president of Armstrong, Torseth, Skold & Rydeen, Inc. (ATS&R), Minneapolis.

He can be reached at jrydeen@atsr.com.

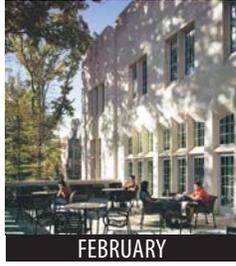
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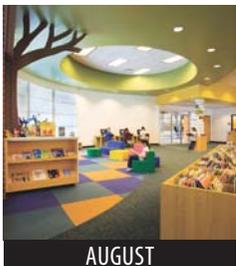
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N 10,000-14,999
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M Under 1,000

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- 1 100+
2 76-100
3 51-75
4 21-50
5 11-20
6 6-10
7 5 or less

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2 7-9 million
3 4-6 million
4 1-3 million
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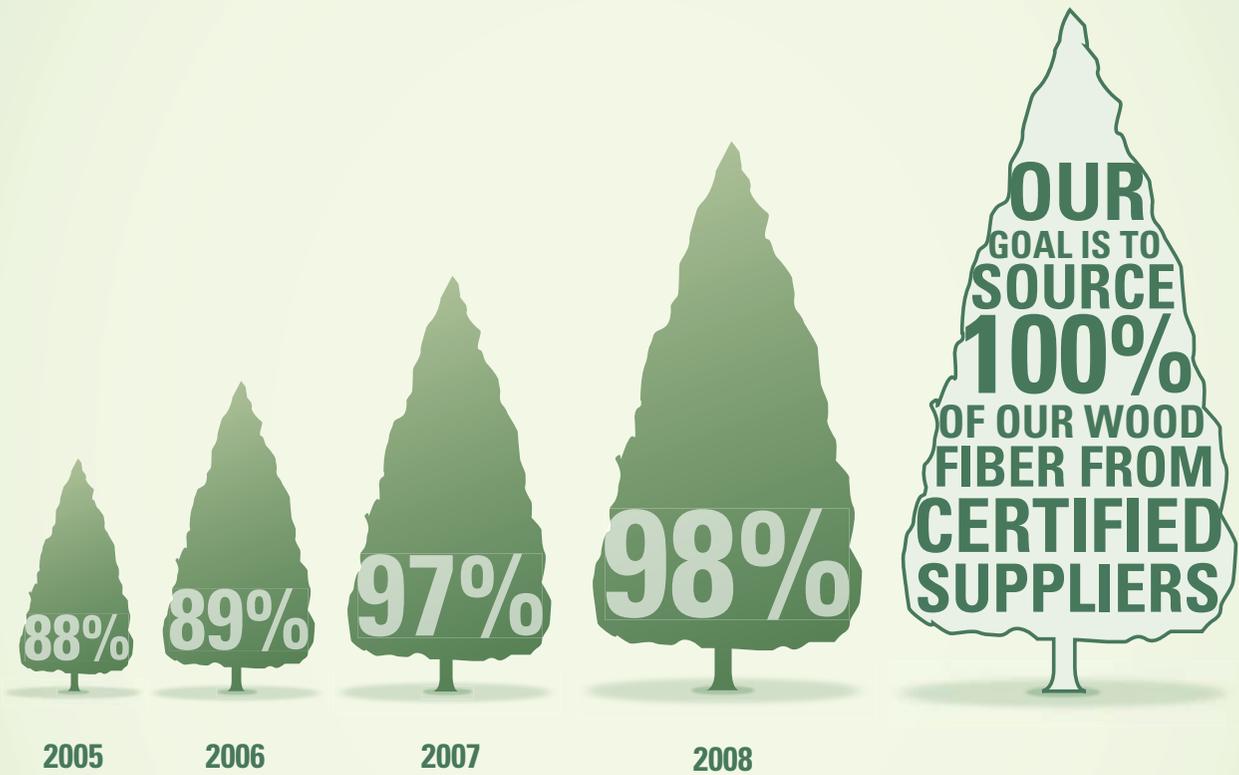
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