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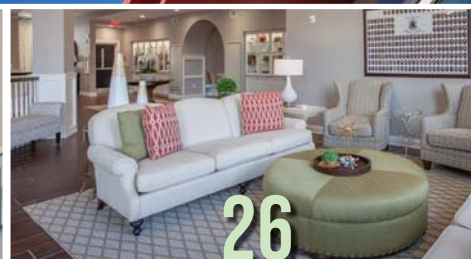
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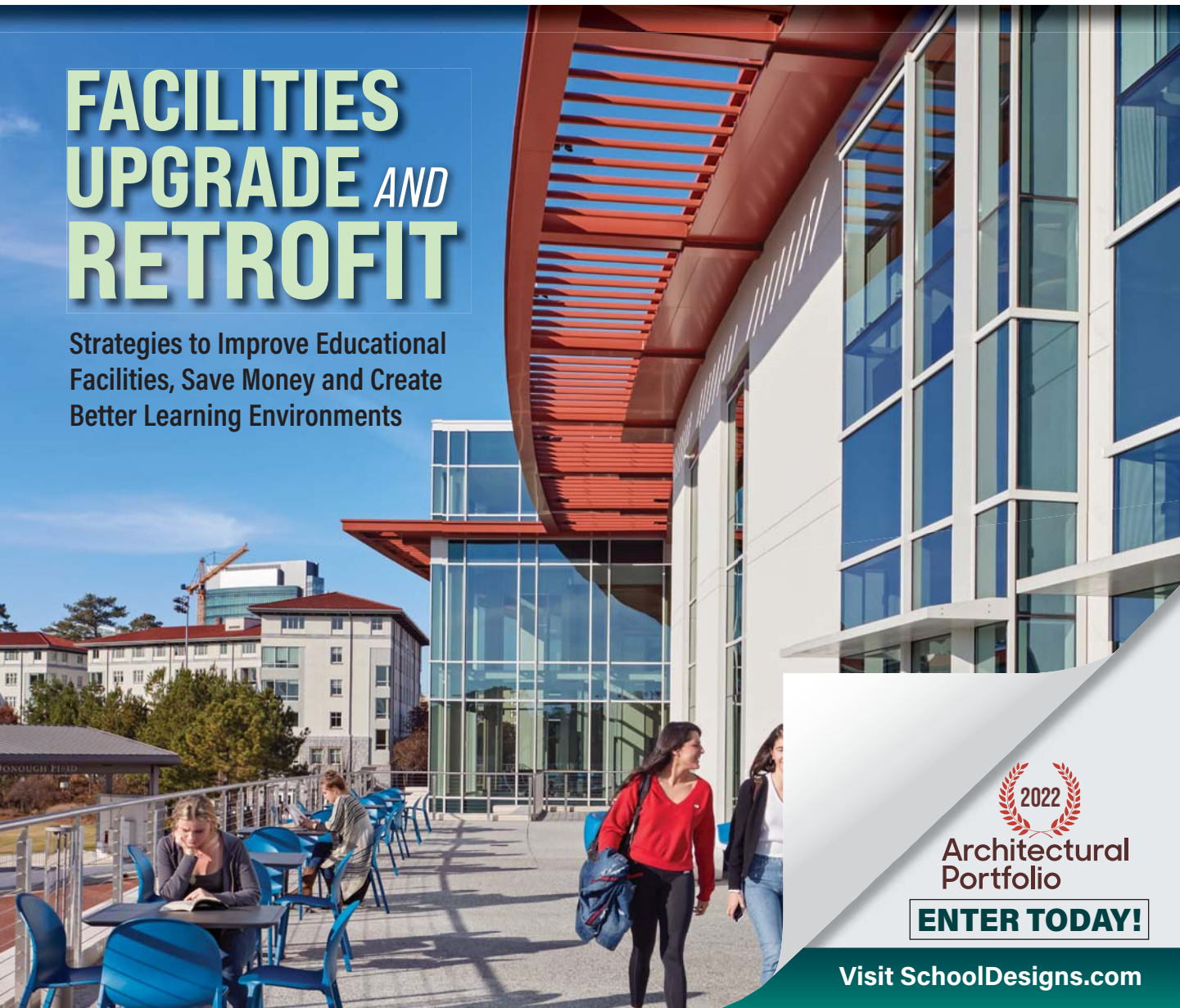
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CONTENTS

VOLUME 94 • ISSUE 8 • JULY 2022



FACILITIES UPGRADE AND RETROFIT

14 Pursuing Equity

Design strategies for educational facilities can help make places welcoming to all students.

18 To Retrofit or Not To Retrofit

Factors to consider when deciding whether to upgrade or replace a school's HVAC system.

26 Making a House a Home

The interior designs of sorority houses seek to balance a respect for traditions with a focus on the amenities modern students are seeking.



DEPARTMENTS

10 Inside

Roofing

12 Construction Zone

Renovation

16 Product Solutions

34 Profiles

People, Places and Goings-ons

ALSO IN EVERY ISSUE ...

8 EDITOR'S FOCUS

9 ON THE WEB

31 MARKET PLACE

33 AD INDEX

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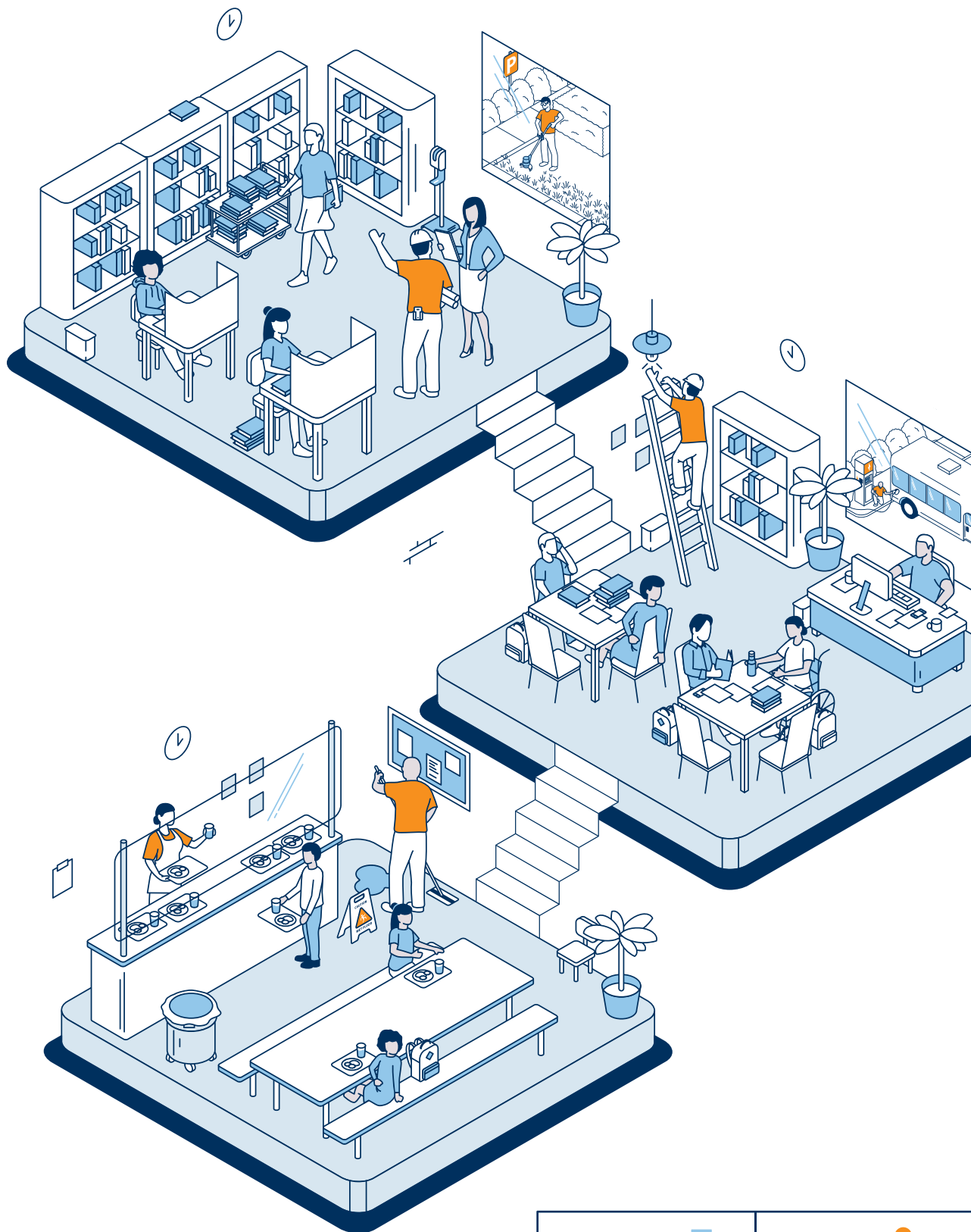
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A BLIP, OR A WORRISOME TREND?

By Mike Kennedy

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A year ago, looking ahead to the 2021-22 school year, I wrote about the understandable but still significant decline in higher education enrollment in the midst of the Covid-19 pandemic. Given the choice of coping with heavy doses of remote instruction and the health and safety restrictions that reined in campus social activities, hundreds of thousands of young men and women opted to defer college plans, if not drop them altogether.

But the hope was that as vaccinations and enhanced safety measures enabled colleges and universities to resume something closer to normal operations, the enrollment drop could be categorized as a blip and more students would come back for the academic and social of the campus experience that had seemed so appealing before Covid-19 struck.

The most recent numbers say the decline may be more than a blip. The National Student Clearinghouse Research Center says that from spring 2021 to spring 2022, total enrollment (undergraduate and graduate) declined 4.1%—or 685,000 students. That's on top of 3.5% enrollment drop from spring 2020 to spring 2021.

Undergraduates account for most of the enrollment drop of the last two years. The spring 2022 undergraduate enrollment of about 13.3 million was 9.4% less than the 14.7 million student numbers in spring 2020.

What started as taking a semester off until the pandemic subsides now may have become a gap year or longer. And the gap may grow into a chasm as the path those former students find themselves on takes them farther away from college campuses.

Whether or not enrollment numbers eventually rebound, higher education institutions should be prepared to help students who may have experienced mental health problems as they endured the disruptions and trauma that stemmed from the Covid-19 outbreak. Students who have been away from higher education also may need help working through the anxieties that may arise as they re-enter campus life.

The U.S. Education Department is urging colleges and universities to allocate some of its Higher Education Emergency Relief Funds on evidence-based mental health supports for students.

"We must make sure our colleges and universities have the tools and resources to help students, faculty, and staff heal from the grief, trauma, and anxiety they endured amid the pandemic," Education Secretary Miguel Cardona says. ■

Mike Kennedy, Senior Editor, has written for *AS&U* on a wide range of educational issues since 1999.

DON'T MISS ARCHITECTURAL PORTFOLIO 2022

Have an exceptional project that deserves recognition? *American School & University* is still accepting entries for Architectural Portfolio 2022. Judging has been scheduled for late August, and we have options for entrants facing project and photography delays.

Contact **Joe Agron** at jagron@endeavorb2b.com or visit SchoolDesigns.com for information about the competition and to reserve a spot for your project.



SchoolDesigns

All-girls charter school will be built with repurposed shipping containers

The Girls Athletic Leadership School (GALS), an all-girls charter middle school in Los Angeles, is constructing a new campus in the city's Van Nuys neighborhood.

The 23,000-square-foot facility will consist of steel modular buildings. It will have 17 classrooms constructed from repurposed shipping containers that feature open space with natural light and full-height glazing.

The school says the new campus will accommodate about 330 students and enable GALS to move off the Panorama High School campus. The school has had to move three times in the last five years.



Construction is expected to be complete in fall 2022.

asumag.com/21244365

Indianapolis solar power initiative will install panels at 20 schools

The Indianapolis school board has approved a plan to install solar panels at 20 campuses.

The district's agreement with Sun FundED calls for the firm to develop, finance and operate solar energy



systems for the district. The project would reduce energy costs in Indianapolis schools by an estimated \$45 million over the next 30 years, the district says.

In addition to the solar installations, the project also would enable the district to incorporate renewable energy and sustainability programs in the classroom.

Based on the initial 20 buildings, the district estimated that first-year savings would be more than \$120,000. Those savings are estimated to increase to \$22 million by year 25, and \$40 million by year 30.

asumag.com/21244689

Tennessee charter network buy former movie theater for \$2.5 million

Gestalt Community Schools, a charter network in Memphis, Tenn., has bought a former movie theater for \$2.5 million.

The 80,000-square-foot building in the Hickory Hill section of Memphis is the former home of the Malco Majestic movie complex.

The sale includes the building and 17 acres of land. Gestalt plans to construct a new facility there for its Power Center Academy K-8 schools, reports WATN-TV.



The new school will be about three miles away from the existing school.

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Students at Alaska elementary accidentally drink floor sealant that was thought to be milk

Twelve children and two adults at an elementary school in Juneau, Alaska, accidentally ingested floor sealant believing it was milk.



Several students complained of burning sensations in their mouth and throats, and at least one child was treated at a hospital, reports KBTX-TV.

The incident occurred at a summer program at Sit Eeti Shaanax Glacier Valley Elementary School in the Juneau district.

What the school thought was milk was actually a floor sealant that resembled liquid milk. Staff members told students to stop drinking the liquid and immediately contacted poison control.

One student received medical treatment at a local hospital, and two other students were picked up by parents and may have gone to seek medical advice, the district said.

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Reopened school to get partial roof replacement

The Richmond (Va.) district is replacing parts of the roof at a building that has been called into emergency service after a fire shut down an elementary campus.

The Richmond board has approved a plan to upgrade portions of the roof at the former Clark Springs Elementary School, which closed in 2014. The district had to reopen the campus earlier this year to accommodate students displaced from Fox Elementary, which was extensively damaged by a three-alarm fire in February.

As the district prepared to reopen Clark Springs, it

found several problems with the roof, including splits in the roof membrane, puncture holes and moisture in the insulation. The district spent more than \$11,000 to address those problems, but a roofing contractor said those problems would recur until the roof in those sections was replaced.

Replacing the entire roof would cost about \$1.5 million, but the work would not be completed in time for the beginning of the 2022-23 school year. Replacing only the sections identified by the contractor as problems would cost \$600,000 and could be completed during the summer. So Superintendent Jason Kamras recommended, and the board agreed to the partial roof replacement.



The Richmond (Va.) district is replacing part of the roof at the formerly shuttered Clark Springs Elementary School.

Credit: Google

New roof at Tennessee high school will cost \$3.9 million

The Tullahoma City (Tenn.) school board has agreed to spend \$3.9 million on a total replacement of the 65-year-old roof at its high school.

The board acted in response to a 2021 assessment by a consultant, The Tullahoma News reported. Because of the age of the roof and several problems uncovered, the consultant advised the district to replace the high school roof in the near future. In addition, the company providing HVAC services to the district also reported that the high school roof had numerous trouble spots and would soon need to be replaced.



Tullahoma High School in Tullahoma, Tenn., is replacing its 65-year-old roof.

Credit: Google

District officials also reported that the high school has had to deal several times with roof leaks; continuing to patch and repair individual leaks was no longer feasible.

The district says it will pay for the roof replacement with federal Covid relief funds. The work is expected to take up to six months.



Meadville Area Middle School and Meadville Area High School have newly installed roofs.

Credit: Google

Pennsylvania district fast-tracks roof replacement at high/middle school complex

The Crawford Central (Pa.) school district has spent \$6.05 million to replace the roofs at a senior high-middle school campus in Meadville.

The Meadville Tribune reports that the roof replacement approved in January 2021 for the Meadville Area Senior High-Meadville Area Middle School complex was supposed to be a two-year project. But the construction company that won the bid for the project proposed adding a second shift during summer 2021 so it could complete the work in half the time.

Matthew Tarr, the district's director of buildings, grounds and transportation, said removal of the roofing and installation of the new roof have been completed, but finishing touches are continuing. The remaining work involves "cosmetic" trim work.

The decision to speed up the project "went quite well," Tarr said. "If the weather would have held out for us, we would have been completely finished." ■

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Busiest building at Colorado State University is getting a makeover

A 54-year-old building that ranks as the most heavily used on Colorado State University's Fort Collins campus will be getting a makeover.

The university says the three-phase project will cost between \$120 million and \$130 million. The Colorado legislature has appropriated \$38 million for the first phase.



Rendering of renovation plans for the Clark Building at Colorado State University. Credit: Colorado State University

Built in 1968, the Clark Building houses nine departments within the College of Liberal Arts as well as the Department of Psychology in the College of Natural Sciences. The university says the 255,000-square-foot building serves 70% of undergraduate students in any given year, and 99% of students take at least one class in the building during their academic careers.

The revitalized Clark will include new private and shared spaces, the newest technologies in storage and layout for anthropology and history, and spaces for collaborative learning and scholarship.

"The pandemic showed us new ways of teaching and learning – we don't want to lose those insights," said Benjamin Withers, dean of the College of Liberal Arts. "The building will reflect that and reflect the future."

The College of Liberal Arts will work with Facilities Management on a request for proposals process to determine the architect and builder, with a goal of breaking ground in late 2023 or summer 2024.

Renovation will create a hub for Washington State University Spokane's medical school

Washington State University Spokane is renovating a 113,000-square-foot building on its campus and will make it the central hub for the university's College of Medicine.

The \$15.5 million project will overhaul the Phase One Building, previously known at the EWU Center when it was used by Eastern Washington University. Eastern Washington moved its programs out of the building last year, and since then it has been vacant.

WSU Spokane plans to add a student center, testing rooms, classrooms and faculty offices for the Elson S. Floyd College

of Medicine, reports the Spokane Spokesman-Review. The estimated completion date is mid-2023.

Built in 1991, the facility is named the Phase One Building because it was one of the first buildings constructed on WSU Spokane's campus. The university plans to rename it.

The architect is Integrus Architects, and the builder is Bouten Construction.



Credit: Bouten Construction

University of Albany in New York is converting former high school to a home for engineering school

A \$75 million appropriation from the state of New York will enable the University of Albany to complete the conversion of the former Albany High School building to a home for the university's engineering college.

The 129,000-square-foot, 110-year-old facility in downtown Albany was home to Albany High from 1913 to 1974, and later was an elementary school and housed alternative education programs. The university announced in 2016 that the building would house its engineering school.

The renovation will provide modern labs and classrooms while preserving the core architectural elements of the building, says a news release from the office of Gov. Kathy Hochul.



The former Albany High School in Albany, N.Y., will become home to the University of Albany's College of Engineering and Applied Sciences.

Credit: Google

ness massive data sets to better understand how to automate complex operations like diagnosing and treating disease and forecasting natural disasters," the governor's office says.

The renovated facility is scheduled for initial occupancy in late 2023 and full occupancy in 2025.

The governor also announced that the renovated building will anchor a \$200 million public-private artificial intelligence supercomputing initiative led by the university's college of engineering and applied sciences.

The initiative, dubbed Albany AI, "will empower university and industry researchers to har-

Springfield, Ill., high school gets makeover

Lanphier High School in Springfield, Ill., is undergoing a \$93.2 million overhaul.

The renovated building will have a commons area with a skylight that will connect the oldest section of the school at the front entrance, reports *The State Journal-Register*.

The district is also constructing a classroom addition behind that area.

Jennifer Gill, superintendent of the Springfield district, says the goal of the renovation is to preserve “the historical nature of Lanphier but yet make it to where it is completely redone and renewed inside.”

Other improvements include a new auditorium, a 2,000-seat fieldhouse, an esports room, and an area for a construction trades program.

Memorial Stadium, home to Lanphier and Springfield High School athletics, will get a new field and a resurfaced track along with new locker rooms, a concession stand and restrooms.



Lanphier High School in Springfield, Ill., is undergoing a \$93.2 million renovation.

Credit: BLDD Architects

Sangamon County voters approved a 1% sales tax hike to pay for school construction for districts in the county.

Most of the construction is scheduled to be completed by the end of 2023.

BLDD Architects, Inc. is the architect, and O’Shea Builders is the builder.

Des Moines hotel will become residence hall for Drake University



A former Holiday Inn Express in Des Moines, Iowa, will become a residence hall for Drake University. Credit: Google

Drake University in Des Moines, Iowa, plans to renovate a former Holiday Inn Express and convert it to student housing.

The Des Moines Register reports that the facility will be renamed Campus Suites at Dogtown and will have 45 single-occupancy rooms, primarily for third- and fourth-year undergraduate students.

Drake plans to spend \$250,000 on the renovation, mainly to add a fitness room, kitchen and other common areas, said Ryan Arnold, the university’s director of community engagement.

The hotel had been in operation since the 1980s, initially as the Drake Inn. In 1996, the university bought the building, and it became a Holiday Inn Express. The operators decided last year not to renew their lease.

Michigan State renovates, expands ice arena

Michigan State University is expected to complete renovations and additions this summer to the Munn Ice Arena on its East Lansing campus.

The university says the project includes construction of a new public “front door” to the facility, which opened in 1974 and is home to MSU’s Division 1 hockey team.

The 35,000-square-foot addition will include new locker rooms, a 5,000-square-foot strength and conditioning room, hydrotherapy pools, shooting bays, and a players’ lounge. Additionally, the new office space for coaches and staff will be elevated from underground.



MSU’s Munn Ice Arena in East Lansing.

Credit: Michigan State University

University trustees approved the \$26.7 million renovation in 2015, but the project has been delayed because of budget concerns related to Covid-19.

The architect is Rossetti. ■

PURSuing EQUITY

Design strategies for educational facilities can help make spaces welcoming to all students.

By Scott Baltimore & Scott Shell

For colleges and universities, the concept of equity and fairness is about ensuring that all students have access to what they need to be successful. This means exposure to opportunities, social and academic networks, all types of student-related resources and other support structures. Architects and their collaborators support this mission by using various design strategies applicable to academic, athletic and student life facilities.

For many students arriving on campus in 2022, the experience may be their first time living away from home. Many students have attended university classes virtually during the pandemic and never stepped onto their campus. Thus, designers seek to

create a sense of place where everyone gains an authentic and empowered sense of belonging and participation. They use strategies such as building location, making the visibility of interior spaces apparent with generous windows and glass storefronts, and integrating adaptability, all of which contribute to the goal of providing welcoming and comfortable experiences. Infrastructure and basics such as adequate light, robust wi-fi, power sources for devices, and gender-neutral restrooms also are essential to equitable design.

At North Carolina Central University's Student Center in Durham, student organization spaces spill out to a broad greenspace.

Credit: Jim Sink Photography



The equity of well-being

Even before the stresses of the last two years, student anxiety and depression were critical challenges facing universities across the nation. Design can aid in advancing students' psychological and emotional wellness by easing access to on-campus services for mental health and physical well-being and enabling easy travel for those with disabilities. These concepts are integrated into the design of the Student Health and Wellness Center at the University of Virginia (UVA). The facility's location is in a developing mixed-use district on the main campus along a primary network of campus circulation routes. The building has spacious lounge lobbies that offer students seamless access to many health and wellness services.

Design for the Student Wellness and Athletics Center at North Carolina's School of Science and Math–Morganton (NCSSM) merges fitness, physical and mental wellness with clinical and athletic programs. Counseling programs occupy glass-enclosed interior spaces adjacent to the main entry. This welcoming configuration contributes to destigmatizing and demystifying mental and emotional health care. By bringing services that once were hidden into the mainstream flow of campus life, universities can take an important step in advancing equity on campus.

Equity for community

Fostering students' sense of belonging and ability to create community is another key aspect of equity in design. To make the Emory facility overtly welcoming and inclusive, the architecture provides for a generous glass storefront and multiple points of entry. The design's openness welcomes movement around and through the building's spaces, day and night. The Commons, visible from the grand connecting stair and from all levels of the building, is the campus "living room" with comfortable, moveable furnishings. Numerous outdoor terraces serve as front porches for individuals and groups.

The design of spaces for organizations and groups must consider how areas dedicated for a specific group or organization, such as student government, are presented to students. Their location, accessibility, sharing opportunities, and



Emory University's Student Center in Atlanta welcomes movement around and through the building's spaces, day and night. Credit: Robert Benson Photography



University of Virginia's Student Health and Wellness Center in Charlottesville has spacious lounge lobbies that offer students seamless access to many health and wellness services. Credit: Lincoln Barbour Photography

Equity is also about ensuring that dining areas offer options that can accommodate students' food sensitivities, religious practices and personal preferences. At Emory University's new Student Center, the architecture supports the inclusion and placement of multiple dining options that meet the dietary needs of all students and that prevent cross-contamination.

programming may, when appropriate, make it possible for the activities of one group to merge with another. For instance, a combination of shared conference and lounge spaces close to one another means one group's activity can cross into another's to establish or strengthen connections.

The newly opened Student Center at North Carolina Central University (NCCU) in Durham includes a wing of student-focused spaces and a large volume of dining, gaming and multipurpose event space joined by a central commons. This open space is the main entry lobby and a hub for all activities contained in the building. Multiple lounge areas within the commons connect to many program components. Adjacency and high visibility advance student organizations by enabling them to expand into and exchange space with the outdoors, other activities and events, and dining areas.

Gender-neutral bathrooms are the new standard, introduced into the International Plumbing Code 2021 edition. The Emory Student Center includes a full set of gender-neutral bathrooms near designated student workspaces. Their configuration includes fully enclosed compartments with a communal area for sinks. Emory made a strong commitment to including these spaces.

Equity from the outdoors In

Equity is enhanced when higher-education institutions provide easy entry to all public spaces. At Emory, UVA and NCCU, the public, lounge and multipurpose spaces are highly visible and designed to flow with daily student patterns of movement. Outdoor spaces on a campus help promote access. Welcoming and accommodating patios, terraces, lawns and gardens all encourage the campus community to gather, find a spot to work, and meet.

Exterior power sources and robust wi-fi improve the function of outdoor spaces for individual student and group or class work. All the projects mentioned—including at NCSSM—include integrated wi-fi and power to make it easier for students and classes to gather in the fresh air. Public outdoor and community spaces within a project also break down barriers between a building and its context, whether it is a campus, a natural area or an urban district.

At NCCU, student organization spaces spill out to a broad greenspace. At Emory, a southern plaza wraps the main building and accommodates spill-out for the café with group and intimately scaled spots. At UVA, the street-side facade looks out to a shared green space for the new campus district. In addition, these projects were designed to offer broad views out to the surroundings, so occupants connect to nature and to campus life.

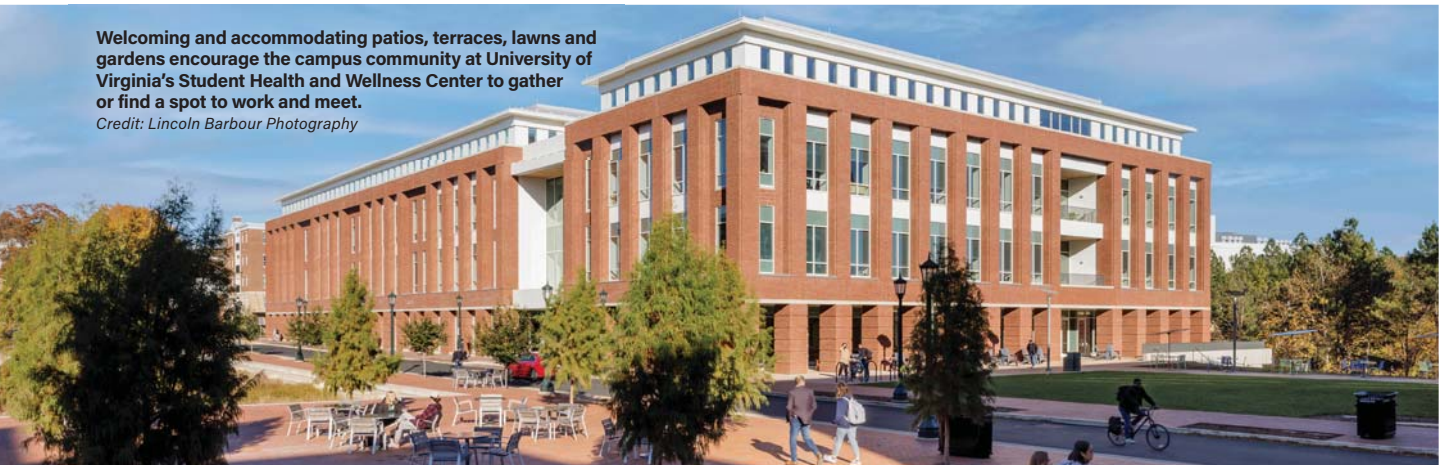


A central commons at the North Carolina Central University Student Center is the building's entry and a hub for its many activities.

Credit: Jim Sink Photography

Welcoming and accommodating patios, terraces, lawns and gardens encourage the campus community at University of Virginia's Student Health and Wellness Center to gather or find a spot to work and meet.

Credit: Lincoln Barbour Photography



An equitable process

Although all campus buildings present opportunities to grow equity for academic communities, student life buildings—student unions, residence halls, health and wellness centers and athletic facilities—provide new models for advancing equity and ensuring a welcoming campus culture.

To achieve equity, designers must engage fully with a building's user groups to gain awareness of the focus, priorities and activities of stakeholders. With this knowledge, commonalities between groups can be uncovered to inform strategies for functional and spatial efficiency that bridge a campus's various populations fairly.

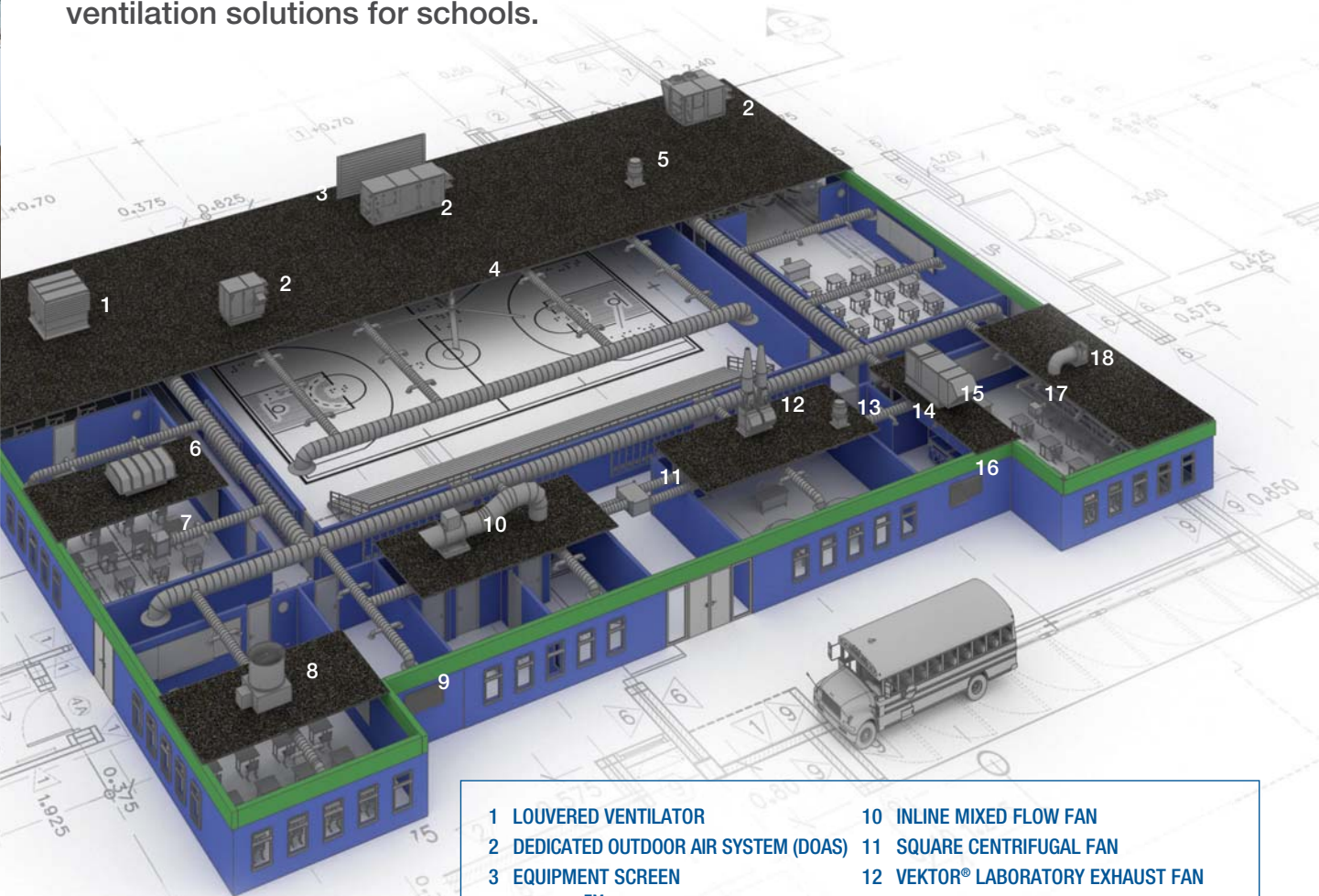
Diversity within building teams—on the design team and among clients—ensures an inclusive process and result. Students can be effective contributors to the design feedback loop too, further elevating equitable project features. Integrating sustainable, resilient and energy efficient qualities safeguard the planet for future generations. The designer's role is to ensure these and other project decisions are made to benefit all users. ■

Scott Baltimore, AIA, is an Associate at Duda | Paine Architects. He was instrumental in shaping the Duke Student Wellness Center, University of Virginia's Student Health & Wellness Center, and the Emory Student Center. He holds a Master of Architecture from Yale University and a Bachelor of Environmental Design from North Carolina State University.

Scott Shell, AIA, LEED AP, is a Principal at Duda | Paine Architects. His portfolio includes projects such as the Duke School of Medicine's Trent Semans Center, North Carolina State University's Talley Student Union and the Emory Campus Life Center in Atlanta. He received a bachelor of environmental design and a bachelor of architecture from North Carolina State.

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TO RETROFIT *or* NOT TO RETROFIT?

Factors to consider when deciding whether to upgrade or replace a school's HVAC system.

By Jason Gillis

Having an HVAC unit that runs at optimal levels has become increasingly important because of the heightened concern about airborne pathogens over the past few years. Cold and flu viruses already were discussed frequently, but the Covid-19 pandemic has pushed indoor air quality (IAQ) to the forefront of the news cycle. K-12 schools were put under a microscope as ensuring health and safety within these facilities became a greater priority.

With the wide availability of vaccines, many people have become less worried about Covid-19, but as schools look at the ways they can improve the healthfulness of their facilities, the efficiency of HVAC units continues to be a prime topic. Should schools consider replacing their HVAC units completely, or will a few upgrades do the trick of providing better heating and cooling solutions? In addition, would replacing the entire unit improve indoor air quality within the building? These are questions that K-12 schools should consider when thinking about their HVAC units.

One of the responsibilities of a school is to ensure its occupants, students and staff alike, are comfortable and have fresh air to breathe. Schools need to determine whether retrofitting HVAC units is the best route to achieve that goal.

Whether a school is retrofitting an HVAC unit or replacing it, it is always important for a system to be operating efficiently. The age of the unit factors heavily into its efficiency. If a system has a motor that is older or worn out, it will have added amp load, which increases the utility bill. Older filters and dirtier coils will add extra static and put more force on the motor as well. When it comes to IAQ, an older system may not be bringing in the fresh air that's required by ASHRAE Standard 62.1 if the dampers or economizers aren't working properly. With less efficiency comes less fresh air and potentially a higher energy bill. Efficiency is critical for HVAC units.

Upgrade or replace?

Several small signs could indicate a need to replace or upgrade an HVAC unit, but the most common is continual breakdowns. Think of an HVAC system like a car. If a car keeps breaking down, it will have to be fixed repeatedly; eventually it will have to be replaced. The same applies to an HVAC unit. In addition, carrying out repairs can be costly. Repeated repairs can quickly eat up the limited budget that schools have for such work.



To boost the efficiency of HVAC units, school administrators can have them retrofitted with upgrades such as improved motors or, if compatible, higher-graded filters.

Credit: Modine Manufacturing Company

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From an IAQ viewpoint, the idea of upgrading an HVAC system with needlepoint bipolar ionization, higher-rated MERV filters or UV lights is a great move if the unit's motors can handle the added stress.

Complaints from students and staff are another telltale sign it's time for an upgrade. When the heating or cooling systems keep failing or the air is uncomfortable to breathe, complaints from occupants will increase.

Schools should consider several factors when determining whether to retrofit an HVAC unit. The age of the unit plays a major role in the decision. The air conditioning industry has seen R-12 and R-22 refrigerants be phased out in recent years. If schools have systems that use those refrigerants, they may want to consider replacing them with systems that use more

modern refrigerants like R-410, R-407C or even refrigerants that will be coming once R-410 is phased out.

From an IAQ viewpoint, the idea of upgrading an HVAC system with needlepoint bipolar ionization, higher-rated MERV filters or UV lights is a great move if the unit's motors can handle the added stress. Many facility managers may attempt to add these components without upgrading their motors at the same time.

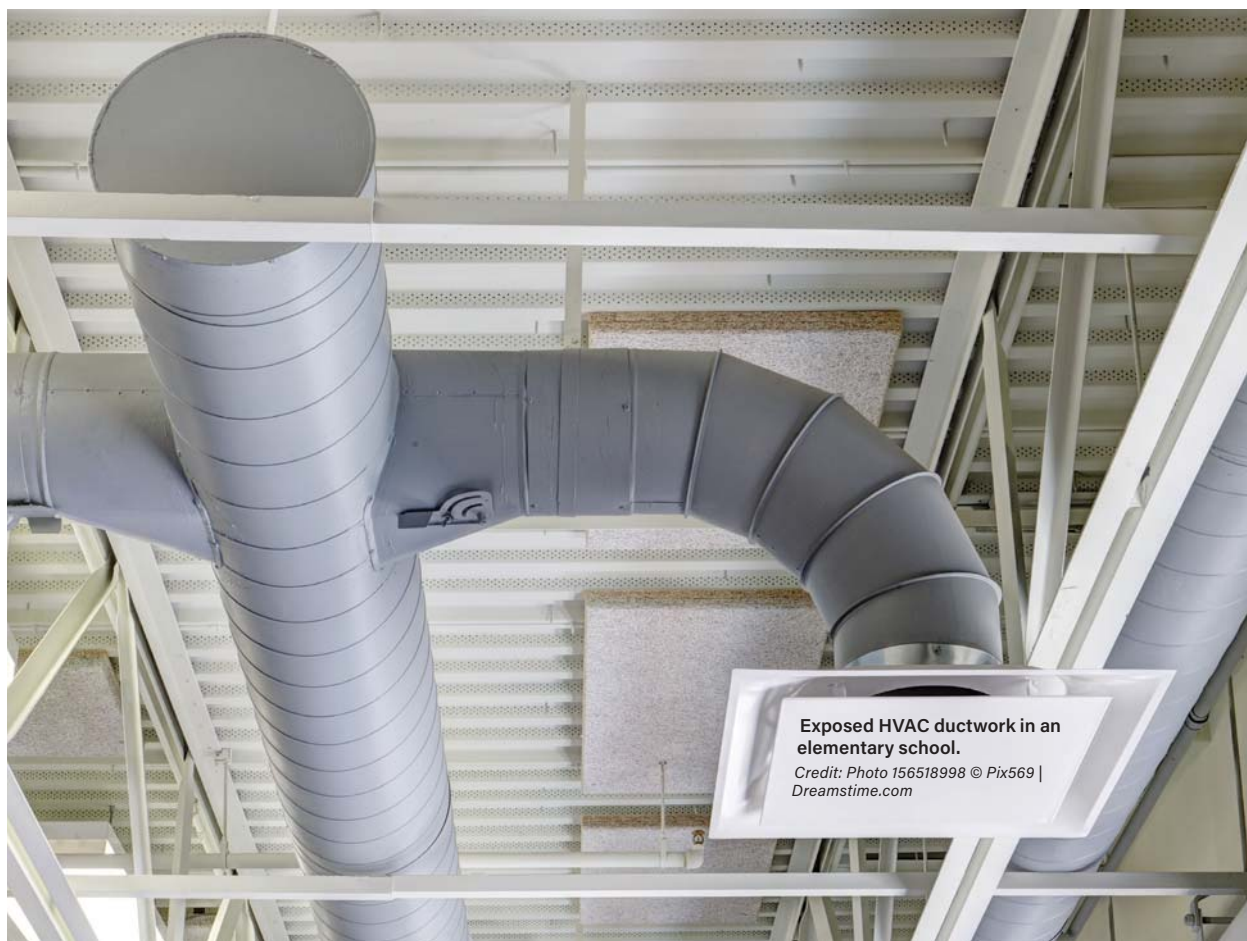
Many motors in older equipment are not sized to handle the added static. Some motors have failed because facility managers did not accommodate for the increased

static pressure and less airflow brought about by added filters. If a school decides to retrofit an HVAC unit, it needs to make all the necessary upgrades so it can avoid added repair expenses down the line.

Older units and upgrades

Retrofitting more modern units have several benefits. The overall cost to retrofit can be considerably lower than a full replacement. The time involved to do a retrofit would be less than a full replacement, and schools would experience less downtime during the retrofitting process.

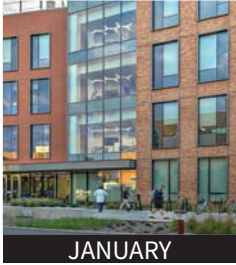
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Exposed HVAC ductwork in an elementary school.

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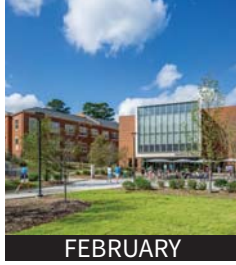
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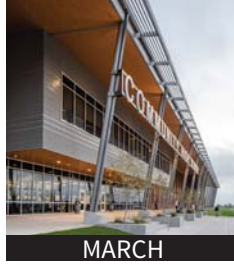
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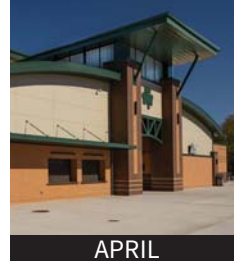
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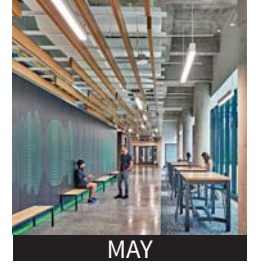
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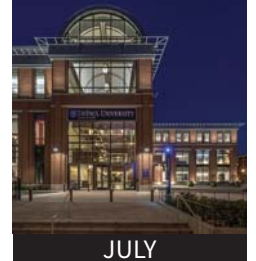
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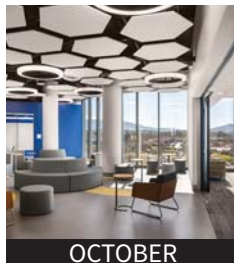
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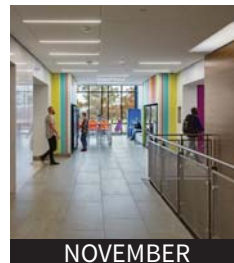
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Schools opt for lower-cost ventilation strategies

A national survey indicates that only 38.5% of U.S. public schools say they have replaced or upgraded their HVAC systems to improve ventilation and combat the spread of Covid-19.

The U.S. Centers for Disease Control and Prevention (CDC), in a Morbidity and Mortality report from June, said that instead of pursuing HVAC system replacement or upgrades, most schools opted for lower-cost strategies for improving ventilation: 73.6% of respondents said they moved activities outdoors; 70.5% said they inspected and validated their existing HVAC systems; 67.3% said they opened doors, and 67.2% said they opened windows.

"The most frequently reported ventilation improvement strategies were lower-cost strategies," the CDC says. "Focusing support on schools least likely to have implemented resource-intensive ventilation strategies might facilitate equitable implementation."

Inadequate ventilation in schools can lead to poor indoor air quality and increase the risk of contracting Covid-19. Even before the pandemic focused greater attention on air quality in schools, the problem of deferred maintenance and inefficient HVAC systems in school buildings was known to be a widespread problem.

The U.S. Government Accounting Office (GAO) issued a report in 2020 that said 41% of the nation's school districts needed to update or replace the HVAC systems in at least half of their schools. That equates to about 36,000 schools, the GAO said.

The June 2022 CDC report said that HVAC upgrade or replacement—which the report categorized as higher-cost, resource-intensive ventilation improvement strategies—were employed less frequently by schools than lower-cost steps; 38.5% of schools said they replaced or upgraded HVAC systems; 29.8% deployed high-efficiency particulate (HEPA) filtration systems in eating areas; and 28.2% used HEPA filtration systems in classrooms.

City schools were less likely to report opening windows for ventilation (53.9%) than were suburban (69.5%), town (75.3%), and rural (73.5%) schools; city schools also were less likely to use fans to increase effectiveness of opening windows (26.1%) than were town (43.0%) and rural (43.3%) schools.

Rural schools were less likely to use HEPA filtration systems in areas where students eat (19.1%) or to use portable HEPA filtration systems in classrooms (15.6%) than were city (33.4% and 37.7%, respectively) and suburban schools (33.2% and 32.9%, respectively). Rural schools were less likely than were city schools to use portable HEPA filtration systems for high-risk areas (22.0% versus 44.7%), the survey found.

"Differences by locale and school poverty level in implementing more resource-intensive strategies might be due to supply chain challenges, differences in school or community resources, or accessibility of technical assistance and support for applying to available sources of funding," the report said.

Schools categorized as mid-poverty used higher-cost strategies less frequently than either higher-poverty or lower-poverty schools.

"Mid-poverty schools might have been least likely to implement these strategies because higher poverty schools might have had more experience in accessing and using federal funds, and lower poverty schools might have been able to implement some of these strategies without additional government support," the CDC says.

The agency says the findings indicate that mid-poverty schools and schools in rural areas should be made more aware that they may have access to Covid relief funds that could help pay to replace or upgrade their HVAC systems.

"Despite availability of substantial federal resources to improve ventilation in schools, findings suggest that additional efforts might be needed to ensure that all schools successfully access and use resources for ventilation improvements," the CDC says, "particularly schools least likely to report using resource-intensive ventilation strategies (i.e., rural and mid-poverty schools)."

The CDC said that public health professionals and funding agencies could assist state and local education agencies and school districts by raising awareness about funding sources and ensuring their equitable distribution.

"Supplemental training and technical assistance can help schools identify and access applicable funding and understand what types of strategies can improve ventilation," the agency said.

The CDC notes that improving ventilation in schools would have long-range health benefits beyond the Covid-19 pandemic.

"In addition to preventing spread of Covid-19 and other infections, such as influenza, ventilation improvements implemented now might lead to broader and lasting improvements in the health of students and staff members," the agency says. "For example, improved ventilation has been linked to better measures of respiratory health (e.g., allergy symptoms), higher student performance, and decreased student absenteeism."

The CDC's findings were based on a web survey in February and March of a nationally representative sample of administrators from 420 K-12 public schools. ■



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A high-efficiency air filter for an HVAC system.

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Continued from p. 20

When it comes to older units, deciding whether to retrofit becomes more difficult. It all goes back to the age of the equipment. Would it be worthwhile to upgrade an HVAC unit that is 20 years old? After replacing the motor and filters and adding needlepoint bipolar or UV lights, schools could still have their unit go out of service five years later. So, there are always more things to look at than just a simple upgrade.

Indoor air quality and retrofitting

UV lights, needlepoint bipolar ionization and higher-rated MERV filters may enhance an HVAC unit's IAQ capabilities. But do these upgrades offer the same level of IAQ as a full replacement? The short answer is possibly. Remember, the age of the HVAC units is paramount. When it comes to older units, one could change the filters and still not be meeting the fresh air requirements



Some schools have upgraded their HVAC systems to combat Covid-19, but most report they have opted for lower-cost ventilation improvement strategies.

Credit: Photo 207582400 © Carolyn Franks | Dreamstime.com

For more modern
units, retrofitting
could provide
multiple benefits
and enable the
unit to bring in
fresh clean air.

stated by ASHRAE. The ability for a retrofitted unit to meet the same standards as a new unit change from unit to unit.

There is no simple yes or no answer on whether a school should retrofit its HVAC unit or replace it. For more modern units, retrofitting could provide multiple benefits and enable the unit to bring in fresh clean air. By offering a solution that increases efficiency at a cheaper cost than a replacement, retrofitting is a great solution for these systems.



On the opposite side of the spectrum, older units may not be able to handle upgrades. The motors in these units may malfunction as a result of added static pressure. Although replacing motors on these units is possible, the unit could easily go out of service soon after the upgrades are made. In that scenario, replac-

ing the entire unit may provide optimal results. It is important to take all things into account when deciding to retrofit or replace. ■

Jason Gillis is a regional sales manager and former application engineer at Modine Manufacturing Company (www.modinehvac.com). Modine specializes in thermal management systems and components.

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The renovated living room of the Alpha Chi Omega sorority house at the University of Kentucky.

All images courtesy of PDR Interiors

MAKING A HOUSE A HOME

The interior designs of sorority houses seek to balance a respect for traditions with a focus on the amenities modern students are seeking.

By Mike Kennedy

Millions of students head off each year to college campuses as they transition from a home with parents and siblings to more independent living as they pursue higher education.

Many will claim space on campus in a university-run residence hall; others will decide they are better suited to off-campus apartment living. And many young women decide to take up residence with their sorority sisters in one of the thousands of chapter houses that dot the landscape on or near college campuses throughout the nation.

Greek houses and student housing managed by higher education institutions have the same mission—providing suitable living spaces for students. But the design of sorority houses also incorporates

the feminine perspective of its residents, the traditions of the organization they belong to and the sense of community that springs from that.

“The fundamentals—offering a place to eat, sleep, study and hang out—those are the same,” says Liz Toombs, a Certified Interior Decorator who runs PDR Interiors in Lexington, Ky. “I think it’s a little bit harder to do general housing and make it feel like a home because there are so many people coming through and living there. There isn’t a common thread like a sorority organization.”

Toombs designs interiors for new and renovated sorority spaces by gathering input from national and local representatives of a sorority, ascertaining the culture of the specific campus, and assessing the needs and wants of the women who will be living in the space.

“We want to collaborate,” Toombs says. “We don’t come in and say, ‘Here’s what we’re doing—get out of the way.’ We need to understand the needs of the student within that chapter, on that campus. Some organizations have brand images, brand colors that they want incorporated. Then you’ll have

other designs that are solely based on, ‘Here’s the vibe on this campus, here’s what this chapter is all about.’”

Not your mother’s sorority house

All student housing has evolved to address the needs of modern students, and that means some of the spaces and amenities in sorority houses no longer make sense.

“Maybe the days are over where we feel we need a formal sitting room where nothing happens in there at all, and people feel like they can’t go in there,” Toombs says.

Some facilities may still have phone booths, which have no practical purpose in a world of ubiquitous cellphones.

“We are trying to take these strange closet-like spaces and turn them into something else,” Toombs says

Those areas are being converted to private rooms where women can have a job interview, take a test, or have a teletherapy session.

“It’s really about figuring out how we can maximize the use of every space,” Toombs says.

Renovations in sorority houses often focus on making the bathrooms more appealing to young women.

“The bathrooms are significantly nicer than when I went to school,” Toombs says. “The overall aesthetic of it, the durability—all of it feels more spa-like than what we were doing in the past. I also think the overall feel and look—paint colors,



The renovated dining room at the Gamma Phi Beta sorority at Oklahoma State University.

furniture colors—everything is a little more light and airy as opposed to the darker, heavier colors that may have been more popular in the 90s and previously.”

What women want

Though their basic functions are the same—providing a living and socializing place for students—the design for sorority houses has obvious differences from fraternities.

“Men’s organizations may be like, ‘We just need a sofa and a table, something kind of indestructible,’” Toombs says. “The women want it to be a lot prettier and have the house look its best when students come in and are going through recruitment

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The upgraded study room at the Alpha Chi Omega sorority house at the University of Kentucky incorporates the school's colors into the decor.

or when visitors come by. The women's organizations definitely want to put their best foot forward."

For many houses, that means design details like draperies or other window treatments, rugs, throw pillows, accessories displayed on walls and tables.

But not all sorority houses adhere to that stereotype.

"There are differences from campus to campus," Toombs says. "It may be the case that a house doesn't need to feel all foo-foo and feminine. They may still want to incorporate their organization's colors and symbols, but not in an extra-girly way. We try to collaborate with the decision-makers and understand what they're going for."

Covid adjustments

The disruptions to college life brought on by the Covid-19 pandemic did not spare sororities, and houses had to adjust on the fly to make their living and sleeping arrangements safer.

"We got a lot of phone calls where we were asked to do space plans, to do furniture layouts showing how we can maximize furniture in a space and still offer 6 feet of social distancing," says Toombs.

That proved to be a challenge in many sorority houses with "sleeping porches," rooms filled with bunk beds where large numbers of women slept.

"During Covid, you couldn't put 30 women in a space to sleep," Toombs says. "We were putting beds in closets, vanities, desk spaces and spread them out, and we had to distance the beds within the sleeping dorms as well."

Revising traditions

Sorority traditions help create community and a sense of camaraderie among members, but they also may make it difficult for some to embrace new ways of doing things.

A common tradition at many sororities and fraternities is a composite photograph. Each year, individual photos of each member are collected and framed in a composite package and displayed in the house so new and old members can appreciate the history of their sorority chapter. But many sororities—and the designers trying to help them spruce up their spaces—have found that they have more composites than places to display them

"If your organization has been on the campus for a long time, you will have hundreds of these composites," Toombs says. "They're hung in stairwells and in hallways. Sometimes you're running out of wall space. It becomes overwhelming."

The solution Toombs has employed uses technology to convert composite displays to a virtual presentation.



Bathroom renovations at the Alpha Chi Omega sorority house at the University of Kentucky sought to create a spa-like space.



The renovated study room at the Gamma Phi Beta sorority at Oklahoma State University offers various seating options.

"Instead of hanging those everywhere you have a wall, you pick a prominent space, have a television mounted and set up a system where you can come in as an alum and type in your name or your year and scroll through and find the composites you want to find," Toombs says. "It's a much more compact and efficient way to display those items rather than traipsing all over the house to find the years you want."

Some of the more inflexible alumnae may resist such changes, but most of those who remain active in sorority life recognize that that the living spaces should focus on the present and not the past.

"There may be some concerns—'We can't take them down because Betty

might want to come back and find herself in her composite from her years, and she donated a lot of money,'" Toombs said. "But most of the alumnae that stay involved recognize that there is a new crop of women coming in. We need to suit their needs if the organization is going to thrive on a campus. Changes have to make sense to the class that is in the house currently." ■



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Wood Look of Radial Metal Ceiling Adds Warmth to New Student Union Building

All Saints Episcopal School in Fort Worth, Texas, recently constructed a student union building that houses an expansive dining area, collaboration lounges, conference rooms, and offices. The facility is semicircular and faces the chapel that is the school's focal point. According to project architect Brady Dietert of Overland Partners in San Antonio, Texas, the semicircular configuration led to a number of design challenges, including the ceiling.

The interior of the building features over 9,000 square feet of open pavilion space. The design team initially considered a traditional acoustical lay-in ceiling for the space but decided against it because of all the field cutting that would have been necessary to fit the radial layout. "It would have involved far too much labor and material waste," Dietert says.

To attain the desired exposed structure visual, the design team chose MetalWorks™ Blades in a cherry finish from Armstrong Ceiling & Wall Solutions. Manufactured from aluminum, the vertical panels are 1" thick, 4" high, and



available in three lengths that can be joined together to create longer lengths.

The look of wood was important, Dieter says. "The chapel features wood in its ceiling, and we wanted the student union to echo that same material quality." The design team considered linear wood panels but decided instead on the wood-look metal panels. "The metal panels are much lighter in weight and much more dimensionally stable than real wood, while still imparting warmth to the space," he says.

To create the signature ceiling, nearly 10,000 linear feet of MetalWorks Blades were installed, including over 1,100 individual panels. The panels are installed in two spans that mirror the roof design. One span is 21 feet in length and slopes down from the chapel-facing window wall. The other is 7 feet in length and slopes down from the opposite wall.

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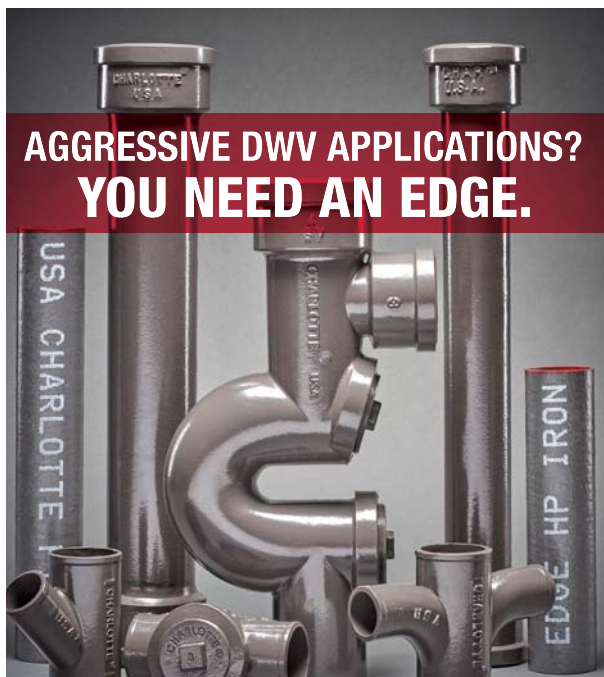


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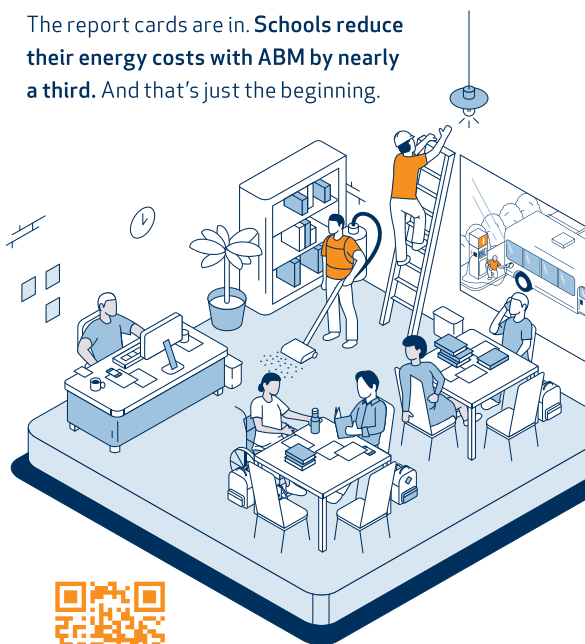


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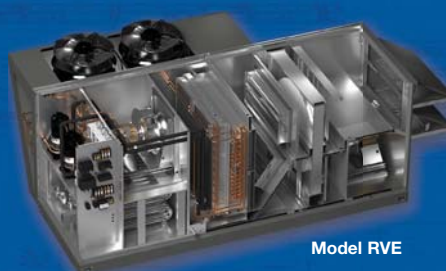
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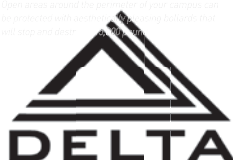
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AD INDEX

ADVERTISER	PAGE
2022 Industry Events Calendar	21
ABM Industries, Inc.	6-7, 31
Alufam North America, LLC	24
Architectural Portfolio	23
Armstrong World Industries	IFC, 33
Bradley Corp.	11, 31
Charlotte Pipe & Foundry	3, 31
Daikin Comfort Technologies	5
Delta Scientific	19, 32
Educational Interiors Showcase	33
Facilities Expo	IBC
Greenheck	17, 31
Isimet	29
Kalwall Corp.	27, 32
Morris Group International	25, 32
Siplast	BC
The T Bag Company	32



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Helping Uvalde recover

The U.S. Department of Education has allocated \$1.5 million to the Uvalde (Texas) school district to help it cope with the aftermath of school shooting that took the lives of 19 students



Credit: Google

and two teachers.

The School Emergency Response to Violence (Project SERV) grant provides money for activities addressing the needs of people directly affected by the shooting.

“Such activities include mental health services for staff and students, and overtime pay for teachers, counselors, and security staff, and may take place over the summer in the form of additional summer programming,” the education department said in a news release.

“We have committed to providing the Uvalde community with every available resource they may require from the Department,” Education Secretary Miguel Cardona said. “Today’s release of these emergency funds is an initial step that will be followed by technical assistance and on-the-ground supports in the months and years to come.”

Panic buttons for Palm Beach teachers

The Palm Beach County (Fla.) School Board has approved a new security alert system that give every school-based staff member a badge with a panic button that can be pushed in an emergency.

WPTV-TV reports that the panic button system, which also is being used in other Florida school districts, will cost Palm Beach a little over \$2 million for the first year. The system will immediately alert school police and administration where a panic button has been activated. The district hopes to have the system in place for the 2022-23 school year.

The Palm Beach district has about 13,000 teachers among its more than 22,000 employees.

School board approval of the system came a few weeks after the school shooting in Uvalde, Texas, but plans for the system were moving forward before the Texas shooting heightened concerns about campus security.

Palm Beach already had a cell phone app in place for a panic alarm system to comply with a state law enacted after the deadly 2018 shooting attacks at Marjory Stoneman Douglas High School in Parkland, Fla. District officials say the panic button system will further enhance school security.

District Superintendent Mike Burke says the panic buttons will be tied into the 911 system so municipalities can respond to emergencies quickly.

Door checks

Texas education officials say they will check hundreds of thousands of exterior school doors this summer to make sure they lock properly.

The Texas Tribune reports that Texas Education Agency Commissioner Mike Morath testified during a state senate hearing that his agency will review external entry points of every school in Texas—about 340,000 doors. The review will evaluate whether door repairs may be needed to secure campuses.

Morath was appearing before a Texas Senate committee looking into the May shooting at Robb Elementary in Uvalde, during which a gunman killed 19 children and two teachers.



Texas officials say they will examine every exterior school door in the state to determine if security upgrades are needed.

Credit: Photo 6117359 © Cynthia Farmer | Dreamstime.com

The Uvalde shooter entered Robb Elementary through a back door, according to school surveillance footage. Authorities said a teacher had closed the door but the automatic lock failed.

Texas has more than 1,200 school districts and more than 3,000 campuses, but Morath promised lawmakers that examinations of all doors will be completed this summer.

Kansas City (Mo.) district considers school consolidation to free up resources

The Kansas City (Mo.) district is considering closing as many as 12 schools with low enrollment to free up money to update classrooms and expand programs.

The Kansas City Star reports that officials are evaluating how best to address inefficiencies and inequities caused by too many outdated school buildings operating under capacity.

District leaders say students in some under-enrolled schools are missing out on having full-time music or art teachers, as well as certain services and extracurriculars, such as a football team. And although some campuses have modern upgrades, others are outdated; for instance, some high school science classrooms do not have sinks to use during lab experiments.

If as many as 12 schools are closed or consolidated, officials

say Kansas City schools would be able to expand curriculum, services and other opportunities to all schools; add foreign language, instrumental music and science labs into elementary schools; increase elective courses in middle and high schools; offer project-based learning at all schools; improve staff development, offer programs and services such as world language and fine arts courses at all schools; and expanding non-traditional school options, such as evening classes, for students who need them.

If fewer schools are closed, the district would not be able to carry out many of those improvements.

The administration intends to recommend a specific plan this fall to the school board. ■

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