K–12 educators interested in transforming teaching and learning may turn to new standards, skills, pedagogies and digital technologies. Personalized, collaborative, project-based and active learning in makerspaces are among the popular trends for engaging students in student-centered and student-driven learning.

Despite this push to reshape education for today’s priorities, one key variable in the learning equation has remained largely impervious to change: the school buildings, classrooms and other places where teaching and learning occur. Stuck with obsolete facilities and a one-size-fits-all model of classrooms, some school communities are beginning to reimagine learning spaces in ways that actually contribute to teaching and learning.

“Basically, this is about using buildings and facilities as a catalyst for transformation of education,” says Prakash Nair, founding president and CEO of Fielding Nair International. “As an architect, I know the profound impact that environments can have on us, on our psyche, our physiology, how we behave and what we can do.”

He came to this realization 15 years ago, when he directed the largest school construction program in the world for the New York City Public Schools, which spent
Redesign continued from page 1

an average of a billion dollars a year on new school construction and renovation. “But we did not improve education outcomes whatsoever,” he says. “None. No improvements by any measure.”

When he launched his own firm with a partner, he wanted to make sure that spending on school buildings also resulted in improved learning. “We’ve never looked at buildings as a resource,” Nair says. “We look at technology as a resource. If schools buy a technology program that costs $30, they say, ‘How is that going to benefit my students?’ Yet you sometimes have a $100-million building and nobody asks the question, ‘How does this improve learning?’”

Now, as districts across the country take up the challenge of building or renovating schools, research and best practices offer some compelling answers to this question.

Why Redesign Learning Spaces?

This is an opportune time to think anew and differently about the built environment of education. Consider:

Schools are “falling apart.” The brick-and-mortar infrastructure of the nation’s schools is “obsolete,” Nair says. The average U.S. school was built more than four decades ago. In “older cities, particularly industrial ones, schools average closer to 60 to 70 years old,” which can result in unsafe and unhealthy conditions that “disproportionately affect poor communities” (Cohen, 2018). Broken heating, ventilation and air conditioning (HVAC) systems leave students freezing in the winter and sweltering in hot weather.

Asbestos, lead, radon, poor air and water quality, mold and pests can sicken students and staff, impacting attendance and performance. The Centers for Disease Control and Prevention estimates that 13.8 million missed school days every year are due to asthma, and chronic exposure to such common environmental factors can exacerbate this condition, according to a Harvard School of Public Health report (Eitland et al., 2017).

Educational priorities are changing. Even in structurally sound schools, the physical environment limits how much educators can do to change programs, pedagogy and practices. Most classrooms are bound by four walls and lined with rows of desks, as they have been for decades. This configuration doesn’t lend itself to teaching and learning skills that are valued today, such as collaboration, communication, creativity and critical thinking.

“It’s really hard to collaborate when you look at the back of someone’s head,” says Robert Dillon, director of innovative learning at The School District of University City (MO). “It’s really hard to collaborate on an 8½ by 11-size desk.” And it’s hard in most classrooms to create a culture of creativity, with space for students to use a range of digital technologies to explore, discover and create, he says.

“Kids who are in K–12 are going to be solving problems that haven’t

continued on page 3
even been defined yet and filling jobs that don’t even exist yet,” says Mark Thaler, education practice leader at Gensler, the global architecture, design and planning firm. “The challenge is that regardless of the swings of pedagogy, the fact of the matter remains that students need to be prepared for an ever-changing world. … Every student learns differently. The one-size-fits-all methodology of kids and desks in rows being taught by a teacher at the front of the room, it doesn’t work. Or it works for the mean, but it doesn’t work for the extremes. They’re teaching to the middle.”

Educators today want to engage all of their students, foster deeper learning with experiences and projects, and work with them in small groups and individually. They want to collaborate with their colleagues to plan lessons, make interdisciplinary connections and monitor student performance. Most school facilities don’t accommodate these kinds of practices very well, leaving educators trying to jury-rig spaces for new purposes as best as they can.

Research is pointing the way forward. More than 40 years of research indicates that school environmental and building conditions can impact student health, thinking and performance: “Student thinking encompasses short-term (i.e., hourly, daily, or weekly) impacts on cognitive function and mental well-being and includes attention, comprehension, annoyance and irritability. Student performance refers to long-term academic performance of students” (Eitland et al., 2017).

Architects and educators are mining this research as they redesign learning spaces, prioritizing features like these (Barrett & Zhang, 2009):

• **Naturalness.** Daylight, acoustics, temperature and air quality can optimize experiences, productivity and performance and minimize discomfort and distractions.

• **Individualization.** Choice and variation in learning environments can support individual needs and preferences—and empower students to take charge of their own learning. Flexible spaces can be quickly adapted to different tasks and groupings. Connecting spaces within a building and to the community can facilitate circulation, create opportunities for extra learning and positive social interaction, and foster cohesive learning communities.

• **Level of stimulation.** Diverse learning spaces can stimulate, excite or calm people and positively affect mood, mental clarity and energy levels. Balancing engagement and comfort encompasses complexity—the visual appearance, unity and orderliness of learning spaces—as well as colors and textures. There’s extensive research on how different color and texture combinations affect students of different ages. Natural, outdoor spaces are considered part of a school’s texture—and “[r]esearch indicates that the quality of life in a school is much enhanced when an abundance of useable outdoor space is present.”

“... it’s hard in most classrooms to create a culture of creativity, with space for students to use a range of digital technologies to explore, discover and create.”

—Robert Dillon
*Director of Innovative Learning*
*The School District of University City (MO)*

*Redesign continued from page 2*
The learning environment can become the “third teacher.” Children learn first with their parents and teachers, then with their peers and then with environment around them—the “third teacher.” A decade ago, Horace Mann Elementary School embraced this idea of the third teacher, first proposed in the 1940s by Italian psychologist Loris Malaguzzi, founder of the Reggio Emilia approach to learning. The recently renovated built and natural spaces at this preK–5 school in the District of Columbia Public Schools make this philosophy come alive. “We are really living in a building that has allowed us to realize some educational values through the design of the building,” says Principal Elizabeth Whisnant. “We wanted to use the building as a teaching tool.” Horace Mann school is also LEED (Leadership in Energy and Environmental Design) Gold-certified, which sends an important signal to the community about its commitment to sustainability, Whisnant says. Some highlights of school, which occupies a city block: 

- **A rooftop farm, teaching kitchen, fairy gardens, chicken coops and beehives.** Students grow their own produce in raised beds on a rooftop farm and sell it at the school’s weekly farmer’s market (with proceeds invested into hydroponic towers for indoor gardening during the winter months). They raise incubated chicks and tend beehives on the rooftop. A teacher certified in horticultural therapy engages students in planting and conversations. A teaching kitchen supports cooking demos, classes and after-school clubs. A natural, hillside landscape doubles as a play space and teaching space, where children can build forts; make fairy gardens, monarch butterfly gardens and medicinal herb gardens; and learn about native plant and animal species.

- **Lively, connected spaces at the core.** The front office sits in a prominent atrium space to welcome visitors. At the center of the building are...
Evidence-based design. Interest in evidence-based design originated in healthcare, where medical professionals documented the impact of hospital environments on patient outcomes, says Brent Hite, project architect at CSO Architects, Inc., an Indianapolis-based firm. Now, the research foundation in educational design provides a compelling rationale for creating learning spaces that can contribute to quantifiable improvements in health, cognition and performance.

More nuanced understanding of how students learn. Students learn in many different ways. Through research, projects and interactions with K–12 educators and students, Gensler’s education practice area has identified six modes of learning (acquire, collaborate, reflect, experience, master and convey) and 10 indicators of 21st century learning. Likewise, Fielding Nair has
“I’m fairly radical about UDL. We never want one way to do anything. No student needs an IEP to use any of the multiple programs we put on every computer for students, like nine different calculators, multiple speech-to-text and text-to-speech programs, interactive periodic charts. Likewise, I was at a multiage classroom and noticed a table that no one seemed to be using and I asked students about it. They said, ‘Nobody uses that table, but there’s one kid who lies underneath it every day to do his work. And I said, ‘Well, then it’s working.’”

— Ira Socol
Chief Technology and Innovation Officer
Albemarle County Public Schools (VA)

“Trends continued from page 5”

developed design principles for learning in the creative age, which drive an integrated education ecosystem that also comprises outcomes, methods, systems, the environment and assessment. Working with educators, architects can create learning spaces that support different learning activities, styles and preferences.

**Universal design for learning.** UDL has its roots in special education, which supports students with disabilities and individualized education plans (IEPs). UDL principles call for providing multiple means of engagement (the “why” of learning), multiple means of representation (the “what” of learning) and multiple means of action and expression (the “how” of learning) (CAST, 2018). Now, there’s recognition that UDL can reduce barriers to learning for every student—not just with variations in instruction and technologies, for example, but also in physical learning environments.

**Focusing on student engagement, choice and experiences.** Innovative schools are shifting away from the factory model of education, giving students opportunities to take charge of their own learning. Well-designed learning spaces can inspire student thinking, support active learning, and promote connections within school communities and to the world.

**Flexible spaces.** There’s strong demand for agile learning spaces that can be reconfigured quickly for a diverse array of activities and for small- and large-group gatherings and individual instruction. Educators and architects are also thinking long term, so that they can “future-proof” learning spaces and adapt to changing priorities without major renovation, Hite says. School buildings serve communities for decades—and no one can predict how teaching and learning will change that far out.

**The demise of the front of the classroom.** As the role of the teacher shifts from sage on the stage to guide on the side, “more and more we’re developing learning spaces that don’t have a front of the room,” Thaler of Gensler says. “The front implies that somebody’s controlling the flow of information. If you think of the different modes of learning over the course of a lesson, a classroom really needs multiple fronts.”

continued on page 7
A resurgence in career and technical education. Demand for vocational spaces that went by the wayside in past decades is roaring back in high schools. “The current market says, we need those vocations, there are jobs and good wages for kids and college isn’t for everybody,” Hite says. Today’s career and technical education spaces feature digital technologies and room for creative, project-based learning.

Green building. There’s huge interest in green technology and sustainability, Hite says. Districts want to be responsible stewards of taxpayer dollars. Energy-efficient mechanical systems, appliances and LED lighting, sometimes backed by power company or government rebates, can produce savings that go back into the capital fund.

Not all districts opt to pay for the “plaque on the wall” for LEED certification, but they do find “teachable, sustainable technology” appealing. For example, farm-to-table gardens can be used in home economics classes. Digital displays of energy harvesting or consumption can be used as a teaching tool. “I’ve seen an elementary school where each grade level competed to see who could use the least amount of energy that week,” Hite says.

Public–private partnerships for athletic facilities. With perennially tight budgets, districts are facing increasing scrutiny, so they’re focusing spending on the academic environment, Hite says. Because school communities still take pride in athletic facilities, districts are getting creative to finance them. “One of the things that we’re seeing that’s very interesting right now is public–private partnerships develop around athletic facilities, often with naming rights,” says Rosemary Rehak, senior associate (retired) at CSO Architects. “We’re also seeing fundraising through the community so they find other ways to pay for that rather than raising taxes.”

A Paramount Concern: SCHOOL SAFETY
The Parkland, FL, school shooting has elevated educators’ concerns about school safety. “I can’t walk into a room now with any of my projects without somebody talking about safety,” Thaler says. “It’s a huge topic. Safety is a paramount concern. The design challenge before us is about controlling access at the front door and securing the perimeter of the campus,” while still maintaining an open, welcoming environment.

Single-point, buzz-in entries are in high demand, and Thaler expects that emerging technologies such as facial recognition and artificial intelligence will be part of the solution as well.
From Classrooms to Campuses
How Schools Are Redesigning Learning Spaces

Fostering a Designer Mindset in Teachers
The School District of University City (MO) and Beyond

As a middle school principal at an Expeditionary Learning school, Dillon noticed the joy and engagement students experienced when they were out in the community learning. And he thought, “Well that’s great, that 20 to 25 percent of the school year. What happens when we get back to the classroom?”

That question led to conversations and projects with teachers in his current position at University City—and in close to 50 other districts and schools. “We’re still at a point where only about single digits of school districts are going to be building new things—brand new schools or big additions,” Dillon says. He focuses on helping schools, and especially teachers, repurpose and redesign existing learning spaces.

Dillon describes the process as capacity building. He starts by asking teachers to really look at their classrooms dispassionately. “First and foremost, any time we are in a space all the time, it starts to become invisible to us,” he says. “Part of my work is to slow people down, get them to notice the little things”—and also generate ideas about what they might want to do in their classrooms that they can’t do in the space they have, despite their best efforts.

From his visits to hundreds of schools and classrooms every year, Dillon sees that many classrooms are filled with unused items, like old textbooks or technology. He asks teachers to remove 10 things from their classrooms to see if it impacts learning, positively or negatively. “I haven’t been to a classroom in America that you couldn’t remove at least 10 things,” he says. Decluttering can open up space—and it can reduce visual distractions for students.

Dillon also facilitates teacher inquiry into the use of classroom space—and into instructional practices. For example: “How do you build a culture of collaboration in your room? How do you allow the perimeter of your room, the floor plan of your room, the language you use in your room really value collaboration? How do you create a culture of creativity? Do you have prototyping materials in your classroom? Where do you give kids opportunities to create video and audio in your classroom? How do you showcase the learning process?” He also asks teachers to think about providing students with quiet spaces to learn, reflect or destress.

Most teachers don’t have opportunities to see classrooms beyond their own schools. Dillon provides inspiration with photos or visits to different learning spaces and encourages teachers to make small changes in their own classrooms. He also has teachers involve students in a feedback loop by asking them regularly what features of their classroom help or inhibit learning.

“About 80% of teachers in America visit two schools a year—the one where they work and the one where their kids go to school.”
—Robert Dillon, Director of Innovative Learning, The School District of University City (MO)
This inquiry can prepare teachers to change their instructional practices and to work productively with architects, which Dillon believes is valuable for more ambitious projects. Teachers get excited about redesigning their space, but they aren’t designers. “And this is not about decorating classrooms,” he says. “If you aren’t making your decisions with a designer’s mindset and research that surrounds it, you’ll get flailing results.”

**Putting Teachers in Charge of a District Design Initiative**

**Farmington Area Public Schools (MN)**

Little did anyone in Farmington know that going completely digital seven years ago would lead to a groundswell of demand for redesigned learning spaces. Once all 7,000 K–12 students in the district had their own devices—and the freedom to use them—teaching and learning changed dramatically.

“We do crazy things, like some days we don’t bring kids in, some days even staff don’t come in, they just teach over the technology,” Superintendent Jay Haugen says. “That’s a pretty good skill for kids to have, to be able to learn at home and cooperate, work together with all the other kids and staff.” As a result, the district’s community-driven strategic plan now calls for every student to be the agent of his or her own self-paced learning, with more hands-on, project-based learning. The plan recognizes that every student has natural strengths, talents and abilities that schools should help unleash.

Teachers are fully on board and in charge of this completely new model of education, Haugen says. On their own, they started rearranging their own learning spaces, scavenging district storerooms and yard sales for tables to use as workspaces, and even knocking down walls between classrooms to create bigger, collaborative learning spaces.

Then came an opportunity to do more. A $10-million project to renovate one school came in under budget, leaving $2 million to repurpose. “Normally, there are a lot of other projects we could do,” Haugen says. “There’s no end to deferred maintenance, roofs and parking lots. But someone said, ‘Shouldn’t we use some of these dollars to actually improve the mission of our school district?’”

So that’s what’s happening. The district is using the funds to redesign a learning space in each of its nine schools. At a one-day, hands-on design charrette—a short, collaborative workshop to explore design ideas—teachers, parents and students from each school worked with 18 architects, a pair for each school team, to brainstorm unique learning spaces for their needs.

Glass garage doors at Center Grove Innovation Center in Greenwood, IN, designed by CSO Architects, allow educators to reconfigure learning spaces for small or large groups.

*Photo courtesy of CSO Architects*
Classrooms to Campuses continued from page 9

The architects then designed the spaces, which are under construction now and due for completion in time for the start of 2018–19 school year.

The new learning spaces range from commons areas to flexible classrooms to spaces for independent, group and design work. One school is adding a science lab, another a media center and another an athletics and fitness room. Only two schools repurposed existing classroom space. The rest are converting unused spaces, such storage areas or locker bays, into educational areas.

“We figure that for that $2 million investment we recaptured $10 million, or created $10 million, of educational space,” Haugen says.

Building a New Middle School Centered on the Student Experience

Frederick County Public Schools (VA)

When the time came to replace a 50-year-old middle school in a growing district, Frederick County broke ground not just for construction, but also with its design process.

“We took a new approach,” says Steve Edwards, coordinator of policy and communications at the district. “Frederick County Middle School was designed from the perspective of the student—designed to support their growth academically and socially.”

Before any plans were drawn up, the district held focus groups with students, parents and staff members, and also with the wider community of people and organizations that use school facilities. The district also created a project advocacy group made up of educational and community leaders, including from the school board, county board of supervisors (the taxing authority), business leaders and retirees, who also communicated with their constituencies. “We had input from all of those diverse groups, something like 30 meetings,” says Wayne Lee, coordinator of planning and development at the district.

The school’s architectural firm then turned the perspectives of various
Classrooms to Campuses continued from page 10

constituencies into a student-centered, community-oriented, high-performing and highly adaptable campus—filled with natural light and open spaces, a commons area with an open media center at the heart of the building, and nine learning communities that each have four flexible classrooms and a team commons area.

“The entire campus is designed as a learning opportunity”—the third teacher concept—“everything down to the drain fields for the sewer system, the water cisterns, even an astronomy patio,” Edwards says. Some infrastructure and architectural elements, such as ductwork and light reflectors in classrooms, are exposed. Teachers use this visible, built environment to teach curricular content. An outdoor classroom, gardens and informal spaces extend opportunities for learning on the campus. Students use outdoor spaces to make observations and collect data for science experiments, create works of art, read and write; or simply unwind in a peaceful spot.

The middle school, which opened in 2016, is also the most energy-efficient building in the district. Its geothermal heating and air conditioning system and net-zero water system are environmentally friendly features that made economic sense, Edwards says. They cost more up front, but their operational costs will be lower than traditional systems, making the return on investment and total cost of ownership over time attractive.

While the school has many sustainable design features, the district elected not to go for LEED certification. “Our approach with Frederick County Middle School was to only select those green features that would pay for themselves,” Lee says. “It’s not necessarily a monetary return, it could also be an educational return.”

Finally, the district paid close attention to school safety and security in the new middle school. During the design process, some community members questioned whether the school’s open layout and glass-enclosed classrooms posed a safety issue. “It’s quite the opposite,” Edwards says. “In fact,

Preparing Teachers for Redesigned Spaces

Instructional technologists have long supported teachers in incorporating new technologies in Frederick County classrooms. Preparing teachers for new learning spaces amplifies that role, says Rod Carnill, supervisor of instructional technology coaches in the district.

In the school year and summer before the new middle school opened, instructional technologists created many professional learning opportunities for teachers to feel comfortable with new technologies, learning spaces and instructional approaches. “The coaches support teachers in classrooms, facilitate learning as the space flexes, sometimes leading a small group or co-teaching, and leading behind the scenes to bring resources to teachers,” Carnill says. The aim is to “maximize the benefit” of new learning spaces for teachers and students.

Instructional technologists also help the district monitor return on investment by traditional measures, such as student test scores, and in terms changes in the student learning experience, productivity, creative work and attitudes about learning, all of which show positive results, Carnill says. In addition, behavior referrals in the new school have declined compared to the old school and to other middle schools of similar size and similar populations.

Preparing Teachers for Redesigned Spaces continued from page 10
one of our partners in the design was the local law enforcement community. They told us that visibility is key. We can lock down or segregate out the different learning communities if there was to be an incident in one part of the school. Also, we have multiple points to exit the building from the learning communities, which is a safety feature.”

The middle school has a buzz-in entry, as do all elementary schools. In response to recent community demand, the district is installing this safety feature in the rest of its schools now.

A “Wild and Crazy” Alternative to a Comprehensive High School

Albemarle County Public Schools, VA

Faced with a growing population of high school students, Albemarle County could have run on autopilot and built a new comprehensive high school. Instead, in August 2018 the district will open an “unschool,” a creative technology center where 150 students will be able create personalized learning plans and pursue their own passions in their own ways.

“We’re not building any classrooms,” says Socol, chief technology and innovation officer. “We’re creating spaces that we call studios which will have specialized equipment—although what that equipment will be, we won’t know until the students tell us what they need. We’ll have collaborative spaces, perhaps spaces for startups and projects from the University of Virginia entrepreneurship program, so they can work with our students.”

Students will develop contracts and projects designed in collaboration with educators to earn them multiple credits. The district’s talented technology staff will be located at the center, so they can provide on-the-spot guidance and instruction. There will be no classes or schedules. Students will be free to come and go as they please—to take a course in a high school, community college or online, or intern at a local business or organization, for example. Unlike other selective programs in the district, such as STEM academies, enrollment in the center is open to any high school student.

The 46,000-square-foot center is housed in a redesigned space in an old, 1-million-square-foot warehouse that is also home to 70-odd companies. Within a half-mile radius are another 1,000 businesses, ranging from agriculture technology to e-lighting to cybersecurity to custom ink and T-shirt companies. “So it’s fully embedded in the community,” Socol says, which will give students opportunities to learn from professionals in fields that interest them.

The creative technology center is a prototype based on a comprehensive educational and facilities plan, says Pam Moran, superintendent, before her June 2018 retirement. The district engaged Fielding Nair International to conduct a “fairly exhaustive” environmental scan of the district, its schools and learning environments.

“We started looking at this and discovered they could actually change the way high school is delivered. Rather than have students sit in buildings, they should be able to go out and start building skills.”
—Prakash Nair
Founding President and CEO
Fielding Nair International

continued on page 13
Brand your school. Realtors advise home sellers to make a good first impression by sprucing up the curb appeal. Schools can take that approach with “a relatively inexpensive intervention,” Thaler says. “Take drab entrance lobbies and hallways and infuse them with messaging and images that tell a story about the school’s mission. Have stories to inspire students and families, teach a lesson about environmental stewardship, anything like that. It’s all about a holistic, comprehensive message. If they don’t have a lot of money, we find that a little bit of paint, some graphics, some messaging and some key furniture purchases can go a long way to completely changing the perception of how things are.”

Do a small project that makes a big difference. In one school, Gensler repurposed a small, underutilized science prep room into a teacher lounge/greenhouse collaboration space. “It’s a place where faculty can meet and gestate ideas and try to be as innovative as they can,” Thaler says. For this project, Gensler converted science lab casework into bookshelves, created whiteboard surfaces, installed cool furniture and brightened the space. “Sometimes it’s just creating these moments where teachers can break out of the day-to-day grind and find a way to collaborate. That’s a really low-barrier, small intervention. But if you can make the teachers feel energized, you’ve gotten half of the equation solved.”

Classrooms to Campuses continued from page 12

“We started looking at this and discovered they could actually change the way high school is delivered,” Nair of Fielding Nair says. “Rather than have students sit in buildings, they should be able to go out and start building skills.”

The firm came back with a continuum of financial and master planning options for future learning spaces, from conservative to highly innovative. To address high school capacity, the district could build another comprehensive high school, build a smaller, scaled down high school or look to the future with a completely new model for educating high school students. In this model, each of the county’s three high schools will serve as a “home base,” with multiple, specialized “hubs” located across the district, close to businesses, civic and community institutions for off-campus learning experiences, field studies and internships.

Intrigued by the center model, that’s the option the school board selected to prototype with the creative technology center. If it’s successful, there are plenty of ideas for future specialty centers, such as biotechnology/medical, advanced manufacturing, and media, arts, design and entertainment.
Advice for Creating “Irresistible Places”

In discussions with designers, strategists and leaders, Gensler identified “memorable learning experiences” in “irresistible places” as a trend on the horizon not just in education, but also in retail, cultural and civic work (Feola, 2016). Educators and architects interviewed for this report offered their advice for redesigning learning spaces that appeal to students and adults.

Connect to the vision and mission. Educators should be clear about what they are trying to accomplish educationally and share that vision up front with architects and designers. Fielding Nair, for example, had the benefit of Albemarle County’s design imperatives, which integrally connected to the district’s mission, vision and goals, Moran says. With its school board, the district developed a strategic plan with a three-pronged vision for students: All learners believe in their power to embrace learning, excel and own their future. That vision derives from 15 years of engagement with staff in defining critical skill sets and lifelong learner competencies and developing innovative digital instructional units and pathways to transform learning, among other efforts to move education, and now learning spaces, into the 21st century.

Avoid a top-down process and engage the community. People shouldn’t find out about a redesigned learning space or new school on the day it opens. “This will inevitably result in either people who are disenfranchised in the process or feeling that their voices weren’t heard, that they don’t know how to use the space or they don’t understand why certain decisions were made,” Thaler says.

Building broad and deep support, beginning early in the planning process, is critical. Students, parents, staff, school boards, taxing authorities, businesses, civic and community organizations, retirees and the media are among those who can contribute ideas and become informed advocates for new learning spaces.

Visit innovative learning spaces. A picture is worth a thousand words, but actually experiencing exemplar continued on page 15
Irresistable Places continued from page 14

learning spaces can help people envision themselves there. Observing and talking to students and teachers opens minds to new possibilities. “It’s a real eye-opener,” Lee says. Does it change minds? “It changed ours, and it changed ours almost in an instant.”

Schools don’t have to be the only inspiration. When Albemarle County teachers go to the annual World Maker Faire in New York City, the trip does double-duty as an opportunity to examine places like the Metropolitan Museum of Art, New York Public Library, commercial spaces, and even retail stores and restaurants to see how they “teach and explain themselves to people,” Socol says.

Make the educational—and economic—case. Some resistance to new kinds of learning spaces and spending is to be expected. “We always say that there’s 10 percent of people who are going to think it’s great, no matter what we do, and 10 percent who are going to think it is horrible,” Edwards says. “It’s that middle 80 percent that you need to really focus on and get them to understand.”

That means explaining why students need to learn in different ways today and how the built environment can support this. It also might mean justifying the price tag to people who think educators want to build a “Taj Mahal.” Lee comes prepared. For the new middle school in Frederick County, he put the land and construction costs into perspective. While the building has a lifespan of 50 years or more, per-student revenues will pay for it in about seven years. Flexible spaces will reduce the need for major renovation in the future. He also shares cost breakdowns and rationale for project line items, such as spending more upfront for energy-efficient HVAC systems that will save money over time.

Secure funding upfront. Before going after funding, make sure your projected costs are on target. It’s difficult to go back to a school board or other taxing authority to ask for more money when the budget comes up short.

Bring in educational technology professionals early. Ed tech professionals should be full partners in project planning and implementation. Their

Turn Moments of Crisis into Opportunities

When Christchurch, New Zealand, lost 11 schools in a devastating earthquake in 2011, educators and the community could have simply rebuilt the schools. Instead, they took the time to rethink learning spaces for the future.

A CoSN delegation to New Zealand in 2017 had a chance to see the results of this endeavor. Instead of single classrooms, the rebuilt schools feature open spaces where three or more teachers work as a team with 100 students. This new model for the built environment supports collaboration and professional sharing and fosters creativity, critical thinking and discovery, according to a CoSN report on this international benchmarking experience.

“I think this is a great example of using a time of crisis to rethink space,” says CoSN CEO Keith Krueger. “It’s relevant in the United States when hurricanes, tornadoes, floods or fires damage or destroy schools—or even when upgrading for safety.”

continued on page 16
contributions can improve designs and head off costly mistakes. Ed tech professionals can help future-proof technology decisions and call attention to details that might be otherwise be overlooked. This includes everything from creating a robust technology infrastructure to placing screens where they can be seen in sun-saturated spaces to ensuring enough wireless access points, outlets, charging stations and storage spaces.

**Prepare teachers.** Teachers can be the driving force for redesigning learning spaces. But they need preparation to use these spaces most effectively and, often, in ways that differ considerably from their established routines. Sustained professional development and opportunities to practice methods that may be new to them, such as cross-disciplinary collaboration, co-teaching and flexible grouping, will help them get comfortable in new territory.

**Leverage smaller projects to build support for more ambitious ones.** Districts may think long-term and big-picture with facilities projects. Smaller projects can help them get there. Experiences and lessons learned can improve the process for more expansive projects. Actual built environments, such as the redesigned learning spaces in Farmington, can whet the community appetite for transformed spaces.

**Tell a story and communicate success.** Schools put up websites, send out newsletters, hold meetings and more to present themselves to their communities. The school building itself tells a “deeply nonverbal story,” Dillon says. Rather than let the building tell that story on its own, educators can be more thoughtful and proactive about their school’s messaging with even simple design elements.

Frederick County communicated success by producing a series of YouTube videos (A Look Inside) that features students, teachers and administrators talking about the positive impact of the learning environments in its new middle school.

**Trust students.** Before they move to new learning spaces, educators sometimes express misgivings about glass-walled learning spaces, assets left in the open and free-ranging students. They worry that students will be distracted by the visible activity beyond their learning spaces. They worry about theft from unenclosed media centers or makerspaces. They worry that students will wander away from learning activities. But that’s not what happens. Educators report that students are more engaged in learning and respectful of school property. Students want to spend more time at schools where learning environments are designed and centered on the student experience.
Very educator and architect interviewed for this report has an opinion about chairs. Everyone has the same opinion: Chairs need to be comfortable. And because comfort is relative, students should have a variety of different seating options. This isn’t about coddling. It’s about attention, health, behavior, choice and learning. “If people are totally uncomfortable, the only thing they’re focusing on is their discomfort,” Moran says. “One of the reasons we talk about furniture a lot is because, ergonomically, we know that there are more problems with our kids having back issues than there has been ever in documented research history. It’s primarily because our kids have spent so much time sitting and we’ve subtracted from our schools many of the opportunities for kids to get up and move—shop classes, recess, whatever.”

In learning spaces where students can choose to swivel, rock, stretch out, walk around or use a standing desk, educators notice fewer behavior issues. For many students, simply burning off energy, without facing disciplinary infractions for fidgeting, remedies inattention and keeps students productively engaged. Lightweight, mobile chairs also make it possible to quickly rearrange seating configurations for collaborative work in flexible groups.

Furniture is perhaps the single most important part of learning environments, the experts say, yet it’s often the line item that schools want to reduce or nix. “If you can’t afford good furniture, don’t go to cheap school furniture,” Socol advises. Trendy, lower-cost home furniture stores are a better option. “At least get furniture that will be comfortable for a few years before you have to replace it. Bad school furniture will be uncomfortable for the next 50 years.”

So bring on the comfortable seating choices—ergonomic chairs, swivel stools, bean bags, pillows, arm chairs, couches, benches and window seats.
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This CoSN resource is related to the following skill areas from CoSN’s Framework of Essential Skills of the K–12 CTO:

Leadership + Vision
Instructional Focus + Professional Development

Resources & References

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