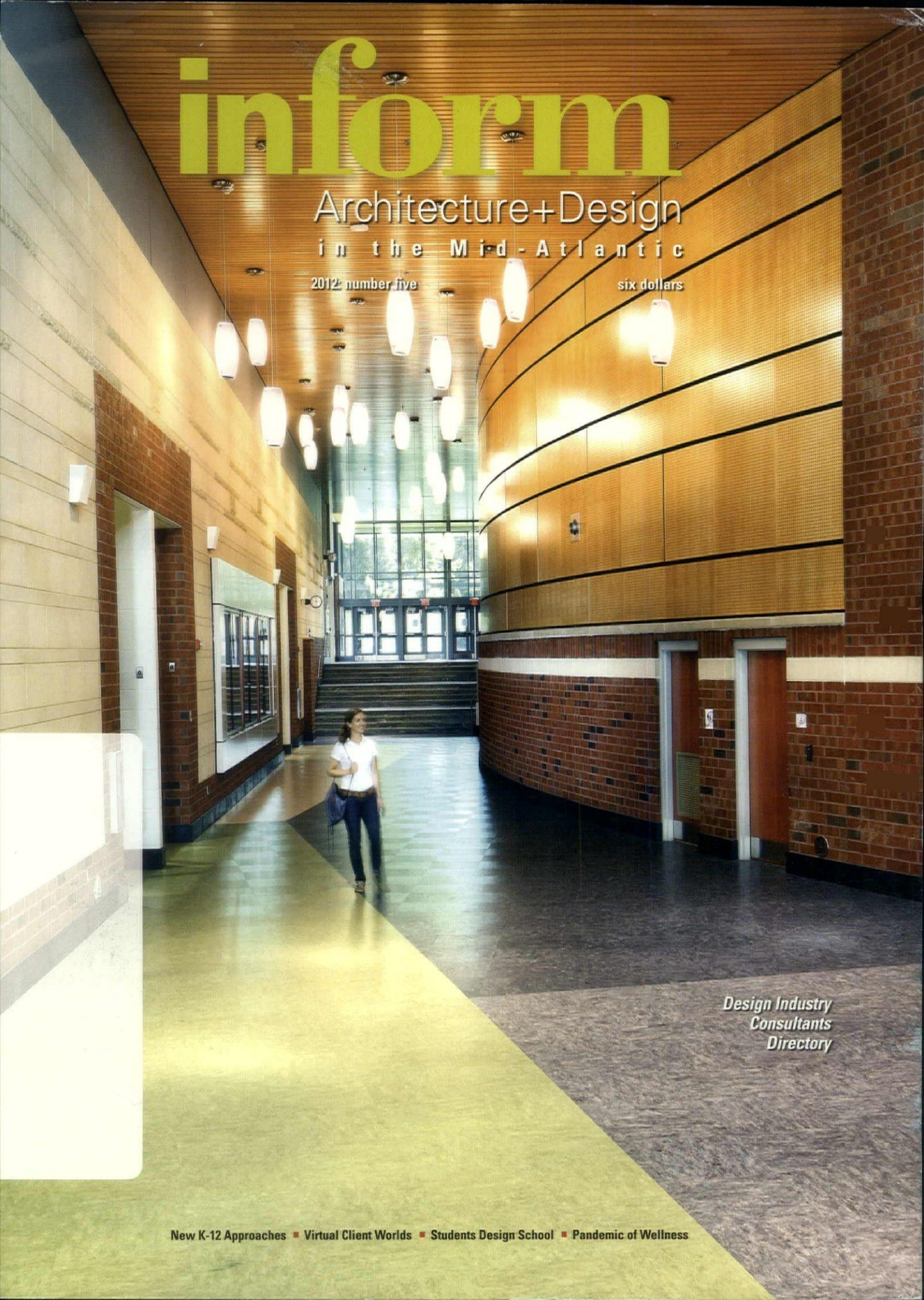

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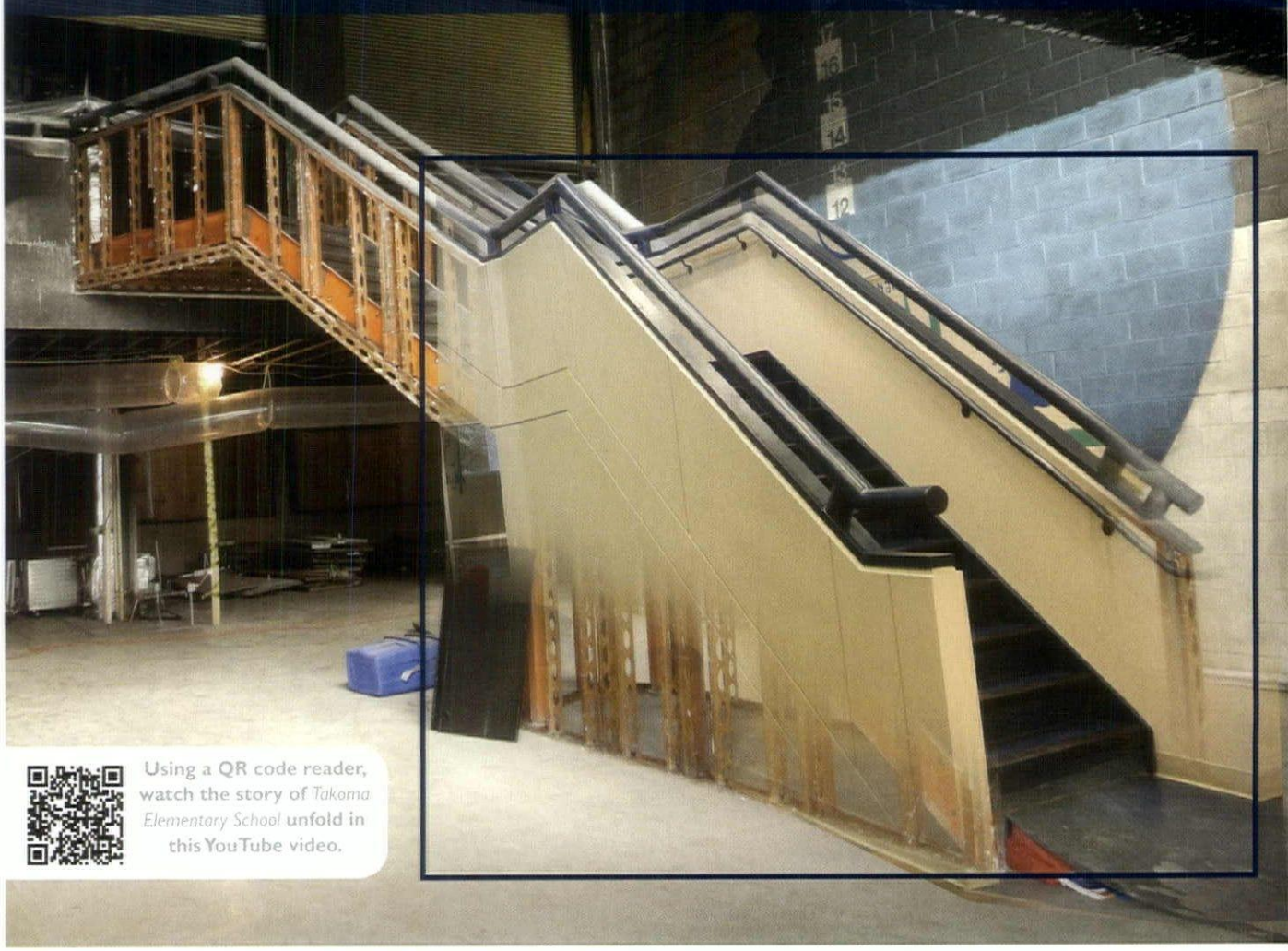
In December 2010, Takoma Elementary School was damaged by a devastating fire, destroying nearly the entire structure. Turner and Fanning Howey developed a comprehensive design solution at a cost below the established construction budget. This ambitious project was successfully completed in 243 days, in time for the winter 2012 school opening.



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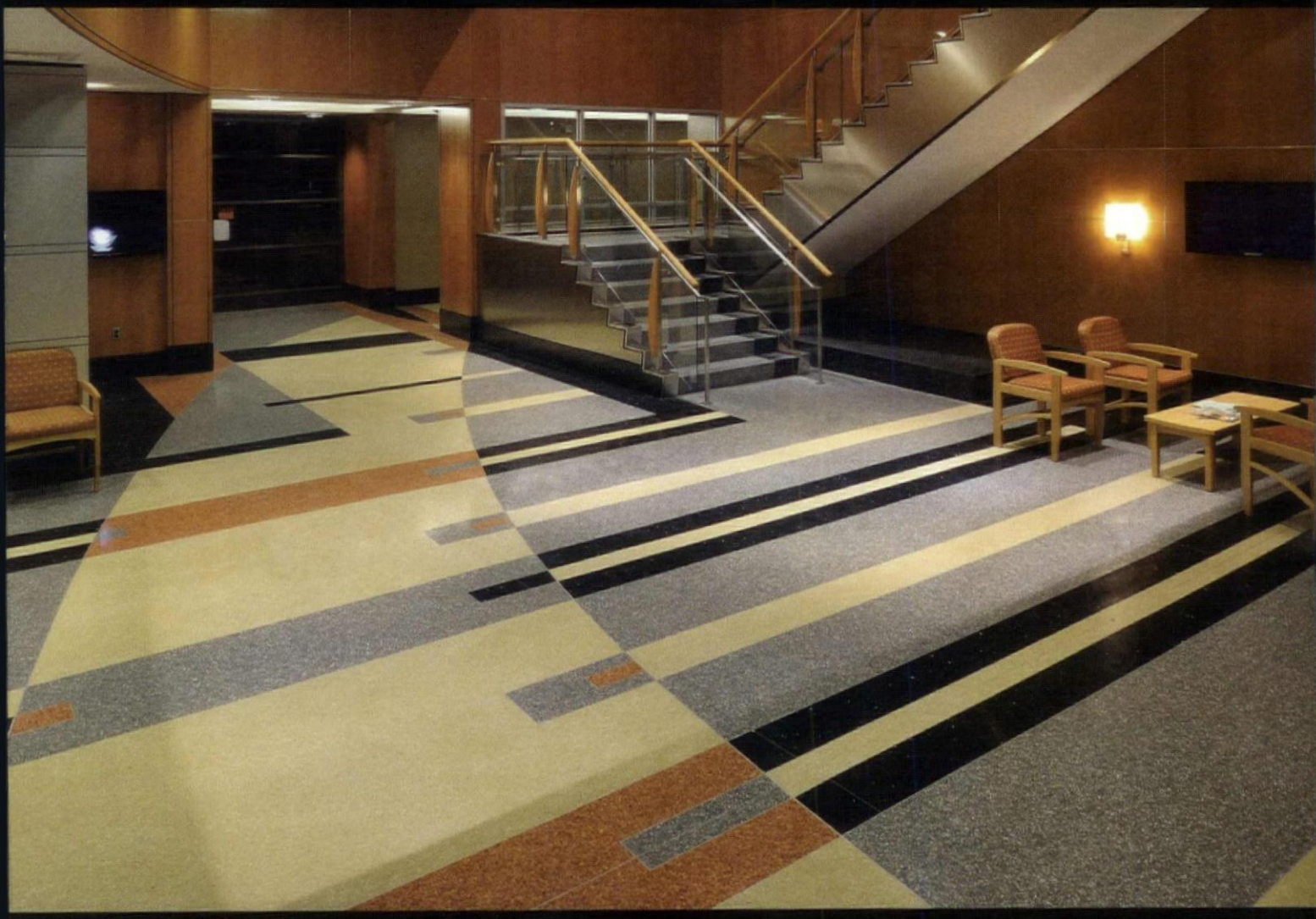

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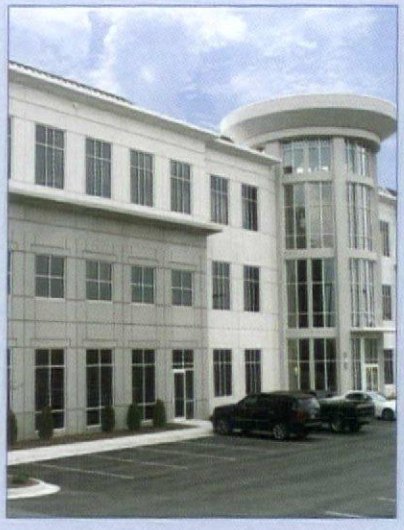

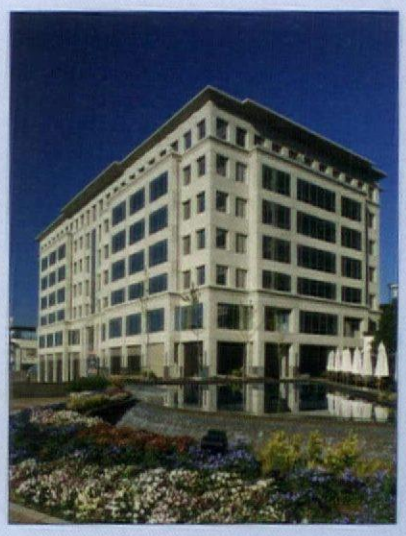

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From The Editor

Architecture: A Critical Part of the K-12 Curriculum

If there is one theme that permeates the three schools featured in this issue—and the Member Dialogue essay on page 7—it's that the latest approach to pre-K-12 education is engagement. Lectures and memorization still have their place, but certainly not the only place in learning today. It is also clear that the careful introduction of natural light, fresh air, and acoustic control make for healthier, more attentive, and more engaged students—and teachers.

Take career training as an example, once known more commonly as vocational education. Spaces for shop, auto repair, home economics, office-skills training, and mechanical drawing were often relegated to out-of-the-way, back-of-the-school areas. At Kellam High School in Virginia Beach, designed by HBA, Project Principal C. Michael Ross, AIA, makes the point that these are the courses that have been "doing it right" for so many years by focusing on hands-on participation.

At the Takoma Educational Center in the District of Columbia, it was a fire that brought out the best in the design and construction team, which began with listening carefully. From the outset, the school's principal expressed her commitment to a more open school. The 1960s-era building interior was closed off from the outside, dark, and rather dreary. She said that instead of a "center," with the institutional connotations of the word, the community would be more receptive to see the school rebuilt (in exactly one year, remarkably enough) as a "campus" with a specific focus on integration of the arts. And the school duly changed its name to the Takoma Educational Campus. Success can often be found in some of the unlikeliest details.

The re-design of the school opened up the front façade, gave it a much more welcoming approach and entry, and, says Fanning/Howey Project Principal Edwin R. Schmidt, AIA, the team achieved this—as well as pursuing LEED® Gold certification. Because the construction schedule was so tight, often running three shifts, there wasn't opportunity for the students to tour the areas under construction. So they visited virtually with project team members presenting live coverage via audio/video links.

"At one part of the video, you see someone saying to the kids, 'look we're going into your new science lab,' and the kids are cheering," Schmidt relates. "When we showed that to the chancellor of schools she said, 'I don't think I've ever seen a fifth-grade boy cheering for a classroom.'"

Excitement is contagious, as Fluvanna County School System Director of Secondary Instruction Brenda Gilliam notes of the new high school there, designed by BCWH. "Walking through the school, you get a tremendous feeling" she says. "It's like being on a college campus the way the spaces are used, what you see going on in the hallways. I've heard a few kids talk about how beautiful the facility is. It's just a really good feeling in that building."

Plus, she notes, despite severe budget constraints, the focus on installing up-to-date equipment in the career training facilities was an overriding concern. With a new culinary arts program, a television production studio, and other new training amenities, students can graduate with the confidence that their educational experience will relate directly to their career objectives.

Here we have three different pre-K-12 school complexes in three very different locations all approaching education from a common perspective: Getting students engaged in interesting activities that teach them what they will need to know to contribute to a brighter future.

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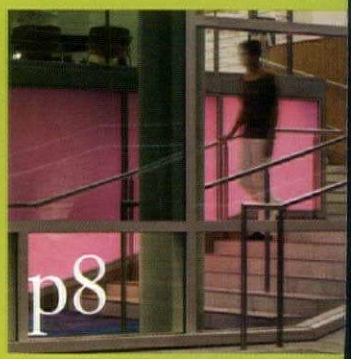

On the cover:
Fluvanna has a bright new high school
Photo by Chris Cunningham Photography courtesy of BCWH.

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Design **Dialogue**

The Classroom Is Dead

The Rise of Integrated Learning Spaces and the Education of the Whole Child

By Robert W. Moje, AIA, LEED AP

The classroom as we know it is dead. It is outdated in helping children meet their full educational potential.

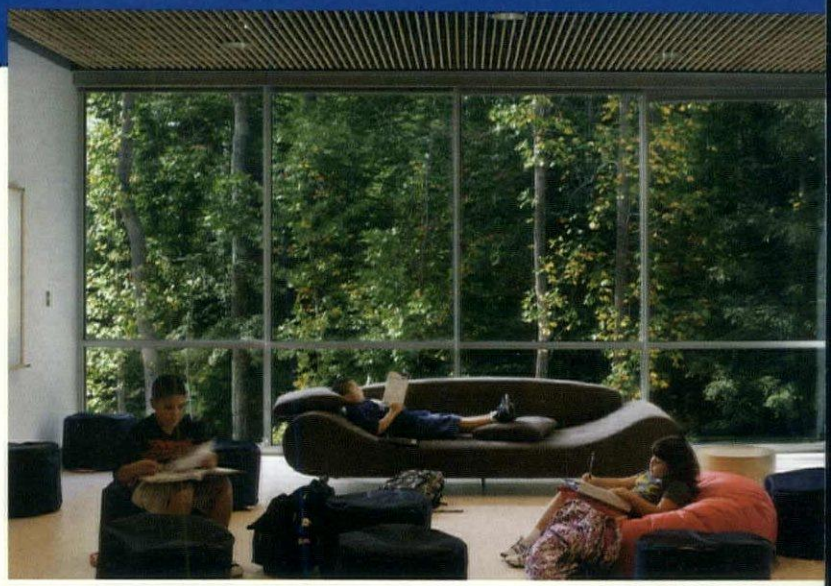
Based on a factory-inspired model, the American classroom was designed to help children receive an adequate, standardized education. The prototypical public school classroom is set up to run 20 to 30 students through the same educational obstacle course, at the same pace, with the same intellectual nourishment. The desire is that a certain majority of the class will finish with "passing" results that will help ensure further support and funding for the school. This system is predicated on a percentage-based hope that a child will fall within a certain range of measured intelligence.

But what happens to those students who don't "pass" or to those who finish with better-than-average results? The classroom model has failed to provide both inclusive and individualized educational experiences for American students, particularly for those at the extremes. The challenge before us is to educate each child and unlock every student's individual potential as citizens and future leaders.

With the advent of new technologies, educational philosophies, and research strategies, it is possible to educate each child while still meeting educational requirements. This opportunity for specialization has major implications for teachers, parents, and school administrators and particularly for the school environments in which children learn and play. Here is a look at some design worthy of our scrutiny.

Flexibility of space: Spaces that can be easily arranged to support the learning process are needed more than ever. In a well-designed school, every space and surface helps contribute to teaching and learning. This is a new design paradigm that calls for more break-out spaces, circulation areas, flexible furnishings, views of nature, technology-rich learning areas, and creative graphics and wayfinding to activate learning.

Just as no two children are alike, no two schools should be designed the same. Children are living, breathing beings who need different types of environmental stimulation and opportunities for adjustment. The paradigm is no longer about targeting specific areas of students' intellect, with the hope that they will respond in a certain way. Rather, it's about engaging the whole child and helping students understand their bodies' and minds' unique rhythms and potential so that they can become more intuitive learners now and into adulthood.



Prakash Patel

Manassas Park Elementary School in Fairfax County, designed by VMDO, has received accolades nationwide for the way the facility engages students with nature and the understanding of the importance of environmental-resource stewardship.

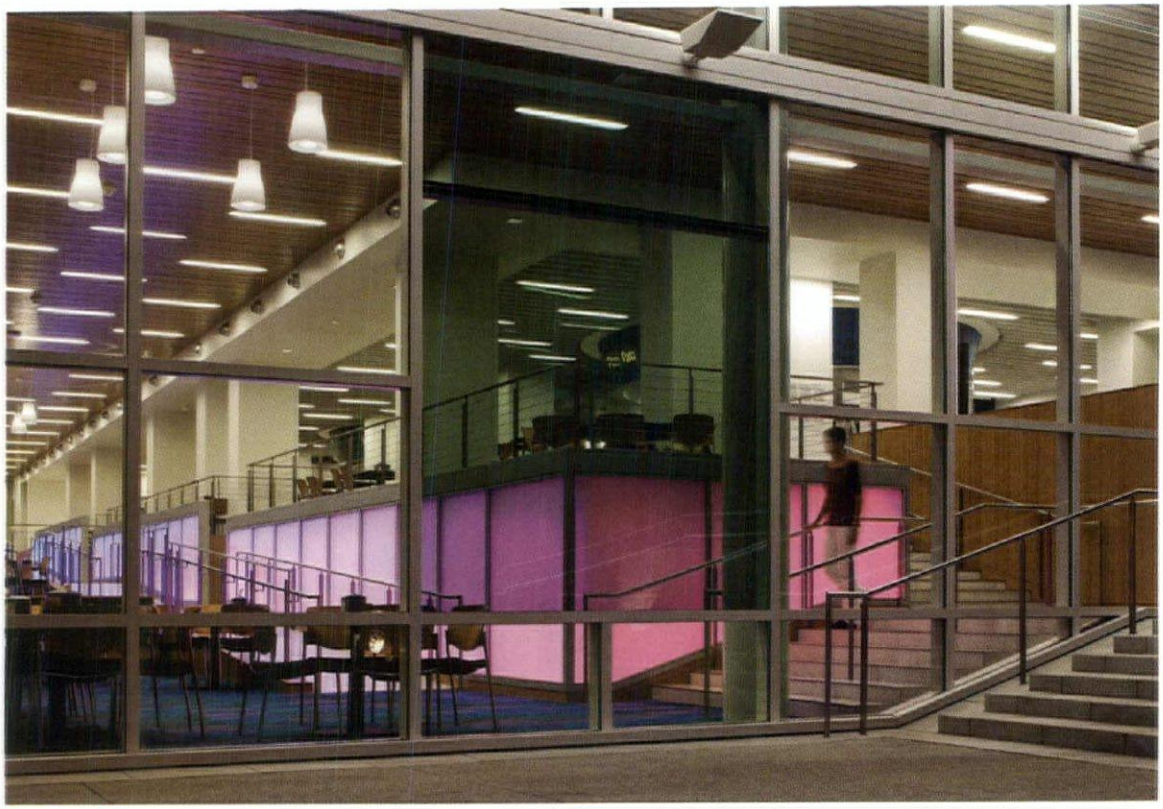
Nature as teacher: We need school buildings that incorporate more daylight, scenic views, locally sourced foods, and fresh air. Opening children up to nature instead of sheltering them from it adds another full dimension to the learning experience. We often do not realize how restrictive school environments can be, particularly in terms of how children are allowed to interact with their natural surroundings. Thoughtful architectural choices inspire learning, support well-being, and encourage focus by exposing students to healthy conditions in the world around them.

Culture of continual improvement: While not a specific design strategy, constant improvement is a trait found in good architecture that also speaks to our psychology as humans. Fundamental is the desire to raise our children to be the very best that they can be and make sacrifices to help that hope become a reality. The way that we have educated our children in the past, under the factory model, is incompatible with this culture of improvement. Why support a model that supports only the average child sometimes, instead of every child all the time? Such thinking is a disservice to our culture. Although change does not happen overnight, we can try to change pieces and parts at a time.

Creative architectural solutions that provide flexible spaces, incorporate nature, design for health, and inspire integrated, individualized learning opportunities are making things better. I believe that with time, with the results of further research and testing, and with the involvement of more specialists, we will continue to improve. School systems with mediocre facilities will realize "it's better over there" and make a choice to build better schools. There is no right answer and no single narrative of change, but there is better. And helping to cultivate a child's interests, passions, and potential through integrated design solutions, at the moment, is better.

Virtualization: The New Reality of Design

By Nicholas E. Vlattas, AIA, and Deborah Marquardt



Robert Benson Photography

This urban dining hall, which wraps an older residence hall at Georgia Tech in Atlanta, uses an ever-changing LED wall to create street interest. Rendering (below) created in Sketch Up and Maxwell.

A recent cabinet clean-out caused us to stumble upon some old design award entries. What a walk down memory lane to think of how we used to produce our graphics.

Two days later, we watched a short on-line video from MAKE Architecture in the U.K. about a strategy it used to pitch an important job. When the potential client said, "All this is fine, but we don't understand what it feels like," the MAKE team had a response. Andrew Godwin, business and information systems coordinator, had developed an iPad App that allowed everyone in the room to be able to immerse themselves in the 3D model, using the iPad like a window to look up, down, or around in a series of panoramas. It created an instant experience for the people in the room. MAKE won the work.

Technology today allows clients to see fully fleshed digital models of their projects. They can fly through them, experience the spaces, and see how their project fits into local context. Perhaps most importantly, it allows clients to connect at an emotional level. There's never been a better communication tool, and many clients don't want to settle for anything else.

You will hear some complaints in architectural circles that these technologies cause us to make a lot more design decisions sooner, or that 3D visualizations are so realistic they remove an element of surprise, and clients may assume a design is finished while elements are still being explored.

As professionals, we must keep perspective. Immersive technologies and other visualizations are design tools. Their use does not negate the need for design reviews and quality controls, and it doesn't replace other more conventional ways of design exploration, such as hand-renderings and sketches.

Overwhelmingly, though these advances have been positive for the industry and good for business. I doubt anybody would like to go back to the old, old days.

Recently, a fast-track project in our office caused a design team to use our BIM platform, Revit®, as a design tool, rather than just a production tool. We soon learned that we could

render much faster in the Revit 360 Cloud. Using this process, we quickly moved the client through different scenarios, arriving at a decision that caused the client to abandon an additive alternate. This saved hours of detail development and, since the base was drawn in Revit, it was a quick matter of adding notations to finish the construction documents—a bonus, given the tight delivery of bid documents.

Such visualizations are also great risk-management tools. Clients can't say, "This isn't what you told me it was going to look like." And consultants and contractors in the field are finding these models helpful in understanding the end result, cutting down on RFIs.

Little Diversified Architectural Consulting in Charlotte empowered a group that organized as Skyscraper 3D. While the group is Little, it also has the ability to chase projects of its own if they have the potential to open the door for architectural design, explains studio leader Coby Watts. "Not being an architect, I didn't always understand the nuances of architecture. There are a lot of people like that," says Watts. He looks for ways to tell the project story best. Skyscraper not only produces 3D renderings but often animates them or creates a documentary-style video. "A video invests emotionally in the client," he says.

Revit makes things very easy, he continues. "We used to build movie sets and only build a certain part of the model to produce a rendering. The Revit byproduct is the 3D model, so all the information is there."

Sometimes the graphics team gets plugged into a pursuit of new work. Sometimes their involvement comes later—for example, when a client isn't quite understanding a design. Skyscraper helps clients, such as developers who want to pre-lease buildings, by producing informational pieces that capture the feeling of the project and its proximity to light rail or restaurants. Skyscraper 3D even keeps a model of the city of Charlotte, which helps clients imagine projects in context. One recurring question is, "What are my views?" says Watts. He adds, interactivity is huge for clients. They love immersive environments they can explore at their own pace.

Virginia Tech worked with an alumni firm, Spine 3D out of Florida, when it wanted an animation of its Solar Decathlon project, LumenHAUS. "We wanted an idea of what it would look like before building it, and then we wanted a way to make it accessible to the public," says ACSA Distinguished Professor Robert Dunay, FAIA. Early on, appealing to sponsors and donors, "It gave us an element of credibility," he says. Later, the video evolved to become an integral story-telling tool, because project features could be presented in a condensed way.

LumenHAUS, an award-winning solar house designed by students and faculty, originated with conventional drawings, plans, and elevations. But then a 3D digital model was made, which was used both as a presentation tool and analytical tool, for example, to study lighting, structure, and spatial composition. Spine 3D created the animation, which gave students an idea of what the project exterior would look like both day and night. "It was most interesting and informative to see how close the animation came to the final reality," Dunay recalls.

As 3D evolves to 4D and maybe beyond, it won't be long before we'll be able to smell the chocolate chip cookies baking.

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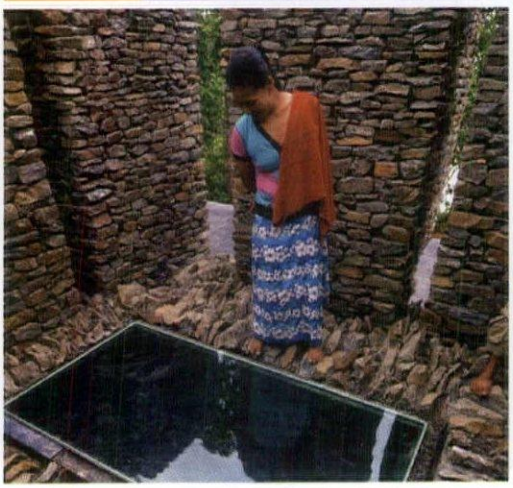

Memorial to the Magar Ancestors | Landscape Architecture Honor Award | Photo: Travis Price, FAIA

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The Experiential Paradigm of **Kellam High School**

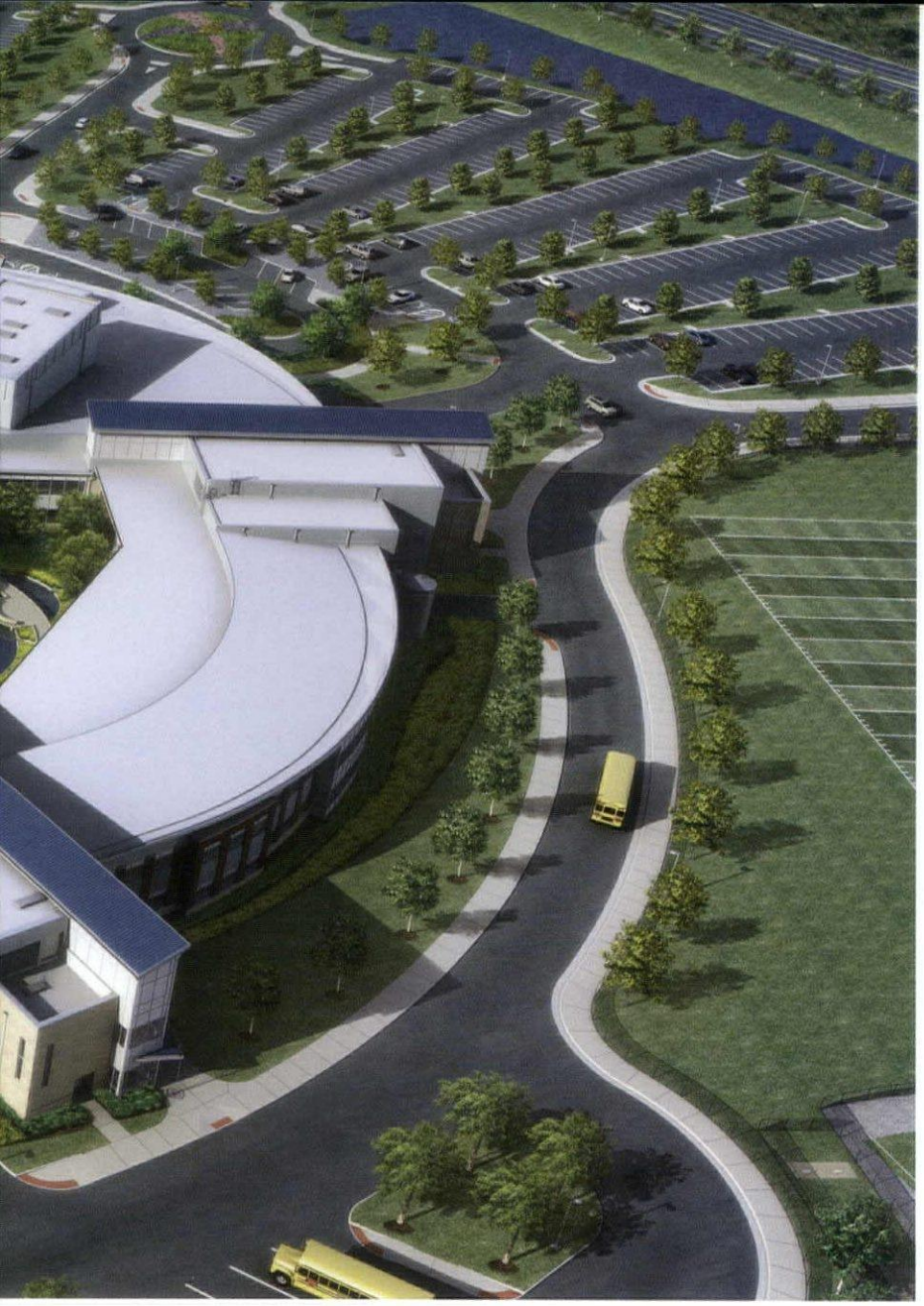
By Douglas E. Gordon, Hon. AIA

Virginia Beach City is the third largest school system in the commonwealth, after Fairfax and Prince William counties. So City Schools Superintendent James G. Merrill, EdD, had power to his purpose when he undertook a massive effort to sharpen the city's educational focus. One result will be the new Kellam High School, designed—concurrently with Merrill's initiative, almost in a fast-track way—by HBA Architecture and Interior Design. Projected to be completed in early 2014, the 336,410-sf building on 108 acres has a projected construction cost of $77 million.

The designers were so observant of the school system's strategic plan that they included elements of its Objective One (involvement of students in real-world problem solving) into the design process itself.

Compass to 2015

Although preliminary comparative studies showed that the graduation rate of the Virginia Beach City Public Schools (VBCPS) was 82 percent, more than 10 percent higher than the national average, Superintendent Merrill was not satisfied. To define educational achievement and measure its progress, he launched "Compass to 2015: A Strategic Plan for Student Success," which involved two years of work by district administrators, educators, outside experts, students, and the community at large. The result, displayed prominently on the VBCPS Web site, is a plan that condenses all of this study and discussion into one goal for plan implementation ("by 2015, 95 percent or more of VBCPS students will graduate having mastered



the skills that they need to succeed as 21st century learners, workers, and citizens"), four outcomes, and five objectives.

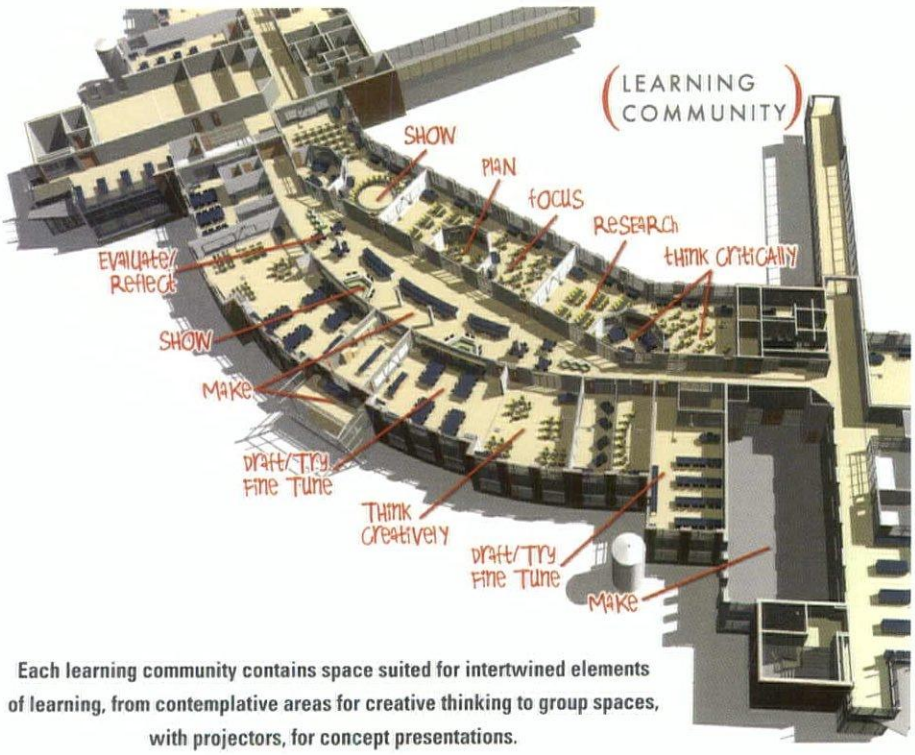
For HBA, Objective One was a guiding principle in the design process and final outcome: "All teachers will engage every student in meaningful, authentic, and rigorous work through the use of innovative instructional practices and supportive technologies that will motivate students to be self-directed and inquisitive learners."

The design team targeted certain development skills through their design, including: critical and creative thinking, innovation, and problem solving; effective communication and collaboration; and global awareness.

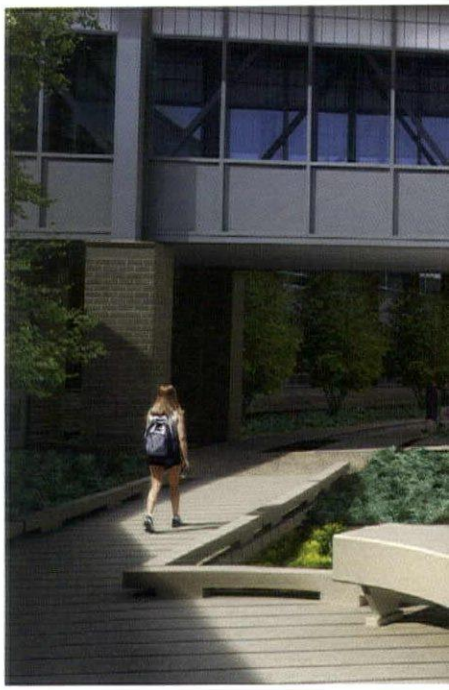
The architect's focus on Compass to 2015 left an indelible impression on at least one VBCSB administrator, Assistant Superintendent Rodney J. Burnworth. He commends HBA Principal-in-Charge C. Michael Ross, AIA, REFP: Mike is "well-versed in the division's work, the philosophies of educational futurists, and problem-based learning and performance assessment," Burnworth says. "He schooled us on sustainability and went above and beyond physical structure and grounds to engage the students in problem-based learning."

Specifically, in one exercise involving five Kellam AP environmental science classes and one CADD class, 140 students competed in teams to design the school's educational courtyard. The re-

With a central hub, the new high school for Virginia Beach uses the wheel and spoke concept to make walking quick and easy from one point to the other, top. The entrance is obvious and welcoming, with windows both admitting and projecting light, above.



Each learning community contains space suited for intertwined elements of learning, from contemplative areas for creative thinking to group spaces, with projectors, for concept presentations.



Garden areas highlight student transition among the school's study, recreational, and activity spaces. Passive and active teaching centers include dry areas, with xeriscopic plantings, top, and water infiltration areas that slowly absorb storm waters, above.

sulting scheme combines edible, gathering, and rain-water infiltration gardens into a single system for the science and culinary arts programs, a cistern irrigation system, gathering areas, and an outdoor café. The students come to understand natural hydrostatic systems, soil development, and student circulation patterns, and, as Burnworth points out, they came to appreciate how their work "contributed to the design of an authentic learning experience for generations of students to come."

The gardens they designed connect those same students to the world into which they will be graduating as well, Ross notes. The building is targeting LEED® Gold certification., which encourages students to understand the interplay of sustainable design elements necessary to meet certain externally certified requirements. Monitoring the ongoing resource efficiency of the systems will also be part of hands-on curriculum over time.

Engagement affects recollection

New communication technologies are bound to generate new ways of reaching students, especially when one considers that students today are so comfortable with—perhaps even dependent upon—instant access to a universe of information. So educators and designers alike are focusing on how to direct that torrent of information into useable knowledge.

Often through informal learning, and certainly through a desire to know what their peers know, "students have progressed beyond consumers of content to become producers and publishers, too" Ross explains. A result seems to be that traditional "formal" teaching and learning methods are becoming less effective at engaging students and motivating them to learn.

"Across the nation, though, much of today's school curriculum still presents students with assignments that lack a real-world context, with activities that ultimately lead either to a letter grade or proficiency at taking standardized tests," Ross says. "Many students either learn to do just enough to get by—to become good at 'school'—or lose interest and drop out."

One solution, he suggests, comes from findings published by the Institute for Applied Behavioral Science. Learning retention rate corresponds directly to personal engagement. In the process of teaching a concept or skill to others, for instance, a person achieves an impressive 90 percent retention of that knowledge. Through the practice of doing, without the additional task of teaching, the retention rate falls somewhat to 75 percent. And the diminishing return continues from being in a discussion group (50 percent), seeing a demonstration (30 percent), an audio-visual presentation (20 percent), and, toward the bottom, reading (10 percent) and hearing a lecture (5 percent).

A reasonable conclusion from this bit of insight is that hands-on and collaborative "challenge-based" learning encourages the absorption of knowledge and, by extension, encourages critical and creative thinking. The physical manifestation of this, as one can see in the Kellam design, is the arrangement of the flow of spaces to areas that allow students to participate in collective activities where they can readily use the technologies and group interactions with which they are already comfortable to sequentially *focus*, *plan*, *make*, *show* (i.e., share and teach), and *evaluate* and reflect on results. An alternative sequence is to allow students to *think creatively*, *collaborate*, *make*, *draft/try*, and *fine-tune*.

Educational design from the inside out includes the redefinition of student desks and teacher stations, which, shown here, can meet multiple configurations.

Physical manifestations

To orient spaces most effectively for education, recreation, administration, nourishment, and other school-day activities, the HBA design team grouped particular parts of the school in arrangements based on their function. Challenge-based learning areas extend along an arc on one side of the complex, for instance and in turn connect to all other areas via a general wheel-and-spoke plan, with common space serving as the hub, as well as a dining area.

The entire school is designed for flexibility. All interior-room partitions are nonstructural; reconfiguration of the school's interiors at some distant date can be achieved with minimal cost. Redesigned desks (for students and teachers), partitions, presentation boards, and tables provide workspace and storage that can be readily rearranged to form small-, mid-size-, and large-group interactive seating. All areas have wireless Internet access; areas for creative, production, presentation, and evaluation tasks are designed specific to those tasks, yet grouped by learning communities.

"The curriculum is being reinvented based on models that are integrated and cross-disciplinary," Ross says. "The grouping allows real-world-problem solving that uses science, math, language arts, and social studies together, to name just a few disciplines. We took great care to provide both a variety of space sizes and types and a lot of flexibility within these learning communities.

"The plan is set up in such a way that related subjects are all contained within each learning community. As just one example, the culinary arts teaching kitchen is adjacent to the common-space dining area as well as the edible garden, which connects food sourcing, preparation, and serving."

Engaging the community

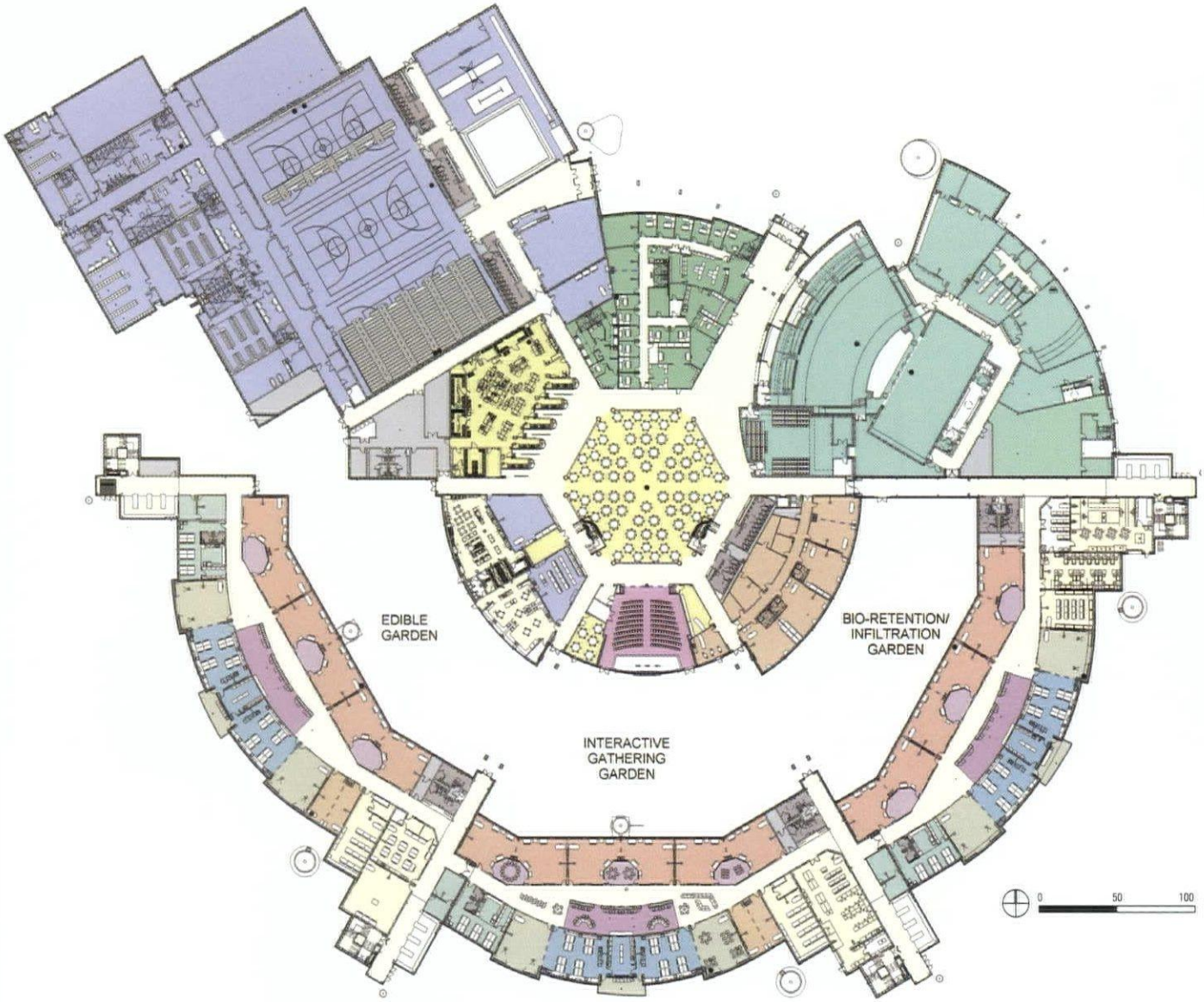
Another Compass to 2015 objective is to engage the community, which involves its own balance of priorities, Ross says. "You organize the building and integrate fire walls and security barriers so that you can close off certain parts of the building, make those accessible to community activities, and still maintain security. You also have to consider that there will be separate but simultaneous activities, such as in the gymnasium, auditorium, and common spaces. The way the six learning communities and group-activity areas are individually self-contained with support facilities, the school can be safely, effectively used for many after-hours activities."

Architecture school is a model

Even though school design is one of the HBA focus markets, every project is as much a learning experience as an exercise in sharing their knowledge with others.

"This has been a learning process for me also," Ross amplifies. "One of the things that really resonated with me was how many parallels there are between how we were taught in design school and the educational direction VBCPS has set, which would include how to learn — how to define problems and achieve real-world solutions. The more I see those same types of philosophies being applied to the entire curriculum, the more I think of it as "design learning." Perhaps, especially for architects designing schools, remembering our own educational experience is another tool for imagining schools for the 21st century. As part of the educational process, we are helping to teach students how to be creators instead of just containers for content. They are learning how to take the information they acquire and make new things."

An enormous school envelopes every necessary element of interactive, collaborative education, below, yet maintains a low, unobtrusive exterior profile, above.

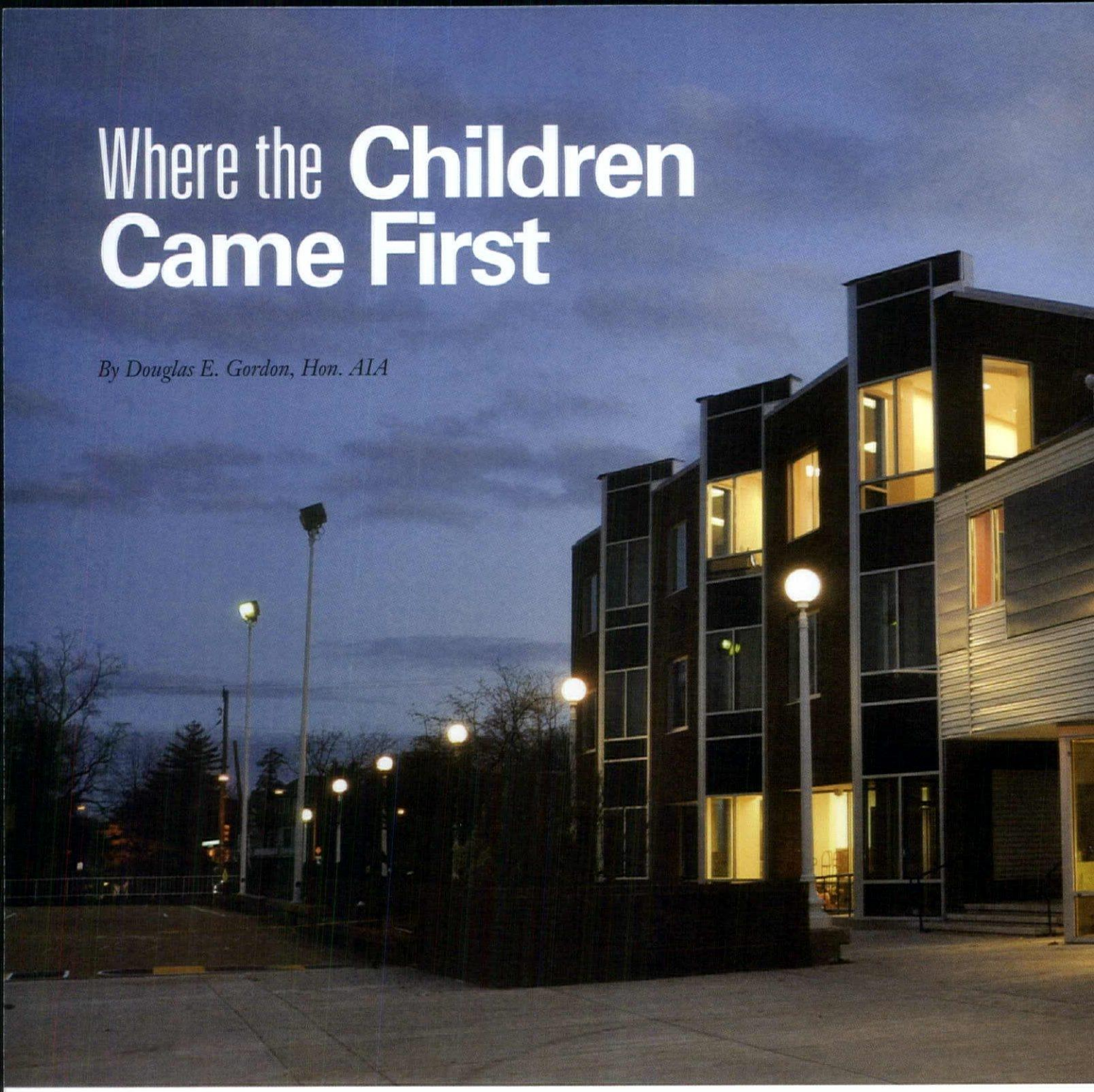


RESOURCES

ARCHITECT: HBA Architecture & Interior Design Inc.; **GENERAL CONTRACTOR:** S.B. Ballard Construction Co.; **EDUCATIONAL FACILITY PLANNER:** DeJONG Richter; **CIVIL ENGINEER and LANDSCAPE ARCHITECT:** WPL; **EPOXY TERRAZZO CONTRACTOR:** David Allen Company (see ad, p. 1); **PAINT SUPPLIER:** Sherwin Williams (see ad, p. 6)

Where the **Children Came First**

By Douglas E. Gordon, Hon. AIA



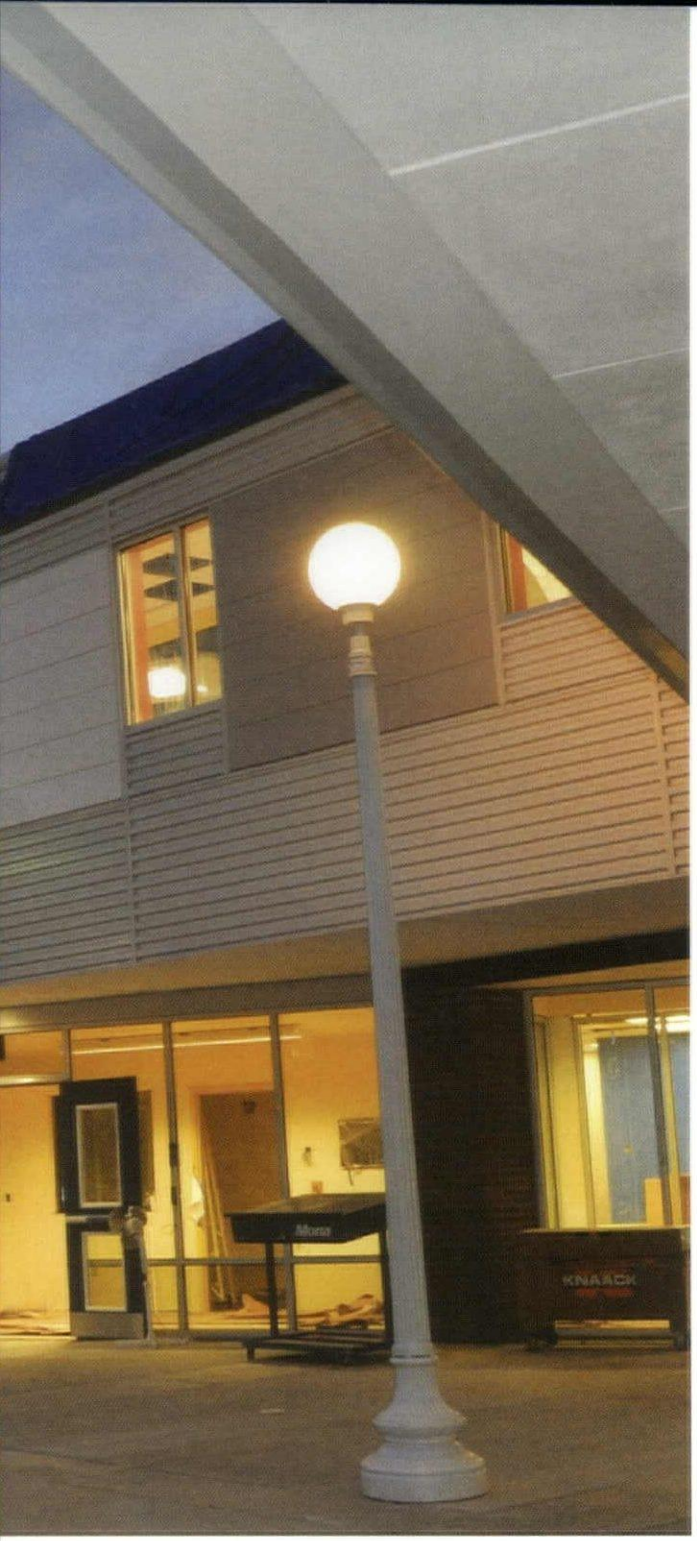
The Takoma Educational Center had become a fixture in its neighborhood near the northernmost corner of Washington, although not particularly inspiring. Built in the late-1960s, the school was originally designed to the then-popular school-without-walls open-plan concept. Despite that pedagogical moniker, interior space was poorly lighted and lacked connectivity to the out-of-doors.

Still, Principal Rikki Hunt Taylor worked hard to make the school, as she says, "a cool place to be." But, on the evening of December 22, 2010, during a roof renovation, a mislaid torch sent the school up in flames. Everyone got out safely, including Principal Taylor, who was in the school working late, but the school was gutted.

D.C. Public School officials worked quickly to accommodate the students, erecting a tent outside the burned shell from which to bus the children to a recently closed school across town. By February 2011, they put out a request for proposals for a design/build team that could rush-deliver a new facility by January 2012.

Jump forward in time exactly one year from the fire to December 22, 2011, and the dedication ceremony of a completely renovated school with new life and a renewed mission to its pK-8 students. With Mayor Vincent Gray in attendance, Schools Chancellor Kaya Henderson lauded the new Takoma Educational Campus as a state-of-the-art facility, "one of the best in the city."

The proposal from Turner Construction and Fanning/Howey had been selected in April 2011. How in the world did their combined team do what they did: assemble complete schematic drawings in a month to house the city's only Catalyst



Fanning/Howey

A flat and unwelcoming façade, above, became the angular, window-rich entryway, left, in large part thanks to two things. First, the school community wanted more natural light into the school, which meant more windows. To accommodate that, the design team turned the floor plan and projected the interior out to the street.

Arts Integration elementary program and construct it in seven months in a way that it could satisfy demanding and often-changing programmatic requirements and still be in a position to pursue LEED® Gold?

A close-knit D/B team

Commitment to the goal began with the city school system, which worked with other city officials to redirect $21 million quickly from already-approved funds. In addition, Turner Construction and Fanning/Howey had worked with D.C. Schools and each other in the past and were able to demonstrate that they shared the client's commitment to this project.

"One of the biggest challenges to developing that original proposal," recalls Fanning/Howey Managing Principal Edwin R. Schmidt, AIA, "was that we had to lock ourselves into a room and not let anybody out until we had a design. We brought together Fanning/Howey engineers from one part of the country, Turner people from their offices, and our planners and designers with D.C. schools experience. In one week, we did what normally takes a couple of months. It was a totally different education planning model than I had ever been involved with before."

Associate architect Bryant Mitchell and engineer-of-record Global Engineering Solutions (GES) soon joined the team for the accelerated design development in close cooperation with school officials.

"You gather inspiration from different places," Schmidt says. "Principal Taylor—who was desperately trying not to break into tears as we visited the burned-out-shell of a building—told us the old building had looked like a prison. It even had the name Educational *Center*. When we asked for her vision for a new facility, she said she wanted a bright, airy, open *campus*. And we latched onto that vision of an entirely new culture for the school." The school district eventually changed the school's name from Center to Campus in parallel with that mission.

The design process

One of the first elements of bringing light into the building and opening it up visually to the community was to take a flat, rather uninviting front façade and thrust the windows outward, creating a new grid for the entire building interior.

The entire school was gutted by fire just before Christmas 2010, yet, with a focus on creating a new unified campus for the displaced students and establishing a new, exciting community landmark, the design/build team was able to welcome the students back to an entirely re-invented school experience faster than expected and within budget.

"Those window prisms, which you see now punctuating the front wall, effectively thrust the school outward. While they capture light they also capture the attention of the students and the community," Schmidt says. "As we developed the design, we tried to stay at the conceptual level for as long as possible. One of the most critical components of a successful fast-track design/build project is dialogue. We wanted to establish the mission, vision, and concepts with the client representatives and get buy-in to those concepts because we knew certain lesser details might change. For instance, because we were looking at it as a unified campus, a lot of the geometry of the school building plan came from the juxtaposition of the adjacent gymnasium. When we rotated the classrooms to match the gym grid, it allowed us to thrust the internal plan out to the exterior of the building. We embraced that geometry as we continued design development."

The sequencing of the process may have been out of the norm, but the level of service was not, Schmidt says: "There's a misconception that when you do design/build you're cutting out parts of the process. You don't cut out anything, you simply order it differently. We were already punching out the windows while we were still deciding finishes. And that's one aspect of this particular process where our close relation with Turner worked to the client's benefit in both time and cost. We had a color scheme set for colored-glass columns of windows, for instance. By working with the contractor, we were able to see where we wouldn't need colored glass in certain panels because they were going to be backed by opaque spandrels anyway, and we could get the illusion of color using a less expensive clear tempered glass over those spandrels. We maintained the design concept and saved money that could go to other components, such as terrazzo flooring that would, in turn, save the client money in life-cycle cost."

Building modeling assistance

"When we saw that the fire had ravaged the building, we decided to replace the entire mechanical/electrical/plumbing system," says GES Associate Principal Essi Najafi.

This proved to be a big help in getting LEED credits, too, which were always at the back of design-team members' minds, even though D.C. did not have an accreditation requirement until midway through the project. "The component of sustainability is

Interior spaces (a new school *with* walls) are entirely different, in large part because of the introduction of so much daylight.

"We didn't have a playground before," said one of the students of her delight in moving into the new school campus. The new school will be delighting students for years to come.

very important with all projects," Schmidt explains. "As with a lot of elements for design and construction professionals, we have reached a point at which sustainability always comes into the overall outlook from the outset. When D.C. made a requirement for LEED Silver certification for public buildings, the client came to us to ask whether we could do that. We were able to tell them we'd already been considering it. Then they asked: 'Well, how about Gold?'"

"Even if we had been able to reuse the original system as it had been when intact, it really would not have helped us in getting those credits that we ended up needing to get up to at least Silver," Najafi says. "We did life-cycle-cost analysis and energy modeling at the initial concept phase to determine what our HVAC-system options would be. The client chose to go with a variable refrigerant flow system, which saved them money up-front over an equivalent typical system and earned a lot more LEED points." The VRF system, which pumps heat as needed among internal spaces, is also more thermally comfortable and energy-efficient than other systems more common in the U.S.

"Through the preliminary planning sessions, we were also able to develop an equipment schedule earlier than usual to shorten purchasing lead times," Najafi continues. "It gave a lot of energy to the project when the contractor had systems selected and ready to deliver when they needed it. This was really a great team that we had developed."

The non-rectilinear layout of the building also involved careful coordination among the design/build team members. BIM software helped considerably. "We used the 2013 Revit MEP version, and Turner was able to take our model and prefabricate components. To bring the whole project together, we

Even with walls, the classrooms have a feeling of openness. Glass walls maintain visual connectivity and help daylight permeate through window-facing rooms deep into the building.

used NavisWorks, which also turned out to be seamless and successful," Najafi says.

Using new technologies occasionally creates its own misdirection, though, as Schmidt recalls: "There was one meeting where we were all evaluating the building model. Someone had coordinated the structural and MEP systems. As it turned out, the sprinkler lines had U-bends in them to avoid any cuts in the beams. That all seemed very elegant until someone asked: 'How are you going to drain that sprinkler system?' You can sometimes get so wrapped up in the BIM software clash detection—loving the technology—that you can forget the functionality of the design system itself."

New amenities for learning

The new 119,000-sf school occupies a 2.3-acre site and accommodates 450 students with two classes per grade. In addition to improved natural lighting, indoor air quality, acoustic control, and thermal comfort, the new facility includes enhanced arts integration. As of September 2011, it has become the sole elementary Catalyst Arts Integration School in D.C. Among the areas it now fully supports are tutoring, wellness and fitness, sports, guided recess and conflict resolution, and arts and culture programs such as Shakespeare Steps Out, Architects in Schools, Embassy Adoption, and Washington Animal Protection.

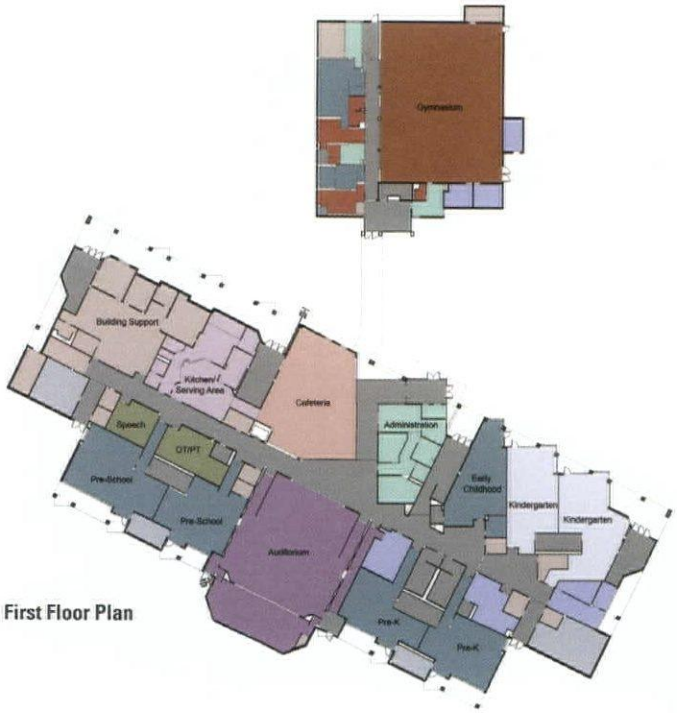
Arranged in small academic clusters, the design facilitates flexibility for a variety of instructional methods and a sense of community among students and teachers in a safe, well-supervised environment. The school has its pre-kindergarten classrooms on the first floor with their own entrance. And special-educational facilities are located throughout the building to support inclusion of all students in a unified school family.

"Designing this facility to accommodate the arts-integration program was helpful to us, too, as we were reconfiguring the building to optimize the perimeter window access," Schmidt says. "We could use the deep spaces that aren't necessarily adjacent to perimeter windows for those dance, music, and choral support spaces that work without windows. If this had been an academic center with no need for those spaces, it would have taken much more time to devise the means to have adequate natural lighting throughout. The client's vision worked really well with the nature of the existing shell we had to work with so quickly."

"It reflects our vision, it reflects our mission, and I'm just pleased and thrilled. So are the kids and so are the parents," Principal Taylor says.

Schmidt confirms the student excitement: "Because of the breakneck speed of construction, we couldn't bring the kids to the school for a hardhat day, as we usually would. So we did virtual hardhat days where one of our staff walked through the building with a laptop broadcasting to them from hotspots. At one part of a video we made, someone says to the kids 'look we're going into your new science lab,' and the kids are cheering. When we showed that to Chancellor Henderson, she said 'I don't think I've ever seen a fifth-grade boy cheering for a classroom.'

"There was a lot of 'I can't believe we did it,'" Schmidt says. "There was no negative attitude within the team. You didn't ask about it, you just did it. That attitude went from the children taking the bus every morning to the architects and engineers adjusting to constant changes and the construction teams working three shifts around the clock.



First Floor Plan


Site Plan

"Initially, we were wondering whether it would have been physically possible to do the project at all. Once you realize you can walk, then you wonder whether you can jog. And once you can jog, you wonder whether you can sprint. Once you're sprinting, you wonder whether you can do a marathon. We continued to challenge ourselves in our success.

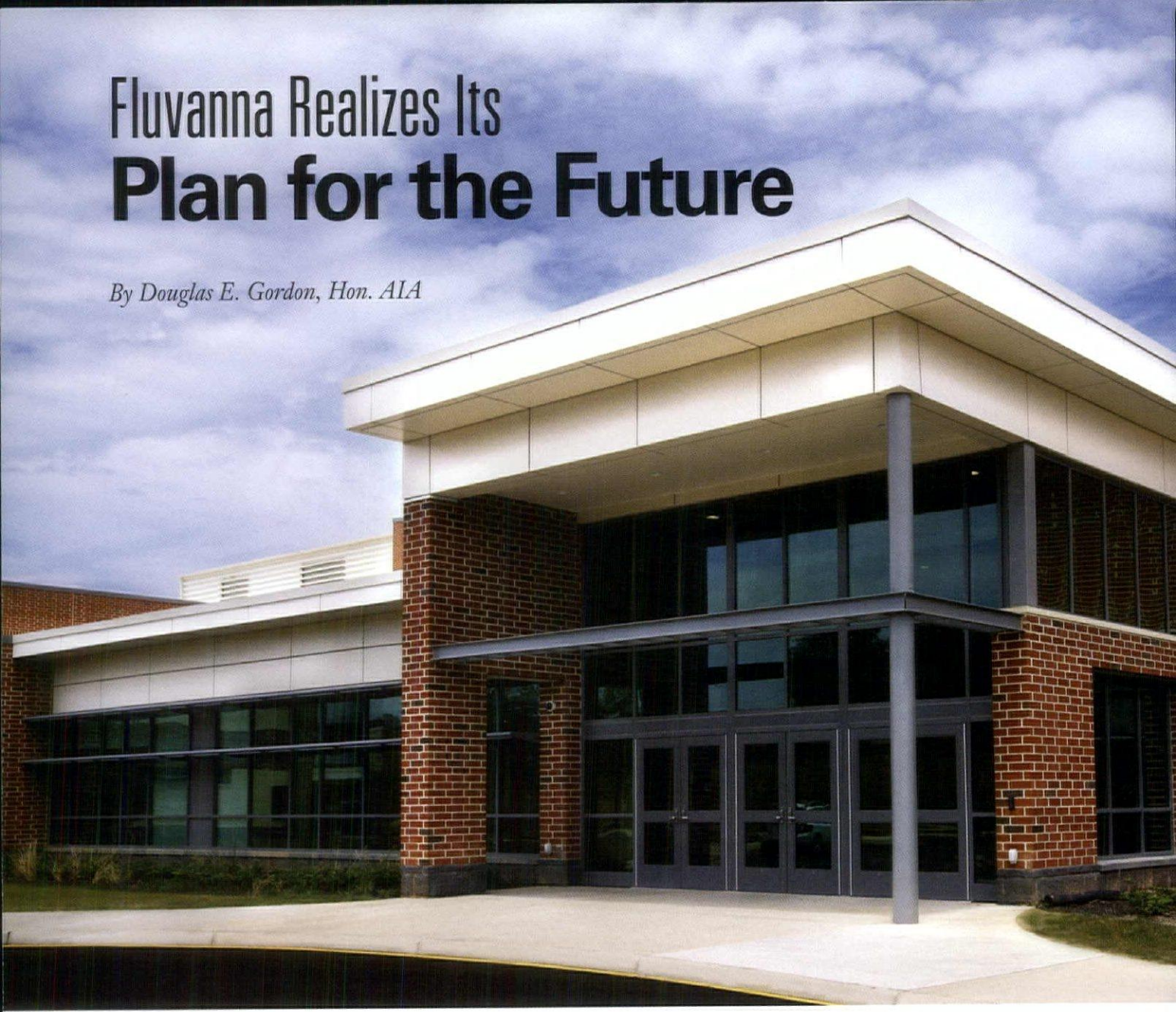
"At the end of the job, three of us from Fanning/Howey painted a mural on one of the walls. We don't do that on projects we have years to complete. I guess sometimes, when you've crossed the finish line and can look back, you just get a little cocky."

RESOURCES

ARCHITECT, INTERIOR DESIGN, AND LANDSCAPE ARCHITECT: Fanning Howey Associates, Inc. (see ad, p. 9); **ASSOCIATE ARCHITECT:** Bryant Mitchell; **GENERAL CONTRACTOR:** Turner Construction Company (see ad, inside front cover); **ELECTRICAL AND MECHANICAL ENGINEERS:** Global Engineering Solutions (see ad p. 39); **PAINT SUPPLIER:** Sherwin Williams (see ad, p. 6)

Fluvanna Realizes Its **Plan for the Future**

By Douglas E. Gordon, Hon. AIA



Fluvanna is a moderately sized county for Virginia insofar as population goes. Nonetheless, it has tremendous plans for the future of its schools.

The central-Virginia rural community's secondary education program is already well-regarded, having earned a place on the 2012 *U.S. News & World Report* list of top schools in the country, with a third of its students participating in advanced placement programs. And that ranking was based on the performance of students attending a 1970s-era school facility. Now, with a brand new high school as of this year, designed by BCWH, the future is wide open. "We call this our new beginning," says Fluvanna High School Principal James Barlow.

The community's planning process began more than a decade ago, notes BCWH Principal Roger D. Richardson, AIA. Projections at the time presented the county with two options: build a smaller supplemental school or build a larger and expandable new replacement facility. The county chose the latter. The high school is programmed and designed as a community focal point serving county residents as well.

The new building has four levels with 70 instructional spaces, including labs, accommodating 1,500 students. It can expand to 1,750 students over the next decade, through the incremental addition of classrooms, and still maintain the target student/teacher ratio of 22/1. Core areas—such as the two-story library, food services areas, and auditorium—are already sized to accommodate that expansion. The building is master planned to be able to grow to 2,500 students through more extensive additions, such as enlarging the dining commons area.

Ultimately, the high school is just one part of a cascade of physical improvements to the county's school system. To accommodate the anticipated growth in the number of intermediate and elementary students, the plan is to renovate the old high school into a middle school and convert the middle school to provide space for elementary students.

The new high school for Fluvanna County has a timeless Modern entryway that will be iconic in the minds of its matriculating students—despite the school's planned reinventions—even when they come back for their 40th reunion in 2055.

Terracing and landscaping welcome students from the bus drop-off past arts and vocational-study areas. Expansive, well-lighted hallways provide open access to communal spaces that make student interaction pleasant and welcoming.

Common space for eating can accommodate the projected student population for at least 10 years, and is expandable to meet the county's expected growth for 30 more.

Programming for the school

Things have changed quite a bit in the past 40 years since the county built the last high school, and Fluvanna residents embraced an outlook that the rate of progress will only increase into the future. The building needed to anticipate inevitable (albeit unknowable) changes in every area from curriculum diversity to student/teacher/technology interaction.

"We've been working with Fluvanna for 20 years now," Richardson says. "We have a strong relationship with the school board and understand their vision for the future. From that base, we undertook a planning process that went on for close to a year and involved school administrators, faculty, students, and community representatives. The resulting plan and vision aligned the core curriculum and career and technical education programs to support diverse learning needs and a universal pursuit of excellence and commitment to life-long learning."

In addition to the design applications the BCWH team spent time watching how students and faculty interact daily. Taken as a whole, the design team organized a school of the present yet for the future; one where students are not necessarily bound to the physical facility as we perceive it today.

Overall, the high school facility has the look and feel of a college campus, one student told a local newspaper reporter during the school ribbon-cutting ceremony in August.

"The biggest challenge is always the budget," Richardson says. "When this project started a dozen years ago, the projection was $40 million. By 2006, when the project was ready to go, costs were up, and, with all the things the stakeholders wanted to achieve, the estimate was closer to $64 million. Debate and evaluation ensued, and the ultimate bid came in at $57 million."

Some savings came from the project coming on line just as the market hit its downturn. Another change was the

Areas devoted to locker storage provide another congregating space but not in transitional areas. Locker-free hallways, theoretically, will keep those areas free of congestion.

Davis-Bacon Act. The county paid for the school through bonds, and the architect and county worked together to document those elements of the project eligible for American Reinvestment Act funds, which carried zero financing charge. "By spending $600,000, the county was able to save an additional $1.5 million," Richardson notes. "And any funds we were able to save went toward facilities the client had moved to its alternative needs list."

A collection of learning communities

Size was a definite design factor in determining the layout of the school. Students have to be able to move within the facilities within a reasonable timeframe, so the design subdivides the high school into communities, which allows the students to share core areas and migrate to particular areas as needed for their individual educational path.

"We initially broke it into three communities, with a fourth possible for the future," Richardson explains: world health, global communications, and technology. So a student in the health sciences would get access to all core curriculum—math, English, and social studies—then also have adjacent access to science, nursing, emergency medical technical, and health and human science facilities. Global communications would, for their part, connect to technology in communications, broadcast, and journalism areas.

"The other thing the future plan embraces," Richardson continues, "is that these students are tomorrow's leaders. To prepare them to be independent and collaborative, we needed to provide appropriate spaces: small, individual ones for independent work, small-group collaborative areas, and large inter-disciplinary places. To encourage

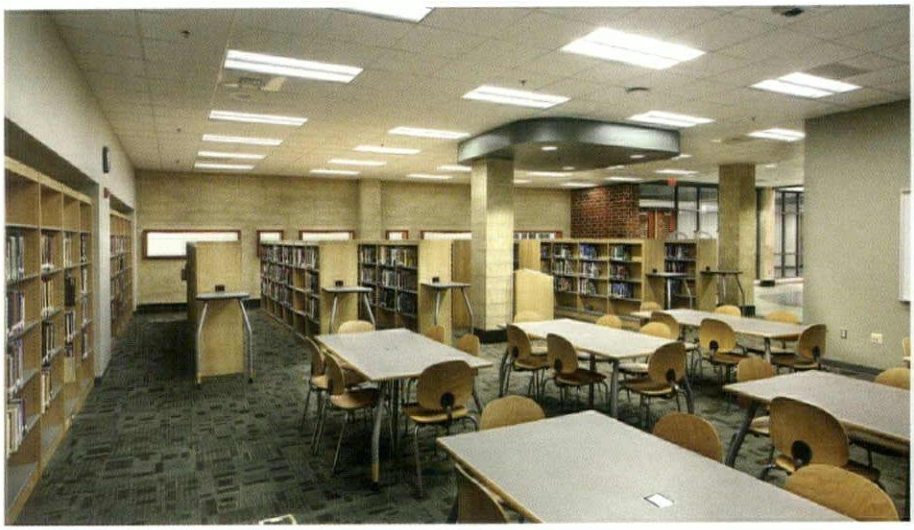
A dedicated performing venue is new for the school. "Imagine the excitement when students first perform there," Brenda Gilliam says.

collaboration among students, the design team had to change our own thinking. For example, instead of STEM (science, technology, engineering, and math), we see the adjacency-planning acronym as STEAM (science, technology, engineering, arts, and math), which excites us as architects, particularly, because it explores all those applications involving visual information."

In addition to group working areas, such as the learning libraries—two-tiered spaces similar to college learning areas with sound systems that allow all students to hear the teacher and participate—there is a main library that facilitates research through shelved books as well as electronically accessed information. The library features a coffee bar, which the planning committee found particularly appealing as a way to attract students, and has ready access to common spaces.

Students arrive in the morning along a terraced, landscaped courtyard that also provides outside gathering places. On their way to locker bays, they pass the highly visible performing, culinary, and fine arts and building-trades facilities. (Taking lockers out of the circulation area reduces hallway congestion.)

The school now boasts a gymnasium that seats 2,000 for basketball and volleyball. There is also an auxiliary gym, which the school was able to afford by realizing savings elsewhere. Directly accessible from the outside, it can be used by the community, the same as a fitness center at the front of the school. Outside, near the field house with its locker rooms and refreshment amenities are the competition fields and football stadium with artificial turf, another of the additive alternates.



Library areas provide access to books as well as electronic information, which allows students a full range of research and study options.

Resource efficiency

This building currently is tracking LEED Silver. It provides lots of natural light in every instructional space, which have light controls to dim mechanical lighting automatically, as appropriate, along the window (brighter) and corridor (dimmer) sides of rooms. Exterior shading devices reflect glare-free light onto room surfaces. Classrooms are environmentally sound, safe, comfortable, and efficient so they do not distract from learning by

being uncomfortable.

This will be more energy-efficient than the old school. "It's a bigger building, though," Richardson says, "so whether it consumes less energy overall is yet to be seen. We've also taken the step to control lighting with motion detectors. And the roof reflects heat rather than absorbs it and is well insulated to further reduce heat transfer."

Other elements include "green housekeeping" guidelines for environmentally sensitive cleaning products and practices. For instance, the building features linoleum tile, an attractive, renewable material that is readily cleaned with a wet mop. "That's a green housekeeping approach because you don't have to use chemicals that would go into the water treatment system," Richardson explains. "A number of the products we've used are renewable with high recycled-material content. The outside of the building is trimmed with long-lasting aluminum-composite metal panels manufactured from up to 90-percent post-consumer recycled material.

"The idea behind LEED certification was not to get a plaque on the wall. It was to be a good example, with the building serving as a teaching tool to everyone about how to behave in the larger community. With integrated recycling and containers distributed everywhere throughout, the building will inspire a culture of conservation because it shows that a building's performance depends, in part, on how its occupants behave.

"Overall, this is one of the most advanced and innovative high school instructional environments in Virginia," Richardson says. "In fact, there is talk of having partnerships with nearby higher-education institutions, which would use the building after hours as satellite learning facilities."

It's a nice place to be, too, adds Fluvanna School System Director of Secondary Instruction Brenda Gilliam: "The spaces in the new school are so welcoming, open, and filled with the natural light. The really great thing is that the experiences the kids have in the classroom are very similar to what they will face in the real world. Walking through the campus, you get a tremendous feeling of walking through college campus."

Wheels on desks and chairs—and a number of desktop options—allow ready reconf

classroom spaces to suit specific instructional and workgroup ne

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Ashland, VA 23005
Tel: 804-550-2090
Fax: 804-550-2095
Email: AHegarty@FCSassociate.net
Web: www.FoodserviceConsultantsStudio.com
Contact: Amy E. Hegarty, CID, ASID, CFSP, LEED Green Associate

We are fee-based institutional kitchen designers and, as such, specify foodservice equipment that best meets the architectural client's needs and project goals. We've completed projects throughout Virginia, the U.S., and internationally. Programming & Schematic through CA. Certified small, women-owned business. Specializing in K-12, university, corporate, health care and military.

Recent projects: Warrior Café, Walter Reed National Military Medical Center, Bethesda, Md.; CFA Institute, Charlottesville; Capital One, West Creek, Richmond; Kellam High School, Virginia Beach; Virginia Commonwealth University Institute for Contemporary Art, Richmond.

• Foodservice Solutions Design Consultants
605B Jack Rabbit Rd.
Virginia Beach, VA 23451
Tel: 757-425-0005
Fax: 757-623-8903
Email: info@fsdesignconsultants.com
Web: www.fsdesignconsultants.com
Contact: Robin Nelson

Let Foodservice Solutions Design Consultants' experienced design team plan, lay out, and specify your commercial kitchens. Space planning, kitchen layouts, seating plans, electrical and plumbing rough-ins, elevations, 3-D renderings, the latest Autodesk® programs. We can meet clients at their sites, your office, or ours. NAFEM Certified Food Service Professionals. Woman-owned, SWAM.

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Fayetteville, NC 28305
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Fax: 910-484-0576
Email: melanieg@thompsonlittle.com
Web: www.thompsonlittle.com
Contact: Andrew D. O'Quinn

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3808 Annandale Rd.
Annandale, VA 22003
Tel: 703-658-1350
Fax: 703-658-5038
Email: woody@woodburnassoc.com
Web: www.woodburnassoc.com
Contact: J.M. (Woody) Woodburn, FCSI

Woodburn & Associates, Inc., designs foodservice facilities—providing independent services from programming through installation coordination with in-house CAD and Revit documentation, dimensioned utility rough-ins, and millwork detailing for a variety of food handling operations in corporate offices, hotels, conference centers, hospitals, universities, commissaries, churches, military, and restaurants.

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Alexandria, VA 22314
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Fax: 703-684-6273
Email: light@cmkling.com
Web: www.cmkling.com
Contact: Candace M. Kling, FIALD, IESNA

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• Kuyk & Associates, Inc.
P.O. Box 7291
Charlottesville, VA 22906
Tel: 434-974-9300
Fax: 434-974-9302
Email: info@kuyk.com
Web: www.kuyk.com
Contact: Dirk Kuyk III, LC

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Recent projects: Garrett Hall, University of Virginia, Charlottesville; Alumnae Hall, Hood College, Frederick, Md.; Davidson's Men's Store, Roanoke; Saint John's Episcopal Church, Roanoke; Kay Spiritual Center, American University, Washington, D.C.; Alleghany Highlands Arts and Crafts Center, Clifton Forge; Trinity Episcopal Church, New Orleans; and private residences from Virginia to Massachusetts.

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1000 Potomac St., NW, Ste. 121
Washington, DC 20007
Tel: 202-298-8062
Fax: 202-298-8079
Email: moran@mcla-inc.com
Web: www.mcla-inc.com
Contact: Maureen Moran

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- **The Specialty Group**
  9 West Cary St.
  Richmond, VA 23220
  Tel: 804-264-3000
  Fax: 804-262-5973
  Email: info@thespecialtygrp.com
  Web: www.thespecialtygrp.com
  Contact: Tony Lovette

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ROOFING

- **Lucas & Associates**
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  Tel: 804-594-3610
  Fax: 804-594-3609
  Email: lucasassociates@comcast.net
  Contact: Bob Lucas

Lucas & Associates is a design-oriented firm specializing in roofing and waterproofing assemblies. We offer professional consulting services to A&E firms, building owners, and facility and property managers. Our services include surveys and evaluations of existing conditions, complete design services for new and replacement systems, and ConA and on-site construction observation.

Recent projects: Department of Military Affairs, Warrenton Armory roof replacement, Warrenton, Va.; Virginia Beach City Public Schools, Strawbridge Elementary School roof replacement, Virginia Beach; Norfolk Public Schools, Lake Taylor High School roof replacement, Norfolk; Science Museum of Virginia, IMAX Theater roof replacement—green roof, Richmond; First National Bank Building roof replacement, Richmond.

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  Contact: Ned Dunford, VP Sales

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Recent projects: The Kennedy Center, Washington, D.C.; UVa Garrett Hall, Charlottesville; George Mason University, Fairfax; University of Virginia Rehearsal Hall, Charlottesville; Richmond Ballet, Richmond; The Fillmore in Washington, D.C.; and numerous high schools across Virginia.

THEATER CONSULTING

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Our consulting services include planning for audience access, amenities, and sightlines; analysis of technical and space requirements for the stage, the performers, the technicians, and equipment storage; and design of rigging and lighting systems. We are independent theater consultants.

Recent projects: Linganore and Oakdale High Schools, Frederick, Md.; Norfolk Collegiate School Performing Arts Center, Norfolk; Conmy Hall, Fort Myer, Arlington; Blue Ridge Community College, Weyers Cave, Va.; Brooklyn Academy of Music, New York City; Carrington Pavilion, Danville; Wilder Performing Arts Center, Norfolk.

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Recent projects: The Kennedy Center, Washington, D.C.; UVa Garrett Hall, Charlottesville; George Mason University, Fairfax; University of Virginia Rehearsal Hall, Charlottesville; Richmond Ballet, Richmond; The Fillmore in Washington, D.C., and numerous high schools across the state.

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Contact Shanelle Calvin at (804) 237-1772 or scalvin@aiava.org.

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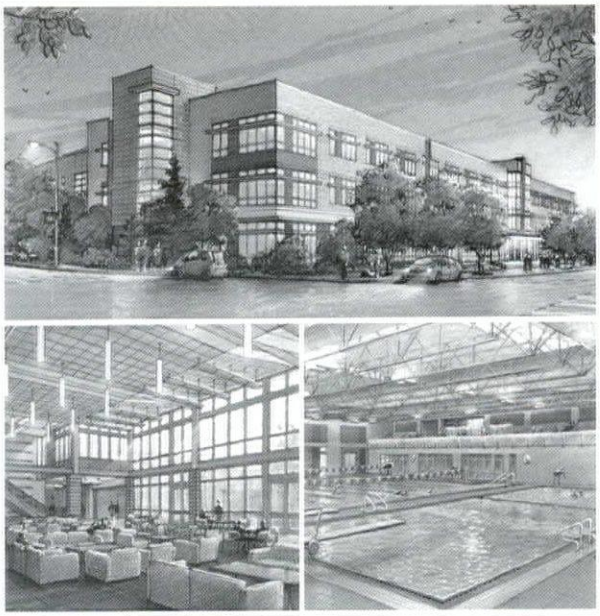
on the Boards

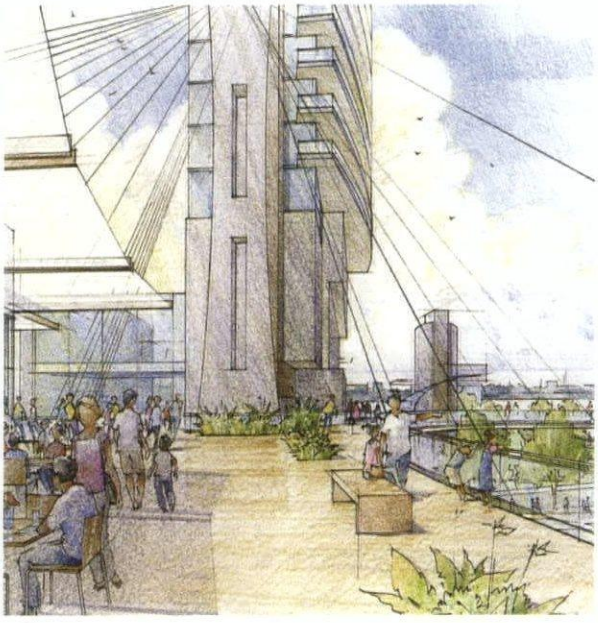
Architect: Dewberry, Fairfax
Project: Chatham County Courthouse, Savannah, Ga.

Dewberry Architects are designing a new 125,000-sf free-standing court annex to house the Superior and State Courts in the historic district of Savannah, Ga. Tel: 703.698.9050 / www.dewberry.com



Architect: Bowie Gridley Architects, Washington, D.C.
Project: Wakefield High School, Arlington

Slated for August 2013, the new Wakefield High School re flects current standards for a school population of 1,600 stu dents and features many sustainable design features. Tel 202.337.0888 / www.bowiegridley.com

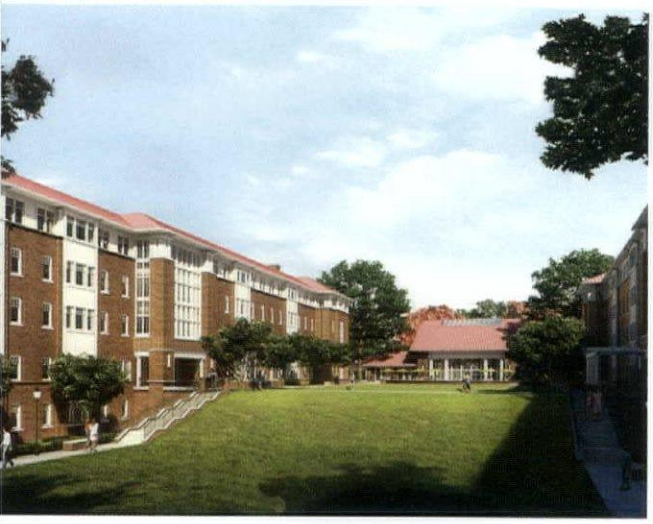


Architect: Clark Nexsen and Harvey Lindsay Development Group
Project: Re-Development Proposal, Norfolk

This project connects downtown Norfolk to a lively new waterfront district containing an exhibit hall, office buildings, hotels, and an elevated park. Tel: 757.455.5800 / www.clarknexsen.com

Architect: HKS Architects
Project: The John Dempsey Hospital at University of Connecticut Health Center, Farmington, Conn.

The 315,000-sf, 169-bed addition weaves together the can ons of academics, research, and patient care, both program matically and through thoughtful play of massing and mate rials. Tel: 804.644.8400 / www.hksinc.com



Architect: Mitchell/Matthews, Charlottesville
Project: Longwood North Campus Student Housing, Farmville

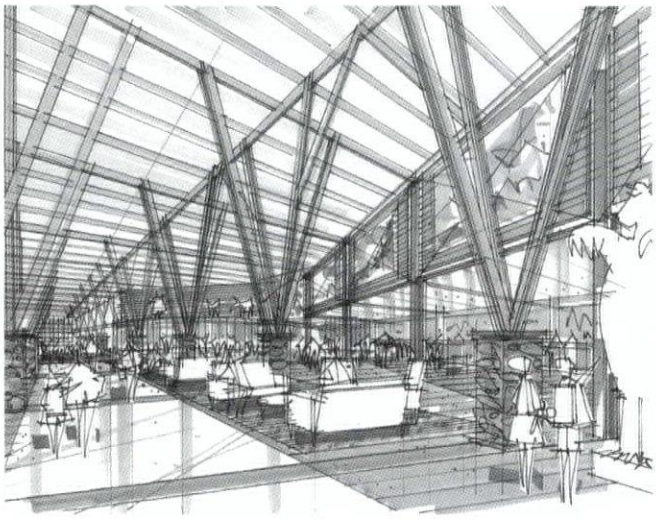
The winning design scheme for North Campus at Longwood University brings order and convenience to an under-utilized and challenging parcel of land adjacent to the central campus. Tel: 434.979.7550 / www.mitchellmatthews.com

Architect: Moseley Architects, Richmond
Project: Henrico Fire Station 10, Henrico, Va.

Offering more than 12,000 sf, this LEED®-registered (seeking Silver certification) project features three drive-through bays and accommodations for 15 firefighters. Tel: 804.794.7555 / www.moseleyarchitects.com

Architect: ODELL, Richmond
Project: Clay Road Office Complex, Houston

Located in the Energy Corridor on the west side of Houston, the Clay Road Office Complex places 750,000 sf of Class A office space in two high-rise towers framing a central landscape park and targeting LEED® Silver certification. Tel: 804.287.8200 / www.odell.com



Architect: Price Studios, Richmond
Project: Missoula International Airport Terminal Renovation, Missoula, Mont.

Renovation and expansion of the existing terminal to serve the functional demands of increased air traffic while expressing the natural beauty of the surrounding region. Tel: 804.521.2266 / www.pricestudios.com

Architect: RRMM Architects, Chesapeake

Project: P1378 Wounded Warrior Hope and Care Center and P1330 Battalion Headquarters Building, Marine Corps Base, Camp Lejeune, N.C.

The LEED® Silver Center will provide a facility that supports wounded marines and sailors in their rehabilitation and transition back to active duty or separation. Tel: 757.622.2828 / www.rrmm.com

Architect: Wiley|Wilson, Lynchburg

Project: Montgomery County Public Safety Building, Christiansburg

The county is incorporating high performance features into this adaptive reuse of its 1970s-era courthouse to house the sheriff and the regional Emergency Communications Center. Tel: 434.947.1901 / www.wileywilson.com

inform

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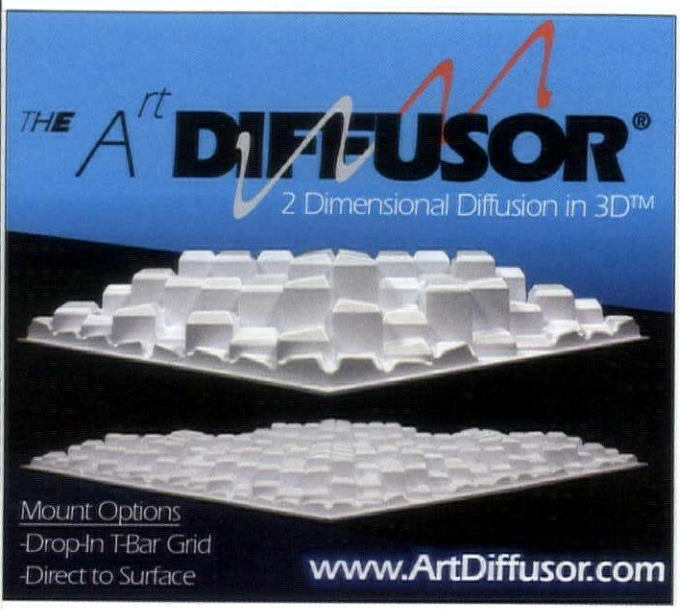

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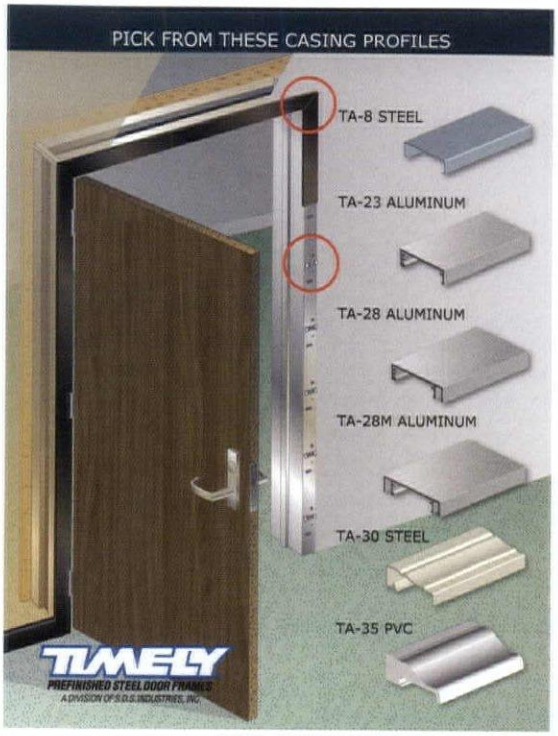

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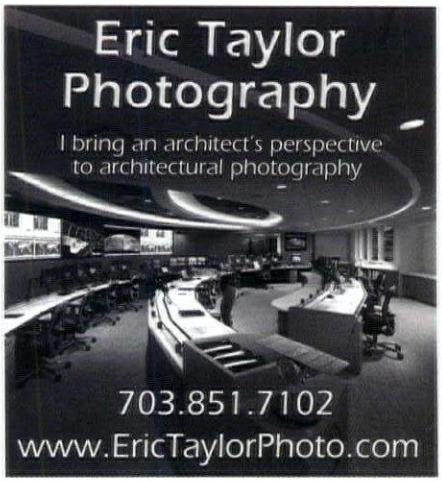


Architects Aim for a Pandemic of Health

By Tye Farrow, FRAIC

Whether at an oncology center in Trinidad and Tobago (National Oncology Centre, Port of Spain) or an eco-tourism destination in the Canadian wilderness (E'Terra Samara Resort, Bruce Peninsula, Ontario), connections to serene, natural respite soothe the mind and thereby heal the body. Images courtesy of Farrow Partnership Architects Inc.

The word health, unfortunately, has become synonymous with ***healthcare*** deficiencies and austere cost-reduction measures. Heated debates over medical care insurance reform have obscured the bigger question of how to reduce overall use of and dependence on medical services.

For answers to our most dire chronic disease problems, we need to look outside the field of medicine. Many doctors would be the first to admit that their education taught them a lot about the causes of disease—pathology—and very little about creating health. Moreover, the assumption is that current conditions are likely to get worse.

In this culture of negative health, it's no wonder that costs are out of control.

Who will teach the public how to cause health instead? This gap in knowledge creates an enormous opportunity for architects. The profession is in a premier position to create "pandemics of health," that is to say, widespread outbreaks of health-causing design, which should be the essential focus of every city plan and the design of our schools, office buildings, and homes.

Now is the time for architects to claim and clarify their role in humanizing the places people live, work, play, and learn. And it's time to work with project decision makers to connect the dots between physical places, our state of mind, and our state of health. Chronic disease, alienation, and depression should not be seen primarily as personal deficiencies but rather as the result of unhealthy physical and social environments.

Architects can be the leaders in redirecting the $750 billion that are spent each year in America on unnecessary medical services, using that money instead to heal the built environment. While the traditional standard of care for doctors has been to "do no harm," the current burden of chronic disease, alienation, and depression will require a bigger agenda: accelerate a vast change in public demand for salutogenic (health-causing) design.

The first step in this quest is to recognize that we live in a world that has traditionally been fixated on pathologies and negative health anxieties. While ongoing research aimed at pinpointing what's bad for us will continue to yield crucial medical breakthroughs, it's time to balance pathology-oriented discoveries with an entirely different pursuit. To minimize the burden of illness on society, we need to launch a quest to create salutogenic places.

The fact that few people have ever heard the term ***salutogenic***, while pathogenic is more common, tells us a lot about where the traditional focus of society has been. Salutogenic is the antithesis of pathogenic. It's a big word for a simple idea: understanding what kind of environments make us feel better—humanized places that give whole communities the energy and motivation to lead healthier lives.

Humanizing changes in our built environment are beginning to break through everywhere, from small community projects to major city developments. But this humanizing movement needs more people who can analyze the difference between salutogenic and pathogenic places.

Generations of architects have tried to educate the public regarding how we create positive environments that feed the spirit. Five diagnostic vital signs can help any member of the public understand the most basic elements that contribute to healthy design. These plain-language questions have been created so that citizens and policy makers can look at their surroundings with a critical eye, then demand more from their built environment.

Five vital signs of healthy design

1. **Nature:** Does the design include elements from the natural world?

2. **Authenticity:** Does it reflect the values and deeply held beliefs of the people who live and work there?

3. **Variety:** Does the design provide visual interest and support diverse activities?

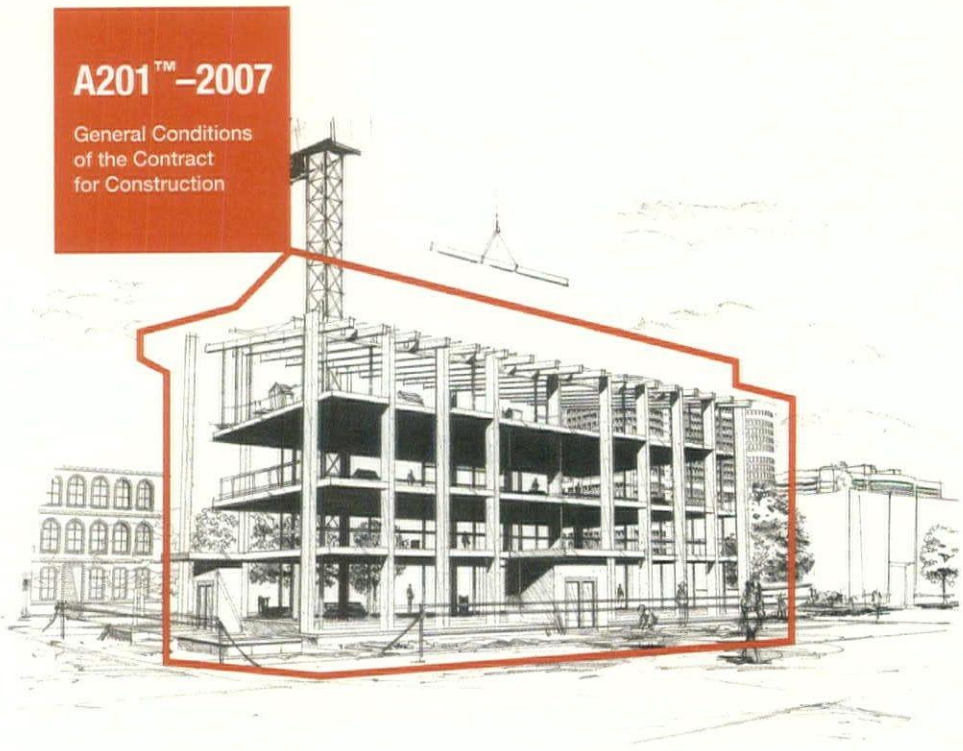
4. **Vitality:** Does the design convey energy and stimulate social interaction?

5. **Legacy:** Does the design go beyond sustainability to advance long-term health and prosperity?

In the same way that public health awareness has now moved beyond the baby steps of designated smoking rows on airplanes, every citizen must come to demand the Five Vital Signs of salutogenic design for their cities and neighborhoods.

This is a golden opportunity for our profession to take a leadership role in minimizing the burden of illness on society by accelerating a quest to discover and apply the causes of health.

Tye Farrow delivers the keynote address on advancements in salutogenic design at Architecture Exchange East 2012, November 7-9, in Richmond. For more information on the annual conference and additional continuing education opportunities, visit www.archex.net.



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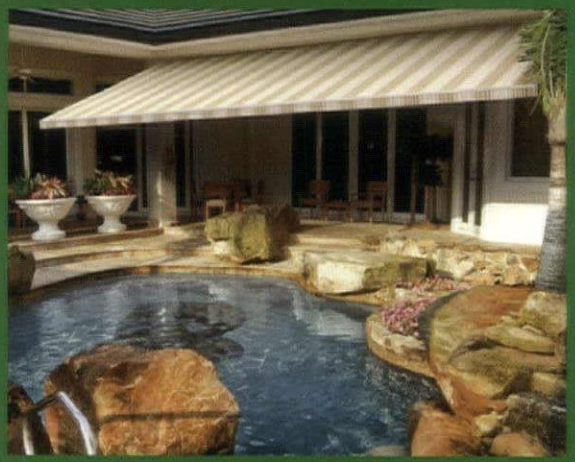

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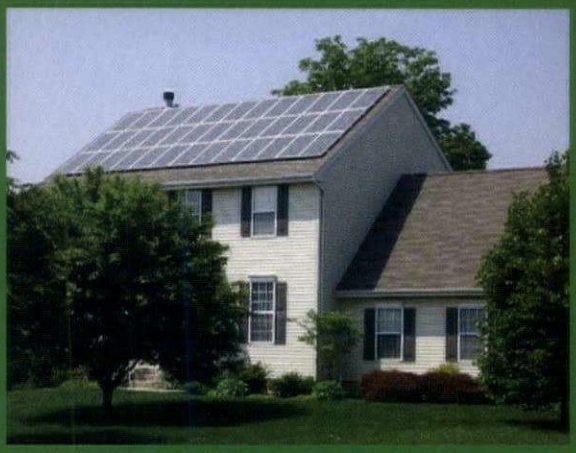

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