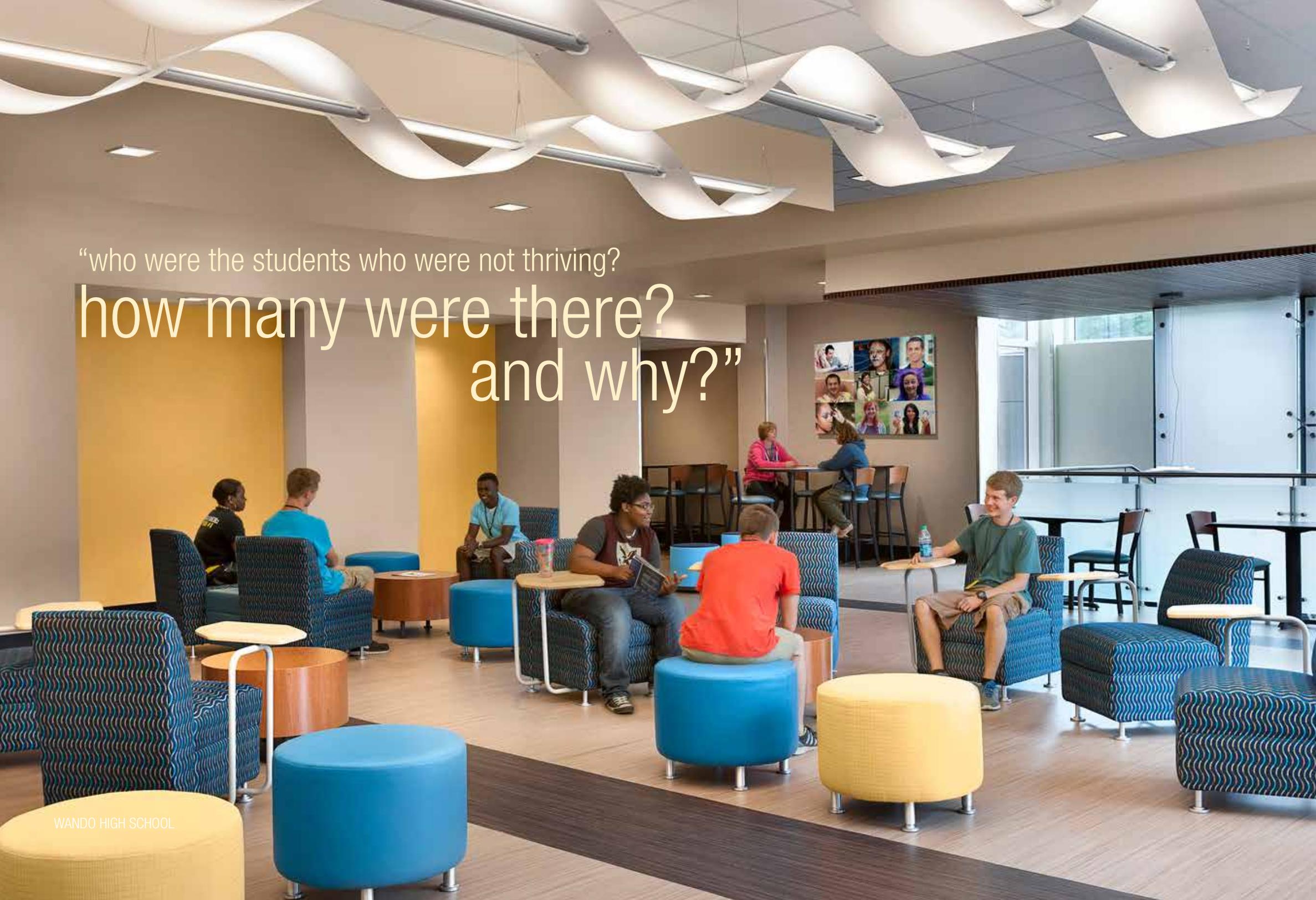




LS3P

**When Opportunity Knocks:**  
The Center for Advanced Studies at Wando High School



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how many were there?  
and why?”

WANDO HIGH SCHOOL

## When Opportunity Knocks

When Charleston County School District built Wando High School in Mt. Pleasant, SC in 2001, the campus was created for a 3,000 student population filled with high achievers. College-bound students, mostly upper middle class, were filling the school’s Advanced Placement courses, participating in extracurricular activities, and enjoying the benefits of an excellent school system solidly focused on academic success. For the majority of the system’s students, this arrangement worked well, and most students were thriving.

“Most students,” however, means “not all students.” Who were the students who were not thriving? How many were there? And why? This question has weighed heavily upon educators for as long as education has existed, and it can be a challenging question to answer.

Faster than expected student growth in the district, another perennial challenge in the field of education, provided CCSD with an unusual opportunity: to construct a new facility, on the campus of the existing Wando High School, which would alleviate enrollment pressures while providing space for new programs. Could these new programs solve larger problems than crowded classrooms? District leaders knew that they could.

## Vision 2016: A Bold Plan

CCSD doesn't believe in letting students fall through the cracks, and district leaders got to the heart of the problem: roughly 30% of students weren't planning to go to a four-year college after high school, and many of these students were dropping out of high school due to lack of interest in the college-oriented curriculum. These students were eager to be on a more focused career path while in high school so that they could explore career options, develop marketable skills and certification, or earn community college credit before graduation.

In 2011, district leaders released a strategic plan for student achievement targets for 2016. The Vision 2016 mission is straightforward: "to increase student achievement overall, and close achievement gaps in order to prepare all students to compete in a global economy and make a positive contribution to our community and nation." The district's objective supports the goals of all students, expecting that "Every child will graduate from CCSD with the critical skills and knowledge necessary to succeed in college and the 21st Century global workforce." CCSD believed that the new facility at Wando High School could be a powerful tool in achieving this vision. District leaders knew they needed not only a new building, but also a new model for innovation in education, and so they decided to

create the Wando Center for Advanced Studies.

## From the Ground Up

The district's vision for the center, which was to provide a facility to offer all of its students the opportunity to take advanced studies in anticipation of college, technical college, or the workforce, offered direct benefits to students with three different goals. In this new program, college-bound students could take courses in their chosen field of study to give them a head start in college, with access to state-of-the-art learning spaces such as biotechnology labs. Students planning to attend technical college could take entry-level courses while still in high school, earning academic credit towards future degree programs. Students entering the workforce directly could pursue marketable skills and entry-level certification in programs which would best position them to find jobs after graduation.

In developing this new curriculum, it quickly became clear that the district was breaking new ground in meeting the needs of 21st Century learners. CCSD reached out to LS3P, an architecture firm founded in Charleston in 1963, with experience in over 2,000 school designs

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The resulting programs reflect the ever-evolving, high-tech skills which offer both educational engagement and real-world productivity. The new curriculum features not only the traditional advanced placement courses and vocational programs such as cosmetology, auto tech, nursing, EMS, and horticulture, but also videography, television production, interactive media, aerospace engineering, and Homeland Security. With the programming complete, and a bold new curriculum in the works, designers set

about creating a space to make this vision a reality.

## Vision 2016, Made Visible

The design team knew that, to be truly effective in engaging students, this new educational model needed a space which shouted “transition.” A typical K-12 institutional building might communicate to students that this was just another school with same old options and a different title, so the architects looked to the higher education sector for inspiration. The result is a high-tech, high-impact building that feels more like a university building than a high school. Because the balance of career and collegiate focused students permeated the programming and design, the team made sure that entering the building feels as much like a transition from high school to college as a transition from high school to career.

across North and South Carolina. LS3P’s David Burt, AIA, CDT, LEED AP BD+C, served as Project Manager for the endeavor. Burt recalls, “There were very few standard school guidelines that applied to the design of this building.”

The first challenge, and one of the most critical, was to determine which programs would be engaging, relevant, and effective for students. During the programming phase, before the architects put pencil to paper, designers, CCSD leaders, and Trident Technical College, a Charleston-area technical college, collaborated closely on research and curriculum development. The design team engaged the local business community to investigate which skills were most sought-after among new graduates, and what programs might benefit the wider community in addition to the student population.



Lucy Beckham, Principal of Wando Center for Advanced Studies, knows firsthand what this investment in facilities means to her students. She describes watching the high schoolers enter the main entry atrium for the first time, seeing the touch screens, digital kiosks, and an array of flat screens embedded in a digital wall streaming information and student-centered art. “What I saw was gaping mouths,” she says. “One of the students said, ‘It’s amazing!’ Then another said, ‘Is this for us?’ That same level of joy and praise is sustaining, weeks into the school year.”

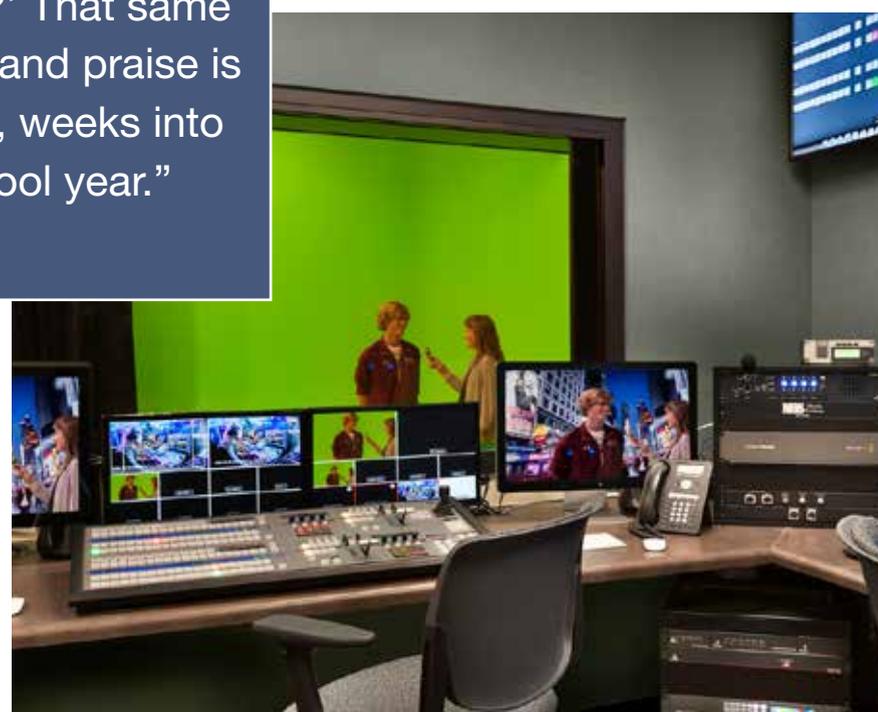
The new 125,000 SF building sits on the campus of Wando High School, sharing parking and site facilities and offering students easy access. The facility accommodates 600 students at a time, though over the course of a day, it's used by 2,400 students in various classes (and some technical college students in the community are already using the facility for evening courses.) The expansive digital entry provides a “wow” factor, announcing that this is not the high school of yesteryear, but the design achieves far more than a memorable first impression. The building itself ensures that programs for all types of students are visible, intertwined, and mutually respectful. Subtly facilitating constant interaction of diverse student groups, the design supports collaboration and collegiality throughout both academic and informal spaces. The hands-on courses being taught in the building are prominently showcased along windowed corridors, and the curriculum spaces include carefully-considered changes to support better teaching and more engaged learning.

In creating the learning spaces, the design team relied heavily on the latest research on best practices for learning, 21st Century School Design concepts,

and the most important tool in the design toolbox—listening. Standardized curriculum spaces were not always helpful to the teachers involved; for example, the usual design for a cosmetology class involved barber’s chairs in rows facing each other, with rows of mirrors in between. Teachers told the architects that this configuration made it difficult to circulate, observe, and provide individual instruction. The designers reworked the standardized design to place the chairs at mirrors around the perimeter, so the instructors could see every chair at once. It’s a small change, but one with a big impact. In interviewing teachers from programs from auto tech to landscape architecture to nursing, designers first sought to deeply understand the needs of each unique curriculum, then to tailor a space to meet each need.

Burt found the design of specialized spaces for a new paradigm of learning to be an engaging challenge, as there was no template in place for this type of project. “I learned so much more about each of the subjects being considered, and how that translates into future employment opportunities for the students, than I ever could have imagined,” he tells us. Because the facility needed to reflect a focus on leading-edge technology, the team looked for meaningful ways to integrate technology into each program. The horticulture program, for example, is not just

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about landscape maintenance; the design team included an autoclave room so that students could germinate seeds to make new hybrids of plants. In a modern-day twist on the standard horticultural curriculum, the program is taught on a rooftop, preparing students for working in the relatively new field of green roof technology and installation. A rooftop cistern collects rainwater coming off of a higher roof level and is used for irrigation, giving students a visible example of sustainability.

Other learning spaces incorporate 21st Century School Design concepts as well as elements of contemporary work environments. Group study rooms and tutoring rooms sprinkled throughout the building accommodate group sizes from 2-10 in a variety of spaces for small-group projects, collaboration, and break-out discussions. For teachers, collaborative work centers encourage communication, reduce the sense of isolation which comes from being tethered to a particular space for most of the day, and allow more versatility in classroom use.

“There was no play book to design this building,” Beckham tells us. “It took a lot of hard work and a very dedicated design team partnering with us. The fact that the kids are so appreciative is like being in a college environment more than a high school,” she explains. “The kids are respectful and focused. Yes, it’s just a building, but having what it takes for these kids to make their dreams

a reality is what this is all about. This project is a dream builder.”

## Making it Look Easy

The new facility is as impactful from the outside as it is on the inside, sending a strong message about educational investment, commitment to innovation, and the power of forward-looking technology to the wider community. Located along a busy commercial corridor adjacent to the existing high school, the exterior had to meet strict design guidelines to satisfy the developer’s requirement for a building with a presence along the prominent boulevard. The sleek brick, glass, and metal panel exterior is a departure from traditional school architecture, and is organized with three slender wings reaching to the east. This configuration allowed the majority of academic spaces to be oriented to the north or south, the most sustainable layout in Coastal South Carolina for daylighting and passive energy controls. Light shelves and sun shades on the south-facing elevations control heat gain and glare while allowing natural light deep into the building for student wellness and a more effective learning environment. The main entry, situated between 2 of the wings facing the existing high school building, leads into a 3-story atrium that connects all the way through the building to an outdoor dining courtyard fronting the commercial corridor.

In addition to daylighting and passive solar technologies, other sustainable strategies include LED fixtures with light sensors, a high-efficiency HVAC system, and ventilation systems designed for excellent indoor air quality. Extended hours of occupancy also make this one of the most efficient buildings in the school district. The dedicated outside air system tempers and distributes ventilation air directly to the occupied spaces as required, and also provides humidity control within the building. The building HVAC system features dedicated outside air distribution and individual zone water source heat pumps, and the central plant includes high efficiency modulating, full-condensing hot water boilers for supplemental heating as needed.

The site itself provided geographic challenges requiring high-tech solutions. Charleston is located in a seismic zone as well as a high-wind zone, and the building needed to remain safe and structurally sound in the face of seismic activity or hurricane-force winds. The unstable soil was not sufficiently compact, and in a zone subject to liquefaction, so in lieu of installing piles, the design team chose to install seismic drains. This engineered solution utilizes vertical French drains and a reservoir near the floor slab to alleviate water pressures applied to the building during a seismic event, making the building much safer for occupants. The steel moment frame structure also provides ductility

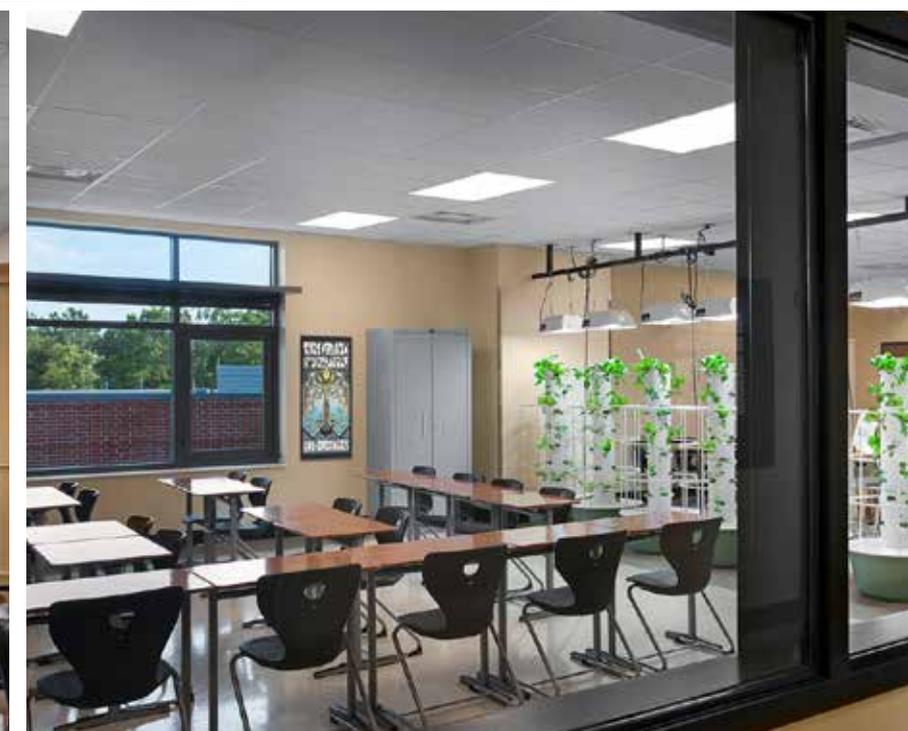




and resiliency in the event of ground shaking. To resist damage due to wind-driven rain, the building skin creates a continuous drain plane made of a fluid-applied air barrier applied to the sheathing, with phenolic panels, metal panels, or brick veneer acting as the first line of defense. Impact glazing used throughout the project is designed to resist flying debris in the event of a hurricane or wind storm.

## Designing for the Future

At the end of the day, though, the building's high-tech, high performance systems are a small part of the story. The real message is about the investment of the CCSD in its students, and in their futures. Engaging programs, innovative design to complement the innovative curriculum, and a visible commitment to student achievement all underscore the Vision 2016 belief that "with the right supports, high expectations and great teaching, every student can graduate from high school with the skills to succeed in college, the workforce, and life."

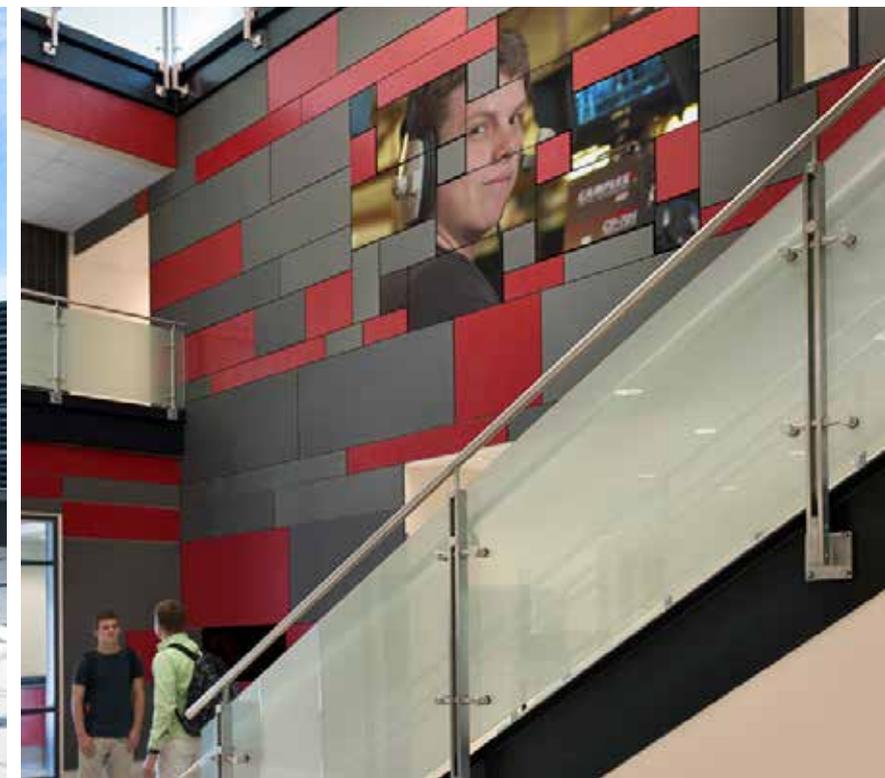


The Center for Advanced Studies at Wando makes an investment in this fundamental belief which is real, visible, and accessible to all. At the school's dedication ceremony, Dr. Nancy J. McGinley, the Superintendent of CCSD, told the crowd, "I am so excited that this school meets the needs of all children. It taps into the interests of a diverse community of students.

This project is an example of leading the nation, not following.” William Lewis, former Chief Operational Officer for Capitol Programs for CCSD, sees this building taking students far into the future, stating that “this building is about agility and adaptability.” Mount Pleasant’s Mayor Linda Page sees a wider impact of the school on the entire community. “Great communities are built on work forces,” she explains. “Industry will come here because of what this community has created.”

It’s an investment which makes the district proud, and the community stronger, but the real dividends are in engagement, preparation, and success, which the students at Wando Center for Advanced Studies are already reaping.

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