EDUCATIONAL SPECIFICATIONS FOR 21ST-CENTURY TEACHING AND LEARNING A COMPANION FOR SCHOOL COMMUNITIES

BALTIMORE CITY public schools

August 13, 2013

There is real momentum in Baltimore City Public Schools and a powerful sense of possibility about what students can accomplish and what that will mean for Baltimore City. In 2012, the Baltimore City Board of School Commissioners set a bold vision for the district:

In 10 years, all City Schools students will learn in buildings that embody 21st-century standards of excellence.

This vision set in motion City Schools' 21st-Century Buildings for Our Kids initiative. To fulfill the vision, the Board articulated a set of guiding principles that the district in turn used to develop a plan with specific recommendations for renovating and replacing all of its school buildings, starting in the 2014-15 school year.

Guiding Principles

- Invest to support academic success for all students
- Maximize fiscal responsibility and stewardship of resources
- Engage school communities to inform the creation of excellent school buildings for their students
- Align school buildings with demographic trends, enrollment trends and parent and student choices
- Invest to have maximum impact on community stability, growth or development
- Provide diverse options in every geographic area of the city
- Create school buildings on the cutting edge of technology and environmental sustainability

On May 16, 2013, after sustained advocacy by Mayor Stephanie Rawlings-Blake and a broad community coalition, the Maryland legislature passed and Governor Martin O'Malley signed into law House Bill 860, which establishes funding and oversight for City Schools' 21st-century buildings plan and will result in an approximately \$1 billion investment in 35 to 50 new and modernized school buildings during the plan's first phase. This initiative represents an unprecedented investment in the school district and in the city.

Visit the City Schools website (<u>www.baltimorecityschools.org/betterbuildings</u>) for a range of detailed documents, videos and other information about the buildings plan.

MOVING FROM VISION TO REALITY

Districtwide Educational Specifications: The First Step

Moving forward, the first step in this unprecedented school building modernization project is for City Schools to define what it means by 21st-century education and how school buildings can support that education. In recent months, the district and its stakeholders have collaborated to identify districtwide "educational specifications," the basic requirements all renovated and newly constructed school buildings should have to support this newly defined form of teaching and learning. The districtwide educational specifications describe

- The educational goals and the desired features of a learning environment
- General requirements, options and considerations to guide development of project-specific educational specifications unique to each individual school site

While each school community and school building is different—with its own particular history, vision, strengths and challenges—the districtwide educational specifications represent the necessary common features and considerations all modernized school buildings should have in order to ensure that all students get the high-quality, 21st-century learning environments they deserve.

Developing the Educational Specifications

In spring 2013, City Schools engaged Grimm + Parker, an architecture firm specializing in educational facility design, to conduct a series of focus groups to gather input on school design from a range of stakeholders. These stakeholders spanned City Schools staff, students and community partners, including

- City Schools' Parent Community Advisory Board (PCAB)
- Associated Student Congress of Baltimore City (ASCBC)
- PTA Council of Baltimore City
- Baltimore Education Coalition (BEC)
- Transform Baltimore
- Baltimoreans United in Leadership Development (BUILD)
- Attendance Collaborative
- Green Schools Network

Also in early summer, an online survey was posted on the City Schools website and sent to more than 800 school-level stakeholders who in summer 2012 had participated in community conversations about 21st-century buildings. District staff worked closely with the state Interagency Committee on School Construction (IAC) to ensure that all requirements of the Maryland State Department of Education and the IAC were incorporated during development of the educational specifications.

A first draft of these districtwide educational specifications was presented to the Board of School Commissioners and made available for public comment on July 9, 2013. Prior to the close of the public comment period, an information session was held to ensure that community members fully understood the structure and content of the document. At its public meeting on August 13, the Board voted to approve the specifications.

Reading the Educational Specifications

The educational specifications document is organized in two parts: the general, districtwide educational specifications for all 21st-century school buildings; and a set of examples of school-level educational specifications that can serve as prototypes for, and inform the work of, the district and individual school communities as they develop educational specifications to support individual school programs and needs.

- *Baltimore City Public Schools Educational Specifications—Part 1* includes the general requirements for all projects and does not need to be re-created or repeated as part of the school-level educational specifications.
- Baltimore City Public Schools Educational Specifications—Part 2 includes four school configuration prototypes for each of the district's four main grade groupings: pre-k to 5, pre-k to 8, 6 to 12 and 9 to 12. These will be used as the basis for building out project-specific educational specifications for individual schools. They are not intended to correlate to every individual project, but instead to be customized to support each unique school's program and needs. (Because the district includes very few schools that serve only grades 6 to 8, and these schools each have different requirements, specifications for middle schools will be reconfigured as needed from the prototypes for pre-k to 8 and 6 to 12.)

In addition to these districtwide educational specifications, each school will have project-specific educational specifications. City Schools is also developing "design standards" for use by the design teams that will lead the design of actual school buildings. These design standards will provide detailed and specific information about the construction techniques, materials and installation methods that must be used as part of City Schools' 21st-century buildings initiative.

For more details on how project-specific educational specifications will be created for each school, please see *Baltimore City Public Schools Educational Specifications—Part 1: General Requirements*.

21st-Century Teaching and Learning in City Schools

Baltimore City's students look to Baltimore City Public Schools to prepare them for success in college, career and life. To be successful, they must have the right mix of knowledge and skills to be competitive with peers from other educational settings, cities, states and countries. City Schools' students bring with them the potential to be powerful, creative learners; they have a wide range of unique talents and interests; and they are poised to direct their own lives and shape the world around them. They come to the district with big hopes and unlimited potential—potential exhibited daily in achievements inside and outside the classroom and in displays, large and small, of curiosity, confidence, civic engagement and leadership. The district must maximize this potential by creating access for all students to the best possible teaching and learning, in the best possible learning environments.

It is in this spirit and sense of obligation that City Schools is transforming its school buildings into spaces that not only allow for but inspire 21st-century teaching and learning. What and how students learn—and what and how teachers teach—are changing daily, and are significantly different from the education City Schools was originally established to deliver. While some attributes of 20th-century school buildings continue to support educational approaches in the 21st century, a new set of requirements must be added to those attributes so that more dynamic, adaptive learning environments can be created for today's—and tomorrow's—students.

As part of its commitment to transforming school buildings to support 21st-century education, City Schools has articulated

- The role of 21st-century school buildings in Baltimore
- A set of functions that are essential to the 21st-century educational experience and that all of its school buildings will support
- A set of design elements that are essential to the 21st-century educational experience and that all of its school buildings will feature
- A recommended organizational model for schools based on clusters of classrooms

The Role of 21st-Century School Buildings in Baltimore

As a result of the building renovations and replacements City Schools plans to conduct over the next decade, school buildings in Baltimore City will

- Foster deep community engagement and a sense of ownership by giving everyone the opportunity to invest in and actively participate toward the success of their schools
- Build on the positive momentum currently focused on the city's schools to recruit and maintain the best educators and encourage them to cultivate innovation in flexible and adaptive teaching environments
- Employ the latest technology that evolves and is fully integrated with the way students learn
- Adapt to the wide range of diverse neighborhood environments across the city and instill a sense of pride by addressing the specific needs and legacy of each distinct community
- Create flexible learning environments and clustered spaces that nurture collaboration and interaction across disciplines and communities

- Deliver a high-quality learning experience to rival competitive school choices in the area and keeps families in the city
- Convey a message of sustainability through energy efficiency, resource stewardship and use of durable materials
- Meet the unique safety needs of neighborhoods, while providing welcoming and inviting buildings

Essential Functions of 21st-Century Learning Space

All new or renovated school buildings should be designed to do the following.

Cultivate Knowledge and Skills

Ensuring that City Schools students graduate from high school ready for college and career training and positioned for success in the 21st century requires them to have strong grounding both in core academics and in skills that span technology, problem solving, perseverance, critical thinking and communication (written and oral)—all skills that are essential in today's workforce and to fostering the necessary creativity and adaptability for jobs that don't yet exist. While many of the space attributes of a traditional educational model remain relevant, a new set of requirements should be added to this model to provide a more dynamic and adaptive learning environment.

Provide Flexible, Adaptive Spaces for Learning

City Schools gives broad yet bounded autonomy to schools when it comes to decisions about allocation of resources, because schools know best what their students need to succeed. Because of this, each school community is unique. This, in turn, requires creation of a range of physical spaces that allow for many different learning experiences, day-to-day flexibility in use of space and adaptability over time. On one hand, spaces must be designed in a way that teachers and students are able to make the most of them; on the other hand, they must be flexible enough to be repurposed—now and in the future. Instructional practices change over time, and spaces must have sufficient flexibility built into their design to meet shifting trends in teaching and learning.

Inspire Social Interaction

As young people increasingly engage in and rely on Internet communities, face-to-face socialization and collaboration in school become increasingly important to the healthy development of students as productive members of society. So while program spaces in schools must be designed to incorporate technology (such as Wi-Fi with adequate bandwidth, network data connections and power stations in the walls, floors and furniture to support student work and expanded opportunities for communication), they must also invite impromptu socializing and structured collaboration inside and outside of class time. They should accommodate a multitude of uses, including small performances, dining and community use after school hours.

Support Diverse Instructional Styles

Instructional practices are always evolving, and educational spaces need to be able to support multiple modes of curriculum delivery—and transition from one mode to another. For example, educational spaces need to support inquiry-based projects and project-based learning, and they need to feature

laboratory-style spaces such as interactive learning labs, tinkering spaces and workshops with flexible technology that allow students to work in groups or enable a single student to lead an entire class. These spaces must afford seamless transitions from whole-group learning to small-group and individual teacher-student interactions, for all disciplines and ages.

Welcome and Include Parents and Communities

Schools are essential to the communities they serve. Research shows that schools with involved parents typically also have high levels of student achievement, and schools that are connected and integral to their communities help secure the health of—and spur improvement in—those communities. The successful integration of schools and communities requires a vision of partnership and collaboration that allows for joint use of school buildings with, for example, multifunctional spaces that are used by the school during the day but available to the community after hours. School buildings should accommodate mentoring programs for students, activities by partner organizations to support students and families and community access to resource and meeting space, as well as to recreational facilities and playgrounds.

Accommodate Multiple Forms of Collaboration

In the 21st century, the definition of collaboration is expanding to include collaborations of all forms from one-on-one student interaction to partnering and communication on a global scale. The move away from departmental structures toward team-based, collaborative teaching, for example, means that while a school's organizational principles can be designed to support one or the other organizational approach, its overall design should allow for both. Flexibility in building design and technology will support collaborative teaching and learning and help foster open communication both within the school itself and among schools throughout the city and around the world. Space equipped for video conferencing and live streaming allows students and teachers to access—and create for others—resources outside of the school building. The way schools are organized and space in schools is created must express a school district's larger values around collaboration.

Essential Design Elements of 21st-Century Learning Space

City Schools has identified the following design elements, common among successful 21st-century educational spaces, as essential to its new and renovated school buildings:

- Openness and transparency between learning spaces
- Rooms that open to each other
- Seamless technology with wireless capability that is universally available
- Provisions for charging of portable devices
- A variety of seating styles and chairs that allow different ways to sit or move
- Surfaces that can be projected on and written on throughout
- Spaces that are open to circulation and don't impede the flow of traffic
- High ceilings with multiple lighting levels, where possible
- Comfortable furniture and furniture with built-in power for technology needs
- Movable work surfaces that allow different arrangements for group work
- Movable storage furniture to create different spatial configurations in a room

Clustering Learning Spaces

City Schools' educational specifications encourage the clustering of classrooms as an organizational device for 21st-century school buildings. Clusters, which are just one of many ways of approaching spatial organization, create a flow that allows for common use of space, collaboration and flexibility—essential design elements cited earlier.

A school can have multiple clusters throughout its building. These clusters can accommodate 100 to 200 students, with smaller clusters for lower grades and larger clusters for the high school level. Each cluster comprises four to eight classrooms aligned to the number of students designated to share the cluster; the classrooms are designed to support flexibility for small-group activities and one-to-one teaching. Classrooms within a cluster share a common collaborative learning space, resource room and teacher planning room with storage. The collaborative learning space is the most flexible and technology-rich space in the cluster, and is conducive to interactive project-based activities.



The diagram below shows the relationship between spaces in a typical cluster.

It is also important to consider the relationship of clusters to one another and their proximity to shareduse spaces. Shared-use spaces that are not contained in each cluster should be located on the edge of a cluster, so that they are readily accessible from multiple clusters. They can be located in such a way that they align with a cluster and share in its common space, but allow access for students from other clusters—as shown below.



The specific forms these spaces take will depend largely on individual school projects. In renovation projects, space relationships will be created by removing portions of existing corridors and classroom walls and reconfiguring interior partitions. Design teams will work with school communities to create the best possible space relationships.

KEY OVERARCHING THEMES: FROM TECHNOLOGY TO FAMILY AND COMMUNITY USE

The districtwide educational specifications address important themes that affect design in many different ways, including technology, sustainability, safety and security, and family and community use.

Technology

Today's students are technologically fluent, and schools should support their technology skills. School design should facilitate the integration of technology into every aspect of education in the same way it has been integrated into the world in which today's students live. School design should allow students to do the following.

Connect

Schools should have wireless connectivity to support simultaneous use by 30 students in each classroom.

Collaborate

Schools should have the necessary technology to support students working between schools and within schools, including the possibility of districtwide simultaneous delivery of live or recorded instruction.

Communicate

All teaching spaces should include audio enhancement technology to maximize the benefits of proper, balanced sound in order to facilitate the best possible communication among students and teachers.

Sustainability

In addition to achieving LEED Silver designation, the districtwide educational specifications call for each project—whether new construction or renovation—to be guided by the following principles regarding sustainability.

Environmental Literacy

Design, renovation, operation and maintenance decisions should consider the impact and value of those decisions on the educational program of the school. The modernized school buildings under the 21st-century buildings initiative provide powerful environmental literacy learning opportunities.

Healthy School Environments

A healthy school can have real and positive effects on its students, teachers and staff, contributing to improved student achievement. Design, construction, renovation, operation and maintenance decisions should be weighed to optimize indoor environmental quality, especially regarding ventilation, illumination, acoustics and choice of materials.

Cost and Consumption Reduction

At the core of sustainability is the need to reduce consumption, both in resources used to construct or renovate schools and in schools' ongoing operations. Reduction in the use of resources such as energy and water, and the corresponding financial savings, are essential to sustainable schools.

Safety and Security

Buildings will use an approach architects call "Crime Prevention through Environmental Design," or CPTED, a set of design strategies that has been proven to improve safety.

Natural Surveillance

"See and be seen" is the overall goal when it comes to natural surveillance. A person is less likely to commit a crime if he or she thinks someone will witness it. Lighting and landscape play an important role in defining and revealing school activities and safety for the school site. This CPTED strategy must also be applied throughout the interior school spaces. Corridors should be straight and minimized in length to provide clear lines of sight and no places to hide. Adults in administrative roles or support services should be placed throughout the building in small groupings, to allow for oversight of more spaces during class time when teachers are in their classrooms. Glass should be used abundantly and spaces should be arranged strategically to ensure that all areas are observable while unoccupied or between classes.

Natural Access Control

Much more than providing imposing, physical barriers, this strategy uses walkways, fences, lighting, signage and landscape to clearly guide people and vehicles to and from the proper entrances. The goal is not necessarily to keep people out, but to direct the flow of people while decreasing the opportunity for crime. Limited access to secure areas such as courtyards or outdoor teaching areas should also be considered through natural deterrents.

Territorial Reinforcement

Physical designs such as pavement treatments, landscaping and signage give users of an area the opportunity to develop a sense of ownership over it. Public areas should be clearly distinguished from private ones. Classrooms should be grouped to create interior zones. Students can then develop a sense of ownership of their designated cluster area, and adults can expand their zone of effective supervision by creating perceived outer boundaries or thresholds. Those who are not regular "members" of a cluster recognize those boundaries and are deterred from entering or engaging in them inappropriately.

Family and Community Use

City Schools' districtwide educational specifications embody the belief that family and community engagement is essential to student success. The district sees 21st-century school buildings as hubs in the communities they serve.

• Spaces in schools should be designed to support family and community partnering and involvement. After-hours use should be both a goal and a reality for each building. The resources

community institutions can offer students after hours can support school success, and the school can provide space for programs that help build community success.

• Because each community is unique, project-specific educational specifications for each school will also be unique to ensure that they meet the specific needs of each community.

NEXT STEPS IN THE PROCESS

The districtwide educational specifications document is designed to set the standard for all City Schools construction, expansion and renovation projects as the 21st-century buildings plan moves forward. Standardized educational specifications are just the first step. The following outlines the typical process each school project will include.

Design Phases

Project-Specific Educational Specifications

In this phase, the design team will work with the district and a school's local community, administration and staff to transform the districtwide educational specifications into project-specific educational specifications for the unique school site. Consideration of community use space and any specialty programs at the school will be included in these project-specific educational specifications.

Feasibility Study

Once the project-specific educational specifications are complete, the design team will conduct a feasibility study to evaluate various construction, schedule and budget options. The purpose of the feasibility study is to make a recommendation for the scope and nature of the construction project, and to ensure adherence to the educational specifications and that the project conforms to budgeting and scheduling goals.

Schematic Design

Once the feasibility study is complete, one of the options it presents will be selected to move forward into the detailed design process, in which the first step is the schematic design phase. In this phase, the design team will work with the school and its community to organize the spaces in the building and on the site in a way that meets the goals of the project-specific educational specifications. This phase lays the groundwork for the final design of the building.

Design Development

Once the schematic design is approved, the design team moves into the design development phase in which the floor plan of the building design is established. In this phase, the design team will make many decisions that carry out the goals established in the project-specific educational specifications and schematic design phases. At the end of this phase, the final floor plan of the building has been created.

Construction Documents

In this phase, the design team prepares the detailed systems designs and the many architectural and engineering documents that define the project and the specifics of its successful execution.

Beginning Construction

Bidding and Contractor Selection

The construction documents are issued to prospective contractors to provide bids on the cost for completing the project. The contractors selected through this bid process will then begin construction of the project under direction of City Schools staff and private sector construction management firms.

Training for Staff and Others

To ensure successful use of redesigned spaces, new systems and new opportunities made possible by new and renovated school buildings, City Schools will provide comprehensive professional development for school leaders, teachers and staff on ways to use and maintain the buildings.

Engaging School Communities

Community input is essential to a successful school renovation or replacement, and City Schools will work to ensure that everyone has an opportunity to participate. At multiple steps in the process, there will be opportunities for the community and users of school buildings to provide input—for example, at open forum community meetings in the project-specific educational specifications, feasibility study and schematic design phases. City Schools' Engagement Office will work with school communities to set out a clear schedule of when these opportunities will occur.

Each project will also have a project-specific educational specifications team with representatives from stakeholder groups in the individual school community and the school district. This team will meet on a regular basis with the design team throughout the schematic design process.

Engagement in Action

For school communities affected by construction or renovation scheduled to begin in the first year of the plan, the engagement process is already underway. School-level meetings to introduce the design process were held throughout summer 2013. These will be followed by "vision" meetings with each school community, where all stakeholders have an opportunity to discuss needs and desires with district staff and project architects. Design teams at each school—which include the principal, a teacher, a parent, a student (for middle and high schools), a community partner and representatives from the district office—will provide input throughout the process. And in fall 2013, a design expo will bring together school communities, school and district staff, local and national experts and stakeholders from across the city to learn more about 21st-century school buildings.

For information about becoming involved in the 21st-Century Buildings for Our Kids initiative, visit the City Schools website at <u>www.baltimorecityschools.org/betterbuildings</u>.