Educational Specifications • Alexandria City Public Schools

JULY 2014

ELEMENTARY SCHOOL
The City of Alexandria (the City) and the Alexandria City Public School Division (ACPS) joined together in the fall of 2012 to develop a Long Range Educational Facilities Plan (LREFP) to improve facilities planning, accommodate the growing student population, and enhance educational programs and services. As part of this effort, ACPS has engaged Studio Twenty Seven Architecture and Brailsford & Dunlavey (“the Planning Team”) to develop Elementary School (PreK – 5th Grade) Educational Specifications. An Educational Specification (“Ed Spec”) is the guiding planning document that describes the proposed outcomes of a school modernization or new construction project.

The document presented here is a result of the application of professional technical expertise and the collaboration of invested and knowledgeable stakeholders. The document is outlined in the following table of contents.
The recommended program and concept presented here constitute the professional opinions of the Planning Team based on the assumptions and conditions detailed throughout. This planning effort was in complement to the staff and faculty participation and community input. The School Board will make the final recommendation. It is recommended that this document be comprehensively updated every 10 years.

The Planning Team was comprised of the following individuals //
  Jay Brinson, Program Manager,
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  John K. Burke, Architect.

The Planning Team wishes to acknowledge the support, cooperation, and effort of all of the ACPS and City staff who contributed to the planning effort, in particular //
  Alyson Alvarez,
  Katherine Carraway,
  Steven Chozick,
  Susan Eddy
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  Andrea Feniak,
  Laurel Hammig,
  GwenCarol Holmes,
  Pat Mann
  Karl Mortiz, and

All of the faculty, staff, and committee members who joined the effort throughout.
introduction

purpose .................................................................. 08
process ..................................................................... 09
national trends ....................................................... 14
context / formulation ........................................... 16
strategic vision ...................................................... 20

planning concepts

capacity .................................................................. 22
program area summaries ....................................... 25
conceptual building organization .......................... 34

design principles

overview ............................................................... 36
the 700 student prototype .................................... 40
space summaries .................................................. 41

SPACES

core academic / E-ACA ....................................... 44
media center / E-MC .............................................. 70
visual arts / E-VA ................................................... 84
music / E-MU ........................................................ 92
physical education / E-PE .................................... 102

administration / E-AD ........................................ 119
student dining / E-SD .......................................... 153
maintainence & custodial / E-MC ....................... 171
building support / E-BS ..................................... 181

appendix

space and tag list .................................................. 207
glossary of terms ................................................ 209
energy / environmental criteria ............................ 211
technology ............................................................ 215
safety / security .................................................... 216
community use .................................................... 218
prototype chart .................................................... 220
INTRODUCTION

purpose

Educational Specifications ("Ed Specs") are developed to serve as the guiding recipe and benchmark for future school renovations and new construction projects.

Per the National School Boards Association

The purpose of educational specifications ("Ed Specs") is to define the programmatic, functional, spatial, and environmental requirements of the educational facility, whether new or remodeled, in written and graphic form for review, clarification, and agreement as to scope of work and design requirements by the architect, engineer, and other professionals working on the building design.

In essence, the Ed Spec tells the story of the school facility and how the built environment will support the academic program and vision of school leadership. This generic Elementary School Educational Specifications is primarily intended for use as a planning guide by architects and project planners but it is also intended to serve as communication and benchmarking tool for all project stakeholders: students, parents, and families; faculty and administrators, civic leaders and community members; and project design and construction partners.

The general concept embodied in the specifications is to provide adequate details for proposed spaces while leaving ample flexibility for creativity and options in design by the architects. They are meant to define expectations amongst project stakeholders but not limit creativity. The Ed Spec is also meant to be a living document, amendments can be discussed, developed and issued over time.

Project Planning

During the planning phase of a project, the Ed Spec will be utilized to understand and develop future project scopes of work and budgets. The Ed Spec will be included in project procurements to ensure that interested vendors are clearly and uniformly communicated the intent of a project and therefore provide well informed responses to meet actual project needs. While the unique site locations of new schools may necessitate floor plan modifications, the program and space requirements should be modified only as allowed within the parameters of this document.

Project Implementation

During the implementation phase the Ed Specs will be utilized for quality control, allowing ACPS to measure project deliverables against the stated benchmarks and standards. Design deliverables and construction will be reviewed for compliance with the standards and goals stated herein with a goal of meeting benchmarks by 10 to 15 percent. Additionally, the Ed Spec will help provide the foundational support for project decisions during implementation as responses can be measured against their responsiveness to the Ed Spec.

Project Turnover and Occupancy

The Ed Spec can serve as a valuable aid in the turnover of the facility to staff and administrators and other occupants. It is a user friendly document that allows people outside of design and construction professions to understand the building and the intent of its spaces.
Planning a state-of-the-art school requires the consideration of several influencing factors: the historical and forthcoming context of the community; the current and future learning pedagogy and curricular goals; the technical expertise of the faculty and administrators; national and regional trends and benchmarks; and strategic visioning goals and objectives.

Developing the plan requires the cooperative efforts of facility specialists, administrators, faculty and instructional consultants, in addition to the careful involvement of outside partners and community stakeholders. In order to create the best possible learning environment for children, an effort has been made to incorporate the best ideas from existing plans and facilities as well as to anticipate future needs for educating Alexandria’s children.

As mentioned, ACPS and the City are working together to develop a long range educational facilities plan in order to develop thoroughly coordinated plan that responds to projected enrollment growth and considers city-wide needs in a comprehensive manner. The LREFP process, which is shown in figure 1.0 on the following page, focuses on developing technical details in three key areas: Enrollment Forecasts, Current Facility Conditions and Capacities, and the Educational Specifications. The joint work group has subcommittees assigned to each of the three technical areas to enhance the efficacy of community involvement and report on progress to the full work group.

The overall workflow for the development of the Educational Specifications is demonstrated in figure 1.1 on the following page. The process began with a series of discussions devoted to aligning this document with the Division’s strategic objectives and vision for future schools followed by several weeks of interviews with technical experts, building users, and other stakeholders. The project Planning Team was careful to solicit community and student input at key intervals to ensure the document considers all perspectives related to facility needs, adjacencies, and space prioritizations.

Input from specialists in technology, facility planning, other school divisions, and elementary school pedagogy has been added to the basic plan to ensure quality facilities well into the twenty-first century.
JOINT CITY COUNCIL / ACPS SUBCOMMITTEE
[ 14 members ]

LREFP WORK GROUP
explores the major issues that will impact public school facilities over the long term and guides staff in the development of a draft long-range educational facilities plan for consideration by the school board and city council.

SUB COMMITTEES

ENROLLMENT FORECASTS / DEMOGRAPHICS
establishing sustainable short and long term enrollment forecast program

FACILITY CAPACITY NEEDS ANALYSIS
understanding current conditions and needs of the existing facilities

EDUCATION SPECIFICATIONS / SCHOOL OF THE FUTURE
planning for our future and matching of facilities to our students and our vision

JOINT LONG-RANGE EDUCATIONAL FACILITIES PLAN
to improve facilities planning, accommodate the growing student population, and enhance educational programs and services

FIG. 1.0 /// PROCESS DIAGRAM
INFORMATION GATHERING

DRAFT DEVELOPMENT

FINAL PRESENTATION

COMMITEE KICK-OFF

STAKEHOLDER MEETINGS

COMMITEE MIDPOINT
DRAFT SPECIFICATIONS

INTERNAL PRESENTATION

FINAL DOCUMENT
AND PRESENTATIONS

COMMUNITY FEEDBACK

OVERARCHING ISSUES
EDUCATIONAL VISION, SECURITY,
TRANSPORTATION, EXTERNAL PARTNERS

RESOLVE ISSUES

DISCUSS OPTIONS

INTEGRATE COMMUNITY
FEEDBACK

STRAATEGIC
PLANNING

CURRENT
GUIDELINES

PAST
OCCUPANCY

PARAMETERS

21ST CENTURY
CLASSROOMS INST.
TECHNOLOGY

FOOD
SERVICES

MEDIA
CENTER

SPECIAL
EDUCATION

PHYSICAL
EDUCATION

21ST CENTURY
CLASSROOMS INST.
TECHNOLOGY

FOOD
SERVICES

MEDIA
CENTER

SPECIAL
EDUCATION

PHYSICAL
EDUCATION

GENERAL PLANNING CONCEPTS

CAPACITY AND CORE
ACADEMICS

room layouts and
programmatic requirements

capacity matrices

FIG. 1.1 /// WORKFLOW DIAGRAM
Each school division is unique from an educational and building program perspective. Balancing against national, state, and local regulations, it is important to understand that one size does not fit all. The trends and planning principles presented here are to provide context to the formulation and development of this document.

21st Century Learners //
Learning environments should be planned and designed in consideration of supporting all learners: auditory, tactual, kinesthetic and visual. Individual learning styles impact the way in which individual students:

- Concentrate in one’s immediate surroundings
- Process information
- Make decisions and solve problems
- Complete tasks and assignments
- Interact with others
- Retain new information

Educational facility planning and design can help maximize learning by considering differentiated instruction and recognition that ‘one size does not fit all’ when it comes to learning environments.

Today’s learners were born digital and are used to having the world of information at their fingertips and in their pockets. Today, learning can occur “any time, any place, any path, any pace.” Classrooms are transitioning from environments focused on teacher-directed whole-group instruction to learner-centered workplaces that support a collaborative culture of students at work.

Schools and homes continue to be important places for learning, but not exclusively. Understanding the importance of the “third learning space” - the many places where students learn in ways not bounded by the schedule of the school day, the limitations of the four classroom walls, or the location of one’s home - is a critical component in planning and designing innovative, inspirational, and thriving educational environments.

Student Focus Group //
The Planning Team held a focus group with middle school students from George Washington Middle School to discuss current and future learning environments and help inform the plan. The prevailing theme centered on students wanting the opportunity to have choices for how and when they learn throughout a class period as well as throughout the day. They generally understood that each student has a different style of learning and recognized the importance of providing appropriate environments and opportunities for each learning style.

Other student discussion points captured generally accepted evidence based design elements and other trends in modern educational environments:

- Exciting, engaging and varying learning spaces
- Access to natural daylight and climate control
- Ability to control acoustics and ambient noise
- Furniture options, adaptability, convertibility, and ergonomics
- Ability to work alone and/or in groups
- Space to move around and work within classrooms
- Informal break out spaces within corridors
- Healthy eating options and improved dining
facilities
- Use of the media center for multiple activities (quiet and noisy)
- Access to deliberate outdoor learning spaces
- After school access to spaces such as the Media Center and fitness spaces

Classrooms & Technology //
The ‘classroom of the future’ should be more personalized, student-directed, collaborative, interdisciplinary, and hands-on than those of even 10 years ago. As the focus of education moves away from just the transmitting of information and to developing creative problem solving and communication skills, the classroom setting is morphing into a beehive of activity – a learning studio.

At different times, students may be working alone, in pairs, or in groups:
- Working alone: reading, writing, interacting with the computer, or just thinking
- Working together in pairs or groups: dissecting a problem or reading and reacting to one another’s written work, role-playing, or sharing ideas, opinions, and experiences
- Interacting with the teacher and the whole class: listening, making presentations, asking questions or brainstorming ideas

Teaching methods should address a variety of learning styles and children with disabilities are educated alongside their non-disabled peers at their neighborhood school.

The classroom of the future should no longer be just one-directional with rows of desks facing the ‘front’ of the room. It should have a variety of focal points with mobile resources to support learning, flexible furniture, and robust technology. Rooms should also range in size and purpose from small incubator and assessment spaces to large seminar and presentation areas. Corridors and informal learning spaces should create a seamless and extended learning environment.

Technology is infused seamlessly into the education program and physical building and wireless connectivity allows for learning to occur whenever and wherever. Classrooms are versatile, flexible and adaptable to support different mediums.

Media Centers and Student Commons //
The 21st Century school media centers are changing from being quiet book-lined storage spaces for research and reading to multi-media, interactive studios of social collaboration for faculty and students. They are seen as a learning ‘commons’ - an extension of the classroom and the social and technology heart of the school.

New media centers are more than 50 percent digital and offer both learning and gathering areas as well as production areas. The ideal media center might move from noisy to quiet - through a ‘café’ and mobile computing environment, to small, AV-enhanced, group study conference areas, to individual study carrels or a media
The technology that this generation of students understands and uses is multi-media. They communicate and learn through on-line devices, but they also publish and perform. The media center may include a computer lab for research, a publications room for the school newspaper and yearbook, a video production and editing lab for film, a distance learning lab, and a variety of display venues.

National standards for media centers call for 4-6 SF per student. Even at this size, most learning commons cannot offer a full range of media options. Multimedia satellites instead are infused throughout the school to complement core curricular activities. Many learning commons also offer virtual space to bring together a generation that grew up on social media.

Building & Grounds
The school building itself is considered a learning tool and a community asset. There is a sense of identity and the quality of architecture instills a sense of place and pride. The architecture considers learning opportunities over the entire campus, including school grounds and landscaping.

Transparency of spaces help foster an internal sense of community and excitement about the learning activities that are occurring within. Use of glass allows for visual connections externally and internally. Front entrances are inviting and welcoming for all community member – parents, families, neighbors. The school is a hub of activity before and after school as well. Health services and other non-educational support are often provided.

Evidence-Based Environmental Elements
Evidenced-based design is the consideration of credible research findings in the planning and design process with a goal of achieving positive outcomes. Researchers have presented findings that link measurable outcomes such as student attendance, academic performance, faculty retention, and disciplinary actions. More specifically, several design elements have been connected to these outcomes: Lighting quality, indoor air quality, acoustics, and furniture design.

Lighting Quality
The Heschong Mahone Group found statistical correlations between the amount of daylight in an elementary school classroom and the performance of students on standardized math and reading tests in 1999. Since then, case studies and further research have supported this finding and the educational facility planning community has generally accepted the following classroom design parameters.

Goal: Improve natural and artificial lighting in classrooms.

Environmental / Air Quality
According to the US Center for Disease Control and Prevention, American children miss approximately fourteen million school days each year due to asthma. Controlling environmental factors such as dust, pollen, and carbon monoxide could help prevent more than 65 percent of asthma cases of elementary school-
age students according to the American Journal of Respiratory and Critical Care Medicine. The following classroom design parameters should be considered when modernizing a school facility.

**Goal:** To ensure comfortable rooms, address temperature control, ventilation, air filtration, carbon dioxide levels, and HVAC background noise.

**Acoustics**
Research links the importance of maintaining appropriate acoustic conditions for student learning. This relates to noise from external sources and reverberation in the classroom and is linked to academic achievement, behavior, attention, and academic concentration. Acoustics are also important for teacher wellness and avoiding straining vocal cords while attempting to speak over noise. Classroom design parameters are generally accepted as outlined.

**Goal:** Limiting reverberation and background noise and improving sound isolation.

**Ergonomics**
A 2007 study compared adjustable furniture in schools to traditional fixed furniture. Students using adjustable furniture were found to have higher grades than those in the control group using traditional school furniture. Characteristics of furniture that promote good posture should be considered as well as adjustable desks and chairs to allow students of varying sizes and body types to improve their comfort levels when sitting for long periods of time. Research studies continue to explore this issue.

In summary, these national trends provide an important context for many of the ideas that ACPS is working to implement and how those concepts are articulated within this document.

**City of Alexandria: Demographic, and Economic Context**
The City of Alexandria is divided into 18 planning neighborhoods, each with their own unique history and atmosphere ranging from the more urban historic neighborhoods close to the District of Columbia to the more suburban western communities. In general, most neighborhoods serve higher income professionals seeking safe, walkable community close to DC. Typical of the Metro, people come from all over the world – ACPS records 128 countries of birth and 103 languages.

According to the 2010 census, the City was 60 percent white (16 percent Hispanic), however ACPS is more diverse.
- Black: 31.95 percent
- Hispanic: 33.04 percent
- White: 27.07 percent
- Asian: 4.56 percent
- Native American: 0.49 percent
- Native Hawaiian/Pacific Islander: 0.32 percent
- Multi-racial: 2.29 percent

As a percentage of total population, the school age population in Alexandria is lower than the United States
as a whole. This is due primarily to the fact that much of the City’s historic growth has been from young adults moving to the Washington, DC metropolitan area for new jobs. As a result, the City has become more urbanized with over 60 percent of the housing stock being multifamily and an average household size of just over two persons.

The school age population in Alexandria had been steadily declining since 1970, but the decline tapered off in 2007. Although the percentage of school age population in Alexandria remains lower than adjacent Virginia counties; between 2000 and 2010 the number of children aged 0-5 grew at more than twice the rate of the whole population (22 percent to 9.1 percent). This growth trend combined with observed increases in kindergarten capture and cohort survival rates has led to over 31 percent enrollment growth since 2007. Based upon these trends and recent work with the City’s planning department, ACPS believes that enrollment growth over the next five years will continue to outpace the citywide growth rate at more than a 3:1 ratio.

To underscore the diversity of the student population in Alexandria it is important to note that although median incomes in the city are among the highest in the region, approximately 60 percent of ACPS students are eligible for free or reduced lunch programs. Further, the division has a strong international presence with English Language Learner (ELL) students accounting for nearly 20 percent of the school population.

**CURRENT AS OF 2/2014**

<table>
<thead>
<tr>
<th>Schools</th>
<th>Total Enrollment</th>
<th>Free Lunches</th>
<th>Reduced Lunches</th>
<th>ELL Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>PreK - 5th</td>
<td>3328</td>
<td>1871</td>
<td>369</td>
<td>392</td>
</tr>
<tr>
<td>K - 5th</td>
<td>4206</td>
<td>1650</td>
<td>339</td>
<td>1065</td>
</tr>
<tr>
<td>PreK - 8th</td>
<td>329</td>
<td>266</td>
<td>19</td>
<td>48</td>
</tr>
<tr>
<td>6th - 8th *</td>
<td>2550</td>
<td>1273</td>
<td>297</td>
<td>487</td>
</tr>
<tr>
<td>Total</td>
<td>10413</td>
<td>5060</td>
<td>1024</td>
<td>1992</td>
</tr>
</tbody>
</table>

*Reflects ACPS’ current direction to return to a traditional style of school model and abandon multiple schools within one building*
ACPS Learning and Teaching Model

Learning and Teaching in ACPS is a well-executed balance between a rigorous curriculum, proven instructional strategies (pedagogy) and relationships with students that communicate high expectations and commitment to student success.

ACPS has developed and uses a 21st century curriculum that is focused on helping students become critical thinkers and problem solvers. In addition to helping students acquire declarative and procedural knowledge, each unit has a focus on higher-order thinking skills to ensure students are developing critical thinking skills needed for post-secondary success: reading complex text, writing at a post-secondary level, analyzing and interpreting data and participating in discourse across the disciplines.

Instructional Methods

Instructional methods vary with grade level, but maintain continuity from early childhood through the primary, intermediate, and middle grades. Predominant elements include:

- Integrated learning, where content areas cross disciplines
- Flexible groupings (In primary grades, regrouping stays within the classroom).
- Mentoring of older to younger students
- Extended day learning opportunities
- Parent involvement and volunteer activities

ACPS offers ‘What to Expect’ brochures for every grade level available on its web site and the full program of studies is available for middle and high school. These documents should be referenced by architects to better understand program offerings and curriculum goals.
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strategic visioning

ACPS was guided through a series of visioning sessions with educators, administrators, and community members that challenged them to clarify their expectations related to facility operations, sustainability, architectural quality, space priorities, and the community context. The visioning sessions focused on identifying gaps between ACPS’ future goals and their current realities. The following narrative summarizes the areas of greatest dissonance and formulates the concept for the construction and operation of a school of the future in Alexandria.

Building Concept and Priorities of Spaces //
The desire to teach whenever and wherever drives the need for future facilities to implement a spatial organization that provides both formal and informal learning spaces and maximizes collaboration and interaction between students and faculty.

School designs should focus on creating collaborative and adaptable learning spaces supported by a robust and seamless integration of technology and flexible and ergonomic furniture. Incorporating an overall organization of small learning communities with breakout spaces in hallways (ELA’s), collaborative spaces in classrooms, and spaces that facilitate chance interactions throughout the school will allow teachers to collaborate across disciplines and tailor learning objectives and lessons to students’ individual needs.

Providing multifunctional spaces for third party partner and community programs that extend educational and extracurricular services to students, families and the community is a priority. The facility should operate as one organism that can be segmented into different functions and zones depending on the time of day and use.

Community Context //
ACPS school facilities should serve as neighborhood assets and centers for parent, family and community interaction and engagement. Parental and family support plays a critical role in the success of students. ACPS students and families come from diverse backgrounds and schools should be welcoming and inviting places that include dedicated space for parent and family engagement as well as spaces available for community and partnership use.

Each school community is unique and designers should consider what spaces best support the community’s needs; however, all schools should be planned and designed to support community use during non-school hours. Implementing a secure separation between the academic core and the shared use spaces along with the careful application of active and passive design strategies will create safe and secure learning environments.

Organizational and Operational Paradigm //
ACPS believes an integrated, interdisciplinary team approach will increase student achievement and faculty collaboration and enhance the overall learning experience. A collaborative team approach is best facilitated with small learning communities, extended learning environments, and a departmental organization of spaces. Media Centers should be seen as the ‘learning commons’ and be utilized
regularly as an extension of teacher’s classrooms and workspaces.

ACPS desires to increase inter-student collaboration and group learning and activities. To support this, flexible and adaptable informal and formal teaching spaces are required. Emphasis will be on spaces and configurations that support critical thinking and project-based learning ideally within groups of four students and the ability to break out of formal learning environments. Utilizing a push-in and team teaching approach, special education students will learn in the same collaborative learning environment as their peers.

**Architectural and Construction Quality**

ACPS has a strong belief that high-quality architecture has a positive influence on student success and faculty retention and is committed to delivering high-quality, state-of-the-art, and sustainable facilities to students and faculty and the community. This belief applies to the external and internal qualities of the facility. The school facility and grounds are considered a learning tool and creativity in design and architecture is a priority.

Quality of design and engineering should focus attention on areas that most impact the learning environment with a particular emphasis on incorporating researched-based facility elements, such as enhanced natural lighting, acoustics, air quality, climate control and technology, that directly impact student achievement and educator effectiveness. Externally, the architecture must be respectful of the historical and cultural context of the community while simultaneously inspiring students and the public.

Materials and system selections should consider extended life cycles. Building systems, materials, and finishes must be resilient, easy to maintain, and create a positive, aesthetically pleasing learning environment. Life cycle of materials should balance quality and potential for future costs in an effort to ensure appropriate use of public funds is achieved.
The following section provides executive summary level descriptions of the capacity analysis and planning concepts of each program space within an ACPS school facility. Detailed descriptions of each space are included later in the document.

**capacity**

Every school project begins with establishing the number of students that will be served when the project is complete or the ‘capacity’. Capacity is the primary driver in determining the number, type, and size of the spaces in the new or modernized building.

There is no ideal school size. Schools in ACPS range from 373 students at Cora Kelly Elementary School to 874 students at John Adams Elementary School. Though the division does not have a preferred school size, for the purposes of planning, this educational specification assumes that school capacities will range between 450 students and 800 students. This prototype is based on 700 students for illustration only.

Nationally, the average school size is 600 (540 in Virginia) with smaller schools in urban cores. The Division has been provided with an active, editable spreadsheet that will allow planners and architects to develop facilities lists for a range of schools based on the capacity and unique program needs in real time.

Simply defined, school capacity is a product of the number of classrooms at a school and the student stations assigned to each room type. Only classrooms that are 600 square feet or more with a teacher and students regularly assigned to the space are counted toward full time capacity. For elementary schools, small instructional spaces and specialized labs including art, music, or resource are not part of the capacity calculation. It is possible for a school’s capacity to change in minor ways from year to year based on average class sizes (determined by the budget) or changes in the number and type of programs.

Currently, the ACPS budgeted class size caps range from 22 in kindergarten to 26 in 5th grade. Figure 3.1 on the following page identifies class sizes for school divisions surrounding the City of Alexandria in addition to those recommended by the code of Virginia. The classroom size limits enunciated by the ACPS School Board are generally in line with the regional averages.

Class size caps establish a maximum desirable class size but the average class size in ACPS is lower. By applying actual school staffing to the current enrollment it can be determined that for most ACPS schools, class sizes range from 20-24 in grades kindergarten through 5th grade. The lower class sizes are more in keeping with the division’s long range policies and goals. For the purposes of planning the following class sizes will be used to calculate a ‘design’ capacity. It is important to size all classrooms to accommodate the maximum number of students even if the average is used for capacity planning.

Once a capacity is proposed, many other areas of the building are sized to support the enrollment. The number of small group rooms, art and music labs, and support staff offices are based on staffing formulas. The size of the core areas such as media center, dining and food services,
## FIG. 3.0 // CLASS SIZE

<table>
<thead>
<tr>
<th>ROOM TYPE</th>
<th>RANGE OF CLASS SIZE</th>
<th>TARGET FOR PLANNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-K</td>
<td>16-20</td>
<td>18</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>20-22</td>
<td>20</td>
</tr>
<tr>
<td>Primary Grades</td>
<td>22-24</td>
<td>22</td>
</tr>
<tr>
<td>Intermediate</td>
<td>24-26</td>
<td>24</td>
</tr>
<tr>
<td>Special Needs</td>
<td>6-12</td>
<td>10</td>
</tr>
</tbody>
</table>

## FIG. 3.1 // REGIONAL BENCHMARKS

<table>
<thead>
<tr>
<th>SPACE</th>
<th>ENROLLMENT</th>
<th>RECOMMENDED OR AVERAGE CLASS SIZE PER GRADE</th>
<th>SF / STUDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K-5</td>
<td>6-8</td>
<td>Pre-K</td>
</tr>
<tr>
<td>Arlington</td>
<td>13,277</td>
<td>4,860</td>
<td>544</td>
</tr>
<tr>
<td>Fairfax</td>
<td>98,264</td>
<td>27,872</td>
<td>99</td>
</tr>
<tr>
<td>Loundoun</td>
<td>33,574</td>
<td>16,512</td>
<td>620</td>
</tr>
<tr>
<td>Prince William</td>
<td>39,538</td>
<td>19,473</td>
<td>505</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>21,348</td>
<td>7,018</td>
<td>3,368</td>
</tr>
<tr>
<td>Average</td>
<td>41,200</td>
<td>15,147</td>
<td>3,368</td>
</tr>
<tr>
<td>United States</td>
<td>41,200</td>
<td>15,147</td>
<td>3,368</td>
</tr>
<tr>
<td>Alexandria</td>
<td>7,616</td>
<td>2,597</td>
<td></td>
</tr>
</tbody>
</table>

*Code of Virginia 22.1-253.14:2 C states: “24 to one in kindergarten with no class being larger than 29 students; if the average daily membership in any kindergarten class exceeds 24 pupils, a full-time teacher’s aide shall be assigned to the class; (ii) 24 to one in grades one, two, and three in any kindergarten class exceeds 24 pupils, a full-time teacher’s aide shall be assigned to the class; (ii) 24 to one in grades four through six with no class being larger than 35 students.”

1- www.apsva.us
2- www.fcps.edu/fts/dashboard/
3- www.lcps.org
4- pwcs.schoolfusion.us
5- dcps.dc.gov
6- www.doe.virginia.gov
7- nces.ed.gov
8- www.acps.k12.va.us
physical education facilities, and site amenities are based on local and national benchmarks related to size.

The following chart (figure 3.2) summarizes the breakdown of the proposed capacity for a prototype 700 student elementary school. The balance of this document outlines the spaces for this sample prototype.

Per the Guidelines for School Facilities in Virginia’s Public School, the goal of the optional guidelines developed by the Virginia Department of Education is … to provide recommendations that will help local school divisions ensure that their school sites and facilities support the principles of good teaching and learning and promote sound educational programs.

<table>
<thead>
<tr>
<th>GRADE</th>
<th># OF CLASSROOMS</th>
<th>CAPACITY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-K / Pre-S</td>
<td>5</td>
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<td>90</td>
</tr>
<tr>
<td>Kindergarten</td>
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</tr>
<tr>
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<td>22</td>
<td>110</td>
</tr>
<tr>
<td>Grade 2</td>
<td>5</td>
<td>22</td>
<td>110</td>
</tr>
<tr>
<td>Grade 3</td>
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<td>Grade 4</td>
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<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Grade 5</td>
<td>4</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
<td><strong>710</strong></td>
<td></td>
</tr>
</tbody>
</table>

The guidelines developed here by the project team respond to or exceed the Virginia State guidelines and recommendations. It is the responsibility of the architect to ensure their plans meet or exceed the current state guidelines at the time of actual project design in the event the state guidelines has changed and this document has not yet been updated to reflect those changes.
program area summaries

The following section provides executive level narrative summaries of the core program space areas. Detailed descriptions of each space within a program area is provided later in this document.

Main Office-Reception/Administration/Student Services //
As students, families and other visitors enter an ACPS building, it is important that they are greeted with an inviting and well organized front office suite. The main office should be located near the primary entrance to the school. The architect should consider security when designing the main office. The space should be organized to provide direct visual access to the entrance doors. Provide appropriately sized office spaces with an adjoining shared conference room and adajcent staff restroom. Occupational and Physical Therapy services are provided by ACPS staff who travel between multiple school locations. Within the main office, provide an appropriately sized space that includes itinerant work stations and storage. Near or adjoining the main office, provide the Family and Community Engagement center. Other administrative functions can be dispersed throughout the school via grade level suites to encourage maximum student collaboration and connection.

Visitor parking should be located by the front door. Signage and building design should clearly indicate the school entrance. Immediately upon entry, visitors should be directed to the Welcome Center/main office. For security reasons, no visitor should be able to enter the classroom areas without being checked through the reception area. See Security section for additional suggestions.

A digital information kiosk in the lobby may provide real-time data on the school’s administrative and building operations. This may include information on the buildings energy use, water use, and the latest recycling rates.

Health Services //
Health Services should be located near the main entrance to the school. Health Services is responsible for providing health related amenities to all students and staff. The space should be organized to provide appropriate space for:

- health screening
- illness or injury treatment
- meetings and trainings
- prescription medication storage and distribution
- secure records keeping
- private consultations
- rest and recovery units
- waiting area.

In addition, it is possible that a facility in the future will provide (location depended) community partner/provider operated wellness centers. These centers will require additional spaces to accommodate offerings and amenities such as:

- full medical evaluations
- full laboratory services
- dental services
- radiology services
- pharmaceutical services.
Cooperative and collaborative wellness centers are desired (location dependent) and operated through community partnerships.

If the school division elects to provide a school based health center (SBHC), the architect should work with the division’s officials to ensure full space programming requirements are met according to federal regulatory standards. This center should be adjacent to the school clinic but implementation of a full SBHC will require significant advance coordination by ACPS.

**Core Instructional Spaces**

The basic organizational structure of the school should reflect a cluster concept and should consist of general purpose classrooms, commons space for informal instruction, a small group room, two and three dimensional display areas, and a teacher work center. Each cluster should also contain a resource classroom used by support educators and an extended learning area to facilitate collaborative teaching and learning. Student restrooms should be located within all classrooms or shared by two adjoining classrooms.

**Classrooms**

Flexible and easy to arrange furniture that is easy to store is preferred. Student arrangements should reflect small collaborative groupings over individual desk arrangements. Many classrooms are designed around discovery-based learning centers. Provide ‘teaching and learning’ surfaces on two walls to include touch screen interactive boards, magnetic white boards and tackable surfaces at student height.

Restrooms should adjoin classrooms at every grade level to increase flexibility for conversion to younger grades if necessary. Each classroom should include a sink and a water bubbler. The provision of an itinerant or hoteling space for drop-in or special needs instructors is another unique feature that should be included in each classroom.

Extended learning areas (ELA) should be incorporated into designs as additional teaching spaces-learning areas that occur adjacent to each academic cluster. ELA’s are open spaces off the corridor that are meant to facilitate break out instruction, small group and project-based work in addition to multi-class collaboration and joint teaching initiatives. ELA’s vary in size based upon the individual needs of the school and the academic cluster and should be designed and equipped to accommodate a variety of furniture arrangements to optimize flexibility.

**Science**

Each elementary-level classroom should be designed to support science activities and simple lab components. Schools should supplement the in-classroom sinks by providing a portable science demonstration cart for each academic cluster. Additionally the provision of an outdoor classroom, a garden area, and/or a food lab should also be considered in order to support elementary level science instruction. If a food lab is provided, it should be located off the main dining area and equipped as a dual
purpose warming and cooking studio for both teaching and extracurricular activity support.

**Special Education**

Special education facilities should be integrated throughout the school to support the concepts of inclusion and the specialized requirements for the students. Currently, more than 70 percent of all students with disabilities are included in standard learning environments for 80 percent of each day. In all elementary schools, provide at least one resource space for every two grades or at least three spaces per school to support individualized learning needs and/or speech therapy. Typical occupancy of a pullout space is approximately four to five people.

A dedicated, programmatically-sized classroom may be necessary on a location-by-location basis to support City-wide programs and would be identified at the time of individual site planning. Special education facilities should be integrated throughout the school to support the concepts of inclusion and these specialized requirements should be integrated throughout the school to support the concepts of inclusion and these specialized requirements should be considered for the identified student groups. Special attention should be given to accessibility of all facilities and an integrated learning program.

**English Language Learning (ELL)**

ELL instruction occurs at every elementary school in the division but enrollment can vary from as little as five percent of the school’s total student population to over 50 percent. The majority of ELL instruction is pushed-in to the general education classrooms with an itinerant instructor floating into classes as needed. Elementary schools also provide an English Language Development (ELD) break out class which can typically be accommodated in one of the resource classrooms; however, in schools with a large ELL population, such as Ramsey ES, it is possible that a dedicated classroom will be required. Designers should be careful to inquire about the site-specific requirements.

**Talented and Gifted (TAG)**

A TAG program exists at every elementary school in the division, although enrollment varies widely from school to school. Staffing levels are based upon enrollment but at most schools there is one full time TAG teacher. For grades K – 3, TAG curriculum is ‘pushed in’ to the standard classrooms and is managed by the elementary teachers. At the 4th and 5th grade levels the same strategy is utilized for social studies and science curriculum; however, mathematics and language arts TAG course work is ‘pulled out’ into a separate classroom. Typical class size for these TAG classes is about 15-20 students, warranting the provision of an assigned, standard classroom. Additionally, TAG curriculum emphasizes project-based learning which may occasionally require use of ELA space or resource rooms along with the provision of storage for student projects.

**Early Childhood**

ACPS does not currently provide universal pre-kindergarten programs and, at some schools, early
childhood education is provided either through a state funded grant (Virginia Preschool Initiative) or federally funded grant such as Head Start (provided by a community partner, The Campagna Center). In accordance with national trends toward earlier schooling, ACPS desires to implement universal prekindergarten at every school. For planning purposes, this document allocates classrooms for early childhood at every school at 80 to 90 percent of the planned kindergarten classrooms. At schools that house Head Start, classes can be held in standard PreK/K classrooms described in this document.

Visual and Performing Arts

ACPS has a strong arts focus in the elementary and middle grades. Well-designed spaces need to support a vigorous curriculum and creative presentations. Art, music, and multipurpose classrooms should be shared by all grade levels for general class and small group instruction. The location and access to these rooms should promote orderly transitions. Larger ACPS schools often have more than one art teacher (but less than two). The main art instructor assigned to the school will own the main art classroom and ancillary spaces. Optimal location for the art room is on the ground floor with a northern daylighting orientation. Access to an outside patio or seating area should offer additional work space, display spaces, and performance spaces. Itinerant art instructor assigned to the school will function out of the Early Childhood Dining/ELA space where a separate art storage location is provided. This location provides the opportunity for push-in art assembly or the ability to program the adjacent ELA as a full-size classroom when needed.

Larger ACPS schools often have one music teacher each for choral, band and orchestra – not all full time. Large practice and performance spaces are not provided for part-time programs and so the stage may be used part of the day for practice for orchestra or one of the other classes. If possible the music suite should be located near the stage and instrument storage shared between the band and orchestra. Chair and music stand storage can be provided on or under the stage.

Media Center

The media center serves a dual role – its traditional role as a gathering place for research and learning and a new role as a technological information base and learning hub. In this new role, the media center may house a wireless voice/video/data network, which runs throughout the entire building. This network enables the transmission of media services to the desktops of teachers and students without physically entering the media center. The new library will utilize digital technology to enhance voice, video, and data communications within the school, among division facilities, and with distant learning resources.

Today's library is a learning place, not a warehouse space. And it must be a fluid environment, one that continually reinvents itself to remain relevant, that adapts to new knowledge of learning and new pedagogy. The concept of the library as a hushed, quiet space, where all students study individually and silently, sitting up straight on
uncomfortable, wooden chairs is a concept that should have long ceased to exist. Students have become accustomed to multimedia environments, working in groups, and multitasking.

Libraries must be spaces where multiple activities can take place simultaneously. And since there are many different learning styles, the library should offer as many different types of environments as possible—quiet study areas, group activity areas, spaces for individual and small group work, spaces for instruction, and spaces where students can listen to music ....

Rolf Erikson, DesignShare interview Nov 2006

Physical Education //
To support the elementary school physical education program, a variety of indoor and outdoor areas are required. Outdoor physical education teaching areas should be located near the indoor gymnasium. Physical education facilities should be designed with a focus on community use during non-school hours, since there is a high demand for both indoor and outdoor facilities.

ACPS offers formal physical education to elementary students twice a week. For larger schools this may mean 2-4 teachers are teaching in the gymnasium at the same time. At a safe 100 square feet per student, larger schools need a full size gymnasium to accommodate the program. Because the elementary schools do not have intramural sports, no seating is required. To further support the physical education program and provide for after school programs, larger schools should have a smaller multi-purpose space.

Parking should be located near the gymnasium and a separate entrance should be provided for after school activities. Flexibility of space use is desired and designers should provide the ability to separate the gymnasium into two smaller gym stations during teaching periods.

Dining and Food Service //
The dining space(s) should accommodate one-third of the projected student capacity each lunch period. The dining area(s) should be warm and inviting spaces with plenty of natural light, pleasant acoustics, and multiple seating choices. The furniture should be age appropriate and serving lines height sensitive which may require having two distinct areas for primary and intermediate students. It is proposed through creative design that dining area(s) should effectively house multiple functions including assemblies, community meetings, and potentially be utilized as learning areas.

It is important to note that ACPS is currently piloting a “distributed dining” concept at the new Jefferson Houston School, which is slated to open in August of 2014. This design approach locates serving lines in three locations around the school and utilizes the ELA spaces as dining areas in addition to the provision of one, small cafeteria space which is primarily for the youngest students. Designers on future projects should inquire with ACPS
about the success of the distributed dining model which was implemented to minimize student travel time/maximize eating time, foster smaller-group eating environments, and minimize underutilized space throughout the school day.

This educational specification recommends a hybrid approach by providing for two separate dining areas: one for the early childhood grades (PreK and K) and one for grades one through five. The early childhood dining area should be located adjacent to the classrooms where it can also function as the ELA and an indoor play area in a fashion similar to the distributed dining concept. The dining area for grades one through five should be much larger and designed as a more traditional centralized cafeteria adjacent to the kitchen. This larger space if a more traditional dining solution is preferred, the space should also include the school stage for performances. The key to a well-designed multi-purpose performance space is to consider the technology, acoustics, and layout very early in the design process. The architect should consider the room volume, configuration, technology requirements, acoustics, and general layout as it relates to the stage and kitchen. These key design points can then be further enhanced by the selection of materials and a well-designed audio system.

Food services is responsible for food preparation and delivery of food programs division wide. Foodservices facilities should provide appropriate space for both ‘scratch’ and ‘warming’ kitchens with appropriate equipment. Provide appropriate sized storage facilities to support healthy eating program offerings which include:

- breakfast
- bag meals
- meals between bells
- snacks
- supper

Architects should consider serving and dining areas that incorporate composting and recycling facilities, homelike environmental qualities, breadth of flexible seating options, and design qualities that support visual and verbal communication between students and faculty.

**Site**

Site circulation should be organized for safety and efficiency. This should be accomplished through careful separation of vehicular traffic, including the separation

<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
</tr>
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<tr>
<td>Multiuse (Hard Surface)*</td>
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</tr>
<tr>
<td>Fitness Development Fenced</td>
<td>(1) 100' x 120'</td>
</tr>
<tr>
<td>Equipment Area (PK-1)</td>
<td></td>
</tr>
<tr>
<td>Fitness Development Fenced</td>
<td>(1) 100' x 120'</td>
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<tr>
<td>Equipment Area (2-5)</td>
<td></td>
</tr>
<tr>
<td>Multiuse Field Play Area</td>
<td>(2) 180' x 140'</td>
</tr>
</tbody>
</table>

*A gymnasium may substitute for one multiuse (hard surface) play area.

**NOTE:** Quantities are based on 700 student prototype.
of school buses, parents, and staff. Particular consideration should be given to providing safe passage to pedestrian traffic. Sufficient stacking space should be provided to prevent congestion of busy streets.

All play areas should be protected from vehicular and pedestrian traffic, so students can be assured of a safe and secure environment on the entire school site. Shading elements should be considered along with an outdoor learning area and garden.

The Virginia Department of Education Guidelines recommend that each school “site have areas that can be developed to provide the minimum number of play areas required for physical education;” as indicated by the chart (figure 3.3) on the previous page. Alexandria school sites are urban in nature and most current and future sites cannot accommodate the recommendations outlined in the Guidelines for School Facilities in Virginia’s Public School. However, every elementary school site should accommodate non-structured or natural play areas as well as at least one playground. It is recommended that architects work with ACPS and RPCA to prioritize types of outdoor space development on a site-specific basis. Architects should endeavor to design new schools or future renovations in a way that will maximize available open space. Ideally, all elementary schools will be designed to accommodate one multiuse field play area that conforms to the state guidelines.

**Site Management //**
Recreation, Parks, and Cultural Activities (RPCA) is a partnership program that utilizes shared ACPS facilities for afterschool programming. RPCA operates the majority of playing fields, courts, parks, and playgrounds adjacent to Alexandria schools. When funds are available to enhance the campus or grounds of the school, architects should coordinate and consider RPCA’s requirements towards playgrounds, courts, fields, and gymnasium spaces, per the joint ACPS/RPCA Facility & Outdoor Maintenance & Use agreement.

**Parking and Transportation //**
Recreation, Parks, and Cultural Activities (RPCA) is a partnership program that utilizes shared ACPS facilities for afterschool programming. RPCA operates the majority of playing fields, courts, parks, and playgrounds adjacent to Alexandria schools. When funds are available to enhance the campus or grounds of the school, architects should coordinate and consider RPCA’s requirements towards playgrounds, courts, fields, and gymnasium spaces, per the joint ACPS/RPCA Facility & Outdoor Maintenance & Use Agreement.

The following chart (figure 4.0 on next page) recommends the minimum parking requirements based upon proposed capacity prototype. Actual parking requirements may be impacted by factors such as zoning, site constraints, absences or presence of other modes of transportation, etc. The architect must coordinate at time of design and it should be noted that ACPS offers incentives to encourage carpooling and the use of mass transit by staff.
Ancillary staff includes teaching aides, media center specialist, special education staff, etc. Total is calculated as percentage of the student population as follows: Elementary-2%.

Administration includes principals, secretarial, itinerant staff. Calculation at 1%

Custodial/maintenance staff includes full-time staff for regular school hours. Calculation: 1 staff per 150 students.

Food service staff is calculated at 1 staff per 100 meals served with 80% building capacity participation for a full service kitchen.

Visitor parking is calculated at 2% of building student capacity.

Bicycle rack quantity is calculated at 5% of sum of student capacity + FTE staff members, per LEED 2009.
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conceptual building organization

The careful organization of programmatic components during early design phases is critical for the success of a future school program. This conceptual building organization diagram (Figure 5.0) illustrates relevant adjacencies for the typical elementary school model. The rooms and spaces illustrated in this educational specification compose a number of program “clusters”. The school is a collection of these “clusters” organized according to adjacencies required to best support the educational mission of ACPS. For most campuses in the city, site constraints and the presence of existing structures will limit the options available to control illustrating a learning environment characterized by flexibility, a sense of community for the students and teachers, and a safe, well-supervised environment.

Academic clusters are located in the quiet areas of the building that can be isolated during off-hours. Noisier and shared programmatic clusters are grouped toward parking, public and play areas and allow for after-hours access. A single main entry is a specific determination of ACPS’s security plan and that entrance is supported by administration and family welcome center functions. Informal “break-out” or Extended Learning Areas happen throughout the building along with opportunities for distributed dining areas.
FIG. 5.0 /// ADJACENCY DIAGRAM

"PRIVATE SIDE" = SERVICE ACCESS / ALLEY

"PUBLIC SIDE" = STREET PRESENCE, COMMUNITY ACCESS
The following section provides executive summaries of the guiding design principles that should be applied to each space within an ACPS school facility. The appendix of this document includes expanded detailed guidance for some of the categories discussed here.

**Furniture & Equipment //**
Classrooms vary in shape and size; therefore, the furniture should be flexible to accommodate a variety of classroom formats for both individual and group activities. Teachers and students should have storage space for personal belongings, papers, books, supplies, and teaching materials.

To the extent possible, movable furnishings will be used, rather than fixed casework, to provide flexibility for future reconfiguration. Furniture should be selected for its ergonomic traits. Consideration for variability and adjustability to support diverse learning styles.

**Technology //**
The facility will contain the latest in technology and infrastructure should be provided to support wireless access to data and video throughout the building. It is intended that access to technology will be seamless and pervasive throughout the building with only the minimal number of hard drops needed to support voice, teaching stations, and wall-mounted devices. Technology infrastructure should support the concept that learning can happen anywhere by enabling a one-to-one student to device ratio and the notion of “bring your own device”. The specific tools and design guidance will be determined based on the best practices at the time of construction.

Every learning area will be wired for teacher audio enhancement. Research into this cutting-edge technology suggests that student learning can improve in classrooms where the teacher’s voice is amplified and the classroom acoustics are designed to support voice clarity. Please reference Appendix pg. 215 for additional guidance regarding technology infrastructure requirements.

**Universal Design //**
The entire facility will be accessible for students, staff, and visitors. This will be accomplished through judicious use of ramping and elevators with sufficient internal clearances for circulation, convenient bus/van loading and unloading, and nearby handicapped parking spaces. All elements of the Americans with Disabilities Act must be complied with, including way finding and signage, appropriate use of textures, and universal accessibility of all indoor and outdoor school facilities.

**Safety & Security //**
ACPS wants to maintain an inviting and de-institutionalized environment, while simultaneously providing a safe environment for students, staff, and community. The organization of a building will have a major impact on student behavior and safety concerns. Architects should refer to Crime Prevention Thru Design (CPTED).

All school locations should include a double perimeter approach where every visitor is guided through a secure exterior door into a secure holding vestibule prior to gaining access to the main office. Visual access from the main office to the exterior vestibule is mandatory and every
entrance to the school will have a CCTV IP camera. Consult with ACPS over the most current keying policy. Please reference Appendix 3 for additional guidance regarding technology infrastructure requirements.

**Community Use and Partnerships**
ACPS is pleased to have community and non-profit partners in its buildings offering valuable services and programs for students and families. Partnership programs and other regular community activities require shared, co-located and sometimes dedicated space that is internal to the school yet has the ability to operate beyond ACPS school hours. Extended hours of operation require the partnership programs and community activity area to have an entrance that can be separated from the main school. This secondary building entrance for after school program use should be visible to all spaces co-located in the community use and partnership area, specifically the gym and multipurpose rooms. This space will be utilized by after school programs for record keeping, registration transactions, secure money storage, and child pickup. This allows partnership to operate independently of the school’s staffing requirements and provides the necessary security to protect the main school. During general school hours, partnership programs will function under ACPS’ security policies and use of secondary entrances should be restricted.

Program offerings are location dependent and include, but are not limited to
- tutoring
- family and community education centers (FACE)
- recreation, parks & cultural activities (RPCA)
- medicaid therapy
- licensed before/after school programs (e.g. Campagna Kids)

Functions of these programs should be co-located with the ability to utilize standard classrooms, the gymnasium, multipurpose room and media center. It is also important to note that licensed programs have specific requirements that should be considered as a part of any plans to renovate or build new facilities. While the requirements are not onerous, failure to incorporate their consideration during the planning process can significantly constrain having access to such programs.

ACPS has a standing partnership with Alexandria Department of Recreation, Parks, and Cultural Activities (RPCA) for the maintenance and after-school programming of fields. At several schools, RPCA operates after school and community programs in the gymnasium or multipurpose room; per the joint ACPS/RPCA Facility & Outdoor Maintenance & Use Agreement.

**Family and Community Engagement Centers**
ACPS serves a diverse community of families who have immigrated to the DC Metropolitan area from all over the world. It is understandable that for cultural reasons or due to language barriers that newcomers to the school may be hesitant to engage staff and need additional support. The Division wants to locate Family and Community Education Centers (FACE) to welcome families and provide the additional resource that will help them succeed.

A typical FACE center would be located near the main
office and include
- reception area with both comfortable seating for
- individual conversations and table seating for
- meetings and classes
- private office
- storage.

Parent Teacher Associations //
Provide flexible use space to accommodate the mission and program offerings of the PTA group. PTA's meet on a monthly schedule, typically during weekday evenings and have 30 to 35 participants in attendance. PTA meetings include school board members, staff, parents, and on occasion the superintendent. PTA's offer volunteer afterschool programs that require access to standard, flexible classrooms, the gymnasium, the media center, and the cafeteria. Consider co-locating PTA with other partnership functions like the FACE center. PTA functions require dedicated storage space and direct interaction with the schools main office suite and staff.

Energy & Environmental Performance //
ACPS is dedicated to renovating existing or building new facilities that meet or exceed Eco-City standards and City of Alexandria environmental performance standards. ACPS desires to offer schools that teach faculty, staff, students and the community the importance of environmental stewardship. ACPS believes quality architecture and high energy performance facilities positively impact the education of students and increase retention of staff and students. At this time, city development standards require compliance with LEED Silver certification standards for major construction projects. ACPS seeks to exceed these minimum standards. Please reference Appendix 5 for additional guidance regarding technology infrastructure requirements.

Materials & Finishes //
ACPS believes high-quality architectural materials and finishes create an atmosphere that supports and inspires learning. All spaces should be conducive to teaching and provide a warm and welcoming feeling and meet the principals of Evidence Based Design (lighting, environmental / air quality, and acoustics). All materials must be highly durable and resilient yet support a creative learning environment. ACPS is cognizant that materials should be reasonable in cost and not exuberant when considering budget and life-cycle costs to maintain and upkeep. A sensible balance is necessary to maintaining budget and achieve ACPS' facility standards.

Operations & Mechanical //
Provide mechanical systems that are climate appropriate and responsive to the life cycle, maintenance and efficiency expectations of ACPS. Provide passive systems that pair with active systems and coordinate to achieve maximum efficiencies while coordinating with the users to determine the location of universal and dedicated systems. ACPS requires individual facilities to operate under 20 kw/hr per square foot by the year 2026. Please reference Appendix 1 for additional guidance regarding technology infrastructure requirements.
the 700 student prototype

The remainder of this document is meant to be illustrative of a typical 700 student school in the Alexandria City Public Schools. The basis for the capacity and the number of classrooms per grade is located was previously described on page 15. The number and size of support spaces and labs are driven by staffing formulas and national benchmarks. For new schools or the modernization/addition to an existing school, this information would inform a 'site specific' educational specification.

It is assumed that architects will be required to bring an existing school up to new school standards within reasonable limits. Designs for spaces may vary from recommended sizing by +/- 10% to minimize the unnecessary movement of walls or to preserve the integrity of a historic building.

The net square foot requirements include the classrooms, support spaces, labs and large core areas. The net/gross calculation includes corridors, bathrooms, mechanical spaces, etc. The proposed ratio listed in this specification assumes a new, highly efficient school. It is expected that existing schools will be less efficient and the actual final (wall to wall) building will be larger than what is listed.

Summary of Facility Space Requirements //

The following section provides a summary of all spaces required within the facility. It provides an overall summary of the school facility as well as individual space detail. Data is provided to serve as an overall guideline and architects should strive to meet the goals within 10 to 15 percent.
<table>
<thead>
<tr>
<th><strong>INTERIOR AREAS</strong></th>
<th><strong>TOTAL NET</strong></th>
<th><strong>CONSTRUCTION FACTOR [0.082]</strong></th>
<th><strong>TOTAL GROSS</strong></th>
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<tr>
<td>CORE ACADEMIC / SPECIAL EDUCATION AREAS</td>
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<td>PHYSICAL EDUCATION</td>
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<td>ADMINISTRATION</td>
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<tr>
<td>STUDENT DINING AND FOOD SERVICES</td>
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<td><strong>TOTAL GROSS</strong></td>
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<tr>
<td>EQUIPMENT AREA (PK-1)</td>
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<tr>
<td>FITNESS DEVELOPMENT FENCED</td>
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<tr>
<td>EQUIPMENT AREA (2-5)</td>
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<td>PARKING [ 78 spaces ]</td>
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FIG. 6.0 // BUILDING SPACE SUMMARY
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<th>TOTAL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-k Classroom</td>
<td>5</td>
<td>1,175</td>
<td>5,875</td>
<td>includes 50 SF toilet and 100 SF storage closet</td>
</tr>
<tr>
<td>Kindergarten Classroom</td>
<td>5</td>
<td>1,175</td>
<td>5,875</td>
<td>includes 50 SF toilet and 100 SF storage closet</td>
</tr>
<tr>
<td>Outdoor Storage Early Childhood</td>
<td>1</td>
<td>200</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Grade 1 Classroom</td>
<td>5</td>
<td>900</td>
<td>4,500</td>
<td></td>
</tr>
<tr>
<td>Grade 2 Classroom</td>
<td>5</td>
<td>900</td>
<td>4,500</td>
<td></td>
</tr>
<tr>
<td>Grade 3 Classroom</td>
<td>4</td>
<td>900</td>
<td>3,600</td>
<td></td>
</tr>
<tr>
<td>Grade 4 Classroom</td>
<td>4</td>
<td>900</td>
<td>3,600</td>
<td></td>
</tr>
<tr>
<td>Grade 5 Classroom</td>
<td>4</td>
<td>900</td>
<td>3,600</td>
<td></td>
</tr>
<tr>
<td>Extended Learning Area</td>
<td>5</td>
<td>600</td>
<td>3,000</td>
<td>add to cluster circulation</td>
</tr>
<tr>
<td>Classroom Bathroom</td>
<td>11</td>
<td>100</td>
<td>1,100</td>
<td></td>
</tr>
<tr>
<td>Resource Classroom (Sped)</td>
<td>3</td>
<td>250</td>
<td>750</td>
<td>pull out instruction</td>
</tr>
<tr>
<td>Resource Classroom (other)</td>
<td>2</td>
<td>250</td>
<td>500</td>
<td>reading, math, speech, etc.</td>
</tr>
<tr>
<td>TAG Classroom</td>
<td>1</td>
<td>900</td>
<td>900</td>
<td>typically located in 4th or 5th grade classroom cluster</td>
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<tr>
<td>Student Project Storage</td>
<td>1</td>
<td>150</td>
<td>150</td>
<td>for general class and TAG use, typical equipment similar to art storage</td>
</tr>
<tr>
<td>ELL</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>TBD</td>
</tr>
<tr>
<td>Student Services</td>
<td>4</td>
<td>100</td>
<td>400</td>
<td>social worker, psychologist</td>
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<td>Occupational/Physical/Itinerant Hoteling Storage</td>
<td>1</td>
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<td>400</td>
<td>50 SF of storage</td>
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<tr>
<td>Teacher Collaboration Room</td>
<td>5</td>
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<td>1,250</td>
<td></td>
</tr>
<tr>
<td>Early Childhood Learning</td>
<td>1</td>
<td>2,000</td>
<td>2,000</td>
<td>Includes 200 SF chair and table storage</td>
</tr>
<tr>
<td>Art Storage</td>
<td>1</td>
<td>200</td>
<td>200</td>
<td>Adjacent to ELA/Dining</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>43,200</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Comments**

During facility renovations, the architect should be expected to minimize the movement of ‘hard’ walls and fit the proposed programmed spaces into the existing building. Tolerances of +/- 10% is acceptable as is the combination of spaces within a suite. Adjacencies as specified are desirable, but options may be considered and should be reviewed with the planning team.
size
1,175 SF

capacity
16-20 students (HS/PK/K)
2 teachers
parents/staff members

ancillary spaces
pre-k/ kindergarten restroom (50 SF)
storage closet (100 SF)

spatial relationships
see illustration opposite page
group classrooms for potential teaming
locate coat cubbies near door
locate at first floor for emergency
prefer door to the outside from the classroom
designate area for cot storage (stacked)
centers in the classroom may include:
  housekeeping
  blocks
  library/books
  writing table
  art table
  sand and water tables

program activities
whole group
teacher directed
small group
one-on-one instruction
cooperative learning
discovery

language arts
inquiry

plumbing
double sink at two heights
with drinking fountain and sink at child height
with deep well at adult height
wall mounted watercloset
wall mounted lavatory

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving
F2 student cubbies (20)
F3 wall shelving (over cubbies)
F4 marker board (8 LF)
F5 tackable/magnet wall surface
F6 soap dispenser
F7 towel dispenser
F8 wall mounted interactive electronic presentation device
F9 classroom sink
F56 30” itinerant/aid station

L3 teacher work surface with mobile storage and two chairs
L4 four drawer lateral file cabinet
L5 bound group rug (3, group area, block area, and reading area)
L6 mobile shelving (various)
L7 teachers lockable wardrobe (18” x 18 “)
L9 learning center sets- sand/water table, kitchen, art cart, etc.
L10 student desks

data drop

loose furnishings
L1 stackable/nesting chairs (18-20)
L2 stackable/nesting tables (4-5)
E-ACA /// GRADES 1 - 5 CLASSROOM
size
900 SF

capacity
22 students (1st – 2nd)
24 students (3rd – 5th)
2 teachers
staff members
guest speakers/volunteers

ancillary spaces
restrooms

spatial relationships
see illustration opposite page
group classrooms for potential teaming
doorway into the commons area
doorway into adjacent bathroom suite
connecting to adjacent classroom
locate coat cubbies near door
two teaching/learning walls with student
height marker boards and technology
infrastructure
consider outside ‘porches’ where feasible.

program activities
large group instruction
small group instruction and group work
computer instruction
team teaching
oral presentations
testing

plumbing
sink with drinking fountain

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving
F2 student cubbies (20-22)
F3 wall shelving (over cubbies)
F4 marker board (on 2 walls, 16 LF each)
F5 tackable/magnet wall surface
F6 soap dispenser
F7 towel dispenser
F8 wall mounted interactive electronic
presentation device
F9 classroom sink
F56 30” itenerant/aid station
F62 sound enhancement system

loose furnishings
L1 stackable/nesting chairs (22-26)
L3 teacher work surface with mobile storage
and two chairs
L4 four drawer lateral file cabinet
L5 bound group rug (up to grade 2)
L7 teacher’s lockable wardrobe (18”X18”)
L8 tall cabinet with shelves
L10 student desks (22-26)
L11 adjustable height bookshelves

∗ data drop
size
600
capacity
4-25 students
1-2 teachers
ancillary spaces
grades K-5 classroom
furniture storage
spatial relationships
integrated into circulation
located within classroom clusters
program activities
small group learning centers
story telling
team activities and project based learning
individual activities
amphitheater
kitchenette

LEGEND ///

- **fixed equipment** (TBD based on age and school preference) may include:
  - F4 marker board (8 LF)
  - F5 tackable/magnet wall surface
  - F8 wall mounted interactive electronic presentation device (optional)

- **loose furnishings**
mixture of the following to support multiple learning activities in multiple learning configurations:
  - L1 stackable/nesting chairs
  - L13 small table(s)
  - L18 lounge chairs
size
100 SF

capacity
2 students

ancillary spaces
1-5 classrooms

spatial relationships
shared by two adjacent classrooms

plumbing
sink connection
toilet connection

LEGEND ///

fixed equipment
F6 soap dispenser
F7 towel dispenser
F18 mirror
F19 toilet tissue holder
F20 bathroom accessories
F30 bathroom sink
THIS PAGE IS LEFT BLANK INTENTIONALLY
size
250

capacity
up to 15 students
2 or more staff members

ancillary spaces
n/a

spatial relationships
located within academic core areas

program activities
small group work
independant instruction and work
reading, math, speech, etc.

---

**LEGEND ///**

- **fixed equipment**
  - F1 base/wall cabinets and shelving
  - F3 wall shelving (over cubbies)
  - F4 marker board (8 LF)
  - F5 tackable/magnet wall surface
  - F8 wall mounted interactive electronic presentation device
  - F9 classroom sink

- **loose furnishings**
  - L1 stackable/nesting chairs (15-18)
  - L3 teacher work surface with mobile storage and two chairs
  - L4 four drawer lateral file cabinet
  - L7 teacher’s lockable wardrobe (18”X18”)
  - L8 tall cabinet with shelves
  - L10 student desks (15-18)
  - L11 adjustable height bookshelves

- **data drop**
size
100 SF

capacity
- counselors
- psychologist
- social worker
- students and parents
- staff
- teachers

ancillary spaces
- staff restrooms

spatial relationships
- near academic core areas

program activities
- group and individual counseling/learning
- student assessment

LEGEND ///

- loose furnishings
  - L1 stackable/nesting chairs (4)
  - L4 four drawer lateral file cabinet
  - L11 adjustable height bookshelves
  - L12 admin workstation and chair
  - L13 small table
THIS PAGE IS LEFT BLANK INTENTIONALLY
**size**
- 400 SF

**capacity**
- itinerant
- up to 4 staff

**ancillary spaces**
- none

**spatial relationships**
- near student services
- near resource classroom used for speech
- near special needs classroom
- near FACE center

**program activities**
- therapy
- exercise
- assistive technology evaluation
- occupational and physical therapy

**environmental considerations**
- electrical outlets for equipment
- wheelchair accessibility
- reinforcing structure in ceiling to support lift equipment

---

**fixed equipment**
- F4 marker board (8 LF)
- F5 tackable/magnet wall surface
- F56 30” itinerant/aid station (4)

**loose furnishings**
- L1 stackable/nesting chairs (6)
- L4 four drawer lateral file cabinet
- L15 task chair (4)
- L21 work table
size
250 SF

capacity
teachers
teachers’ assistants
parents/volunteers

ancillary spaces
staff restroom
storage

spatial relationships
near academic core classrooms
access to staff restroom(s) from within
access to storage from within

program activities
team staff meetings
lesson planning and grading
scheduling appointments
record keeping
develop and review teacher materials

plumbing
sink connection

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving
F4 marker board
F5 tackable/magnet wall surface
F6 soap dispenser
F7 towel dispenser
F9 classroom sink
F49 lockers
F57 kitchenette

loose furnishings
L15 task chair (6)
L17 printer station
L19 conference table
L26 refrigerator

miscellaneous
M2 color printer
size
200 SF
capacity
staff members
ancillary spaces
n/a
spatial relationships
near core academic classrooms
program activities
storing and retrieving books/supplies

LEGEND ///
● fixed equipment
F3 wall shelving (12” and 24” deep)
F28 base cabinets

○ loose furnishings
L6 mobile shelving
**size**
200 SF

**capacity**
staff members

**ancillary spaces**
n/a

**spatial relationships**
direct access to outdoors
near early childhood classrooms
direct access to interior corridor

**program activities**
storage of portable outdoor play equipment

---

**LEGEND ///**

- **fixed equipment**
  F3 wall shelving (10’-16’ total, 84” high, 12”, 24,” or 30” deep)
size
200 sf

capacity
1 teacher

ancillary spaces
art lab

spatial relationships
direct access to art lab
visual access to art lab
second storage room provided adjacent to
early childhood dining / ELA space

program activities
storage of equipment and supplies

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving (paper
storage cabinets. one cabinet for
hazardous materials)
F1.1 casework
F3 wall shelving (18” deep, metal)

loose furnishings
L4 four-drawer lateral file cabinet
size
2,000 SF

capacity
Pre-K-Kindergarten: two lunch periods
3-6 staff members

ancillary spaces
ECE Classrooms
Storage
Art storage

spatial relationships
integrated into circulation
located within classroom clusters

program activities
early childhood dining
early childhood art
small group learning centers
story telling
team activities and project-based learning
individual activities

environmental considerations
cleanable surfaces
windows to provide ample natural light
good sight lines to all areas of the room for supervision
window treatment to darken room for AV presentation
electric outlets for food serving equipment

LEGEND ///

fixed equipment
F4 marker board (two 8 LF boards with electric outlet below)
F5 tackable or magnetic wall surface
F8 wall mounted, interactive, electronic presentation device

loose furnishings
L39 cafeteria tables (tables and seating to accommodate for 130 children ages 4-6)
L41 chair dollies
three sinks: adult hand washing, child hand washing, utility
E-MC /// MEDIA CENTER
READING / LEARNING / CIRCULATION
TECHNICAL PROCESSING ROOM
COMBINED OFFICE/WORKROOM
DEVICE CHARGING ROOM
STORAGE
SMALL GROUP ROOM
<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
<th>SF</th>
<th>TOTAL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading/Learning/Circulation</td>
<td>1</td>
<td>2792</td>
<td>2792</td>
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</tr>
<tr>
<td>Technical Processing Room</td>
<td>1</td>
<td>200</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Combined Office/Workroom</td>
<td>1</td>
<td>200</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Device Charging Room</td>
<td>1</td>
<td>150</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>1</td>
<td>200</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Small Group Room</td>
<td>2</td>
<td>150</td>
<td>300</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
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<td>3842</td>
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</tr>
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</table>

**Comments //**
Spaces within the Media Center may vary up to 15% and may be combined to facilitate circulation and supervision. The overall square footage may be +/- 10%.
FIG. 8.0 // MEDIA CENTER ADJACENCY DIAGRAM
CORRIDOR

TECHNICAL PROCESSING ROOM

DEVICE CHARGING ROOM

SMALL GROUP RM

COMBINED OFFICE / WORKROOM

STORAGE

SMALL GROUP RM

E-MC /// READING / LEARNING / CIRCULATION

0' 4' 8' 16'
size
3000 sf

capacity
75 students
1 media specialist
community patrons after school hours

ancillary spaces
technical processing room
device charging room
combined office/workroom
storage
small group room

spatial relationships
circulation area located close to entrance / exit

program activities
reading and research
circulation of materials and resources
including online catalogs
large group and small group instruction
provide meeting areas for community, staff, and parents
dramatic reading and storytelling
informal small group interaction

environmental considerations
recessed floor outlets at tables
adequate ventilation
lighting appropriate to task with switches
to dim separate zones of media center
environmental sound control:
wall minimum: STC 45
ceiling minimum: CAC35
electrical outlets at entrance for future security system
electrical outlets at column locations
windows to provide natural sunlight
security of school when center is in use during after school hours
ceiling height in proportion to room dimensions
open flow for traffic in reference/professional/periodical areas
electrical outlets in toe space of wall shelving
window treatment to darken room for AV presentation
mix of lounge furniture

finishes
flooring: carpet

LEGEND ///

fixed equipment
F1.1 casework (circulation desk)
F3 marker board (in two locations, 8 LF ea)
F44 library case work*
F45 motorized projection screen

loose furnishings
L1 stackable/nesting chairs (32-55 per student enrollment)
L17 printer station
L18 lounge chairs

L21 work table (6-10 with various heights)

miscellaneous
M3 bar code reader
M7 desktop computer (2)

data drop

*shelving calculations per 3’ shelves
Picture thin: 20 books per foot / 60 books per shelf
Standard size: 9 books per foot / 30 books per shelf
Reference books: 6 books per foot / 18 books per shelf
Periodicals: 1 per foot for display purposes

to calculate how many linear feet of shelving are required for a collection, take the total number of volumes and divide by the number of books per foot. For example, a primary collection of 5,000 volumes consisting of picture and thin books would require a total of 250 linear feet of shelving. shelves should only be two-thirds full. to allow for this, multiply the number of linear feet required by 1.33. example: 250 x 1.33 = 332.5 or 333 linear feet of shelving.
*VA guidelines recommend free standing shelving 36” in height or less.
E-MC /// TECH PROCESSING ROOM
size
200 sf

capacity
5 students
2 teachers

ancillary spaces
reading/learning/circulation
combined office/workroom

spatial relationships
n/a

program activities
scanning, digitizing, desktop publishing, copying, and collating

environmental considerations
uniform lighting with an appropriate visual comfort level
environmental sound control:
wall minimum: STC 45
ceiling minimum: CAC 40
electrical outlets for equipment
due to the changing nature of technology, a media production room is to be designed for flexibility of use.
provide visual control from media center

LEGEND ///

● fixed equipment
F1 base/wall cabinets and shelving
(peripheral counters with storage below)

☐ loose furnishings
L13 small table (several and various, for scanners and other equipment)
L17 printer station (2)
L21 work tables (2)

■ miscellaneous
M1 high speed and/or large format printers
M2 color printers
M4 photocopy machine
M5 digital scanner
M6 laminator

▷ data drop
size
200 sf

capacity
media specialists

ancillary spaces
reading/learning/circulation
small group room

spatial relationships
adjacent and access to reading/learning/circulation
adjacent to and access to office
adjacent to access to technical processing room
located behind circulation desk and wholeclass zone

program activities
storage of materials
storage of a/v materials and videotapes
scanning
digitizing

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving (base cabinets with power)
F1.1 casework (poster/map storage)
F3 wall shelving

loose furnishings
L4 four drawer lateral file cabinet (1-2)
L11 adjustable height bookshelves
L12 admin workstation (2)
L15 task chair (2)
L21 work table

miscellaneous
M7 desktop computer (2)

data drop
size
150 sf
capacity
staff
ancillary spaces
n/a
spatial relationships
adjacent and access to reading/learning/circulation
program activities
overnight secure charging area for laptops/tablets
environmental requirements
secure metal door
  electrical outlets designed around a ‘parking’ strategy for 5-6 laptop charging carts

LEGEND ///
● fixed equipment
  F3 wall shelving (no lower shelves)
◇ loose furnishings
  L51 laptop charging cart (5-6)
**E-MC /// STORAGE**

- **size**: 200 sf
- **capacity**: staff
- **ancillary spaces**: n/a
- **spatial relationships**: near core classrooms
- **program activities**: storing and retrieving books / supplies

**LEGEND ///**
- **fixed equipment**
  - F1 base/wall cabinets and shelving
  - F3 wall shelving (variety of 12" and 24" deep shelving)
**Small Group Room**

**Size**
- 150 sf

**Capacity**
- up to 8 persons

**Ancillary Spaces**
- n/a

**Spatial Relationships**
- adjacent and access to reading / learning / circulation area

**Program Activities**
- group research projects
- meetings
- listening and viewing

**Legend**

- **Fixed Equipment**
  - F4 marker board (8 LF)

- **Loose Furnishings**
  - L1 stackable/nesting chairs (4)
  - L13 small table

- Data drop

---

**Key Features**

- **Compared Office/Workroom**
- **Reading / Learning / Circulation Room**

---

82.
E-VA /// VISUAL ARTS

ART LAB
KILN ROOM
<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
<th>SF</th>
<th>TOTAL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>VISUAL ARTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art Lab</td>
<td>1</td>
<td>1200</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td>Kiln Room</td>
<td>1</td>
<td>75</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>1,275</strong></td>
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</tr>
</tbody>
</table>

Comments //
The overall total for the Instructional area may be +/-10%.
FIG. 9.0 // VISUAL ARTS ADJACENCY DIAGRAM
size
  1200 sf

capacity
  20-24 students
  1 teacher
  1 student teacher
  parent volunteers

ancillary spaces
  kiln room
  art storage

spatial relationships
  centrally located with convenient access to core academic classrooms
  if two labs - one will be located in the early childhood area and be furnished with age appropriate furniture
  direct access to art patio - with overhang adjacent and access to kiln room

program activities
  drawing, painting, and print making
  sculpture, model-making, collage, and assembly
  ceramics-clay (age appropriate)
  computer graphics and mixed media work
  viewing prints/slides/movies/art videos
  individual and cooperative group work
  storage of supplies, projects, and small equipment

environmental considerations
  uniform lighting/track and display lighting
  windows to provide natural light and egress, preferably northern exposure
  include outlets on the wall above counter spaces in raceway
  provide one ceiling hung, retractable electrical outlet
  window treatment to darken room for AV presentation is required

finishes
  ceiling:
    exposed structure, painted with acoustical treatment
  walls:
    painted concrete masonry units or dry wall
    one tackable wall

plumbing
  2 large, deep sink (separated by at least 5 ft)
  plumbing connections

hvac
  manually controlled general exhaust

LEGEND ///

● fixed equipment
  F1 base wall cabinets and shelving (12 LF of 30" high base cabinets w/wall cabinets above paper storage cabinets. Two sinks with different heights)
  F2 student cubbies
  F4 marker board (16 LF)
  F6 soap dispenser (at each sink)
  F7 towel dispenser (at each sink)
  F8 wall mounted interactive electronic presentation device
  F35 hand sink

☐ loose furnishings
  L1 stackable/nesting chairs (24-30)
  L2 stackable/nesting tables (7)
  L3 teacher work surface with mobile storage and two chairs
  L7 teacher’s lockable wardrobe
  L8 tall cabinet with shelves
  L13 small table
  L42 drying rack (40-80 slats)

☐ miscellaneous
  M7 desktop computer
  ▶ data drop
E-VA // KILN ROOM

ART LAB

L44

L45
size
  75 sf
capacity
  1-2 persons
ancillary spaces
  art lab
spatial relationships
  direct access to art lab
program activities
  store 3d sculptural work
  house kiln equipment
environmental considerations
  ventilation controlled by a thermostat
  adequate ventilation with vents to the outside for kiln
  electrical outlets for equipment
  lighting appropriate to task
  consider safety in plumbing room layout

LEGEND ///

 loosenings
  L44 kiln (28+” opening, 27” deep, and ventilation)
  L45 greenware shelving
E-MU /// MUSIC

GENERAL MUSIC ROOM
INSTRUMENTAL MUSIC ROOM
(BAND AND ORCHESTRA)
GENERAL MUSIC STORAGE
INSTRUMENT STORAGE
<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
<th>SF</th>
<th>TOTAL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Music Room</td>
<td>1</td>
<td>1200</td>
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<tr>
<td>Instrumental Music Room</td>
<td>1</td>
<td>1000</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>(Band and Orchestra)</td>
<td></td>
<td></td>
<td></td>
<td>Choral and Drama</td>
</tr>
<tr>
<td>General Music Storage</td>
<td>1</td>
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</tr>
<tr>
<td>Instrument Storage</td>
<td>1</td>
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<tr>
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<td><strong>2,600</strong></td>
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</tbody>
</table>

**Comments //**
The overall total for the instructional area may be +/- 10%. See stage for third teaching stations.
FIG. 10.0 // MUSIC ARTS ADJACENCY DIAGRAM

GENERAL MUSIC ROOM

STAGE

INSTRUMENTAL MUSIC ROOM

INSTRUMENTAL MUSIC STORAGE

GENERAL MUSIC STORAGE

CHAIR/STAND/RISER STORAGE
E-MU /// GENERAL MUSIC ROOM
size
1200 sf

capacity
20-30 music students
1 teacher
parents/volunteers

ancillary spaces
general music storage
near other music rooms
chair/stand/riser storage
general storage

spatial relationships
co-located near similar functions/noise levels
adjacent instrumental music and general music

program activities
listen, analyze, describe, and compose music
sing alone and with others (solas, duets, trios, ensembles, large groups)
guest speakers and performers (solo and ensembles)
group instruction
choral, speech, theatrics (musicals, operas)
view educational videos for music enrichment
extra-curricular after school activities (i.e. Odyssey of the Mind)
audio recording and playback

environmental considerations
uniform lighting and (optional) theatrical lighting
environmental sound control:
wall minimum: STC 50
ceiling minimum: CAC 35
sound insulation in walls and ceiling (extended above ceiling to underside of deck)
acoustical wall treatments
drinking fountain and sink in classroom

finishes
flooring:
carpet
plumbing
plumbing connections
drinking fountain
sink

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving (music storage cabinet)
F4 marker board (16 LF)
F8 wall mounted interactive electronic presentation device
F79 tackable surface (12 LF)

loose furnishings
L3 teacher workstation with mobile storage
L4 four drawer lateral file cabinet
L5 bound group rug
L7 teacher's lockable wardrobe
L11 adjustable height bookshelves (for instrument storage around periphery)
L30 mobile a/v cabinet
L31 music posture chairs (24-36)
L32 conductor podium and stool

miscellaneous
M7 desktop computer
M8 upright piano

data drop
E-MU /// INSTRUMENTAL MUSIC ROOM
size
1000 sf

capacity
20-60 students
1 teacher

ancillary spaces
instrument storage
near cafetorium

spatial relationships
adjacent to general music room
adjacent and access to instrument storage

program activities
teaching and learning to read music
individual practice
performance of music
students will practice in large groups,
small groups, and individually

environmental considerations
environmental sound control:
wall minimum: STC 50
ceiling minimum: CAC 50
sound insulation in walls (extended above
celling to underside of roof deck)
aoustical wall treatments
double doors with removable mullions

finishes
flooring:
carpet

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving (paper storage cabinets)
F4 marker board (16 LF)
F6 soap dispenser
F7 towel dispenser
F8 wall mounted interactive electronic presentation device
F9 classroom sink
F79 tackable surface (on two walls)

loose furnishings
L3 teacher work surface with mobile storage
L4 four drawer lateral file cabinet
L7 teacher’s lockable wardrobe
L11 adjustable height bookshelves
(for instrument storage around periphery)
L30 mobile a/v cabinet
L31 posture chair (24-50)
L32 conductor’s podium and stool

miscellaneous
M7 desktop computer
M8 upright piano
size
100 sf

capacity
students
teachers

ancillary spaces
general music room
stage

spatial relationships
n/a

program activities
storage and simple repair of accessories and equipment

LEGEND

● fixed equipment
F3 wall shelving (variety of 12” and 18” deep)

◇ loose furnishings
L4 four drawer lateral file cabinet (2)
**size**
250 sf

**capacity**
teacher
students

**ancillary spaces**
instrumental music room
near stage

**spatial relationships**
n/a

**program activities**
storage

**environmental considerations**
na

**LEGEND ///**

- **fixed equipment**
  F1.1 casework (adjustable open cubbies for medium and small instruments)
E-PE /// PHYSICAL EDUCATION

GYMNASIUM
PE OFFICE
PE STORAGE
MULTI-PURPOSE/AFTER SCHOOL SPACE
PLAYGROUNDS
<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
<th>SF</th>
<th>TOTAL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gymnasium</td>
<td>1</td>
<td>6,500</td>
<td>6,500</td>
<td></td>
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<tr>
<td>PE Office</td>
<td>2</td>
<td>150</td>
<td>300</td>
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</tr>
<tr>
<td>PE Storage</td>
<td>2</td>
<td>250</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Multi-Purpose/After School Space</td>
<td>1</td>
<td>1,500</td>
<td>1,500</td>
<td></td>
</tr>
<tr>
<td>Playgrounds</td>
<td></td>
<td></td>
<td></td>
<td>See pages for more information</td>
</tr>
</tbody>
</table>

Total                                |          |     | **8,800** |   |

Comments //
FIG. 11.0 // PHYSICAL EDUCATION ADJACENCY DIAGRAM
size
6,500 SF

capacity
20-24 students per class
2-3 teachers
parents and community members for
meetings
assemblies to accommodate at least 1/2 of
the student body

finishes
flooring: wood strip flooring for athletic
applications or resilient athletic
flooring
base: vented resilient base
ceiling: painted exposed structure on
acoustical deck
walls: painted concrete masonry units
acoustical wall treatment and/or
sound absorbing concrete masonry
units
padding on lower levels

spatial relationships
near public restrooms
access to outdoor physical education play
areas
near visitor parking
located with easy access to rest of school,
but must be able to close off area for
security during evening activities
adjacent and access to PE office
adjacent and access to PE storage

adjacent to multi-purpose room

program activities
athletic skills and leader games
adaptive physical education
student assemblies and programs
lectures/teaching
community use

environmental considerations
environmental sound control:
wall minimum: STC 50
adequate sound control/acoustics
clear height of 20’ from floor to nearest
obstruction
electrical outlets for equipment
drinking fountain and open cubbies in
adjacent lobby area
structure, lighting, and ducts designed not
to trap PE balls; wire guards on light
fixtures
ceiling heights should be proportional to
room volume

LEGEND ///

fixed equipment
F4 marker board (8 LF 2 sides of gym with
electrical outlet below)
F22 basketball goals (adjustable height, ceiling
hung or portable)
F23 operable partition- motorized

loose furnishings
L53 portable sound system
F24 climbing wall
size
  150 SF

capacity
  1-2 teachers
  student teachers

ancillary spaces
  gymnasium
  near adult restrooms

spatial relationships
  adjacent and access to gymnasium
  near restrooms

program activities
  ordering
  scheduling
  planning
  maintaining records
  meetings

plumbing
  wall mounted lavatory
  wall mounted water closet
  floor drains in restroom and shower

LEGEND ///

fixed equipment
  F4 marker board (4 LF)
  F6 soap dispenser
  F7 towel dispenser
  F18 mirror (24” x 60”)
  F20 bathroom accessories
  F30 bathroom sink
  F49 lockers (2)

loose furnishings
  L4 four drawer lateral file cabinet
  L12 admin workstation and chair
  L11 adjustable height bookshelves

miscellaneous
  M7 desktop computer

data drop
size
250 SF

capacity
1-2 teachers
student teachers

ancillary spaces
gymnasium
near direct access to exterior for access
to outdoor equipment

program activities
storage

environmental considerations
leave space below shelving on one wall
for portable bins

LEGEND ///

fixed equipment
F3 wall shelving (12" and 18" deep)
F21 pegboard (4 LF)

loose furnishings
L34 tumbling mats
L35 ball bins
L38 play equipment
THIS PAGE IS LEFT BLANK INTENTIONALLY
size
1,500 SF

capacity
students
teachers and staff
after school staff
community

finishes
flooring: resilient athletic flooring

spatial relationships
near after school entrance to building
near parking area
adjacent and access to after school
storage area

program activities
back-up physical education teaching
wellness area
after school staff to tutor and counsel
students
quiet area for students to play cards, work
on homework, read
office space for after school staff

plumbing
connections for sink with gooseneck
faucet

environmental considerations
elevated ceiling, +/- 18 LF
uniform lighting
flexibility of space
adequate ventilation and ceiling fans
electrical outlets for equipment

must be able to isolate from the rest of
the school after hours
drinking fountain in adjacent corridor
windows to provide natural light

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving
F4 marker board (on 2 walls, 16 LF each)
F6 soap dispenser
F7 towel dispenser
F8 wall mounted interactive electronic
presentation device
F9 classroom sink

loose furnishings
L1 stackable/nesting chairs (22-26)
L2 stackable/nesting tables (6)
L6 mobile shelving

loose furnishings for after school staff TBD

data drop
FIG. 7.0 // PRE-K PLAYGROUND DIAGRAM
general requirements
provide playground areas to allow for difference in age, ability, and varying interests. follow applicable safety guidelines for different age groups.

pre-kindergarten to grade 1 play area (figure 7.0)
plan for play activities that include rocking, balancing, climbing, and sliding.
include tables and chairs for age group
Locate equipment with moving parts, at the perimeter of the play area. use fence or planting beds to prevent children from inadvertently stepping into path of moving equipment.

primary play area (figure 7.2)
design for grades 1 - 3.
plan for play activities that include rocking, swinging, balancing, climbing, and sliding.
plan for upper-body strengthening devices such as a parallel bar and overhead ladder play equipment.

intermediate play area (figure 7.3)
design for grades 4 - 5.
intermediate play area may be combined with primary play area and a ‘tot
track’ designed around both play areas
Include an outdoor science classroom that may include a garden.
plan for 1 full basketball court (50 feet by 84 feet) or 2 half courts (50 feet by 42 feet).

soft surface play area //
soft surfaces are provided under play equipment and must be handicapped accessible.
surfacing is to be a poured polyurethane surface.
avoid using black surfacing.

accessibility standards (figure 7.1)
plan for ramps and/or transfer points on composite play structures for access to play components on elevated decks.
meet the Americans with Disabilities Act guidelines for percentage of components that are to be accessible by ramp and by transfer deck.
provide table and benches along accessible route.
provide upper-body strengthening devices as appropriate for age group and amount of supervision.

FIG. 7.1 // TYPICAL RAMP AND TRANSFER DECK

22”
RAMP
32”
RAMP
16”
8”
12”
RAMP
FIG. 7.2 // PRIMARY PLAYGROUND DIAGRAM
FIG. 7.3 // INTERMEDIATE PLAYGROUND DIAGRAM
E-AD /// ADMINISTRATION

LOBBY/GATHERING AREA
WELCOME CENTER
CONFERENCE ROOM
PRINCIPAL’S OFFICE
ASST. PRINCIPAL’S OFFICE
ADMINISTRATIVE WORKROOM
MAILROOM
RECORDS ROOM
FAMILY AND COMMUNITY ENGAGEMENT CENTER
STAFF TOILET
STUDENT SERVICES OFFICE
STUDENT SERVICES CONF RM
HEALTH SUITE
  OFFICE AREA
  WAITING/TREATMENT AREA
  COTS
  STORAGE
  TOILET
AFTER SCHOOL OFFICE AND STORAGE
<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
<th>SF</th>
<th>TOTAL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lobby/Gathering area</td>
<td>1</td>
<td>700</td>
<td>700</td>
<td>welcoming area, work area for administrative asst.</td>
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<tr>
<td>Welcome Center</td>
<td>1</td>
<td>450</td>
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<tr>
<td>Conference Room</td>
<td>1</td>
<td>250</td>
<td>250</td>
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<tr>
<td>Principal’s Office</td>
<td>1</td>
<td>180</td>
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<tr>
<td>Assistant Principal’s Office</td>
<td>1</td>
<td>150</td>
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<tr>
<td>Administrative Workroom</td>
<td>1</td>
<td>200</td>
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<tr>
<td>Mailroom</td>
<td>1</td>
<td>125</td>
<td>125</td>
<td>needs to be a secure space</td>
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<tr>
<td>Records Room</td>
<td>1</td>
<td>150</td>
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</tr>
<tr>
<td>Family and Community Engagement Center</td>
<td>1</td>
<td>300</td>
<td>470</td>
<td>parent liaison office 120 SF/PTA storage 50 SF</td>
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<td>Staff Toilet</td>
<td>1</td>
<td>50</td>
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<td>Student Services Office</td>
<td>2</td>
<td>150</td>
<td>300</td>
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<tr>
<td>Student Services Conference</td>
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<td>200</td>
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<td>Office Area</td>
<td>1</td>
<td>100</td>
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<tr>
<td>Waiting/Treatment Area</td>
<td>1</td>
<td>575</td>
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<tr>
<td>Cots</td>
<td>1</td>
<td>150</td>
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<tr>
<td>Storage</td>
<td>1</td>
<td>25</td>
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<tr>
<td>Toilet</td>
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<tr>
<td>After School Office and Storage</td>
<td>1</td>
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<tr>
<td><strong>Total</strong></td>
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<td>4,375</td>
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</tr>
</tbody>
</table>

**Comments //**
The overall total for the administration area may be + or - 10 percent. Some areas may be combined to facilitate circulation. Some areas (*) may be located outside of the suite to make the best use of the existing building.
**size**
450 SF

**capacity**
- administrative assistants
- visitors/parents
- students

**spatial relationships**
- see illustration opposite page
- located inside the main administrative area directly accessible from entry vestibule
- near public restrooms
- maximize views to exterior and main entry
- public address alcove
- closet (lockable)

**program activities**
- greeting visitors
- student waiting/pick up area
- workstation for administrative assistant
- second and final access control point
  - prior to accessing the main school security check-point

---

**LEGEND ///**

- **fixed equipment**
  - F5 tackable/magnet wall surface (8 LF)
  - F26 reception counter (Finish carpentry)

- **loose furnishings**
  - L13 small table (3)
  - L15 task chair (2)
  - L18 lounge chairs (4-6)
  - L21 work table for check-in station

- **miscellaneous**
  - M7 desktop computer

- **data drop**
E-AD /// CONFERENCE ROOM
size
250 SF

capacity
staff

ancillary spaces
n/a

spatial relationships
near welcome center
centrally located within administrative area
adjacent and access to principal’s offices

program activities
conferences with staff, students, parents, and visitors

LEGEND ///

fixed equipment
F1.1 casework (6 LF)
F4 marker board (8 LF)
F5 tackable/magnet wall surface (8LF)
F17 audio/video recording and playback equipment

loose furnishings
L19 Conference table (with table technology installations-VGA jacks, data outlets, power outlets, etc.)
L20 Executive chairs (12)

data drop
size
180 SF

capacity
principal

ancillary spaces
conference Room

spatial relationships
near main entry
near administrative assistant
adjacent and access to conference room
back door to secondary corridor, desirable

program activities
conferences with students, parents, teachers, staff, and visitors
curriculum development
research and planning
telephone communications
dealing with personnel issues
coordination of school and support services

LEGEND ///

fixed equipment

F5 tackable/magnet wall surface

loose furnishings

L4 four-drawer file cabinet
L7 teacher’s lockable wardrobe
L11 adjustable height bookshelves (12 LF)
L12 admin workstation
L15 task chair (4-6)
L20 executive chair
L50 small conference table

miscellaneous

M7 desktop computer

data drop
**size**
150 SF

**capacity**
assistant principal

**ancillary spaces**
n/a

**spatial relationships**
may be located near Academic Core for supervision
may be located near administration suite

**program activities**
conferences with parents
student interaction
conferences with individual teachers or small groups
telephone communications (private)
research and planning
coordination of school and support services

---

**LEGEND ///**

- **fixed equipment**
  F4 marker board

- **loose furnishings**
  L4 four-drawer file cabinet
  L7 teacher’s lockable wardrobe
  L11 adjustable height bookshelves (12 LF)
  L12 admin workstation
  L15 task chair (2-4)
  L20 executive chair
  L50 small conference table

- **miscellaneous**
  M7 desktop computer

- **data drop**
size
200 SF

capacity
  secretaries and administrators
  volunteers
  staff

ancillary spaces
  n/a

spatial relationships
  near welcome center
  adjacent to mail room

program activities
  copying
  collating
  sorting of files
  preparing communications for mailing
  binding reports
  telephone communications

plumbing
  plumbing connections
  sink, single/deep bowl

LEGEND ///

fixed equipment
  F1 base/wall cabinets and shelving
  F1.1 casework (base/wall cabinets and shelving)
  F4 marker board (4 LF)
  F5 tackable/magnet wall surface (4 LF)
  F6 soap dispenser
  F7 towel dispenser

loose furnishings
  L15 task chair (4)
  L17 printer station
  L21 work table

miscellaneous
  M1 high speed and/or Large format printers
  M2 color printers
  M4 photocopy machine
  M5 digital scanner
  M6 laminator

data drop
**size**
125 SF

**capacity**
staff
faculty

**ancillary spaces**
n/a

**spatial relationships**
adjacent to administrative workroom
located in administrative area
accessible from main corridor

**program activities**
delivery of general mail

---

**LEGEND ///**

- **fixed equipment**
  - F1.1 casework - mail slots
    - 12" wide x 6" high x 15" deep
    - (65, 80, 95 total slots) pass-through cabinets below
  - F4 marker board (4 LF)
  - F5 tackable/magnet wall surface (4 LF)

- **data drop**
**Records Room**

**Legend**
- Loose furnishings:
  - L4 four-drawer file cabinets (8-10 fireproof file cabinets)
  - L13 small table
  - L15 chair
  - L22 safe

**Program Activities**
- Storing of money and other valuable items
- Storage of files and records
- Accessible to administration staff

**Spatial Relationships**
- Near main office

**Capacity**
- Secretaries staff
- Ancillary spaces: n/a

**Size**
- 150 SF
size
470 SF

capacity
8-10 parents
1- parent liaison
volunteers

ancillary spaces
n/a

spatial relationships
near lobby entrance
adjacent parent liaison office with
    connecting door*
adjacent teaching space for up to 20
adjacent conference room

program activities
small group meetings
work area
storage for personal items
parent training
private consultation
parent employment research
volunteer registration

plumbing
sink w/ goose neck faucet

LEGEND ///

● fixed equipment
F1 base/wall cabinets and shelving (place for a refrigerator)
F1.1 casework (Wardrobe cabinet)
F1.1 casework (Storage cabinets)
F4 marker board (8 LF)
F5 tack board (8 LF)
F6 soap dispenser
F7 towel dispenser
F8 wall-mounted, interactive, electronic
    presentation device

● loose furnishings
L4 four-drawer file cabinet
L11 adjustable height bookshelves (20 LF)-
    workstation for computer/printer
L15 ten chairs
L18 lounge chairs
L21 two work tables (36” x 72”)
L26 refrigerator

■ miscellaneous
M7 desktop computer

data drop

*Office for Parent liaison- see typical office
description
size
50 SF

capacity
staff

spatial relationships
near welcome center
near principal’s office

plumbing
wall-mounted water closet
wall-mounted lavatory
plumbing connections
floor drain

---

LEGEND ///

- **fixed equipment**
  - F1.1 casework (wall cabinet)
  - F7 towel dispenser
  - F18 mirror
  - F20 bathroom accessories
size
150 SF

capacity
- counselor
- intern
- psychologist
- social worker
- reading resource
- math resource
- science resource
- ESL

spatial relationships
- near student services conference room
- near welcome center

program activities
- counseling for students and parents
- administrative paperwork
- enrollment and orientation of new students

LEGEND ///

- fixed equipment
  - F4 marker board (8 LF)
  - F5 tackable/magnet wall surface (4 LF)

- loose furnishings
  - L4 four-drawer file cabinet (2)
  - L11 adjustable height bookshelves (12 LF)
  - L12 admin workstation
  - L15 task chair
  - L20 executive chair

miscellaneous
- M7 desktop computer

data drop

near student services conference room
near welcome center

program activities
- counseling for students and parents
- administrative paperwork
- enrollment and orientation of new students
size
200 SF

capacity
staff
students
parents
visitors

ancillary spaces
n/a

spatial relationships
adjacent and access to counselor’s office
adjacent to parent or welcome space

program activities
conferences with staff, students, parents, and visitors
IEP meetings

LEGEND ///

● fixed equipment
  F1.1 casework (6 LF)
  F4 marker board (8 LF)
  F5 tackable/magnet wall surface (4 LF)

◇ loose furnishings
  L19 conference table (with table technology installations- VGA jacks, data outlets, power outlets, etc.)
  L20 executive chairs (10)

▶ data drop
size
100 SF

capacity
Staff
Students
Parents
Visitors

ancillary spaces
Treatment area
Storage

program activities
Meeting area for students, parent or guardian
Administrative activities by school nurse
Private conversations

environmental conditions
Independent temperature controls and operable window
Health suites should comply with CDC requirements for number of air exchanges per hour to help prevent spreading illness
Prefer not to have automated or low-flow sinks

LEGEND ///

fixed equipment
F4 Marker board

loose furnishings
L4 Four-drawer file cabinet
L11 Adjustable height bookshelves
L12 Admin workstation
L15 Task chair
L18 Lounge chair

miscellaneous
M7 Desktop computer

data drop
HEALTH SUITE: WAITING + TREATMENT AREA

- Nurse's Office
- Storage
- Waiting Room
- Cots
- Toilet
- Exam Rooms
- Dental Room
- Office

E-AD /// 100'
size
575 SF

capacity
1 nurse
students

ancillary spaces
nurse’s office
cots
storage
toilet/shower
waiting/area
office for partners
dental room

spatial relationships
near welcome center
near lobby entrance

program activities
first aid
consultation with students
health screening
medical treatments
medication administration
student resting while awaiting pick-up by
parent or guardian

environmental conditions
stain-resistant floor covering
sink with hot and cold water
adequate ventilation
visual control to office/waiting or
welcome center

plumbing
plumbing connections:
depth sink with hands-free gooseneck
hook-up for ice-maker for refrigerator

LEGEND ///

fixed equipment
F1 base/wall cabinets and shelving (place for
refrigerator connected to back-up generator
F1.1 casework (seamless, non-porous counter)
F5 tackable/magnet wall surface
F6 soap dispenser
F7 towel dispenser
F25 treatment cubicle curtain

loose furnishings
L1 stackable/nesting chairs (2-3)
L13 small table
L18 lounge chairs
L24 mobile exam table
L25 nurse stool
L26 refrigerator (lockable)
size
varies

capacity
staff
students

ancillary spaces
located near the toilet in the health suite

program activities
a resting place for students and staff when feeling ill

LEGEND ///

fixed equipment
F25 treatment cubicle curtains

loose furnishings
L1 stackable/nesting chairs (2)
L27 health suite cot (2)
size
25 SF

capacity
staff

ancillary spaces
office/waiting area (E-AD-15)

program activities
storing chemicals, equipment, and supplies
environmental conditions
security of equipment, supplies, and medicines
security of door

LEGEND ///

- fixed equipment
  F3 wall shelving (12” deep)
  F3 wall shelving (18” deep)
size
50 SF

capacity
staff
students

ancillary spaces
located near the cots within the health suite

plumbing
wall mounted water closet (deep well)
wall mounted lavatory
shower
plumbing connections
floor drain

LEGEND ///

- fixed equipment
  F1.1 casework: wall cabinet
  F6 soap dispenser
  F18 mirror (24"x60")
  F20 bathroom accessories
size
250 SF

capacity
staff
coordinators of after school program
parents/volunteers

spatial relationships
near public use spaces
near Gymnasium and student dining
area/multipurpose
access to main corridor
near FACE center

program activities
administrative duties
storing and retrieving supplies and
equipment
teaching/tutoring and counseling

LEGEND ///

● fixed equipment
  F3 wall shelving (12” deep)
  F3 wall shelving (18” deep)
  F5 tackable/magnet wall surface (8 LF)

● loose furnishings
  L4 four-drawer file cabinet
  L11 adjustable height bookshelves
  L12 admin workstation
  L15 task chair
  L18 lounge chair
  L22 safe

▶ data drop

note: consult caregiver on the quantity of
storage. larger spaces should be outfitted
like a standard classroom (white board, tack
board, technology)
E-SD /// STUDENT DINING
DINING / MULTIPURPOSE
CHAIR STORAGE
LOCKERS / TOILET
COOKING KITCHEN
FOOD PREP AREA
FOOD SERVICE OFFICE
SERVING AREA
DRY FOOD STORAGE
FREEZER / COOLER
WARE WASHING
CLEANING STORAGE
<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
<th>SF</th>
<th>TOTAL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Dining Area/Multi-purpose</td>
<td>1</td>
<td>3,000</td>
<td>3,000</td>
<td>grades 1-5 in 3 lunch periods; seats 185 at lunch</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>seats 280 auditorium style</td>
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<tr>
<td>Chair and Table Storage</td>
<td>1</td>
<td>350</td>
<td>350</td>
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<tr>
<td>Serving area</td>
<td>1</td>
<td>700</td>
<td>700</td>
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</tr>
<tr>
<td>Kitchen Suite</td>
<td>1</td>
<td>2,150</td>
<td>2,150</td>
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<tr>
<td>Stage with storage</td>
<td>1</td>
<td>1,100</td>
<td>1,100</td>
<td>includes 200 SF chair and table storage</td>
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<tr>
<td><strong>Total</strong></td>
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<td></td>
<td><strong>7,300</strong></td>
<td></td>
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</tbody>
</table>

**Comments //**
The overall total for the Dining and Food Services area may be + or – 10%. The existing dining area and kitchen are undersized for the proposed capacity. If these spaces are replaced, the school would like to keep the current dining as a multi-purpose area if feasible. If this area is expanded, the room should be dividable.
CHAIR STORAGE

FOOD PREP AND SERVING AREA

SEE LEGEND INFORMATION FOR F65

FOOD LAB

STAGE

L41

L39

F65

F4

L40

F64

L40

L39

F64

L39

E-SD /// DINING / MULTIPURPOSE (GRADES 1-5)
**size**
3,000 SF

**capacity**
1/3 of the projected capacity per lunch period
3-6 staff members
members of community (after hours)

**configuration**
consider two spaces - primary and intermediate – with separate serving lines
alternatively, consider a flexible wall
varies, see table

**ancillary spaces**
serving area
stage (optional)

**spatial relationships**
centrally located to office area, classrooms, and media center
near parking and entry to building
near food lab classroom (consider overhead rolling door)

**program activities**
student dining
school and community programs
meetings and activities

**environmental considerations**
electrical outlets for student use
provide a sound system
provide large motorized projection screen with ceiling mounted projector
configure larger spaces to manage sound and for multiple users; configure serving lines for conversational voice
higher than normal ceiling height
if feasible, provide patio for outside seating options
cleanable building surfaces
windows to provide ample natural light
good sight lines to all areas of the room for supervision
window treatment to darken room for AV presentation; this is required if the stage is located in this area
outlets and data ports for salad bar and point of sale locations; flush to ground with cover

**LEGEND ///

- **fixed equipment**
  F4  marker board (on two walls - 16 LF each with electric outlet below)
  F64 filtered water fountain w/ bubbler and goose neck bottle filler
  F65 recycling center (work with food service staff on location and design)

- **loose furnishings**
  L39 cafeteria tables (tables and seating to accommodate 1/3 of school capacity-vary seating options and heights
  L41 chair dollies
  L40 point of sale station
size
varies

capacity
n/a

ancillary spaces
student dining area / multipurpose

spatial relationships
adjacent and access to student dining area / multipurpose
may provide back of stage access

program activities
storage

environmental considerations
uniform lighting
cleanable and resilient building surfaces
accessibility for moving furniture in and out

LEGEND ///

loose furnishings
L1 stackable/nesting chairs (stacked)
L41 chair dollies
size
200 SF

capacity
food service personnel

ancillary spaces
kitchen

program activities
space for the storage of towels, aprons, etc.
space to allow food staff personnel to take breaks

LEGEND ///

● fixed equipment
F49 lockers
F71 tack board (4 LF)

○ loose furnishings
L1 stackable/nesting chairs (4-6)
L13 small table
FOOD SERVICE
OFFICE
DRY FOOD
STORAGE
FREEZER
COOLER
CLEANING
STORAGE
PREP
LOCKERS
POT/PAN
WASHING

E-SD /// COOKING KITCHEN
this space consists of the following areas //
- food preparation area
- dry food storage
- freezer & cooler
- pot/pan washing
- cleaning storage
- lockers
- food service office

a space plate follows for each of these areas

size
350 SF

capacity
students
staff

ancillary spaces
student dining area / multipurpose

spatial relationships
near loading dock to permit truck access
to docking and storage areas (site specific)
adjacent and access to student dining area / multipurpose
near dumpsters
cafeteria serving arrangement

program activities
prep food
serve food
storage
point of sale (in the dining area associated with the serving area)

environmental considerations
durable seamless flooring
proper ventilation of space to remove cooking odors
cleanable building surfaces
size
   varies
capacity
   staff
ancillary spaces
   kitchen
spatial relationships
   adjacent to student dining area
   multipurpose
   open to serving area
program activities
   prepare food
environmental considerations
   uniform lighting
   proper ventilation of space to remove cooking odors
   cleanable building surfaces
   electrical/plumbing / mechanical connections for food service equipment
finishes
flooring
   easy clean, non-slip flooring - single surface
   poured or rolled flooring
base
   resilient base
ceiling
   cleanable, suspended, acousticac
walls
   epoxy-painted concrete masonry units
plumbing
   connections to food service equipment
   plumbing and gas connections
   hand washing lavatory
   floor drains
   food preparation sink with adjacent trash bin
HVAC
   supply/return air system
   independent temperature control
   kitchen canopy exhaust system
   air conditioning
electrical
   duplex receptacles
   connections to food service equipment
   single-level switching
   clock
   central sound system

LEGEND ///
• fixed equipment
  F3    storage shelving
  F33   pot washing sinks
  F34   food preparation sinks
  F35   hand sinks with adjacent trash bin
  F36   work tables
  F37   warming/holding/cabinets
  F38   refrigeration/reach-ins
  F39   mop washing sink
  F40   lockable chemical storage
  F41   exhaust hood systems, including fire suppression
  F66   combi oven
  F67   convection steamer
  F68   range, with oven
  F69   ware washing machine with appropriate accessories (tables, booster heater, disposer, etc.)
size
700 SF

capacity
students
staff
community

ancillary spaces
student dining area / multipurpose
kitchen

spatial relationships
within student dining area / multipurpose
or food preparation area
beginning of serving line should be
near entry door of students dining
area / multipurpose
open to food preparation area

program activities
serve food

* serving line configuration and design will be
determined in consultation with School Nutrition
Services

LEGEND ///

● fixed equipment
F42 drop-in individually controlled heated
electric food wells and full service sneeze
guard (student height) with over shelf
F47 drop-in self-contained refrigerated cold
pan for side items (counter and sneeze
guards are lower than normal for better
viewing and service to elementary
students)

○ loose furnishings
L55 milk coolers
size
varies

capacity
n/a

spatial relationships
near supply storage/receiving
adjacent and access to food prep area

program activities
storage

LEGEND ///

fixed equipment
F12 rust resistant shelving and dunnage racks (24” deep)
size
varies

capacity
n/a

ancillary spaces
kitchen

spatial relationships
adjacent and access to food prep area
near the supply storage/receiving

environmental considerations
ventilation for refrigeration machinery
equipment
floor to be flush with adjacent kitchen floor
electrical service for refrigeration equipment

LEGEND ///

fixed equipment
F12 rust resistant shelving and
dunnage racks (24” deep)
NOTE //
This is an example of a ware washing area. Food service equipment will vary from school to school; confirm requirements with ACPS Food Service Department.

size
varies, see table

capacity
n/a

ancillary spaces
kitchen

spatial relationships
pass-through into student dining area/multipurpose for tray drop-off adjacent and access to food prep area

environmental considerations
proper ventilation of space to remove steam and condensation cleanable building surfaces

plumbing
connections to food service equipment three compartment sink floor drain

LEGEND ///
  • fixed equipment
F12  rust resistant shelving and dunnage racks (24” deep)
size
50 SF

capacity
food service staff

ancillary spaces
kitchen

spatial relationships
adjacent and access to kitchen

program activities
storing chemicals and equipment

environmental considerations
cleanable building surfaces
sensors for spilled chemicals
adequate exhaust/ventilation

LEGEND ///

- fixed equipment
  F9.2 rust resistant shelving
  F39 mop sink
  F70 mop rack

E-SD /// CLEANING STORAGE
E-EC /// MAINTENANCE & CUSTODIAL

SUPPLY STORAGE / RECEIVING
TOILET / SHOWER / LOCKERS
CUSTODIAL OFFICE
<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
<th>SF</th>
<th>TOTAL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUILDING ENGINEERING</td>
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<tr>
<td>Supply Storage / Receiving</td>
<td>1</td>
<td>600</td>
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<td></td>
</tr>
<tr>
<td>Toilet / Showers / Lockers</td>
<td>1</td>
<td>150</td>
<td>150</td>
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<tr>
<td>Custodial Office</td>
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<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

Comments //
FIG. 14.0 // MAINTENENCE & CUSTODIAL ADJACENCY DIAGRAM
size
varies, see table

capacity
maintainence personnel

spatial relationships
adjacent and access to loading dock area
and service courtyard
access to corridor
adjacent and access to custodial office
adjacent and access to toilet/shower/
locker room

program activities
loading and unloading
storage of furniture, materials for special
events, paper, and general supplies

plumbing
plumbing connections service sink

environmental considerations
supplemental heating source
double door with removable mullions
overhead door to service courtyard

LEGEND ///

fixed equipment
F3 wall shelving (84" high x 36" deep)

loose furnishings
L36 flammables storage
L46 step ladder
L41 chair dollies

data drop
size
  100 SF

capacity
  maintainence and custodial staff

spatial relationships
  adjacent and access to supply storage/receiving

program activities
  showering
  changing clothes

plumbing
  wall-mounted water closet
  wall-mounted lavatory
  ADA shower controls and head
  floor drains - in restroom and shower
  plumbing connections

LEGEND ///

- fixed equipment
  F6  soap dispenser
  F18  mirror (24” x 60”)
  F20 bathroom accessories
  F29  ADA shower accessories
  F49  lockers
  F54  locker bench
CORRIDOR

SUPPLY / STORAGE / RECEIVING

L15
L4
L3
L11
L11
L3
L15
L4
F71

E-EC /// CUSTODIAL OFFICE
size
150 SF

capacity
  maintainence and custodial staff
  building engineer

spatial relationships
  adjacent and access to supply storage/
  receiving
  access to corridor
  near custodial toilet

program activities
  conferences with staff and other visitors
  telephone calls

LEGEND ///

● fixed equipment
  F71  tack board (4 LF)

○ loose furnishings
  L3  teacher work surface with mobile
      storage (2)
  L4  four drawer lateral file cabinet (2)
  L11 adjustable height bookshelves (12 LF)
  L15 task chair (2)
E-BS /// BUILDING SUPPORT
LARGE GROUP RESTROOMS
CUSTODIAL CLOSET
ELECTRICAL CLOSET
TELECOMMUNICATIONS ROOM
CORRIDORS
MECHANICAL / ELECTRICAL SPACE DECK
STORAGE AREA
CENTRAL STORAGE AREA
LOADING / RECEIVING AREA
STAFF RESTROOM
FAMILY RESTROOM
TECHNOLOGY STORAGE
<table>
<thead>
<tr>
<th>SPACE</th>
<th>QUANTITY</th>
<th>SF</th>
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<tr>
<td>Large Group Restrooms</td>
<td>1</td>
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<tr>
<td>Custodial Closet</td>
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<tr>
<td>Electrical Closet</td>
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<tr>
<td>Telecommunications Room</td>
<td>1</td>
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<tr>
<td>Corridors</td>
<td>1</td>
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<tr>
<td>Mechanical / Electrical Space Deck</td>
<td>1</td>
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<tr>
<td>Storage Area</td>
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<tr>
<td>Central Storage Area</td>
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<tr>
<td>Loading / Receiving Area</td>
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<tr>
<td>Staff Restroom</td>
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<tr>
<td>Family Restroom</td>
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<tr>
<td>Technology Storage</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
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</table>

Comments //
E-BS /// LARGE GROUP RESTROOM
Spaces to be determined by design professional based on the number of fixtures required.

**size**
- based on the sum of the program areas excluding building services, multiplied by 3.5%

**capacity**
- based on size of program area

**spatial relationships**
- near student dining area
- near public use areas, such as media center and gymnasium
- near academic core area
- restrooms located in several areas throughout building

**program activities**
- personal and health needs for the students

**plumbing**
- wall mounted water closets
- wall mounted lavatories
  - or wash fountains
- appropriate height fixtures by age
- plumbing connections

---

**LEGEND ///**

- **fixed equipment**
  - F6 soap dispenser
  - F7 towel dispenser
  - F18 mirror (24” x 60”)
  - F20 bathroom accessories
  - F50 toilet partitions

**NOTES //**
Where individual restrooms are provided in lieu of large group restrooms, refer to staff restroom.
E-BS /// CUSTODIAL CLOSET

size
50 SF

capacity
n/a

spatial relationships
near large group restrooms

program activities
space for storage of custodial supplies throughout the building

plumbing
service sink or floor drain sink
plumbing connections

LEGEND ///

fixed equipment
F39 mop sink
F3 wall shelving
Spaces to be determined by design professional.

**size**
50 SF

**capacity**
n/a

**program activities**
space for electrical wiring and panels

**LEGEND ///**

- **fixed equipment**
  F80 electrical panel
size
- 0-75,000 SF = 8’ x 8’ minimum
- 75,000-150,000 SF = (1) 8’ x 10’ and 8’ x 8’
- 150,000 SF plus = (2) 8’ x 10’ and 8’ x 8’

capacity
n/a

program activities
space for technology needs

LEGEND ///

loose furnishings
- L52 telecommunications rack (6” organizers between all racks)

data drop

NOTES //
This is an example of a telecommunications room. The equipment and layout will vary from school district to school district.
• corridors shall be a minimum of 8 feet wide; some areas of natural light is desirable; the designer should minimize long corridors lined with classroom doors.

• extended learning areas are in addition to the minimum above and must not intrude into the egress pathway. Seating areas in extended learning areas must meet fire code.

• lobbies are in addition to the circulation requirement.

• instructional and activity areas shall be accessible by corridors without passing through another instructional or activity area.

• the corridors are to meet the egress requirements of applicable codes.

• stairs, ramps, and elevators are included under the corridor category.

• it is recommended that stairs in multi-story buildings not be enclosed unless required by code. However, such a design should not allow students to lean over railings or put arms/legs through posts.

---

**program activities**
- circulation space

**vestibules**
- area of vestibules to be included within area allotted for corridors
- width of vestibules can be no less than minimum width of adjacent corridor.
- provide recessed vinyl floor mats (recommend 15 LF of surface mats in addition to vinyl mats)
- provide automatic door operator on one leaf of main entrance/exit door and related vestibule door

**plumbing**
- drinking water coolers with gooseneck faucet for water bottles

**fixed equipment**
- F51 fire extinguisher
- F52 recessed floor mats
- F53 digital boards
- F71 tack board
- F72 3D displays
Spaces to be determined by design professional.

**size**
- based on the sum of the program areas, excluding building services, multiplied by 6.9%

**capacity**
- based on size of program area

**program activities**
- space for mechanical and electrical equipment

**spatial relationships**
- accessible for maintenance and repair
- access to outside
- isolate from main area of building
- near loading/receiving area
- near custodial area

**NOTES //**
1. This is an example of a mechanical room. The equipment and layout will vary depending upon the heating, ventilating, and air conditioning system used.
2. A penthouse is considered a mechanical room.
Spaces to be determined by design professional.

**size**
- 150-250 SF

**capacity**
- n/a

**program activities**
- space for storage of outdoor custodial equipment

**spatial relationships**
- near custodial office
- near custodial workroom
- direct access to outdoors

**LEGEND ///**

- **fixed equipment**
  - F3 wall shelving (10’-16’, depth may vary)
Space to be determined by design professional.

**size**
- 250 SF

**capacity**
- n/a

**spatial relationships**
- near loading/receiving area
- direct access to building circulation

**program activities**
- Storage for paper products, utensils, supplies, etc., to be used throughout the entire building

**environmental considerations**
- uniform lighting

**finishes**
- flooring:
  - resilient tile flooring
- base:
  - resilient base
- ceiling:
  - exposed structure
- walls:
  - painted concrete masonry units

**fire suppression**
- fire supression system

**HVAC**
- exhaust air system
- supplemental heat as required

**electrical**
- single level switching
- fluorescent lighting
- duplex receptacles

**electronic safety and security**
- life safety devices per code

**LEGEND ///**
- fixed equipment
  - F3 wall shelving (26’-32’, depth may vary)

**NOTES //**
1. Finishes/features: refer to ________ for specification references.
2. Ranges shown indicate quantities for the smallest and largest possible room size.
E-BS /// LOADING / RECEIVING AREA
Space to be determined by design professional.

**size**
120 SF

**capacity**
n/a

**spatial relationships**
- near food service spaces
- near central storage area
- near mechanical room
- adjacent to loading dock

**program activities**
- delivery of materials and goods to be used throughout the building

**finishes**
- flooring: sealed concrete
- base: resilient base
- ceiling: exposed structure
- walls: painted concrete masonry units

**fire suppression**
- fire suppression system

**plumbing**
- drain at pit

**HVAC**
- exhaust air system
- supplemental heat as required

**electrical**
- single level switching
- fluorescent lighting
- duplex receptacles
- leveler

**LEGEND ///**

- **fixed equipment**
  - F73 loading dock levelers and dock bumpers

**NOTES //**
1. Finishes/features: refer to ________ for specification references.
2. Refer to Chapter 3, Section 3201 for site vehicular circulation requirements.
size
50 SF

capacity
1 person

spatial relationships
  near academic core classrooms
  near teacher prep area/workroom

program activities
  personal and health needs for teachers, staff, and other individuals

environmental considerations
  uniform lighting
  environmental sound control -
    wall minimum STC 53
    ceiling minimum CAC 35, NRC 0.40
  moisture and stain resistant finishes

finishes
flooring:
  ceramic tile
base:
  resilient base
  optional - ceramic mosaic tile or porcelain tile
ceiling:
  suspended, acoustical
walls:
  painted concrete masonry units

fire suppression
  fire supression system

plumbing
  wall-mounted water closet

  wall-mounted lavatory
  plumbing connections
  floor drain

HVAC
  exhaust air system
  supplemental heat as required

electrical
  single level switching
  fluorescent lighting
  duplex receptacles
  leveler

communications
  central sound system

electronic safety and security
  life safety devices per code

LEGEND ///
● fixed equipment
  F6   soap dispenser
  F7   towel dispenser
  F18  mirror (24" x 60")
  F20  bathroom accessories

NOTES //
1. Extend walls above ceiling to deck above for security and acoustical reasons.
2. Provide staff restrooms for both men and women.
3. Each pair of staff restrooms should be distributed throughout the building at appropriate locations.
size
80 SF

capacity
2 people

spatial relationships
located in the administrative area, but accessible to all building occupants

program activities
personal, health, and handicap needs for all building occupants

environmental considerations
uniform lighting
environmental sound control - wall minimum STC 53 ceiling minimum CAC 35, NRC 0.40 moisture and stain resistant finishes

finishes
flooring:
  ceramic tile
base:
  resilient base
  optional - ceramic mosaic tile or porcelain tile or resinous flooring
ceiling:
  suspended, acoustical
walls:
  painted concrete masonry units

fire suppression
fire supression system

plumbing
wall-mounted water closet

wall-mounted lavatory
plumbing connections
floor drain

HVAC
exhaust air system
supplemental heat as required

electrical
single level switching
fluorescent lighting
(1) duplex receptacle

communications
central sound system

electronic safety and security
life safety devices per code

LEGEND ///

fixed equipment
F6 soap dispenser
F7 towel dispenser
F18 mirror (24" x 60")
F20 bathroom accessories
F77 mounted child seat
F78 child changing station

NOTES //
1. Finishes/features: refer to ________ for specification references.
Space to be determined by design professional.

**size**
- 250-400 SF

**capacity**
- n/a

**ancillary spaces**
- technology storage

**spatial relationships**
- near loading/receiving area
- direct access to building circulation
- adjacent to technology storage

**program activities**
- storage for computers during breaks/summers
- to secure hardware during cleaning, repairs, construction, etc.

**environmental considerations**
- uniform lighting

**finishes**
- flooring:
  - resilient tile flooring
- base:
  - resilient base
- ceiling:
  - exposed structure
- walls:
  - painted concrete masonry units

**fire suppression**
- fire supression system

**HVAC**
- exhaust air system
- supplemental heat as required

**electrical**
- single level switching
- fluorescent lighting
- duplex receptacles

**electronic safety and security**
- life safety devices per code

**LEGEND ///**
- fixed equipment
  - F3 wall shelving (26’-32’, depths may vary)

**NOTES //**
1. Finishes/features: refer to ________ for specification references.
2. Ranges shown indicate quantities for the smallest and largest possible room size.
3. Confirm with the District of Columbia Public Schools’ technology education specialist for requirements for each school.
size
100 SF
capacity
n/a
ancillary spaces
computer storage
spatial relationships
adjacent and access to technology storage
program activities
materials storage
environmental considerations
uniform lighting
security of door
finishes
flooring:
resilient tile flooring
base:
resilient base
ceiling:
exposed structure
walls:
painted concrete masonry units
fire suppression
fire supression system
HVAC
supply/return air system
electrical
single level switching
fluorescent lighting
duplex receptacles
electronic safety and security
life safety devices per code

LEGEND ///

fixed equipment
F3 wall shelving (12” and 18” deep)

NOTES //
1. Finishes/features: refer to ________ for specification references.
2. Loose furnishings and features shown represent one of many possible solutions.
space and tag list

Fixed Equipment

- F1 base/wall cabinets and shelving (deleted “around classroom sink”)
- F21 peg board
- F22 basketball goals
- F23 operable partition- motorized
- F24 climbing wall
- F25 treatment cubicle curtain
- F27 amphitheater
- F29 ADA shower accessories
- F31 stage curtains
- F32 stage lighting
- F33 pot washing sinks
- F34 food preparation sinks
- F35 hand sinks
- F36 work tables
- F37 warming/holding cabinets
- F38 refrigeration- reach in
- F39 mop sink
- F40 chemical storage
- F41 exhaust hood systems
- F42 food wells and full service sneeze guard
- F43 self-contained refrigerated cold pan
- F44 library case work
- F45 motorized projection screen
- F49 lockers
- F50 toilet partitions
- F51 fire extinguisher
- F52 recessed floor mats
- F53 digital boards
- F54 locker bench
- F55 folding utility shelf
- F56 30" itinerant/aid station
- F57 kitchenette
- F58 changing table
- F59 shower curtain/rod
- F62 sound enhancement system
- F63 towel hook
- F64 filtered water fountain with bubbler and gooseneck bottle filler
- F65 recycling center
- F66 oven
- F67 convection steamer
- F68 range
- F69 ware washing machine
- F70 mop rack
- F71 tack board
- F72 3d displays
- F73 loading dock levelers and dock bumpers
- F74 coat hook-bathroom accessory
- F75 sanitary napkin dispenser
F76  sanitary napkin disposal
F77  mounted child seat
F78  child changing station
F79  tackable surface
F80  electrical panel
loose furnishings

L1 stackable/nesting chairs
L2 stackable/nesting tables
L3 teacher work surface with mobile storage and two chairs
L4 four drawer lateral file cabinet
L5 three bound rugs-group area, block area, and reading area
L6 mobile shelving
L7 teacher's lockable wardrobe
L8 tall cabinet with shelves
L9 learning center sets - sand/water table, kitchen, art cart, etc.
L10 student desks
L11 adjustable height bookshelves
L12 admin workstation and chair
L13 small table
L14 computer station
L15 task chair
L16 bound group rug
L17 printer station
L18 lounge chairs
L19 conference table
L20 executive chairs
L21 work table
L22 safe
L23 computer desk return
L24 mobile exam table
L25 nurse stool
L26 refrigerator
L27 health suite cot
L28 folding chairs
L29 choral risers
L30 mobile a/v cabinet
L31 posture chair
L32 conductor's podium and stool
L33 upright piano
L34 tumbling mats
L35 ball bins
L36 flammables storage
L37 dance barres
L38 play equipment
L39 cafeteria tables
L40 point of sale station
L41 chair dollies
L42 drying rack
L43 flat storage
L44 kiln
L45 greenware shelving
L46 step ladder
L47 music stand
L48 stainless steel mobile preparation tables
L49 wastebasket
L50 small conference table
L51 laptop charging cart
L52 telecommunications rack
L53 portable sound system
L54 bleachers
L55 milk coolers
### Miscellaneous

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>High speed and/or large format printers</td>
</tr>
<tr>
<td>M2</td>
<td>Color printers</td>
</tr>
<tr>
<td>M3</td>
<td>Barcode reader</td>
</tr>
<tr>
<td>M4</td>
<td>Photocopy machine</td>
</tr>
<tr>
<td>M5</td>
<td>Digital scanner</td>
</tr>
<tr>
<td>M6</td>
<td>Laminator</td>
</tr>
<tr>
<td>M7</td>
<td>Desktop computer</td>
</tr>
</tbody>
</table>
energy / environmental criteria

Scientists who study the “neuroscience of learning” are finding that certain lighting, acoustics, and spatial relationships support or hinder the learning process. The following criteria should be used when creating optimal learning and teaching environments.

<table>
<thead>
<tr>
<th>DESIGN PARAMETERS</th>
<th>PARAMETER NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LIGHTING QUALITY</strong> // improving natural and artificial lighting in classrooms</td>
<td></td>
</tr>
<tr>
<td>1 Controlled Natural Lighting (Glazing)</td>
<td>10-12% of floor SF</td>
</tr>
<tr>
<td>2 Artificial Light</td>
<td>35-50 foot candles</td>
</tr>
<tr>
<td><strong>ENVIRONMENTAL AIR QUALITY</strong> // addressing temperature control, ventilation, air filtration, carbon dioxide levels, and HVAC background noise to ensure comfortable rooms</td>
<td></td>
</tr>
<tr>
<td>1 Winter Temperature</td>
<td>68.5 - 75.5 degrees</td>
</tr>
<tr>
<td>Summer Temperature</td>
<td>74 - 80 degrees</td>
</tr>
<tr>
<td>2 Humidity</td>
<td>30 - 60% relative humidity</td>
</tr>
<tr>
<td>3 Air Changes</td>
<td>6 - 10 per hour</td>
</tr>
<tr>
<td>4 Outdoor Air Ventilation</td>
<td>10 CFM per person</td>
</tr>
<tr>
<td>5 Air Filtration</td>
<td>MERV 13</td>
</tr>
<tr>
<td></td>
<td>MERV 6 - 8</td>
</tr>
<tr>
<td>6 Carbon Dioxide Levels</td>
<td>below 700 PPM above outdoor air</td>
</tr>
<tr>
<td>7 HVAC Background Noise Levels</td>
<td>RC(N) Mark II level of 37</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ACOUSTICS</strong> // limiting reverberation and background noise and improving sound isolation</td>
<td><strong>PARAMETER NOTES</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1 Reverberation</td>
<td>0.6 per second</td>
</tr>
<tr>
<td>2 Background Noise</td>
<td>45 dBA</td>
</tr>
<tr>
<td>3 Sound Isolation</td>
<td>STC 45 between classrooms</td>
</tr>
</tbody>
</table>

| **TECHNOLOGY** // providing data connections for online learning resources, AV equipment, closed-circuit televisions, and a sound system with emergency capabilities | |
|---|---|---|
| 1 Data / Computer Drops | at teacher workstations and wireless access points | |
| 2 Audio / Video Equipment | amplifier, microphone, speakers | |
| Interactive Whiteboard | synchronized with bell system | |
| Document Cameras | | |
| Sound Reinforcement | class change bells, emergency announcements | |
| 3 Clock | | |
| 4 Sound System and Emergency Call Box | | |
| Ceiling or Wall Speaker | | |
| 5 CCTV Camera | | |
| Security | | |
| WebX Conferencing | | |
| Distance Learning | | |
energy / environmental design

There is a high interest in using school buildings as teaching tools to teach environmental stewardship and awareness, while simultaneously providing engaging environments for students, staff, and community who use the facilities. The organization, understanding, and use of school buildings will have a major impact on student and staff conservation behavior.

The sustainable design and green features of any building can be addressed in an active or a passive manner: active interaction is based on digital displays, educational features and curriculum integrated learning about environmental issues; passive interaction is based on the program design, building configuration, green building features, and energy efficient building automation.

Passive Concepts //

1. Building Layout
   - Concentrate daylight and views to the outside to areas of frequent human interaction (e.g. classrooms, cafeterias, media center, art rooms, music rooms) with passive solar design
   - Avoid excessive window areas in corridors, lobbies, hallways with no gathering opportunities (design for less than 45% of wall area)
   - Avoid skylights and use roof monitors with vertical glazing instead

2. Types of Building Materials
   - Use durable wall surfaces that are easy to clean
   - Design for cleanability with easy and safe access
   - Incorporate light colored pitched roofs to prevent heat gain and leakage
   - Install high performance walk-off mats at all points of entry
   - Design with noise minimization in mind

3. Uses of Technology
   - For instructional and administrative purposes, the new school should have extensive technology systems. These same infrastructures and technology components can be used to enhance the perception of the buildings environmental components. Digital display of buildings energy and water use at entrance and in cafeteria
   - Website with environmental features of the school
   - Use only vacancy sensors for classrooms, cafeteria etc. to turn off (not on) lighting
   - Daylight sensors and dimming in larger areas (cafeteria, multi-purpose etc.)

4. Vehicular and Pedestrian Traffic
   - Provide sufficient, covered and secure bicycle storage
   - Provide bicycle lanes to building from all major access directions

5. Landscaping, Play/Practice Fields, Site, and Lighting
   - Use native high trees and low bushes and ground covers and locate to provide shade to the building
   - Non-intrusive lighting of all areas (not correctional-type lighting) according to the Light Pollution Credit in LEED-S with no lighting to leave property line
   - Use aesthetically pleasing fence around perimeter of the building
   - Reference the Alexandria City Landscaping Guidelines when providing landscaping.
6. Green Curriculum
   - Provide outdoor classroom
   - Design interior with sense of buildings orientation to North – East – South - West

Active Concepts

1. Building Layout
   - Provide signage to educate users about interior and exterior green building features throughout
   - Provide signage for user behavior modification, e.g. ACPS policy for thermostat settings, reminders to turn equipment off when not in use
   - Provide visitor map with floor plan for location and explanation of green building features

2. Types of Building Materials
   - Provide view window to inside of wall constructions and mechanical room
   - Provide materials with environmental massage in selective areas, e.g. 100% recycled post consumer plastic toilet compartments, wheatboard cabinets, or furniture made of wood harvested from school site, and explain with signage.

3. Uses of Technology
   - For instructional and administrative purposes, the new school should have extensive technology systems. These same infrastructures and technology components can be used to enhance the perception of the buildings environmental components.
   - Green morning announcement with update on energy and water use
   - Student conducted energy audits

4. Vehicular and Pedestrian Traffic
   - Provide preferred parking for ACPS Green Fleet (for carpooling and fuel efficient vehicles)

5. Landscaping, Play/Practice Fields, Site, and Lighting
   - Design for no-mow areas
   - Design for student garden
   - Provide solar or wind powered, off the grid site lighting as demonstration model for select areas

6. Green Curriculum
   - School based resource conservation program with frequent feedback to users

LEED credit Schools as a Teaching Tool requires 10 hours of instruction per student, grade and school year on environmental issues related to the school building. The school buildings design should support this requirement wherever possible.
Information Technology provides technical services to all schools in the division and is operated from a remote location. ACPS IT does not adhere to BICSI (Building Industry Consulting Services International) or RCDD (Registered Communications Distribution Designer) standards, all electrical and data layouts are location dependent. Architects will consult IT with all design decision related to services operated by IT. Provide blocking systems in all walls for future acceptance of equipment and teaching devices. Provide a maximum of four hard data ports per classroom; two data ports each at opposite facing walls to accommodate mobile teaching stations. Provide electricity in multiple locations along all walls and wireless internet capacity to host 30 computing devices at one time per classroom. Provide appropriate wireless data coverage through each school to facilitate a one-to-one teaching device ratio. ACPS’ fiber optic systems support security, IP cameras, clocks, and PA systems.
safety / security

ACPS wants to maintain an inviting and de-institutionalized environment, while simultaneously providing a safe environment for students, staff, and community who use the facility and adjacent support services. The organization of a building will have a major impact on student behavior and safety concerns.

Building security can be addressed in an active or a passive manner: active security is based on security systems; passive security is based on program design, building configuration, and community participation. Schools should be based on passive concepts with applied active concepts where necessary.

The principles of the Crime Prevention Through Environmental Design (“CPTED”) approach should be followed to incorporate passive safety and security measures. CPTED is the broader approach to safety and security that seeks building designs that encourage desirable behavior, heighten functionality, and decrease social behavior.¹

There are three main considerations in CPTED:

1. Natural Surveillance: the capacity to see what is occurring without having to take special steps to do so
2. Natural Access Control: the capacity to limit who and how someone can enter a facility
3. Territoriality: the capacity to establish an authority over an environment in who is in charge, who is allowed and who is not welcome.

1. Building Layout
   - Avoid blind spots, corners, and cubby holes
   - Maintainable lines of sight and use of opening to create transparency
   - Locate administrative and teacher preparation with good visual contact of major circulation areas (i.e., corridors, cafeteria, bus drop-off, parking)
   - Develop spatial relationships that naturally transition from one location to another
   - Locate toilets in close proximity to classrooms
   - Design toilets to balance the need for privacy with the ability to supervise
   - Locate areas likely to have significant community (after school) use close to parking and where these areas can be closed off from the rest of the building

2. Types of Building Materials
   - Use durable wall surfaces and maintainable flooring material that are easy to clean so graffiti and dirt can be removed
   - Incorporate pitched roofs which inhibit roof entry and are aesthetically pleasing
   - Operational part of windows on the ground floor should be in the upper portion to prevent access
   - Install non-slip floors and walk-off mats at point of entry
   - Use of interior glass to create a transparent environment within the school, and Colors, artificial lighting, and natural day lighting should be managed artfully to create an

¹. Schneider, Tod (September 2002). Guide 4: Ensuring Quality School Facilities and Security Technologies: Safe and Secure: Guides to Creating Safer Schools. Northwest Regional Educational Laboratory,
environment that is aesthetically pleasing in order to support student and faculty pride in the building.

3. Uses of Technology
- Phones in every instructional and support area
  Building-wide all-call designed to be heard throughout the school and on the play fields when needed
- Motion or infra-red detectors, which can also conserve lighting costs
- Video cameras that are used for instructional purposes could also be used for security purposes during non-school hours
- Smoke and heat detectors located throughout the building
- Emergency call buttons in large parking areas, and
- Magnetic locking systems and carefully selected door hardware to facilitate lock downs in needed.
- Considerations should be given to zoning the building for non-school day uses in terms of both energy efficiency as well as security: Lighting zones, Securable zones, and Mechanical zones

4. Visitor Management
- The front entry lobby should be welcoming and inviting for students, staff, and visitors with a central visitor registration area should be prominent upon entry,
- Clear way finding signage should be included that directs visitors upon campus arrival to visitor registration and as well as throughout the building to provide overall building guidance,
- A secured double vestibule or a video enabled front entry intercom buzzer system should be provide to manage visitor entry, and
- Front lobby & exterior displays should be provided for communicating school messages.

5. Vehicular and Pedestrian Traffic
- Separate bus drop-off area from other vehicular traffic
- Separate staff and community parking area
- Separate student (pedestrian) traffic flow

6. Landscaping, Play/Practice Fields, Site, and Lighting
- Use native high trees and low bushes (less than three feet high) to deter hiding
- Use aesthetically pleasing fencing around perimeter of the building
- Non-intrusive lighting of all areas (not correctional-type lighting) according to the Light Pollution Credit in LEED-Ss with no lighting to leave property line
- Provide security lighting around building and parking lots with photocell timer, motion sensor and on/off capacity
Community involvement in education and educational involvement in the community can take a variety of forms before, during, and after the school day. The following is a partial list of potential community uses:

- Touring Groups
- Speech/Debate Clubs
- After School Youth Enrichment
- Adult Education
- Community Meetings
- Mentoring Programs
- Parent Involvement
- School/Business Partnerships
- Alternative Education Programs
- Dance Studios
- Community Athletics
- Recreation Programs
- Health Screening
- Senior Citizens Programs
- Intramural Sports Programs
- Child Care (staff, students, community)
- Voting
- Emergency Shelter

Based on limitations established for the size of the facility and budget constraints, most of the community uses will need to focus on shared space -- space that is used primarily for school programs during the school day and community uses during non-school hours. Priorities need to be established at the local site level to determine future community activities that may be added in order to be incorporated in the overall master plan.

Even within these constraints, opportunities exist. The areas that have the greatest possibility for community usage include:

- Performance/meeting area
- Library/media center
- Play fields
- Computer labs
- Conference rooms
- Multipurpose room/gym
- Cafeteria

Consideration should be given to furniture and equipment selection for shared uses by students, very young children, and adults. The facility and site should be configured and zoned to enhance parking and circulation, security, and energy conservation. Adequate signage to assist community members. Auxiliary storage needs to be made available for community programs.

Collaboration and partnership require greater cooperation in the planning of schools and community facilities. It is important for the school division, governmental agencies, and corporate partnerships to participate collaboratively in the planning of schools.

Planning for future schools should include joint use considerations at the beginning of the process. School divisions and governmental agencies are beginning to
realize that cooperation is needed, especially considering the ever-shrinking budgets and meeting the diverse needs of the community. There are potential opportunities in jointly developing parks, libraries, and one-stop shopping centers for human services. Partnerships and joint ventures should be considered and are encouraged by the Board of Education.
## Prototype Table

<table>
<thead>
<tr>
<th></th>
<th>PRE-K</th>
<th>KINDERGARTEN</th>
<th>1ST</th>
<th>2ND</th>
<th>3RD</th>
<th>4TH</th>
<th>5TH</th>
<th>SELF-CONTAINED</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>460 Students</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Classrooms</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Capacity</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>22</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>60</td>
<td>66</td>
<td>66</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>0</td>
<td>462</td>
</tr>
</tbody>
</table>

|                |       |               |     |     |     |     |     |                |       |
| **850 Students** |       |               |     |     |     |     |     |                |       |
| Number of Classrooms | 6     | 6             | 6   | 6   | 5   | 5   | 5   | 0              | 39    |
| Capacity         | 18    | 20            | 22  | 22  | 24  | 24  | 24  | 10             |       |
| Total            | 108   | 120           | 132 | 132 | 132 | 120 | 120 | 0              | 852   |