

Building Design Principles

3. Building Design Principles

Davenport CSD: District of Distinction

Long Range Facilities Plan

Educational Specifications

These Educational Specifications describe the desired requirements for our school facilities in specific measurable terms of what is physically needed to support instructional programs and in aspirational terms of how each campus is a part of the community and what kind of climate exists at each school. These specifications are to be used to guide future design of renovations, additions and new construction with a focus on supporting instruction for teaching and learning. These are not specific requirements and each facility will be guided toward alignment with these specifications to the extent practicality and economic efficiency allows. For example we may wish for every general education classroom to exceed 900 square feet, but it may not be economically practical in every case to accomplish that goal, so it is a target and not a requirement.

District Expectations

- Health, safety and welfare of students, staff and public
- Welcoming and secure campus
- Facility ed specs that focus on supporting instructional programs
- Code compliance
 - Accessibility
 - Building code compliance
 - Exceed Energy Code requirements
- Relative parity of conditions among campuses
- Mitigating the negative effects of poverty on our families
- Efficient use of existing facilities
- Appropriate and adequate allocation of budgets for facility improvements
- Wise use of financial resources



Measurability Factors

- Maintain enrollment capacity to meet projected needs
- Work toward fully meeting Ed Specs to support instructional programs
- Maintain enrollment/demographic data and projections
- Monitor and report annual operating costs
- Measure and report deferred maintenance cost projections
- Understand each site's ability to support reasonable additions and changes
- Appreciate historical, social and cultural designations or acknowledgements

Six Design Principals

1. **The learning environment should enhance teaching and learning and accommodate the needs of all learners.**

Learning and Teaching Environment

Provide virtual and physical learning spaces to meet students' diverse learning needs. Provide spaces of different shapes and colors for a variety of learning activities involving different size groups. Enable activities ranging from large, hands-on, team projects to quiet personal reflection. Provide quiet, private study areas for reflection that are well-separated from noisy areas. Give teachers practical and stimulating teaching spaces, as well as good personal work spaces. Offer strong spaces to display and celebrate student work. Offer outdoor environments for educational activities and experiences that can't be done indoors. Allow the building to function as a "three-dimensional textbook." Encourage strong, active school leadership in administrative spaces. Provide spaces that enable mentoring, collaboration, externships and distance learning.

Build an environment that focuses on learning as well as teaching that will have key attributes that are different than traditional schools. Teaching environments focus around the needs of teachers. Twenty First Century Schools focus on the needs of learners and teachers. Learning happens in a variety of ways, individually, in small and large groups, in project based activities, hands on and in ways supported by limitless kinds of technology. Learning environments need to be flexible and can be arranged in multiple ways to support a variety of learner activities. Modern learning environments need to be multipurpose, easily manipulated, accessible, student centered with easy access to the outdoors. The space needs to participate in the learning process not simply house it. Learning is limitless and space should not limit learning.



Differentiated Learning

Educators recognize that students learn in different ways. A successful learning environment provides students with different ways to acquire content regardless of differences in ability or learning style. Differentiation in learning needs to be organized yet flexible to allow for adjustment in teaching and learning methods to best accommodate individual student needs. To that end, differentiated learning needs to:

- Provide student ready access to materials
- Information that can be accessed where students learn
- Allow freedom of movement and trust between teacher and students

Differentiated learning requires space that is adaptable for a variety of activities. Students may find themselves working individually or in different size groups. Use of technology is very important in supporting teacher's needs to provide varied lessons and opportunities for individualized learning plans. Differentiated learning also means understanding the impacts that poverty has on our students and taking appropriate steps to minimize the negative effects of poverty on our students and on our community.

Inclusive Learning Environment

An inclusive learning environment is one where all have equal access and all are included. Learning strategies are developed that encourage all to learn regardless of speed, style or ability. This requires learning activities to take place in different and varied types of physical environments. Pleasant, transparent, open and flexible spaces support inclusive learning environments. Learning spaces need to be adaptable to provide for different needs of individuals and groups of learners.

Culturally Responsive

Today, more than ever, schools need to be part of the community and accessible to all. Schools need to provide a sense of home and place and provide for safety and security. Schools need to recognize the importance of cultural and economic diversity, celebrate it and provide programs and places that respond to the specific needs and uniqueness of its communities. Programs should serve local neighborhood and community groups with cultural and economic diversity and make the school a center of its community. Schools need to be welcoming to families and responsive to the needs of students, families and staff.



An Energized School

An energized school is a place where it is exciting to work and learn. It is welcoming and draws people in. It is joyful, exciting, colorful, fun, creative, playful, light, visible and stimulating. The School is a place where all enjoy spending time. Its activities extend beyond normal school hours. Student work is displayed prominently and celebrated. Visitors recognize its vibrancy. Learning is celebrated and encouraged. Students excel, are excited about learning and want to overachieve. The design of the school reflects a child and learner centered ethos. It is truly a place where it is fun to learn and all want to engage.

2. The learning environment should serve as the center of community.

Recognize that each school attendance area creates a community of common interests among all residents of the area. Build safety and security into the design, avoiding intrusive, prison-like measures. Establish clear boundaries between public use and school use, buffer and protect walking paths outside the school from traffic and service areas. Provide clear sight lines and design inside traffic patterns carefully to maximize safety and supervision. Provide excellent air quality, localized heating and cooling controls, windows that open, and natural/task-appropriate lighting – all of which research has shown to improve learning. Provide for community use of facilities and programming through partnerships with community based organizations, parents and other regional governments. Provide for community use and appreciation of the open space, outdoor amenities and recreational areas. Provide for a connection between the indoors and outdoors on the campus with opportunities use the natural outdoors on the campus as well as the interior of the building.

3. The learning environment should result from a planning and design process that involves all community interests.

School sites should be highly integrated in their community and support the principals of smart growth. Site selection and planning should be highly coordinated with the surrounding community and its development planning. Use designs for mechanical systems and lighting systems that conserve water and energy. Use renewable energy where possible and economical. Use building materials that are environmentally responsible and result in healthy interior environments for students and teachers. Use environmentally sustainable materials, construction procedures and operating practices. Involve community members, staff and students in the design process.



4. The learning environment should provide for health, safety and security.

Design schools to serve as symbols of our commitment to education and as centers of their communities. Build schools that draw the community in with a sense of welcome. Scale the design to the surrounding neighborhood. In a school's public spaces, inside and outside, provide icons that invite pride in the school's and the community's shared traditions and sense of purpose. Make schools easily accessible by walking, bicycling, car or mass transit. Enable schools to become centers of civic participation and recreation. Where desired, integrate shared uses such as neighborhood health clinics, libraries, or recreation centers. Where practical, renovate older schools that play an important role in the history and fabric of their neighborhoods. Incorporate the neighborhood and its assets (social, cultural, natural) into the students' learning environment. Conversely, make sure the school provides spaces for its community partners in learning and for lifelong learning activities. Make public access available through welcoming but secure entries where visitors are easily screened and public entries are secure.

5. The learning environment should make effective use of available resources.

Engage the public, in all its multiple perspectives, in a meaningful and authentic processes when envisioning and designing schools. Go beyond the obvious stakeholders – parents, teachers, students – to include community groups, the business community, senior citizens, local colleges, taxpayer groups and other government officials. Listen to and value public input, respecting diversity in age, culture and gender. Provide honest and transparent information about costs and financing. Use an open and inclusive process of design and construction to build trust between schools and community. Design quality, durable, adaptable facilities that provide long term economic value, reduced operating costs, energy efficiency and environmental sustainability.

6. The learning environment should be flexible, adaptable and economical.

Design and build to optimize public investment. Use designs and materials that are easy to use and maintain without sacrificing aesthetics. Use all available resources, including up-to-date technology and community resources that can provide alternatives to traditional classroom spaces, cultural diversity and technology. Apply a "life-cycle cost



approach” that reduces the total costs of ownership through efficient design. Ensure the flexibility and adaptability of places and spaces because part of being cost effective is planning on changes in curriculum, technology, programs or community needs in the future. Take a long term perspective, understanding that our schools may serve us for generations, even centuries.

Planning and Design Characteristics

Pride of Place

Each local school is a center of its community. The school’s architecture should celebrate the importance of the work of teaching and learning and the commitment of the community to public education. Feelings of belonging and ownership create pride and confidence in student learners, staff and community. Every school should identify and celebrate/commemorate an appropriate part of the school’s history and place in the community. Examples include special murals, displays, historic artifacts, indigenous materials, student work and tributes to students, staff and community members who have made important contributions to the school.

Welcoming Main Entrance

All schools should have a clear sense of main entry that sets the expectation for all users with a balance of “welcome and safety”.

Safety / Security

Schools should be designed as welcoming. However, security concerns will remain a priority consideration throughout the future in facility planning efforts. Security should be integrated as unobtrusively as possible. Security should be pervasive and seamless. Care should be taken to avoid strategies that actually contribute to building users feeling more fearful. Each school should have a secure primary public entry designed to both welcome and to regulate visitor entry to the building. Principles of security through site design will always be applied in the design process.

Administrative Spaces

Locate administrative spaces near the school’s main entrance with exterior and interior windows and layouts that allow for passive and active supervision. Administrative spaces should serve as the primary public entry and be organized to be both welcoming and secure.



Age Appropriate

Organize and shape learning spaces with varieties of student groupings, furniture arrangements and organizational structure with special care and attention to student size and age. Examples include ceiling heights/volume, age appropriate sized and placed view windows, calming color selections, locker size and access, etc. Facilities should reflect and provide for students' different ages and learning styles.

Volunteer Comfort-Support

Recognize the value and importance of community volunteers with a reception/waiting area that accommodates space for infant toddler play/entertainment and support. Provide adequate space for parent volunteer and community organizations that work on campus and serve the particular and unique needs of each school community.

Accessibility

All teaching, learning and lunch room spaces should be accessible and convenient for all. It is highly desirable to discontinue the use of any basement or "garden level" spaces in the district's elementary schools for dining or classrooms. ADA accessibility to all programs should be maintained. Special consideration of accessibility requirements for special access needs populations should be a priority for all facilities.

Pre-K classroom considerations

Our Pre-K centers may still serve many students and all elementary buildings should be evaluated and considered for the potential inclusion of future pre-school classroom(s) and support areas. The inclusion of Pre-K at neighborhood schools should be considered on a case by case basis as other additions and renovations are undertaken at each neighborhood elementary school.

Outdoor Learning

The outdoor features of the campus should be integrated into the curriculum where ever possible. Storm water features on campuses can support multiple instructional units in science, geography and environment. Where possible, formal outdoor "classrooms" should be provided to promote outdoor leaning and contact with nature. Food producing gardens, raised planter boxes and use of native plants and grasses in the landscape should be encouraged.



Seamless Technology

As we embrace our digital future classrooms will be connected to the world and present transparent and seamless access to rich technology resources for teachers and students. All learning spaces will be covered with high density wireless capacity to enable whole class participation from mobile devices. Teachers and students will embrace and utilize cloud based systems for content data storage and collaboration. Students will have ample access to connected mobile devices. Appropriate means for presenting educational content including large screen projection and audio enhancement systems will be a staple in the classroom.

Acoustics

The acoustic qualities of school facilities are important to consider. Indoor functions require active, semi quiet and quiet acoustical characteristics depending on their use. Instructional benefits from properly tuned spaces and student performance are positively affected by properly designed learning spaces. Special care and attention should be considered to accomplishing this important key planning and design characteristics. Teachers should have access to electronic sound re-enforcement in every classroom.

Access to water/sinks in elementary teaching spaces

Sinks with water fountains should be considered for all classrooms in grades pK-2. Accessible water fountains and sinks should be considered at all grade level classrooms where the curriculum requires them. Ready access to drinking water should be made available in every school.

Color and Light

Significant research concludes that color choice and natural light have a significant effect on learning and achievement. Complexity and color both support providing an ample and appropriate amount of visual stimulation for students in the classroom. Accent walls (different color from the others in the space) are recommended. Natural light should be provided where ever possible for classrooms.



Environmental Sustainability

We will take advantage of every appropriate opportunity to reduce energy consumption and apply principals of sustainability in our designs, our construction materials and methods and in our on-going operations. Every campus should have outdoor learning opportunities. The buildings and grounds should be used to inform and support instruction, not simply to house it. Energy efficiency measures and data should be reported to teachers, students and the community. Campus sustainability measures should be a source of pride and integrated into building operations and instruction.

Furniture, fixtures and equipment

The District is encouraged to consider furniture and fixtures that are age appropriate, adjustable and ergonomically supportive. Change is inevitable. One size does not fit all. Furniture must be able to adapt quickly for many teaching styles, arrangements and spontaneous movement activities. Furniture that is easily re-arranged to suit differences in instruction should be emphasized. Student comfort and proper ergonomics are essential for supporting student achievement. All furniture and fixtures should be durable, high quality and long lasting. Classroom furniture should offer a variety of seating choices. In some circumstances both sitting and standing work surfaces are appropriate.

Student lockers/cubbies placement in classrooms

It is desirable to accommodate appropriately sized student lockers and/or personal storage within classrooms in PreK-3 grade levels. Lockers in corridors for upper grades should be located in areas that provide ample space so that use of lockers does not impede corridor traffic.

Group space flexibility

Grade level classroom teams should be supported by “Pods” or “Academic Commons”. These areas are recognized as valuable social connectors for grade level activities, additional space for purposeful collaborative group projects and exploratory activities. Where possible groups of classrooms should have access to a common shared space for collaboration and spilling out of the classroom for projects and teamwork

Spatial variety is important. Learning today takes many forms and the ability to create different size and shaped learning environments contributes and supports the variety of learning strategies present today.

