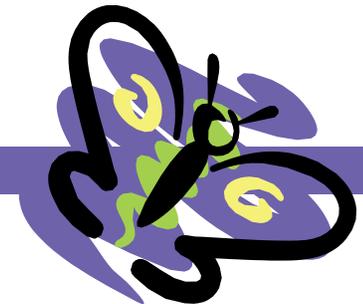

7.0 Site Considerations

In this chapter we present ideas for site layout and design with particular attention to sustaining and maximizing the natural environment.







SITE CONSIDERATIONS

7.1 The School Site

Site layout and design is just as important as the spatial relationships of the spaces within the building. Of course, many of the design decisions relating to site issues will vary according to the actual size, orientation and topography of the land. Still, no matter where it is located, the building should be carefully placed within its context and should also sensitively cooperate with the environment.

Site considerations such as zoning, setbacks, building heights, lot coverage, landscape ordinances, and local building codes need to be incorporated into the overall site plan design. Although many building codes are similar in different areas each local jurisdiction usually has unique building and/or local requirements that may alter the building and zoning codes.

The site design in this document is based on an allocation of approximately 72,000 square feet. The recommended size of an elementary school, per the State's Facility Guidelines is 10.0 developable acres plus one developable acre for each 100 students. The 10 acres include adequate space for bus drop-off and parking; service and loading area; staff, faculty, and visitor parking; parent drop-off area; play areas; walking trails; stormwater pond; and minor building expansion. The assumptions here are that the site is basically flat, and the buildings are located with a north-south orientation.

Minimum acreage refers to usable acreage or acreage that can be developed. School site sizes may be larger or smaller than those outlined in the State Guidelines. For example, additional acreage may be necessary to:

- Accommodate community use of the facility and multiuse recreational facilities such as soccer and soft-ball fields.
- Account for areas that cannot be built upon, such as steep slopes, wetlands, rights-of-way, easements, setbacks, buffers, or poor soils.
- Meet requirements imposed by local ordinances, i.e. restrictions governing land that cannot be disturbed within a development and the permitted amount of impervious service will affect the ultimate size of the site.
- Include landscaping and buffers.

Other aspects to consider in siting a new school include natural geographic barriers, road patterns, and existing or non-existing infrastructure such as water, sewer, and roadways. School systems should actively pursue partner agreements with communities, parks and recreation departments, private developers, and business in an effort to maximize joint use of facilities.

“Students are more likely to prosper when their environment is conducive to learning. Well-designed systems send a powerful message to kids about the importance their community places on education.”

~The American Association of School Administrators



Fairfield Middle School
 Photo courtesy of Perkins Eastman | Photographer: Woodruff/Brown

7.2 Site Design and the Environment

The following are some suggestions that insure a focus on sustaining and maximizing the natural environment. We have also included ways in which the site itself might be integrated into the school curriculum.

1. Site layout should minimize disturbance to natural areas. Wherever feasible, these areas are to be used for outdoor learning locations.
2. Limit amount of impermeable paving by maximizing use of porous materials such as pavers, porous concrete, porous asphalt, turf pavers, etc.
3. Provide preferred parking spaces for hybrid and compact cars.
4. Promote planting and saving of trees to provide canopy coverage particularly near and within parking areas.
5. Site planning should maximize potential for pedestrian and bike access.
6. Site design and layout should include opportunities for improving the land through restoration of degraded ecological attributes such as streams or wetlands. These restored features can be used as outdoor teaching areas.
7. If areas/borders do not exist, create them. They should be composed entirely of native species plantings with drought tolerance, and should come from a local nursery source for proper genetic provenance.
8. Trees and shrubs should provide wildlife food source. Species selection should be based on geographic location.
9. The building should be located on the higher part of the site in order to take advantage of natural slopes for drainage.
10. Provide a variety of covered outdoor activity areas for shaded play and rainy weather.
11. Ensure that all areas are handicapped accessible.
12. The building should be laid on an east/west axis. This will allow most windows to be placed on the North/South side of the building, thus allowing the design to take advantage of natural light and air. This includes sizing the windows based on the orientation of the sun, and using natural breeze to help ventilate.
13. In order to lower construction cost and significantly reduce site disturbance, consider building size reduction, multi-story structures and shared use with other community organizations.
14. Local materials will bring local character to the design. Use of indigenous materials will reduce the cost of shipping materials to the site and the emissions associated with shipping.
15. Green products can contribute to a sustainable design, for example by creating retaining walls with vegetation bags to bring more green to the design and create more areas to treat stormwater.



St. Ignatius School
 Photo courtesy of Perkins Eastman | Photographer: Sarah Mechling

Access to nature is linked with development of imagination, independence and autonomy.



Concordia International School | Elementary School
 Photo courtesy of Perkins Eastman | Photographer: Tim Griffith



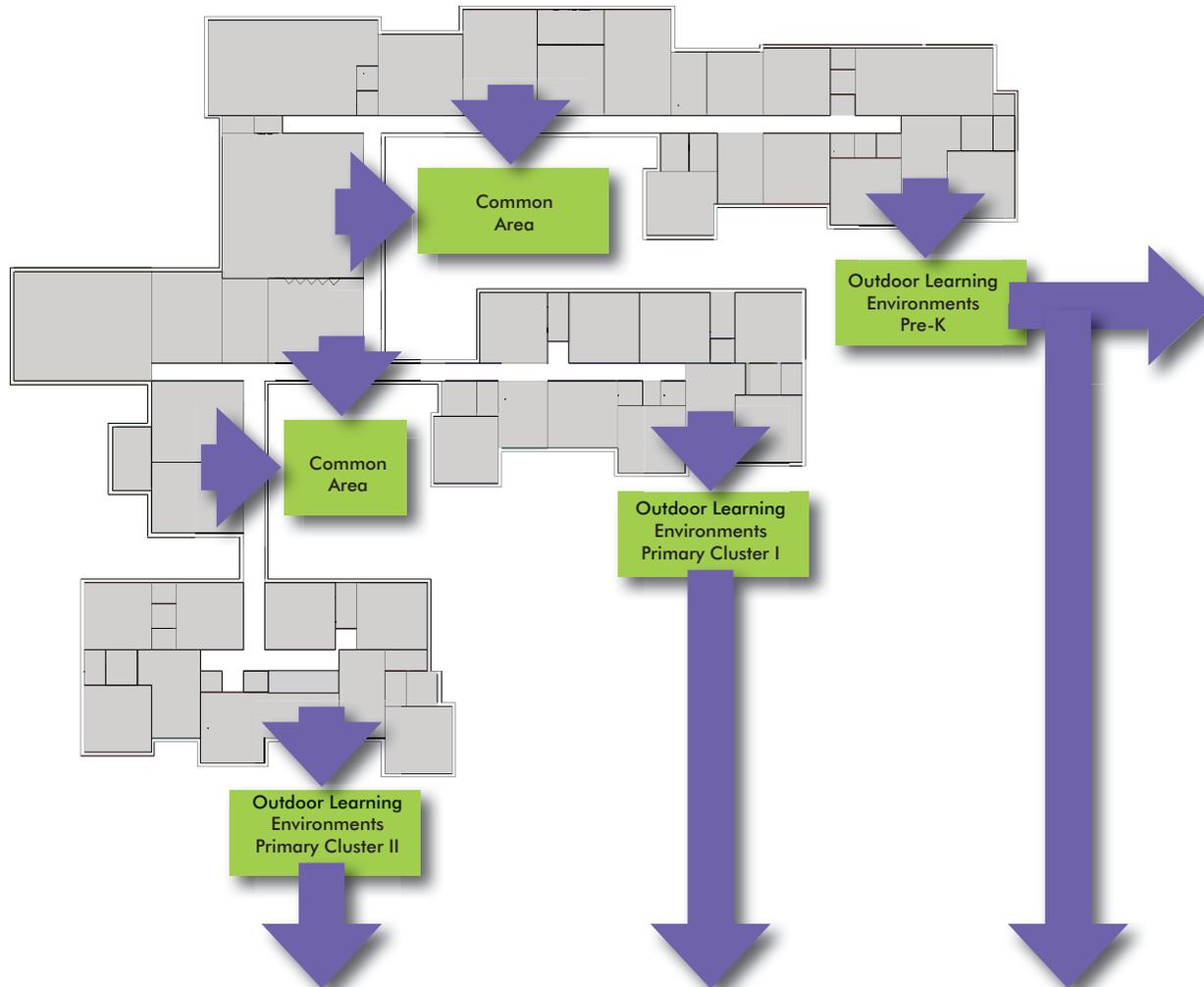
7.3 Student Engagement in Outdoor Play and Learning

Outdoor spaces should be designed so children can test their abilities in an environment that offers challenge and stimulation. Children need tools, open space, and the opportunity to interact with the outdoor environment. Outdoor spaces help children grow up closely connected to nature. By being exposed to trees, plants, and other natural materials, children can independently discover nature and its processes. The outdoor environment should engage children's sense of inquiry, stimulate their imaginations, invite exploration, and support their developing competencies.

An ideal outdoor area should be one that contains a variety of natural play and learning settings, offering children multiple opportunities to observe, explore, and interact with nature. An outdoor water exploration area would promote creativity, innovation, and exploration. Outdoor areas could also contain a variety of play and learning settings with constructed or manufactured elements that encourage physical activity. In addition to gross motor equipment, outdoor areas can promote arts and crafts, scientific and mathematical exploration, relaxation, quiet or dramatic play.

In the FirstSchool Design Guide, it is suggested there be an outdoor learning area adjacent to each cluster of classrooms, promoting the outdoor learning experience related to the age group of each cluster. Outdoor opportunities should be designed for age appropriate learning experiences.

1. Areas should be set aside for natural learning locations, perhaps named, for such things as vegetable production (organic), wildflowers, butterfly gardens, and rainwater harvesting.
2. Plant edible and re-seed gardens: These gardens will bring life and fun to the classroom. Re-seed gardens will allow students to learn nature's patterns.
3. The implementation of composting stations on-site will complete the planting cycle for the students. They will see how leftover food and yard debris can be used to fertilize their gardens.
4. Adventure Play Gardens (APG) give students not only the chance to play, but also a chance to bring lessons learned back into the classroom. APG allows students to explore and enhance their love for the outdoors. These playgrounds, though different from the typical schoolyard, give students a chance to mold, create, build, and manipulate many parts of their play area. APG allows children to take part in the things they love; crawling, digging, damming, and climbing. These spaces can be designed so that children will have plants and rocks to crawl under, soil and sand to dig in, water features to dam, and trees and other objects to climb.
5. Play areas that are responsive to the interests and skills of all young children (age 3 through 8), with attention to safety and supervision needs, facilitate cross-age interaction. The creation of these play spaces will also allow younger and older students to interact and learn from one another.



Outdoor Play and Learning Environment





7.4 A Welcoming Environment

One of the most important features of a school is the degree to which it fosters a sense of welcome and belonging for children and families. As a child approaches the school grounds and facility itself she/he should have a sense of being welcome. Buildings may seem imposing to young children and they can become easily overwhelmed with the size and scope of the space. Children should be able to easily negotiate the space. Doors should be easily opened by young children, pathways should be marked so that children not yet reading can find their way, displays should be placed at eye level for small children, and furniture should be available for young children in common areas as well as in their own classroom areas. The entry and other common areas should be familiar to children. They should see themselves and their families reflected in the art work, and depicted in school activities, photographs, and other displays in the school. The environment should inspire a sense of curiosity reflective of the school's attitude of inquiry as a core attribute of a successful school.

Similarly, unless there is clear thought put into making a school friendly to adult family members, they too may feel uncomfortable entering a strange and imposing space. Having spaces specifically designed for use by family members that are clearly identified and easily accessible helps to let parents and other family members know that they are a welcome part of the school community and encourages them to become active in the life of the school. While the school must be designed to provide security for children at all times, this does not mean the spaces cannot be friendly to both children and adults as they enter the building. Indeed, a sense of safety is essential to a welcoming atmosphere.