The Urban School as a Model for the Future

by

Matthew Bell, FAIA

Principal- Perkins Eastman
Professor- University of Maryland
Issues for Suburban Schools

1. Growth
2. Energy
3. Fields
4. Specialized programs
5. Modernization
OBJECTIVE

• To designate a high school site that is:
  – Physically suited to meet typical program requirements
    • 2,000 student capacity (330,000 sq ft.)
  – Appropriately located within the target geographic area
  – Available for acquisition within acceptable time parameters
  – Oriented to meet LEED™ criteria for Green Schools
SITE CRITERIA

- Location
- Size
- Access
- Proximity to Transit
- Topography
- Physical Condition
- Utilities
- Availability
- Cost
SITE CRITERIA

• Location
  – Centrally Located within the Target Area
  – Adjacent to Residential Use
  – Environment Conducive to Learning
SITE CRITERIA

• Site Size for a High School
  – 30 net useable acres

• Site Requirements
  – Building footprint
  – Parking for 500 cars
  – Athletic fields
  – Tennis and Basketball courts
  – Outdoor Storage Sheds

SITE CRITERIA

• Access
  – Primary Road
  – Long or multiple road frontages
  – Multiple curb cuts for traffic separation
  – Bus loop for 30 buses
  – Proximity to transit
LEED™

- Proximity to transit
  - ½ mile of commuter rail, light rail or subway station or
  - ¼ mile of 2 or more bus lines
- Compact site design
  - Reduced footprint for building, parking, access
- Site orientation
  - 50% more energy efficient if school is built on East-West Axis
- Opportunity for Geo-thermal field
Sample High School Template
John Handley HS- Winchester, VA
John Handley HS- Winchester, VA
Section A-A
1 Entry Plaza (Academic Wing beyond)
2 Entry Vestibule
3 Senior Lounge
4 Armory
5 Grand Stair
6 Pool
7 Gym
8 Photovoltaics

Dunbar High School- Washington, DC
A ground-source heat pump system (also known as a geothermal system) under the athletic field and radiant flooring in the Armory support Dunbar’s commitment to energy efficiency.

Geothermal wells take advantage of the earth’s constant year-round temperature of 59°F. Water is pumped through pipes that are buried underground. In the summer, the water absorbs excess heat from the building’s mechanical system, then transfers that heat into the ground. In the winter, the opposite happens; the water draws heat from the ground to provide pre-warmed air and water to the heating system of the building. This system reduces the building’s demand for energy from fossil fuels.

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**DID YOU KNOW THAT...**

- 362 wells are buried under the track and field to a depth of 500 feet.
- $250,000 - $300,000
  Estimated annual energy cost savings when compared to average DC schools.
- In all, the system has more than 68 miles of tubing, longer than the Capital Beltway!
School Without Walls - Washington, DC

Respecting historic character

School Without Walls - Washington, DC
School Without Walls - Washington, DC
Stoddert Elementary School and Community Center - Washington, DC
Stoddert Elementary School and Community Center- Washington, DC
Deanwood Community Center
Washington, DC
The center responds to three different contexts: the elevated Metro and its large parking lot, Ron Brown Middle School and the residential neighborhood.
The campus was carefully planned to respect and celebrate a monumental row of oak trees. The trees define the field (left), the building (rear) and courts, parking and bio-swales (right) on the 5.8 acre site.
Resources for All

In a place and time where the challenges to family and community bonds are increasing, Dreamwood Community Center provides the stage for community activities big and small that reinforce family and community bonds, and help to sustain the social fabric of the neighborhood. The design connects an innovative combination of programs for community members of all ages including a recreational swimming pool, public library, large gymnasium, senior center, community meeting rooms, recording studios, and an early childhood center with a distinctive and memorable public space: the "Street."
A large monitor (above) and several skylights ensure that plentiful natural light fills the library.

The children’s area creates an amphitheater actively used by the early care center and other neighborhood children.
Beekman Hill International School-PS 59
New York, NY
Beekman Hill International School-PS 59
New York, NY
Keys to Sustainable Schools

1. Choose locations close to transit
2. Co-location of program when possible
3. Go vertical!
4. Minimize surface parking lots
5. School as energy resource