

# SPS Guidelines for New School Construction

BOE accepted 10-7-08

## NEW FACILITIES

### **LEED™ CERTIFICATION AND THE ROLE OF STANDARDS**

- A. Springfield Public Schools R-12 will use the Leadership in Energy and Environmental Design (LEED™) standard as a benchmark for comparing different design proposals and as a resource for investigating opportunities in sustainable design.
- B. Springfield Public Schools R-12 will use current LEED™ standards for the building design process. Initial design efforts shall support the award of the Silver designation, as a minimum.
- C. The implementation of all sustainable design components shall be cost effective and demonstrate a favorable life-cycle cost compared to traditional technologies.
- D. The Springfield Public Schools R-12 Board of Education shall, in each individual case, direct and authorize the use of LEED™ standards for design, bid, and construction.

### **BUILDING REASONABLE LIFE**

- A. Although some buildings may last hundreds of years, there is a reasonable life expectancy for school buildings that take into account factors such as:
  - a. Construction materials & methods
  - b. Environmental factors
  - c. Longer term building adequacy, efficiency, & economy
  - d. Technology changes
  - e. Educational methods including programming and curriculum
  - f. Safety, health, & comfort
  - g. Building use
  - h. Maintainability
- B. 35-50 years is a reasonable lifespan for new buildings. Newer buildings or major additions should be designed and constructed to support this timeframe.

### **CURB APPEAL**

- A. Although curb appeal is a term normally associated with restoration or upgrading of older buildings, it is also an important factor in new construction. Emphasis must be placed on the following;
  - a. Appealing and easy to maintain landscaping.
  - b. Designs should be considered that will stand the test of time.
  - c. Exterior building features that add to the character of the building, setting, and surrounding community.

## **SCHOOL SIZE**

- A. Elementary School 300 – 650 students.
  - a. Title 1-minimum two sections and a maximum of four.
  - b. Non-Title 1- minimum of two sections and a maximum of five.
- B. Middle School 700 – 950 students.
  - a. Title 1-maximum of 700 students
  - b. Non-Title 1- maximum of 950 students.
- C. High School 1,500 – 1,900 students
- D. Combination Schools Pre-K – 8, 700-950 students.

## **CLASS SIZE GOALS**

- A. Class sizes shall align with the current Springfield Public Schools SP5 Strategic Plan.

## **SQUARE FOOT PER STUDENT**

- A. A gross square foot per student for the overall building will be calculated using the total student population (TSP).
- B. Ranges:
  - 1. ES = 120 Ft<sup>2</sup> minimum
  - 2. MS = 140 Ft<sup>2</sup> minimum
  - 3. HS = 160 Ft<sup>2</sup> minimum
  - 4. PK-8 = Blended

## **NET AND GROSS SQUARE FOOTAGE**

The net square footage will be composed of the following two components:

- A. Program area spaces – spaces related to instruction and support.
- B. Building Services – a component contained within the total net square footage containing the following types of spaces:
  - 1. Large group restrooms
  - 2. Custodial Closets
  - 3. Electrical Closets
  - 4. Telecommunications and/or IT rooms
  - 5. Corridors (High schools and middle schools; Usable width 12-foot recommended, 10-foot minimum)
  - 6. Mechanical/Electrical Spaces
  - 7. Storage Areas
  - 8. Central Storage Areas
  - 9. Adequate storage areas associated with each classroom to keep materials out of the instruction environment.
  - 10. Loading/Receiving Areas
  - 11. Teacher workrooms
  - 12. Staff dining
  - 13. Community spaces
  - 14. High school nursery

## **UTILIZATION FACTOR**

Utilization factor is defined as “the educationally appropriate percentage of the school day that typical spaces can be used for instruction.” Utilization factors have been established for each of the following school levels:

- A. Elementary Schools – 90%
- B. Middle Schools – 80%
- C. High Schools – 80%

## **SITE SIZE**

- A. The recommended site sizes are:
  - 1. Elementary School: minimum 20 acres.
  - 2. Middle School: minimum 25 acres.
  - 3. High School: minimum 50 acres.
  - 4. PK-8 School: minimum 30 acres.
- B. Provisions for adequate playgrounds, athletic fields, practice fields, and other outdoor use areas must be considered.
- C. Provisions for adequate parking, traffic flow, pickup and drop-off of staff, visitors, and parents must be taken into account.
- D. Deviations from the site size may be required because of extenuating circumstances.

## **PROGRAMS**

The following programs are guidelines only:

- A. Elementary Schools
  - 1. Pre-school
  - 2. Academic Core
  - 3. Special Education
  - 4. Visual Arts
  - 5. Music-Vocal
  - 6. Physical Education- always provide separate gyms and cafeterias. Gyms and cafeterias both to support regulation high school basketball courts.
  - 7. Library Resource Center
  - 8. Title I and/or Rooms for At-Risk programming, literacy & math coaches, Title I reading
  - 9. Computer labs/technical education
  - 10. Department team rooms
  - 11. Allow special spaces to deal with school choice options. Example, for a science-based school, additional laboratories and associated services may be required.
- B. Middle Schools
  - 1. Academic Core
  - 2. Special Education
  - 3. Visual Arts
  - 4. Music-Vocal
  - 5. Music-Orchestra

6. Music-Band
7. Foreign language lab
8. Technology Education
9. Family and Consumer Sciences
10. Physical Education- 2 gyms and a cafeteria large enough for practices. All gyms and cafeterias to be support regulation high school basketball courts.
11. Library Resource Center
12. Computer labs
13. Title I and/or rooms for At-Risk programming, literacy & math coaches, Title I reading
14. Intervention rooms
15. Department team rooms
16. Allow special spaces to deal with school choice options. Example, for a science-based school, additional laboratories and associated services may be required.

### C. High Schools

1. Academic Core
2. Special Education
3. Visual Arts
4. Physical Education (minimum of 2 gyms, need space for 6-33 student classes simultaneously). All courts to be regulation high school basketball size.
5. Music-Vocal
6. Music-Orchestra
7. Music-Band
8. Foreign language lab
9. Technology Education
10. Family and Consumer Sciences
11. Library Resource Center
12. Computer labs
13. Title I and/or rooms for At-Risk programming, literacy & math coaches, Title I reading
14. Intervention rooms
15. Cardio/wrestling room
16. Weight room
17. Industrial/Vo Tech areas
18. Drama/Auditorium (to include fly systems, orchestra pits, catwalk, and garage door access)
19. Business Ed
20. Counseling services (career, substance abuse, site-based clinician)
21. Media/Broadcast journalism
22. Print media
23. A+/ Academic recovery/MOOP
24. Department team rooms

25. Allow special spaces to deal with school choice options. Example, for a science-based school, additional laboratories and associated services may be required. This may become the norm.

**SIZE OF SPECIFIC SPACES**

The spaces listed below are intended to be samples and representative of typical spaces. All sizes are recommended.

A. Regular Classrooms	900 Ft <sup>2</sup> (all levels)
B. Pre-Kindergarten/Kindergarten Classrooms (Restrooms to be located outside the classroom)	1,100 Ft <sup>2</sup>
C. Special Education Classrooms (District Programs)	1,100 Ft <sup>2</sup>
D. Resource Room (One-on-One. Recovery/speech)	450 Ft <sup>2</sup>
E. Library Media Center	<300 students, 1,800 Ft <sup>2</sup> >301, TSP x 6 Ft <sup>2</sup> (HS min 10,000 Ft <sup>2</sup> )
F. Art Classroom	1,100 Ft <sup>2</sup>
G. Music –Vocal(Choir)	1,500 Ft <sup>2</sup> Secondary
H. Music -Orchestra	1,500 Ft <sup>2</sup> Secondary
I. Music -Band	3,000 Ft <sup>2</sup> HS includes practice and storage
J. Student Dining	10% TSP x 40 Ft <sup>2</sup> /Student
K. Science Rooms	1,250 Ft <sup>2</sup>
L. Gyms	HS-Main 10,000 Ft <sup>2</sup> usable floor space. Permanent chairback non-movable bleachers preferred on one side. Retractable on the other. Practice gym to include seating for 500 on one side. MS-to include seating on one side.
M. Auditorium	Seating for 50% of TSP
N. Wrestling room	3,000 Ft <sup>2</sup>
O. Weight room	3,000 Ft <sup>2</sup>

**SECURITY**

- A. Security camera systems should be designed and installed to monitor the exterior and interior of buildings as required to provide a safe environment.

**ACOUSTICS**

- A. It is recognized that the acoustical factor in all rooms is important.  
 B. All rooms over 1,500 Ft<sup>2</sup>, used regularly by students/staff (APR, gyms, cafeterias, etc.), must have the acoustics modeled during the design process. Appropriate attenuation systems will be installed.

## **EXTERIOR WALLS**

- A. Options available for numerous, insulated wall systems.
- B. All systems to be well insulated and have a moisture barrier.

## **ROOFS**

- A. New construction to be sloped or low slope roof system.
- B. Options available for numerous, UL class "A" systems with warranties.
- C. Vapor barriers are critical for weather protection.

## **OPENINGS**

- A. All academic spaces to have natural daylight.
- B. Minimize east and west facing glass.

## **INTERIOR FLOOR FINISHES**

- A. Use water-based coatings and adhesives.
- B. No Zinc.
- C. Options available include soft and hard surface flooring.
- D. Choose low-VOC emitting materials.

## **PLUMBING**

- A. Water piping should not be installed under floor slabs.
- B. Domestic water systems within the building shall be type "K" or "L" copper tubing.

## **HVAC**

- A. All new construction will include air conditioning. Special attention is to be paid to computer rooms, kitchens, etc., that require air conditioning year round when central systems are typically shut down.
- B. Several systems are available and selection shall be based on a life cycle cost analysis.
- C. All temperature control systems shall be electronic, direct digital controls.
- D. Commissioning of HVAC is required.

## **ELECTRICAL**

- A. Conductors shall be copper.
- B. All branch circuits and feeder circuits should be run above ceilings and within walls.
- C. Interior lighting shall be controlled by occupancy sensors, automatic timed lighting controlled system or a combination of both.

## **SERVICES DISTRIBUTION**

- A. All water, power, data, electrical, and other services shall be run above ceiling or in hidden chases.

## **TECHNOLOGY**

- A. All instructional spaces will be wired for voice, video, data, and power.
- B. All offices and meeting spaces will be wired for voice, data, and power.
- C. As the number of computers are added to the classroom, allocation for space, electrical load, and heat load must be taken into account.

### References and Sources

1. Missouri Department of Elementary and Secondary Education (DESE)
2. Florida State Requirements for Educational Facilities
3. Arkansas State Facilities Standards
4. Springfield Public Schools Food Service Department Wellness Program Procedural Guidelines
5. Education Facilities, Basil Castaldi
6. Principal/Facilities Committee on Building Standards
7. Marshall-Waters-Woody, Architects of Ozark High School
8. SPS Administration recommended building standards
9. SPS Facilities group recommended building standards

This document shall be reviewed annually by the Building Services Department and Board of Education.

\*\*\*\*End of Document\*\*\*\*