

Facility Guidelines for School Construction or Renovation

Middle School Educational Specifications



“To Build Knowledge and Skills for Success Today and Tomorrow”



Meade School District 46-1
South Dakota

Edition 1: May 2005

Facility Guidelines for School Construction or Renovation Middle School Educational Specifications

Meade School District 46-1

1230 Douglas Street
Sturgis, SD 57785
605-347-2523
www.meade.k12.sd.us

MSD Board of Education

Terry Koontz, President
Sue Davies, Vice President
Kathy Behrens
Wanda Blair
Dennis Chowen
Helen Jenkins
Rod Martens
Dennis Thuringer
Carl Wahl

Superintendent of Schools

James Heinert

Superintendent of Buildings and Grounds

James Harris

Middle School Principal

Lon Harter

Facilitator

Heather Krafka, Thurston Design Group, LLP

Forward and Acknowledgements



In April of 2004, the Meade School Board hired Thurston Design Group to facilitate the development of an Educational Specification for the Meade School District. Its purpose is to create a new benchmark that will build on and strengthen the excellent educational tradition of the Meade School District through a comprehensive investigation of how their school facilities can better meet student needs and add to the quality of their educational experience.

With the basic understanding that *the environment in which a child learns affects the success of their education*, the Meade School Board determined that it was time to take a hard look at their school facilities while asking the question, “How can the Meade School District school facilities better accommodate learning?”

During the year that it took to thoroughly consider all aspects of school facilities and their effect on students, numerous people joined and generously gave of their time to answer the above question. The development of this Educational Specification was a collaborative effort, and listed below are the committee members who attended the primary meetings and worked between meetings to gather information. Also, many other people were asked to spend time to provide information for specific portions of the Educational Specification. All totaled, nearly 100 people: school administrators, school staff, parents and community members, worked together to develop this document. Without their considerable time and effort, this project would not have been possible.

The Meade School District will be able to utilize the document that was created through this process as the basis for future change and improvement to the MSD school facilities; and thus, to the educational experience of their students.

Educational Specification Committee Members

Steering Committee

Sue Davies	School Board
Rod Martens	School Board
Dennis Chowen	School Board
James Heinert	Superintendent
Jim Harris	Buildings and Grounds
Heather Krafka	Thurston Design Group
Norman Graham	Principal, Sturgis Elementary
Dan Olson	Principal, Piedmont/Stagebarn Elementary
Lon Harter	Principal, Sturgis Middle School
Tim Drone	Principal, Sturgis High School
Julie Mathiesen	Community/Parent, Sturgis
Howard W. Smith	Community Member, Sturgis
Tim Reilly	Community/Parent, PTA President, Sturgis
Dan Freed	Community/Parent, Stagebarn
Nikki Dyczek	Community/Parent, Stagebarn
Jeri Prestjohn	Community/Parent, Stagebarn
Aneita Henry	Rural School Representative
Steve Anders	City Representative
Dayle Hammock	Meade County Commissioner

Educational Specification Committee Members (continued)

Elementary School Facility Committee

Norman Graham	Principal, Sturgis Elementary
Dan Olson	Principal, Piedmont/Stagebarn Elementary
Jolene Hanson	Teacher, Stagebarn
Jenny Seals	Teacher, Stagebarn
Mary Maher	Teacher, Sturgis
Nancy Keffeler	Teacher, Sturgis
Kelli Wilson	Secretary, Stagebarn
Cheri Peterson	Community/Parent, Sturgis
Kathy Behrens	School Board, Community/Parent, Sturgis
Beth Haivala	Community/Parent, Stagebarn
Lisa Seidel	Community/Parent, Stagebarn

Middle School Facility Committee

Lon Harter	Principal, Sturgis Middle School
Linda Hampton	Teacher, Sturgis
Lora Wilson	Teacher, Sturgis
Connie Berg	Teacher, Stagebarn
Holly Kopplin	Parent/Teacher, Stagebarn
Pam Teany Thomas	Community/Parent, Stagebarn
Lori Smith	Community/Parent, Stagebarn
Brenda Fink	Community/Parent, Sturgis
Ronda Snyder	Community/Parent, Sturgis

Thank you to everyone who gave unselfishly of their time, energy and experience.

Table of Contents



INTRODUCTION	1
MEADE SCHOOL DISTRICT MISSION STATEMENT	1
INTRODUCTION AND BACKGROUND	1
INTENT AND PURPOSE	1
USE OF THE PLANNING GUIDE	2
THE DEVELOPMENT PROCESS	3
COMMUNITY SCHOOLS CONCEPT	6
UPDATE PROCESS	6
EXECUTIVE SUMMARY	7
STRATEGIC PLAN	14
MISSION STATEMENT	14
BELIEF STATEMENTS	14
VISION STATEMENT	15
GOAL STATEMENTS	15
GENERAL FACILITY GUIDELINES	18
SCHOOL SITE	19
<i>Location</i>	19
<i>Site Size</i>	20
COMMUNITY USE	21
SCHOOL SIZE, GRADE CONFIGURATION, AND CLASS SIZE	22
<i>School Size</i>	22
<i>Grade Configuration</i>	22
<i>Class Size</i>	22
SAFETY AND SECURITY	23
<i>Law Enforcement Agencies</i>	23
<i>Site</i>	23
<i>Access Control</i>	23
<i>Surveillance and Security Systems</i>	23
<i>Additional Considerations</i>	23
SITE DEVELOPMENT	24
<i>Outdoor Interaction Area</i>	24
<i>Athletic Fields</i>	24
<i>Site Circulation</i>	24
<i>Landscape</i>	25
<i>Additional Items</i>	25
INSTRUCTIONAL TECHNOLOGY – GENERAL	26
CORRIDOR DESIGN	27
EDUCATIONAL ENVIRONMENT GUIDELINES	28
GENERAL CONSIDERATIONS	28
<i>Indirect Lighting</i>	29
<i>Daylighting & Full Spectrum Lighting</i>	29
<i>Tools</i>	32
ACOUSTICS	33
<i>Tools</i>	34
HIGH PERFORMANCE SCHOOL BUILDINGS	35
<i>Tools</i>	35
MECHANICAL AND ELECTRICAL	36
<i>Plumbing Systems</i>	36
<i>HVAC Systems</i>	37

<i>Electrical Systems</i>	37
<i>Tools</i>	38
INSTRUCTIONAL AREA GUIDELINES	39
ENGLISH CLASSROOM.....	40
SCIENCE CLASSROOM.....	41
ART CLASSROOM	42
COMPUTER LAB.....	43
INSTRUCTIONAL TECHNOLOGY LAB	44
LIFE SKILLS CLASSROOM.....	45
TLC ROOM.....	47
MATH REPLACEMENT ROOM	48
RESOURCE ROOM.....	49
LIBRARY/MEDIA CENTER.....	49
CHOIR REHEARSAL ROOM	51
BAND REHEARSAL ROOM	52
COMMONS AREA.....	54
ADMINISTRATION	54
<i>Reception</i>	54
<i>Secretarial office</i>	55
<i>Conference Room</i>	55
<i>Principal's Office</i>	55
<i>Assistant Principal's Office</i>	55
<i>Nurse's Office</i>	56
<i>Teachers' Lounge and Staff workroom</i>	57
<i>In-School Suspension</i>	57
<i>Staff Toilets</i>	58
<i>Storage</i>	58
COUNSELING SERVICES	59
PHYSICAL EDUCATION	60
<i>Gymnasium</i>	60
<i>Offices</i>	61
<i>Locker Rooms</i>	61
<i>Storage Rooms</i>	62
<i>Wrestling Room</i>	62
<i>Weight Room</i>	62
<i>Ticket Booth</i>	63
<i>Concessions</i>	63
<i>Sound Room</i>	63
THEATER	63
CUSTODIAL/MAINTENANCE.....	64
<i>Receiving Area</i>	64
<i>Custodial Office</i>	64
<i>Break Area</i>	64
<i>Paper Goods Storage</i>	64
<i>Cleaning Supplies Storage</i>	65
<i>Equipment Storage</i>	65
<i>Work Bench</i>	65
<i>Prep Area</i>	66
TECHNOLOGY REPAIR AND STORAGE	67
STUDENT AND STAFF TOILETS.....	68
FOOD SERVICE GUIDELINES	69
DIRECTOR'S OFFICE	70
NUTRITIONAL/SECRETARY OFFICE.....	70
RECEIVING GARAGE/LOADING.....	71

RECEIVING AREA	71
RECEIVING OFFICE.....	71
DRY FOOD AND PAPER GOOD STORAGE.....	72
REFRIGERATED STORAGE – COOLER AND FREEZER.....	73
PANTRY.....	73
PREP/COOKING AREA – ONSITE.....	74
CAN WASH/CART WASH	75
HOLDING AREA.....	75
SERVING AREA	75
DINING	76
POT/PAN WASHING.....	76
DISH/TRAY WASHING.....	77
CUSTODIAL AND CHEM./SOAP STORAGE	77
TOILET WITH LOCKER VESTIBULE	78
STUDENT INPUT ACTIVITIES.....	79
STUDENT IDEAS - GRADE 5	80
STUDENT IDEAS - GRADE 6	82
SPACE NEEDS ANALYSIS – MIDDLE SCHOOL STURGIS.....	83
SPACE NEEDS ANALYSIS – MIDDLE SCHOOL STAGEBARN.....	86
FUNCTIONAL RELATIONSHIP GUIDELINES.....	89
OVERALL FACILITY RELATIONSHIPS.....	89
<i>Diagram & Discussion</i>	89
FUNCTIONAL RELATIONSHIP GUIDELINES.....	90
INSTRUCTIONAL AREAS.....	90
<i>Diagram & Discussion</i>	90
APPENDIX INFORMATION	91
APPENDIX A	
<i>Meeting Schedule</i>	
<i>Meeting Notes</i>	
<i>Informational Briefs</i>	
<i>References</i>	
<i>South Dakota County Population Projections – from USD State Data Center</i>	
<i>2003 South Dakota Community Abstracts – from USD State Data Center</i>	
<i>State of South Dakota Procedures for Design-Build Procurement</i>	
APPENDIX B	
<i>General Facility Guidelines Outlines</i>	
<i>Educational Environment Benefits and Design Principal Sheets</i>	
<i>Space Needs Forms</i>	
<i>Cut sheets</i>	

Introduction



Meade School District Mission Statement

“To Build Knowledge and Skills for Success Today and Tomorrow”

Introduction and Background

In the past, classrooms were designed only for lecture style teaching and school facilities were designed for an industrial type of schooling. We have since entered a technology/information age, and many of our educational spaces have not been significantly updated. Changes in instructional methods, changes in curriculum, and the addition of Instructional Technology have had a huge impact on the space needs of the classroom. In addition to accommodating the new functional requirements, meeting the educational environment needs of the students must also be considered.

Based upon the mission statement of the Meade School District, the goal is to support education for the children in Meade School district and to give them the best possible foundation for success in the future. The challenges a school district must face concerning their school facilities today include; keeping up to date with technology, upgrading and adding security, meeting new codes and standards for safety, and the ADA (Americans with Disabilities Act). Additional space needs such as flexibility, comfort, health, and resource efficiency must also be taken into account when considering an educational facility.

The following document describes the model facility for a middle school in the Meade School District; *what the facility should be to support the education goals of the district.*

Intent and Purpose

An Educational Specification is a comprehensive description of facility standards needed to support current and future educational programs. It may be used as a decision making tool, part of the master planning process, or a standard for facility design. An educational specification may also be utilized to evaluate existing facilities and as a basis for facility renovations, additions and/or new facilities.

The information in this Educational Specification reflects the committees' conclusions. While including every consideration discussed in this document may not be feasible when designing a new facility or renovating an existing school facility, use of the Educational Specification will ensure that each item is taken into account.

Every attempt was made to create an all-inclusive manual; however, specific building projects will have unique factors that will need to be considered as well. Each school will have distinct dynamics and requirements based upon the context in which it is planned. Also, the community needs may differ as well as the site and/or existing facility situation. This document was planned to be flexible for use in these differing conditions.

The Education Specification will impact the future of your education facilities and therefore the future of the education for Meade School district's children.

Use of the Planning Guide

School Districts are confronted with the need to make decisions which are increasingly complex given existing facility condition, enrollment projections, and maintenance and operational costs. This guide will not make the task simpler; however, it does add an additional level of information with which to make comparisons, and as such, will aid in fully-integrated decision-making in the best interests of MSD and its students.

The Educational Specification may be applied in various ways:

- It may be utilized as a baseline for an Existing Facility Analysis or Inventory and help to clarify deficiencies in existing facilities in relation to the guidelines listed.
- Specific sections of this document, such as, the Site section in the General Facility Guidelines may be considered when looking to purchase land for future facility needs or other long-rang planning decisions.
- Other master plan decisions may be aided by information in the document including the Space Needs Analysis which list the spaces desired in a new facility and their square foot guidelines.
- The Educational Specification may also be used to generate options and recommendations for future facility goals, such as shared community use.
- When planning a new facility, an addition to an existing facility, or the renovation of a facility, this document is the starting point for determining the both budgetary and program needs.
- The Educational Specification may also be used in preparing for a Design-Build Request for Proposal. Specifically it may be utilized when developing the:
 - Background information and project description
 - Programmatic space needs
 - Conceptual design criteria
 - Site development requirements
 - Facility standards and design guidelines
 - See Appendix A for State of South Dakota Procedures for Design-Build Procurement <<http://www.state.sd.us/boa/ose/DesignBuild/DBFrontPage.htm>>
- It may also be utilized throughout the planning and design process to review considerations and choose options.

The Development Process

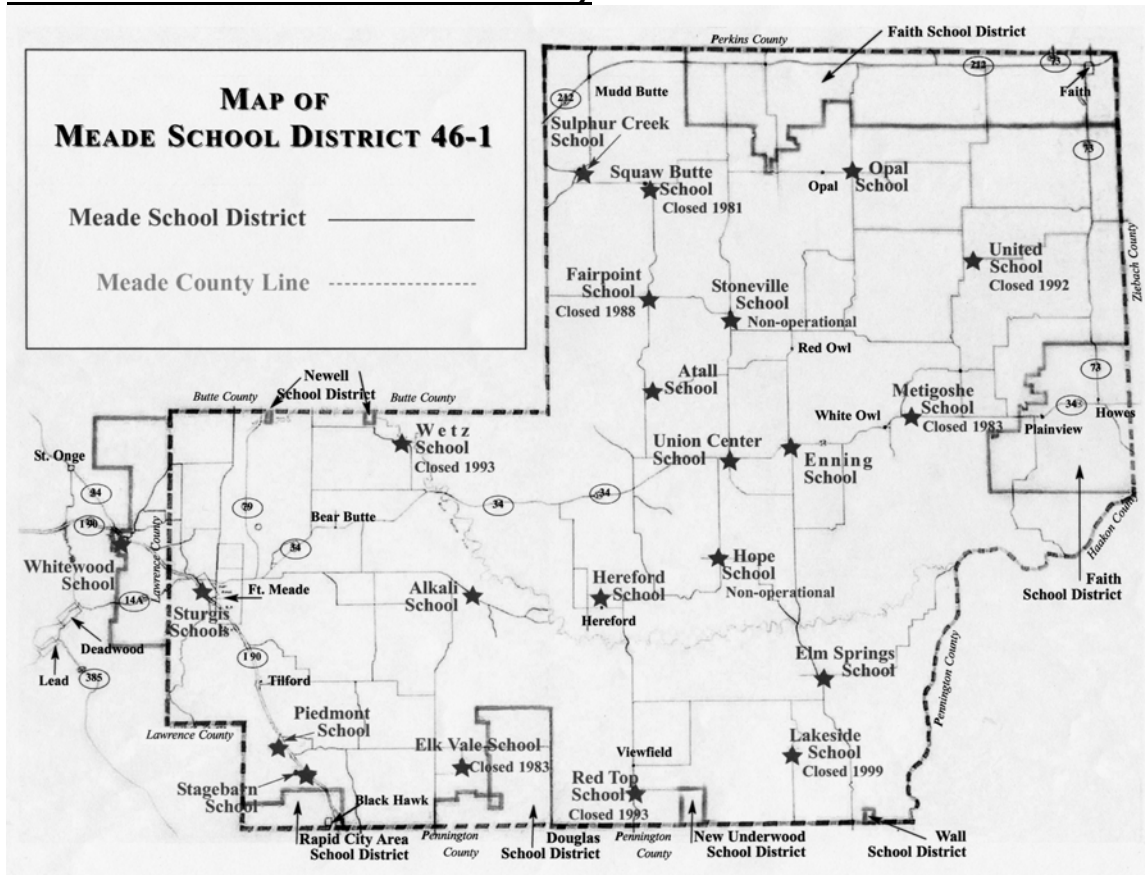
The development process was a community effort to ensure that the MSD Education Specification is based upon what is important to the citizens of the Meade School District; and that it is established including current curriculum needs and in accordance with current educational philosophies.

Thurston Design Group gave an introductory presentation, after which three main committees were formed to develop the Educational Specifications. The diverse group of committee members who contributed to the development process included; school board representatives, school administrators, teachers, administrative staff, parents, community members and community leaders. (Please see the Acknowledgement section at the beginning of this document for the names of the people who served on the committees).

The committees worked together and separately to create a strategic plan for the MSD School Facilities. This process was to determine shared beliefs, build common understanding, and a work towards a collective vision. The committees' decision-making process was informal and designed to promote consensus. (Meeting discussions are recorded in the Meeting Notes that are included in Appendix A).

Depending on the topics to be covered, we used a number of methods of information gathering, compilation and review. The development process included: presentation of material to the entire group, large group review and discussion, small group activities and individual review. Data was gathered by the facility committee members from MSD teachers, administrative staff and students. Once the information was compiled and similarly formatted by Thurston Design Group, it was distributed it to all committee members for review, comments, questions, and suggested changes. Each portion of the document was reviewed in this manner, and changes were discussed at the primary meetings and incorporated with the consensus of the committees. Throughout the development process committee members kept in mind that they were considering what they would want in an educational facility for MSD students not what currently is.

The Meade School District Community



MSD Phone Number

Central Administration Office 347-2523

Meade School District Website

<http://meade.k12.sd.us/>

For up-to-date information on School District:

- Personnel
- Physical Plants
- Current Enrollment
- Pupil Teacher Ratios

Enrollment Projections

Several methods are available both based percentage change from grade to grade each year and live birth rate compared to enrollment rate in Kindergarten. However, based upon the current rate of housing development in the area or the determination of students based upon open enrollment, neither of these methods would be fully representative for the Meade School District. A more in-depth study and survey will be necessary to determine the intentions of families in the new development areas.

The National Center for Education Statistics has projections based upon state and national information.

<<http://nces.ed.gov/programs/projections/>>

The Meade School District Community (continued)

Population Projections

From the State Data Center at the University of South Dakota.

South Dakota County Population Projections 2000-2025

(Note: Meade County statistics are not fully representative of Meade School District statistics as the boundaries differ. See district map)

Total Population Projections – Meade County

Age	2000	2005	2010	2015	% change from 2005 - 2015
0-4	1,868	2,325	2,484	2,689	+15.7%
5-9	1,798	1,868	2,325	2,484	+33.0%
10-14	2,029	1,797	1,867	2,325	+29.4%
15-19	1,896	2,185	1,936	2,012	-7.9%
20-24	1,856	2,060	2,375	2,105	+2.2%
25-29	1,605	1,773	1,968	2,269	+28.0%
30-34	1,605	1,603	1,771	1,966	+22.6%
35-39	2,019	1,595	1,593	1,760	+10.3%
40-44	1,951	2,010	1,588	1,586	-21.1%
50-54	1,448	1,763	1,863	1,919	+8.85%
55-59	1,007	1,434	1,748	1,847	+28.8%
60-64	824	992	1,413	1,723	+73.7%
65-69	730	801	964	1,373	+71.4%
70-74	637	704	773	930	+32.1%
75-79	486	600	662	730	+21.7%
80-84	360	441	545	602	+36.5%
85+	317	365	441	540	+47.9%
TOTAL	24,235	26,238	28,296	30,422	+15.94%

See Appendix for actual tables and methodology.

Community Abstract

From the State Data Center at the University of South Dakota.

2003 South Dakota Community Abstracts

Education	1990	2000
Persons 25 and over by education completed		
Elementary – 12 grade, no diploma	2,310	1,829
High School Graduate	4,229	4,999
College		
Some College, no degree	2,995	4,364
Assoc. or Bachelor's Degree	2,573	2,911
Grad. Or Professional Degree	612	713

Vital Statistics	Birth		Death	
	Births	Rate	Deaths	Rate
1992	451	20.6	163	7.5
1993	432	19.7	133	6.1
1994	435	19.9	145	6.6
1995	463	21.2	149	6.8
1996	440	20.1	169	7.7
1997	392	17.9	173	7.9
1998	410	18.7	162	7.4
1999	368	16.8	156	7.1
2000	311	12.8	173	7.1
2001	430	17.7	173	7.1
2002	407	16.8	174	7.2

The Meade School District Community (continued)

Occupied Households

1990	7,084
2000	8,805

Building Permits (One-family houses)

2000	92
2001	168
2002	172

Community Schools Concept

A new movement in school facility development integrates community resources and school programs. These community schools are better able to accommodate the needs of the students both related to learning and nonacademic needs such as physical, social and psychological development. Focusing on these nonacademic needs promotes progress in academic areas as well. Incorporating community programs within educational facilities also supports community involvement and connection and makes effective use of available resources.

Recommended resources are listed below.

Book:

Inside Full-Service Community Schools by Joy Dryfoos

May be ordered at:

<http://www.corwinpress.com/book.aspx?pid=7421>

Website:

Coalition for Community Schools website

<http://www.communityschools.org/index.php>

Downloadable Manual:

The Children's Aid Society

Building a Community School, Third Addition.

<http://www.communityschools.org/Toolkit/CompleteManual.pdf>

Update Process

The Educational Specification should be reviewed and updated periodically to stay current with curriculum changes, current technologies, and other educational developments. An ad hoc review committee of administrators, school staff, parents and community members should be assembled at five year intervals to keep the document current with the needs of the Meade School District.

Executive Summary

Introduction

In April of 2004, the Meade School Board hired Thurston Design Group to facilitate the development of an Educational Specification for the Meade School District. Its purpose is to create a new benchmark that will build on and strengthen the excellent educational tradition of the Meade School District through a comprehensive investigation of how their school facilities can better meet student needs and add to the quality of their educational experience.

An Educational Specification is a comprehensive description of facility standards needed to support current and future educational programs. It may be used as a decision making tool, part of the master planning process, or a standard for facility design. An educational specification may also be utilized to evaluate existing facilities and as a basis for facility renovations, additions and/or new facilities.

The Educational Specification may be applied in various ways:

- It may be utilized as a baseline for an Existing Facility Analysis or Inventory and help to clarify deficiencies in existing facilities in relation to the guidelines listed.
- Specific sections of this document, such as, the Site section in the General Facility Guidelines may be considered when looking to purchase land for future facility needs or other long-rang planning decisions.
- Other master plan decisions may be aided by information in the document including the Space Needs Analysis which list the spaces desired in a new facility and their square foot guidelines.
- The Educational Specification may also be used to generate options and recommendations for future facility goals, such as shared community use.
- When planning a new facility, an addition to an existing facility, or the renovation of a facility, this document is the starting point for determining the both budgetary and program needs.
- The Educational Specification may also be used in preparing for a Design-Build Request for Proposal. Specifically it may be utilized when developing the:
 - Background information and project description
 - Programmatic space needs
 - Conceptual design criteria
 - Site development requirements
 - Facility standards and design guidelines
 - See Appendix A for State of South Dakota Procedures for Design-Build Procurement <<http://www.state.sd.us/boa/ose/DesignBuild/DBFrontPage.htm>>
- It may also be utilized throughout the planning and design process to review considerations and choose options.

The development process was a community effort to ensure that the MSD Education Specification is based upon what is important to the citizens of the Meade School District; and that it is established including current curriculum needs and in accordance with current educational philosophies.

Executive Summary (continued)

Strategic Plan

The Facility Committees developed a strategic plan both to focus and guide the educational specifications development, along with creating goals for the future facility planning of the MSD.

District Mission Statement:

To build knowledge and skills for success today and tomorrow

MSD Facility Vision Statement:

The educational facility is an integral part of the educational program. The facility has an impact on learning, the performance of staff and students, and influences their attitudes and behavior. The facility serves a greater purpose than merely housing students and the educational program.

General Facility Guidelines

The General Facility Guidelines cover the broad considerations for the planning a school facility. Below are several significant items covered in this section.

Existing and/or Potential Sites:

Stagebarn Elementary School Site

- The existing Stagebarn Elementary School (grades 2-6 with an enrollment of 242) is sited on a 20 acre parcel.

Williams Middle School Site

- The existing Williams Middle School Site (grades 5-8 with an enrollment of 669) consists of 2 facilities, WMS North and WMS South.

Site Size:

The recommended size for a middle school site is 15 acres + 1 acre for each 100 students. The recommended site shape is rectangular with a 3 to 5 ratio.

Community Use:

Community organizations including (but not limited to) the following shall be identified and included in the facility planning.

- Sturgis Community Center Pool and Youth Sports
- National Guard
- Boy Scouts and Girl Scouts
- Piedmont Gymnasium
- PTA

Possibilities for joint facility development and/or partnerships with community organizations shall be considered (see the listed resources in the Community Schools Concept section in the Introduction).

School Size:

The recommended school size (student capacity) shall maintain a balance between economy of construction and operations and establishing a small school environment.

The recommended middle school enrollment to achieve a small school environment is 300-600 students.

The recommended middle school enrollment to attain an economy of construction and operations is 600-800 students.

Executive Summary (continued)

If the capacity is determined based upon economy of construction and operations, the design of the school shall consider the school within a school model of planning. The school within a school model can achieve similar benefits to the small school environment as listed above.

Square foot guideline for middle schools (based upon national and regional averages) shall be 125 square feet per student. The space required per student may be modified based upon the: total capacity, class size, instructional methods, shared use with community, and program goals.

Grade Configuration:

The recommended grade configuration for a middle school is sixth through eighth grade (6 – 8)

Class Size:

The following recommended class sizes are based upon MSD Guidelines.

- 6th Grade – 28 students
- 7th Grade – 28-30 students
- 8th Grade – 28-30 students

Instructional Technology – General:

(See Instructional Area Guidelines for individual room guidelines)

The facility shall be designed to accommodate current and emerging technologies such as computers, computer networking (wireless “d-link”), the Internet, distance education (DDN), teleconferencing (smart boards), telecommunications and television and video. The facility shall be designed in accordance with statewide standards and a district wide master plan.

Technology systems to accommodate include (but are not limited to) the following.

- Building wide instructional television
- Media Center information networking
- Administration computer network
- Home/School Data link

Educational Environment Guidelines

General considerations:

The following educational environment guidelines describe what is optimal and desirable for the MSD school facilities. The basic understanding is that although all design principles may not be able to be implemented, they should be considered during the design process. Budgetary constraints and existing structure constraints for renovations may not permit all design principles to be followed. Furthermore, the design principles which can be shown to have a payback (using the life cycle costing method) will be considered ahead of those which may not pay back in a directly quantifiable way. However the benefits to the occupants may also be considered payback on investment.

Executive Summary (continued)

Each of the following educational environment issues were considered by the Ed Spec Committees:

- Lighting and Daylighting
- Indoor Air Quality and Thermal Comfort
- Acoustics
- High Performance Buildings
- Mechanical and Electrical

For each of the above areas of consideration, the document lists benefits to the users and design principles for facility planning. Also listed in the document are tools and standards that can be referred to during the design phase and/or decision making process. These references are listed below.

Lighting and Daylighting

Indirect Lighting

Design Standards

- IESNA - Recommended Practice for Lighting for Educational Facilities

Daylighting & Full Spectrum Lighting

Tools:

US Department of Energy - National Best Practices Manual for Building High Performance Schools

<<http://www.rebuild.org/Lawson/attachments/ESSBestPracticesHighPerfSchools.pdf>>

US Department of Energy - Energy Star: Energy Design Guidelines for High Performance Schools. Cool and Dry Climates

<<http://www.nrel.gov/docs/fy02osti/29109.pdf>>

Indoor Air Quality & Thermal Control

Tools:

US Environmental Protection Agency - Indoor Air Quality Tools for Schools Program: Benefits of Improving Air Quality in the School Environment.

<http://www.epa.gov/iaq/schools/images/tfsprogram_brochure.pdf>

Acoustics

Design Standards:

ANSI S12.60-2002 American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools

Tools:

The Acoustical Society of America Classroom Acoustics I and II: Send orders to the Acoustical Society of America, Suite 1N01, 2 Huntington Quadrangle, Melville, NY 11747-4502, or call Tel.:516-576- 2360.

Executive Summary (continued)

High Performance School Buildings

Tools:

US Department of Energy - National Best Practices Manual for Building High Performance Schools

<<http://www.rebuild.org/Lawson/attachments/ESSBestPracticesHighPerfSchools.pdf>>

US Department of Energy - Energy Star: Energy Design Guidelines for High Performance Schools. Cool and Dry Climates

<<http://www.nrel.gov/docs/fy02osti/29109.pdf>>

Mechanical and Electrical

Consider future usage and or additions when designing mechanical and electrical systems.

Plumbing Systems:

HVAC Systems:

Electrical Systems:

Tools:

GeoExchange – Geothermal Heat Pump Consortium

<<http://www.groexchange.org>>

US Department of Energy – Office of Geothermal Technologies

<<http://www.eere.energy.gov/geothermal/>>

US Department of Energy – National Best Practices Manual for Building High Performance Schools

<<http://www.rebuild.org/Lawson/attachments/ESSBestPracticesHighPerfSchools.pdf>>

US Department of Energy – Energy Star: Energy Design Guidelines for High Performance Schools. Cool and Dry Climates

<<http://www.nrel.gov/docs/fy02osti/29109.pdf>>

Instructional Area Guidelines

The Instructional Area Guidelines were developed using Space Needs Forms to gather information from the current facility users. The completed forms are available for reference in Appendix B.

The compiled information was then reviewed by the committee members and discussed at our regular meeting. Below is a listing of the spaces covered by the Instructional Area Guidelines.

Contents:

English Classroom

Science Classroom

Art Classroom

Computer Lab/Classroom

Instructional Technology Lab

Life Skills Classroom

Teen Learning Center

Math Replacement Room

Resource Classroom

Library

Choir Rehearsal Room

Band Rehearsal Room

Executive Summary (continued)

Support Area Guidelines

The Support Area Guidelines were also developed using Space Needs Forms to gather information from the current facility users. The completed forms are available for reference in Appendix B.

The compiled information was then reviewed by the committee members and discussed at our regular meeting. Below is a listing of the spaces covered by the Instructional Area Guidelines.

Contents:

Commons Area

Administration

Reception

Secretarial Office

Conference Room

Principal's Office

Vice Principal's Office

Nurse's Office

Teachers' Lounge

Staff Workroom

Dare (Liaison) Officer Office

In-School Suspension

Storage

Counseling Services

Physical Education

Gymnasium

Office (2 Spaces)

Locker Rooms (2)

Storage Rooms (4)

Wrestling Room

Weight Room

Mezzanine Multipurpose Room

Ticket Booth and Concessions

Sound Room

Theater

Custodial/Maintenance

Receiving Area

Custodial Office

Break Area

Paper Goods Storage

Cleaning Supplies Storage

Equipment Storage

Work Bench

Prep Area

Technology Repair and Storage

Student and Staff Toilets

Executive Summary (continued)

Food Service Guidelines

The Food Service Guidelines were developed with Joe Schaffer, the MSD Food Service Director. Below is a listing of the spaces covered by the Instructional Area Guidelines.

Contents: Central full-service kitchen

- Director's Office
- Secretary/Nutritional Office
- Receiving Garage
- Receiving Area
- Receiving Office
- Dry Food and Paper Good Storage
- Refrigerated Storage
- Prep/Cooking Area – Onsite
- Pantry
- Can/Cart Wash
- Holding Area
- Serving Area
- Dining
- Pot/Pan Washing
- Dish/Tray Washing
- Custodial and Chem/Soap Storage
- Toilet with Locker Vestibule

Student Input Activities

Students use and experience school facilities differently than the adults, so including their perspective is important to better accommodate their needs. Also, students spend one-third of their day in school, so it is important how they feel about their surroundings.

The teachers on the Ed Spec Committees asked their students to describe their classroom and school and the things they would want in their classroom and school if they could be just how they wanted it.

Space Needs Analysis

The Space Needs Analysis is the square foot listing of all the spaces that are to be in a school facility. The analysis includes both the square foot recommendations from the Space Needs Forms and the actual recommended square footages.

Space Needs Analysis – MS Sturgis

The Sturgis Analysis utilizes a grade 5-8 arrangement as this would work within the existing grade structure.

Assumptions, including enrollment numbers, are listed for each example.

Space Needs Analysis – MS Stagebarn

The Stagebarn Analysis utilizes a grade 6-8 arrangement.

Assumptions, including enrollment numbers, are listed for each example.

Functional Relationship Guidelines

To add to the “Adjacencies” information in the Instructional Area and Support Area Guidelines, the Ed Spec Committee created Space Relationship Diagrams for both an overall facility and the instructional area. Along with the diagrams are discussion notes.

Strategic Plan

Prepared by Middle School Facility Committee
Reviewed and revised at June 6, 2004 Committee Meeting



Mission Statement:

To build knowledge and skills for success today and tomorrow

Belief Statements:

We believe...

Educational Philosophies

- the needs of all students should be at the forefront of everything that we do.
- learning should be a life long process.
- the dynamics of MSD are unique and require special considerations to provide the variety of services to students, staff and community. MSD has a diverse and culturally rich population which can be an educational asset to the schools.
- education should be the shared responsibility of home, school and community.

Curriculum and Instructional Methods Including Student Achievement

- a high level of staff and student attendance at school is integral to effective learning and achievement.
- the instructional design should account for the changing developmental stages of students and different learning styles. Instructional design should allow classes to coordinate and build upon each other.
- students need the most effective and beneficial resources possible to facilitate learning.

Technology Integration

- to prepare students for the real world, effective schools should keep pace with changes and updates in educational technology.
- proficient use and application of current technology by staff and students will enhance the learning process and prepare students for a successful future.

Parent/Community Relationships, Use, and Involvement

- a high level of parent and community involvement will encourage beneficial relationships, effective communication, and sharing of resources that will enhance the students' educational experience.

Diversity and Individuals with Disabilities and Special Needs

- all students with disabilities and special needs should have access to educational programs that will prepare them for success in the future.

Student Needs

- specific instructional needs for each student should be addressed at each level of learning.
- all students should be actively motivated and engaged for productive learning and to reach their full potential.

Teacher Needs

- when teachers are empowered by a sense of professionalism and purpose they can better serve students.

Physical Education

- regular physical education classes are necessary to promote personal fitness, and teach individual/team games. Health education classes should promote healthy lifestyles for present and future.

Safety/Security

- effective schools should provide students with a safe, secure, and organized school environment for learning, and associated activities.

Food Service

- good nutrition is essential for optimum student learning.

Arts and Music

- involvement in fine arts has significant and life long benefits.

Co-curricular Activities

- participation in co-curricular activities builds positive character traits.

Media Center/Library

- the resources are an integral part of each school instructional program and should serve as an extension of each classroom.

Vision Statement:

The educational facility is an integral part of the educational program. The facility has an impact on learning, the performance of staff and students, and influences their attitudes and behavior. The facility serves a greater purpose than merely housing students and the educational program.

Goal Statements:

To provide facilities that will...

Educational Philosophies

- be designed with students' needs placed first.
- be developmentally responsive with a safe, inviting, and caring environment that will promote a sense of community and encourage learning as a life long process.
- center on the intellectual, social, emotional, moral, and physical developmental learning styles and stages of adolescences.

Curriculum and Instructional Methods Including Student Achievement

- be flexible in layout, enabling teachers to engage students' attention using interdisciplinary educational methods and creative learning activities with students as active participants.
- include spaces to support multiple instructional strategies and program delivery models, such as individualized instruction, small and large group learning, and independent learning.
- enable small learning communities to operate within the school.

Technology Integration

- incorporate current and future technology to support staff, students and the programs that help personalize education, maximize learning, and prepare students for a successful future.

Parent/Community Relationships, Use, and Involvement

- allow access and space for parents and community members to collaborate meaningfully as learning partners, while promoting a rigorous academic environment and co-curricular activities at the school.
- have flexible spaces for school and community programs, allowing for the most effective use of the facility.

Diversity and Individuals with Disabilities and Special Needs

- include appropriate, private, distraction-free, and flexible areas specifically for special services staff that provide individualized support services for students, including mental, physical, social, and academic support.
- include an appropriate, easily accessible and private space for the nursing department to provide daily planned medical care for students, as it is essential for the health and safety of students.

High-Performance School Guidelines

- incorporate high-performance design strategies as appropriate for student and teacher success and achievement, as well as efficient building operation and maintenance.

Student Needs

- accommodate appropriate spaces for students to develop personalized relationships with adults and interact with peers.
- accommodate spaces to support a range of formats for students to display their work and to demonstrate their knowledge.
- be a stimulating environment in which to learn.

Teacher Needs

- include appropriate staff work and support spaces that encourage interaction and collaboration. These areas are essential for creating meaningful work for students, teacher productivity, and student/parent/staff contacts.

Physical Education

- include a gymnasium area that will safely accommodate student physical education activities, and, when possible, is separate from the student dining area.
- include a flexible gymnasium area to accommodate a variety of school and community activities.

Safety and Security

- be easily supervised and monitored to encourage feelings of safety and trust while contributing to a low incidence of disciplinary action.
- contain both individual and group meeting spaces, providing opportunities for each student to interact and be known by staff.
- allow for public use while securing appropriate areas.

Food Service

- include a food service dining area that is a large, pleasant, and flexible space located for public use, with acoustical separation from instructional areas.
- include appropriate spaces for safe and nutritional food preparation, storage, delivery and serving.

Arts and Music

- include adequate and appropriate spaces for arts and music instruction and performance.
- accommodate large group instruction as well as private instruction with acoustical separation from instructional areas.

Co-Curricular Activities

- include safe, flexible, and appropriate spaces that will accommodate each co-curricular activity.

Media Center/Library

- include a centrally located Media Center/Library with access for community use. The Media Center/Library should be a flexible space with appropriate areas for students and staff activities and current technology.

Aesthetics

- be appealing, warm, comfortable, and inviting, with fun, stimulating, and tactile spaces that entice and motivate students to explore and learn.
- inspire identification with and pride in the school.

Facility Committee Members:

Connie Berg
Brenda Fink
Linda Hampton
Lon Harter
Holly Kopplin
Lori Smith
Pam Teaney Thomas
Rhonda Snyder
Lora Wilson

General Facility Guidelines



Codes and Government Agencies:

The following agencies shall be consulted for current zoning, building code and ordinance requirements.

- City of Sturgis, Engineers and Inspection
1029 1st Street
Sturgis, SD 57785
Bob Kaufman (605) 347-4424
- Meade County
Director of Equalization
1425 Sherman Street
Sturgis, SD 57785
Kirk Chaffee (605) 347-3818
- State of South Dakota, Department of Education
 - Office of School Enhancement
700 Governors Drive, Pierre
South Dakota 57501-2291
Wade Pogany (605) 773-3282
 - Office of Curriculum, Technology and Assessment:
700 Governors Drive, Pierre
South Dakota 57501-2291
Tammy Bauck (605) 773-6118
- State of South Dakota, Department of Natural Resources
SD DENR
Joe Foss Building
523 E Capitol
Pierre, SD 57501
(605) 773-3151
- State of South Dakota, Department of Transportation
700 E. Broadway
Pierre, SD 57501
Todd Seaman (605) 394-2244

Additional requirements may include (but are not limited to) the following. Consult the listed agencies for project specific requirements:

- Environmental Impact Study, Meade County
- Traffic Impact Study, City of Sturgis, Meade County, or DOT
- Landscape Points, City of Sturgis

State, federal, fire, safety and health regulations in relation to (but not limited to) the following shall be applied.

- Asbestos
- Lead
- Water System
- Septic System
- Food Service

Facilities shall be designed to meet current federal ADA (American with Disabilities Act) Guidelines.

School Site:

Location:

Existing Sites

Sites to be considered for expansion or addition of facilities include (but are not limited to) the following:

Stagebarn Elementary School Site

- The existing Stagebarn Elementary School (grades 2-6 with an enrollment of 242) is sited on a 20 acre parcel.

Williams Middle School Site

- The existing Williams Middle School Site (grades 5-8 with an enrollment of 669) consists of 2 facilities, WMS North and WMS South.

Potential Sites

When evaluating sites for purchase or assessing existing properties, the following items shall be considered and the listed agencies should be consulted:

- The site should be within close proximity to the population center to be served, in order to lower transportation costs, allow for alternate methods of transportation, and opportunities for community involvement and use.
- The main access road to the site shall be from a collector road with access to an improved highway system (minor or principal arterial). Utilizing a local road (neighborhood street) as the main access should be avoided.
- The site should have good access to public utilities.
- The site should be evaluated in relation to possible/future designated attendance areas.
- The microclimate conditions of the site shall include good access to the sun and protection from prevailing winds. For access to the sun, a flat or south facing slope is preferable and obstructions such as adjacent structures and/or vegetation shall be considered. For protection from prevailing winds, adjacent landforms, structures and vegetation shall be considered. Hill top sites and windward slopes shall be avoided.
- Adverse surrounding environmental conditions including noise from industry, traffic or other sources should be avoided when possible. If adverse conditions exist, site development and planning shall work to minimize the impact with the use of vegetation, landforms (i.e. earth berms) and building location. Any adjacent land uses which may present hazardous conditions (i.e. heavy traffic, industrial or agricultural) shall be avoided.
- The subsurface conditions shall be analyzed by a soils engineer to determine types and costs of foundations systems that would be required. Soils types that should be avoided are expansive, fat clays and soft silts.
- Community groups including (but not limited to) the following should be consulted when evaluating site possibilities (see also Community Use Guidelines):

PTA

Club Sports

School Site (continued):

Potential Sites (continued)

- The following information should be acquired from the listed agencies.
 - Requirements for transportation costs
SD Department of Education
 - Town plans and/or population growth centers
The City of Sturgis
Ron Baker
Meade County
Metropolitan Planning Organization
Kirk Chaffer
 - Information on alternate transportation opportunities (biking, walking, etc.)
Department of Transportation
 - School bus information & needs
Sturgis Bus Company
2237 West Sherman, Sturgis, SD 57785
(605) 347-5066

Site Size:

The recommended size for a middle school site is 15 acres + 1 acre for each 100 students. The recommended site shape is rectangular with a 3 to 5 ratio.

From:

Weihs, Janell. "School Site Size — How many acres are necessary?" *CEFPI Issue Track*. September 2003. <http://www.cefpi.org/pdf/state_guidelines.pdf>

The site should allow space for each of the following (see also Site Development Guidelines).

- Appropriate site circulation and parking
- Recreation and athletic field needs
- School building and instructional needs
- Curriculum and program needs
- Expansion and possible growth
- Potential shared use with the community

Community Use:

Community organizations including (but not limited to) the following shall be identified and included in the facility planning.

- Sturgis Community Center Pool and Youth Sports
- National Guard
- Boy Scouts and Girl Scouts
- Piedmont Gymnasium
- PTA

Possibilities for joint facility development and/or partnerships with community organizations shall be considered (see the listed resources in the Community Schools Concept section in the Introduction).

Spaces for shared use with the community shall include (but are not limited to) the following:

- Gymnasium
- Multi-purpose room
- Auditorium/Theater
- Kitchen
- Library/Media Center
- Computer Lab

The facility shall be planned with adequate separation of and access to the identified community use spaces to allow after hours use while maintaining security to the other areas of the building.

School Size, Grade Configuration, and Class Size:

School Size:

The recommended school size (student capacity) shall maintain a balance between economy of construction and operations and establishing a small school environment.

The recommended middle school enrollment to achieve a small school environment is 300-600 students.

The benefits of a small school environment include:

- a safer place for students
- a more positive, challenging environment
- higher achievement
- higher graduation rates
- fewer discipline problems
- much greater satisfaction for families, students, and teachers.

From:

Nathan, Joe and Karen Febey. "Smaller, Safer, Saner, Successful Schools."
National Clearinghouse for Educational Facilities. 2001.
<<http://www.edfacilities.org/pubs/saneschools.pdf>> (15 Oct. 2004).

The recommended middle school enrollment to attain an economy of construction and operations is 600-800 students.

If the capacity is determined based upon economy of construction and operations, the design of the school shall consider the school within a school model of planning. The school within a school model can achieve similar benefits to the small school environment as listed above.

When determining student capacity of facilities, the impact of open enrollment shall be considered and accommodated.

Square foot guideline for middle schools (based upon national and regional averages) shall be 125 square feet per student. The space required per student may be modified based upon the: total capacity, class size, instructional methods, shared use with community, and program goals.

Grade Configuration:

The recommended grade configuration for a middle school is sixth through eighth grade (6 – 8)

Planning for possible modifications to School Calendar shall be considered when determining school configuration.

Class Size:

The following recommended class sizes are based upon MSD Guidelines.

- 6th Grade – 28 students
- 7th Grade – 28-30 students
- 8th Grade – 28-30 students

Safety and Security:

Law Enforcement Agencies:

Law enforcement agencies including the police, sheriff and fire departments, shall be consulted during site master planning and building design phases.

The issues to be coordinated with the law enforcement agencies include (but are not limited) to the following.

- Fire Department access and hydrant locations
- Location of knox box, hose connections, and fire entrance location.
- Police and sheriff emergency procedure/strategies for intruder defense
- Emergency vehicle access and parking
- Natural disaster and crisis guidelines

Site:

Site circulation shall minimize intersections between pedestrians and automobiles.

Site lighting shall be included for safety and security.

Outdoor educational and recreational spaces shall be well defined perimeter with access control when possible.

Visitor parking shall be visible from administrative spaces, including reception and the principal's office.

Access Control:

The number of entrances and exits to the facility shall be minimized.

Exterior entrances shall be located where they may be supervised.

A card access system is preferred. The system shall have programming and memory capabilities.

Surveillance and Security Systems:

Formal surveillance shall consist of a CCTV system with cameras at building perimeter, main entry areas, corridors, common areas and community use areas. The central control room shall be in the administrative offices.

Natural surveillance shall consist of windows and borrowed lights to allow supervision from occupied rooms to the main entry, the corridors and other common areas.

Avoid alcoves or recesses in circulation and common areas that cannot be easily supervised.

Additional Considerations:

An office shall be provided in the administrative area for a school liaison (security) officer.

Site Development:

Outdoor Interaction Area:

An outdoor patio area with picnic tables, benches and trash receptacles shall be provided for student interaction before school, after school and during lunch.

An outdoor instructional area large enough to accommodate the following shall be included.

- Art Class
- Health Class
- English Class
- Science Class

The outdoor instructional space shall have plumbing and electrical connections for art and science projects and should be isolated from noise sources.

Shade area shall be provided by structures, vegetation or both.

The patio and outdoor instructional areas shall be physically separated from roads and parking lots. If space constraints will not allow for separation in distance, fencing and vegetation may be used.

Athletic Fields:

Athletic fields shall be designed to meet the State Athletic Association requirements.

Site Circulation:

See SAFETY AND SECURITY, Law Enforcement Agencies

See SAFETY AND SECURITY, Site

Student drop-off and loading shall be separate for busses and automobiles.

There shall be a direct and safe access to the school from the bus and automobile drop-off and loading. Walks from student drop-off and loading shall not cross traffic.

The bus drop-off and loading areas shall accommodate the required number of busses without parking in double rows.

Whenever possible, service and delivery drives shall be separated from student drop-off and loading areas.

Public and Staff parking shall comply with city ordinances and ADA guidelines.

The staff parking shall be separated from the public parking.

The site shall accommodate alternate methods of transportation including pedestrians and bicycles. Conflicts with automobile traffic shall be minimized, bike racks shall be provided and sidewalks shall be a minimum of 5'-0" wide.

Site Development (continued):

Landscape:

Bushes and other vegetation that might conceal intruders should be avoided along walkways and around outdoor recreational and instructional areas.

Dense plantings of shrubs at recesses in the exterior walls will keep students and intruders out of “nooks and crannies” at the building perimeter.

Fencing with gates at access control points shall be provided to define boundaries and separate conflicting site uses.

Bollards or offset gates shall be provided for access control at outdoor recreational areas.

Landscaped areas with turf and vegetation shall be provided wherever possible including locations that are viewed from classroom windows. Irrigation shall be provided to maintain landscaped areas.

Additional Items:

Additional site considerations include (but are not limited to) the following.

- Site Furniture – benches and trash receptacles
- Exterior Signage
- Flexibility and Adaptability
- Trash enclosure(s)

Facility Context, Scale and Character:

The school facility shall be a symbol of civic pride with aesthetic appeal that is inviting to the public and fosters unity and belonging within the community.

The building's exterior shall be appealing and warm with a prominent entry and shall consider historical and cultural context and indigenous design.

The design shall create a stimulating environment using form and color, spatial variety, appropriate scale for students, and changing displays.

The condition, appearance and upkeep of existing facilities should reflect community values including the value that the community places on education.

Instructional Technology – General:

(See Instructional Area Guidelines for individual room guidelines)

The facility shall be designed to accommodate current and emerging technologies such as computers, computer networking (wireless “d-link”), the Internet, distance education (DDN), teleconferencing (smart boards), telecommunications and television and video.

The facility shall be designed in accordance with statewide standards and a district wide master plan.

Strategies for technology integration into instructional and support programs shall be accommodated. Computer-aided instruction plans shall be considered in the facility technology plan.

Technology systems to accommodate include (but are not limited to) the following.

- Building wide instructional television
- Media Center information networking
- Administration computer network
- Home/School Data link

The system shall be designed with flexibility to accommodate growth. Design features shall include (but are not limited to) the following.

- Channels at base of wall
- Conduits to accommodate future cabling needs

A centralized server room (wiring room) will be located in the administrative office area.

Corridor Design:

Corridors shall be broad and well-lit. Long corridors should be avoided.

Corridors shall be designed to meet the following minimum criteria:

- Major Corridors – 10'-0"
- Corridors serving 2 or more classrooms – 8'-0"
- Corridors serving 8 or more classrooms – 9'-0"
- Corridors with lockers on one side – add 2'-0"
- Corridors with lockers on two sides – add 3'-0"

Corridors shall have spaces for display of the following:

- Student work, projects and exhibitions
- School and class announcements, etc.
- Electronic message board(s)
- Symbols of school community

Corridors design shall provide wayfinding clues:

- Provide paths with focal points (i.e. display, plants, benches, posters)
- Color Coded interior pathways
- Clear markings and signage

Corridors shall be designed to encourage interaction between students, between staff members and between students and staff members.

- Provide activity pockets – for small group work
- Provide windows in or near classroom doors to provide natural surveillance
- Allow space for casual contact between people

Doors that swing into corridors should be recessed or protected by a wing wall.

Oversize doors for certain spaces – consider equipment needs.

- Music
- Food Service
- Receiving

Stairs shall be avoided when possible. If stairs are required, the maximum rise to each landing is 8'-0", and the minimum width is 6'-0".

Locker banks should not be taller than 4'-0" to allow for natural surveillance.

Educational Environment Guidelines



General Considerations:

The following educational environment guidelines describe what is optimal and desirable for the MSD school facilities. The basic understanding is that although all design principles may not be able to be implemented, they should be considered during the design process. Budgetary constraints and existing structure constraints for renovations may not permit all design principles to be followed. Furthermore, the design principles which can be shown to have a payback (using the life cycle costing method) will be considered ahead of those which may not pay back in a directly quantifiable way. However the benefits to the occupants may also be considered payback on investment.

Each of the following educational environment issues shall be considered and addressed when planning for renovation of an existing facility or construction of a new facility:

- Lighting and Daylighting
- Indoor Air Quality and Thermal Comfort
- Acoustics
- High Performance Buildings

Proper review and consideration of these issues will allow for responsible decisions based upon full understanding of options and outcomes.

Due to the abundance of possible design considerations and techniques, the following information discusses the main benefits of each of the issues and general design principles from the resources reviewed by the ed spec committees. Each section also includes tools which may be utilized during decision making and building design. Consideration and coordination of the design issues and principles during the early phases of a project will provide a fully integrated and more cost-effective product.

Tools:

US Department of Energy - Life Cycle Cost (LCC)
<<http://www.rebuild.org/lawson/lifecyclecost.asp>>

Lighting and Daylighting

Indirect Lighting

Benefits:

- Less fatigue and headaches caused by eyestrain from glare
 - Keeps students more alert
 - Achieves good distribution without “bright spots” which reduces reflection and glare off of computer screens
 - Eliminates shadows and spaces appear brighter which better meets with our biological needs
- Energy consumption is decreased
 - Due to more efficient light fixtures
 - Less heat is generated by fixtures so less cooling is needed
 - With ambient lighting, there is the perception of a brighter space, therefore, only 35 footcandles are needed as compared to 50 footcandles for direct lighting.

Design Principles:

- Utilize indirect light fixtures to increase quality and perception of light while reducing glare
- For indirect light fixtures, the minimum ceiling height should be 9'-6"
- The minimum suspended length should be 18" below finished ceiling height with the bottom of the fixture at 8'-0"
- Install light sensors and electronic dimming ballasts to continually adjust lighting levels in relation to available daylight and maximize energy savings
- Utilize high efficiency lamps with full-spectrum color rendition
- Aim for 1.2 watts power usage per sf (NCEF)
- Install motion sensors in auxiliary spaces (i.e. toilets, work rooms, etc.)
- If ceiling heights will not allow for indirect lighting fixtures, parabolic lenses to reduce glare should be used in areas that have frequent computer use.

Design Standards

- IESNA - Recommended Practice for Lighting for Educational Facilities

Daylighting & Full Spectrum Lighting

Benefits:

- Improved health
 - Better attendance
 - Fewer cavities and improved growth (attributed to vitamin D).
- Improved behavior and performance
 - Improved attention
 - Better work habits
 - Improved academic performance
 - Resistance to fatigue
 - More positive attitudes
 - Lower levels of hyperactivity
 - Accommodate the biological need for natural light and circadian rhythms
 - Windows provide necessary relief of focused attention for attention spans.

Daylighting & Full Spectrum Lighting (continued)

- Energy Efficiency
 - Less heat from light fixtures so that less cooling required
 - Reduced environmental impact
 - Less electric lighting is used so that a reduced amount of maintenance is needed for fixtures and lamps.

Design Principles:

- Plan for an east to west axial arrangement to maximize solar exposure
- Maximize windows on the south and north sides of the facility
- Minimize windows on the east and west sides of the facility
- Specify solar glazing with low emittance coatings to minimize heat loss and gain through window penetrations
- Specify double glazed windows with thermal breaks
- Utilize shading devices, such as overhangs and lightshelves, to reduce direct solar penetration into spaces and minimize solar heat gain
- Utilize light shelves to reflect daylight deeper into room while reducing solar heat gain
- Plan for high ceilings (min. 9'-6") and clerestory windows to allow better penetration of daylight
- Utilize light monitors or skylights to balance daylight in classroom areas (daylight from two or more directions)
- Specify wall finishes and ceiling finishes with high light reflectance values
- Plan for view windows for interest, relaxation and communication with the outdoors
- Integrate with HVAC design to achieve cost savings from smaller cooling requirements

Tools:

US Department of Energy - National Best Practices Manual for Building High Performance Schools

<<http://www.rebuild.org/Lawson/attachments/ESSBestPracticesHighPerfSchools.pdf>>

US Department of Energy - Energy Star: Energy Design Guidelines for High Performance Schools. Cool and Dry Climates <<http://www.nrel.gov/docs/fy02osti/29109.pdf>>

Reviewed Resources:

Grocoff, Paul. "Electric Lighting and Daylighting in Schools." CEFPI Brief on Educational Facility Issues. December 1995. CEFPI The School Building Association. October 20, 2004
<<http://www.cefpi.org/issue1.html>>

"Better Lighting for Healthier Students." Healthy Schools Network, Inc. 20 October 2004.
<http://www.healthyschools.org/downloads/Lighting_Guide.pdf>

Benya, James R. PE. "Lighting for Schools." National Clearinghouse for Educational Facilities. December 2001. National Institute of Building Sciences. 20 October 2004.
<<http://www.edfacilities.org/pubs/lighting.html>>

Indoor Air Quality & Thermal Control

Benefits of Good Indoor Air Quality:

- Lessen symptoms of Sick Building Syndrome such as irritated eyes, nose, and throat, upper respiratory infections, headaches and fatigue
- Present fewer chemical and biological environmental contaminants that have negative health effects such as asthma (which is one of the leading causes of absenteeism)
- Healthier students and teachers sustain higher performance levels.
- Increased attendance
- Controlled carbon dioxide levels can lessen symptoms such as headaches, drowsiness and inability to concentrate.

Benefits of Thermal Comfort:

- Higher achievement and task performance
- Increased alertness
- Better morale and effectiveness, especially for teachers

Design Principles:

- Supply between fifteen and twenty cubic feet of air per person per minute
- Exhaust air to remove contaminants
- Avoid carbon dioxide build-up
- Maintain temperatures and humidity within “comfort zone” (note: comfort zones vary by person and age)
- Provide appropriate filters to maintain low levels of environmental contaminants
- Provide space in mechanical room for filter maintenance
- Employ a maintenance program for HVAC systems
- Effectively control moisture infiltration and other moisture sources to prevent possible mold growth
- Utilize heat exchangers to recover sensible and/or latent heat to maintain proper humidity levels
- Install direct exhaust systems in areas with large amounts of contaminants (i.e. science labs, art rooms, kitchens, toilets, etc.)
- Design and maintain pressure differentials to keep environmental contaminants localized
- Specify building materials with minimal off-gassing at time of installation and that do not require harsh chemicals for maintenance
- Consider flooring that will trap contaminants and allergens when they fall to the floor and allow them to be removed during routine maintenance
- Specify flooring that will not support microbial growth

Indoor Air Quality & Thermal Control (continued)

Reviewed Resources:

Schneider, Mark. "Do School Facilities Affect Academic Outcomes?" National Clearinghouse for Educational Facilities. November 2002. National Institute of Building Sciences. 20 October 2004. <<http://www.edfacilities.org/pubs/outcomes.pdf>>

Frank, David. "From the Ground Up: Floorcovering Recommendations From and IAQ Consortium." CEFPI Brief on Educational Facility Issues. August 2002. CEFPI The School Building Association. October 20, 2004 <<http://www.cefpi.org/pdf/issue15.pdf>>

Fickes, Michael. "HVAC and the Environment." School Planning and Management. February 2004. Peter Li Education Group. October 20, 2004 <<http://www.peterli.com/archive/spm/609.shtml>>

Tools:

US Environmental Protection Agency - Indoor Air Quality Tools for Schools Program: Benefits of Improving Air Quality in the School Environment. <http://www.epa.gov/iaq/schools/images/tfsprogram_brochure.pdf>

Acoustics

Benefits of appropriate acoustics:

- Aids younger learners because noise levels affect younger students more than older students and adults
- Intelligibility is better with proper acoustics so that students may comprehend the teacher more effectively.
- A quieter environment promotes a calmer atmosphere.
- A room with good acoustics can accommodate small group learning because the groups don't distract each other.
- Fight the Lombard effect (i.e. the cumulative effect of students speaking louder to be heard over the background noise and the teacher then speaking louder to be heard over the students)
- Aids students with certain learning disabilities
- Less fatigue for teachers as they do not need to strain to be heard.

Design Principles:

- Reduce level of background noise to approximately 35 decibels
- Reduce noise from HVAC systems
 - Locate AC units outside classrooms and at a proper distance to isolate compressor noise
 - Avoid locating rooftop air handlers above instructional areas
- Reduce sound infiltration from exterior sources
- Design proper sound isolation between spaces (approx. STC 50 rating for instructional areas)
- Apply proper reverberation for speech intelligibility (typically approx. 0.5 – 0.7 seconds in classrooms)
- Utilize sound absorbing materials on ceilings and walls to reduce reverberation (minimum NRC of 0.75 for ACT ceilings)
- Utilize carpeting to reduce sound reflections and noise from sliding chairs or desks
- Utilize soft floor surface or suspended ceilings in multilevel buildings to reduce impact noise
- Apply lower articulation levels in private areas (offices, speech etc.)
- Locate noisy spaces (i.e. cafeteria, music room, gymnasium, mechanical room, kitchen, etc.) away from instructional spaces
- Locate high traffic areas (i.e. path to recess or lunch) away from classrooms when possible
- Utilize sound absorptive materials in high-traffic areas
- Control sound reflections to the rear of the room
- Consider an audio enhancement system which relies on microphone-transmitted sound amplification, so sound is delivered at a uniform level through speakers around the room

Design Standards:

ANSI S12.60-2002 American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools

Acoustics (continued)

Reviewed Resources:

Erdreich, John Ph.D. "Classroom Acoustics." CEFPI Brief on Educational Facility Issues. June 1999. CEFPI The School Building Association. October 20, 2004 <<http://www.cefpi.org/pdf/issue9.pdf>>

Rittner-Heir, Robbin. "Huh? – could you repeat that?" School Planning and Management. August 2004. Peter Li Education Group. October 20, 2004 <<http://www.peterli.com/archive/spm/723.shtm>>

Clark, Greg. "The Ears Have It." American School and University. 1 November, 2003. Primedia Inc. October 20, 2004 <http://asumag.com/Acoustics/university_ears/>

Tools:

The Acoustical Society of America Classroom Acoustics I and II: Send orders to the Acoustical Society of America, Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502, or call Tel.:516-576- 2360.

High Performance School Buildings

Benefits:

- Reduced operating and maintenance costs
- Less money spent on energy provides more money for educational resources
- Minimizes environmental impact
- Improves student and teacher health, comfort, and performance (see above sections on Lighting and Daylighting, Indoor Air Quality and Thermal Comfort, and Acoustics)
- Sustain natural resources for future generations

Design Principles:

- Utilize a comprehensive, whole building approach by integrating appropriate facility systems from beginning of design process
- Employ advanced energy efficient technologies and consider renewable energy sources
- Utilize energy efficient materials and consider embodied energy of materials
- Specify materials that are recycled, recyclable and/or renewable
- Employ methods to conserve water
- Minimize site runoff by reducing impervious ground coverings
- Emphasize good waste management practices
- Minimize construction and operational waste
- Locate the school central to the population it serves to reduce resource use and pollution from transportation
- Locate the school to allow for community use of the facility providing for maximum use of the school facility's resources
- Consider life cycle cost analysis to compare first cost to utility bill reductions
- Consider possibilities for alternate transportation (i.e. walking, biking, public transportation, etc.)
- Utilize the design of the school as an educational tool to demonstrate environmentally sound principles and decisions
- Install an energy management system

Tools:

US Department of Energy - National Best Practices Manual for Building High Performance Schools

<<http://www.rebuild.org/Lawson/attachments/ESSBestPracticesHighPerfSchools.pdf>>

US Department of Energy - Energy Star: Energy Design Guidelines for High Performance Schools. Cool and Dry Climates <<http://www.nrel.gov/docs/fy02osti/29109.pdf>>

Reviewed Resources:

Weiss, Johnathan. "Sustainable Schools." CEFPI Brief on Educational Facility Issues. August 2000. CEFPI The School Building Association. 20 October 2004 <<http://www.cefpi.org/pdf/issue11.pdf>>

Werner, Carol. "Energy Smart Schools: Opportunities to Save Money, Save Energy and Improve Student Performance." November 1999. Environmental and Energy Study Institute. 20 October 2004. <<http://www.eesi.org/publications/Briefing%20Summaries/09.23.99smartschools.pdf>>

Sims, Joel K. AIA. "Green Schools: A Design Fad or a Trend Worth Embracing?" School Planning and Management. March 2001. Peter Li Education Group. October 20, 2004 <<http://www.peterli.com/archive/spm/233.shtml>>

Mechanical and Electrical

Consider future usage and or additions when designing mechanical and electrical systems.

Plumbing Systems:

Toilet facilities

- Sufficient toilet facilities per the minimum requirements in the current plumbing code shall be included in each facility.
- The toilet rooms shall be located throughout the facility near the main student populations and designed for easy supervision.
- The total number of toilet fixtures required shall be divided into an adequate amount of toilet rooms so that the distance from each student-occupied space to a toilet room is minimized.
- If spaces such as the gymnasium and cafeteria will be occupied after-hours, an adequate number of toilet fixtures shall be provided within the public-use space allowing the other areas of the school to be secured.
- Separate toilet facilities for staff shall be provided per plumbing code requirements. At least one toilet (unisex) shall be provided near the Teacher's Lounge Area, with the other(s) located near instructional areas so that the distance to a staff toilet room is minimized.
- Toilet fixtures shall be wall hung and have automatic flush valves. Sensor-activated automatic flush valves shall be considered.
- A chase with minimum inside dimension of 24 inches shall be provided between back-to-back toilets to allow for maintenance access.
- Waterless urinals shall be considered based upon further study of schools systems that have installed this new type of fixture. Along with the water savings, operation and maintenance savings can be realized since there are not any flush valves to maintain.
- Lavatories in Elementary School facilities shall be located adjacent to the hallway to allow for supervision. Middle School facilities shall have lavatories in the toilet rooms.
- Pre-kindergarten and Kindergarten shall have toilets directly adjacent and opening into the classrooms for supervision and safety reasons.
- Lavatories shall have sensor-activated automatic faucets.

Drinking Fountains

- Refrigerated drinking fountains shall be located at proper distance intervals throughout the school.
- A drinking fountain shall be located at the building exit close to the playground, near the cafeteria and near the administrative offices.

Shower Facilities

- Shower facilities shall be provided as deemed necessary for physical education and athletics.
- Partitions for locker room showers and dressing areas are recommend to add privacy and encourage students to shower.

Hot Water Supply

- Hot water shall be generated as necessary for lavatories, shower facilities, custodial sinks and classroom/project sinks. Temperature settings for the hot water shall be set low enough to avoid scalding.
- Hot water needs for a preparatory kitchen with dishwashing shall be generated separately or a temperature booster shall be installed to meet the required temperatures.

Additional Items

- An in-house water supply shall be included for short-term outages in public supply.
- During construction of new facilities or renovations tracer wires shall be installed with non-metallic underground pipes or conduits.
- Isolation and control valves must be easily accessible. Isolation valves should be located for each group toilet room, locker room or kitchen.
- When water is supplied to outbuildings, systems shall be designed for winterization.
- Install a fire suppression system as required by current code.

HVAC Systems:

- A central boiler shall have dual fuel capabilities
- Central cooling systems shall be considered for new construction. Factors include (but are not limited to) thermal comfort and control and the possibility of year-round school.
- Appropriate zoning for cooling units should allow for summertime and after hours use of areas including (but not limited to) the administrative offices, the media center, the gymnasium and the multi-purpose areas.
- Additional supply and exhaust or a supplemental cooling system shall be provided in computer classrooms rooms and server rooms.
- Appropriate humidity and temperature controls shall be provided in the media center and server rooms.
- Digital temperature controls, with preset yet adjustable limits, should be supplied in each occupied room.
- Locate mechanical and electrical equipment where they may be easily accessed to allow for proper maintenance and replacement of parts or entire unit.
- HVAC equipment shall not be located on the roof. Rooftop units may cause noise problems, maintenance problems, lessen the lifespan of the unit and add to roofing problems and leaks.
- Appropriate high-efficiency air filters and/or filtration systems shall be included for improved indoor air quality.
- Life-cycle costing, an analysis and decision making tool based upon first cost, maintenance and operation and replacement costs, should be considered when selecting appropriate HVAC systems and equipment.
- Possibilities for renewable energy sources such as geothermal capabilities and wind generation shall be considered.
- New systems shall have a DDC (digital control system) that will allow for adjusting space temperature limits and monitoring temperatures and units from a central computer

Electrical Systems:

- For new facilities and remodels, design fire alarm and emergency lighting systems to comply with current codes and ADA guidelines.
- New facilities shall include a stand-by generator(s) with capacity to run emergency systems and provide power to sustain/supply all schools system necessary for operation as an emergency support shelter.
- New facilities shall be designed with a single integrated communications system connecting to a central communications control room. The system shall include the following:
 - Telephone, intercom and public address system access in all occupied rooms
 - Audio/Video distribution and media retrieval system with central control
 - System Clock with time display correction and programmable class period bell control

Electrical Systems (continued):

- Surveillance and Security System with central control
- Digital Message Boards located for student viewing in commons area with central control
- Data connections to connect computers and accessory equipment to a building-wide network
- Television receivers shall be located appropriately for viewing angles, convenient control and reduction of glare.
- Lightning protection and surge suppression shall be provided to protect all electronic equipment and supply panels.
- Appropriate connections for telephone, AV, and computer and accessory equipment shall be located at the teacher's station within classrooms.
- Perimeter outlets shall be located throughout classrooms with enough power to accommodate a full classroom of computers (future), accessory equipment and traditional AV equipment.
- Design technology connections and distribution system to accommodate current and future innovations such as a wireless data system.
- Select fixture types based upon planned room usage and activities. Fixtures shall be chosen based upon occupant comfort (glare control), energy efficiency and ease of maintenance.
- Design lighting controls for appropriate light levels during AV presentations.
- Utilize occupancy sensors for lighting control in ancillary spaces.
- Electrical hand dryers are preferred to paper towels.

Reviewed Resources:

Facilities Guidelines. Public Schools of North Carolina. State Board of Education, Department of Public Instruction. September 2004. Pages 54-66. 20 October 2004.
<<http://www.schoolclearinghouse.org/pubs/FacilityGuidelines2003.pdf>>

Elementary Educational Specifications Facility Planning Standards, Edition III. Jefferson County Public Schools, Colorado. Facilities Planning and Design Department. September 2003. Pages 40-44. January 1998. <jeffcoweb.jeffco.k12.co.us/cm/specguides/elemspec1.PDF>

State Requirements for Educational Facilities. Florida Department of Education. September 2003. Pages 45-46. December 1999. <<http://www.firn.edu/doe/edfacil/pdf/srefvol1.pdf>>

Tools:

GeoExchange – Geothermal Heat Pump Consortium

<<http://www.groexchange.org>>

US Department of Energy – Office of Geothermal Technologies

<<http://www.eere.energy.gov/geothermal/>>

US Department of Energy – National Best Practices Manual for Building High Performance Schools

<<http://www.rebuild.org/Lawson/attachments/ESSBestPracticesHighPerfSchools.pdf>>

US Department of Energy – Energy Star: Energy Design Guidelines for High Performance Schools. Cool and Dry Climates <<http://www.nrel.gov/docs/fy02osti/29109.pdf>>

Instructional Area Guidelines



General Information

Please see Appendix for completed Space Needs Surveys. Additional information on the surveys includes:

- Who gathered the information
- Contact information
- Date
- Cut sheets for furniture and other information

Please Note:

The Square Footages listed in this section (under square foot summary) are based upon the Space Need Survey Input. Please reference the Square Footage Analysis section for recommended Square Footage.

Contents:

English Classroom
Science Classroom
Art Classroom
Computer Lab/Classroom
Instructional Technology Lab
Life Skills Classroom
Teen Learning Center
Math Replacement Room
Resource Classroom
Library
Choir Rehearsal Room
Band Rehearsal Room

English Classroom

Space Description:

- The English Classroom will be used for English and Speech classes of 15 to 32 students with the possibility of more students.

Space Needs:

- Storage and Casework
 - Countertop: 14 lineal feet
 - Upper Cabinets: 8 lineal feet
 - Lower Cabinets: 8 lineal feet
 - File Drawers: 2 5-drawer cabinets
 - Bookshelves: 20 lineal feet
 - Teachers Closet: with lock for personal items
- Furniture
 - Teacher Desk
 - Teacher Chair
 - Table: 3 feet x 5 feet
 - Student Desk: 30+
 - Teacher Work tables: 2
 - Guest Chairs: 3
 - Stool
 - Audio/Visual Cart
 - Computer Cart
- Equipment
 - Teacher Computer
 - Teacher Printer
 - Student Computers: 5-6 workstations
 - Television
 - Overhead Projector
 - Classroom PDA's: with keyboards and printer
- Special Requirements
 - Power and Data Outlets
 - Intercom and Phone
 - Air Conditioning
- Square Feet Summary
 - 30 x 30 feet

Science Classroom

Space Description:

- The activities and programs in this space will include:
 - Lecture: 25 to 30 students
 - Lab Activities: 25 to 30 students

Associated Spaces:

- Equipment/Supply Storage Room

Space Needs:

- Storage and Casework
 - Countertop: 52 lineal feet
 - Upper Cabinets: 26 lineal feet
 - Base Cabinets: 26 lineal feet
 - File Drawers: 4-6 drawers
 - Open Shelving: 10 – 20 lineal feet
- Furniture
 - Student Desks or Lab Tables: accommodate 25 to 30 students
 - Side Tables
 - Computer Stand
 - Overhead Projector Stand
- Equipment
 - Computer
 - Overhead Projector
 - TV & VCR/DVD
- Special Requirements
 - Project Sinks: 6 minimum
 - Countertop Workstations at perimeter of room
 - Plastic Laminate work surface is sufficient
 - Windows as required for special experiments
 - Power and Data Outlets: 5 feet spacing at perimeter countertop
 - Power to Lab Tables
 - Stove
 - Refrigerator
- Adjacencies
 - Equipment/Supply Storage Room: direct access
- Square Feet Summary (minimum in parentheses)
 - Classroom: 30 x 40 feet (28 x 28 feet)
 - Storage Room: 15 x 15 feet (12 x 12 feet)

Art Classroom

Space Description:

- The activities and programs in this space will include:
 - Daily Student Classes: 25 to 30 students
 - Pottery
 - Painting
 - Pastels
 - Charcoal Drawing
 - Drawing
 - Wood Burning
 - Crafts

Associated Spaces:

- Kiln Room
- Storage Room

Space Needs:

- Storage and Casework
 - Countertop: 6 computer workstations
- Furniture
 - Long and Wide Activity Tables with durable surface
 - Rolling Storage Carts
 - Teacher Desk
 - Teacher Storage
 - Supply Table: 4 x 8 feet
- Equipment
 - Television
 - Matt Board Table
 - Kiln: 220 Volt connection
- Special Requirements
 - Data and Power Outlets: (4) 4-plex per wall
 - Framing Area: with shelving
 - Air Conditioning in Computer Lab
 - Two Sinks
 - Natural Light (Windows)
- Adjacencies
 - Kiln Room
 - Storage Room
- Square Feet Summary (minimum in parentheses)
 - Kiln Room: 10 x 10 feet
 - Storage Room: 12 x 12 feet

Computer Lab

Space Description:

- The activities and programs in this space will include:
 - Student Classes: 30+ students
 - Training: 30+ people

Space Needs:

- Storage and Casework
 - Countertop: 16 lineal feet
 - Upper Cabinets: 16 lineal feet (6 cabinets)
 - File Drawers: 2
 - Open Shelving: 16 lineal feet
 - Full-height Cabinets: (2) at 4 lineal feet
- Furniture
 - Teacher Desk
- Equipment
 - Gateway Presentation System
 - Ceiling Mounted LCD Projector
- Special Requirements
 - Power and Data: 30+ workstations and additional equipment
- Square Feet Summary (minimum in parentheses)
 - 30 x 45 feet

Instructional Technology Lab

Space Description:

- The activities and programs in this space will include:
 - Computer Instruction: 5th and 6th Grade
 - Manufacturing Process: 7th and 8th Grade

Space Needs:

- Storage and Casework
 - Countertop: 200 lineal feet
 - Upper Cabinets: 15 lineal feet
 - Base Cabinets: 15 lineal feet
 - File Drawers: 8
 - Open Shelving: 200 lineal feet
- Furniture
 - Student Desks
 - Chairs
 - Booths
 - Tool Cabinets
- Equipment
 - Power Tools
 - Radial Arm Saw: 20 square feet (110/220 Volt)
 - Router Tables: (3) at 10 square feet (110 Volt)
 - Drill Press: 10 square feet (110 Volt)
 - Bench Sander: 12 square feet (110 Volt)
 - Band Saws: (2) 10 square feet (110 Volt)
 - Computers: 6 – 8 station
 - Dust Collection System: 20 square feet (110 Volt)
 - Paint Booth: 30 square feet
- Special Requirements
 - Sinks
 - Additional Power Outlets: Wood Lab Area
- Square Feet Summary (minimum in parentheses)
 - 3000 square feet (2500 square feet)

Life Skills Classroom

Space Description:

- The activities and programs in this space will include:
 - Life Skills Instruction: up to 12 students
up to 3 teachers
 - Content Standards Instruction

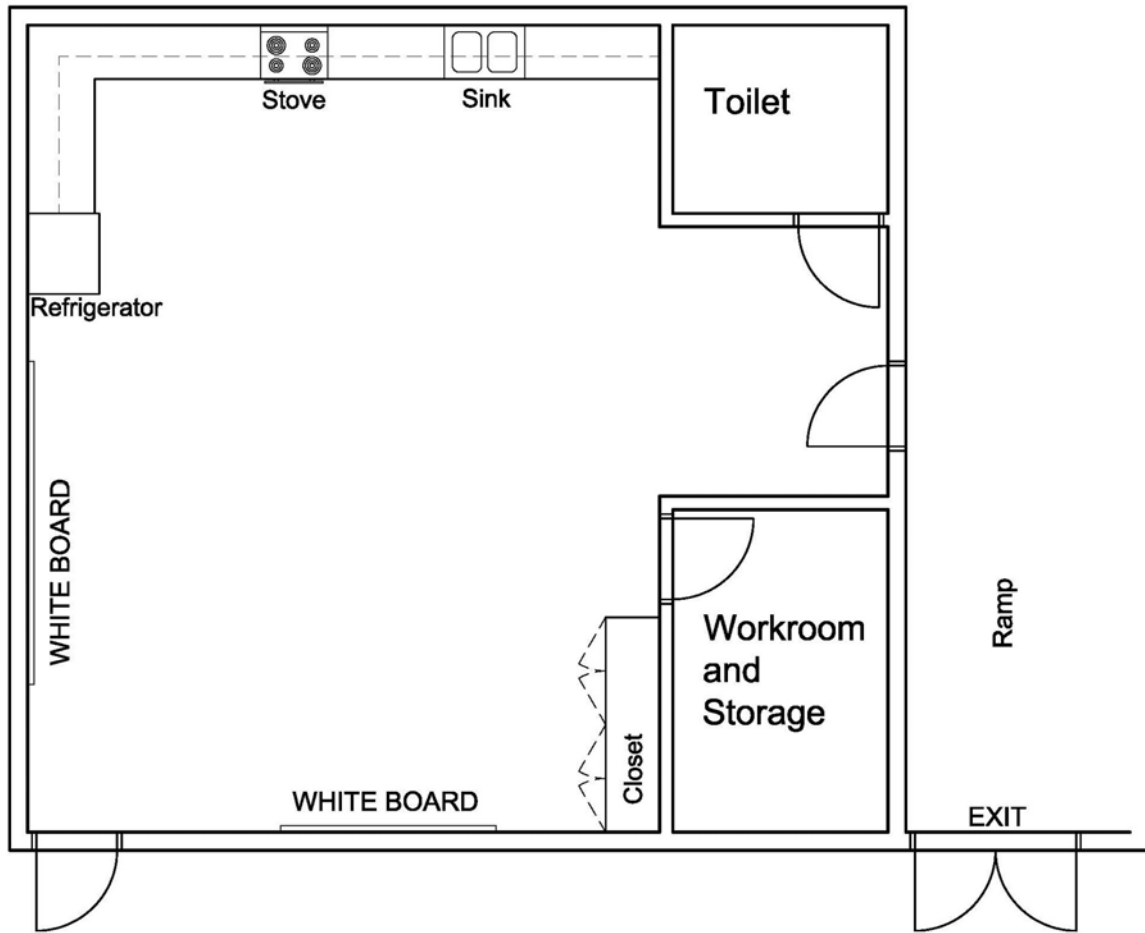
Associated Spaces:

- Student Toilets
- Exterior Work Area

Space Needs:

- Storage and Casework
 - Countertop: 22 lineal feet
 - Upper Cabinets: 27.5 lineal feet
 - Base Cabinets: 22 lineal feet
 - ADA Countertop: 3.5 lineal feet
 - Closet: 8 x 2 feet
- Furniture
 - Computer Desks: 3
 - File Cabinets
 - Room Dividers
 - Bookcase
 - Teacher Desk
 - Student Tables: accommodate 12
 - Student Chairs: accommodate 12
 - Activity Table: semi-circle
 - Activity Chairs
 - Three-foot Tables: 3
- Equipment
 - Stove
 - Refrigerator
 - Computers: 3
 - Television
 - Data and Power Outlets: 5 feet spacing along countertop and perimeter
- Special Requirements
 - Double Sink
 - Hot Water
 - Stove Outlets
 - Telephone
 - ADA design
- Adjacencies
 - Student Toilets (if not in room)
 - Exterior Door
- Square Feet Summary (minimum in parentheses)
 - 36 x 36 feet (30 x 32 feet)
- Space Needs Diagram (Below)

Diagram: Life Skills Classroom



TLC Room

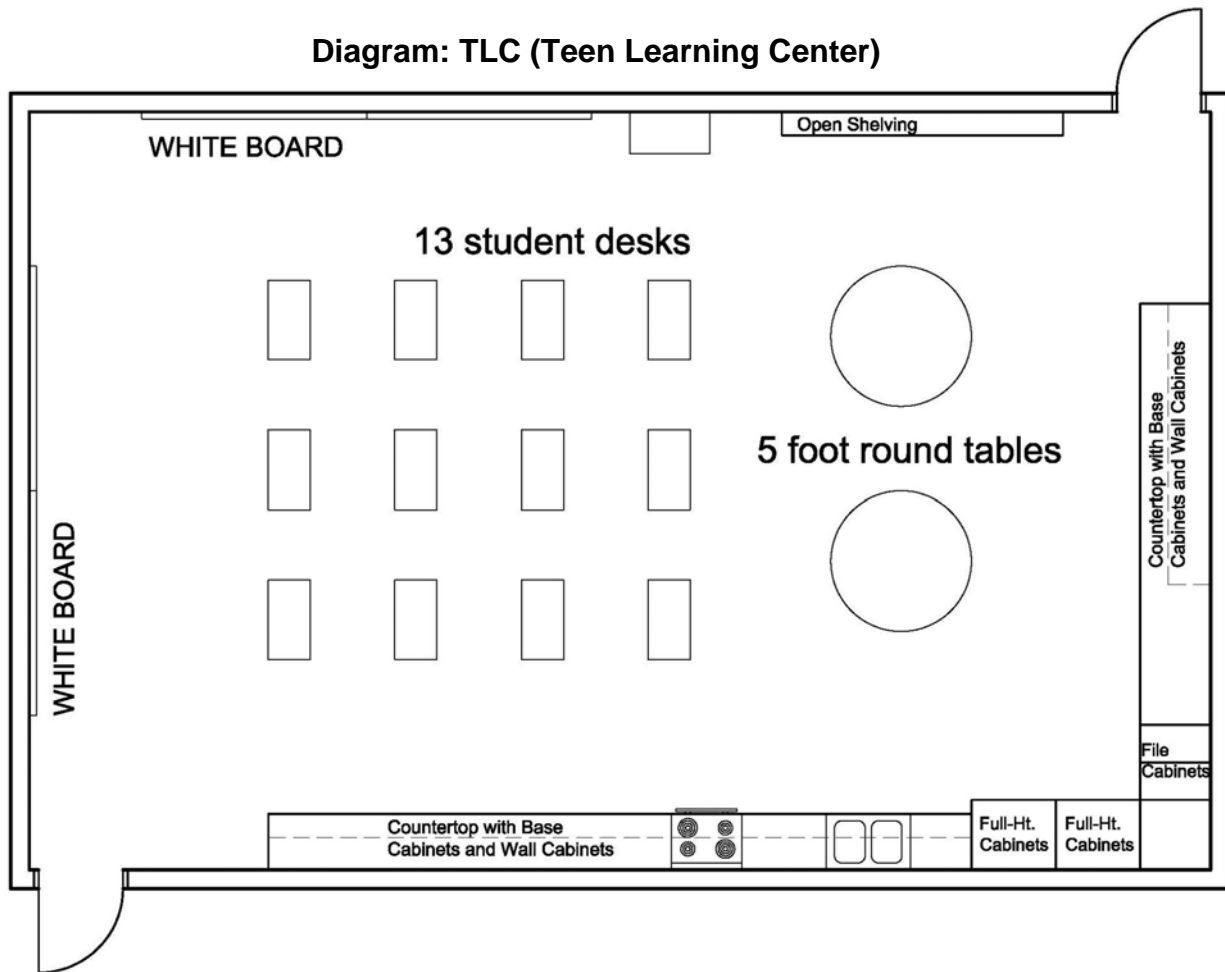
Space Description:

- The activities and programs in this space will include:
 - Daily Student Classes: 13 students (approximately)
2-3 teachers

Space Needs:

- Storage and Casework
 - Countertop (x2): 25 lineal feet
up to 15 lineal feet
 - Upper Cabinets: 25 – 30 lineal feet
 - Base Cabinets: 25 – 30 lineal feet
 - File Cabinets: (2) 4-drawer
 - Open Shelving: 10 – 20 lineal feet
 - Full-height Cabinets: (2) 3 x 6 feet
- Furniture
 - Student Desks: 13
 - Large Round Tables: 5 feet
 - Student Desk: 1 for time out
- Equipment
 - Computers: 2
 - Printer
- Special Requirements
 - Oven
 - Sink
 - TV Data Connection
 - Data and Power Outlets
 - Power Outlets (Quad): 5 feet spacing along countertop and
perimeter
 - Windows
- Square Feet Summary (minimum in parentheses)
 - 50 x 50 feet (45 x 45 feet)
- Space Needs Diagram (Below)

Diagram: TLC (Teen Learning Center)



Math Replacement Room (2)

Space Description:

- The activities and programs in this space will include:
 - Daily Student Lessons: up to 12 students

Space Needs:

- Storage and Casework
 - For supplies and materials
- Furniture
 - Student Desks: 12
 - Teacher Desk
- Square Feet Summary (minimum in parentheses)
 - 20 x 25 feet

Resource Room

Space Description:

- The activities and programs in this space will include:
 - Students: up to 20 at a time

Associated Spaces:

- The Resource Room does not have any associated spaces.

Space Needs:

- Storage and Casework
 - Countertop: 12 lineal feet
 - Upper Cabinets: 6 lineal feet
 - Base Cabinets: 6 lineal feet
 - File Drawers: 3
 - Open Shelving: 3 lineal feet
 - Computer Countertop: 20 workstations
- Furniture
 - Student Desks: 20
 - Activity Table: kidney-shaped table
- Equipment
 - Computers: 20
 - White Boards: two walls
 - Power and Data Outlets
- Adjacencies
 - Located at the end of the 7th grade wing

Library/Media Center

Space Description:

- The Library is used for multiple activities including:
 - Individual studying and research
 - Group activities
 - Meetings
 - Library Classes: 20 to 25 students
 - Staff Meetings: up to 75 staff
 - Adult Classes: 12 to 20 students
 - Community Meetings: 15 to 25 attendees

Associated Spaces:

- Library Storage Room
- Library Office and Workroom
- Listening Room for recorded books

Library/Media Center (continued)

Space Needs:

- Storage and Casework
 - Circulation Desk: 30 lineal feet of 30-inch countertop (L-shaped)
 - Countertop: 20 lineal feet workspace
16 computer work/search stations and printers
 - Base Cabinets: at Circulation Desk
at workspace countertop
 - Open Shelving: 6 feet tall along perimeter walls
freestanding reference books shelving
freestanding fiction book shelving
- Furniture
 - Tables
 - Chairs
 - Book Carts
 - Dictionary Stand
 - Atlas Stand
 - Office Desk and Chair
 - Stools for Computer Stations
 - Filing Cabinets: 3
 - Magazine Racks
 - Newspaper Stand
- Equipment
 - Computers: 16 workstations + staff workstation
 - Overhead Projectors
 - Audio/Visual Projector
 - Presentation Monitors
 - Printers: 3
 - Copier
 - Fans
- Special Requirements
 - Power and Data Outlets
 - Security Gates: at Entry Doors
 - Electronic Security Doors
 - Telephone
 - Internet connections for Math Applications
 - Acoustical Treatments: for meeting and study spaces
- Adjacencies
 - Computer (IT) Lab: for additional computer workstations
- Square Feet Summary (minimum in parentheses)
 - Library: 120 x 80 feet (80 x 60 feet)
 - Storage: 80 x 60 feet (60 x 20 feet)
 - Office and Workroom: 14 x 14 feet (10 x 10 feet)
 - Listening Room: 12 x 14 feet (10 x 12 feet)
- See Appendix for Furniture Cut Sheets

Choir Rehearsal Room

Space Description:

- The activities and programs in this space will include:
 - Choir Rehearsals: 50 students
- A space with built-in risers (3 – 4) is ideal.
- See Appendix Information for Opportunity-to-Learn Standards for Music Instruction

Associated Spaces:

- Choir Staff Office

Space Needs:

- Storage and Casework
 - Countertop: 6 lineal feet
 - Upper Cabinets: 6 lineal feet
 - Base Cabinets: 6 lineal feet
 - File Drawers: 12
 - Open Shelving: 24 lineal feet
- Furniture
 - Computer table
 - Teacher Desk
 - Teacher Chair
 - Student Chairs: 50
 - Music Folder Cabinets: 2
- Equipment
 - Upright Piano
 - Percussion Equipment
 - 5 Music Stands
 - Power and Data Outlets: minimum of 6
 - Computer
 - Marker Boards with music staff lines
 - Tack Boards
- Special Requirements (from Opportunity-to-Learn Standards for Music Instruction)
 - Curtains to adjust acoustics
 - Sink for instrument maintenance
 - 16 feet ceiling heights (minimum)
 - Appropriate acoustics
 - Good ventilation (quiet ventilation NC 25)
 - Adequate lighting
 - Acoustical isolation: STC50 walls
STC45 doors and windows
 - Temperature: 68 to 70 degrees
 - Entry Vestibule
- Adjacencies
 - Choir Staff Office: for supervision of classroom
 - Other Music Classrooms
 - Performance Space (if provided)
 - Ensemble and Practice Spaces (if provided)
- Square Feet Summary (minimum in parentheses)
 - 1800 square feet minimum (from Opportunity-to-Learn Standards)

Band Rehearsal Room

Space Description:

- The activities and programs in this space will include:
 - Band Classes: 6th and 7th Grade
 - General Music Classes: 5th Grade

Associated Spaces:

- Practice Rooms: 2
- Instrument Storage Room
- Band Instructor Office: 2

Space Needs:

- Storage and Casework
 - File Cabinets: (2) 4-drawer cabinets
 - Instrument Storage: 250 lineal feet (30 inches deep)
 - Music Shelving: 150 lineal feet (15 inches deep)
- Furniture
 - Teacher Desk
 - Teacher Chair
 - Computer Desk
 - Student Chairs
- Equipment
 - Piano
 - Stereo and Recording Equipment
 - Band Instruments
 - i.e. percussion and large wind instruments
 - Music Stands
- Special Requirements
 - Appropriate Acoustics
 - Acoustical Isolation: STC50 walls
STC 45 doors and windows
- Adjacencies
 - Choir Classroom
- Square Feet Summary (minimum in parentheses)
 - Practice Rooms: 8 x 10 feet (optional if space does not permit)
 - Instrument Storage Room: 20 x 20 feet
 - Band Instructor Office: 12 x 12 feet
 - Band Rehearsal Room: 40 x 40

Support Area Guidelines



General Information:

Please see Appendix for completed Space Needs Surveys. Additional information on the surveys includes:

- Who gathered the information
- Contact information
- Date
- Cut sheets for furniture and other information

Please Note:

The Square Footages listed in this section (under square foot summary) are based upon the Space Need Survey Input. Please reference the Square Footage Analysis section for recommended Square Footage.

Contents:

Commons Area

Administration

Reception

Secretarial Office

Conference Room

Principal's Office

Vice Principal's Office

Nurse's Office

Teachers' Lounge

Staff Workroom

Dare (Liaison) Officer Office

In-School Suspension

Storage

Counseling Services

Physical Education

Gymnasium

Office (2 Spaces)

Locker Rooms (2)

Storage Rooms (4)

Wrestling Room

Weight Room

Mezzanine Multipurpose Room

Ticket Booth and Concessions

Sound Room

Theater

Custodial/Maintenance

Receiving Area

Custodial Office

Break Area

Paper Goods Storage

Cleaning Supplies Storage

Equipment Storage

Work Bench

Prep Area

Technology Repair and Storage

Commons Area

Space Description:

- The activities and programs in this space will include:
 - A place for students to congregate before school
 - A place for students to congregate during and/or after lunch

Space Needs:

- Furniture
 - Round Tables
 - Benches
- Equipment
 - Televisions Mounted every 40 feet around perimeter
- Special Requirements
 - Needs to be a large open area
- Adjacencies
 - Main Toilet Rooms
 - School Administration
- Square Feet Summary (minimum in parentheses)
 - Should be able to accommodate all students (total enrollment)

Administration

Administration – Reception

Space Description:

- This is the Hub of the school. It is Grand Central Station most days. Approximately 175 to 200 students utilize the administrative area each day.

Associated Spaces:

- Administrative Storage Room

Space Needs:

- Storage and Casework
 - Bookshelves
- Furniture
 - Waiting Area Chairs
 - Secretarial Workstations 2
 - Secretarial Chairs
- Equipment
 - Computer Stations 7
 - Central Phone/Intercom System
 - Fax Machine
 - Copier
- Adjacencies
 - Secretarial Office
 - Conference Room
 - Principal's Office
 - Vice Principal's Office
 - Nurse's Office
 - Teachers' Lounge
 - Staff Workroom
 - Dare Officer Office
- Square Feet Summary (minimum in parentheses)
 - 100 x 100 feet (50 x 100 feet)

Administration – Secretarial office

Space Description:

- Enclosed office Space for secretarial staff working on finalizing reports or confidential information.

Associated Spaces:

- Main reception desk

Space Needs:

- Adjacencies
 - Adjacent to the main reception desk
- Square Feet Summary (minimum in parentheses)
 - 100 sf

Administration – Conference Room

Space Needs:

- Furniture
 - Conference Tables to seat up to 16
 - The furniture for the conference rooms should allow for flexibility of use with 3 or 4 smaller tables that can be combined into a larger conference table.
- Adjacencies
 - Main Reception
 - Principals' Offices
 - Teachers' Lounge within proximity for beverages and snacks
 - Food Service for catering
- Square Feet Summary
 - 20 x 25 feet

Administration – Principal's Office

Space Description:

- Office Space for Principal to meet with students, parents and staff

Space Needs:

- Storage and Casework
 - Cabinets
 - Shelves
 - Bookshelves
- Furniture
 - Main Desk
 - Computer Desk
 - Small Round Table
 - Cabinets
- Adjacencies
 - Reception
 - Conference Room

Administration – Assistant Principal's Office

Space Needs:

- See Principal's Office

Administration – Nurse’s Office

Space Description:

- The activities and programs in this space will include:
 - Space for ill students and/or staff to lay down and rest (2 to 3 at a time)
 - See ill students (3 to 4 at a time)
- Perform procedures such as diabetes care, urinary catheterization, nebulizer/inhalation therapy, etc.
- Care for injured students
- Talk with staff and students

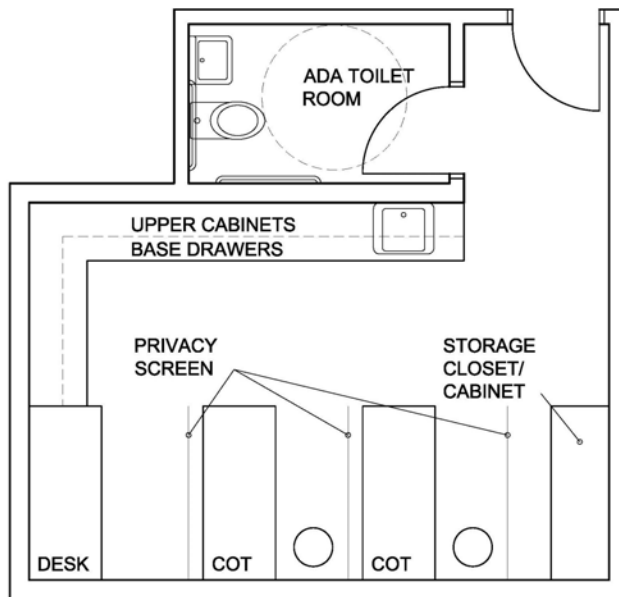
Associated Spaces:

- Nurse’s Office Toilet Room: ADA accessible, for ill student and staff use
- Nurse’s Office Storage Closet: Closet to hang coats, store extra students clothing, medical supply boxes, etc.

Space Needs:

- Storage and Casework
 - Countertop: 8 to 10 linear feet
 - Upper Cabinets: 8 to 10 linear feet
 - Base Cabinets: 8 to 10 linear feet
 - File Drawers: 3 drawers
 - Open Shelving: 3 linear feet
- Furniture
 - Bulletin Board
 - Nurse’s Desk
 - Nurse’s Chair
 - Cots 2 or 3
 - Privacy Screens
- Equipment
 - Wheel Chair
 - Mobile Cabinet
 - Small Refrigerator for medications
 - Scale
 - Floor Light
 - Computer Station
 - Vision Tester
 - Audiometer
- Special Requirements
 - Hand Washing Sink
- Adjacencies
 - Reception
- Square Feet Summary (minimum in parentheses)
 - 18 x 18 feet (12 x 12 feet)
- Space Needs Diagram (Below)

Diagram: Nurse's Office



Administration – Teachers' Lounge and Staff workroom

Administration – Dare (Liaison) Officer Office

Space Needs:

- Furniture
 - Desk
 - Bookshelves
- Equipment
 - Computer

Administration – In-School Suspension

Space Description:

- The activities and programs in this space will include:
 - Space for up to 16 students to complete schoolwork out of the classroom

Associated Spaces:

- In-School Suspension Toilet

Space Needs:

- Furniture
 - Study Carrels: 16
 - Chairs
 - Teacher Stations: 2
- Equipment
 - Computers
- Adjacencies
 - In-School Suspension should be easily accessible from the administrative area

Administration – Staff Toilets

Space Needs:

- Storage and Casework
 - Storage Cabinet
- Adjacencies
 - Convenient to Staff Offices and Teachers' Lounge

Administration – Storage

Space Description:

- Storage for the main administrative offices

Space Needs:

- Storage and Casework
 - Shelving
 - Cabinets
- Adjacencies
 - Main Reception Desk
 - Staff Workroom

Counseling Services

Space Description:

- The activities and programs in this space will include:
 - Individual Counseling
 - TAT meetings: 2 counselors
 - Group Counseling
 - Staffing Meetings
 - Consultations

Associated Spaces:

- Conference/Meeting Room

Space Needs:

- Storage and Casework
 - Countertop: 8 lineal feet, 36 inch deep
 - Upper Cabinets: 6.6 lineal feet (20 square feet)
 - Base Cabinets: 13.3 lineal feet (40 square feet)
 - File Drawers: 6 drawers
 - Open Shelving: 48 lineal feet
- Furniture
 - Table
 - Chairs
 - Desks
 - TV Cart
 - Overhead Projector Stand
- Equipment
 - TV/DVD
 - Overhead Projector
 - Computers
- Adjacencies
 - Proximity to students is most important consideration.
 - Accessible to parents and out of the main public zone
 - Close to a Restroom
- Square Feet Summary (minimum in parentheses)
 - Offices: (2) at 14 x 12 feet (10 x 12)
 - Conference/Meeting Room: 14 x 20 feet

Physical Education

Physical Education – Gymnasium

Space Description:

- Physical Education Space
- Can accommodate 2 classes at a time
- Courts for Basketball and Volleyball and area for Wrestling Mats
- Seating the student population for athletic events and/or concerts
- Running Track above

Associated Spaces:

- Locker Rooms male and female
- Equipment Storage Rooms 3
- Sound Room Adjacent to Gymnasium
- Coaches offices 2
- Coaches Staff Restroom
- Custodial Closet
- Ticket Booth (optional)
- Concessions

Space Needs:

- Equipment
 - Bleachers
 - Basketball Backstops (Adj. height) 2 main backstops & 2 side court
 - Gymnasium Divider Curtain
 - Volleyball Standard Sleeves
 - Wrestling Mats
 - Roll-Down Cargo Net
 - Scoreboard Volleyball, Basketball, and Wrestling
 - Sound System
 - Retractable Bleachers Minimum 6 risers on both sidelines
- Special Requirements
 - Natural Light Windows
 - Air Conditioning
 - Separate Exterior Entrance Double doors for loading
 - Power and Data for A/V Equipment
 - Wood Gymnasium Floor
 - Appropriate Aesthetic Wall Designs
 - No Suspended Ceiling
- Adjacencies
 - Exterior Athletic Fields, Track
 - Should be separate from the Food Service Preparation and Dining areas
 - Adjacent to the Entry Commons Area
- Square Feet Summary (minimum in parentheses)
 - 110 x 110 feet
 - Main Court 50 x 92 feet (High School Regulation Court)
 - 5'-10" Perimeter around Main Court
 - Bleacher space beyond perimeter space

Physical Education – Offices (2 Spaces)

Space Description:

- Office space for P.E. Teacher/Coaches for planning and coaching

Space Needs:

- Storage and Casework
 - Full Height Cabinets and Lockers 15 linear feet
 - Base Cabinets 14 linear feet
 - File Cabinets 2
 - Open Shelving
- Furniture
 - Desk and Chair
 - Computer Desk and Chair
- Equipment
 - Telephone/Intercom
 - Computer
 - Printer
- Special Requirements
 - Power and Data Outlets
- Adjacencies
 - Coaches Toilet Room
- Square Feet Summary
 - 15 x 20 feet (includes adjacent toilet)

Physical Education – Locker Rooms (2)

Space Description:

- Can accommodate 2 classes at a time (28 to 30 students in each the male and female locker room)

Associated Spaces:

- Training Room

Space Needs:

- Furniture
 - Benches
- Equipment
 - Lockers
 - Mirrors
- Special Requirements
 - Showers
 - Power Outlets
- Adjacencies
 - Gymnasium
- Square Feet Summary (minimum in parentheses)
 - Locker Room: 15 x 30 feet
 - Shower Room: 8 x 20 feet
 - Training Room: 10 x 10 feet

Physical Education – Storage Rooms (4)

Space Description:

- Storage for Physical Education and Athletic Equipment
- Storage for Wrestling Mats
- Storage for Tables and Chairs
- Custodial Equipment

Space Needs:

- Special Requirements
 - Double doors for moving equipment
- Adjacencies
 - Gymnasium
- Square Feet Summary (minimum in parentheses)
 - Equipment Storage: 12 x 28 feet
 - Wrestling Mat Storage: 15 x 32 feet
 - Adjacent to Multipurpose Room if shared space for wrestling
 - Tables and Chair Storage: 12 x 28 feet
 - Custodial Equipment: 12 x 12 feet

Physical Education – Wrestling Room

(Could be shared with Multipurpose Room)

Space Description:

- Used for P.E. classes in wrestling, after school wrestling, aerobics, etc.

Space Needs:

- Storage and Casework
 - Open Shelving and Cabinets: 100 lineal feet
- Special Requirements
 - Power and Data Outlets
- Square Feet Summary (minimum in parentheses)
 - 55 x 55 feet

Physical Education – Weight Room

Space Description:

- Used for P.E. classes in weight lifting, athletics weight training, and cardiovascular exercise

Space Needs:

- Storage and Casework
 - Open Shelving and Cabinets 100 lineal feet (some locking)
- Equipment
 - Weight Machines
 - Free Weights
 - Cardiovascular Equipment
- Special Requirements
 - Power and Data Outlets
- Square Feet Summary (minimum in parentheses)
 - 45 x 45 feet

Physical Education – Ticket Booth

(Optional)

Space Description:

- The Ticket Booth will be used to both sell and take tickets
 - A portable Ticket Booth would allow it to be set up near the Gymnasium Entrance

Space Needs:

- Special Requirements
 - Ticket Booth: Glass in Ticket Window with Money and Speaking Holes
- Square Feet Summary (minimum in parentheses)
 - Ticket Booth: 8 x 6 feet

Physical Education – Concessions

Space Description:

- Concession area with 2 to 3 points of sale for events

Space Needs:

- Equipment
 - Soda Machine
- Special Requirements
 - Hand Sink
 - Ample countertop and outlets to accommodate equipment needs
- Adjacencies
 - Food Service Kitchen
- Square Feet Summary (minimum in parentheses)
 - 150 square feet (100 square feet if adjacent to kitchen)

Physical Education – Sound Room

Space Description:

- Sound Room for Audio and Visual Equipment

Space Needs:

- Equipment
 - Audio/Visual Systems for Athletic Events and Assemblies
- Adjacencies
 - Direct Access to Gymnasium
- Square Feet Summary (minimum in parentheses)
 - 8 x 8 feet

Theater

Space Description:

- Performance Space for music and drama
- Could be planned with the Community School Concept

Space Needs:

- To seat student population

Custodial/Maintenance

Custodial/Maintenance – Receiving Area

Space Description:

- The activities and programs in this space will include:

Space Needs:

- Special Requirements
 - Snow-melt system in loading dock and/or ramp
- Adjacencies
 - Loading Dock

Custodial/Maintenance – Custodial Office

Space Needs:

- Storage and Casework
 - Record Storage
 - Equipment Manuals
 - Timesheets
 - SOP Manuals
 - Safety Manuals
- Furniture
 - Filing Cabinet
- Equipment
 - Computer
 - Time Clock
 - Telephone/Intercom
- Special Requirements
 - Power and Data

Custodial/Maintenance – Break Area

Space Description:

- Break Area for Custodial Staff

Associated Spaces:

- Staff Restroom (optional if other staff toilet is in proximity)

Space Needs:

- Storage and Casework
 - Storage Cabinet for staff Uniforms and Coats

Custodial/Maintenance – Paper Goods Storage

Space Description:

- Storage of up to 15 cases on paper goods

Space Needs:

- Furniture
 - Adjustable shelving: 24 inches deep and 6 foot long minimum
- Adjacencies
 - Receiving Area
- Square Feet Summary (minimum in parentheses)

Custodial/Maintenance – Cleaning Supplies Storage

Space Description:

- Space to store up to 2 months of cleaning supplies for the facility

Space Needs:

- Furniture
 - Adjustable shelving: 24 inches deep and 6 foot long
- Adjacencies
 - Receiving Area

Custodial/Maintenance – Equipment Storage

Space Description:

- Store all custodial equipment used in the care of the facility

Space Needs:

- Equipment
 - Misc. hand tools (shovels, ice chippers, rack, etc.)
 - Ladders: 3
 - Custodial Carts: 3 (24 x 40 inch)
 - Mop bucket with wringer
 - Window Washing Unit
 - Restroom Cleaning Machine: 1 (24 x 36 inch and 30 inch tall)
 - Wet/Dry Vacuums: 2 (24 x 24 x 24 inch)
 - Carpet Cleaning Machine
 - Auto Scrubbing Machines: 2 (24 x 36 inch and 30 inch tall)
 - Propane Powered Burnisher: Secure Outdoor Storage for Propane
 - Dry Carpet Vacuums: 3

Custodial/Maintenance – Work Bench

Space Description:

- The activities in this space will include:
 - Cleaning and repairing equipment and furniture

Space Needs:

- Storage and Casework
 - Parts storage underneath bench
- Furniture
 - Work Bench: 6 x 3 feet
- Special Requirements
 - Electrical outlets on wall above bench
 - Pegboard on the wall behind bench

Custodial/Maintenance – Prep Area

Space Needs:

- Equipment
 - Mop hanging brackets above floor sink
- Special Requirements
 - Floor Drain
 - Floor Sink
 - Good ventilation
 - Bright lighting
 - Emergency shower and eyewash station
 - Power outlets for charging the scrubbers
 - Sealed Concrete Floor
 - Painted concrete or filled and painted CMU Walls
- Adjacencies
 - Cleaning Supplies Storage
 - Equipment Storage
- Square Feet Summary
 - 10 x 10 feet

Technology Repair and Storage

Space Description:

- The activities in this space will include:
 - Repair of computer equipment and storage of computers and other technology equipment.
 - Record keeping and software storage
 - Small group training

Space Needs:

- Storage and Casework
 - Shelving for 30 computer systems
 - Lockable Storage Caging
- Furniture
 - Fire-proof file cabinet
 - Test Bench for repairing equipment: 30 x 72 inches minimum
 - Monitor shelf above bench
 - Shelving unit for parts and equipment by Test Bench
 - Tables and Chairs for training: to seat 20
- Equipment
 - Mobile equipment carts: 2
 - Air Compressor
 - Air-Dryer for cleaning equipment
 - Ceiling Mounted Digital Projector
 - Projection Screen
 - Whiteboard
- Special Requirements
 - Environmental Controls to maintain proper temperature
 - Secure room
 - Double doors into space to receive pallets
 - Power and Data Outlets: additional outlets at Work Bench
Floor outlets of ceiling drops share with Server Room
 - Back-up Power Supply: share with Server Room
 - Telephone/Intercom
 - Hand washing sink: optional if toilet room is adjacent
 - Hard surface flooring
- Adjacencies
 - Near Server Room
 - Near Loading Dock
- Square Feet Summary (minimum in parentheses)
 - 20 x 24 feet (15 x 20 feet)

Student and Staff Toilets

Space Needs:

- Storage and Casework
 - Student Toilets
 - Book rack/shelf in toilet stalls
 - Staff Toilets
 - Storage cabinet for personal hygiene supplies
- Equipment
 - Mirrors
 - Hand Dryers
- Special Requirements
 - Multiple Floor Drains
 - Floor to Ceiling Ceramic Tile on Walls
 - Terrazzo or Porcelain Tile on Floors
 - Good Ventilation
 - Heavy Duty Stalls

Food Service Guidelines



CONTENTS: Central full-service kitchen

Director's Office
Secretary/Nutritional Office
Receiving Garage
Receiving Area
Receiving Office
Dry Food and Paper Good Storage
Refrigerated Storage
Prep/Cooking Area – Onsite
Pantry
Can/Cart Wash
Holding Area
Serving Area
Dining
Pot/Pan Washing
Dish/Tray Washing
Custodial and Chem/Soap Storage
Toilet with Locker Vestibule

Director's Office

Space Description:

- Enclosed office space for food service manager with space for small meetings

Space Needs:

- Furniture
 - Desk
 - Chairs
 - Bookcases
 - Locking File Cabinet
 - Computer table
 - Small table with chairs
- Equipment
 - Computer Station
- Special Requirements
 - Dedicated computer line
 - Additional power and data outlets for office equipment
 - Visual access (window) to food prep
- Adjacencies
 - Directly adjacent to Nutritional/Secretary Office
 - Direct access to Food Service Preparation Area
- Square Feet Summary (minimum in parentheses)
 - 160 square feet (150 square feet)

Nutritional/Secretary Office

Space Description:

- Enclosed office space for food service secretary and/or nutritional staff (total of 2 staff)

Associated Spaces:

- Storage Room for office supplies

Space Needs:

- Furniture
 - Desks: 2 workstations
 - Chairs
 - Bookcases
 - Locking File Cabinet
 - Printer stand
- Equipment
 - Computer Stations: 2
 - Copier: 24 inch x 24 inch
 - Printer
- Special Requirements
 - Dedicated computer lines
 - Additional power and data outlets for office equipment
- Adjacencies
 - Directly adjacent to Food Service Director's Office
 - Access to public are of school (through dining area)
- Square Feet Summary (minimum in parentheses)
 - Office: 200 square feet (180 square feet)
 - Storage: 6 foot x 6 foot

Receiving Garage/Loading

Space Needs:

- Equipment
 - Overhead doors
- Special Requirements
 - Large double doors to Receiving Area
- Adjacencies
 - Direct access to Freezer and Cooler storage
 - Receiving Area
 - Receiving Office
- Square Feet Summary (minimum in parentheses)
 - 1250 square feet (Room for two loading docks and/or parking for two trucks)

Receiving Area

Space Description:

- Transitional space, holding and circulation from Receiving Garage to Food Service Area
- Satellite food cart storage
- Food temperature recording (HACCP)

Space Needs:

- Equipment
 - Satellite food carts
- Adjacencies
 - Dry Food and Paper Good Storage
 - Receiving Office
- Square Feet Summary (minimum in parentheses)
 - 300 square feet (250 square feet)

Receiving Office

Space Description:

- Enclosed office space for Receiving/Kitchen manager

Space Needs:

- Furniture
 - Desks
 - Chair
 - Bookcases
 - Locking File Cabinet
- Equipment
 - Computer Station
- Special Requirements
 - Dedicated computer line
 - Additional power and data outlets for office equipment
 - Visual access (window) to receiving area
- Adjacencies
 - Receiving Garage
 - Receiving Area
- Square Feet Summary (minimum in parentheses)
 - 125 square feet (100 square feet)

Dry Food and Paper Good Storage

Space Description:

- Storage for food that does not require refrigeration (cans, jars, and sacks)
- Storage for paper goods, utensils etc that do not require refrigeration

Space Needs:

- Furniture
 - Dunnage Platforms 6
 - Portable Carts 2
 - 4-Shelf Unit, 18 inch wide 150-175 linear feet
 - Paper Good Shelving 1 square foot per each student meal up to 250
Then 1 sf per every additional 10 meals served
- Special Requirements
 - Actual size and shelving requirements shall be determined based upon delivery schedule and supply needs
 - Consider bulk purchases to cut transportation cost and food prices
 - Consider USDA donated food
 - 36 inch minimum aisles
 - 42 inch door
 - Keyed separate from school master system
 - Provide window for visual surveillance (optional)
- Adjacencies
 - Accessible to receiving area without crossing the food preparation area
 - Adjacent to food preparation area
 - Visual surveillance from Receiving Office
- Square Feet Summary (minimum in parentheses)
 - 800 square feet (600-700 square feet)

Refrigerated Storage – Cooler and Freezer

Space Needs:

- Furniture
 - Can Racks 2
 - Dunnage Racks 6
 - Shelving 1 square foot per each student meal up to 250 divided equally between Cooler and Freezer
- Equipment
 - Walk-In Cooler 16'x20'
 - Walk-In Freezer 20'x24'
 - Cooler/Freezer Shelving 150-175 linear feet
1 square foot per each student meal up to 250 divided equally between Cooler and Freezer
Bottom shelf at 6" above floor with 4 shelves
Spaced at 18"
 - Cooler/Freezer Dunnage Racks 6
 - Mobile Angle Rack
- Special Requirements
 - Actual size and shelving requirements shall be determined based upon delivery schedule and supply needs
 - Consider bulk purchases to cut transportation cost and food prices
 - Consider USDA donated food
 - 42" aisles are desirable (36" minimum)
 - Freezer and Cooler floors should be at the same height as the adjacent floors
 - Ceiling Height at 8'-6"
- Adjacencies
 - Receiving
 - Preparation
- Square Feet Summary
 - 800 square feet
 - Generally more freezer space than cooler space should be provided (see above recommendations).

Pantry

Space Description:

- Storage for open ingredient containers that is easily accessible to bakery, food preparation and cooking area.

Space Needs:

- Furniture
 - Shelving
- Adjacencies
 - Adjacent to bakery area
 - Adjacent to food preparation area
- Square Feet Summary
 - 90 square feet

Prep/Cooking Area – Onsite

Space Needs:

- Equipment
 - Preparation
 - Bakers Table: 8 foot x 30 inch with portable bins
 - Disposer: 2 HP
 - Food Processor: 1 ea.
 - Hank Sink: 2 minimum
 - Heater/Proofer Cab.: 2-3 ea.
 - Meat Sink: 1
 - Mixer: 60 quart
 - Portable Carts: 6 ea.
 - Pot/Pan Shelving Units: 4-5 ea.
 - Preparation Tables
 - Automatic Slicer: 1 ea.
 - Vegetable Sink: 1 ea. (2 compartment)
 - Work Tables
 - Baking
 - Proofer: 1 ea.
 - Baker's Oven: 1 ea.
 - Exhaust Hood (if separate from Cooking)
 - Cooking
 - Combo Oven/Steamer: 1 ea.
 - Convection Oven: 4 ea.
 - Convection Steamer: 1 ea.
 - Cooks Sinks: 1 ea.
 - Cooling Racks: 3-4 ea.
 - Exhaust Hood: 1 ea. (make-up air and fire protection)
 - Range (2 burner): 1 ea.
 - Trunion Kettles: 2 ea. (10 gallons)
 - Tilt Kettle: 1 ea.
- Special Requirements
 - Should be planned to maximize productivity as well as provide a pleasant environment to work in.
 - Provide space for portable carts next to each workstation
 - Keep traffic flow out of the cooking area
- Adjacencies
 - Refrigerated Storage
 - Pot and Pan Washing
 - Holding and Serving
- Square Feet Summary (minimum in parentheses)
 - Cooking and Cold Preparation
 - 900 square feet
 - Bakery
 - 352 square feet
 - 1250 square feet (1000 square feet)

Can Wash/Cart Wash

Space Needs:

- Spray attachment with sanitizer
- Special Requirements
 - Hot and Cold Mixing Faucet
- Square Feet Summary (minimum in parentheses)
 - 100 square feet (80 square feet)

Holding Area

Space Description:

- Pass through to serving

Space Needs:

- Equipment
 - Heated Cabinet: 20 CF
 - Refrigerated Cabinet: 20 CF
- Special Requirements
 - Access to the serving area for replenishing food supply
 - Pass through counter for returning empty serving pans to the kitchen
- Adjacencies
 - Convenient to serving area for replenishing food supply
 - Visual Access to the serving lines
- Square Feet Summary (minimum in parentheses)
 - 150 square feet

Serving Area

Space Description:

- Food Serving Lines designed for efficient flow of students through the serving and cashier
Counters to the dining room

Space Needs:

- Equipment
 - Cashier Counters: 2
 - Ice Cream Cabinet: 1
 - Milk Coolers: 2
 - Serving Counters: 2
 - Specialty Counters: 2
- Special Requirements
 - Visual Access from the food preparation/holding areas to the serving lines
- Adjacencies
 - Preparation area and food holding area
- Square Feet Summary (minimum in parentheses)
 - 836 square feet (450 square feet with mobile cashier and condiment carts)

Dining

Space Description:

- Food Service Dining area with seating for approximately one-third of the student capacity
- Multi-use space

Associated Spaces:

- Table and Chair Storage

Space Needs:

- Furniture
 - Dining Tables (type of table should be determined based upon age of students as well as multi-use of the space)
- Special Requirements
 - The line dish/tray return line should not cross the food serving lines
 - Avoid placing garbage cans in the dining area, they are an eyesore and more eating utensils are lost
 - Appropriate acoustical treatments are necessary
 - Selection of finishes for this area is very important for maintenance and perception of the dining room
- Adjacencies
 - Food Service Serving
 - Dish/Tray Return
- Square Feet Summary (minimum in parentheses)
 - 25% student capacity (based upon 4 serving times):13 square foot per diner

Pot/Pan Washing

Space Needs:

- Equipment
 - 3 compartment sink
 - Sink sanitizer
 - Hand sink
- Special Requirements
 - Separate soiled and clean pot/pan areas
 - Finishes should be planned to provide a more pleasant environment
 - Floors finish and base should be Quarry or Ceramic Tile
 - Walls finish should be ceramic tile
 - Ceilings should be vinyl clad acoustical tile
 - Separate hot water heater for food service area
- Adjacencies
 - Adjacent to food prep and cooking area
- Square Feet Summary (minimum in parentheses)
 - 125 square feet (110 square feet)

Dish/Tray Washing

Space Needs:

- Equipment
 - Booster Heater: 1
 - Clean Dish Table: 4-16 lineal feet (30 inches wide)
 - Dishwasher: 270 (20 inch x 20 inch racks per hour)
 - Disposer: 3-5 horsepower
 - Hand Sink: 1
 - Hose Reel: 1
 - Portable Carts: 4
 - Pre-Rinse Sink: 1 (with spray)
 - Silver Sort Table: 1
 - Soiled Dish Table: 14-16 lineal feet (30 inches wide)
- Special Requirements
 - Consider traffic flow of diners when locating the tray return window
 - The space design should allow for continual return of soiled trays and dishes and clean trays and dishes
- Adjacencies
 - Adjacent to food prep and cooking area.
 - Next to dining room for dish/tray return
 - Locate exit of dish/tray washing in a clean area of the Food Service
- Square Feet Summary (minimum in parentheses)
 - 350 square feet (250 square feet)

Custodial and Chem./Soap Storage

Space Description:

- Store toxic chemicals and cleaning supplies separate from the food storage

Space Needs:

- Furniture
 - Non-corrosive Shelving and Dunnage Racks
- Equipment
 - Washer
 - Dryer
 - Mop Rack
- Special Requirements
 - Janitors Sink
 - Actual size and shelving requirements shall be determined based upon delivery schedule and supply needs
 - Aisles shall be 36" minimum
 - Secure room (door locks)
 - Chemical Resistant Finishes
 - Electrical Outlet
- Adjacencies
 - Close to Pot Washing and Dish Washing
- Square Feet Summary (minimum in parentheses)
 - 125 square feet (100 square feet)

Toilet with Locker Vestibule

Space Description:

- Toilet for food service staff use

Space Needs:

- Furniture
 - Bench
- Equipment
 - Lockers six (6) at 72 inch tall by 15 inch wide
- Special Requirements
 - Impervious finishes on walls and floor
 - Toilet cannot open directly into kitchen
- Adjacencies
 - Located adjacent to the kitchen and near serving areas.
- Square Feet Summary (minimum in parentheses)
 - 225 square feet

Reference:

Silberberg, Susan Crowl, "The New Design Handbook." National Food Service Management Institute, University of Mississippi. September 25, 2004
<<http://www.nfsmi.org/epubs/ex11-95/ex1195.pdf>>

Student Input Activities



General:

Students use and experience school facilities differently than the adults, so including their perspective is important to better accommodate their needs. Also, students spend one-third of their day in school, so it is important how they feel about their surroundings.

Students were asked to describe their classroom and the things they would want in their classroom if it could be just how they wanted it.

Questions asked included the following:

- What do you like about your classroom?
- What problems do you see with your classroom? How would you solve those problems?
- How do you think a classroom should look? Try to describe it.
- What are your ideas for making it a better place to learn?
- What is the most important aspect of your classroom?
- Where do you think you learn best? What is it like? (i.e. quiet, bright, etc.)

Next, students were asked to think about their school and describe their school and the things they would want in their school if it could be just how they wanted it.

- What do you like about your school?
- What problems do you see with your school? How would you solve those problems?
- How do you think a school should look? Try to describe it.
- What are your ideas for making it a better place to learn?
- What is the most important aspect of your school?
- Where do you think you learn best? What is it like? (i.e. quiet, bright, etc.)

Student Ideas - Grade 5

Teacher: Holly Kopplin

Students: John Ahrens, Tanner Bertolotto, Brandy Foust, Dylan Gingras, Heather Graff, Tyler Jacobson, Clay Kopplin, Shawn Kraft, Delayna Labelle, Donovan Lindsley, Steven Mulvehill, Chase Porterfield, Connor Reid, J'Quann Richardson, Alex Spencer, Haley Tyan, Blake Williams, Colton Young, Alexis Weber, Tanner Bothwell, Jesse Byram, Cody Colhoff, Jordyn Ferguson, Shane Foust, Austin Fritz, Tyler Fullmer, Nick Houchin, Jade Irving, Kyle Krol, Jacob Morgan, Zach Murray, Brooke Padilla, Adam Pilgrim, Ashley Puckett, Desirae Robinson, Zach Vekovius, Cole White, Cole Wade, Austin Barber, Tony, Bedard, Cody Cassen, Tanner Fenenga, Ian Gunderson, Stephanie Jacobs, Kaya Kuriga, Tyler LeFrancios, Paula Licklider, Tyler Makor, Mikayla Nepper, Trent Opstedahl, Dyllan Rathert, Chad Scully, Jenna Seiroe, Danielle Shelly, Lavana Williamson, John Lee

Classroom Changes:

Carpeted floors so it is quieter, more windows, better heating and add air conditioning, skylights or solar powered lights, rooms need to be at least the same size if not larger, more computers along the walls, colorful walls, better water fountains, enough shelves for all the books, enough storage for all of the teacher's things, add a science lab with sinks and big tables and also add an art room.

Hallway Changes:

Hallways need to be much wider so people don't have to shove to get through. There should be individual lockers and more lighting, benches for kids to sit on, drinking fountains (with purified water) in each hallway.

Bathroom Changes:

Automatically flushing toilets, motion-controlled water faucets, and automatic hand dryers to eliminate paper towel waste (like Wal-Mart) also, needs to be much bigger with more stalls and better mirrors and dispensers with supplies for girls.

Library Changes:

Needs to be much bigger, away from noisy things like the music room. Many for shelves and many more books. The library needs good lighting and more computers for research. There should be comfortable sitting areas to read and spread out.

Cafeteria Changes:

This should be its own room and not shared with PE. There should be round tables so you can talk. There should be music and/or a TV in the cafeteria.

Gymnasium Changes:

At one end there should be a stage for plays. There should be more basketball hoops and better line markings on the floor. There should be retractable bleachers and a new scoreboard. There should be a climbing wall. There should be a swimming pool that can be used for PE classes in the day, and community members at night. There should also be a locker room with showers.

Computer Lab Changes:

Add more windows and make it much bigger so that you don't trip on the cords. Also, it needs more windows because it gets too hot in there!

Student Ideas - Grade 5 (continued)

Playground Changes:

There should be a grassy area. There should be some tables to sit at to eat or to visit. There needs to be a bigger asphalt area with more basketball hoops and a football field with goal posts that can also be used for soccer and it should have a running track around it.

General Comments:

The building should be made of bricks because it looks nicer. The principal's office and the nurse's office should be much bigger. There should be a fountain in the front of the building near the front door. The school should have more than one story, with different grades on each level.

There should be a security system with cameras in the halls and bright lighting on the outside.

Student Ideas - Grade 6

Teacher: Connie Berg

Students: E'Unique Austin, Elizabeth Bales, Aisling Ball, Logan Behnke, Colton Chubb, Kelsey Dunn, Kayla Frey, Marshal Haag, Shauntel Jandreau, Zachary Miller, Chelsea Neihoff, Joseph Olson, Ryan Olson, Katie Plymate, Brianna Quinn, Rachel Seidel, Tierney Tyan, Ashley Weir, and Clinton Wilson, Taylor Anderson, Mariha Bloom, Nicholas Chalkley, Joshua Cihak, Joshua Dellinger, Kelsey Emme, Maggie Fulton, Derek Haug, Patrick Lechtenberg, Jordan Lewellen, Cathering Licklider, Brandy McCloud, Alexander Nold, Brianna Parks, Jared Rundell, Lindsey Sanftner, Sommer Schaefer, Taylor Schaeffer, Lee Stadem, Jared Thaler, Tiffany Thomas, Tessa Tierney, Kyle Tullis

Classroom likes:

- Large rooms
- Availability of technology in classrooms
- Storage/closet space
- Telephone, intercom system
- Sinks and water fountains in the room
- Lots of lights

Classroom problems/solution:

- Instead of closets, put in lockers in the halls
- Carpet the floors
- Make rooms more colorful – paint, flooring
- Computer hook-ups in better location

They think a classroom should be bright and colorful. There would be carpet on the floors. There would be bookshelves and cabinets. The atmosphere would be for a quiet working area that was brightly lit.

School likes:

- Gym-library in separate areas of the building
- Gym in a central location
- Commons area at the entrance of the building
- Grades are kept separate by hallways or areas of the building
- Large playground

School problems/solutions:

- Music room and library are too close—arrange the classes with more disturbances away from the classrooms and study areas.
- Entrance and office areas should be centrally located
- Wider hallways
- Separate the gym and lunchroom
- Bigger cafeteria
- Bigger gym with locker rooms, bleachers and wooden floor
- Bigger library/media area

They see our school as a large brick building with trees, grass and flowers at the entrance. It would be built of material that would lessen the wind noise so it doesn't sound like the roof is blowing off. There would be more windows. They see the grades in separate halls or areas. There would be a large parking lot. There would be separate parking for parents and for staff.

Space Needs Analysis – Middle School Sturgis



Middle School - Sturgis

Grades 5-8

assuming 5 section

Total Capacity = 560

Department Name

Square Footage Needs

Space Name

per Space Needs Forms

TDG Suggested

Max sf Min sf

Instructional Spaces

General Classroom	30 sf per student min.								
Classroom	900	15	@	900 sf	=	13500	sf		
Science Classroom	50 sf per student min.								
Classroom	1200	784	4	@	1400 sf	=	5600	sf	
Storage Room	225	144	1	@	100 sf	=	100	sf	
Art Classroom	50 sf per student min.								
Classroom			1	@	1400 sf	=	1400	sf	
Kiln Room	100		1	@	80 sf	=	80	sf	
Storage Room (10%)	144		1	@	120 sf	=	120	sf	
Computer Lab/Classroom	30 sf per student min.								
Classroom	1350	900	1	@	900 sf	=	900	sf	
Instructional Technology Lab	50 sf per student min.								
Classroom	3000	2500	1	@	1400 sf	=	1400	sf	
Life Skills Classroom	50 sf per student min.								
Classroom	3000	2500	1	@	1400 sf	=	1400	sf	
Student Toilet (optional if adjacent)			0	@	54 sf	=	0		

Supplementary Instructional Spaces

Teen Learning Center	2 sf x capacity min.								
Classroom	2500	2025	1	@	1400 sf	=	1400	sf	
Resource Classroom									
Classroom			1	@	1400 sf	=	1400	sf	
Library/Media Center	6 sf x capacity								
Reading Room/Circulation/Stacks	9600	4800	1	@	3024 sf	=	3024	sf	
Storage Room (10%)	4800	1200	1	@	300 sf	=	300	sf	
Office and Work Room	196	100	1	@	200 sf	=	200	sf	
Listening Room	168	120	1	@	120 sf	=	120	sf	
Choir Rehearsal Room	20 sf per singer min. (choir enrollment - 50)								
Classroom	1800		1	@	1200 sf	=	1200	sf	
Office	120		1	@	144 sf	=	144	sf	
Band Rehearsal Room	35 sf per person (band enrollment #)								
Practice Rooms (optional)	80		2	@	80 sf	=	160	sf	
Instrument Storage Room	400		1	@	200 sf	=	200	sf	
Band Instructor Office	144		1	@	144 sf	=	144	sf	
Band Rehearsal Room	1600		1	@	1600 sf	=	1600	sf	

Space Needs Analysis – Middle School Sturgis (continued)

Support Spaces

Commons Area (5 sf x capacity)			1 @	2800 sf =	2800 sf
Administration	10000	5000			
Reception			1 @	450 sf =	450 sf
Secretarial Office	100		1 @	100 sf =	100 sf
Conference Room	500		1 @	350 sf =	350 sf
Principal's Office			1 @	180 sf =	180 sf
Vice Principal's Office			1 @	150 sf =	150 sf
Nurse's Office	324	144	1 @	324 sf =	324 sf
Teachers' Lounge			1 @	500 sf =	500 sf
Staff Workroom/Teacher Planning			1 @	600 sf =	600 sf
Staff Toilets			2 @	54 sf =	108 sf
Dare (Liaison) Officer Office			1 @	120 sf =	120 sf
In-School Suspension	800		1 @	450 sf =	450 sf
Storage			1 @	150 sf =	150 sf
Counseling Services					
Office	168	120	2 @	150 sf =	300 sf
Meeting Room	280		1 @	200 sf =	200 sf
Physical Education					
Gymnasium (50 x 84 foot court)	12100		1 @	6000 sf =	6000 sf
Bleachers (seating 600+)			1 @	3000 sf =	3000 sf
Coach/PE Office	240		2 @	150 sf =	300 sf
Coach/PE Office Toilet			1 @	54 sf =	54 sf
Locker Rooms	710		2 @	700 sf =	1400 sf
Equipment Storage	336		1 @	300 sf =	300 sf
Wrestling Mat Storage	480		1 @	450 sf =	450 sf
Chair Storage	336		1 @	150 sf =	150 sf
Custodial Storage	144		1 @	0 sf =	0 sf
Wrestling Room	3025		1 @	3000 sf =	3000 sf
Weight Room			0 @	1000 sf =	0 sf
Mezzanine Multi-Purpose Room	1400		1 @	1400 sf =	1400 sf
Climbing Wall (optional)			0 @	300 sf =	0 sf
Running Track (optional)			0 @	1250 sf =	0 sf
Swimming Pool (optional)			0 @	5550 sf =	0 sf
Ticket Booth and Concessions			1 @	150 sf =	150 sf
Sound Room	64		1 @	64 sf =	64 sf
Theater (500 seat)					
Seating (7 sf x capacity)			0 @	3500 sf =	0 sf
Stage			0 @	1500 sf =	0 sf
Backstage			0 @	1000 sf =	0 sf

Space Needs Analysis – Middle School Sturgis (continued)

Food Service - Preparation (Satellite Kitchen for 5-8)

Managers Office	1	@	100	sf	=	100	sf
Receiving	1	@	80	sf	=	80	sf
Dry Food and Paper Good Storage	1	@	200	sf	=	200	sf
Refrigerated Storage	1	@	160	sf	=	160	sf
Prep/Cooking Area	1	@	400	sf	=	400	sf
Holding/Pass-through Area	1	@	100	sf	=	100	sf
Serving Area	1	@	200	sf	=	200	sf
Dish/Tray Washing	1	@	120	sf	=	120	sf
Custodial Storage	1	@	100	sf	=	100	sf
Toilet with Locker Vestibule	1	@	110	sf	=	110	sf

Support Space - Food Service

Dining (Multi-purpose) Room (25% capacity @ 13 sf) (shared with commons, see above)	0	@	1820	sf	=	0	sf
Table and Chair Storage	1	@	180	sf	=	180	sf
Special Program (QUEST) Storage	2	@	50	sf	=	100	sf

Support Space - Facility Control

Custodial/Maintenance Storage & Receiving Area

Overall Space Requirement	720	400	1	@	720	sf	=	720	sf
Receiving Area (in overall #)			0	@	120	sf	=	0	sf
Custodial Office (in overall #)			0	@	60	sf	=	0	sf
Break Area (in overall #)			0	@	120	sf	=	0	sf
Paper Goods Storage (in overall #)			0	@	36	sf	=	0	sf
Cleaning Supplies Storage (in overall #)			0	@	36	sf	=	0	sf
Equipment Storage (in overall #)			0	@	160	sf	=	0	sf
Work Bench (in overall #)			0	@	40	sf	=	0	sf
Prep Area (in overall #)			0	@	100	sf	=	0	sf
Staff Restroom (Optional if adjacent)			1	@	54	sf	=	54	sf

Technology Repair and Storage Area

Tech Room	480	300	1	@	480	sf	=	480	sf
-----------	-----	-----	---	---	-----	----	---	-----	----

Playground Equipment Closet

			1	@	60	sf	=	60	sf
--	--	--	---	---	----	----	---	----	----

Student Toilet Rooms

(actual space needs based upon occ. load)									
Toilets			6	@	250	sf	=	1500	sf
Custodial Closets			3	@	40	sf	=	120	sf
General Storage (1 sf x capacity)			1	@	350	sf	=	350	sf

Sub-total 60,546 sf

Grossing Factor (Halls, Walls, M & E) 30%

18,164 sf

TOTAL 78,710 sf

Space Needs Analysis – MS Stagebarn



Middle School - Stagebarn

Grades 6-8
 assuming 4 section
 Total Capacity
 = 336

Department Name
Space Name

Square Footage Needs
 per Space Needs Forms **TDG Suggested**
 Max sf Min sf

Instructional Spaces

General Classroom	30 sf per student min.						
Classroom	900	12	@	900 sf	=	10800 sf	
Science Classroom	50 sf per student min.						
Classroom	1200	784	3	@	1400 sf	=	4200 sf
Storage Room	225	144	1	@	100 sf	=	100 sf
Art Classroom	50 sf per student min.						
Classroom			1	@	1400 sf	=	1400 sf
Kiln Room	100		1	@	80 sf	=	80 sf
Storage Room (10%)	144		1	@	120 sf	=	120 sf
Computer Lab/Classroom	30 sf per student min.						
Classroom	1350	900	1	@	900 sf	=	900 sf
Instructional Technology Lab	50 sf per student min.						
Classroom	3000	2500	1	@	1400 sf	=	1400 sf
Life Skills Classroom	50 sf per student min.						
Classroom	3000	2500	1	@	1400 sf	=	1400 sf
Student Toilet (optional if adjacent)			0	@	54 sf	=	0 sf

Supplementary Instructional Spaces

Teen Learning Center	2 sf x capacity min.						
Classroom	2500	2025	1	@	1400 sf	=	1400 sf
Resource Classroom							
Classroom			1	@	1400 sf	=	1400 sf
Library/Media Center	6 sf x capacity						
Reading Room/Circulation/Stacks	9600	4800	1	@	3024 sf	=	3024 sf
Storage Room (10%)	4800	1200	1	@	300 sf	=	300 sf
Office and Work Room	196	100	1	@	200 sf	=	200 sf
Listening Room	168	120	1	@	120 sf	=	120 sf
Choir Rehearsal Room	20 sf per singer min. (choir enrollment - 50)						
Classroom	1800		1	@	1200 sf	=	1200 sf
Office	120		1	@	144 sf	=	144 sf
Band Rehearsal Room	35 sf per person (band enrollment #)						
Practice Rooms (optional)	80		2	@	80 sf	=	160 sf
Instrument Storage Room	400		1	@	200 sf	=	200 sf
Band Instructor Office	144		1	@	144 sf	=	144 sf
Band Rehearsal Room	1600		1	@	1600 sf	=	1600 sf

Space Needs Analysis – MS Stagebarn (continued)

Support Spaces

Commons Area

Administration

			1 @	1680 sf =	1680 sf
Administration	10000	5000			
Reception			1 @	400 sf =	400 sf
Secretarial Office	100		1 @	100 sf =	100 sf
Conference Room	500		1 @	350 sf =	350 sf
Principal's Office			1 @	180 sf =	180 sf
Vice Principal's Office			1 @	150 sf =	150 sf
Nurse's Office	324	144	1 @	324 sf =	324 sf
Teachers' Lounge			1 @	400 sf =	400 sf
Staff Workroom/Teacher Planning			1 @	400 sf =	400 sf
Staff Toilets			2 @	54 sf =	108 sf
Dare (Liason) Officer Office			1 @	120 sf =	120 sf
In-School Suspension	800		1 @	450 sf =	450 sf
Storage			1 @	100 sf =	100 sf

Counseling Services

Office	168	120	2 @	150 sf =	300 sf
Meeting Room	280		1 @	200 sf =	200 sf

Physical Education

Gymnasium (50 x 84 foot court)	12100		1 @	6000 sf =	6000 sf
Bleachers (seating 600+)			1 @	3000 sf =	3000 sf
Coach/PE Office	240		2 @	150 sf =	300 sf
Coach/PE Office Toilet			1 @	54 sf =	54 sf
Locker Rooms	710		2 @	700 sf =	1400 sf
Equipment Storage	336		1 @	300 sf =	300 sf
Wrestling Mat Storage	480		1 @	450 sf =	450 sf
Chair Storage	336		1 @	150 sf =	150 sf
Custodial Storage	144		1 @	0 sf =	0 sf
Wrestling Room	3025		1 @	3000 sf =	3000 sf
Weight Room (optional)			0 @	1000 sf =	0 sf
Mezzanine Multi-Purpose Room (Optional)	1400		0 @	1400 sf =	0 sf
Climbing Wall (optional)			0 @	300 sf =	0 sf
Running Track (optional)			0 @	1250 sf =	0 sf
Swimming Pool (optional)			0 @	5550 sf =	0 sf
Ticket Booth and Concessions			1 @	150 sf =	150 sf
Sound Room	64		1 @	64 sf =	64 sf

Theater (500 seat)

Seating (7 sf x capacity)			0 @	3500 sf =	0 sf
Stage			0 @	1500 sf =	0 sf
Backstage			0 @	1000 sf =	0 sf

Space Needs Analysis – MS Stagebarn (continued)

Food Service - Preparation (Satellite Kitchen for K-8)

Managers Office	160	150	1	@	150	sf	=	150	sf
Receiving	125	100	1	@	80	sf	=	80	sf
Dry Food and Paper Good Storage	800	600	1	@	400	sf	=	400	sf
Refrigerated Storage	750	600	1	@	200	sf	=	200	sf
Prep/Cooking Area - Onsite	1250	1000	1	@	500	sf	=	500	sf
Can Wash	150	125	0	@	0	sf	=	0	sf
Holding Area	800	400	1	@	150	sf	=	150	sf
Serving Area	1200	800	1	@	250	sf	=	250	sf
Pot/Pan Washing	125	110	0	@	0	sf	=	0	sf
Dish/Tray Washing	350	250	1	@	120	sf	=	120	sf
Custodial Storage	125	100	1	@	100	sf	=	100	sf
Toilet with Locker Vestibule	225		1	@	110	sf	=	110	sf

Support Space - Food Service

Dining (Multi-purpose) Room (25% capacity @ 13 sf)			1	@	3120	sf	=	3120	sf
Table and Chair Storage			1	@	300	sf	=	300	sf
Special Program (QUEST) Storage			3	@	50	sf	=	150	sf

Support Space - Facility Control

Custodial/Maintenance Storage & Receiving Area

Overall Space Requirement	720	400	1	@	720	sf	=	720	sf
Receiving Area (in overall #)			0	@	120	sf	=	0	
Custodial Office (in overall #)			0	@	60	sf	=	0	
Break Area (in overall #)			0	@	120	sf	=	0	
Paper Goods Storage (in overall #)			0	@	36	sf	=	0	
Cleaning Supplies Storage (in overall #)			0	@	36	sf	=	0	
Equipment Storage (in overall #)			0	@	160	sf	=	0	
Work Bench (in overall #)			0	@	40	sf	=	0	
Prep Area (in overall #)			0	@	100	sf	=	0	
Staff Restroom (Optional if adjacent)			1	@	54	sf	=	54	sf

Technology Repair and Storage Area

Tech Room	480	300	1	@	480	sf	=	480	sf
Playground Equipment Closet			1	@	60	sf	=	60	sf

Student Toilet Rooms

(actual space needs based upon occ. load)

Toilets			6	@	250	sf	=	1500	sf
Custodial Closets			3	@	40	sf	=	120	sf
General Storage (1 sf x capacity)			1	@	336	sf	=	336	sf

Sub-total	57,366	sf
Grossing Factor (Halls, Walls, M & E)	30%	

17,210 sf

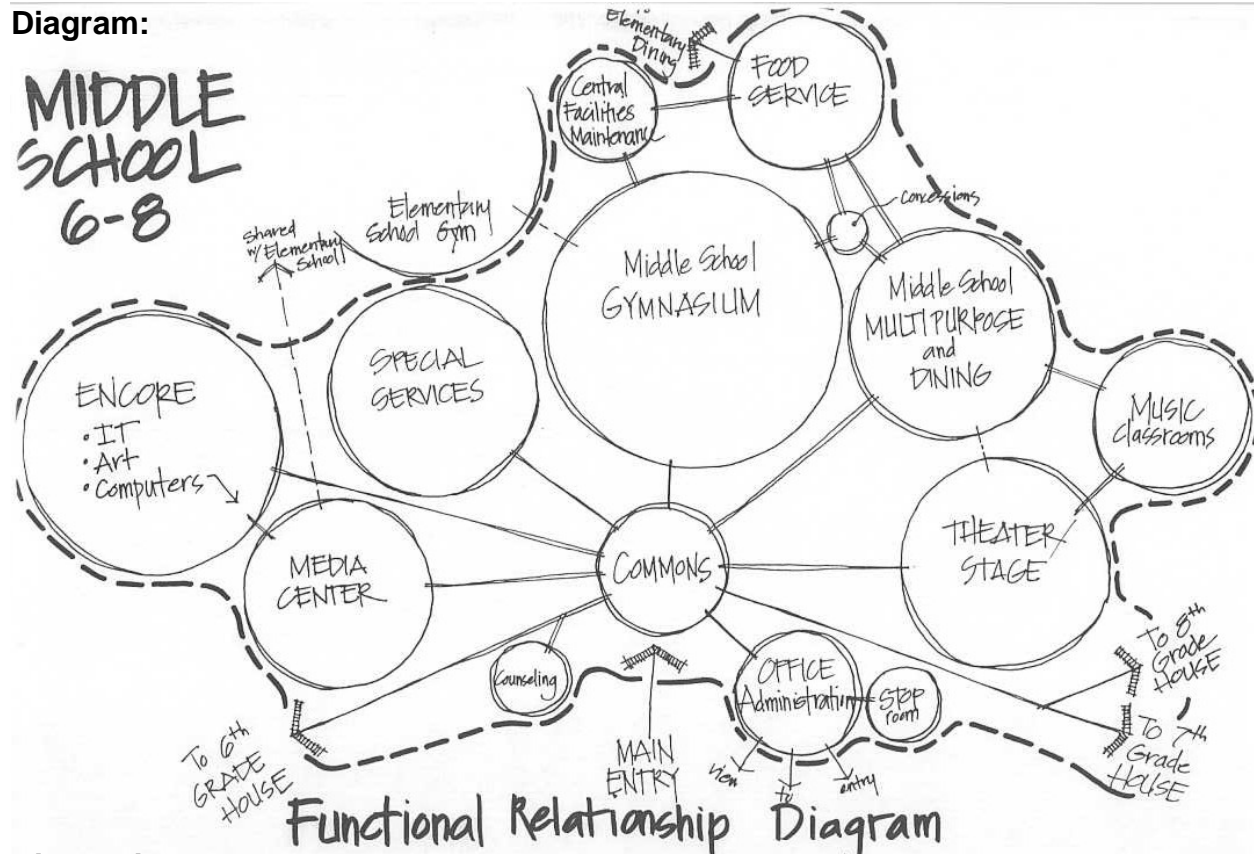
TOTAL	74,576	sf
--------------	---------------	-----------

Functional Relationship Guidelines



Overall Facility Relationships

Diagram:



Discussion:

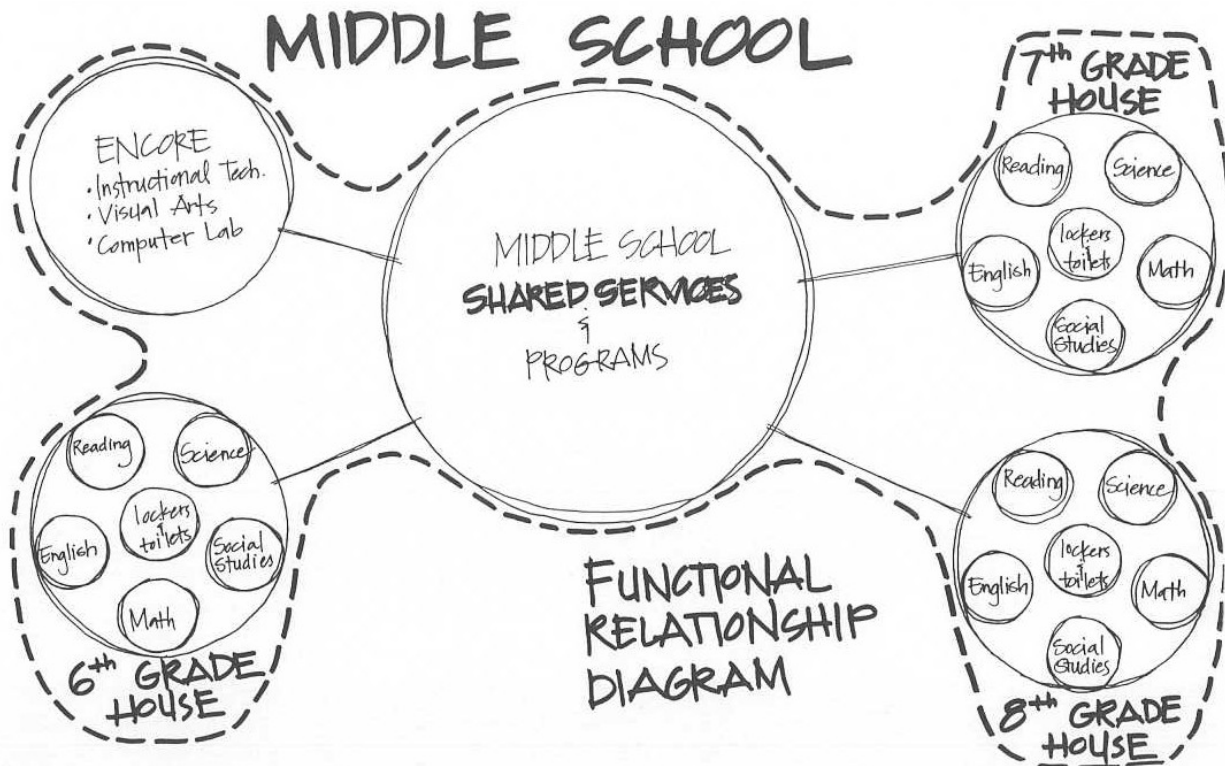
- The main entry should come into the Commons Area. From the Commons area there should be direct access to the Administration Offices, the Gymnasium, the Multipurpose Room, the Theater and the Media Center. Each of these areas has the potential to be shared community use spaces.
- The Administrative Offices should be located to maintain natural surveillance of the exterior entry walk and entry lobby.
- The Computer Classrooms in the Encore Area should be accessible from the Media Center.
- The Concessions Area should be adjacent to the Food Preparation Kitchen and the Gymnasium Space.
- The Music Classrooms should have direct access to the Theater/Stage Area. The Multipurpose Room and/or the Commons Area would also serve as the lobby space for the Theater.
- The Counseling Offices should be easily accessible to the students in the Grade Level Houses. The offices should also be accessible for parents, yet out of the main public areas.
- The Custodial and Facilities Maintenance Areas should be directly accessible from both the Loading Area and the Food Service Kitchen. Good access to the Gymnasium is beneficial as well.

Functional Relationship Guidelines



Instructional Areas

Diagram:



Discussion:

- The main arrangement of the Grade Level Classrooms should be in a house design. Each house would have a Reading Classroom, an English Classroom, a Math Classroom, a Science Classroom, and a Social Studies Classroom. Also, each House would have lockers and toilets to accommodate all the students from one grade level.
- The Sixth Grade House would be better located separate from the other two grade level houses. The Seventh and the Eighth Grade Houses would be more appropriately located in proximity to each other.
- The computer needs for the grade level houses could be accommodated utilizing mobile, wireless, labs. Space and appropriate connections and security for these labs would need to be planned in each of the grade level houses.
- The Encore Classrooms would be utilized by all students and should be accessible from each grade level house.
- Special Services provides programs for all grade levels, and the possibility of locating spaces in each grade level house was discussed.

Appendix Information



Appendix Documents are available for review at the MSD Central Administration Office.

Appendix A

- Meeting Schedule

- Meeting Notes

- Informational Briefs

- References

- South Dakota County Population Projections – from USD State Data Center

- 2003 South Dakota Community Abstracts – from USD State Data Center

- State of South Dakota Procedures for Design-Build Procurement

Appendix B

- General Facility Guidelines Outlines

- Educational Environment Benefits and Design Principal Sheets

- Space Needs Forms

- Cut sheets