

Design **Contents**

Design Phase Overview

An excerpt from the Ohio School Design Manual on the design phase

OSDM organization

An overview of the Ohio School Design Manual

Phase submission and typical submission errors

Requirements for the submission of schematic design documents

Bracketing

Samples of how “bracketing” works in the planning and design of facilities

Special Needs Design

Ohio School Design Manual allocations for special needs students

21st Century Design

A brief summary of options to consider when designing your facilities

OSDM Tolerance Policy

Policy illustrating areas of flexibility in the design manual

Class Size

The method used for determining the number of “teaching stations” within a building

Design Variance

How to request a variance and a flowchart on the decision-making process

Standards for Specifications

Policy on the development of specifications used in bids

Building Energy Use and the OSFC Green Buildings Initiative

Information on the effect of a new building on your operating budget and LEED for Schools

Technology Phase Submission and Budget

Information on the technology portions of the project budget

Phase Submission Form

Cover form for design submissions

OVERVIEW OF THE PLANNING, DESIGN, AND CONSTRUCTION PROCESS

CHAPTER 1: INTRODUCTION

C. DETAILS OF THE PLANNING, DESIGN, AND CONSTRUCTION PROCESS, continued

DESIGN

Develop Program of Requirements (POR)

The Development of the Program of Requirements (identification of space needs) is accomplished by the Design Professional working directly with the District Administration, OSFC staff, students and interested community members. In the beginning of this process, the grades to be housed, the number of students per grade and the square footage per student are entered into the Design Manual's active Excel spreadsheets yielding the Total Gross Building Square Footage. Using the Bracketing Chapter of the Design Manual, prototypical space allocations for specific grade groupings are reviewed and a district specific written building space plan is developed. Various schemes are developed and tested against the allowable square footage until the District's Educational Delivery Plan is manifested in a space plan. The POR is a written listing of the spaces along with their respective square footages. Two-dimensional graphic building plans should not be developed until the written Program of Requirements has been completed and approved by the Project Team.

If the district elects to proceed with components not listed as acceptable in the Design Manual, the district may proceed with district funds in addition to the prescribed district millage requirement or apply for a variance. Deviations should be discussed with the OSFC staff during the early planning phases of the project. Upon recommendation of the Variance Committee, the Executive Director may approve the variance, where there is agreement that the variation will result in good value for the district while maintaining the budget.

K-12 BRACKETING EXAMPLE

The Bracketing spreadsheet is an interactive tool that aids in the development of the Program of Requirements.

The spreadsheet is organized by Program Area, i.e. Core Academic, Special Needs, etc. Spaces in each of the program areas will be included in every school.

The top table shows examples of programs for various school size levels.

The table labeled WORKSHEET is linked to the detailed pages for each program area.

SUMMARY OF SPACES

CHAPTER 2: BRACKETING Sample School District, SAMPLE MIDDLE SCHOOL SUMMARY OF SPACES

The following is an example of three sizes of middle schools. The examples are intended to assist in the development of the summary of spaces.

EXAMPLE	450 Students		600 Students		750 Students	
	SF	SF	SF	SF	SF	SF
Grade Configuration: 6-8						
Number of Students	450	600	450	600	450	750
Square Feet Per Student	151.00	142.88	142.88	141.00	141.00	141.00
Total Gross Square Feet Funded	67,950	85,725	67,950	85,725	67,950	105,750
PROGRAM AREA						
M-AC Academic Core Spaces	18,450	24,450	18,450	24,450	18,450	29,850
M-SE Special Education Spaces	1,750	2,350	1,750	2,350	1,750	3,700
M-AD Administrative Spaces	2,237	2,705	2,237	2,705	2,237	3,415
M-MC Media Center Spaces	3,795	4,473	3,795	4,473	3,795	5,745
M-VA Visual Arts Spaces	1,400	1,450	1,400	1,450	1,400	2,700
M-MU Music Spaces	1,600	2,900	1,600	3,000	1,600	3,000
M-TE Technology Education Spaces	1,450	1,450	1,450	2,750	1,450	2,750
M-FCS Family and Consumer Science Spaces	0	1,200	0	1,200	0	1,200
M-PE Physical Education Spaces	9,300	10,325	9,300	11,100	9,300	11,100
M-SD Student Dining Spaces	4,150	4,300	4,150	5,732	4,150	5,732
M-FS Food Service Spaces	1,825	2,350	1,825	2,875	1,825	2,875
M-CU Custodial Spaces	300	400	300	600	300	600
M-BS Building Services	14,960	18,876	14,960	23,304	14,960	23,304
Facility Total	67,216	77,229	67,216	95,270	67,216	95,270
Construction Factor	0.11	0.11	0.11	0.11	0.11	0.11
Gross Square Feet Developed	67,950	85,725	67,950	105,750	67,950	105,750

WORKSHEET

EXAMPLE	450 Students	600 Students	750 Students
Space	Qty	SF	Area
M-AC-1 Middle School Classroom	15	900	13,500
M-AC-2 Project Laboratory	3	1,100	3,300
M-AC-3 Teacher Prep Area/Workroom	3	300	900
M-AC-4 Individual Restroom	3	50	150
M-AC-5 Instructional Material Storage	3	200	600
M-AC-6 Small Group Room	0	150	0
Academic Core Total		18,450	24,450

Space	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-AC-1 Middle School Classroom	0	0	0	0	0	0	0	0	0
M-AC-2 Project Laboratory	0	1,100	0	0	0	0	0	0	0
M-AC-3 Teacher Prep Area/Workroom	0	300	0	0	0	0	0	0	0
M-AC-4 Individual Restrooms	0	50	0	0	0	0	0	0	0
M-AC-5 Instructional Material Storage	0	200	0	0	0	0	0	0	0
M-AC-6 Small Group Room	0	150	0	0	0	0	0	0	0
Academic Core Total		0	0		0	0		0	0

PROGRAM AREA

Sample School District, SAMPLE MIDDLE SCHOOL
ACADEMIC CORE SPACES
M-AC

The following is an example of three sizes of middle schools. The examples are intended to assist in the development of the summary of spaces.

EXAMPLE	450 Students			600 Students			750 Students		
	Space	Qty	SF	Area	Qty	SF	Area	Qty	SF
M-AC-1 Middle School Classroom	15	900	13,500	15	900	13,500	24	900	21,600
M-AC-2 Project Laboratory	3	1,100	3,300	6	1,100	6,600	6	1,100	6,600
M-AC-3 Teacher Prep Area/Workroom	3	300	900	3	300	900	3	300	900
M-AC-4 Individual Restroom	3	50	150	3	50	150	3	50	150
M-AC-5 Instructional Material Storage	3	200	600	3	200	600	3	200	600
M-AC-6 Small Group Room	0	150	0	0	150	0	0	150	0
Academic Core Total			18,450			24,450			29,850

WORKSHEET	New SF			Existing SF			TOTAL SF			
	Space	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-AC-1 Middle School Classroom	0	0	0	0	0	0	0	0	0	0
M-AC-2 Project Laboratory	0	1,100	0	0	0	0	0	0	0	0
M-AC-3 Teacher Prep Area/Workroom	0	300	0	0	0	0	0	0	0	0
M-AC-4 Individual Restrooms	0	50	0	0	0	0	0	0	0	0
M-AC-5 Instructional Material Storage	0	200	0	0	0	0	0	0	0	0
M-AC-6 Small Group Room	0	150	0	0	0	0	0	0	0	0
Academic Core Total		0	0		0	0		0	0	0

When the number of rooms is entered into the spreadsheet, the total square footage for that program area is automatically calculated. The total is also automatically linked to the program area summary of spaces.

OVERVIEW OF THE PLANNING, DESIGN, AND CONSTRUCTION PROCESS

CHAPTER 1: INTRODUCTION

C. DETAILS OF THE PLANNING, DESIGN, AND CONSTRUCTION PROCESS, continued

DESIGN

Develop Program of Requirements (POR), continued

CAREER-TECHNICAL BRACKETING (example)

The Bracketing spreadsheet is an interactive tool that aids in the development of the Program of Requirements.

The spreadsheet is organized by Program Area, i.e. Core Academic, Special Needs, etc. Spaces in each of the program areas will be included in every school.

The top table shows examples of programs for various school size levels.

Sample School District, Sample School Building
CAREER-TECHNICAL SCHOOL
SUMMARY OF SPACES EXAMPLE

CHAPTER 2: BRACKETING

The following is an example of four sizes of Career-Technical Schools. The examples are intended to assist in the development of the summary of spaces.

	400	600	800	1,000
Number of Students	400	600	800	1,000
Core SF/student Funded	113	101	97	95
Total Core Space Funded	45,200	60,588	77,616	95,000
Program SF/student Funded	169	162	146	136
Total Program Space Funded	67,600	97,200	116,800	136,000
Total Gross SF Funded	112,800	157,788	194,416	231,000

Core Spaces				
CT-AC Academic Core	14,400	20,500	26,850	33,330
CT-SE Spec. Ed./Student Svs.	4,000	4,000	5,170	5,290
CT-AD Administration	3,020	3,900	4,900	6,160
CT-MC Media Center	2,820	4,120	4,890	6,040
CT-SD Student Dining	4,400	5,650	7,367	9,344
CT-FS Food Service	1,650	2,350	3,050	3,750
CT-CU Custodial	300	400	500	500
CT-GS General Services	3,091	4,228	5,110	6,376
Net Core Space	33,681	45,148	57,837	70,790
Mechanical/Electrical Space (6.9%)	2,324	3,115	3,991	4,885
Corridors (14%)	4,715	6,321	8,097	9,911
Total Core Space	40,720	54,584	69,925	85,586
Construction Factor (11%)	4,479	6,004	7,692	9,414
Gross Core Space Developed	45,200	60,588	77,616	95,000
Gross Core Space Co-Funded	45,200	60,588	77,616	95,000

Program Spaces				
CT-P1 Program Type 1	4,860	6,380	7,900	12,460
CT-P2 Program Type 2	4,620	2,310	4,620	4,620
CT-P3 Program Type 3	3,700	7,990	9,070	11,360
CT-P4 Program Type 4	8,355	14,465	14,465	19,335
CT-P5 Program Type 5	10,126	18,752	19,252	15,389
CT-P6 Program Type 6	18,889	23,249	32,475	28,912
CT-P7 Program Type 7	0	0	0	10,000
Net Program Space	50,550	73,146	87,782	102,076
Mechanical/Electrical Space (5%)	2,528	3,657	4,389	5,104
Corridors (14%)	7,077	10,240	12,289	14,291
Total Program Space	60,155	87,044	104,461	121,470
Construction Factor (11%)	6,617	9,575	11,491	13,362
Gross Program Space Developed	66,771	96,619	115,951	134,832
Gross Program Space Co-Funded	67,600	97,200	116,800	136,000

Total Gross SF Developed	111,971	157,207	193,567	229,832
Total Gross SF Co-Funded	112,800	157,788	194,416	231,000
Difference	829	581	849	1,168

CAREER-TECHNICAL PROGRAM SPREADSHEET

School District Name, School Building Name
LABORATORY AND SUPPORT SPACES
CT-P2

CHAPTER 2: BRACKETING

The following lists all of the programs within Type 2 with the laboratory space requirements as well as related space requirements. In this example of a 600 student Career-Technical School, it is indicated that one program is being offered.

EXAMPLE				
Laboratory Space	Quantity	SF	Area	
Biotechnology	07.4850	1500	0	
Chemical Laboratory Assisting	17.2000	1500	0	
Community Health Aide	07.0906	0	1500	0
Dental Laboratory Technology	07.0103	1500	0	
Emergency Medical Technician	07.0907	1500	0	
Fitness Aide/Athletics Trainer Assisting	07.0410	1500	0	
Health Support Pathway	07.4840	1500	0	
Health Unit Coordinator	07.0913	1500	0	
Home Health Aide	07.0307	1500	0	
Industrial Laboratory Assisting	17.2004	1500	0	
Medical Laboratory Technology	07.0203	1500	1500	
Pharmacy Assisting	07.0912	1500	0	
Practical Vocational Nurse	07.0302	1500	0	
Health Informatics Pathway	07.4890	1500	0	
Therapeutic Pathway	07.4830	1500	0	
Total Lab Spaces	7			
Related Space				
CT-P2-2 Office	1	120	120	
CT-P2-3 Storage	1	200	200	
CT-P2-4 Changing Room	1	490	490	
Total Program Type 2				2,310

When the number of rooms is entered into the spreadsheet, the total square footage for that program area is automatically calculated. The total is also automatically linked to the program area summary of spaces.

DESIGN

Schematic Design (SD)

During the Schematic Design Phase, the required spaces developed during the POR process are organized in functional groupings and orientated around building circulation and service systems. The Schematic Design is reviewed and approved by the Project Team before starting the Design Development Phase.

Design Development (DD)

During the Design Development Phase the design is further refined to incorporate the actual materials and systems that will be used in construction. Detailed calculations for material stresses, heat loss/gain, and electrical loads are made and the final configuration of materials is established. Preliminary Specifications for all components are prepared and are used along with the drawings in the preparation of the Construction Estimate of Cost by the CM. The Design Development documents are reviewed and approved by the Project Team before starting the Construction Documents Phase.

Construction Documents (CD)

At the conclusion of the Design Development Phase all decisions regarding the make-up of the new building should be resolved and documented. Adjustments should have been made in the design to bring the cost estimate into alignment with the project budget. The objective of the Construction Documents Phase is to prepare documentation that will accurately and precisely convey that design to the prime contractors who will construct it. In essence the Design Development drawings and specifications are refined and combined with Instructions to Bidders and General Conditions of the Contract for Construction and other documents necessary to define the activities of all parties during the actual construction. These documents are used as the basis of the final CM Estimate of Construction Cost necessary for a recommendation to the Board of Education and OSFC prior to entering the Bidding Phase. These documents are submitted for agency approval necessary for the issuance of a building permit.

The structure of the bidding process is defined by statute. The process begins with the public advertisement for bidders. This advertisement describes work divided into trade packages. It indicates where the documents can be obtained and states the date, time, and place of the public bid opening. It establishes a time and place for a pre-bid conference during which the Contractors can ask questions related to the project. Sealed prime contract bids are received at the bid time and publicly opened, read aloud and tabulated.

BIDDING

Evaluate Bidders

After the bid opening meeting, the apparent low bidders are evaluated to determine whether they are responsible according to criteria set forth in law. The Bid Packages are carefully examined by district counsel and the CM for compliance with the Bidding Requirements.

Enter Into Contracts

Within 60 days of the receipt of bids the CM and low bid Contractors work together to prepare Construction Contracts for the work on form documents provided by OSFC. The Contracts are approved by Resolution of the Board of Education and the Commission.

Trade Contractor Partnering

Similar in format to the previous day-long Executive Partnering Session, the Trade Contract Partnering Session introduces the Prime Contractors to the team. Objectives and concerns are discussed, communication channels are established and dispute resolution procedures are agreed upon.

The Design Manual is organized into ten chapters that explain the planning, design, and construction process; identify the square footage provisions for each school level; detail the features and amenities of each space; and provide systems, materials, and specification information. This section of the Executive Summary contains an overview of key points included in each chapter.

The chapters included in the Design Manual are:

- Chapter 1: Introductory Information
- Chapter 2: Bracketing
- Chapter 2: Bracketing (Career-Technical)
- Chapter 3: School Site
- Chapter 4: Elementary School
- Chapter 5: Middle School
- Chapter 6: High School
- Chapter 6: High School (Career-Technical)
- Chapter 7: **(Unused)**
- Chapter 8: Systems and Materials
- Chapter 8: Systems and Materials (Career-Technical)
- Chapter 9: Specifications
- Chapter 9: Specifications (Career-Technical)
- Chapter 10: Miscellaneous
- Chapter 10: Miscellaneous (Career-Technical)

Chapter 1: Introduction

Chapter 1 contains introductory information that provides a general overview of the planning, design, and construction process and the Design's responsiveness to educational planning.

Key Points

- Developing a clearly articulated educational program is the essential first step to any successful school building project. Partnerships should be developed between school personnel and the community to establish and refine the educational vision and begin the connection between the educational vision and a building program.
- Enrollment Projections and Facility Assessments provide essential data for decision-making.

Chapter 2: Design Manual Bracketing

Chapter 2 assists the school district in establishing the square footage for a new facility. Bracketing first identifies the overall square feet for a facility and then identifies spaces that may be included. The size of a school facility is based on student capacity, grade configuration, and square foot per child.

K-12 Key Points

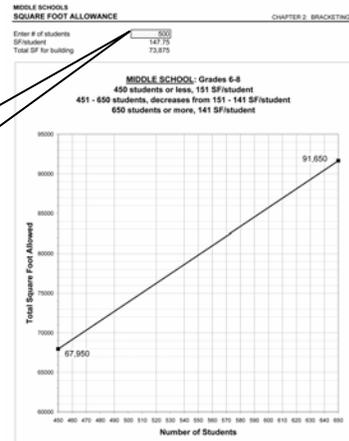
- The formula for determining the overall square footage of a school facility is:

$$\text{grade grouping \# of students} \quad \times \quad \text{student square feet} \quad = \quad \text{total overall square feet funded}$$

Additional Key Points in Chapter 2:

- The minimum school size at any grade configuration is 350 students (per 3318.03 ORC).
- The ranges of fundable square footage per student per school level are:
 Elementary (K-5) – from 115.6 – 125 square feet on a sliding scale
 Middle (6-8) – from 141 – 151 square feet on a sliding scale
 High (9-12) – from **156** – 180 square feet on a sliding scale
 The sliding scale allows for the fact that larger buildings that must be provided for larger student populations are more space efficient and require fewer square feet per student.
- Additional graphs indicate total funded gross square footage for K-12, K-8, and 6-12 school buildings.
- There are certain parameters for which spaces must be included and how large those spaces must be. Aside from those parameters, the planning team must work together to determine which spaces are needed. The parameters for developing the Program of Requirements (POR) include:
 - “Academic Space” refers to space in: Core Academic, Special Education, Art, Music, Family and Consumer Science, Technology Education, and Business Education. All other space is considered to be “Non-Academic.” Space can be moved from Non-Academic areas to Academic areas, but not *vice versa*.
 - The total square footage for all Academic areas must equal or exceed the total listed in the design manual for that school level and enrollment.
 - For grades PK-5: the size of a classroom **may be reduced** 10% from the size listed in the Design Manual.
 - For **all grade levels**: Classrooms may be no greater or less than 3% of the sizes listed in the Design Manual.
 - The total square footage developed must be equal to or be no more than one-tenth (0.10) percent below the total square footage in the Master Plan.
 - **For all grade levels: Academic spaces may be reduced up to 10% to accommodate extended learning areas.**
- See charts in Chapter 2 for additional information
 - Section 2100 for elementary schools (grades K-5)
 - Section 2200 for middle schools (grades 6-8)
 - Section 2300 for high schools (grades 9-12)
 - Section 2400 for grade K-12 combination schools
 - Section 2500 for grade K-8 combination schools
 - Section 2600 for grade 6-12 combination schools

To determine the gross square footage for a school building, enter the number of students.



Academic Classroom 10% Tolerance

During the development of the original Design Manual, published in 1997, extensive research was conducted into existing local, state, and national classroom size standards. It was determined that a 900 SF classroom was the appropriate size to accommodate current and future student needs, project based delivery, special needs students, and multiple program delivery methods.

As part of the implementation of the Design Manual, it was found that a tolerance of 10% was needed to allow flexibility when designing schools and to allow districts to reduce overall elementary classroom size to no less than 810 SF. The extra space is to be used for additional instruction areas or it can be applied to other instructional areas such as art and music. This reduction allows elementary school classrooms to remain adequately sized to meet student educational needs. The 10% reduction was not allowed for middle and high school academic spaces.

With an increased understanding of how to organize schools to facilitate learning opportunities, flexibility is needed to allow the School District and Design Professional the freedom to re-allocate space to other learning areas. Therefore, the following tolerances will be allowed:

- » Reduction in Classroom Size at the Elementary Schools
A reduction in the size of the classroom at 10% for the development of additional learning areas and classrooms and to increase the size of other educational spaces is an acceptable re-assignment of square footage for elementary schools.
- » Reduction in Classroom Size at the Middle, High, and Career-Technical Schools
A 10% reduction of the middle, high, and career-technical classroom is NOT allowed, unless the space is reallocated to develop an extended learning area adjacent to a group of academic classrooms.

Extended Learning Areas or Commons

Allowing the 10% reduction in the size of the classrooms can provide exciting opportunities for flexibility in educational programming. Over the past few years, educational program delivery has changed to accommodate differences in students' learning habits, an increasing information base, project based assignments, and technology. When this reduction is used, it can result in a "commons" or "extended learning area" where students can receive instruction, conduct small group activities, practice drama, and engage in other learning activities.

Extended Learning Areas [ELA's] or commons are intended to provide students, staff, and teachers with an area adjacent to the classroom where a multitude of activities can take place. This space does not have walls and is intended to "extend" the classroom area for instructional and support purposes. A few of the activities that can occur are:

- ◆ ***Small group work/study areas using soft or hard seating (3-7 students per group)***
- ◆ ***Rehearsal area for student skits or plays***
- ◆ ***One-on-one tutoring by peers or community volunteers***
- ◆ ***Individual projects requiring more space than what is allotted in a traditional classroom
(ex: creating a poster display board, doing a large painting or drawing, etc.)***
- ◆ ***Reading by a teacher or volunteer to a large group of children
(8-15 students, soft seating or soft floor space)***
- ◆ ***Individual study of quiet time to read, reflect, or do homework***
- ◆ ***Space to showcase student art and projects***
- ◆ ***Service learning activities (volunteerism)***
- ◆ ***Physical activities not incorporated in gym or outside areas
(ex: gross motor skills, tumbling on mats, cheerleading practice)***

- ◆ **Accessibility for after-school student clubs**
(key club, school newspaper, student officers, etc.)
- ◆ **English as a Second Language (ESL) tutoring**
- ◆ **Lecture/presentation space that combines students from two or more classes**
- ◆ **Lounging space for students with soft furniture to allow for wireless Internet access, reading, conversation, and other other forms of informal social interaction**
- ◆ **Make-up tests (proficiency and school subject exams)**
- ◆ **Showing of films, class parties, fun activities**

When designing commons or extended learning areas, it is important to note some of the characteristics that define what an ELA is and is not. The characteristics below are not meant to limit the design team in its creative endeavors, but are meant to provide a guideline for discussions between the District and the design team.

Extended Learning ARE:

- ◆ **A flexible learning and support space**
- ◆ **Adjacent to classrooms**
- ◆ **Classrooms on most sides**
- ◆ **May be part of the means of egress/corridor**
- ◆ **Has a visual connection to each of the adjacent classrooms**

Extended Learning Areas ARE NOT:

- ◆ **Enclosed with walls and/or doors**
- ◆ **A room**
- ◆ **A “teaching station”**
- ◆ **A room with desks, chairs, a teacher’s desk, or fixed furniture**

Chapter 2: Career-Technical Bracketing

Chapter 2 assists the school district in establishing gross square footage for a new facility. The size of a Career-Technical school facility is based on student capacity, approved program square feet and core square foot area per student.

Number of Students	Maximum Square Feet Per Student		
	Core Area	Program Area	Total
400 or less	113	169	282
600	101	162	263
800	97	146	243
1,000 or more	95	136	231

Number of students / 50 students per program = # of Type 1 – 4 programs funded
 Number of students / 30 students per program = # of Type 5 – 7 programs funded
 Core Area(# of students x square feet) + Program Area(# of programs x program square feet) = Total Overall Square Feet Funded

- There are certain parameters for which spaces must be included and how large those spaces must be. Aside from those parameters, the planning team must work together to determine which of the spaces are needed. The parameters for developing the Program of Requirements (POR) include:
 - A ratio of 25 students per classroom is used to determine building capacity.
 - A ratio of 50 students per program is used to determine the number of funded Type 1 - 4 programs and 30 students per program in Type 5 - 7 programs.
 - “Academic Space” refers to space in: Core Academic, Special Education and Program Types 1 - 7. All other space is considered to be “Non-Academic.” Space can be moved from Non-Academic areas to Academic areas, but not *vice versa*.
 - The total square footage for all Academic areas must equal or exceed the total listed.
 - 50% of classrooms may be no greater or less than 3% of the sizes listed.
 - The total square footage developed must be equal to or be no more than one-tenth (0.10) percent below the total square footage in the Master Plan.
- See charts in Chapter 2, Section 2700, for additional information.

The Bracketing spreadsheet is an interactive tool that aids in the development of the Program of Requirements.

The spreadsheet is organized by Program Area, i.e. Core Academic, Special Needs, etc., as well as Program Types 1-7.

The table at the top of the page shows examples of Core Spaces.

The second table shows examples of Program Spaces.

The table labeled WORKSHEET is linked to the detailed pages for each program area.

Sample School District, Sample School Building
 CAREER-TECHNICAL SCHOOL
 SUMMARY OF SPACES EXAMPLE
 CHAPTER 2: BRACKETING
 The following is an example of four sizes of Career-Technical Schools.
 The examples are intended to assist in the development of the summary of spaces.

Number of Students	400	600	800	1,000
Core SF/Student Funded	113	101	97	95
Total Core Space Funded	45,200	60,588	77,616	95,000
Program SF/Student Funded	169	162	146	136
Total Program Space Funded	67,600	97,200	116,800	136,000
Total Gross SF Funded	112,800	157,788	194,416	231,000

Core Spaces				
CT-AC Academic Core	14,400	20,500	26,850	33,334
CT-SE Spec. Ed./Student Svcs.	4,000	4,000	5,170	5,290
CT-AD Administration	3,020	3,900	4,900	6,160
CT-MC Media Center	2,820	4,120	4,890	6,040
CT-SD Student Dining	4,400	5,650	7,367	9,344
CT-FS Food Service	1,650	2,350	3,050	3,750
CT-CU Custodial	300	400	500	500
CT-GS General Services	3,091	4,228	5,110	6,376
Net Core Space	33,681	45,148	57,837	70,790
Mechanical/Electrical Space (6.9%)	2,324	3,115	3,991	4,885
Corridors (14%)	4,715	6,321	8,097	9,911
Total Core Space	40,720	54,584	69,925	85,586
Construction Factor (11%)	4,479	6,004	7,692	9,414
Gross Core Space Developed	45,200	60,588	77,616	95,000
Gross Core Space Co-Funded	45,200	60,588	77,616	95,000

Program Spaces				
CT-P1 Program Type 1	4,650	6,380	7,900	12,460
CT-P2 Program Type 2	4,620	2,310	4,620	4,620
CT-P3 Program Type 3	3,700	7,990	9,070	11,360
CT-P4 Program Type 4	8,355	14,465	14,465	19,335
CT-P5 Program Type 5	16,126	18,752	19,252	15,389
CT-P6 Program Type 6	16,889	23,249	32,475	28,912
CT-P7 Program Type 7	0	0	0	10,000
Net Program Space	50,550	73,146	87,782	102,076
Mechanical/Electrical Space (5%)	2,528	3,657	4,389	5,104
Corridors (14%)	7,077	10,240	12,289	14,291
Total Program Space	60,155	87,044	104,461	121,470
Construction Factor (11%)	6,617	9,575	11,491	13,362
Gross Program Space Developed	66,771	96,619	115,951	134,832
Gross Program Space Co-Funded	67,600	97,200	116,800	136,000

Total Gross SF Developed	111,971	157,207	193,567	229,832
Total Gross SF Co-Funded	112,800	157,788	194,416	231,000
Difference	829	581	849	1,168

Chapter 3: School Site

Chapter 3 contains information about site size, site circulation, and site amenities. Design requirements are also outlined for a multitude of factors that must be considered, including: various types of circulation and site access, drainage, play fields and playgrounds, fencing, lighting, mechanical/electrical yard, landscaping, site furnishings, and exterior security provisions.

Key Points

- Site size guidelines accommodate a variety of sizes for schools located in rural and suburban districts. Recommended site sizes are:
 - Elementary School: 10 acres plus 1 acre per 100 students
 - Middle School: 20 acres plus 1 acre per 100 students
 - High School or Career-Technical School: 35 acres plus 1 acre per 100 students
 - Combination Schools:
 - K-12 School: 40 acres plus 1 acre per 100 students
 - K-8 School: 20 acres plus 1 acre per 100 students
 - 6-12 School: 35 acres plus 1 acre per 100 students
- It is recognized that not all urban sites will be able to accommodate a new or replacement facility, even with the smallest site sizes recommended in the Design Manual. The Design Manual provides a list of possible site size reductions that may be considered. Strategies include decreasing the building footprint, decreasing the amount of parking, decreasing the size of the mechanical yard, providing curbside bus and parent drop-off, reducing the amount of greenspace, and reducing the size or decreasing the number of outdoor play spaces. These strategies are not intended to be all-inclusive and implementing these reductions should involve all interested parties. Chapter 3 identifies a process to determine the area required for an urban school's site needs.
- Deviations from the site size may be required due to extenuating circumstances. In such case, the OSFC will require the Design Professional to evaluate and recommend that the school district's educational program needs can be accomplished within a facility on the applicable site.
- Site selection applies to new construction. A review of the site selection criteria is required for additions to existing facilities to determine if the existing site can accommodate the site design requirements. The site selection is to be done by the school district within the assistance of a design professional.
- Factors to be used for judging the merits of a site are:
 - Adjacent Property
 - Aesthetic Considerations
 - Codes and Zoning
 - Easements/Right-of-way
 - Environmental Restrictions
 - Site preparation
 - Site Size
 - Site Utilities
 - Soil Characteristics
 - Testing
 - Topography
 - Vehicle Access
- Site design requirements detail design considerations and provide diagrams for important site elements, including:
 - a. Vehicular circulation
 - b. Pedestrian circulation
 - c. Emergency vehicle access
 - d. Bicycle circulation
 - e. Storm drainage
 - f. Sanitary sewerage
 - g. Directional signage
 - h. Physical education
 - i. Playgrounds
 - j. Fencing
 - k. Lighting
 - l. Mechanical/electrical yard
 - m. Landscaping
 - n. Site furnishings
 - o. Exterior security provisions
- Parent drop-off and bus drop-off areas are to be separate.
- Particular emphasis is placed on safety issues, such as separation of vehicular and pedestrian traffic.
- In addition to stating design requirements, this chapter indicates items that the school district and the design professional should "plan for" in future improvements. Items indicated to be "planned for" are not funded by the OSFC.

Chapter 4: Elementary School

Chapter 4 begins with an overall building diagram detailing the way in which various areas of an elementary school could be arranged. There are also program area diagrams throughout this chapter that demonstrate how specific spaces might relate to each other within a program area. Space plates are included for each type of space in the program area.

Key Points

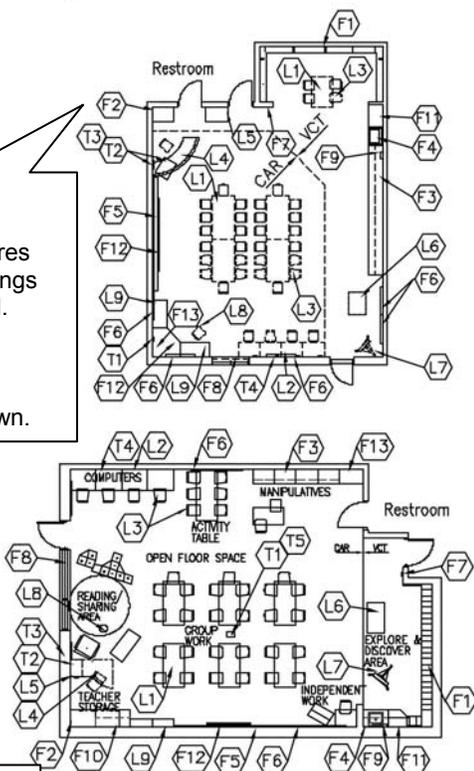
The information in this diagram is referred to as a *space plate*. There is a space plate for each room in each program area in each school level.

Each room has a unique code that appears in the bracketing and on the space plate. In this case:
E=Elementary
AC=Academic Core
1=Space Plate #1

**PRE-K/KINDERGARTEN CLASSROOM
E-AC-1**

CHAPTER 4: ELEMENTARY SCHOOL

A diagram of the space shows how some of the features and loose furnishings may be organized. The space is not required to be designed in the configuration shown.



- PROGRAM ACTIVITIES:**
- Kindergarten instruction through active exploration
 - Children practice with tangible articles and are encouraged to develop learning skills, creativity, and imagination.
 - Activities include, but are not limited to: group discussions, demonstrations, music activities, listening skills, gross motor skills, art and science projects, and small group activities.

Program activities indicate the type of activities that may occur in the space. These activities will vary from district to district depending on the educational program.

- SPATIAL RELATIONSHIPS:**
- Near other pre-k/kindergarten classroom
 - Near teacher prep area/workroom
 - Direct access to outdoor playground
 - Near vehicle drop-off/pick-up drive
 - Adjacent to pre-k/kindergarten restroom

Relationships of a particular room to other spaces and activities have been identified to assist the A/E in the design of the facility.

- ENVIRONMENTAL CONSIDERATIONS:**
- Uniform lighting
 - Natural light opening equal to minimum 5% of floor area, with an operable vent
 - Environmental sound control – wall minimum STC 50 ceiling minimum CAC 35, NRC 0.65
 - Resilient and stain-resistant floor covering
 - Ergonomically appropriate furniture and equipment heights

Environmental considerations are items that may affect the educational program. They are the basis of some requirements of Finishes, Features, Plumbing, HVAC, Electrical, and Technology.

Size must be maintained except for tolerance previously noted.

CAPACITY: 25 students
SIZE: 1,200 SF
ANCILLARY SPACES: Pre-K/Kindergarten Restroom E-AC-2

NOTES:

1. Loose furnishings shown represent one of many possible configurations based on educational program.
2. Depending upon the educational program of the district, a tall wardrobe may be located in this classroom or could be placed in a teacher prep area/workroom.
3. Second exit from space to meet code need not open to exterior.

Chapter 4: Elementary School, continued

Key Points, continued

This is the subsequent page of information for each space.

Features identified on the space plates are required for the space. Features include: Fixed Equipment, Plumbing, HVAC, Electrical, and Technology Systems.

Each room has a unique code that appears in the bracketing and on the space plate. In this case:
E=Elementary
AC=Academic Core
1=Space Plate #1

**PRE-K/KINDERGARTEN CLASSROOM
E-AC-1**

CHAPTER 4: ELEMENTARY SCHOOL

<u>FINISHES¹:</u>	Spec. Ref.#	<u>FEATURES¹:</u>	Spec. Ref.#
<u>Flooring:</u>		<u>Fixed Items:</u>	
Combination carpet with vinyl composition tile	096816	F1 Open casework - student coats and personal items, with wall cabinets above	123550
Optional: All vinyl composition tile, linoleum, VET, VCTT, or sheet vinyl	096500	F2 3' of tall wardrobe w/file drawers, optional	123550
		F3 15'-18" of base & wall cabinets	123550
<u>Base:</u>		F4 3' sink base cabinet	123550
Resilient base	096500	F5 12'-16" of chalk/marker board	101100
		F6 16'-20" of tack board or tackable wall surface or combination	101100
<u>Ceiling:</u>		F7 Pencil sharpener support	062000
Suspended, acoustical	095113	F8 Window with integral blinds	085116
		F9 Towel dispenser (optional)	102813
<u>Walls:</u>		F10 36" - 42" high storage cabinet	123550
Painted concrete masonry units	042200/099100	F11 3' of tall cabinets (could have tote trays, optional)	123550
		F12 Projection screen (optional)	115213
		F13 Technology support casework (could be mobile)	123550
<u>LOOSE FURNISHINGS:</u>		<u>Fire Suppression:</u>	
L1 Student desks/tables		Fire suppression system	211000
L2 Computer workstation furniture (fixed or mobile)		<u>Plumbing:</u>	
L3 Student chairs		Sink with drinking fountain	224000
L4 Teacher workstation/computer support and chair (fixed or mobile)		Plumbing connections	224000/221113/221116/221119
L5 File cabinet		<u>HVAC:</u>	
L6 Sand/water table		Supply/return air system	Div. 23
L7 Children's painting easel		Independent temperature control	230923
L8 Teacher reading chair or stool		<u>Electrical:</u>	
L9 8'-10" of low bookcases (fixed or mobile)		Fluorescent lighting	265100
Wastebasket		Illumination level: See Table 8600-10	
Pencil sharpener		Multilevel switching	262726
		4 duplex receptacles	262726
<u>Miscellaneous:</u>		Double duplex receptacle adjacent to each data and video port	262726
N/A		Emergency lighting	265100
		Means of egress lighting per code	265100
		<u>Communications:</u>	
		T1 1 video port	271533/271543
		T2 1 voice port and phone	271513/273113
		T3 1 data port near teacher workstation	271523
		T4 4 data ports (minimum) for student use	271523
		Central sound system	275123
		Clock	275313
		Sound reinforcement system	275127
		T5 Overhead projector	274119
		<u>Electronic Safety and Security:</u>	
		Life safety devices per code	283111

The loose furnishings shown on the space plates are often found in spaces of the room type. The list is not inclusive of all furniture that might be included. Loose furnishings are funded as part of the project cost.

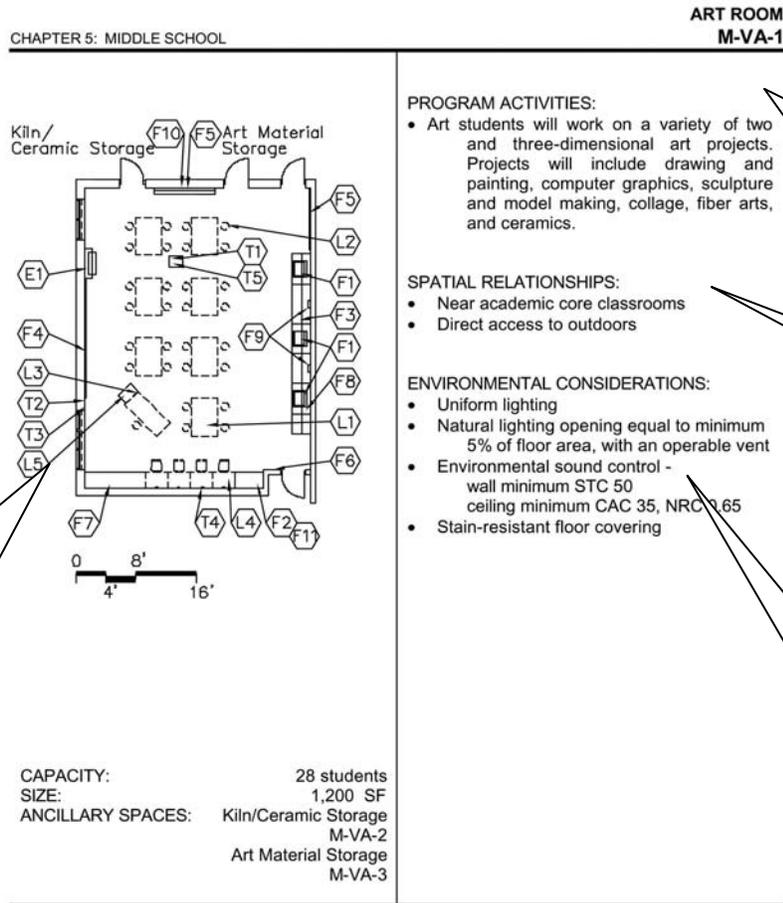
NOTES:
1. Finishes/Features: Refer to Chapter 9 for specification references.
2. Technology components may be placed in a separate small cabinet, or integrated in the other casework in the room.

Chapter 5: Middle School

Chapter 5 begins with an overall building diagram showing how the various areas of a middle school could be arranged. There are also program area diagrams throughout this chapter that demonstrate how specific spaces might relate to each other within a program area. Space plates are included for each type of space in the program area.

Key Points

The following space plate is for a middle school art room.



A diagram of the space shows how some of the features and loose furnishings may be organized. The space is not required to be designed in the configuration shown.

Each room has a unique code that appears in the bracketing and on the space plate. In this case:
 M=Middle
 VA=Visual Arts
 1=Space Plate #1

Program activities indicate the type of activities that may occur in the space. These activities will vary from district to district depending on the educational program.

Relationships of a particular room to other spaces and activities have been identified to assist the A/E in the design of the facility.

Environmental considerations are items that may affect the educational program. They are the basis of some requirements of Finishes, Features, Plumbing, HVAC, Electrical, and Technology.

NOTES:

1. Loose furnishings shown represent one of many possible arrangements.

Chapter 5: Middle School, continued

Key Points, continued

This is the subsequent page of information for each space.

Features identified on the space plates are required for the space. Features include: Fixed Equipment, Plumbing, HVAC, Electrical, and Technology Systems.

Each room has a unique code that appears in the bracketing and on the space plate. In this case:
M=Middle
VA=Visual Arts
1=Space Plate #1

The loose furnishings shown on the space plates are often found in spaces of the room type. The list is not inclusive of all furniture that might be included. Loose furnishings are funded as part of the project cost.

ART ROOM		CHAPTER 5: MIDDLE SCHOOL	
M-VA-1		Spec.	Spec.
		Ref.#	Ref.#
FINISHES¹:			
Flooring:	Vinyl composition tile, sealed concrete, VET, or sheet vinyl	096500	
Base:	Resilient base	096500	
Ceiling:	Suspended, acoustical	095113	
Walls:	Painted concrete masonry units	042200/099100	
LOOSE FURNISHINGS:			
L1	Student work tables		
L2	Student chairs or stools		
L3	Teacher desk and chair/stool and teacher computer support		
L4	Computer workstation furniture		
L5	Desk height file cabinet		
	Wastebasket		
	Pencil sharpener		
EQUIPMENT:			
E1	Drying rack		
FEATURES¹:			
Fixed Items:			
F1	3'-4' sink base cabinet, or several wash fountains	123550	
F2	3' of tall wardrobe with file drawers	123550	
F3	10'-12' of base cabinets	123550	
F4	12'-16' of tack board or tackable wall surface	101100	
F5	12'-16' of chalk/marker board	101100	
F6	Pencil sharpener support	062000	
F7	6'-10' of tall storage cabinets	123550	
F8	10'-12' of wall cabinets	123550	
F9	Towel dispenser (optional)	102813	
F10	Projection screen (optional)	115213	
F11	Technology support casework	123550	
Fire Suppression:			
	Fire suppression system	211000	
Plumbing:			
	Sinks with solids interceptor	224000	
	Plumbing connections	224000/221113/221116/221119	
HVAC:			
	Supply/return air system	Div. 23	
	Independent temperature control	230923	
	Manually controlled general exhaust	Div. 23	
Electrical:			
	Fluorescent lighting	265100	
	Illumination level: See Table 8600-10		
	Multilevel switching	262726	
	4 duplex receptacles	262726	
	Double duplex receptacle adjacent to each data and video port	262726	
	Track lighting	265100	
	Means of egress lighting per code	265100	
	Emergency lighting per code	265100	
Communications:			
T1	1 video port	271533/271543	
T2	1 voice port and phone	271513/273113	
T3	1 data port near teacher workstation	271523	
T4	4 data ports (minimum) for student use	271523	
	Clock	275313	
	Central sound system	275123	
	Sound reinforcement system	275127	
T5	Overhead projector	274119	
Electronic Safety and Security:			
	Life safety devices per code	283111	
Miscellaneous:			
	Windows with integral blinds	081113/088000	

NOTES:

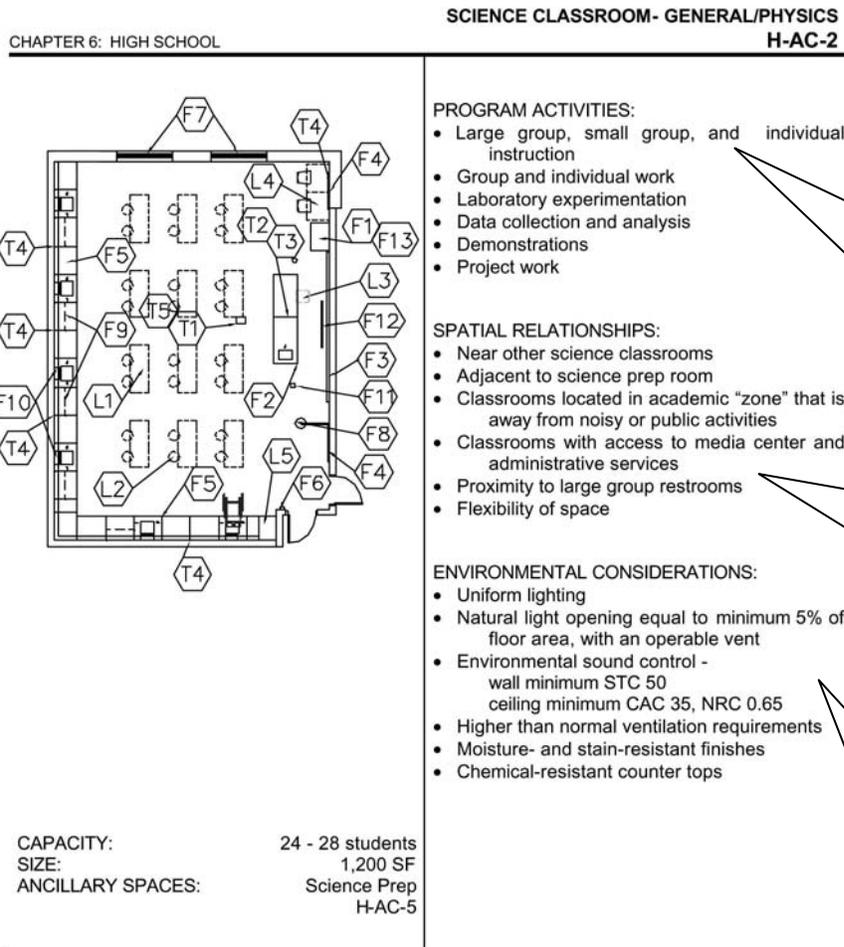
1. Finishes/Features: Refer to Chapter 9 for specification references.

Chapter 6: High School

Chapter 6 begins with an overall building diagram showing how the various areas of a high school could be arranged. There are also program area diagrams throughout this chapter that demonstrate how specific spaces might relate to each other within a program area. Space plates are included for each type of space in the program area.

Key Points

The following space plate is for a high school general science/physics classroom.



Diagrams of the space show how some of the features and loose furnishings may be organized. The space is not required to be designed in the configuration shown.

Each room has a unique code that appears in the bracketing and on the space plate. In this case:
 H=High
 AC=Academic Core
 2=Space Plate #2

Program activities indicate the type of activities that may occur in the space. These activities will vary from district to district depending on the educational program.

Relationships of a particular room to other spaces and activities have been identified to assist the A/E in the design of the facility.

Environmental considerations are items that may affect the educational program. They are the basis of some requirements of Finishes, Features, Plumbing, HVAC, Electrical, and Technology.

- NOTES:**
1. Loose furnishings shown represent two of many possible arrangements.
 2. Science casework layout to be determined by the school district.
 3. Depending upon the educational program of the district, a tall wardrobe may be placed in this classroom or could be placed in a teacher prep area/workroom.
 4. The layouts shown do not restrict or reflect the variety of arrangements available to the Design Professional.

Chapter 6: High School, continued

Key Points, continued

This is the subsequent page of information for each space.

Each room has a unique code that appears in the bracketing and on the space plate. In this case:
H=High
AC=Academic Core
2=Space Plate #2

Features identified on the space plates are required for the space. Features include: Fixed Equipment, Plumbing, HVAC, Electrical, and Technology Systems.

**SCIENCE CLASSROOM - GENERAL/PHYSICS
H-AC-2**

CHAPTER 6: HIGH SCHOOL

	Spec. Ref.#		Spec. Ref.#
FINISHES¹:		FEATURES:	
Flooring:		<u>Fixed Items:</u>	
Vinyl composition tile, linoleum,	096500	F1 3' of tall wardrobe with file drawers	123553
Rubber, VET, or sheet vinyl	096516	F2 Demonstration table/teacher desk	123553
Base:		F3 10'-16' of chalk/marker board	101100
Resilient base	096500	F4 10'-16' of tack board	101100
Ceiling:		F5 40'-60' of lab casework with sinks	123553
Suspended, acoustical	095113	F6 Pencil sharpener support	062000
Walls:		F7 Windows with integral blinds	085116
Painted concrete masonry units	042200/099100	F8 Emergency shower/eyewash	224000
		F9 18'-24' of wall cabinets	123553
		F10 Towel dispensers (optional)	102813
		F11 2 eye hooks for demonstrations (optional)	055000
		F12 Projection screen (optional)	115213
		F13 Technology support casework	123553
		Fire Suppression:	
		Fire suppression system	211000
		Plumbing:	
		Plumbing connections	224000/221113/221116/221119
		Emergency shower/eyewash connections	224500
		Gas connections (optional)	226313
		Master shutoff for gas	226313
		Compressed air connections (optional)	221513
		HVAC:	
		Supply/return air system	Div. 23
		Independent temperature control	230923
		Manual exhaust	Div. 23
		Electrical:	
		Fluorescent lighting:	265100
		Illumination level: See Table 8600-10	
		Multilevel switching	262726
		Duplex receptacles at perimeter workstations and teaching wall	262726
		Double duplex receptacle adjacent to each data and video port	262726
		Emergency lighting	265100
		Means of egress lighting per code	265100
		Communications:	
		T1 1 video port	271533/271543
		T2 1 voice port and phone	271513/273113
		T3 1 data port at demonstration table	271523
		T4 4 data ports (minimum) for student use	271523
		Clock	275313
		Central sound system	275123
		Sound reinforcement system	275127
		T5 Overhead projector	274119
		Electronic Safety and Security:	
		Life safety devices per code	283111

NOTES:

1. Finishes/Features: Refer to Chapter 9 for specification references.
2. Technology components may be placed in a separate small cabinet, or integrated in the other casework in the room.

Chapter 6: Career-Technical School

This Chapter begins with general information about the design and construction of Career-Technical schools. Two subject code/program tables are include with references to the space plates that follow. There are also program area diagrams throughout this chapter that demonstrate how specific spaces might relate to each other within a program area. Space plates are included for each type of space in the various program areas.

Key Points

The information in this diagram is referred to as a *space plate*.

There is a space plate for each room in each program area and each program type.

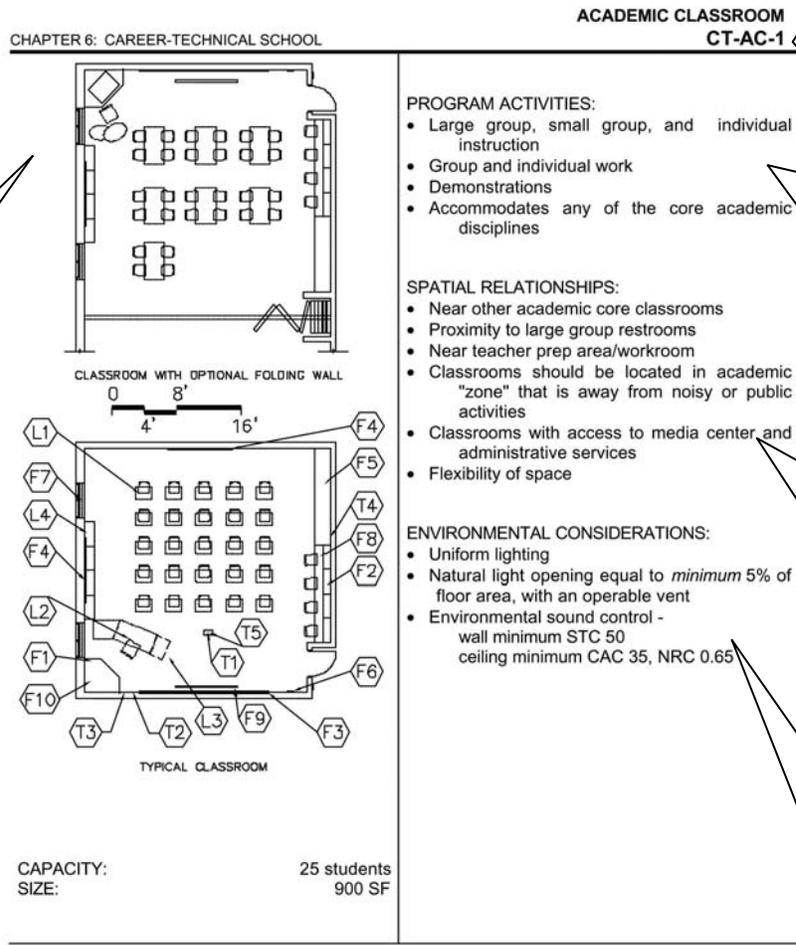
Each room has a unique code that appears in the bracketing and on the space plate. In this case:
CT=Career Tech
AC=Academic
Core
1=Space Plate #1

Program activities indicate the type of activities that may occur in the space. These activities will vary from district to district depending on the educational program.

Relationships of a particular room to other spaces and activities have been identified to assist the A/E in the design of the facility.

Environmental considerations are items that may affect the educational program. They are the basis of some requirements of Finishes, Features, Plumbing, HVAC, Electrical, and Technology.

A diagram of the space shows how some of the features and loose furnishings may be organized. The space is not required to be designed in the configuration shown.



- NOTES:
1. Loose furnishings shown represent one of many possible arrangements.
 2. Depending upon the educational program of the district, a tall wardrobe may be placed in this classroom or could be placed in a teacher prep area/workroom.

Chapter 6: Career-Technical School

Key Points, continued

This plate contains detailed information about the Career-Technical Academic Classroom.

Features identified on the space plates are required for the space. Features include: Fixed Equipment, Plumbing, HVAC, Electrical, and Technology Systems.

Each room has a unique code that appears in the bracketing and on the space plate. In this case: CT=Career Tech AC=Academic Core 1=Space Plate #1

The loose furnishings shown on the space plates are often found in spaces of the room type. The list is not inclusive of all furniture that might be included. Loose furnishings are funded as part of the project cost.

ACADEMIC CLASSROOM		CHAPTER 6: CAREER-TECHNICAL SCHOOL	
CT-AC-1			
	Spec. Ref.#	FEATURES¹:	Spec. Ref.#
FINISHES¹:		Fixed Items:	
Flooring:		F1 3' of tall wardrobe with file drawers	123550
Carpet	096816	F2 Computer work surface (could be loose)	123550
Optional: Vinyl composition tile, linoleum, VET, or sheet vinyl	096516 096500	F3 10'-16' of chalk/marker board	101100
Base:		F4 10'-16' of tack board	101100
Resilient base	096500	F5 8'-12' of base & wall cabinets	123550
Ceiling:		F6 Pencil sharpener support	062000
Suspended, acoustical	095113	F7 Windows with integral blinds	085116
Walls:		F8 About 10' of wall cabinets	123550
Painted concrete masonry units	042200/099100	F9 Projection screen (optional)	115213
		F10 Technology support casework	123550
LOOSE FURNISHINGS:		Fire Suppression:	
L1 Student desks and chairs		Fire suppression system	211000
L2 Teacher desk or workstation/computer support and chair		Plumbing:	
L3 File cabinet		N/A	
L4 9' of low bookcases (fixed or mobile)		HVAC:	
Wastebasket		Supply/return air system	Div. 23
Pencil sharpener		Independent temperature control	230923
		Electrical:	
		Fluorescent lighting:	265100
		Illumination level: See Table 8600-10	
		Multilevel switching	262726
		4 duplex receptacles	262726
		Double duplex receptacle adjacent to each data and video port	262726
		Communications:	
		T1 1 video port	271533/271543
		T2 1 voice port and phone	271513/273113
		T3 1 data port near teacher workstation	271523
		T4 4 data ports (minimum) for student use	271523
		Clock	275313
		Central sound system	275123
		Sound reinforcement system	275127
		T5 Overhead projector	274119
		Electronic Safety and Security:	
		Life safety devices per code	283111
		Miscellaneous:	
		M1 Operable partitions between classrooms are optional	102226

NOTES:

1. Finishes/Features: Refer to Chapter 9 for specification references.
2. Technology components may be placed in a separate small cabinet, or integrated in the other casework in the room.
3. Where appropriate, some casework may be mobile to add flexibility and become part of the loose furnishings.

Chapter 6: Career-Technical School

Following is a Program Space Plate for an Electronics lab in A Career-Technical School.

CHAPTER 6: CAREER-TECHNICAL SCHOOL		ELECTRONICS CT-P1-1	
PROGRAM DESCRIPTION: Classroom, laboratory, and practical learning experiences that includes both theory and practice. Students learn construction, maintenance, and repair of digital, analog, and microprocessor circuits in applications such as communications equipment, consumer equipment, and industrial equipment.		FEATURES¹:	Spec. Ref.#
Program Type: 1		Fixed Items:	
Size Requirements: 1,800 SF Lab		16' of chalk/marker board	101100
Lab Requirements:		8' of tack board	101100
FINISHES:		30' of base cabinets	123550
Flooring:		30' of wall cabinets	123550
Carpet		12' of tall storage cabinets	123550
Optional: vinyl composition tile, VET, sheet vinyl, or linoleum		Pencil sharpener support	062000
		Windows with integral blinds	085116
		Projection screen, 6'x8'	115213
Base:		Fire Suppression:	
Resilient		Fire <i>suppression</i> system	211000
Ceiling:		Plumbing:	
Suspended acoustical		N/A	
Walls:		HVAC:	
Painted concrete masonry units		Supply/return air system	Div. 23
		Independent temperature control	230923
LOOSE FURNISHINGS:		Electrical:	
(12) Two-person work tables w/storage below		Fluorescent lighting, parabolic lenses:	265100
(24) Computer workstation furniture & chairs		Illumination level: See Table 8600-10	
(1) Teacher station & chair		Multilevel switching	262726
Wastebasket		6 duplex receptacles	262726
Pencil sharpener		Double duplex receptacle adjacent to each data and video port	262726
		Communications:	
		1 video port	271533/271543
		1 voice port and phone	271513/273113
		1 data port near teacher workstation	271523
		26 data ports	271523
		Clock	275313
		Central sound system	275123
		Sound reinforcement system	275127
		Overhead projector	274119
		Electronic Safety and Security:	
		Life safety devices per code	283111
		Miscellaneous:	
		N/A	

NOTES:

1. Finishes/Features: Refer to Chapter 9 for specification references.

Chapter 7: (UNUSED)

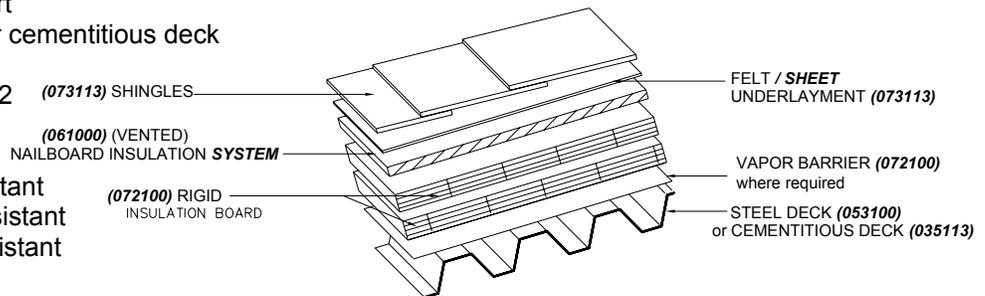
Chapter 8: Systems and Materials

Chapter 8 provides an overview and options of the various materials and systems that have been used to establish a design standard and level of quality for the systems and materials to be incorporated into new buildings. Systems and materials are described in the following categories

- Exterior walls
 - masonry cavity wall
 - veneer and metal framing
 - windows
- Roofs
 - shingle roof system
 - metal roof with batt insulation
 - metal roof with rigid insulation
 - built-up roof
 - membrane roof
- Interior walls
- Structural
- Plumbing
- HVAC
 - central plant VAV system with hot water reheat terminals
 - central plant VAV system with fan powered reheat terminals
 - central plant dual-duct/dual-fan VAV system with dual-duct variable volume terminals
 - water-source heat pump system
- Technology
- Electrical

EXAMPLE: Shingle Roof System

- Application - Steep Roofing
- Components
 1. Roof Membrane
 - Shingles
 - Underlayment/membrane flashing
 2. Roof insulation
 - Vented nailboard insulation
 - Rigid insulation
 3. Vapor Retarder
 - Where required. Refer to Chapter 9.
 4. Structural Support
 - Steel deck or cementitious deck
 5. Slope
 - minimum 3:12 (073113) SHINGLES
- Performance
 1. Features
 - Impact Resistant
 - Moisture Resistant
 - Thermal Resistant



Chapter 9: Specifications

Chapter 9 identifies specifications, which are an element of construction documents, and defines the qualitative requirements for products, materials, and workmanship. This chapter is a guide for the Design Professional who will prepare detailed specifications for the project. The OSFC requires that the specifications for a project promote competition among manufacturers of materials, equipment, and furnishings incorporated into the project.

This chapter includes both performance (a statement of required results with criteria for verifying compliance, but without unnecessary limitations on the methods for achieving the required results) and reference (requirements set by authority, custom, or general consensus and are established as accepted criteria) standards.

The sections are organized into CSI's (Construction Specifications Institute) format:

- 9101 General Requirements
- 9102 **Existing Conditions**
- 9103 Concrete
- 9104 Masonry
- 9105 Metals
- 9106 Wood, Plastics, **and Composites**
- 9107 Thermal and Moisture Protection
- 9108 **Openings**
- 9109 Finishes
- 9110 Specialties
- 9111 Equipment
- 9112 Furnishings
- 9113 Special Construction
- 9114 Conveying **Equipment**
- **9121 Fire Suppression**
- **9122 Plumbing**
- **9123 Heating, Ventilating, and Air Conditioning**
- **9126 Electrical**
- **9127 Communications**
- **9128 Electronic Safety and Security**
- **9131 Earthwork**
- **9132 Exterior Improvements**
- **9133 Utilities**

Excerpt from Section **096816** Carpet Specification

CHAPTER 9: SPECIFICATIONS	FINISHES
	SECTION 096816
	SHEET CARPETING
PART 1 GENERAL	
1.01 SECTION INCLUDES	
A. Qualitative requirements for carpet materials and accessories for a direct-glue down or preapplied adhesive installation of one of the following:	
1. Tufted Broadloom	
2. Vinyl Cushion Tufted Textile (VCTT)	
1.02 QUALITY ASSURANCE	
A. Carpeting shall have a minimum average flux of not less than 0.45 watts/sq.cm. per ASTM E-648 (floor radiant panel test) requirements or NFPA 253.	
B. Chemical Emission/Indoor Air Quality: All carpet specified must be in compliance with the Carpet and Rug Institute (CRI) "Green Label Plus" Indoor Air Quality Carpet Testing Program. The program label and registration number serve as evidence of compliance.	
1.03 PROJECT CONDITIONS	
A. Substrate Conditions	
1. No condensation on underside of 4 foot by 4 foot polyethylene sheet with 48 hours, fully taped at perimeter.	
2. pH of 9 or less when substrate wetted with potable water and pHHydron paper applied.	
B. Recommendation: If existing carpet is being removed, contact major carpet suppliers for carpet recycling programs.	
PART 2 PRODUCTS	
2.01 CARPET	
A. Carpet, Tufted Broadloom	
1. Minimum of 17 ounce face weight on vinyl-backed products (22 oz. on broadloom) with tufted construction. Multicolor (solids only as accents). Yarn pile density should be a minimum of 8000 when calculated with pile thickness (6200 if calculated with pile height).	
2. Fiber Content: 100% nylon 6,6 or 100% nylon 6.	
3. Static resistance of carpet construction to provide a minimum of 3.0 Kv resistance at 20 percent R.H. at 70 degrees F. (21 degrees C.) AATCC 134.	
4. Carpet to have a grey scale rating of 4 or better on product's darkest colors after 180 standard fading hours as compared to AATCC Grey Scale for evaluation of change in color. AATCC 16E-1982.	

Chapter 10: Miscellaneous

Chapter 10 provides an overview explaining the importance of color in schools, including general recommendations regarding the use of color for various items and finishes; suggests loose furnishings and equipment for various spaces at each school level; and provides quality guidelines and furniture selection considerations.

For Elementary Schools Chapter 10 suggests warm base, background colors such as light salmon, beiges, soft yellows or peaches on the walls to produce a calming environment. Deeply saturated bright hues on architectural elements should be avoided, since the colors will create too much stimulation. Similar approaches are suggested for the upper grades. School colors can be integrated into the building color scheme in the athletic areas and possibly in the locker specifications. Color is also a very helpful tool in wayfinding, and this may be accomplished by identifying grade level or team areas with different colors.

Loose furnishings and equipment in the project are those items that are not attached to the building such as furniture, special subject equipment, appliances, trash receptacles, cleaning equipment, etc. The type of loose furnishings and equipment for a school should be selected to support the educational curriculum and the function of the spaces, but also provide flexibility for change and development in the future. The exact items and styles may vary from school to school.

***POLICY ON
MINIMUM PHASE SUBMISSION REQUIREMENTS***

ELEMENTS OF SCHEMATIC DESIGN DOCUMENTS

ARCHITECTURAL

- Single-line drawings showing complete building layout, identifying the various Major areas, core areas and their relationships.
- Show preliminary exterior wall section indicating location of openings, and overall thermal transfer value for each element of the exterior wall/envelope.
- Identify roof system, deck, membrane flashing and drainage technique and indicate overall combined heat transfer coefficient value for exterior wall/envelope.
- Show exterior building elevations identifying proposed shell finishes (includes all exterior surfaces, doors and windows).
- Site plan with building located and overall grading plan with preliminary contours. Preliminary site development such as access road paving, walls and outside support buildings, and paved parking lots landscaping, storm water retention areas, site utilities (existing and new) should be shown.
- Gross and net area calculations separated to show conformance with Program of Requirements. Each space to be annotated with net square footage.
- Building Code type and occupancy information.

STRUCTURAL

- Main building sections depicting proposed structural systems.
- Preliminary structural floor plan with overall dimensions and floor elevations. Identify structural system and provide preliminary sizes for all main structural members.
- Preliminary foundation plan. Identify foundation system and provide preliminary sizes

PLUMBING AND MECHANICAL

- Provide a narrative detailed description of HVAC systems that appear compatible with loading conditions for subsequent life cycle costing. (LCC not required for systems indicated as standards in Design Manual).
- Floor plan showing all mechanical (HVAC and Plumbing) equipment spaces.
- Floor plan showing all major mechanical equipment and plumbing fixtures (toilets, sinks, urinals, water fountains/coolers, janitor sinks, and fire protection system).

ELECTRICAL

- Lighting and power plans showing conceptual solution for lighting, power, communications, fire alarm and technology.
- Floor plan showing all major electrical equipment,
- Preliminary one-line electrical distribution diagrams. Indicate preliminary location of service entry, switchboards, motor control centers, panels, transformers and emergency generator, etc., if required.

ELEMENTS OF DESIGN DEVELOPMENT DOCUMENTS

ARCHITECTURAL

- Dimensioned floor plans indicating structural bay sizes and overall building dimensions. Floor Plan should show dimensions and final partition locations including all openings.
- Exterior and core wall sections showing final dimensional relationships, materials and component relationships.
- Floor Plan should show all fixed and loose equipment.
- Preliminary room finish schedule identifying all finishes.
- Exterior door and hardware schedule showing door, frame and hardware type.
- Site plan including grading and site utilities, utility connection points and a stormwater management design.
- Preliminary development of details and large scale plans and sections.
-
- Preliminary reflected ceiling including ceiling grid, light fixtures and all devices that penetrate or are mounted upon finished ceiling.
- Interior movable furniture, office equipment, demountable partitions and system furniture, layouts for all departments and floors including proposed building signage system.
- Gross and net area calculations by department to determine compliance with program of requirements.
- Outline specifications including selected acceptable manufacturers and suppliers.

STRUCTURAL

- Floor plan with all structural members located and sized.
- Preliminary footing, beam, column and connection schedules.
- Establish final building elevations.
- Outline specifications including acceptable manufacturers.
- Foundation drawings
- Outline specifications including selected acceptable manufacturers.

PLUMBING AND MECHANICAL

- Heating and cooling load calculations for each individual space, include cooling requirements for heat loads generated by office equipment, personal computers, etc
- Mechanical equipment schedule indicating size and capacity.

- Plumbing fixtures schedule
- Floor plans showing mechanical equipment and plumbing fixtures. All equipment and fixtures should be shown and located.
- Floor plans showing main ductwork distribution, branch ductwork and plumbing piping. All ductwork and piping should be located and sized to coordinate with structural framing system.
- All ceiling mounted devices should be located.
- Legend showing all symbols used on drawings.
- Outline specifications including selected acceptable manufacturers.

ELECTRICAL

- Floor Plan locating all power consuming equipment with a description of the equipment load characteristics.
- Estimate total electric load, confirm Design Manual required excess capacity.
- Floor Plan showing all major electrical equipment (switchgear, distribution panels, emergency generator, transfer switches, UPS system, etc.) which shall be dimensioned and drawn to scale.
- Site Plan showing preliminary site lighting design with pole and fixture type designations.
-
- Floor plan showing lighting layout, power, telecommunications and office automation devices and switches with preliminary circuiting.
- Light fixture schedule should be finalized.
- Estimate interior electrical loads for systems furniture, receptacles, lighting, food service equipment and any other special use areas, etc.
- Preliminary Distribution Panel Schedule
- Outline specifications including selected acceptable manufacturers and suppliers.

ELEMENTS OF CONSTRUCTION DOCUMENTS

COVER SHEET(S)

- Name, address of School District Board, Construction Manger, Architect, Interior Designer, etc.
- Vicinity map.
- Legal description of property.
- Final Building Code type, occupancy information and zoning information.
- Gross and net area calculations of all departments and floors.
- Abbreviation and symbol glossary.
- Index to all drawings.

SITE PLAN(S)

- A certified plot plan, (sealed by an Ohio licensed Land Surveyor).
- A grading plan 1'-0" or 2'-0" increments with appropriate sections.
- Sediment Control and Stormwater Management Plans and profiles.
- Local governing utility standards included in all utility details.
- Standard details shall be modified to suit project conditions, all non-applicable information shall be deleted.
- Existing and proposed electrical, gas, sewer, water, storm drainage, telephone and TV cable utilities shall be identified.
- Utility designs shall show plan, profile and all fittings and details required by code and local government standards for all the materials being permitted in the specifications.
- Zoning Plan.

LANDSCAPE

- An overall site plan showing plantings, irrigation and drainage system, site lighting and all site development features.
- Details and sections of all site development features, sidewalks, curbs, paving stones, bollards, ramps, exterior stairs, lawn areas showing seeding methods, etc.
- All landscape conditions should be thoroughly detailed.
- A symbol glossary.
- Planting schedule.
- Seeding schedule.
- Standard details shall be modified to suit project conditions. All non-applicable information shall be deleted.

ARCHITECTURAL

- A basic floor plan of the entire facility showing minimal detail with a grid or column reference system showing overall building layout dimensions, core spaces, floor opening penetrations, etc. Fire ratings of all partitions, fire doors, etc. should be clearly denoted.
- A dimensioned floor plan locating all interior partitions and exterior wall partitions from the grid or column reference system. Floor plan should include room and workstation designations, interior and exterior door and window designations.
- A dimensioned floor plan showing wire management system with openings located for voice, data, video, and electrical outlet locations.
- Room wall elevations for all non-typical walls.
- Casework floor plan complete with schedule, details and elevations.
- Interior and exterior window, door and frame schedule complete with elevations and details for all head, jamb and sill conditions.
- Interior and exterior finish and color schedule (exposed finished mechanical and electrical items shall be clearly addressed).
- A reflected ceiling plan showing all grid, access doors, drapery tracks, light fixtures, grills, diffusers, sprinkler heads, security devices, fire alarm devices, intercom system, exit devices and acoustic treatment. Ceiling heights and type should be indicated on the reflected ceiling plan.
- Details shall be provided for transitions between finish materials and wall types.
- Major building sections in at least two directions.
- A sufficient number of details shall be provided to clearly indicate the method of construction for all building components and shall include but not be limited to the following; exterior wall, waterproofing systems, insulating systems, interior and exterior finishes, architectural details, interior stairs, elevators.
- Interior signage locations shall be shown on the floor plan complete with details and schedules.
- Final locations shall be shown on the floor plan with associated floor loadings being shown on the structural drawings.
- Partition type schedule and section details for all interior, exterior and floor wall conditions.
- Roof plan showing all roofing material, roof drains, overflows, access hatches, roof drainage slopes and elevations, scuppers, skylights, mechanical and plumbing penetrations. Details shall be provided for all edge, parapet and flashing conditions.
- All exterior building elevations showing finish materials, exterior door and window openings and designations, lights, louvers, grilles, sign age, speakers and other devices.
- All structural members included in, or enclosed by the architectural details shall be closely coordinated with and the size verified by the structural engineer. Details shall indicate the framing and furring method wherever appropriate.
- All mechanical/electrical elements included in, or enclosed by the architectural details shall be closely coordinated with and the size verified by the design engineer. Details shall indicate the framing and furring method wherever appropriate.
- Complete Technical Specification including acceptable manufacturers.

STRUCTURAL

- A dimensioned foundation plan showing and locating in plan and in elevation all footing, foundations, foundation piers, caissons, grade beams, reinforcement with all layouts for masonry and anchor bolts.
- A dimensioned floor plan for each floor, showing all beams, beam sizes, duct and piping penetrations, construction joints, expansion joints, edge conditions, imbedded anchors and frames thickened slabs, recessed slabs stair penetrations, elevator shafts, floor loading, top of structure elevation and reinforcement.
- Footing, column, grade beam, caissons, piers, reinforcement and beam schedules.
- Dimensioned to scale details showing all conditions, connections and structural sizes.
- Shear walls clearly shown on plan and schedule if symbol code is used.
- Abbreviation and symbol glossary.
- Fastener/connection schedule.
- Elevations of all footings, elevations to top of all beams, columns, recesses and floors.
- Roof beam plan, elevator hoist beams.
- Complete Technical Specification including acceptable manufacturers.

MECHANICAL

- Abbreviation and symbol glossary.
- Mechanical equipment schedule.
- Exterior louver schedule, as coordinated with architectural louvers.
- Floor plans indicating ductwork with sizes, ductwork mechanical devices, beams for floor above with ductwork penetrations.
- Reflected ceiling plan showing final location of all ceiling mounted mechanical devices which include but is not limited to; diffusers, return air grilles and thermostats.
- Floor plan indicating the sprinkler and standpipe riser systems including all required pumps and control devices.
- Fire damper schedule and individually shown on the floor plan at each required location.
- Ductwork sound attenuation schedule.
- Vibration isolation schedule.
- Terminal control box schedule, with electrical and air volume requirements.
- Chilled water, condenser, refrigerant, fuel oil, steam and gas riser piping floor plans and riser diagrams and schematics including pipe sizes. Piping schematics shall be in large enough scale to clearly indicate all control devices, valves, unions and miscellaneous appurtenances.
- Areas of concentrated mechanical equipment shall be enlarged from the basic floor plan to not less than 1/4" = 1'-0" illustrating detailed ductwork and equipment within the mechanical room in both plan and section views; coil access and filter access are to be shown to scale as verification of clearance.
- Access doors both wall and ceiling, shall be called out at each applicable location as coordinated with the architectural drawings (rated where applicable).
- Floor plans should indicate housekeeping pads and weight of concentrated loads.

- Duct/piping penetrations of all walls, floors, roofs, beams, columns and foundations shall be coordinated with and verified by the structural engineer, code complying firestopping will be detailed for penetrations through fire rated assemblies.
- Locate on the floor plans all controls system equipment and provide a panel and device schedule, indicator panel graphics complete with sequence of operation and control system program diagram.
- Complete Technical Specification including acceptable manufacturers.

PLUMBING

- Fixture/connection schedule.
- Abbreviation/symbol glossary
- Floor plans indicating domestic hot and cold water, storm, waste, vent and gas piping plans, including all valves, unions, fixtures, pipe sizes, and riser diagrams etc.
- Piping and insulation jacket dimensions are to be coordinated with architectural finishes and casework; all exposed piping is to be verified with the architect.
- Plan drawing of all water and sanitary branch piping for installation of interior equipment and fixtures.
- Typical piping riser schematics for all gravity flow piping systems.
- Areas of concentrated plumbing equipment (hot water heaters, circulating pumps, etc.) shall be enlarged from the basic floor plan to not less than 1/4" = 1-0" detail in both plan and section views.
- Access panels, doors and provisions in both walls and ceilings are to be shown on floor plans for all valves, cleanouts and caps, etc.
- Connections to existing and new building utilities shall be clearly shown; requirements of governing utilities shall be determined and clearly detailed and shown; connection details and elevations shall be checked and coordinated with applicable civil
- Design details
- Piping penetrations of all walls, floors, roofs, beams, columns and foundations shall be coordinated with and verified by the structural engineer, code complying firestopping will be detailed for penetrations through fire rated assemblies.
- Complete Technical Specification including acceptable manufacturers.

ELECTRICAL

- Lighting fixture schedule
- Lighting control schedule, switches, emergency lighting.
- Power riser diagram for interior lighting systems.
- Abbreviations and symbol glossary.
- Panel schedules with panel locations shown on floor.
- Fan/motor control schedule/diagram.
- Floor plan showing location of all fire alarm device/panel schedule and indicator graphics and riser diagram including activated hardware, pull stations, confirm activated hardware with hardware schedule.

- Floor plan showing location of all intercom devices, panel schedule and location, program, riser diagram.
- Floor plan showing location of all security devices, panel schedule and locations and riser diagram.
- Floor plan showing location of all intercom and TV. outlets and devices.
- Power riser diagram and main distribution panel layout in large enough scale so each run can be clearly seen.
- Telephone board schedule and riser diagram coordinated as to equipment size requirements and connection provisions with the governing telephone utility and owner requirements.
- TV. terminal/splitter and riser diagram coordinated as to equipment size requirements and connection provisions to antenna and cable TV. system.
- Floor plan indicating wire management wiring for power, receptacles, voice, video and data communications including circuiting, and connections to systems furniture, etc.
- Separate plans for power, voice and data shall be provided.
- Floor plan indicating power connections to all mechanical equipment.
- Reflected ceiling plan indicating above ceiling wiring and circuits for lighting/electrical switches, security, fire alarm, emergency exit lighting and intercom controls, etc.
- Main service entrance connection diagram as verified and coordinated with the governing power utility; locations of service entrances and transformers shall be verified with the architect.
- Areas of concentrated electrical equipment, and electric vault rooms in particular, shall be enlarged from the basic floor plan to not less than 1/4" =1'-0" and shall be shown in plan and elevation.
- Sheet notes shall be applicable to each sheet standard notes and details shall be modified to specific conditions, non-applicable notes or details shall be deleted.
- Access to systems shall be verified, doors, panels or other provision shall be called out in all wall and ceiling locations for junction boxes, controls or any other device requiring access.
- Raceway penetrations of all walls, floors, roofs, beams, columns and foundations shall be coordinated with and verified by the structural engineer. Code complying fire-stopping will be detailed for penetrations through fire rated assemblies.
- Complete Technical Specification including acceptable manufacturers.

Appendix B

TECHNOLOGY PHASED SUBMISSION CHECK LIST FOR COMMENTS

Elements of Schematic Documents

Technology

- ❑ Provide a detailed description of the Owner's needs, including such items as: Connection to DA-Site, Connection to other schools district-wide, Carrier system requirements (ATM, PRI, Ethernet, etc.), owner's vision of how technology will be used in the classroom/school/district, provisions for a district-wide network operations center, and fiber between schools.
- ❑ Initial meeting with Architect and Owner to determine location and size requirements of all technology spaces.
- ❑ Single-line drawings showing connectivity schematic of various networks, including: data, voice, video, media retrieval, security, paging, specialized audio, etc.
- ❑ Provide a detailed description of any special design considerations, including such items as: lighting and wall color requirements for video conferencing rooms, separate HVAC systems for each of the technology areas, coordination issues with local service providers, running cat5e tie cables between TC's, etc.

Elements of Design Development Documents

Technology

- ❑ Preliminary list of all T drawings as per OSFC specifications
- ❑ Technology consultant must coordinate with all other trades in order to ensure proper pathway sizes and locations
- ❑ Preliminary floor plans indicating the locations of all technology outlets throughout the building, including, but not limited to: data, voice, video, sound, paging, security, speakers, access control, and wireless.
- ❑ Preliminary connectivity codes for each type of communication outlet to be installed.
- ❑ Riser diagrams of all technology systems.
- ❑ Outline specifications including acceptable manufacturers.
- ❑ Preliminary engineering of any outside plant work to be performed
- ❑ Preliminary schematics of all technology systems showing connectivity schemes.
- ❑ Floor plans showing all technology pathways, including cable trays in hallways, and conduits in walls.
- ❑ Floor plans indicating the locations of all technology devices throughout the building, including, but not limited: rack/cabinet layouts, wall-fields, layer-2 and layer-3 network switches, routers, transceivers, PBX, servers, security system, media retrieval equipment, ATM switches, monitors, DVD players, patch panels, cross-connects, etc.
- ❑ CM's estimate.

Elements of Construction Documents

Technology

- ❑ Complete list of T drawings as per OSFC specifications.
- ❑ Detailed CM's estimate.
- ❑ Detailed floor plans indicating the locations of all technology outlets throughout the building, including, but not limited to: data, voice, video, sound, paging, security, speakers, access control, and wireless.
- ❑ Detailed connectivity codes for each type of communication outlet to be installed.
- ❑ Detailed riser diagrams of all technology systems.
- ❑ Detailed specifications including acceptable manufacturers.
- ❑ Detailed engineering of any outside plant and inter-building work to be performed
- ❑ Detailed schematics of all technology showing the integration of all Technology systems. Schematics should include: component type, connecting cable type, transmission speed, circuit type, inter-/intra building connections, uplink connections, etc.
- ❑ Schematics shall show physical/logical connection between all integrated technology systems.
- ❑ Detailed floor plans indicating the locations of all technology devices throughout the building, including, but not limited: rack/cabinet layouts, wall-fields, layer-2 and layer-3 network switches, routers, transceivers, PBX, servers, security system, media retrieval equipment, ATM switches, monitors, DVD players, patch panels, cross-connects, etc.
- ❑ System Training Requirements
- ❑ Areas of concentrated technology equipment and telecommunication rooms, in particular, shall be enlarged from basic floor plan to not less than 1/4" = 1'-0".
- ❑ Sheet notes shall be applicable to each sheet standard notes and details shall be modified to specific conditions, non-applicable notes or details shall be deleted.
- ❑ Provide scalable rack and wallfield details that indicate equipment locations and wire management.

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE	450 Students	600 Students	750 Students
	SF	SF	SF
Grade Configuration: 6-8			
Number of Students	450	600	750
Square Feet Per Student	151.00	142.88	141.00
Total Gross Square Feet Funded	67,950	85,725	105,750
PROGRAM AREA			
M-AC Academic Core Spaces	18,450	24,450	29,850
M-SE Special Education Spaces	1,750	2,350	3,700
M-AD Administrative Spaces	2,237	2,705	3,415
M-MC Media Center Spaces	3,795	4,473	5,145
M-VA Visual Arts Spaces	1,400	1,450	2,700
M-MU Music Spaces	1,600	2,900	3,000
M-TE Technology Education Spaces	1,450	1,450	2,750
M-FCS Family and Consumer Science Spaces	0	1,200	1,200
M-PE Physical Education Spaces	9,300	10,325	11,100
M-SD Student Dining Spaces	4,150	4,300	5,732
M-FS Food Service Spaces	1,825	2,350	2,875
M-CU Custodial Spaces	300	400	500
M-BS Building Services	14,960	18,876	23,304
Facility Total	61,216	77,229	95,270
Construction Factor	0.11	0.11	0.11
Gross Square Feet Developed	67,950	85,725	105,750

WORKSHEET

Enter Grade Configuration:			
Enter Student Capacity			0
Square Feet Per Student from Page 2000-3			
Total Gross Square Feet Funded			
SELECT ONE → <input checked="" type="radio"/> Single Story Building <input type="radio"/> Multistory Building			
Plus Vertical Circulation (for Multistory Buildings) Area Allowable			0
Total Adjusted POR Gross Square Footage			0
PROGRAM AREA			
	New SF	Existing SF*	TOTAL SF
M-AC Academic Core Spaces	0	0	0
M-SE Special Education Spaces	0	0	0
M-AD Administrative Spaces	0	0	0
M-MC Media Center Spaces	0	0	0
M-VA Visual Arts Spaces	0	0	0
M-MU Music Spaces	0	0	0
M-TE Technology Education Spaces	0	0	0
M-FCS Family and Consumer Science Spaces	0	0	0
M-PE Physical Education Spaces	0	0	0
M-SD Student Dining Spaces	0	0	0
M-FS Food Service Spaces	0	0	0
M-CU Custodial Spaces	0	0	0
M-BS Building Services	0	0	0
Facility Total	0	0	0
Construction Factor (11% multiplied by the facility total)	0.11	na	na
Actual Gross Square Feet Developed	0	0	0
Minus existing Oversize Area from Master Plan		0	-
Adjusted Existing Area		0	-
Total Adjusted Gross Square Footage Developed (without Oversize Area)			0
Difference of SF developed from SF allowable			0

Vertical Circulation (multistory buildings) refers only to stairways/stairtowers, monumental stairs, elevators and elevator equipment rooms.

see note 1
see note 2

NOTES

- Existing Gross Square Feet taken from assessment report.
 - Oversize Area also taken from assessment report.
- * The Existing SF column is only used in projects where there are to be building additions.

Sample School District, SAMPLE MIDDLE SCHOOL
ACADEMIC CORE SPACES
M-AC

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-AC-1	Middle School Classroom	15	900	13,500	18	900	16,200	24	900	21,600
M-AC-2	Project Laboratory	3	1,100	3,300	6	1,100	6,600	6	1,100	6,600
M-AC-3	Teacher Prep Area/Workroom	3	300	900	3	300	900	3	300	900
M-AC-4	Individual Restroom	3	50	150	3	50	150	3	50	150
M-AC-5	Instructional Material Storage	3	200	600	3	200	600	3	200	600
M-AC-6	Small Group Room	0	150	0	0	150	0	0	150	0
Academic Core Total				18,450			24,450			29,850

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-AC-1	Middle School Classroom	0	900	0	0	0	0	0	varies	0
M-AC-2	Project Laboratory	0	1,100	0	0	0	0	0	varies	0
M-AC-3	Teacher Prep Area/Workroom	0	300	0	0	0	0	0	varies	0
M-AC-4	Individual Restroom	0	50	0	0	0	0	0	varies	0
M-AC-5	Instructional Material Storage	0	200	0	0	0	0	0	varies	0
M-AC-6	Small Group Room	0	150	0	0	0	0	0	varies	0
Academic Core Total				0			0			0

CHAPTER 2: BRACKETING

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students			
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area	
M-SE-1	Self-contained Classroom	1	900	900	1	900	900	2	900	1,800	see note 1
M-SE-2	Workroom/Conference	1	150	150	1	150	150	2	150	300	see note 2
M-SE-3	Restroom/Shower	1	100	100	1	100	100	1	100	100	
M-SE-4	Special Education/Resource	0	900	0	0	900	0	1	900	900	see note 3
M-SE-5	Small Self-contained Classroom	1	600	600	2	600	1,200	1	600	600	
Special Education Total				1,750			2,350			3,700	

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-SE-1	Self-contained Classroom	0	900	0	0	0	0	0	varies	0
M-SE-2	Workroom/Conference	0	150	0	0	0	0	0	varies	0
M-SE-3	Restroom/Shower	0	100	0	0	0	0	0	varies	0
M-SE-4	Special Education/Resource	0	900	0	0	0	0	0	varies	0
M-SE-5	Small Self-contained Classroom	0	600	0	0	0	0	0	varies	0
Special Education Total				0			0			0

NOTE 1: Self-contained classroom(s) could 'house' various special education programs including, but not limited to, cognitive disability, emotional disturbance, multiple disabilities, etc.

NOTE 2: Workroom/Conference could 'house' orthopedic impairment, autism, speech therapy, occupational therapy, and physical therapy.

NOTE 3: Special Education/Resource could 'house' cognitive disability, hearing impairment, visual impairment, emotional disturbance, orthopedic impairment, autistic, traumatic, brain injury, learning disability, deaf/blindness, etc.
 See Chapter 1, Section 1110 for more information.

For student capacities from 1,601 to 2,400 the area remains the same or increases proportionally as indicated in the example.

Sample School District, SAMPLE MIDDLE SCHOOL
ADMINISTRATIVE SPACES
M-AD

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students			
Space	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area		
M-AD-1	Reception Area	1	200	200	1	300	300	1	400	400	
M-AD-2	Secretarial Area	1	200	200	1	300	300	1	400	400	
M-AD-3	Principal's Office	1	150	150	1	150	150	1	150	150	
M-AD-4	Assistant Principal's Office	0	120	0	0	120	0	1	120	120	
M-AD-5	Conference Room	1	250	250	1	250	250	1	250	250	
M-AD-6	Mail/Work/Copy Room	1	200	200	1	250	250	1	300	300	
M-AD-7	Administrative Storage	1	150	150	1	150	150	1	150	150	
M-AD-8	Vault/Records Storage	1	50	50	1	65	65	1	80	80	
M-AD-9	In-school Suspension	1	200	200	1	250	250	1	325	325	
M-AD-10	Restroom	1	50	50	1	50	50	1	50	50	
M-AD-11	Guidance Counselor's Office	1	120	120	1	120	120	2	120	240	
M-AD-12	Guidance Records/Storage	0	100	0	1	100	100	1	100	100	
M-AD-13	Parent/Volunteer Room	1	200	200	1	200	200	1	200	200	
M-AD-14	Health Clinic	1	347	347	1	400	400	1	450	450	
M-AD-15	Itinerant Personnel Office	1	120	120	1	120	120	1	120	120	
M-AD-16	Family Restroom	0	80	0	0	80	0	1	80	80	
Administrative Total			2,237			2,705			3,415		

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area	
M-AD-1	Reception Area	0	200	0	0	0	0	varies	0	
M-AD-2	Secretarial Area	0	200	0	0	0	0	varies	0	
M-AD-3	Principal's Office	0	150	0	0	0	0	varies	0	
M-AD-4	Assistant Principal's Office	0	120	0	0	0	0	varies	0	
M-AD-5	Conference Room	0	250	0	0	0	0	varies	0	
M-AD-6	Mail/Work/Copy Room	0	200	0	0	0	0	varies	0	
M-AD-7	Administrative Storage	0	150	0	0	0	0	varies	0	
M-AD-8	Vault/Records Storage	0	50	0	0	0	0	varies	0	
M-AD-9	In-school Suspension	0	200	0	0	0	0	varies	0	
M-AD-10	Restroom	0	50	0	0	0	0	varies	0	
M-AD-11	Guidance Counselor's Office	0	120	0	0	0	0	varies	0	
M-AD-12	Guidance Records/Storage	0	100	0	0	0	0	varies	0	
M-AD-13	Parent/Volunteer Room	0	200	0	0	0	0	varies	0	
M-AD-14	Health Clinic	0	350	0	0	0	0	varies	0	
M-AD-15	Itinerant Personnel Office	0	120	0	0	0	0	varies	0	
M-AD-16	Family Restroom	0	80	0	0	0	0	varies	0	
Administrative Total			0		0		0		0	

NOTE 1: Student capacity determines SF allowed. 350-450: 200 SF; 451-600: 300 SF; 601-750: 400 SF
 NOTE 2: Student capacity determines SF allowed. 350-450: 200 SF; 451-600: 300 SF; 601-750: 400 SF
 NOTE 3: Student capacity determines SF allowed. 350-450: 200 SF; 451-600: 250 SF; 601-750: 300 SF
 NOTE 4: Student capacity determines SF allowed. 350-450: 50 SF; 451-600: 65 SF; 601-750: 80 SF
 NOTE 5: Student capacity determines SF allowed. 350-450: 200 SF; 451-600: 250 SF; 601-750: 325 SF
 NOTE 6: Student capacity determines SF allowed. 350-450: 350 SF; 451-750: 450 SF

CHAPTER 2: BRACKETING

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-MC-1	Reading Room/Circulation	1	1,575	1,575	1	2,100	2,100	1	2,625	2,625
M-MC-2	Media Specialist Office	1	120	120	1	120	120	1	120	120
M-MC-3	Workroom/Storage	1	150	150	1	200	200	1	250	250
M-MC-4	Main Control/Equipment Rm	1	300	300	1	300	300	1	300	300
M-MC-5	Computer Lab	1	1,000	1,000	1	1,000	1,000	1	1,000	1,000
M-MC-6	A/V Storage	1	150	150	1	200	200	1	250	250
M-MC-7	Conference Room	1	200	200	1	200	200	1	200	200
M-MC-8	Multimedia Production Room	1	300	300	1	353	353	1	400	400
Media Center Total				3,795			4,473			5,145

WORKSHEET		New SF			Existing SF			TOTAL SF			
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area	
M-MC-1	Reading Room/Circulation	0	0	0	0	0	0	0	varies	0	See Note 1.
M-MC-2	Media Specialist Office	0	120	0	0	0	0	0	varies	0	
M-MC-3	Workroom/Storage	0	150	0	0	0	0	0	varies	0	See Note 2.
M-MC-4	Main Control/Equipment Rm	0	300	0	0	0	0	0	varies	0	
M-MC-5	Computer Lab	0	1,000	0	0	0	0	0	varies	0	
M-MC-6	A/V Storage	0	150	0	0	0	0	0	varies	0	See Note 3.
M-MC-7	Conference Room	0	200	0	0	0	0	0	varies	0	
M-MC-8	Multimedia Production Room	0	300	0	0	0	0	0	varies	0	See Note 4.
Media Center Total				0			0			0	

NOTE 1: The size of the reading room/circulation space is equal to 10% of the student capacity multiplied by 35 SF per student.
 NOTE 2: Student capacity determines SF allowed. 350-450: 150 SF; 451-600: 200 SF; 601-750: 250 SF
 NOTE 3: Student capacity determines SF allowed. 350-450: 150 SF; 451-600: 200 SF; 601-750: 250 SF
 NOTE 4: Student capacity determines SF allowed. 350-450: 300 SF; 451-750: 400 SF

Sample School District, SAMPLE MIDDLE SCHOOL
VISUAL ART SPACES
M-VA

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-VA-1	Art Room	1	1,200	1,200	1	1,200	1,200	2	1,200	2,400
M-VA-2	Kiln/Ceramic Storage	1	100	100	1	100	100	1	100	100
M-VA-3	Art Material Storage	1	100	100	1	150	150	1	200	200
Visual Arts Total				1,400			1,450			2,700

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-VA-1	Art Room	0	1,200	0	0	0	0	0	varies	0
M-VA-2	Kiln/Ceramic Storage	0	100	0	0	0	0	0	varies	0
M-VA-3	Art Material Storage - note 1	0	100	0	0	0	0	0	varies	0
Visual Arts Total				0			0			0

NOTE 1: Student capacity determines SF allowed. 350-450: 100 SF; 451-600: 150 SF; 601-750: 200 SF

CHAPTER 2: BRACKETING

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-MU-1	Instrumental Room	1	1,400	1,400	1	1,500	1,500	1	1,600	1,600
M-MU-2	Vocal Room	0	1,200	0	1	1,200	1,200	1	1,200	1,200
M-MU-3	Music Library	1	200	200	1	200	200	1	200	200
Music Total				1,600			2,900			3,000

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-MU-1	Instrumental Room - note 1	0	1,400	0	0	0	0	0	varies	0
M-MU-2	Vocal Room	0	1,200	0	0	0	0	0	varies	0
M-MU-3	Music Library	0	200	0	0	0	0	0	varies	0
Music Total				0			0			0

NOTE 1: Student capacity determines SF allowed. 350-450: 1400 SF; 451-600: 1500 SF; 601-750: 1600 SF

Sample School District, SAMPLE MIDDLE SCHOOL
TECHNOLOGY EDUCATION SPACES
M-TE

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-TE-1a	Modular Technology Lab or	1	1,300	1,300	1	1,300	1,300	1	1,300	1,300
M-TE-1b	Production Lab	0	1,300	0	0	1,300	0	1	1,300	1,300
M-TE-2	Storage	1	150	150	1	150	150	1	150	150
Technology Education Total				1,450	1,450			2,750		

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-TE-1a	Modular Technology Lab or	0	1,300	0	0	0	0	0	varies	0
M-TE-1b	Production Lab	0	1,300	0	0	0	0	0	varies	0
M-TE-2	Storage	0	150	0	0	0	0	0	varies	0
Technology Education Total				0	0			0		

Sample School District, SAMPLE MIDDLE SCHOOL
FAMILY AND CONSUMER SCIENCE SPACES
M-FCS

CHAPTER 2: BRACKETING

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE Space	450 Students			600 Students			750 Students		
	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-FCS-1 Life Skills Lab	0	1,100	0	1	1,100	1,100	1	1,100	1,100
M-FCS-2 Life Skills Storage	0	100	0	1	100	100	1	100	100
Family and Consumer Science Total			0			1,200			1,200

WORKSHEET Space	New SF			Existing SF			TOTAL SF		
	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-FCS-1 Life Skills Lab	0	1,100	0	0	0	0	0	varies	0
M-FCS-2 Life Skills Storage	0	100	0	0	0	0	0	varies	0
Family and Consumer Science Total			0			0			0

Sample School District, SAMPLE MIDDLE SCHOOL
PHYSICAL EDUCATION SPACES
M-PE

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-PE-1	Gymnasium	1	7,000	7,000	1	8,000	8,000	1	8,500	8,500
M-PE-2	P.E./Athletic Office	2	75	150	2	75	150	2	75	150
M-PE-3	Staff Shower	2	75	150	2	75	150	2	75	150
M-PE-4	Student Locker Room	2	600	1,200	2	600	1,200	2	650	1,300
M-PE-5	Student Restroom/Shower	2	250	500	2	250	500	2	250	500
M-PE-6	Physical Education Storage	1	300	300	1	325	325	1	500	500
Physical Education Total				9,300			10,325			11,100

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-PE-1	Gymnasium - note 1	0	7,000	0	0	0	0	0	varies	0
M-PE-2	P.E./Athletic Office	0	75	0	0	0	0	0	varies	0
M-PE-3	Staff Shower	0	75	0	0	0	0	0	varies	0
M-PE-4	Student Locker Room-note 2	0	600	0	0	0	0	0	varies	0
M-PE-5	Student Restroom/Shower	0	250	0	0	0	0	0	varies	0
M-PE-6	Physical Education Storage-note 3	0	300	0	0	0	0	0	varies	0
Physical Education Total				0			0			0

NOTE 1: Student capacity determines SF allowed. 350-450: 7000 SF; 451-600: 8000 SF; 601-750: 8500 SF

NOTE 2: Student capacity determines SF allowed. 350-450: 600 SF; 451-600: 600 SF; 601-750: 650 SF

NOTE 3: Student capacity determines SF allowed. 350-450: 300 SF; 451-600: 325 SF; 601-750: 500 SF

Sample School District, SAMPLE MIDDLE SCHOOL
STUDENT DINING SPACES

CHAPTER 2: BRACKETING

M-SD

The following is an example of three sizes of middle schools.

The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-SD-1	Student Dining	1	3,000	3,000	1	3,000	3,000	1	3,750	3,750
M-SD-2	Stage	1	900	900	1	1,050	1,050	1	1,382	1,382
M-SD-3	Staff Dining	0	200	0	0	250	0	1	300	300
M-SD-4	Table Storage	1	250	250	1	250	250	1	300	300
Student Dining Total				4,150			4,300			5,732

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-SD-1	Student Dining - note 1	0	3,000	0	0	0	0	0	varies	0
M-SD-2	Stage	0	0	0	0	0	0	0	varies	0
M-SD-3	Staff Dining - note 2	0	200	0	0	0	0	0	varies	0
M-SD-4	Table Storage - note 3	0	250	0	0	0	0	0	varies	0
Student Dining Total				0			0			0

NOTE 1: The size of the student dining space is equal to one-third of the student capacity multiplied by 15 SF per student or 3000 SF, whichever is greater.

NOTE 2: Student capacity determines SF allowed. 350-450: 200 SF; 451-600: 250 SF; 601-750: 300 SF

NOTE 3: Student capacity determines SF allowed. 350-600: 250 SF; 601-750: 300 SF

Sample School District, SAMPLE MIDDLE SCHOOL
FOOD SERVICE SPACES
M-FS

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area	
M-FS-0	Warming Kitchen	0	900	0	1,200	0	0	1,500	0	
M-FS-1	Kitchen (total)	1		1		2,100	1		2,625	
M-FS-1a	Preparation Area		567		756			945		
M-FS-1b	Serving Area		536		714			893		
M-FS-1c	Dry Food Storage		173		231			289		
M-FS-1d	Cooler/Freezer		158		210			263		
M-FS-1e	Ware Washing		142		189			236		
M-FS-2	Dietician Office	1	75	75	1	75	75	1	75	
M-FS-3	Restroom	1	50	50	1	50	50	1	50	
M-FS-4	Locker Room	1	125	125	1	125	125	1	125	
Food Service Total			1,825		2,350		2,875			

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area	
M-FS-0	Warming Kitchen	0	0	0	0	0	0	varies	0	
M-FS-1	Kitchen (total)	0	0	0	0	0	0	varies	0	
M-FS-1a	Preparation Area		0		0			varies		
M-FS-1b	Serving Area		0		0			varies		
M-FS-1c	Dry Food Storage		0		0			varies		
M-FS-1d	Cooler/Freezer		0		0			varies		
M-FS-1e	Ware Washing		0		0			varies		
M-FS-2	Dietician Office	0	75	0	0	0	0	varies	0	
M-FS-3	Restroom	0	50	0	0	0	0	varies	0	
M-FS-4	Locker Room	0	125	0	0	0	0	varies	0	
Food Service Total			0		0		0		0	

See Notes 7 and 8.
 See Notes 1 and 8.
 See Note 2.
 See Note 3.
 See Note 4.
 See Note 5.
 See Note 6.

- NOTE 1: The size of the kitchen is equal to the sum of preparation area, serving area, dry food storage area, cooler/freezer area, and ware washing area.
- NOTE 2: The size of the preparation area is equal to the student capacity multiplied by 3.5 SF per student multiplied by 36%.
- NOTE 3: The size of the serving area is equal to the student capacity multiplied by 3.5 SF per student multiplied by 34%.
- NOTE 4: The size of the dry food storage area is equal to the student capacity multiplied by 3.5 SF per student multiplied by 11%.
- NOTE 5: The size of the cooler/freezer area is equal to the student capacity multiplied by 3.5 SF per student multiplied by 10%.
- NOTE 6: The size of the ware washing area is equal to the student capacity multiplied by 3.5 SF per student multiplied by 9%.
- NOTE 7: The size of the warming kitchen is equal to student capacity multiplied by 2.0 SF per student.
- NOTE 8: Only one of the two kitchens is to be used - either M-FS-0 OR M-FS-1 - not both.

CHAPTER 2: BRACKETING

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE		450 Students			600 Students			750 Students		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-CU-1	Workroom	1	200	200	1	300	300	1	400	400
M-CU-2	Custodial Office	1	100	100	1	100	100	1	100	100
Custodial Total				300			400			500

WORKSHEET		New SF			Existing SF			TOTAL SF		
Space		Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-CU-1	Workroom - note 1	0	200	0	0	0	0	0	varies	0
M-CU-2	Custodial Office	0	100	0	0	0	0	0	varies	0
Custodial Total				0			0			0

NOTE 1: Student capacity determines SF allowed. 350-450: 200 SF; 451-600: 300 SF; 601-750: 400 SF

Sample School District, SAMPLE MIDDLE SCHOOL
BUILDING SERVICES SPACES
M-BS

The following is an example of three sizes of middle schools.
 The examples are intended to assist in the development of the summary of spaces.

EXAMPLE Space	450 Students			600 Students			750 Students		
	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area
M-BS-1 Large Group Restrooms	-	1,619	1,619	-	2,042	2,042	-	2,519	2,519
M-BS-2 Custodial Closet	2	50	100	3	50	150	4	50	200
M-BS-3 Electrical Closet	2	50	100	3	50	150	4	50	200
M-BS-4 Telecommunications Room (TR)	2	64	128	3	64	192	4	64	256
M-BS-5 Corridors	-	9,251	9,251	-	11,671	11,671	-	14,393	14,393
M-BS-6 Mechanical/Electrical Space/Decks	-	3,192	3,192	-	4,026	4,026	-	4,966	4,966
M-BS-7 Outdoor Storage Area	1	150	150	1	200	200	1	250	250
M-BS-8 Central Storage Area	1	300	300	1	325	325	1	400	400
M-BS-9 Loading/Receiving Area	1	120	120	1	120	120	1	120	120
M-BS-10 Restroom	0	50	0	0	50	0	0	50	0
Building Services Total			14,960			18,876			23,304

WORKSHEET Space	New SF			Existing SF			TOTAL SF			
	Qty	SF	Area	Qty	SF	Area	Qty	SF	Area	
M-BS-1 Large Group Restrooms	-	0	0	-	0	0	-	varies	0	See Note 1.
M-BS-2 Custodial Closet	0	50	0	0	0	0	0	varies	0	
M-BS-3 Electrical Closet	0	50	0	0	0	0	0	varies	0	
M-BS-4 Telecommunications Room (TR)	0	64	0	0	0	0	0	varies	0	See Note 7.
M-BS-5 Corridors	-	0	0	-	0	0	-	varies	0	See Note 2.
Vertical Circulation	-	0	0	-	0	0	-	varies	0	See Note 6.
M-BS-6 Mechanical/Electrical Space/Decks	-	0	0	-	0	0	-	varies	0	See Note 3.
M-BS-7 Outdoor Storage Area	0	150	0	0	0	0	0	varies	0	See Note 4.
M-BS-8 Central Storage Area	0	300	0	0	0	0	0	varies	0	See Note 5.
M-BS-9 Loading/Receiving Area	0	120	0	0	0	0	0	varies	0	
M-BS-10 Restroom	0	50	0	0	0	0	0	varies	0	
Building Services Total			0			0			0	

NOTE 1: The total size of large group restrooms is equal to the sum of the program areas, excluding building services, multiplied by 3.5%.

NOTE 2: The total size of the corridors is equal to the sum of the program areas, excluding building services, multiplied by 20%.

NOTE 3: The total size of the mechanical/electrical space/decks is equal to the sum of the program areas, excluding building services, multiplied by 6.9%.

NOTE 4: Student capacity determines SF allowed. 350-450: 150 SF; 451-600: 200 SF; 601-750: 250 SF

NOTE 5: Student capacity determines SF allowed. 350-450: 300 SF; 451-600: 325 SF; 601-750: 400 SF

NOTE 6: Vertical Circulation refers only to the following: Stairways/stairtowers, monumental stairs, elevators and elevator equipment room.

NOTE 7: Size of the TR varies with size of middle school. See page 5113-7.

A. Introduction

The Ohio Department of Education - Office for Exceptional Children complies with the Federal Regulations for the Individuals with Disabilities Education Act (IDEA) and the OSFC Design Manual provides square footage guidelines to comply with the educational program requirements. IDEA requires a district to provide a full continuum of services in a student's neighborhood/home school to the greatest extent possible in the Least Restrictive Environment.

The Ohio educational management information system guidelines (rev 11-25-03) provide placement option codes for students with disabilities to meet the Least Restrictive Environment requirement for all special needs students. These codes assist in differentiating the type and number of spaces that are needed in each school to address the facility needs for students with disabilities. As each school district is planning for specific educational program needs in their new or renovated facilities, identifying the number of students in each of these options is important to appropriately provide the unique space requirements. The specific codes are provided as part of this document to assist in identifying all of the students who need to be considered in the facility program needs. An asterisk denotes placement options, which may impact facility needs.

210000 - PLACEMENT OPTIONS FOR STUDENTS WITH DISABILITIES: A continuum of placements to meet the needs of students with disabilities for special education and related services. These programs consist of instructional services at the elementary and secondary levels.

CODE 210021* - Full-time in a regular class with special education/related services provided within the regular class.

210022* - Regular class with special education/related services provided outside the regular class for less than 21% of the time.

210023* - Regular class with special education/related services provided outside the regular class at least 21% and no more than 50% of the time.

210024* - Regular class with special education/related services provided outside the regular class at least 51% and no more than 60% of the time.

210025* - Regular class with special education/related services provided outside the regular class 61% of the time.

210026* - Self-contained special education class (100% of the time) operated by and located in a regular public or Community school building.

210027* - Self-contained special education class at least 50% of the time in a separated facility, and the remainder of the time in a regular public or Community school building.

210028 - Self-contained special education class (100% of the time) operated by the public school and located in a separate building exclusively for students with disabilities.

210029* - Special education/related services provided by CBMR/DD in a chartered public school building 100% of the time, and students participate (academically or non-academically) outside the regular class for less than 21% of the time.

A. Introduction, continued

210030* - Special education/related services provided by CBMR/DD in a regular public or Community school building 100% of the time, and students participate (academically or non-academically) outside the regular class at least 21% of the time and no more than 60% of the time.

210031* - Special education/related services provided by CBMR/DD in a regular public or Community school building 100% of the time, and students participate (academically or non-academically) outside the regular class at least 61% of the time.

210032 - Special education/related services, provided by CBMR/DD, 100% of the time located in a CBMR/DD building.

210033 - Special education/related services provided at a private separate facility at public expense.

210034 - Special education/related services provided in a public residential facility (Ohio State School for the Blind, Ohio School for the Deaf, the Department of Youth Services, the Department of Rehabilitation and Correction, the Department of Mental Retardation and the Department of Mental Health).

210035 - Special education/related services provided in a private residential facility, at public expense.

210036 - Special education/related services provided in a hospital setting.

210037 - Special education/related services provided in a homebound setting (home instruction)

210038 - A student with a disability placed in a state-approved non-public school by a public school district and receives services through an IEP.

210039 - A student with a disability placed in a state-approved non-public school by the student's parent(s) and receives services through a Services Plan.

210041 - No special education provided

210042 - IEP review process incomplete

210043 - No special education services provided due to parent refusal

211001 - Alternative Educational Setting (AES) is an educational setting where a special education student may be temporarily placed for up to 45 days and for the same amount of time as children and youth without disabilities would be subject to discipline. This setting, where the student will continue to receive instruction, is different from the student's current placement setting.

In addition to the classroom space needs for special needs students, there are also additional services that need to be provided which will impact facility needs as well. Those areas that need to be considered within the educational facility program, are identified with an asterisk. The OSFC Design Manual provides flexibility in meeting these varied educational needs through its guidelines.

A. Introduction, continued**Adaptive Physical Education and Related Services for Children With Disabilities**

215001* - Adapted Physical Education Services: Specially designed instruction in physical education to meet the unique needs of a handicapped child, including individual and/or group instruction.

215002* - Aide Services: Services include assisting the teacher in a special class/learning center and assisting the professional in other areas of handicap.

215003* - Attendant Services: Services include assisting the orthopedically and/or other health handicapped or multihandicapped child with personal health care needs within the confines of the educational setting.

215004* - Audiological Services: Those activities organized for identification of children with hearing loss; determination of range, nature, and degree of hearing loss' referral for medical or other professional attention when indicated for the habilitation of hearing handicapped children; the counseling and guidance of pupils, parents, and teachers regarding hearing loss; determination of the child's need for group and individual amplification; evaluation of the effectiveness of amplification; and creation and coordination of hearing conservation programs.

215005* -Guide Services: Services of a guide shall include assisting the visually handicapped child in his or her travels within the confines of the educational setting.

215006* - Interpreter Services: Services of an interpreter shall include providing oral, simultaneous, or manual interpreter service depending on the needs of the children served and may include interpreting, translating (transliterating), reverse interpreting (the verbal rephrasing of the message of hearing impaired), and reverse translating (the intelligible vocal presentation of the exact words of a hearing impaired speaker).

215007* - Medical Services: Those diagnostic and evaluation services that are required for initial or continued placement in an appropriated special education program or for provision of related special education services.

215008* - Occupational Therapy Services: Services include providing an occupational therapy evaluation as part of the multi-factored evaluation; and providing occupational therapy services in accordance with the individualized education program.

215009* - Orientation and Mobility Services: Services include providing an orientation and mobility evaluation and the provision of orientation and mobility services in accordance with the individualized education program

215010* - Physical Therapy Services: Activities include providing a physical therapy evaluation as prescribed by a licensed physician and as part of the multi-factored evaluation, and providing physical therapy services in accordance with the individualized education program.

215011* - Reader Services: Reading orally the school assignments for the visually handicapped child for whom this service is deemed appropriate.

A. Introduction, continued

215012* - School Psychological Services: Activities concerned with conducting and interpreting psycho-educational assessments focused upon pupil learning and behavior; designing instructional and behavioral interventions to help pupils attain specific pupil outcomes; consulting with educators; parents and community agencies to coordinate resources necessary to support needed interventions; providing in-service training to parents and educators regarding effective learning and behavioral techniques to promote student performance; and provision of counseling to pupils and parents on an individual and group basis.

215013* - Speech and Language Services: Those activities organized for the identification of children with speech and language disorders; referral for medical or other professional attention necessary; provision of speech and language services for the prevention of communicative handicaps; and counseling and guidance of children, parents, and teachers regarding speech and language handicaps.

215014* - Supervisory Services: Services include assisting and implementing educational programs to special education personnel, parents, aides, administrators, and general education personnel regarding the education of handicapped children.

215015* - Vocational Special Education Coordinator Services: Services include providing work evaluation of handicapped students referred to a vocational education planning district or vocational school district for placement and providing supplemental instruction in accordance with goals and objectives set forth in the individualized education program.

215016* - Work-Study Services: Services include providing assistance in placement and adjustment of handicapped students and delivering a continuum of work-related services in accordance with goals and objectives set forth in the individualized educational program.

215017* - Parent Involvement: Services provided to parents to assist them in understanding the special needs of the child and to provide the parent with information about child development and the educational implications of the handicapping condition.

215018* - Counseling Services: Counseling services means services provided by school psychologists, guidance counselors, or other qualified personnel in accordance with an individualized education program.

215019* - Adaptive Equipment and Services: Services provided to students with disabilities which include the adaptation of equipment or the introduction of assistive devices that are needed to implement the goals and objectives set forth in the individualized education program.

215020* - Recreational Services: Services provided to students with disabilities which include assessment of leisure functions; therapeutic recreation; recreation programs in schools and community agencies; and leisure education, if required to provide related services in accordance with the individualized program.

215021 - Special Transportation: The term means transportation which is established solely for the purpose of transporting students with disabilities attending a regular public school or non-public school. Special transportation must be uniquely designed for each student in accordance with an individualized education program.

A. Introduction, continued

215022* - Social Work Services: Social work services include group and individual counseling with the children and their families; working with those problems in a child's living situation that affect the child's adjustment in school and mobilizing school and community resources to enable the child to receive maximum benefit from his or her educational program. (proposed federal definition)

215023 - Other: Services not specifically listed above which can reasonably be expected to benefit students with disabilities and which are included in the student's individualized education program.

215024 - Braille Services: Braille services for visually disabled children consist of such services as brailled materials and braillewriter which are provided to children with visual disability in order to meet their unique educational needs in accordance with an individualized education program.

215025 - Transitional Services: The term means a coordinated set of activities designed within an outcome-oriented process which promotes movement from school to post-school activities. The coordinated set of activities shall be based upon the individual student's needs in accordance with an individualized education program.

Just as every student is unique as represented in their IEP (Individualized Education Program), so is every school district in addressing the specific needs of the students they serve. It is the intent of the OSFC Design Manual to accommodate the specific needs of all students, realizing that a large majority of those students identified with special needs may utilize a variety of spaces throughout the school day to address their IEP. Since Ohio is experiencing a continued increase in the number of students identified with special needs, the facility requirements must provide the flexibility to address the changing demographics as well.

In addressing the requirement to provide the least restrictive environment for each student, accommodations must also be made for the mandated age span requirements established in the rules (48-60 months, depending on the disability).

Another factor that must be taken into consideration when determining space needs is based on research as well as common practice. A large majority of special needs students participate in a regular classroom setting with their "teacher of record" being the special education resource teacher. Typically, those students are scheduled in the regular classroom for activities for which they can benefit and then spend time in the Resource Room based on their IEP. Students are often in the Resource Room and the Core Classroom several times each day. Therefore, it is difficult to arbitrarily assume that each student in a building has only one "home base" in determining space needs.

Since the Design Manual serves as a guide, it is necessary during the planning process to identify the specific needs of the school in meeting the special needs population and plan early in the process to ensure that those needs are being met through the design.

Another document that must be taken into consideration in the facility planning process is the Ohio Administrative code (September, 2001). Sections 3301-51-03 and 3301-51-04 and 3301-54-05 provide requirements as to the space needed to meet the continuum of services provided to special needs students. For instance, in addressing individual instruction and small group instruction, the code states that the individual teacher shall not serve more than one child during any single instructional period. The small group instructional teacher shall serve two or three children during any single instruction period.

A. Introduction, continued

In section 3301-51-04, teacher/pupil ratio states that there will be at least one full-time aide in each special class for multi-handicapped children. One special class teacher shall serve six to eight children. If there is a hearing handicapped program within the facility, the room for instruction shall have acoustical treatment to reduce the ambient noise level to sixty decibels or below. (ANSI)

In section 3301-51-05 related services for handicapped children, one of the requirements for adapted physical education instruction that impacts facilities is that the program needs to be housed in existing physical education facilities that are designated for the use of the adapted physical educator during the scheduled times. When such an arrangement is not possible, an open floor area, which is barrier free, shall be provided to accommodate motor activities, games, and sports on an individual or group basis.

There are a number of other facility implications for special needs students in the Ohio Administrative Code. As each School District is addressing their specific educational program needs, the code should be consulted.

B. OSFC Design Manual Square Footage Allocations

In order to accommodate the uniqueness of each district in meeting the special needs population, OSFC has provided space for: a Self-contained Classroom(s), Workroom /Conference Room, Restroom/Shower, Resource Room and Small Self-contained Classroom. The student population will determine the number and type of spaces needed in each area. In addition, square footage has been allocated for Guidance Services, Health Clinic and other support service spaces, as needed for the special needs students.

As each school district addresses their specific student requirements, the square footage allocated for classrooms may be utilized to address special needs students as well as regular education students. It is important for the district to identify the current student population requiring special needs based on their IEP's and recognize the trends that have been established within the district in terms of special needs students to justify space allocations.

The square footage and layout guidelines for special needs spaces will be identified in the Elementary, Middle, and High School program areas.

C. Service Provider Ratios for Delivery of Services

Disability	Grades K-8	Grades 9-12	Age Span
Cognitive Disabilities	16 (12 at one time)	24 (16 at one time)	60 mos. (in 1 period)
Learning Disabilities	16 (12 at one time)	24 (12 at one time)	60 mos. (in 1 period)
Hearing, Visual, Orthopedic Impairments	10 (8 at one time)	10(8 at one time)	48 mos. (in 1 period)
Emotional Disturbances (If no plan, one FT paraprofessional) (see 3301-51-09 3.diii)	12 (10 at one time)	12(10 at one time)	48 mos. (in 1 period)
Multiple Disabilities (plus one FT paraprofessional)	8	8	60 mos. (in 1 period)
Autism, deaf-blind, traumatic brain injury Specialist can serve more than one category (plus one FT paraprofessional)	16	24	60 mos. (in 1 period)

Related Services	K-12 # of Students	Preschool Students
Adapted P.E.	100	100
Audiologist	100	75
Occupational Therapy	50	40
Mobility Instructor	50	40
Physical Therapist	50	40
Speech, language, Pathologist (1SLP for 2000 students)	80	50
School Psychologist (1 Psychologist per 2500 students)	125	75

Preschool Services – Requirements for Class Size, Age Span, and Personnel Services

- 10-20 students - 4 hours per month for itinerant services
- 10 hours per week for special classes
- 6-8 students with disabilities in a full day program
- 12-16 students in a half day program
- 36 mos. age range
- No more than 8 children at one time
- 7 or more children in a class setting requires one additional "responsible" adult

(Source: Based on the Operating Standards for Ohio's School Serving Children with Disabilities 3301-51-09, 2002 (#3))

**EDUCATIONAL PROGRAMMING
SPECIAL EDUCATION PROGRAM OVERVIEW**

D. Matrix For Use of Space By Disability

	Regular Classroom (900 SF)	Self-Contained CR (900 SF)	Restroom	Workroom/ Conference	Resource (900 SF)	Small Self-Contained Classroom (600 SF)
Disability						
Autism	●			●	●	●
Cognitive Disability (Mental Retardation)	●	●	●		●	●
Deaf-Blindness	●				●	●
Emotional Disturbance	●	●			●	●
Hearing Impairment	●				●	●
Multiple Disabilities	●	●	●		●	
Orthopedic Impairment	●			●	●	●
Specific Learning Disability	●				●	●
Speech Language Impairment	●			●		
Visual Impairment	●				●	●
Traumatic Brain Injury	●				●	●
Support Services						
Occupational Therapy				●	●	●
Physical Therapy				●	●	●

- Disabilities are based on the Operating Standards for Ohio's School Serving Children with Disabilities 3301-51-09, 2002 (#3)
- The possible room location is based on the OSFC Design Manual Guidelines
- Other square footage that could be allocated to meet Special Education program needs includes:
 - Project Laboratory
 - Instructional Material Storage
 - Staff Dining
 - Small Group Room
 - Multi-Use Room
 - Teacher Prep Area/Workroom
 - InSchool Suspension
 - Itinerant Personnel Office

E. Definition of Terms

THE FOLLOWING TERMS ARE DEFINED AS THEY ARE USED IN THE OPERATING STANDARDS FOR OHIO'S SCHOOLS SERVING CHILDREN WITH DISABILITIES, 2002

These terms and definitions will provide a better understanding of the program needs of special education students.

(3301-51-01 Definitions)

"Assistive technology device" means any item, piece of equipment, or products system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability.

"Assistive technology service" means any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device.

"Child with a disability" means a child evaluated in accordance with rule 3301-51-06 of the administrative Code having a cognitive disability (mental retardation), a hearing impairment including deafness, a speech or language impairment, a visual impairment including blindness, emotional disturbance, an orthopedic impairment, autism, traumatic brain injury, an other health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, and who, by reason thereof, needs special education and related services.

The terms used in this definition are defined as follows:

Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are:

- Engagement in repetitive activities and stereotyped movements;
- Resistance to environmental change or change in daily routines; and
- Unusual responses to sensory experiences

Cognitive disability (mental retardation) means significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance.

Counseling service means services provided by qualified social workers, psychologists, guidance counselors, or other qualified personnel.

Deaf-blindness means concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs solely for children with deafness or children with blindness.

Deafness means a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, and that adversely affects a child's educational performance.

E. Definition of Terms, continued

Developmentally appropriate means curriculum, instruction, environments, and activities that reflect the cognitive, social, and emotional level of the learner, which are age appropriate to meet the needs of a particular chronological age span; and are appropriate to address the unique abilities or characteristics of a learner or group including learners with disabilities; unique ethnic and or cultural characteristics, and unique life experience.

Early identification and assessment of disabilities in children means the implementation of a formal plan for identifying a disability as early as possible in a child's life.

Emotional disturbance means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance.

Guide services includes assisting learners with disabilities as they travel within the appropriate learning environment.

Hearing impairment means an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness in this section.

Individualized education program or **IEP** means a written statement for a child with disability that is developed, reviewed, and revised in a meeting in accordance with the Administrative Code of Ohio, rule 3301-51-07.

Interpreter services includes assisting learners with hearing impairments and deaf learners by providing interpretation in English and American Sign Language, transliteration in a manual form of coded English or other coded forms of English.

Medical services means services provided by a licensed physician to determine a child's medically-related disability that results in the child's need for special education and related services.

Multiple disabilities means concomitant impairments (such as mental retardation-blindness, mental retardation-orthopedic impairment, etc.), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blindness.

Occupational therapy means services provided by a qualified occupational therapist and includes:

Improving, developing or restoring functions impaired or lost through illness, injury, or deprivation.

Improving ability to perform tasks for independent functioning if functions are impaired or lost; and

Preventing, through early intervention, initial or further impairment or loss of function.

E. Definition of Terms, continued

Orthopedic impairment means a severe orthopedic impairment that adversely affects a child's educational performance.

Other health impairment means having limited strength, vitality or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that is due to chronic or acute health problems.

Physical therapy means services provided by a qualified physical therapist.

Rehabilitation counseling services means services provided by qualified personnel in individual or group sessions that focus specifically on career development, employment preparation, achieving independence, and integration in the workplace and community of a student with a disability.

Related services means transportation and such developmental, corrective, and other supportive services as are identified on the child's IEP and required to assist a child with a disability to benefit from special education. The terms used in this definition are defined as follows:

- **Attendant services** are those that assist children with disabilities with personal health care needs.
- **Audiology** includes identification of children with hearing loss;

School psychological services include but are not limited to consulting with others to plan and develop school programs and interventions to meet specific needs of children or groups of children; conducting and monitoring interventions; conducting interviews; performing observation; administering psychological tests and other assessment procedures; interpreting assessment results; obtaining, integrating, and interpreting information about child behavior related to learning; diagnosing psychological disorders that effect learning and/or behavior; participating in provision of a program of mental health services, including counseling for children and/or parents.

Significantly subaverage general intellectual functioning refers to an intelligence quotient of seventy or below as determined through a measure of cognitive functioning administered by a school psychologist using a test designed for individual administration.

Social work services in schools includes:

- Preparing a social or developmental history on a child with a disability;
- Group and individual counseling with the child and family;

Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.

Speech or language impairment means a communication disorder, such as stuttering.

Speech-language pathology services include

- Identification of children with speech or language impairments;
- Diagnosis and appraisal of specific speech or language impairments.
- Therapy services to address the specific speech or language impairments.

E. Definition of Terms, continued

Traumatic brain injury means an acquired injury to the brain caused by an external physical force or by other medical conditions, including but not limited to stroke, anoxia, infectious disease, aneurysm, brain tumors and neurological insults resulting from medical or surgical treatments. The injury results in total or partial functional disability or psychosocial impairment or both, that adversely affects a child's educational performance.

Visual impairment, including blindness, means an impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness.

F. Glossary of Legal Terms and Special Education Terms and Acronyms

This glossary provides another tool for better understanding of Special Education Programs and Services and how they impact facility design and utilization.

ADA - American's with Disabilities Act of 1990. This law provides for the protection from discrimination of persons with disabilities and allows claims for compensatory and punitive damages

Adaptive Physical Education - A special physical education program developed to fit the limits and disabilities of persons with disabilities.

ADD - Attention Deficit Disorder - A term frequently used to describe the academic and behavioral problems of children who have difficulty focusing and maintaining attention.

ADHD - Attention Deficit Hyperactive Disorder - A condition identified as a medical diagnosis by the American Psychiatric Association's Diagnostic and Statistical Manual III-Revised (DSM III-R). This condition is also often called attention Deficit Disorder (ADD) because of that usage in a previous edition of DSM. Although it is not a service category under IDEA, children with this condition may be eligible for service under other categories or under Section 504, or may be eligible under IDEA as health impaired.

AES - Alternative Education Setting

Americans with Disabilities Act of 1990 (ADA) - Legislation enacted to prohibit discrimination based on disability.

Assistive technology device - Equipment used to maintain or improve the capabilities of a child with a disability.

Audiology - Related service; includes identification, determination of hearing loss, and referral for habilitation of hearing

Behavior intervention plan - A plan of positive behavioral interventions in the IEP of a child whose behaviors interfere with his/her learning or that of others

Continuum of services - The range of services which must be available to the students of a school district so that they may be served in the least restrictive environment

Cross Categorical - Refers to a system in which a teacher addresses more than one disabling condition within one instructional period.

F. Glossary of Legal Terms and Special Education Terms and Acronyms, continued

EBD - Emotional Behavioral Disorder

Fine Motor - The use of small muscles for precision tasks such as writing, tying bows, zipping a zipper, typing, doing puzzles.

Gross Motor - The use of large muscles for activities requiring strength and balance. Examples are walking, running, and jumping.

IDEA - Individuals with Disabilities Education Act - Law that modifies and extends the Education for All Handicapped Children Act (EHA).

Itinerant Teacher - Special Education or other teacher who is shared by more than one school.

LRE - Least restrictive environment; requirement of IDEA to educate special needs children with children who are not disabled to the maximum extent possible.

Mainstreaming - The practice of placing disabled children with special educational needs into regular classrooms for at least a part of the children's school programs.

Multi-Categorical - A special education classroom model in which students with more than one disabling condition are assigned to a special education teacher.

Multiple disabilities - Disability category under IDEA; concomitant impairments (such as Mental retardation-blindness, mental retardation-orthopedic impairment, etc.) that cause such severe educational problems that problems cannot be accommodated in special education programs solely for one of the impairments; does not include deaf-blindness.

Related services - Services that are necessary for a child to benefit from special education; includes speech-language pathology and audiology services, psychological services, physical and occupational therapy, recreation, early identification and assessment, counseling, rehabilitation counseling, orientation and mobility services, school health services, social work services, parent counseling and training, IDEA requires that school districts provide whatever related services (other than medical care which is not for diagnostic purposes) a child needs in order to benefit from his or her special education program.

Resource Room - An instructional setting to which a special education student goes for specified periods of time on a regularly scheduled basis.

Self-Contained Classroom - Special class for specific types of disabled students who spend all or the largest portion of the school day away from non-disabled.

SLP - Speech-language pathology services - Related service; includes identification and diagnosis of speech or language impairments, speech or language therapy, counseling and guidance.

For additional information about the Special Education Programs there are some excellent resources to obtain. One can be obtained from the OSFC office entitled "Planning Your School Facilities Construction Project with Sensitivity to the Needs of Students with Disabilities." The second document is the "Operating Standards for Ohio Schools Serving Children with Disabilities" from the Ohio Department of Education.

**G. Physical Therapy (PT) or Occupational Therapy (OT) Services
Overview of Program**

Physical Therapy is designed to help restore and maintain useful movement or function. Some of the examples of physical therapy are:

- Stretching and range of motion exercises
- Exercises to develop trunk control and upper arm muscles
- Assistance in obtaining appropriate assistive equipment, including ambulatory aids, braces and wheelchairs, etc.
- Training in walking and appropriate use of assistive devices, such as ambulatory aids, braces, and wheelchairs, etc.
- Transfer training-how to get from one spot to another, such as from student chair to wheelchair or from wheelchair to car
- Training in how to fall safely in order to cause the least possible damage
- Patient and family education

(Source: MS Information Sourcebook, produced by the National MS Society
<http://www.nationalmssociety.org/Sourcebook-pt.asp>)

Connections Between Program Requirements and Physical Facilities

The need for a specialized physical therapy space is based on the Individual Education Plan (IEP) of each student that is housed in the educational facility. The program information that is provided in the design manual is based on a physical therapy space that can accommodate the three fundamental requirements in a physical therapy area: exercise; treatment; and hydrotherapy. However, the space needs to support the individual needs of each student and must be flexible to accommodate all students within an educational facility who require physical therapy as an integral part of the services indicated in the IEP. Typically, in the school environment, a limited number of students require physical therapy and the space needs are much less structured as those indicated in this document. In order to determine the appropriate space requirements, it is essential that each District identify all students receiving PT services based on the historical, current and projected enrollment data.

The Exercise Area needs to be:

- Well lighted with flexible lighting (dimmer switches)
- Large enough to allow for unencumbered use of all rehabilitative exercise equipment including: treadmills, bicycles, wall mounted weights, mat tables (Including curtain tracks for privacy), and a reinforced wall of installation of stall bars

The Treatment Area should provide:

- Considerable patient privacy by use of curtains, cubicles or enclosed rooms.
- Flexible lighting (dimmer switches) for student comfort
- Equipment needs may include: massage tables; ultrasonics; thermotherapy (using wet or dry heat) and diathermy (dry heat treatment using short wave or microwave).

Hydrotherapy is the use of water to treat injuries and disease where the water conducts heat and makes motion easier and less painful. If hydrotherapy space is provided, the wet areas require additional engineering to structurally accommodate Hubbard tanks (large tanks of heated moving water big enough to float the whole body) and overhead lifts. Special plumbing, especially for whirlpool baths, is required for mixing valves that control water temperature in the tubs. Floor drains are required and floor surfaces in all wet areas are of a nonskid surface. Hydrotherapy areas include: full baths, footbaths, whirlpool baths and hot and cold baths.

G. Physical Therapy (PT) or Occupational Therapy (OT) Services, continued

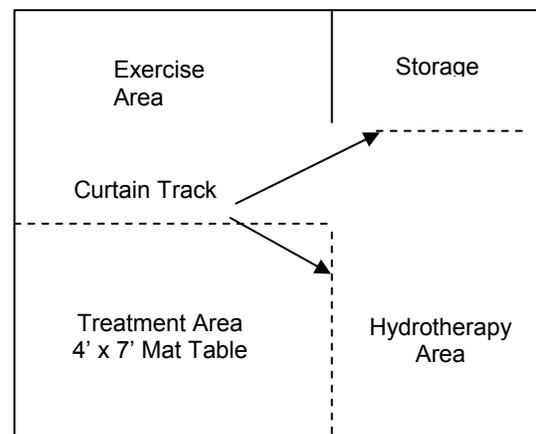
Even though there are three fundamental requirements for physical therapy, no absolute requirements for the type of space can be recommended since the program must be based on the individual needs of the students being housed in the facility. In the event there are a limited number of students requiring these services, (which is most often the case in most educational facilities), an open unobstructed space which allows for maximum flexibility which can be rearranged based on each student's needs is highly recommended. The use of hydrotherapy as defined in the paragraphs above, requires a more specialized space and would not be indicated in most student IEPs. There are other methods of providing hydrotherapy to students without the space requirement of full baths, whirlpools and other water requirements.

Other facility considerations for a physical therapy area need to be considered. One very important area is the need for storage for the variety of therapy equipment that is needed. Controlled ventilation much be considered since many of the treatment procedures require the use of dry or moist heat or active exercise, which raise body temperature. Air conditioning is also recommended for the therapy area. Often wall-mounted equipment is needed for some students and the recommendation is to line the walls with plywood or particleboard and then cover with the finish material of drywall, plaster or paneling. As has been indicated earlier in this section, the need for a specialized, dedicated physical therapy space is not required or recommended for most educational facilities housing a limited number of students requiring specialized physical therapy. The information included as a brief overview of the physical therapy program to provide an understanding of the requirements of the program to better assist the educators in determining appropriate space needs.

(Source: <http://www.schemmer.com/resource/mfrn/therapy.htm>)

Facility Considerations

- Ability to hang equipment from ceiling
- Dimmable lights
- Tile floor
- Access to water
- Large storage area for:
 - balance beam
 - balls
 - mats
 - small therapy equipment
 - scooter board
 - ramp
 - portable stairs
 - hanging equipment
 - braces
 - wheelchairs

Example of Physical Therapy Space

Occupational therapists who work with children are knowledgeable about stage of development and the appropriate milestones in a child's physical, mental, and behavioral development. For example, a child with delayed development may not show behaviors and abilities that are typical of the child's age. A child may have difficulty achieving independence in feeding, dressing, and using the bathroom; understanding relationships between people, objects, time and space; and development problem-solving and coping strategies.

Occupational Therapists can evaluate a child's level of performance, observe the child's environment, and develop a plan of treatment. They can develop age-appropriate self-care routines and habits and recommend adaptive equipment to facilitate the development of age-appropriate abilities.

Most often the space requirements for the OT program can be shared with the PT and/or the SLP because typically PT and OT are only part-time services in each building. Most often, the caseload is seen individually or in small groups with therapy consisting of hands-on activities. If on occasion larger space is needed, alternative arrangements can be made.

**Additional Facility Considerations for Special Needs Students
 Housed in Special Needs Classrooms**

Disability	Group 1 – Areas Inside the Classroom										Group 2 – Areas Outside the Classroom			
	Art Area	Quiet Area	OT/PT Area	Science Area	Floor Mat Area	Mirrors Floor to Ceiling	Mirror on the Wall	Life Skills Area	Changing Area	Restroom	Shower Area	Wheelchair Storage Area		
Autism	X	X	X	X					X	X				
Cognitive Disability (Mental Retardation)	X	X	X	X	X	X		X	X	X	X			
Deaf-Blindness*	X		X	X			X	X						
Emotional Disturbance	X	X		X					X					
Hearing Impairment				X			X							
Multiple Disabilities*	X		X	X	X	X		X	X	X	X			
Orthopedic Impairment	X		X	X					X	X	X			
Specific Learning Disability				X			X							
Speech Language Impairment*							X							
Visual Impairment			X											
Traumatic Brain Injury	X	X	X	X			X		X					

* Acoustical treatment is critical in these areas

ELEMENTS OF 21ST CENTURY DESIGN FOR SCHOOL FACILITIES

(adapted with some additions from “30 Strategies for Education Reform” by Prakash Nair and DesignShare.com, 2003)

1. Design provides a variety of spaces to enhance and invite informal and meaningful social interaction between students and between students and staff

- Design allows for places where students can be engaged in different tasks in various activity zones and interact with teachers and staff on an informal basis
- Inclusion of places where students can enjoy a moment of solitude to read, think, study

2. Circulation provides alternatives to traditional double-loaded corridors

- Fewer corridors; instead more open areas inside and outside of building for social interaction
- Kivas, Atriums, and ‘Learning Streets’ replace corridors

3. Building provides new advances in technology

- Inclusion of Wireless laptops; the Internet; digital communications equipment and other new technology to provide students with opportunities to engage in “anywhere learning”

4. Design enhances connections to the community

- Areas for community use and parental use after hours; amenities provided for other uses for community
- Community is involved in the planning process for the new or renovated facility
- Design provides opportunities for students to work in community school-work programs (reciprocal relationships)

5. Design creates opportunities for outdoor learning

- Inclusion of daylighting, courtyards, and outdoor learning spaces to provide students with access to sunlight and fresh air to engage in outdoor activities with educational purpose

6. Sustainable and flexible future-oriented design, including a minimal building "footprint" on site

- Building designed for maximum flexibility and change; ability to adjust learning areas easily
- Building uses square footage conservatively and attempts made to fit the aesthetics of the building with the existing neighborhood/surroundings

7. Building provides outstanding teacher planning/work and co- or team-teaching areas

- Places provided for teacher research, collaborative work, and student meetings

8. Design provides opportunities for students to engage in project-based learning

- Students work in teams in break-out areas or separate designated areas
- Places kids can work on long-term projects; not specialty-oriented; ample power/lighting

POLICY and PROCEDURE MEMORANDUM

DESIGN MANUAL TOLERANCE

Applicable to: CFAP, ENP, VFAP, ELPP, VFAP-ELPP and Accelerated Urban Programs

The purpose of this policy and procedure memorandum is to establish a measure of flexibility for interpreting the Ohio School Facilities Design Manual (Design Manual). The Design Manual places a priority on classroom facilities and less of an emphasis on extracurricular programs, such as athletics. The Design Manual establishes a core level of quality for materials and systems for school facilities. Systems descriptions and material specifications in the Design Manual provide guidance to architects, engineers, educational planners, and construction managers as they plan and construct buildings.

Measurement and Area Calculations for Building Spaces

Classrooms and other instructional spaces are sized to be flexible and adaptable to curricula of the future. Core areas, circulation, and building services are appropriately sized to support a range of design solutions. The following spaces shall be measured as indicated below when evaluating design solutions for compliance with the Design Manual:

Corridors: Stairs, ramps, and elevators shall be included in the Program of Requirements (POR) as Corridor area.

Stairs: Stair area shall be calculated as one hundred percent (100%) on the ground floor and fifty-percent (50%) on elevated floors. Area shall be calculated based on the total area inside the stair enclosure walls.

Geothermal Underground Vaults: Vault area shall be counted as Mechanical/Electrical Space.

Elevators: Elevators shall be calculated as one hundred percent (100%) on the ground floor and zero percent (0%) on elevated floors.

Overhangs: Overhangs located at building entrances and exits do not count as area. Interior balconies are generally counted as circulation space.

Total Square Footage of a room or vault: Calculated as the measurement of the interior area excluding the wall thickness.

Design Manual Tolerance for Square Footage Requirements

Square Footage Flexibility for the Total Building

The total square footage developed for a building must be equal to or no more than one-tenth of one percent (0.10%) below the total square footage for the building as specified in the Master Facility Plan. For new multi-story construction, the developed area may be increased for vertical circulation up to the square footage provided in the bracketing tool. This tolerance may not be applied to building additions.

Square Footage Flexibility for Non-Academic Spaces

Non-Academic Spaces are defined as those areas that do not comprise the academic core of the building and include specific areas such as: administration spaces, the media center, physical education areas, food service, custodial spaces and building services. The Commission may apply discretion to approve reasonable flexibility for the square footage of non-academic spaces specified in the Design Manual. Increasing the square footage of non-academic spaces is not an acceptable justification for a reduction to the square footage of academic space, however the Commission does support expanding academic spaces

through the reallocation of non-academic space to the academic core. Corridor area should be appropriately sized to accommodate the design solution for the project.

Square Footage Flexibility for Academic Spaces

Academic Spaces are defined as all bracketed program areas except the non-academic spaces within a building. The Design Manual provides a range of flexibility for the square footage of such spaces.

Please note that only one of the below options for each grade level may be used.

1. **For grade levels PK-5**, each selected academic space may be reduced up to ten percent (10%) below the square footage of spaces specified in the Design Manual to accommodate lower pupil-teacher ratios.
2. **For all grade levels**, academic spaces may be increased above the square footage of spaces specified in the Design Manual. Required non-academic spaces must still satisfy their intended uses. The total square footage of the building shall not be increased.
3. **For all grade levels**, academic spaces may be reduced up to ten percent (10%) below the square footage of spaces specified in the Design Manual to accommodate Extended Learning Areas. *Extended Learning Areas (ELAs)* are defined as academic areas that provide supplemental space to support adjacent classroom needs. ELAs may be used for a variety of activities such as: gross motor movement, computer-based learning, tutoring, individual reading and study activities, informal social interaction, hands-on projects, wet/dry learning areas, or small group special projects. ELAs are spaces adjoining multiple classrooms and should be shared by all. To permit observation by the classroom instructor, it is recommended that the ELA have a visual connection to each classroom that the ELA supports. ELAs should not be construed as regular classrooms or teaching stations and will not be furnished as such. Soft seating or large worktables are preferred. For additional information on ELAs, refer to the Ohio School Design Manual.
4. **For all grade levels**, individual academic spaces may be three percent (3%) smaller or larger than the square footage specified in the Design Manual to allow for flexibility in the classroom layout in relation to the entire building design solution. The total square footage of the academic core shall equal or exceed the total square footage of the academic core space specified in the Design Manual.

Variance Requests for Design Manual Systems, Materials and Square Footages

The design professional is required to pursue a Design Manual Variance Request from the Commission for deviations from the standards, material and system specifications, and area square footages provided in the Design Manual. The design professional may provide data to support the use of alternative products through the Design Variance Request process. Variances may be requested via the Construction Manager website at <http://www.cmw.osfc.state.oh.us> using the online Design Manual Variance Request tool. The Commission has established a Design Manual Variance Request Committee that is tasked to review these requests, to conduct proper research on each request, and to make appropriate recommendations.

Class Size Ratio

There have been a number of questions raised by school administrators regarding OSFC calculations, especially those calculations used to determine the number of classrooms in a building. We hope this memo will provide some insight on this issue. Feel free to distribute it in any way that you believe will be beneficial.

Why Has This Become An Issue?

For school administrators, one of the key questions they face is “How many sections (or, to the layperson, “classrooms of students”) am I going to be able to provide in each grade level?” Many administrators feel this to be a real “crunch” issue, partly because of state law, which calls for a reduction in the amount of a state funding a district receives if they do not have on staff the equivalent of one teacher for each 25 students listed on the Average Daily Membership (ADM) figures they report to the state (ORC Section 3317.023 (B)) and partly due to their collective bargaining contracts, which often contain student/teacher ratio restrictions. Also, current educational practice is to reduce student / teacher ratios as low as possible in the hopes of improving student achievement by more individual attention.

It is important to note that the student / teacher ratio found in ORC 3317.023, which is the one most commonly referenced in discussions on classrooms, is not an absolute imperative that each individual classroom contains 25 students and 1 teacher. Both this ORC citation and a similar one found in Ohio Administrative Code 3301-35-03(A)(3) use the ratio in terms of a district wide average. In actual practice, the number of students in an individual class reflects a variety of factors, including, but not limited to, the population of individual grade levels, interest in certain courses (at the high school level), and the master collective bargaining contract of a district.

What Standard Does OSFC Use?

In order to plan for the provision of facilities, OSFC must have some method of determining the **minimum size of the core academic space that is required in a school building**. As noted above, the only references in Ohio law base standards on a model of 25 students per teacher. It is logical, therefore, that OSFC determine the number of classrooms based on this model, even though, as used by the Ohio School Facilities Commission, the 25:1 ratio does not reflect a student/teacher ratio, but rather a **student/classroom** ratio. Also, the size of the classrooms (generally 900 square foot) is specified so the rooms can easily and comfortably accommodate 25 students.

This does NOT mean that OSFC is planning for 1 classroom for every 25 children. The core academic space of an elementary school building does not include such areas as the media center and music, art, and special education spaces, which are also used for academic purposes.

Further, it is imperative to note that this calculation reflects ONLY the spaces in the core academic area and there are a number of factors that provide methods for districts to maximize the number of classrooms within their buildings:

- OSFC standards for the size of a building are based on a square foot per student allotment. That allotment is higher than national and regional averages, giving districts a bigger starting point when designing the components of their buildings. It should be noted that district-wide projects completed thus far by OSFC have had an average increase of 26% in square footage over the space available prior to the OSFC project.
- OSFC, when determining the number of students in a building, uses the maximum projected enrollment for that building during the next 10 years, thereby maximizing the square footage available to the district.
- The Ohio School Design Manual provides a “range” of square feet required in different types of rooms, giving districts choices as to the size of certain areas of their facilities and giving them the flexibility to maximize the number of rooms they have available.
- When calculating the number of teaching stations that are required for a middle or high school building, OSFC calculations involve a conversion that establishes an 85% usage rate for a middle or high school building, i.e., that only 85% of a building will be in use at any given moment in a school day. (While elementary schools do not adhere to that same usage assumption, in those buildings the teaching stations for art, music, physical education, and special education are NOT included in the calculations of teaching stations.)

These factors provide an actual student/classroom ratio significantly lower than 25:1.

What About the State Standard of 15:1 That Affects Some Districts?

There is a 15:1 student / teacher ratio associated with the “Reduced Class Size Program” under Ohio’s Disadvantaged Pupil Impact Aid law. This ratio, like the other ORC standards mentioned earlier, is not a strict requirement. Rather, it is a sliding scale standard used in the calculation of operational funds a district may receive from this program.

There are two issues that need to be acknowledged when looking at the 15:1 ratio. First, in addition to not being a strict requirement, it is NOT a statewide standard. The districts that qualify for this program are limited to those with a DPIA Index of greater than .6 (178 districts according to the Department of

Education’s FY01 DPIA calculations). Additionally, it is a sliding scale that formally establishes a 15:1 ratio for those districts that have a DPIA ratio of 2.5 or above (12 districts – FY01). Second, “*The law permits funds from this calculation to be spent in a variety of ways other than reducing class size, but with the intent to increase instructional attention to K-3 pupils. These approaches include:*

- 1) *Reducing the ratio of students to instructional personnel by adding teachers, aides, or paraprofessionals and by team teaching.*
- 2) *Extending the school day by offering optional academic-related after-school programs, providing curriculum-related extra-curricular activities or establishing tutoring or remedial services for students with educational need.*
- 3) *Extending the school year by adding regular days of instruction or by providing summer programs.* (Cited from: **Disadvantage Pupil Impact Aid – Annual Report to The Ohio General Assembly**, Ohio Department of Education, December 30, 2001)

In Summary

While this memo will not end the discussion on the issue of classrooms, grade-level sections and other corollary issues, it is hoped that this information will make districts more aware of the factors that affect the design of a building and the options that are available to the districts under current practice. In summary it must be noted that:

- 1) *The OSFC calculation of 25:1 represents a figure used primarily for planning purposes and not as a student / teacher ratio standard.*
- 2) *The 15:1 calculation used in the DPIA formula is not a statewide standard and the goals involved can be achieved operationally within a district.*
- 3) *OSFC provides a square footage allotment that exceeds national and regional standards.*
- 4) *OSFC calculations are based on the HIGHEST projected population of a school district, giving districts a generous starting point in building design decisions.*
- 5) *OSFC assumes an 85% usage rate in the middle and high schools.*
- 6) *Buildings are designed by architects selected by the local districts. Districts have the capability to design, within the parameters of the Design Manual, buildings that meet the educational needs of their communities.*
- 7) *OSFC permits a 10% reduction in classroom size in pre-K through grade 3 classrooms. The result is additional classrooms.*

If you have further questions, please do not hesitate to contact us.

POLICY and PROCEDURE MEMORANDUM

DESIGN VARIANCE REQUEST PROCESS

Applicable to: CFAP, ENP, VFAP, ELPP, VFAP-ELPP and Accelerated Urban Programs

Architects, Construction Managers and School District representatives should discuss any design variance that is not within the Design Manual Tolerance Policy with their Project Administrator prior to submitting a Design Variance Request. The Architect is required to submit any Design Variance Request to the Commission 30 days before the completion of the Design Development Phase.

All variances must be submitted electronically via the Ohio School Facilities Construction Manager website, www.cmw.osfc.state.oh.us. Architect access to this website will be granted by the Project's Construction Manager. The following information must be incorporated into each request:

1. Specific Design Manual pages addressing the proposed change.
2. Building Code implications of the proposed change;
3. A comparison of the life-cycle cost of the suggested design element with that indicated by the Design Manual;
4. Manufacturer's product literature, drawings and other data supporting the request. (Note, these may be included as attachments in the web tool.)

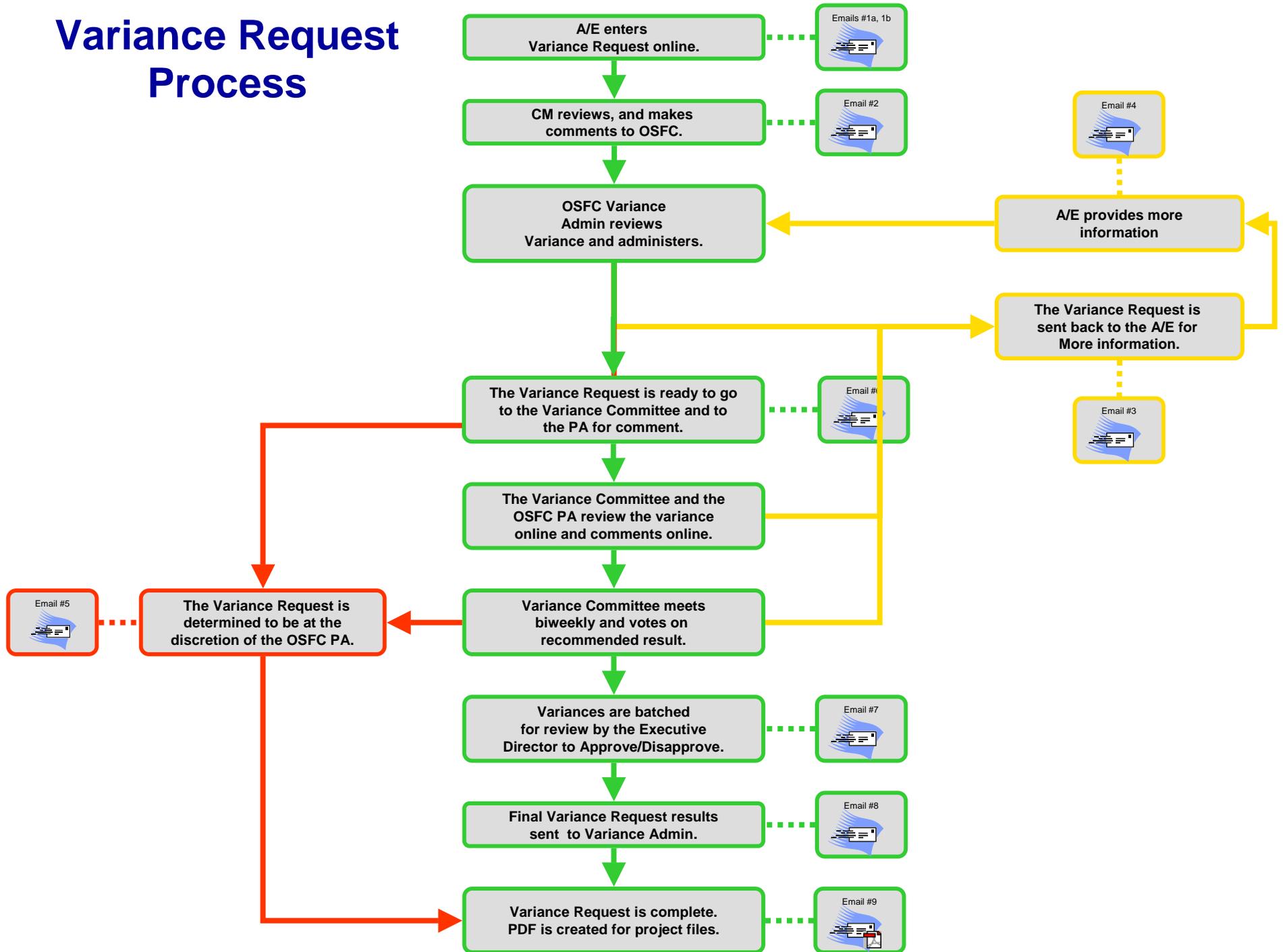
The Variance Coordinator will review the submission to verify that sufficient information is submitted. If additional information is necessary, the Variance Coordinator will notify the sender by return e-mail. Once the submission is complete, the request will be forwarded to the Variance Committee for review.

The Variance Committee meets bi-monthly to make recommendations on Design Variance Requests. The Commission's Variance Committee is comprised of the following staff: Fred Ahlborn, Steve Lutz, Franklin Brown, Bill Prenosil, Been Kuo, Cihangir Calis and Glenn Rowell. At a minimum, three members of the committee must make a recommendation to approve or disapprove a variance to the Executive Director. Note that although they should participate in discussion, committee members may not vote on any Design Variance Request originating from their assigned project.

The recommendation of the Committee is then forwarded to the Executive Director. Notice of the approval or disapproval by the Executive Director of the variance is disseminated to the project team via email.

Approval of a variance is not to be construed as a requirement, nor as approval by the Commission to exceed the available budget for the project. Expenditures associated with this variance must be approved by the Commission's Project Administrator or Planning Manager.

Variance Request Process



POLICY and PROCEDURE MEMORANDUM

STANDARDS FOR SPECIFICATIONS

Applicable to: CFAP, ENP, VFAP, ELPP, VFAP-ELPP and Accelerated Urban Programs

This policy is intended to provide basic guidelines for the design professional in developing specifications for bidding any work that will be incorporated in a contract or change order approved by the Commission, or any work that is approved for credit under the Expedited Local Partnership Program.

The Commission relies upon the Architect to select and specify Design Manual compliant materials and systems of institutional quality, long lasting building components and equipment, suitable for the intended purpose and affordable within the Project budget. Components should also perform well in terms of life cycle costs when operation and maintenance costs are considered. The Architect is requested to specify Ohio based suppliers and manufacturers to the extent possible.

The Bidding Documents must allow for unrestricted competition among interested suppliers and manufacturers to the extent that it is feasible. Specifications for public projects cannot unreasonably restrict sources of products, materials or equipment.

With regard to the selection of equipment or materials, there are two (2) basic types of Specifications: performance and proprietary. Performance Specifications do not refer to any particular brand or product. Instead, the Specification states certain performance capabilities which the equipment or material must meet. The Architect is required to develop performance-based Specifications such that a minimum of three (3) products are capable of meeting the requirements for the equipment or material. Each of the three products will be equal, equally acceptable or the equivalent of the others.

The performance requirements of a given product can not be so narrow as to restrict competition. Any component of other manufacturers' or vendors' product which meets the performance requirements of the Bidding Documents may be considered equally acceptable provided the component is submitted to the Architect prior to bid opening with sufficient time for the Architect to review, approve and respond by issuing an Addendum.

Proprietary specifications call for a particular brand and model to be used. Whenever any product is specified by brand name, i.e., manufacturers' or suppliers' name or trade name and catalog or model number or name, the intent is to establish a standard of quality which the Architect has determined is necessary. In order to foster competition, the Architect is required to develop specifications such that a minimum of three (3) manufacturers are named.

During the bidding period, the Bidder may propose another manufacturer or competing product giving the same or superior function, performance and quality level. The Bidder is to indicate precisely why and how the proposed material or item meets or exceeds all function, performance and quality criteria of the specified item. The Architect is obligated to evaluate a Bidder's submittal requesting approval of a proposed Equal, in accordance with the requirements of the Instructions to Bidders (IB 2.5).

Components must be, in the opinion of the Architect, of equal substance and function. If a proposed Equal product possesses all the “salient characteristics” of the specified brand, it may be considered Equal. The salient characteristics are the physical properties and performance capabilities that reasonably meet the minimum needs for the Project. Obviously, opinions frequently differ as to whether or not a proposed alternate product is equal to the proprietary product listed in the Specifications; however, the Architect’s decision is final and binding.

Sole source specifications have the effect of eliminating competitive bidding and the instances in which its use is permitted have been limited. Under some unusual circumstances, the Specifications for bids may call for patented materials or articles or items which may not be offered by two or three manufacturers. An owner has the ability to include a sole source specification only when it is clearly in the public interest to do so, after carefully considering the serviceability and cost of the material or article for which the contract is made.

Instances that may support an exception are cases where a specified material must match an existing material in appearance or a system or component must match an existing system or components for functional reasons. The specification of a limited number of manufacturers may in some cases be justified in order to achieve a specific design intent provided that the value of the specified goods is insignificant in relation to the overall project.

If the Architect should name less than three manufacturers in a proprietary specification or stipulate performance specifications which cannot be satisfied by three or more manufacturers, then the Architect shall specifically identify such Specification at the time of submitting the Drawings and Specifications to the Commission for phase review, along with a written justification for such Specification. The Project Administrator will review such justification and will approve or deny a requested variance from the requirements of this policy.

It is recommended that the Architect employ the best practices of the industry in developing Specifications, such as following the AIA-Masterspec or CSI format and to seek guidance from sources such as the Masterspec Section 01600-Product Requirements.

BUILDING ENERGY USE

Strategies for Helping Districts Deal with Increasing Energy Costs

WHY ARE NEW BUILDINGS MORE EXPENSIVE TO OPERATE?

- Your previous building probably wasn't air-conditioned
- Today's Codes require 15 cfm of outside air per occupant
- Lighting levels are higher than they were in your old building
- Previous ventilation rates were either poor (when working) or non-existent (if blocked off to save energy)
- All those computers produce heat that the system must dissipate

BUILDING OPERATIONS

- Your new building will require new operational skill sets
- You can hire new staff with the necessary skill sets
- You can develop the skill sets in existing personnel
- You can't wait till closeout to train staff
- It takes a year of work before the building is to open
- The training provided by the equipment manufacturers is inadequate by itself

BUILDING OPERATORS CERTIFICATION COURSE

- Offered through the Department of Development
- Course includes learning assessment and remedial work
- One to two days per month over seven months
- Cost approximately \$950 for all modules
- Course includes
 - Building systems overview (1 day).
 - Energy Conservation techniques (1 day).
 - HVAC Systems and Controls (2 days).
 - Efficient Lighting Fundamentals (1 day).
 - Facility Electrical Systems (1 day).
 - Indoor Air Quality (1 day).
 - Maintenance and related Codes (1 day).
 - Contact Julie Maurer @ (614) 287-2576.

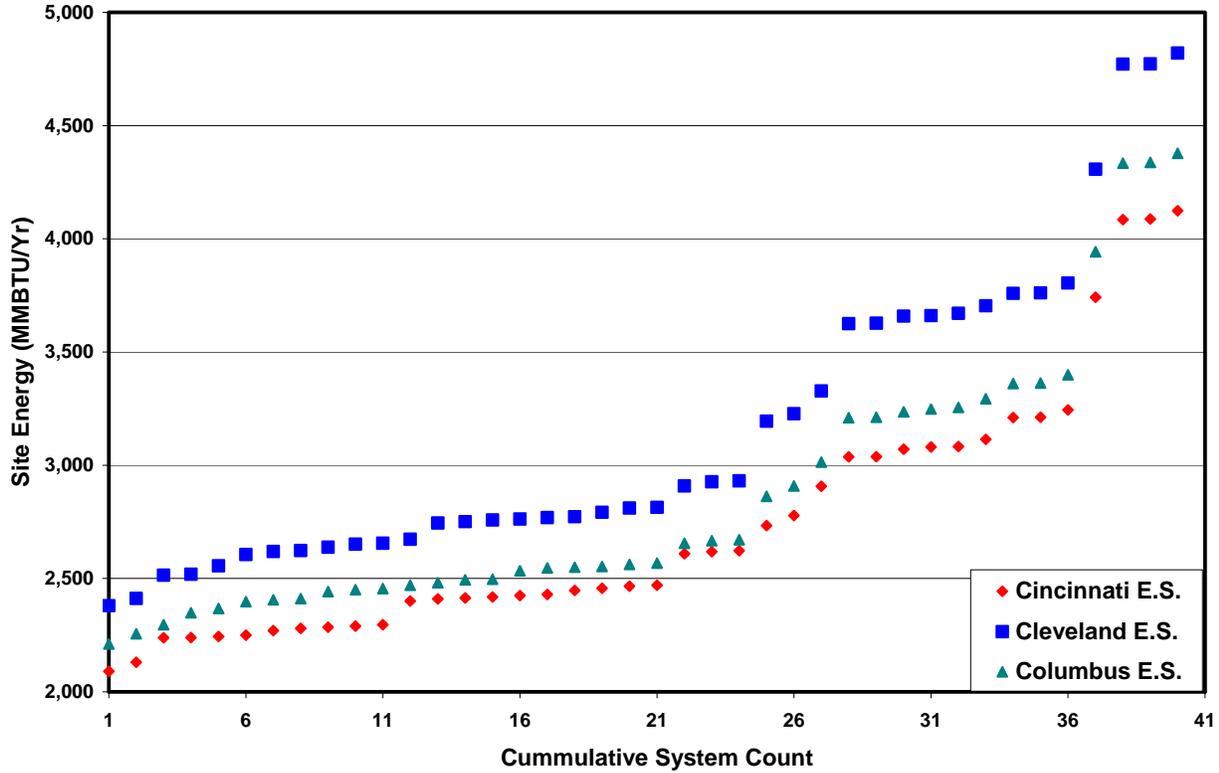
BUILDING COMMISSIONING

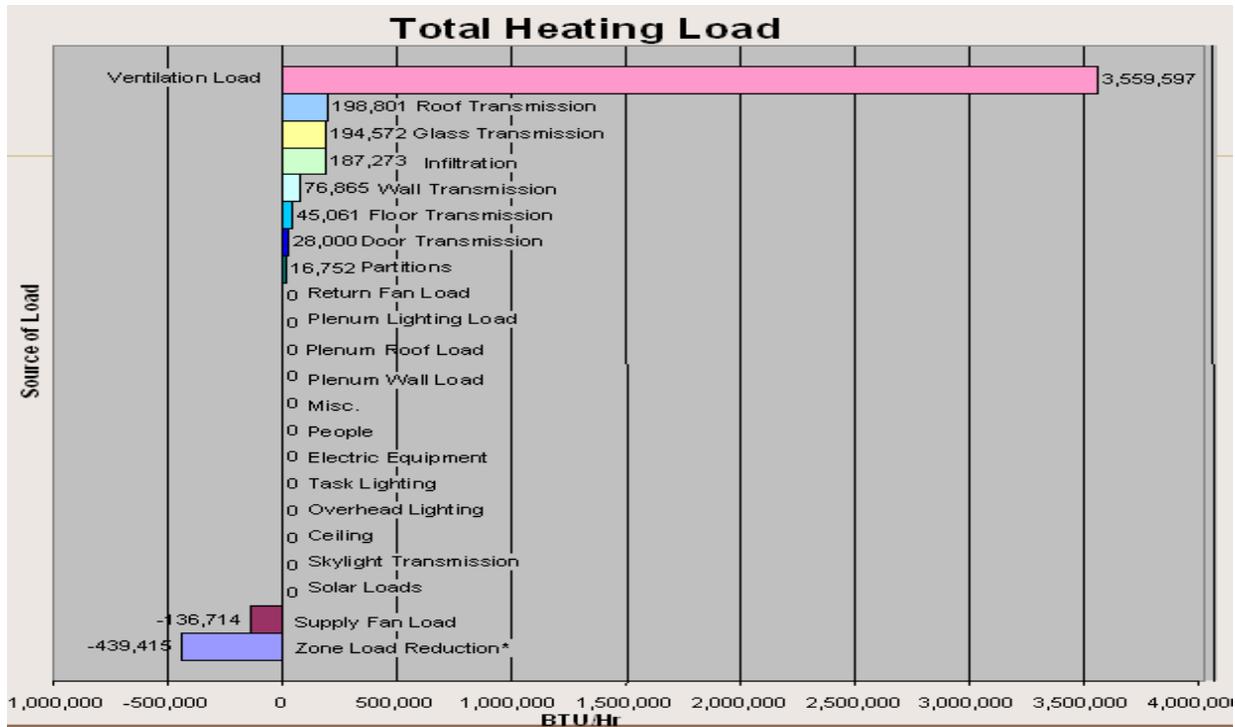
- Independent third party Commissioning Agent
- Review the design prior to CD's
- Review the CD's prior to occupancy
- Develop a system and energy management manual
- Contract for near warranty or post-occupancy reviews
- Could easily blend with MPA's work

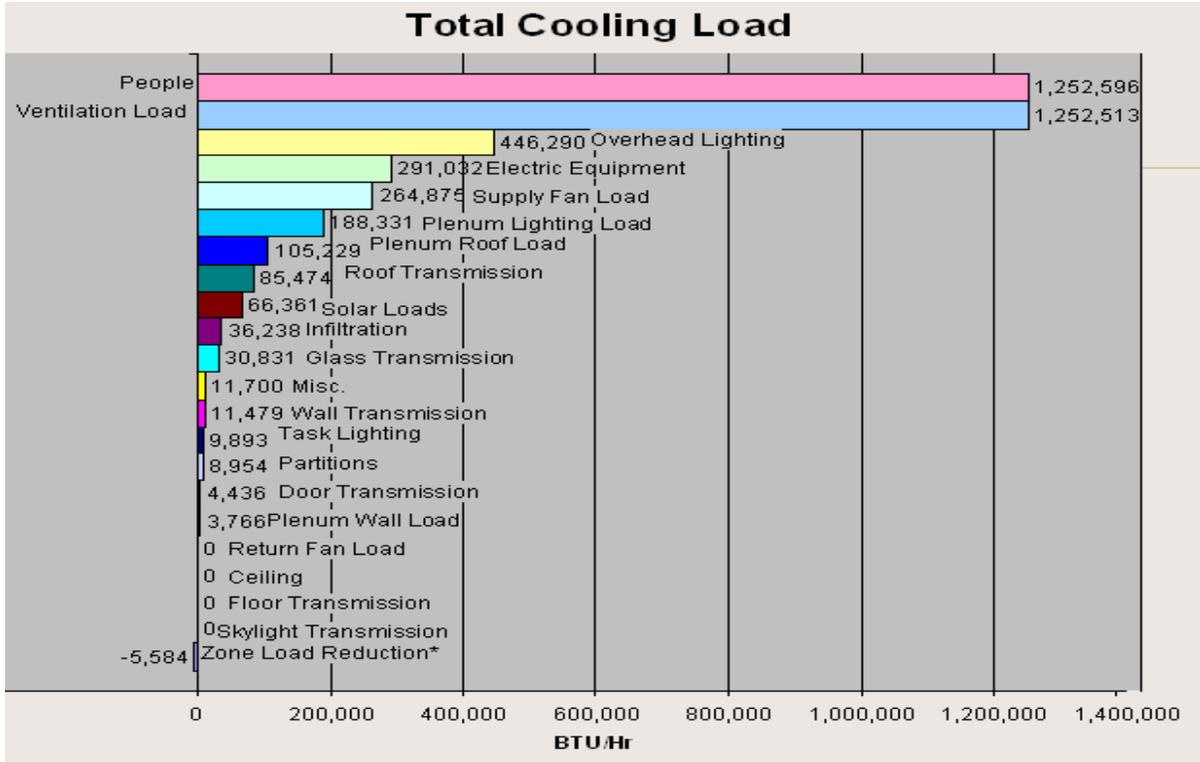
ANNUAL SITE ENERGY CONSUMPTION

Cumulative Plot by HVAC System Option

Elementary School Site Energy (MMBTU/Yr)



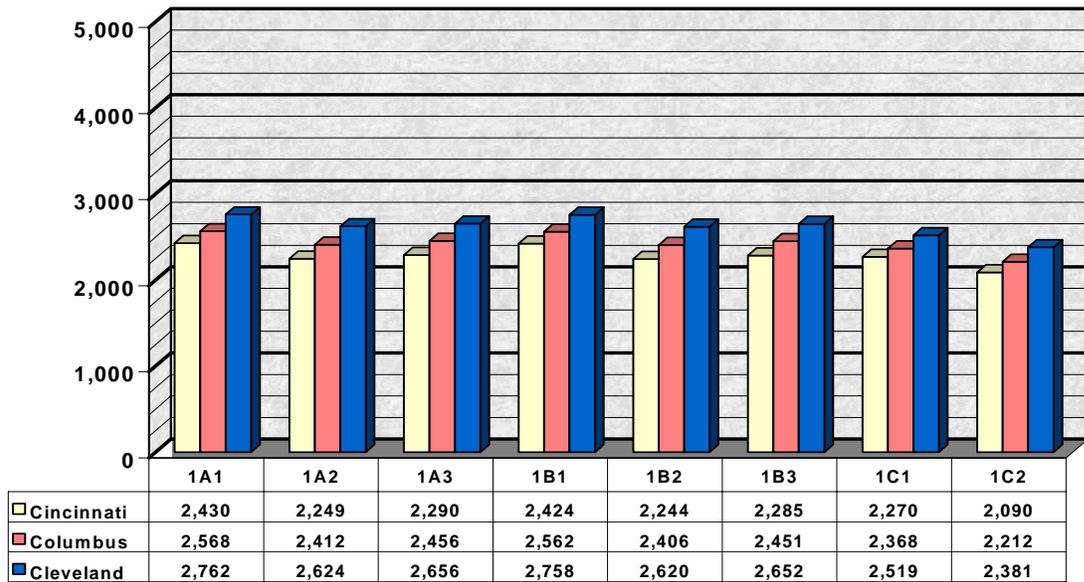




BASELINE ANNUAL ENERGY USE

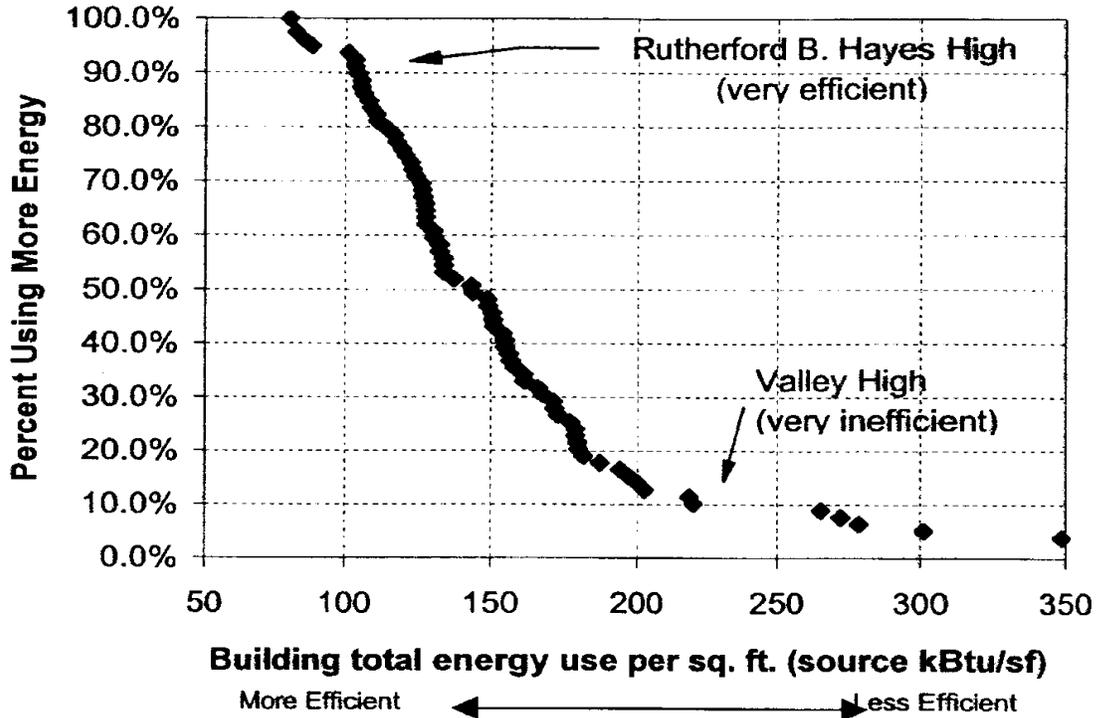
Example of Model Output

**Figure 3-1: OSFC Elementary School
Base Annual Site Energy Consumption (MMBTU/Year)
(HVAC Systems 1A1 - 1C2)**



HVAC System Types

Distribution of Ohio Schools by Energy Use Intensity



BACKGROUND – THE “KEY”

System Number	Air System	Boiler	Heating Fuel	Cooling Plant
1A1	VAV with Reheat	Atmospheric	Nat. Gas	Air Cooled Screw Chiller
1A2	VAV with Reheat	Atmospheric	Nat. Gas	Water Cooled Screw Chiller
1A3	VAV with Reheat	Atmospheric	Nat. Gas	Water Cooled Centrifugal Chiller
1B1	VAV with Reheat	Powr	Nat. Gas	Air Cooled Screw Chiller
1B2	VAV with Reheat	Powr	Nat. Gas	Water Cooled Screw Chiller
1B3	VAV with Reheat	Powr	Nat. Gas	Water Cooled Centrifugal Chiller
1C1	VAV with Reheat	Powr	Nat. Gas	Air Cooled Screw Chiller
1C2	VAV with Reheat	Powr	Nat. Gas	Water Cooled Screw Chiller
1C3	VAV with Reheat	Powr	Nat. Gas	Water Cooled Centrifugal Chiller

System Number	Air System	Boiler	Heating Fuel	Cooling Plant
1A1	VAV with Reheat	Atmospheric	Nat. Gas	Air Cooled Screw Chiller
1A2	VAV with Reheat	Atmospheric	Nat. Gas	Water Cooled Screw Chiller

202	Series Fan Powered VAV Box	Powr	Oil	Water Cooled Screw Chiller
203	Series Fan Powered VAV Box	Powr	Oil	Water Cooled Centrifugal Chiller
3A1	Water Source Heat Pump	Atmospheric	Nat. Gas	
3B1	Water Source Heat Pump	Powr	Nat. Gas	
3C1	Water Source Heat Pump	Electric	Electric	
3D1	Water Source Heat Pump	Powr	Oil	
4A1	Dual Duct VAV	Atmospheric	Nat. Gas	Air Cooled Screw Chiller
4A2	Dual Duct VAV	Atmospheric	Nat. Gas	Water Cooled Screw Chiller
4A3	Dual Duct VAV	Atmospheric	Nat. Gas	Water Cooled Centrifugal Chiller
4B1	Dual Duct VAV	Powr	Nat. Gas	Air Cooled Screw Chiller
4B2	Dual Duct VAV	Powr	Nat. Gas	Water Cooled Screw Chiller
4B3	Dual Duct VAV	Powr	Nat. Gas	Water Cooled Centrifugal Chiller
4C1	Dual Duct VAV	Electric	Electric	Air Cooled Screw Chiller
4C2	Dual Duct VAV	Electric	Electric	Water Cooled Screw Chiller
4C3	Dual Duct VAV	Electric	Electric	Water Cooled Centrifugal Chiller
4D1	Dual Duct VAV	Powr	Oil	Air Cooled Screw Chiller
4D2	Dual Duct VAV	Powr	Oil	Water Cooled Screw Chiller
4D3	Dual Duct VAV	Powr	Oil	Water Cooled Centrifugal Chiller



GREEN SCHOOLS

green school / a school building or facility that creates a healthy environment that is conducive to learning while saving energy, resources and money
-- U.S. Green Building Council

OHIO SCHOOL FACILITIES COMMISSION

WHY GREEN SCHOOLS?

A high performing school building has a positive impact on the local community. School facilities that are built according to the Ohio School Design Manual standards have long been recognized for the positive impact on academic achievement. The Green Schools Initiative will enhance the benefits of Ohio's public school facilities and support schools that run even more efficiently. By promoting the design and construction of green schools, we can make a tremendous impact on student health, test scores, teacher retention, school operational costs and the environment.

OSFC elected to use the U.S. Green Building Council's LEED® for Schools rating system as our roadmap for documenting and measuring the progress of our Green Schools Initiative. The LEED Green Building Rating System is the national benchmark for high performance green buildings. The LEED for Schools certification provides parents, teachers and the community with a "report card" for their school buildings – verifying that the school has been built to meet a high level of energy and environmental performance. LEED Gold or Silver Certification is proof the project achieved its green goals.

Schools in districts that were approved for funding after September 2007 are required to meet at least LEED Silver Certification, with a goal of meeting the LEED Gold level. Participation in this program is voluntary for school districts that were approved for funding prior to the adoption of the new energy and environmental standards.

BETTER PLACES TO LEARN

Green schools are healthy for kids and conducive to getting the best out of their educational experience. Studies have shown that green schools promote a healthy learning environment:

- Natural light and outside views boost attention



GREEN SCHOOLS PROVIDE:

- *A healthy, productive learning environment*
- *Improved teacher retention*
- *Reduced utility costs*
- *Best practices in environmental and resource stewardship*

- Good indoor air quality improves health
- Proper acoustics increase learning potential
- Moisture and mold prevention decrease asthma and allergy related illness
- Comfortable and balanced indoor temperatures increase comfort and ability to concentrate

Standard construction materials such as paints, coatings, adhesives, sealants, flooring materials, insulation and composite woods can emit harmful gases. By using low-emitting versions of these products and designing to prevent mold, the health effects of allergies and asthma can be reduced or eliminated. Daylighting, acoustics and ventilation design supports student health and performance.

HEALTHY PLACES TO TEACH & WORK

Green schools aren't just good for kids. Excellent indoor air quality means improved health for everyone. Our teachers deserve healthy spaces in which to teach our children.

Healthy, satisfied staff save our schools money. Green schools commonly report reductions in staff absenteeism and turnover.

GREEN SCHOOLS



HANDS ON LEARNING: SCHOOLS AS A LEARNING LABORATORY

Students learn best when they are engaged and inspired. Imagine the learning potential when the school building itself becomes an interactive teaching tool, educating the next generation of sustainable leaders through hands-on learning. For example:

- High school students learning about alternative energy from the solar panels on their roof.
- Middle school students studying ecosystems in their constructed wetland.
- Kindergartners learning how recycling keeps our precious resources out of the waste stream.

Students can learn concepts such as energy, recycling and natural sciences by turning off lights, conducting classroom energy audits, composting food waste, studying the natural environment right outside the door and more.

LOWER OPERATING COSTS

Energy efficient schools save money by conserving energy resources while they improve indoor environmental quality. A building that is oriented to make use of light and heat

gain from the sun is optimal. Even when the building's orientation can't be optimal, you can still have a high performance building. Efficient heating and cooling systems are those that are properly sized for the facility, include control systems that monitor and optimize building systems, and are serviced on a regular basis to maintain performance. A school's lighting systems may use high efficiency lamps; however, it is also important to maintain constant lighting levels in a room by integrating electronic lighting with daylighting strategies. The building envelope—the roof, exterior walls, interior walls, windows, and entry ways—all contribute to the efficiency of a building. Learning how your building uses and optimizes shading, insulation levels, thermal mass, glazing, air flow, and surface reflectivity is an important step to determining how it uses energy.

ENVIRONMENTALLY RESPONSIBLE

Green schools lessen environmental impacts through responsible approaches to site, reduced demand on municipal infrastructure and recycling during and after construction. Like other green buildings, green schools decrease our reliance on fossil fuels, thus decreasing carbon dioxide emissions and other forms of harmful pollution.

According to the U.S. Green Building Council, an average green school will:

- Use 33% less energy
- Save 32% more water
- Reduce solid waste by 74%

OSFC's Green Schools Initiative will result in school facilities that are healthier for students, teachers and staff, plus cost less to operate.



ABOUT THE COMMISSION

Established in 1997, the Ohio School Facilities Commission administers the state's comprehensive Kindergarten through 12th grade public school construction program. The agency helps school districts fund, plan, design, and build or renovate schools. OSFC is a Member of the U.S. Green Building Council.

Sustainable Sites**16 Points**

Prereq 1	Construction Activity Pollution Prevention	Required
Prereq 2	Environmental Site Assessment	Required
Credit 1	Site Selection	1
Credit 2	Development Density & Community Connectivity	1
Credit 3	Brownfield Redevelopment	1
Credit 4.1	Alternative Transportation , Public Transportation Access	1
Credit 4.2	Alternative Transportation , Bicycle Use	1
Credit 4.3	Alternative Transportation , Low-Emitting & Fuel-Efficient Vehicles	1
Credit 4.4	Alternative Transportation , Parking Capacity	1
Credit 5.1	Site Development , Protect or Restore Habitat	1
Credit 5.2	Site Development , Maximize Open Space	1
Credit 6.1	Stormwater Design , Quantity Control	1
Credit 6.2	Stormwater Design , Quality Control	1
Credit 7.1	Heat Island Effect , Non-Roof	1
Credit 7.2	Heat Island Effect , Roof	1
Credit 8	Light Pollution Reduction	1
Credit 9	Site Master Plan	1
Credit 10	Joint Use of Facilities	1

Water Efficiency**7 Points**

Credit 1.1	Water Efficient Landscaping , Reduce by 50%	1
Credit 1.2	Water Efficient Landscaping , No Potable Use or No Irrigation	1
Credit 2	Innovative Wastewater Technologies	1
Credit 3.1	Water Use Reduction , 20% Reduction	1
Credit 3.2	Water Use Reduction , 30% Reduction	1
Credit 3.3	Water Use Reduction , 40% Reduction	1
Credit 4	Process Water Use Reduction , 20% Reduction	1

Energy & Atmosphere**17 Points**

Prereq 1	Fundamental Commissioning of the Building Energy Systems	Required
Prereq 2	Minimum Energy Performance	Required
Prereq 3	Fundamental Refrigerant Management	Required
Credit 1	Optimize Energy Performance (2 pt minimum)	2 to 10
	14% New Buildings or 7% Existing Building Renovations	2
	17.5% New Buildings or 10.5% Existing Building Renovations	3
	21% New Buildings or 14% Existing Building Renovations	4
	24.5% New Buildings or 17.5% Existing Building Renovations	5
	28% New Buildings or 21% Existing Building Renovations	6
	31.5% New Buildings or 24.5% Existing Building Renovations	7
	35% New Buildings or 28% Existing Building Renovations	8
	38.5% New Buildings or 31.5% Existing Building Renovations	9
	42% New Buildings or 35% Existing Building Renovations	10
Credit 2	On-Site Renewable Energy	1 to 3
	2.5% Renewable Energy	1
	7.5% Renewable Energy	2
	12.5% Renewable Energy	3

Credit 3	Enhanced Commissioning	1
Credit 4	Enhanced Refrigerant Management	1
Credit 5	Measurement & Verification	1
Credit 6	Green Power	1

Materials & Resources

13 Points

Prereq 1	Storage & Collection of Recyclables	Required
Credit 1.1	Building Reuse , Maintain 75% of Existing Walls, Floors & Roof	1
Credit 1.2	Building Reuse , Maintain 95% of Existing Walls, Floors & Roof	1
Credit 1.3	Building Reuse , Maintain 50% of Interior Non-Structural Elements	1
Credit 2.1	Construction Waste Management , Divert 50% from Disposal	1
Credit 2.2	Construction Waste Management , Divert 75% from Disposal	1
Credit 3.1	Materials Reuse , 5%	1
Credit 3.2	Materials Reuse , 10%	1
Credit 4.1	Recycled Content , 10% (post-consumer + ½ pre-consumer)	1
Credit 4.2	Recycled Content , 20% (post-consumer + ½ pre-consumer)	1
Credit 5.1	Regional Materials , 10% Extracted, Processed & Manufactured Regionally	1
Credit 5.2	Regional Materials , 20% Extracted, Processed & Manufactured Regionally	1
Credit 6	Rapidly Renewable Materials	1
Credit 7	Certified Wood	1

Indoor Environmental Quality

20 Points

Prereq 1	Minimum IAQ Performance	Required
Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
Prereq 3	Minimum Acoustical Performance	Required
Credit 1	Outdoor Air Delivery Monitoring	1
Credit 2	Increased Ventilation	1
Credit 3.1	Construction IAQ Management Plan , During Construction	1
Credit 3.2	Construction IAQ Management Plan , Before Occupancy	1
Credit 4	Low-Emitting Materials	1 to 4
Credit 5	Indoor Chemical & Pollutant Source Control	1
Credit 6.1	Lighting System Design & Controllability	1
Credit 6.2	Thermal Comfort , Controllability	1
Credit 7.1	Thermal Comfort , Design	1
Credit 7.2	Thermal Comfort , Verification	1
Credit 8.1	Daylight & Views , Daylighting	1 to 3
	75% of classrooms (<i>required for either points below</i>)	1
	90% of classrooms	2
	75% of other spaces	3
Credit 8.2	Daylight & Views , Views for 90% of Spaces	1
Credit 9	Enhanced Acoustical Performance	1 to 2
Credit 10	Mold Prevention	1

Innovation & Design Process

6 Points

Credit 1.1	Innovation in Design : Provide Specific Title	1
Credit 1.2	Innovation in Design : Provide Specific Title	1
Credit 1.3	Innovation in Design : Provide Specific Title	1

Credit 1.4	Innovation in Design: Provide Specific Title	1
Credit 2	LEED® Accredited Professional	1
Credit 3	School as a Teaching Tool	1

Project Totals (pre-certification estimates) 79 Points
Certified: 29-36 points, **Silver:** 37-43 points, **Gold:** 44-57 points, **Platinum:** 58-79 points

OSFC TECHNOLOGY COST ESTIMATOR TOOL

Ver: 022006_1.0



Project Name:

Tech Designer:

Select Cost Year: 2006 ▼

Grand Total ==> \$ - \$0.00

Select County: Adams ▼

Adj. Factor ==> 1.67%

Select School Model: ----- Select a School Type to begin ----- ▼

Click on Screen Areas
For HELP with an Item

Check here if System will be connected to a Central Network Control Center (NOC)

REQUIRED SYSTEMS - ITEMS 1-22

		Budget Amount	\$ / sf
1	ASSOCIATED ELECTRICAL - TE WORK Includes: - Back Boxes - Cable Tray - Conduits - Entrance Conduits - typical - Telecom Grounding - Telecom Racks - Monitor/Projector Brackets - Backboards - Power Not Included	\$ -	\$0.00
2	TECHNOLOGY CABLING Includes: - C-5e User Cabling Drops, Faceplates and Jacks - Patch Panels - Cable Organizers - M/M & S/M Fiber Cabling - Backbone Copper Cabling - Fiber Patch Panels - 110 Blocks	\$ -	\$0.00
3	NETWORK ELECTRONICS Includes: - L-3 Core Switch - 10/100 User Sw @ 85% - Wireless Access Points (APs) - Wireless Controller/Switches & Location Tracking - Radius Authentication Server - POE for Wireless - UPS Units - Fiber Patch Cords - Copper Patch Cords	\$ -	\$0.00

OSFC TECHNOLOGY COST ESTIMATOR TOOL

4	<p>IP ENABLED PHONE SYSTEM</p> <p>Includes:</p> <ul style="list-style-type: none"> - IP-Enabled PBX - Digital Display Speaker Phone Instruments - 12 Wireless Phone Instruments - 2 Attendant Consoles - Power Failure Transfer (PFT) Unit - Analog Trunk Interfaces - Analog Station Interfaces - NO PRI Interface - Select Below - NO Voice Mail - Select Below - Interconnect Cables - Copper Patch Cords - IP Trunking 	\$	-	\$0.00
5	<p>CCTV SYSTEM</p> <p>Includes:</p> <ul style="list-style-type: none"> - Interior Cameras - Exterior Cameras - Exterior PZT Cameras - Power Supplies - DVR Units - CCTV Cables 	\$	-	\$0.00
6	<p>ACCESS SYSTEM</p> <p>Includes:</p> <ul style="list-style-type: none"> - Motion Detectors - Card Readers - Intrusion Panels - Door Control - Access/Control Cables - Power Supplies - Central Control Software is Optional -- See Below 	\$	-	\$0.00
7	<p>PAGING & CENTRAL SOUND SYSTEM</p> <p>Includes:</p> <ul style="list-style-type: none"> - Paging Speakers - Paging Speaker Cable - Paging Adapter - Paging Blocks - Paging Power Supplies - Tone Generator - Emergency Switch - Central FM Tuner - Central CD/Cassette Player - FM Antenna - FM Amplifier - FM Amplifier Coax Cabling 	\$	-	\$0.00
8	<p>WIRELESS CLOCK SYSTEM</p> <p>Includes:</p> <ul style="list-style-type: none"> - Wireless Clocks - Wireless Clock Guards as required - Wireless Transmitter and Receiver and Antennas - Wireless Tone Generator and Scheduling System 	\$	-	\$0.00

OSFC TECHNOLOGY COST ESTIMATOR TOOL

9	A/V SYSTEMS Includes: - Classroom Projectors - Classroom MPEG STBs - Classroom Sound System & Speakers - Classroom A/V Cabling - Classroom DVD/VHS Player - NO CATV Coax System -- Select Below - 2 Portable Digital Camera Kits - Central DVD/VHS Player - Bulletin Board Unit - NO MPEG Video Server or Control -- Select Below - Media Center Cart - LCD Monitors for Selected Rooms	\$	-	\$0.00
---	---	----	---	--------

SPECIALIZED AUDIO SYSTEMS

10	GYM AUDIO	\$	-	\$0.00
11	INSTRUMENTAL ROOM AUDIO	\$	-	\$0.00
12	VOCAL ROOM AUDIO	\$	-	\$0.00
13	STUDENT DINING AUDIO	\$	-	\$0.00
14	CAFETORIUM AUDIO	\$	-	\$0.00

Sub Total Required Systems:		\$	-	\$0.00

TYPICAL SYSTEMS LOCATED AT NOC

15	VOICE MAIL -- IF NO CENTRAL PBX EXISTS	\$	-	\$0.00
16	PBX PRI INTERFACE -- IF NO CENTRAL PBX EXISTS	\$	-	\$0.00
17	VOD SERVER -- IF NO CENTRAL SERVER EXISTS	\$	-	\$0.00
18	VOD CONTROL -- IF NO CENTRAL CONTROL EXISTS	\$	-	\$0.00
19	ACCESS CONTROL-- IF NO CENTRAL STATION EXISTS	\$	-	\$0.00

Sub Total Additional Required Systems if no NOC exists:		\$	-	\$0.00

CATV SYSTEM HEAD END

A CATV Head end is required, it can be a Coax based system on a per school basis, or a MPEG - IP system that is located at the NOC to serve the entire District - Select Items 20 - 22 below:

20	CATV HEADEND & COAX -- IF NO CENTRAL MPEG -- Item 20	\$	-	\$0.00

Sub Total CATV System Head End:		\$	-	\$0.00

OSFC TECHNOLOGY COST ESTIMATOR TOOL

Sub Total All Required Systems: \$ ----- - \$0.00

OPTIONAL SYSTEMS

Add a Optional Micro Processor Base Intercom System - Item 23

23 MICRO PROCESSOR CONTROLLED INTERCOM SYSTEM \$ - \$0.00

Add an Optional TV Studio -- Select Type Below: - Item 25

26 TV STUDIO -- LARGE \$ - \$0.00

Add Optional "Smart Board(s)" -- Enter Quantity Below: - Item 27

27 "SMART BOARD" WITH STAND \$ - \$0.00

Add Optional "Interactive Tablet(s)" -- Enter Quantity Below: - Item 28

28 INTERACTIVE DISPLAY TABLET \$ - \$0.00

Add Optional Upgrade of Tech Cabling System to Category-6 - Item 29

29 CAT-6 UPGRADE -- ADDITIONAL COST TO ABOVE \$ - \$0.00

Add Optional Formal Auditorium Sound System -- Not Applicable for ES - Item 30

30 AUDITORIUM -- FORMAL STYLE -- SPECIAL SITUATIONS \$ - \$0.00

Sub Total Optional Systems: \$ ----- - \$0.00

Grand Total All Required and Optional Systems: \$ ===== - \$0.00

School District: _____

Building Name: _____

Phase:

POR

SD

DD

CD

The undersigned has reviewed the documents listed above, incorporated all previous review comments, and certifies them to be sufficient and adequate for the referenced stage of design and in conformance with the OSFC Design Manual and policies with the exception of any variance by the Commission. The undersigned certifies that the specifications contain a minimum of three manufacturers for products and building systems, except where an Architect Justification Letter explains the basis for a more restrictive specification.

Architect

Date

The undersigned has reviewed the documents listed above, incorporated all previous review comments, and certifies them to be in conformance with the OSFC Design Manual and policies with the exception of any variance by the Commission.

Construction Manager

Date

The undersigned has received the documents listed above and, based upon the certification of the Architect and Construction Manager, and appropriate resolution of the Board of Education, approves them for submission to the Commission.

School District

Date

In reliance upon the certifications of the Architect and Construction Manager, and based upon reasonable inquiry and review, the undersigned indicates as marked below:

Approves phase submittals to be in conformance with the OSFC phase submission requirements.

Approved as noted, based upon the incorporation of the attached review comments dated

Rejects

Ohio School Facilities Commission

Date

Distribution of Signed Document to:
Design Architect
Construction Manager
School District Superintendent
OSFC Project File

PHASE SUBMISSION FORM-con't

School District: _____

Building Name: _____

Phase:

POR

SD

DD

CD

The undersigned has reviewed the documents listed above, incorporated all previous review comments, and certifies them to be sufficient and adequate for the referenced stage of design and in conformance with the OSFC Design Manual and policies with the exception of any variance by the Commission. The undersigned certifies that the specifications contain a minimum of three manufacturers for products and building systems, except where an Architect Justification Letter explains the basis for a more restrictive specification.

Architect

Date

The undersigned has reviewed the documents listed above, incorporated all previous review comments, and certifies them to be in conformance with the OSFC Design Manual and policies with the exception of any variance by the Commission.

Construction Manager

Date

The undersigned has received the documents listed above and, based upon the certification of the Architect and Construction Manager, and appropriate resolution of the Board of Education, approves them for submission to the Commission.

School District

Date

In reliance upon the certifications of the Architect and Construction Manager, and based upon reasonable inquiry and review, the undersigned indicates as marked below:

Approves phase submittals to be in conformance with the OSFC phase submission requirements.

Approved as noted, based upon the incorporation of the attached review comments dated

Rejects

Ohio School Facilities Commission

Date

Distribution of Signed Document to:

Design Architect
Construction Manager
School District Superintendent
OSFC Project File