PRESENTATION DRAFT (1)
(August 23, 2011)

EDUCATIONAL SPECIFICATIONS FOR NAUGATUCK HIGH SCHOOL

INTRODUCTION

Naugatuck High School provides a comprehension range of programs and services for its students. The school facility was built in 1959 and the last major renovation to the school was completed in 2003. The building capacity is about 1,600 students and the projected enrollment indicates the school enrollment will decline throughout this decade to just under 1,100 students. The programs and services required of a contemporary high school program have surpassed the functional space utilization of the current building. Operating systems and some exterior components of the building are well past their useful service life. A recent existing conditions study (2007) performed by Kaestle-Boos Architects, Inc. calls for major improvements to the school facility for contemporary programs, mechanical and operation systems, health and safety.

This project will renovate Naugatuck High School to the status of a new school and make site improvements for vehicular traffic and athletic fields. The areas most in need of improvement are science classrooms (6), administrative offices, guidance and conference rooms, faculty offices, locker rooms, performing arts areas (auditorium and green room/storage), applied education (technology), technology infrastructure and terminal equipment, and security.

The conceptual design of the project will provide most changes within the existing footprint of the building. New construction will be required to provide above ground "boys" locker/team rooms and seating for a natatorium area. Waivers will be sought for several areas as the existing building footprint exceeds the allowable square footage as a result of the enrollment decline. Specifically, waivers will be sought for the gymnasium area, auditorium, library-media center and applied technology spaces. The rationale for these requests is that the current building design was constructed within allowable square footage guidelines. It is likely that at some time in the future enrollments will again rise to the former peak. In the meantime, students attending the school are confronted with facilities that are substandard for some programs and non-conforming to current building codes. The Borough of Naugatuck needs to address these shortcomings and seeks to do so without a construction grant penalty due to these circumstances. In addition, it is planned that the Board of Education Offices will be relocated to the high school in order to reduce the number of buildings the school district is occupying, thus reducing overall costs to the town.

This "renovate to new" project will address the following:

- A new administration-reception area that will also include the guidance center and health suite; a security kiosk for building entry and a remote video security system located in this area.
- A corridor will be built in the courtyard area to improve student traffic
- Current guidance area will be converted to special services offices and conference/meeting spaces.

- Maintain up-to-date facilities in a relocated Applied Education area of the school for CAD Labs and Construction; expand the video production area to a "community room" television broadcast studio for government and community use as well as student instruction; move and update the culinary arts program to a new or expanded location area which should also include a restaurant feature.
- Move the Pre-school/ Early Childhood Education programs to a more accessible area within the Applied Arts department.
- Use the current preschool space as a "green room," costume and prop storage area for school productions.
- The boy's locker room, weight room and physical education space requires complete renovation and expansion – these spaces are no longer viable in their current condition or location thus requiring the construction of new space and conversion of other school space for these functions.
- The swimming pool has limited seating for competitive events and requires new, accessible space to create a natatorium effect. A unisex locker room should be located near the pool. Storage may be created under the stairway access to the seating area of the natatorium.
- A "dance" area should be created at the second floor level above the weights/fitness area located on the first floor level.
- Provide an up-to-date technology infrastructure that will enable wireless connectivity from all areas of the building as well as SMART Boards and SMART technologies throughout the school.
- The auditorium sound system requires updating; the source of a musty odor in the area needs to identified and remediated
- The building should have air conditioning in specifically identified areas to enable year-round use
- The number and location of lavatories should be improved to accommodate the population within the physical constraints of an existing building
- Improve interior traffic flow for safety and security; this may require relocation or addition of stairways.
- Relocation of the Board of Education Offices to an area of the high school
- LEED construction should be considered to the extent possible and practical

The following areas will also be renovated to accommodate programs, services and operations of the school:

- Complete renovation of all remaining (6) science rooms in the Castle wing, three classrooms should be converted to two Classroom-Laboratory spaces with secure chemical storage and prep rooms located between them for shared use. will have seven labs and four science classrooms.
- The kitchen area will be expanded by capturing adjacent space that was recently renovated but still requires improvements.
- All classrooms will be renovated.
- Lavatories will be renovated and storage space will expand.
- Cafeteria climate control and removal of refuse needs to be addressed

The following site improvements are planned:

- Relocate the football-soccer field and install a new synthetic surface; improve seating
- Improve vehicular traffic for the bus queue, pick-up and drop-off traffic from parent and parking traffic. Improve overall traffic circulation.

It is expected that the improvements to Naugatuck High School will provide adequate and appropriate classroom space to accommodate the expected enrollment and programs of the school well into the future. The planned improvements will meet the requirements of NEASC and current building code requirements related to programs, health, safety and access.

PURPOSE OF EDUCATIONAL SPECIFICATIONS

The National Council of Educational Planners has stated:

> Educational specifications or program requirements are the means by which educators describe the educational activities and spaces which need to be incorporated in proposed new or renovated facilities. They are written statements that serve as a vehicle of communication between educators and community and, ultimately, educators and the architect.

Educational specification spell out the type of activity, the number persons, and the space requirements needed in order to meet the educational goals and objectives of the program housed in the facility. Educational specifications do not represent architectural solutions but, rather, they inform architectural decisions and provide a framework within which design solutions are formulated.

Educational specifications are the cornerstone of successful school building programs. Good educational specifications provide a comprehensive overview of the program of instruction to be housed, the activities to be encouraged and the facilities necessary to carry out the goals and objectives of the school system.

The Connecticut State Department of Education defines educational specifications as a description of the general nature and purposes of the proposed school building project, including the applicant's long-range educational plan and relationship of the proposed project to such plan; enrollment data and proposed project capacity; the nature and organization of the educational program; support facilities; space needs; specialized equipment; environmental controls; and site needs.

The specific purposes for educational specifications as part of the construction grant approval process are as follows:

1. For the educational agency to justify the need for the proposed school building project.
2. For the educational agency to describe the educational activities that a proposed school building project is to support and the types of spaces which will best accommodate program requirements.
3. For the State Department of Education to determine the nature, scope, feasibility and funding level for the proposed school building project.

4. For the partial fulfillment of the requirements of Section 10-287c11(a) of the Administrative Regulations for a building grant application.

LONG RANGE PLANS

It is the intent of the Naugatuck Board of Education to maintain a comprehensive education program for pre-kindergarten through grade twelve students. While the Board of Education may consider school closings, reconfiguration of grade level organization or redistricting in the future, it is clear that Naugatuck High School will remain a four-year, comprehensive high school. In the short-term, enrollments may decrease but that trend will reverse itself and require the facility design as proposed in these educational specifications to meet present and future program needs.

This construction project will update the high school facility to meet contemporary standards related to access, health, safety, and code compliance.

CAPACITY – ENROLLMENT DATA

The current functional capacity of Naugatuck High School is about 1,600 students. Dr. Peter Prowda provided the following enrollment projections for Naugatuck High School.[1]

GRADES

YEAR	9	10	11	12	TOTAL
2010-11	293	329	355	369	**1,346**
2011-12	325	296	330	360	**1,311**[2]
2012-13	298	328	297	334	**1,257**
2013-14	289	301	329	301	**1,220**
2014-15	296	292	302	333	**1,223**
2015-16	281	299	293	306	**1,179**
2016-17	253	283	300	297	**1,133**
2017-18	277	255	284	304	**1,120**
2018-19	269	279	256	288	**1,092**
2019-20	253	271	280	259	**1.063**
2020-21	277	255	272	284	**1,088**

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[1] Dr. Peter Prowda provided the enrollment projections in May 13, 2011.
[2] 2011-12 represents the high enrollment year for purposes of construction grant calculation.

CATEGORY PRIORITY

This is a category One (1) Project in accordance with the requirements of Section 10-283 (a-6) of the Regulations of Connecticut State Agencies, which states that category One Projects are primarily required to do the following:

> Create new facilities or alter existing facilities to provide for mandatory instructional programs pursuant to Title 10 of the general Statutes, including, but not limited to special education; the arts; career education; consumer education; health and safety; language arts, including reading, writing, grammar, speaking, spelling, and library media centers; mathematics; physical education; science, including laboratories; and at the secondary level one or more foreign languages and vocational education including shops; or for physical education facilities in compliance with Title IX of the US Elementary and Secondary Education Act of 1972 where such programs or such compliance cannot be provided within existing facilities.

EDUCATION PROGRAM

Naugatuck High School provides a comprehensive range of programs for grades 9-12 students. The High School Program of Studies for 2011-12 (appended) describes the course offerings, programs and services that need to be supported by appropriate school facilities.

SPACE SUMMARY

The recommended space needs for the current Naugatuck High School with 1,311 students are listed below. **With the exception of an addition to the PE area, square footages are based upon proposed space in the building**.

INSTRUCTIONAL/PROGRAM SPACE

General Classrooms – 48

English – 14		10,210 SF
Math -14		9,046 SF
Social Studies – 10		7,539 SF
World Languages – 8		5,084 SF
World Language Lab – 1		632 SF
ESL – 1		407 SF
Dept. Storage – 9		1,020 SF
	TOTAL SF	**33,938 SF**

Science Classrooms/Labs – 14

Science Classrooms/Labs - 14		13,775 SF
Prep Rooms – 8		1,845 SF
Greenhouse – 1		281 SF
Dept. Storage – 8		1,061 SF
	TOTAL SF	**16,962 SF**

TOTAL INSTUCTIONAL/PROGRAM SPACE	**50,900 SF**

Summary of Instructional/Program Space – With some renovations to the science classrooms, the existing rooms and space provided will be adequate for the current enrollment and future enrollment. A greenhouse has been recommended by the staff that will enhance science programming.

OTHER INSTRUCTIONAL SPACE

Applied Education – 14

Business/Marketing – 2	1,735 SF
Construction – 2	3,424 SF
Metals – 1	1,295 SF
CADD – 1	777 SF
Graphics – 1	1,294 SF
Video – 1	745 SF
Child Care/Dev. – 2	2,775 SF
Culinary – 2	2,389 SF
Culinary Classrooms – 2	810 SF

Storage – 11		1,020 SF
	SUB TOTAL	**16,264 SF**

Computer Labs -3

Labs/Lab Stations		2,279 SF
	SUB TOTAL	**2,279 SF**

Health – *2*

Health Classrooms – 2		1,198 SF
	SUB TOTAL	**1,198 SF**

Art – 2

2 D classroom		983 SF
3 D classroom		984 SF
Storage – 2		480 SF
	SUB TOTAL	**2,447 SF**

Music/Practice Rooms - 6

Band Room – 1		2,239 SF
Choir Room – 1		1,716 SF
Practice Rooms – 4		355 SF
Storage – 5		924 SF
	SUB TOTAL	**5,234 SF**

Special Education – 20

Classrooms – 17		8,738 SF
Time Out – 1		164 SF
Speech/Music Therapy – 2		240 SF

	SUB TOTAL	**9,142 SF**

Physical Education -

Main Gym		10,000 SF
Aux. Gym		7,425 SF
Pool		6,300 SF
	SUB TOTAL	**23,725 SF**

*Additional space requirements for the Physical Education area can be found in the space section entitled "Addition."

ROTC - 1

Classroom – 1		1,245 SF
Office – 1		333 SF
Storage		468 SF
	SUB TOTAL	**2,046 SF**

Media Center – 2

Library/Media Center - 1		6,962 SF
Classroom – 1		400 SF
Office – 1		240 SF
Workroom – 1		324 SF
Kitchenette – 1		151 SF
Reading/Meeting Rooms – 2		904 SF
Storage – 1		120 SF
	SUB TOTAL	**9,110 SF**

Lecture Hall – 1

Multi-purpose lecture hall – 1		1,228 SF
Storage – 1		19 SF
	SUB TOTAL	**1,247 SF**

Auditorium – 1

Auditorium (including lobby, stage)		15,374 SF
Dressing Rooms – 2		372 SF
Green Room (including lavatory)		412 SF
Storage – 3		1,034 SF
	SUB TOTAL	**17,192 SF**

TOTAL OTHER INSTRUCTIONAL SPACE	**89,884 SF**
GRAND TOTAL INSTRUCTIONAL SPACE	***140, 784 SF***

Summary of instructional space

A total of 115 teaching stations are available within the instructional program and other instructional space areas. This will allow for teachers to have a space to call home and provide for flexibility in scheduling in the forthcoming years. Adequate storage is provided as are large group instruction areas.

MISCELLANEOUS SPACE

Adult Education Computer Lab		705 SF
DECA Office		336 SF
	SUB TOTAL	**1,041 SF**

NON-INSTRUCTIONAL SPACE

Cafeteria/Kitchen/Servery/Storage

Cafeteria – 1	9,061 SF
Kitchen – 1	2,437 SF

Servery – 1		2,212 SF
Teacher Dining – 1		608 SF
Storage – 5		1,179 SF
	SUB TOTAL	**15,497 SF**

Building Services

Female Lavatories – 12		3,386 SF
Male Lavatories – 12		3,197 SF
Faculty Lavatories (hallways/offices) – 24		1,300 SF
Custodial Office – 1		161 SF
Custodial Workroom – 1		709 SF
Custodial Closets – 6		500 SF
Boiler Room – 1		2,061 SF
Electrical Rooms – 3		840 SF
Mechanical Rooms – 3		967 SF
Generator – 1		256 SF
Pool Pump Room – 1		2,202 SF
Elevator Machine Rooms – 2		162 SF
Storage – 1		1,432 SF
	SUB TOTAL	**17,173 SF**

Guidance

Offices – 6		894 SF
Reception area		710 SF
Conference Room		373 SF
Career Center		155 SF
Records/Storage		245 SF
	SUB TOTAL	**2,377 SF**

Special Education

Offices – 5		826 SF
Reception area		688 SF

Conference Room		283 SF
Storage		152 SF
	SUB TOTAL	**1,949 SF**
Athletic Department		
Office – 1		280 SF
Reception area		414 SF
	SUB TOTAL	**694 SF**
Adult Education		
Office – 1		162 SF
Workroom/Reception		1,184 SF
Storage		41 SF
	SUB TOTAL	**1,387 SF**
Security		
Offices – 3		801 SF
Reception		283 SF
Interview Rooms – 3		202 SF
	SUB TOTAL	**1,286 SF**
Administration		
Dean Offices – 2		454 SF
Reception		939 SF
Flex Offices – 6		996 SF
Faculty offices/workroom/conference room		6,000 SF
	SUB TOTAL	**8,389 SF**
GRAND TOTAL NON-INSTRUCTIONAL SPACE		***49,793 SF***

Summary of non-instructional space – The recently renovated cafeteria area is adequate to meet the needs of the current and future enrollments. However, climate control issues have surfaced as have storage and the movement of materials, specifically having to bring garbage through the kitchen during meal time. Adjustments should be made to this area to correct these issues. Faculty offices are provided for each department and are adequate for current use. Student lavatories, while in need to correct compliance and plumbing issues, are adequate for student use. Faculty lavatories are adequate. A school store is being planned in the cafeteria area as is a bank and these will enhance programming. Consideration should be given to creating a senior lounge near the present graphic arts room and could be utilized as a yearbook room as well. The mechanical room, while in need of upgrading, seems to meet the present space requirements. However, should additional space be planned, engineers should determine any adjustments for the added space. Hallways are adequate for student movement. Stairways seem to have compliance issues, but also seem adequate for student movement. The elevator also seems to be in need of upgrading to meet compliance codes.

Board of Education Offices

It may be desirable to relocate Board of Education Offices from the Tuttle Building to the high school (existing applied education spaces). It is estimated that 9,600 square feet of space will be needed to accommodate the move to the high school. Separate parking will be required to accommodate the traffic to and from this area of the building. The following space should be planned to meet the needs of the Tuttle Building staff.

Offices – 7	1,900 SF
Conference Rooms – 2	600 SF
Editing – 1	600 SF
Reception	300 SF
Workrooms - 2	800 SF
Business Staff area	800 SF
Special Education staff area	300 SF

District receiving/storage		800 SF
Kitchenette		400 SF
Record storage		800 SF
General storage		100 SF
Lavatories – 2		100 SF
BOE meeting room		2,100 SF
	SUB TOTAL	**9,600 SF**

Grand total of instructional/non-instructional space 200,777 SF

*** (does not include existing circulation or modifications to existing space)

MODIFIED SPACE

Administration – The entrance and administration area of Naugatuck High School do not present an inviting or welcoming appearance. Further, security issues have been raised concerning the main entrance and all the exits in the entire building. Consideration should be given to converting the present front patio area (usable space) to the administration suite, thus allowing the current administration area to be utilized for other purposes. Further, it would allow the guidance suite to become part of the administration suite and allow the current guidance spaces to be utilized for other office purposes such as special education offices. The space needs to convert the patio area into an administration suite are listed below.

Administration Suite

Reception area	1,000 SF
Principal's Office	240 SF
Associate Principal's Office	220 SF
Conference Rooms – 2	540 SF
Admin. Asst. office	120 SF

Flex Offices – 2		300 SF
Vault		80 SF
Storage – 2		200 SF
Workroom		500 SF
Nurse's Suite		1,700 SF
	SUB TOTAL	**4,900 SF**
Circulation – 50%		**2,450 SF**
Total of administration suite		**7,350 SF**
GRAND TOTAL OF ALL REQUIRED SPACE		***207,427 SF***

ADDITIONAL SPACE (*if a viable option*)

Physical Education – the proposal for an addition to the physical education area is motivated by the condition of the below level male locker rooms and all other areas associated with them. Climate issues are rampant and for years athletes had to traverse stairs in cleats to exit the locker rooms. Visibility for monitoring purposes is hindered by alcoves and correcting ventilation will not solve the conditions that exist above the ceiling tiles. This area is in the most need of the attention of the architects and building committee. Naugatuck High School athletics have been a source of pride to the community and an addition to the PE complex will elevate that pride for the participating athletes. The female locker rooms are at ground level and, with renovations, will be adequate for their use. Consideration should be given to making the addition a two-story structure to best utilize the available construction space.

Physical Education Addition

Ground Level

Team Locker Rooms – 4		3,000 SF
Pool Locker Room – 1		400 SF
PE Locker Rooms – 2		2,000 SF
Coaches Office – 1		240 SF
PE Offices – 2		500 SF
Trainers Room – 1		400 SF
Weight/Exercise Room – 1		2,600 SF
Referee Changing Room – 1		240 SF
Uniform Storage/Laundry – 1		300 SF
	SUB TOTAL	**9,680 SF**

Upper Level

Natatorium – 1		1,600 SF
Dance Studio – 1		3,000 SF
	SUB TOTAL	**4,600 SF**
	TOTAL	**14,280 SF**
Circulation – 50%		**7,140 SF**

Grand total of PE addition **21,420 SF**

SUMMARY OF NAUGATUCK HIGH SCHOOL SPACE NEEDS

Existing high school (usable space)	**265,461 SF**
Modified usable space	**(7,350 SF)**
Total high school usable space	**265,411 SF**
TOTAL OF REQUIRED SPACE	**207,427 SF**
(DOES NOT INCLUDE CIRCULATION)	

PE ADDITION **21,420 SF**

(INCLUDES CIRCULATION)

***Summary of existing SF and projected needed SF for future enrollment*: The existing building will accommodate the future student population. Modifications to the existing areas will enhance both programming and the aesthetics of the building.**

Area Space Specifications

Physical Education

Team Locker Rooms - 4

- if possible, access to the outside fields via double metal doors with security locking as per the security specifications;
- access to the main gym;
- connection to the school communication system;
- ceramic tile floor and walls;
- solid ceiling with recessed lighting;
- shower area with twelve partitioned shower stalls;
- drying area;
- appropriate ventilation and exhaust fans to accommodate at full capacity;
- two urinals and three toilet stalls, one ADA compliant;
- six sinks with metallic mirrors;
- 80 full size ventilated lockers;

- stationary bench fronting lockers;
- an assembly/meeting area with 12 linear feet of white board with markings of the basketball court, football, and soccer fields, TV/DVR;
- bulletin boards on two walls;
- visibility and access to at least one coach office;
- access to trainers room;
- three hair dryer outlets;
- clock.

PE Locker Rooms - 3 The locker rooms should have access to the hallway leading to the gym areas and should include:

- connection to the school communication system;
- ceramic tile floor and walls;
- solid ceiling with recessed lighting;
- shower area with six partitioned stalls;
- drying area;
- one with access to the pool;
- appropriate ventilation and exhaust fans;
- 250 small open grille type lockers;
- stationary bench fronting the lockers;
- open floor plan,
- two urinals and two toilet stalls;
- three hair dryer outlets;
- visibility and access to PE offices;
- bulletin board;
- clock.

Existing Female Locker Rooms In renovating as new, all furniture/fixtures/equipment and ambience of the area should be the equal or equivalent to that provided in the male locker room areas.

- connection to the school communication system;
- new lockers, plumbing, toilets, shower facilities, all ADA compliant;
- visibility and access to PE office;

- new flooring and ceiling;
- ventilation appropriate to the area;
- renovate as new – PE office, new furniture and equipment;
- new lighting;
- direct access to the gym;
- a coaches' office of 150 SF;
- visibility into gym;
- clock.

Trainer Room The trainer room should include:

- connection to the school communication system;
- access to home team locker room and hallway;
- ceramic tile floor, floor drain;
- whirlpool;
- ice machine, freezer, refrigerator;
- two treatment tables;
- counter along one wall with deep sink, goose neck faucets, enclosed lockable cabinets above and below the counter;
- telephone jack;
- bulletin board;
- two lockable stainless steel medicine cabinets;
- appropriate ventilation and exhaust fans;
- desk, chair, file cabinet
- clock.

Weight/Exercise Room. This area should include:

- connection to the school communication system;
- rubberized flooring;
- double door access;
- unbreakable mirror on one wall;
- wall mounted TV monitor, DVR;
- built-in speakers, CD system with lockable control panel;
- air conditioning;

- recessed drinking fountain;
- double door access;
- counter along one-half wall with lockable store beneath;
- free weights and other equipment as determined by staff;
- exercise equipment as determined by PE staff;
- clock, flag.

Coaches Office. The coaches' offices should include:

- visibility and access into home team locker room;
- connection to the school communication system;
- bulletin board;
- desk and chair;
- access to the team locker room;
- curtained shower stall, ceramic tile floor and walls, exhaust fan;
- file size locker;
- two arm chairs;
- 4-drawer file cabinet;
- telephone;
- computer work station, printer;
- lockable metal storage cabinet;
- tile floor;
- air conditioning;
- clock.

PE Offices -2

- connection to the school communication system;
- visibility and access into large locker room;
- visibility into the main gym;
- bulletin board;
- 4 full length lockers;
- 4 desks and chairs;
- computer work station on each desk, printer;
- tile floor;

- four arm chairs;
- two wooden book cases;
- four 4-drawer file cabinet;
- two lockable metal storage cabinet;
- telephone;
- appropriate ventilation;
- air conditioning;
- toilet and shower stall;
- clock.

Drying Room – 1 The drying room should include:

- appropriate ventilation and air circulation;
- two ceiling mounted metal racks for hanging uniforms;
- a caged lockable door;
- concrete floor;
- built-in shelving on two walls sturdy enough to store equipment;
- access to the team locker room if possible;

Referee Changing Room – 1

- tile floor;
- three full size lockers;
- shower stall;
- appropriate ventilation;
- sink;
- toilet;
- clock.

Gymnasium

- provide ADA compliant seating for 900 students in the bleachers;
- replace the motorized folding partition
- connection to the school communication system;

Gym Lobby – Consideration should be given to:

- providing a small ticket booth;
- providing a small security booth;

- replacement of display cases;
- providing electrical outlets for a concession stand with all code compliant equipment with a metal folding door;
- new flooring, ceiling, etc.

Pool - Compliance issues need to be addressed. Consultation with a pool engineer will be essential in the design and planning of renovations to this area.

Natatorium

- connection to the school communication system;
- bleacher style seating;
- appropriate ventilation and climate controls;
- male and female lavatories;
- clock;

Dance Studio

- connection to the school communication system;
- double door access;
- wooden flooring;
- self-contained sound system in a lockable cabinet with tape, record, CD capacity and in-set speakers in two corners;
- recessed drinking fountain;
- other equipment as designated by the PE department;
- clock.

General Classrooms

Classrooms – 48 As part of the renovate as new project, all room should have: **Note: one English classroom should be converted into a writing lab with 22 computer workstations and printer. One world language room should be utilized as a language lab. Consultation with the head of the WL department is suggested in planning this room.**

- new lighting;
- new windows and room darkening shades;
- new floors;
- new ceilings;
- connection to the school communication system;
- new clocks and speakers;
- four computer stations;
- wiring for school-wide video;
- wall mounted TV, DVR;
- new doors;
- new bulletin boards;
- smart boards;
- white board;
- ceiling mounted projector and screen;
- teacher desk, chair, computer work station;
- four drawer file cabinet;
- lockable storage cabinets;
- 22 student desks or four tables with six chairs, ADA compliant;
- air conditioning;
- flag.

Department Offices – An office should be provided for the head of each department and as part of the project:

- air conditioning;
- new flooring and ceiling;
- proximity to the appropriate department classrooms;
- new desk, chair and other furniture;
- computer work station, printer;
- lockable storage cabinet;
- connection to the school communication system;
- telephone;
- bulletin board;

- flag, pencil sharpener.

Department Storage

- each department should have a storage room located in the area of the classrooms.

Science Classrooms/Labs

Science Classroom/Labs These rooms may well be multi-functional for programs other than chemistry. Consultation with the science staff will determine the number of rooms needed for earth science, biological sciences, physics, and chemistry. Staff should inventory all furniture and equipment to determine the exact needs and their input should be sought in room layout as well. **Consideration should be given to converting rooms 201 and 203 into clabs (classroom/lab combination). Also, the flooring in the renovated rooms is a concern and plans should be made to replace the flooring in these rooms.** Each room should include:

- connection to the school communication system;
- appropriate room ventilation including air conditioning;
- fume hoods over lab stations;
- 16 linear feet of white board;
- smart board;
- handicapped accessible lab stations and seating;
- student computer work stations/printers as per Technology Plan;
- teacher computer work station/printer;
- four student computer work stations;
- new windows and room darkening shades;
- wall/ceiling mounted projection screen in front of room;
- wall mounted TV monitor/VCR
- voice/video/data capacity;
- four rectangular tables, 20 chairs in a central learning area;
- fire blanket and extinguisher;

- eye wash drench station;
- emergency shower;
- safety glasses cabinet;
- bulletin boards on two walls;
- lockable teacher desk and chair;
- chemical resistant tile flooring;
- clock, flag, pencil sharpener.

Science Prep Rooms A prep room should be situated between two classrooms with access to each room. Each room should include:

- connection to the school communication system;
- appropriate ventilation;
- chemical resistant tile flooring;
- flammable materials storage cabinet;
- counter along one wall with sink, chemical resistant plumbing, storage above and beneath the counter;
- rectangular table;
- fire blanket;
- eye wash station;
- fire extinguisher;
- air conditioning;
- clock.

Science Chemical Storage Room The room should be located near the chemistry labs and include:

- chemical resistant tile flooring;
- built-in storage shelving along two walls;
- two lockable flammable materials storage cabinets;
- fire blanket extinguisher;
- eye wash station;
- appropriate ventilation including air conditioning;
- rectangular table.

Music Rooms

Instrumental Music Room The room should have close access to an outside door and include:

- connection to the school communication system;
- built-in counter along one-half wall with sink, enclosed cabinets above and below;
- ceiling mounted projector and screen;
- wall mounted TV monitor/VCR;
- acoustically treated tile flooring, walls, and ceiling;
- tiered seating with handicapped accessibility;
- new windows, room darkening shades/blinds;
- air conditioning;
- new lighting with consideration given to an outside lighting source;
- teacher desk and chair, computer work station;
- 4- drawer file cabinet;
- voice/video/data capacity;
- 100 music posture chairs with chair carts;
- 100 music stands with storage cart;
- conductor's chair, music stand, and podium;
- two band/orchestra music folio cabinets;
- double door entrance to hallway;
- bulletin board on wall near entrance;
- 16 linear feet of white board with music staves;
- professional quality piano with lock, piano dolly;
- CD/stereo playback/recording system with recessed speakers on two walls with lockable control panel in room;
- clock, flag.

Choral Music Room This room should include:

- connection to the school communication system;

- acoustically treated tile floor, walls, and ceiling;
- ceiling mounted projector and screen;
- voice/video/data capacity, wall mounted TV with DVR;
- lockable teacher desk and chair, computer work station;
- 4-drawer file cabinet;
- built-in CD/stereo system with recessed speakers on two walls, lockable control panel in room;
- bulletin board on wall near entrance;
- double door access to hallway;
- professional quality piano with lock, piano dolly;
- new windows and room darkening shades/blinds;
- ADA compliant seating;
- 100 chairs, chair cart;
- 16 linear feet of white board with music staves;
- conductor's chair, music stand, podium;
- built-in counter along one-half wall with sink, enclosed cabinets above and below;
- air conditioning;
- clock, flag.

Practice Rooms

- acoustically treated floor and ceiling;
- windowed into instrumental music room;
- electrical outlets for electronic keyboards;
- air conditioning.

Instrument Storage This room should include:

- double door access from instrumental music room;
- built-in shelving on one wall sturdy enough to store instruments
- open grille shelving, Wenger or equivalent;
- tile flooring.

Uniform Storage This room should be located in the music area and include:

- ceiling suspended metal clothes rails for hanging uniform and robes;

- appropriate ventilation;
- tile flooring.

Office/Library The office/library should be planned so that visibility allows sight into the instrumental and choral music rooms. The office/library should include:

- connection to the school communication system;
- tile flooring;
- two desks, two chairs, computer work stations;
- two telephones;
- four arm chairs;
- coat rack;
- two 4-drawer file cabinets;
- two wooden book cases;
- music folio cabinet;
- bulletin board;
- window draperies if windowed;
- clock.

ART

Art Room - 2D studio

- connection to the school communication system;
- coat/smock closet with shelves;
- air conditioning;
- new windows, room darkening shades/blinds;
- outside light source;
- new lighting;
- ceiling mounted projector, screen;
- wall mounted TV, DVR;
- white board;
- smart board;

- teacher desk, chair, computer work station, printer;
- new floors, ceiling, flooring – acoustically treated surfaces;
- new furniture and equipment;
- handicapped accessible seating;
- new bulletin boards and display cases;
- clock, flag, pencil sharpener.

Art Room – 3D

- connection to the school communication system;
- air conditioning;
- code compliant kiln room with appropriate ventilation;
- new bulletin boards and display cases;
- handicapped accessible seating;
- new furniture and equipment;
- ceiling mounted projector, screen;
- wall mounted TV, DVR;
- white board;
- handicapped accessible work station and seating;
- smart board;
- teacher desk, chair, computer work station;
- coat/smock closet with shelves;
- new windows, room darkening shades/blinds;
- new flooring, ceiling with acoustic treatment;
- new lighting;
- outside light source;
- clock, flag, pencil sharpener.

Art Storage – storage should be provided within each room with built-in shelving and appropriate ventilation.

ROTC

ROTC Classroom The room should include:

- connection to the school communication system;
- tile flooring;
- counter along one wall with sink, enclosed cabinets beneath;
- ceiling mounted projector and screen;
- wall mounted TV monitor/DVR;
- 24 student desk/chairs with book rack beneath;
- teacher desk and chair, computer work station;
- built-in book shelving along one-half wall;
- 16 linear feet of white board;
- smart board;
- rectangular table;
- room darkening shades;
- assembly area for inspection/fall-in activities;
- double door access to hallway;
- voice/video/data capacity;
- bulletin boards on two walls;
- clock, pencil sharpener, flag standard.

ROTC Offices It is expected that an officer and enlisted man will operate the program and the offices should include:

- connection to the school communication system;
- tile flooring in one, quality static-free carpeting in the other;
- desk and chair, computer work station;
- telephone;
- window draperies if windowed;
- the office with tile flooring should have window visibility into the classroom;
- two wooden book cases;
- 4-drawer file cabinet
- coat rack;
- air conditioning;
- two arm chairs;

- clock, flag.

ROTC Uniform Storage This room should include:

- access to the classroom;
- two metal ceiling mounted clothes handing rods for hanging uniforms;
- built-in storage shelving on two walls;
- tile flooring;
- appropriate ventilation.

Special Education

Classrooms – All special education classrooms and resource rooms should be planned as indicated in the specifications for general classrooms. Note: The location of the transition program is essential to its success and it should remain in its present locale. All special education spaces should include:

- connection to the school communication system;
- air conditioning;
- new furniture and equipment;
- teacher and student computer work stations, printer;
- new windows, room darkening shades;
- new floors and ceilings;
- new lighting;
- white board;
- new bulletin boards;
- new appliances in the life skills room with appropriate ventilation;
- handicapped accessible seating;

OT/PT – space should be found to include an OT/PT room of 200 SF in the proximity of the life skills classroom. The room should include:

- connection to the school communication system;
- air conditioning;
- furniture and equipment appropriate to the needs of the therapists through consultation with the special education staff;

- double door access.

Special Education Offices- Offices for the school psychologist, 4 social workers, and the special education supervisor should be provided. The present guidance area could accommodate their needs. The offices should include:

- connection to the school communication system;
- new windows and blinds;
- air conditioning;
- lockable desk, chair, computer work station;
- telephone;
- four arm chairs;
- tile flooring;
- lockable four drawer file cabinet;
- book cases;
- bulletin board;
- clock.

Auditorium

Auditorium – The auditorium is both a school and community resource. A separate climate control system including air-conditioning should be designed for the area.

Auditorium Lobby – The present lobby requires upgrading to make it an attractive assembly area. It should meet all the code requirements. Display cases and an electronic bulletin board will enhance the area. All lavatories should be upgraded with handicapped accessible toilets, sinks, etc.

Auditorium:

- connection to the school communication system;
- quality fabric numbered seating for 1000 students/adults;
- ADA compliant seating;
- egress to meet code requirements;
- handicapped accessibility to the stage;
- new code compliant curtains;
- access to stage from seating area on both sides with railings;

- full consideration to acoustics to accommodate young voices, solo and group performances, and plays;
- clocks in two locations;
- because the area is not often used, it should receive frequent airing and be part of the weekly maintenance schedule for the custodial staff, particularly during warmer weather;
- consultation with design professionals, school and community groups for additional specifications and equipment that will be needed to accommodate student and community needs with consideration given to both the space available and the funds required.

Stage

- improved lighting;
- double door access to hallway(s).
- large electrically controlled projection screen;
- projector with video capacity;
- floor electrical outlets, microphone outlets;
- public address system with control panels on stage and in lighting booth;
- podium;
- wooden flooring;
- connection to the school communication system;
- clock visible to back stage personnel

Dressing Room – one room near the stage entrance should be designated as a dressing room. It should include:

- design to accommodate school and community plays;
- tile flooring;
- connection to the stage communication system;
- movable privacy screening;
- two lockable metal storage cabinets;
- clothes hooks along two walls with benches fronting the hooks;
- one half wall with dressing tables, mirrors, counter and two sinks;
- full length mirror ;
- air conditioning;

- connection to the school communication system;
- clock.

Stage Storage

- this area should include piano/dolly and movable risers.
- space for chair dollies, 300 folding chairs;
- wooden floor;
- double door access.

Considerations: The auditorium will be an important learning and performing area for the school and community. In the design process, frequent consultation will be required to produce a quality space that will serve the needs of all who will be using it.

Applied Education

Consideration: The applied education area is large and three rooms require modification into potential classrooms. Future use of the present metals room is questionable. Maintaining the CADD, construction, graphics, and video rooms seems reasonable for future programming. The conversion of the former auto shop into the culinary kitchen, restaurant, and community room is a better use of the 2,700 SF space. The movement of the culinary program into the auto shop area will free up the present culinary space for use as a child care room, thus leaving the present child care room as a dressing room for the auditorium. Reducing the graphics room to 1200 SF and utilization of the other 500 SF into a senior lounge/yearbook room will enhance programming. The ISS room can be relocated to the dean of student's office area.

CAD/Construction – These rooms should include:

- new windows;
- new lighting;
- new sinks and plumbing;

- inventory of equipment and replacement of new appropriate equipment as indicated by the department head.
- connection to the school communication system;
- appropriate ventilation and air circulation;
- floor markings for safety purchases around all equipment;
- eye wash/drench station;
- new furniture with handicapped accessible work stations;
- new ceilings;
- teacher desks and chairs, computer work station, printer;
- new bulletin boards;
- smart board;
- white board;
- wall mounted TV, DVR;
- ceiling mounted projector, screen;
- other code compliant equipment such as fire blankets, extinguishers, etc.
- clock, flag, pencil sharpener.

Video Room – This room should be modified to make it into an attractive video studio/classroom for the school. It should include:

- connection to the school communication system;
- wiring room for video feed for the entire building;
- acoustically treated ceiling, walls, flooring;
- a studio area for broadcast with microphones, painted backdrop, etc.
- new video equipment and cameras;
- a classroom space with 22 chairs or tables/chairs seating 22;
- handicapped accessible work station;
- teacher desk and chair, computer work station, printer;
- air conditioning;
- appropriate lighting for the studio area;
- bulletin boards;
- new windows;
- other equipment and furnishings as indicated by the video teacher and staff;

- double door access;
- clock, flag standard, pencil sharpener.

Graphics – As mentioned above, the graphics area should be 1200 SF and a 500 SF senior lounge should be planned. The graphics room should include:

- connection to the school communications system;
- new windows and dropped ceiling;
- new lighting;
- an inventory of present equipment and purchase of new equipment as needed and indicated by the graphics teacher;
- appropriate ventilation and air circulation;
- teacher desk and chair, computer work station;
- five tables, 22 chairs, handicapped accessible seating;
- bulletin boards;
- smart board;
- white board;
- ceiling mounted projector, screen;
- wall mounted TV, DVR;
- clock, flag, pencil sharpener.

Senior Lounge – located with access to the hallway and should include:

- connection to the school communication system;
- air conditioning;
- two bulletin boards;
- two tables, 12 chairs, handicapped accessible seating;
- computer work station, printer;
- white board;
- six arm chairs and a sofa;
- clock, flag, pencil sharpener.

Culinary Arts – Presently the culinary arts program has 1,240 SF of space. Consideration: Moving the culinary arts program into AE 115 room with 2,700 SF available can provide for a community room as well. It will require walling in the overhead doors in that area to provide double door access to the outside and filling in the

lift area of the former automotive shop. This area should be planned in consultation with culinary arts staff and include:

- connection to the school communication system in all areas;
- an 800 SF kitchen with all new quality appliances with appropriate hoods and ventilation, ceramic tile flooring, appropriate sinks, utensils, clock, etc.
- an 800 SF dining area with tables and chairs to accommodate 40 people, tile flooring, wall mounted TV/DVR, attractive in appearance to diners, air conditioning, clock;
- a 100 SF smock/coat closet;
- a 300 SF lockable storage room;
- a 700 SF community room that should include: tile flooring, tables and chairs to accommodate 25 people, connection to the school communication system; access to the outside, a podium with speaker system, handicapped accessible seating, wall mounted TV/DVR, air conditioning, clock.

Foods – to best meet the program needs of this area, the room should include:

- connection to the school communication system;
- new windows/blinds;
- new lighting;
- all new appliances with appropriate ventilation, hoods, etc;
- new floors;
- air conditioning;
- teacher desk, chair, computer work station, printer;
- four drawer file cabinet;
- bulletin boards;
- white board;
- wall mounted TV, DVR;
- ceiling mounted projector, screen;
- smock closet;
- clock, flag, pencil sharpener.

Metals – Consideration should be given to converting this 2,700 SF room into department storage rooms or 3 classroom of 800 SF.

Child Care The child care classrooms should include:

- connection to the school communication system;
- new windows/blinds;
- new ceilings and floors;
- new equipment and furniture appropriate for the age level of the children;
- handicapped accessible seating;
- white board;
- air conditioning;
- ceiling mounted projector and screen;
- wall mounted TV/DVR;
- teacher desk, chair, computer work station, printer;
- chairs, desk, tables for students;
- bulletin boards;
- clock, flag, pencil sharpener.

AE 113 and AE 111A These two rooms could better be served as the Technology Rooms with all school technology dead-heading in this area. The rooms should include:

- connection to the school communication system;
- new dropped ceilings;
- tile flooring;
- zoned air conditioning;
- all appropriate and current technology related to the purpose of school technology;
- double door access;
- two desks, chairs, and telephones;
- four 4 drawer lockable file cabinets;
- four metal lockable cabinets;
- chemical fire protection;
- electrical power conditioner/saver;
- two tables, four chairs;
- tools and tool kit;
- wall mounted TV/DVR;

- two white boards;
- storage room;
- clock, flag.

Media Center

The NHS resource center should have code compliant display cases outside and an electronic bulletin board. The resource center should include:

- connection to the school communication system in all rooms/areas;
- new windows with room darkening blinds/shades;
- air conditioning throughout;
- a window in the office for visibility into the center;
- new furniture and equipment with casters on chairs;
- new reference desk;
- security cameras;
- two learning areas each with a wall mounted TV/DVR, ceiling mounted projector and screen;
- an area for meetings such as the BOE with sound system;
- computer work stations, printers;
- new lighting;
- new floor, ceiling;
- consultation with media specialist in designing of the area;
- clocks in each area;
- flag standards.

Lecture Room

The lecture room should include:

- connection to the school communication system;
- air conditioning;

- code compliant handrails leading to the stage;
- code compliant seating;
- a large electrically controlled projection screen;
- ceiling mounted projector;
- large TV/DVR;
- clocks in two locations.

Faculty Workroom

As excess space is found within the building, a faculty workroom should be provided. The room should include:

- connection to the school communication system;
- new windows;
- 200 built-in mailboxes;
- two conference tables each seating 10 people;
- new lighting;
- tile flooring;
- six desks, chairs, computer work stations, printers;
- two telephones;
- two copy machines;
- six comfortable chairs, end tables, magazine rack;
- wall mounted TV/DVR;
- two white boards;
- two bulletin boards;
- counter along one wall with storage above and beneath, code compliant coffee service, microwave;
- two refrigerators;
- clock, flag.

Security

The office of student affairs/security department is essential in providing a safe and secure environment in and out of the building. If the administration area is moved to the modified patio area, the Dean of Student Affairs office and school security could be moved into the present administration area. ***It is imperative that that the head of school security and the Dean of Student Affairs are involved in the design of the security area and security systems.*** The area should include:

- connection to the school communication system;
- air conditioning;
- acoustically treated ceilings and walls;
- a counter with storage cabinets below;
- secretary desk and chair, computer work station, printer;
- a waiting area with five arm chairs;
- bulletin board;
- Dean of Student Affairs office with same furniture and equipment found in the Associate Principal's office;
- a partitioned separation from the security area;
- three security interview rooms with acoustically treated ceiling and walls;
- **a back door leading to driveway for privacy when police are involved;**
- five decks and chairs, computer work stations, printers;
- TV monitors connected to security cameras in the building;
- a table with six chairs;
- other furniture and equipment needed in consultation with security/Dean of Student Affairs staff;
- two clocks, flag.

Hallways/Corridors

In renovating the hallways, consideration should be given to:

- connection to the school communication system;
- replace all display cases with code compliant ones;
- new student lockers;
- handicapped accessible recessed drinking fountains;
- non-skid flooring;
- new bulletin boards;
- appropriate security cameras;
- appropriate signage on all room entrances;
- new lighting.

Lavatories

All lavatories should include:

- connection to the school communication system;
- new plumbing, toilets, urinals with adequate handicapped accessibility;
- new sinks with metallic mirrors above;
- ceramic tile floor and walls;
- solid ceilings with recessed lighting;
- appropriate ventilation;
- washable toilet stalls;

Administration

Considerations: This area will be the main entrance to the building with enough double doors to accommodate code compliant egress. The flow of traffic should be straight forward with a centered kiosk. Offices should be air conditioned and should be located off the traffic area.

Administration

Principal Office – If possible, this office should have windows and should include:

- connection to the school communication system with all-call capacity;
- paneled or wall papered walls, window draperies;
- built-in book case on one-half wall;
- executive desk and chair;
- computer work station, printer;
- fax and fax table;
- matching furniture throughout;
- coat closet with shelves;
- wall mounted TV, DVR with capacity to broadcast from this location;
- four drawer lockable lateral file cabinet;
- telephone, credenza;
- quality static free carpeting;
- four arm chairs;
- white board;
- bulletin board;
- clock, flag.

Associate Principal Office

- connection to the school communication system;
- quality static free carpeting;
- desk and chair, computer work station, printer;
- telephone and credenza;
- fax and fax table;
- draperies if windowed;
- lockable four drawer file cabinet;
- bulletin board;
- four arm chairs;
- two wooden book cases;
- white board;
- clock and flag.

Dean of Academic Affairs Office

- connection to the school communication system;
- quality static free carpeting;
- draperies if windowed;
- desk and chair, computer work station, printer;
- telephone and credenza;
- lockable four drawer file cabinet;
- bulletin board;
- white board;
- four arm chairs;
- two wooden book cases;
- clock, flag.

Conference Rooms – 2 One should be located near the principal's office and one near the guidance offices and should include:

- connection to the school communication system;
- accessibility from the reception area(s);
- tile flooring;
- white board;
- bulletin board;
- conference table seating 12, 12 arm chairs;
- window draperies if windowed;
- telephone ;
- clock, flag.

Guidance Offices and Flex Offices – flex offices will be designated for use by the principal. These rooms should include:

- connection to the school communication system;
- access to the reception area(s);
- tile floors;
- acoustically treated ceiling and walls;
- desk and chair, computer work station, printer;

- telephone;
- lockable four drawer file cabinet;
- bulletin board;
- two arm chairs;
- two metal book cases;
- clock, flag.

Workroom –

- connection to the school communication system;
- tile floor;
- counter along one wall with sink, storage cabinets above and below the counter, electrical outlets along the counter top;
- two copy machines;
- rectangular work table;
- mobile paper storage cart;
- metal lockable storage cabinet
- clock.

Unisex Lavatories – 2

- ceramic tile floor and walls;

Storage Room –

- tile floor;
- built-in shelving on two walls sturdy enough to store paper goods;
- metal lockable door.

Reception – Consideration should be given to having a main reception area and a guidance reception area. The reception area should be enclosed by code compliant glass and have signage that indicates the admin or guidance areas. The reception area should include:

- access and visibility into the main corridor;
- tile flooring;
- counter separating the reception area for the work area with storage below the counter;

- ten secretarial work stations, partitioned with visibility into each area, each work station with computer, telephone, file cabinets, printer;
- two bulletin boards;
- security window facing into entrance area;
- principal's secretary with access to principal's office;
- associate principal and dean of academic affairs secretaries with access to each office;
- connection to the school communication system;
- ten lockable lateral file cabinets;
- master clock;
- master communication system control panel housing state of art communication system;
- master fire alarm system;
- master 'open door' panel with another located in the head of security office;
- waiting area with ten arm chairs, magazine table;
- two flag standards;
- clock on two walls.

Nurse's Suite – Consideration: The nurse's suite should be accessible via the reception area and also have double door access to the outside for privacy movement to an ambulance. The nurse's suite should include:

- an office with 3 desks, 3 chair, 4 lockable file cabinet, telephone, fax, computer work station, printer on each desk, window visibility into cot room area and waiting area, clock
- connection to the school communication system;
- tile flooring;
- bulletin board;
- 5 cots, one enclosed for privacy;
- a waiting area with ten arm chairs;
- an ADA compliant lavatory, sink, metallic mirror, ceramic tile floor and walls;
- four exam tables;

- eyewash/drench station;
- stainless steel lockable instrument cabinet;
- eye chart;
- refrigerator;
- clothes rack;
- counter with sink, microwave, goose neck faucets, lockable storage above and below the counter;
- biohazard waste can;
- lockable medicine cabinet;
- lockable storage area;
- clock in exam area.

Summary of Considerations

- making AE 108 into a dressing room;
- converting AE 113 and AE111A into the technology room;
- converting the present guidance area into special education offices for the social workers and school psychologist;
- converting the present school store into a career center;
- modifying the front patio area into the administrative suite;
- enlarging the gym lobby.

TECHNOLOGY

The Technology Program:

Basic purposes of technology in the Naugatuck Public Schools are twofold: (1) It serves as a productivity tool for administrative, teaching and learning functions and (2) It serves as a tool for learning.

As a productivity tool, all school personnel must have ready access to a computer and related devices and connectivity to both a local area network and a wide area network where school and district application software resides. As the district becomes more involved with electronic data storage and retrieval (data warehousing), its decision-making capabilities will become more data driven, timely and effective. Electronic

records, student reports, student electronic portfolios and assessment tools are just some of the myriad of potential applications for technology as a productivity tool, in addition to such functions as attendance, grade reporting and student records. Open Portal capacity will be needed to provide timely information to parents and students about class assignments and grading.

Technology tools in classrooms have profoundly affected teaching and learning both pedagogically and in terms of access to information and human resources. The contemporary high school classroom must have SMART Boards, ceiling mounted LCD projection devices, computer workstations with wireless and strategically placed hard-wire access to the school LAN and media distribution system, and the Internet. There is increasing likelihood that "tablet" computing devices will become a more predominant aspect of a high school program.

The International Society for Technology in Education (ISTE) has identified six broad categories for Technology Foundation Standards and Performance Indicators for Students (2007). These standards are…

1. **Creativity and Innovation** – *Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:*
    - Apply existing technology to generate new ideas, products or processes
    - Create original works as a means of personal or group expression
    - Use models and simulations to explore complex systems and issues
    - Identify trends and forecast possibilities
2. **Communications and Collaboration** – *Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:*
    - Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media
    - Communicate information and ideas effectively to multiple audiences using a variety of media formats
    - Develop cultural understanding and global awareness by engaging with learners of other cultures
    - Contribute to project teams to produce original works or solve problems
3. **Research and Information Fluency** – *Students apply digital tools to gather, evaluate, and use information. Students:*
    - Plan strategies to guide inquiry
    - Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
    - Evaluate and select information sources and digital tools based upon the appropriateness to specific tasks
    - Process data and report results
4. **Critical Thinking, Problem Solving, and Decision Making** –*Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:*
    - Identify and define authentic problems and significant questions for investigation

- Plan and manage activities to develop a solution or complete a project
- Collect and analyze data to identify solutions and/or make informed decisions
- Use multiple processes and diverse perspectives to explore alternative solutions

5. **Digital Citizenship** – *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:*
    - Advocate and practice safe, legal, and responsible use of information and technology
    - Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity
    - Demonstrate personal responsibility for lifelong learning
    - Exhibit leadership or digital citizenship
6. **Technology Operations and Concepts** – *Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:*
    - Understand and use technology systems
    - Select and use applications effectively and productively
    - Troubleshoot systems and applications
    - Transfer current knowledge to learning of new technologies

These standards are linked to performance indicators for elementary, middle and high school levels that enable teachers to plan technology-based activities for students. The effective use of technology in the classroom occurs when its use is embedded within the fabric of the content and skills areas of the core curriculum. Therefore, students must have ready access to technology tools and appropriate learning, communications and application software to benefit fully from a powerful, new learning environment. This new learning environment makes use of traditional teaching-learning strategies but incorporates new ones that will prepare students for the world in which they will function as productive digital citizens. This new learning environment will include more…

- Student-centered learning
- Multisensory stimulation
- Multipath learning progressions
- Multimedia approaches
- Collaborative work
- Information exchange
- Active/ exploration/ inquiry-based learning
- Critical thinking and informed decision-making
- Proactive/ planned action
- Authentic, real world contexts

Technology Infrastructure – General Requirements:

The general guidelines for the technology infrastructure of the Naugatuck High School must conform to the "Guidelines for Infrastructure in Connecticut Schools," as published by the Connecticut state Department of Education, December 1995, or its most recent revision. The specific technology requirements prepared by architects or engineers

must be reviewed by School Building Committees and their technical advisors to ensure the most advanced and flexible system is being installed. The infrastructure should provide for both wired and wireless connectivity to the LAN, WAN and Internet.

Design

A data design will be performed for this school that includes specific recommendations for the following:

- Wiring closet locations
- Location and quantity of drops for classrooms
- Backbone requirements for wired and wireless computer workstations
- Wiring closet electronics specifications (100mb.)
- Testing requirements
- Power requirements (a separate, independent power source for the technology systems is recommended, with surge protection at the power source)
- Documentation requirements

Internet Connection

The building must have routers and DSU, capable of connecting to an Internet Service Provider in varying speeds. The building will have a dedicated Internet connection.

Standards

The system will conform to all current industry standards.

Applications

An integrated technology system (SMART Technologies) shall be installed to support administration, teaching and learning activities. The system should provide the following:

- Video time display, instant messaging, all call and retrieval systems
- Digital time displays, electronic clock and bell system
- Classroom and office telephone/ intercom
- Vandal alarm and video security system in strategic parts of the building and outdoor areas
- Public address
- Connections to the public voice system in strategic parts of the building (gym, cafeteria, auditorium, media center, main office), voice messaging and room-to-room calling
- Electronic mail, bulletin board and conferencing
- Facsimile capability
- Wired and wireless LAN, WAN and Internet connectivity

Video Distribution

The video system should enable media retrieval from a variety of sources including:

- Local origination, CATV, ITFS microwave signal antenna. Decoder, satellite dish, DVD/VCR, laserdisc, CD-ROM, video file server, classroom or school programming.
- Each teacher should be able to control the technology devices from the classroom; power, program selection, volume and lighting.
- The system must be safeguarded; equipment, file server data and program access.

- All instructional and administrative areas should support live video program generation.
- The video component of the network must be capable of supporting multiple channels.
- Classrooms will have the ability to access multiple channels, independent from each other.
- Broadcast capability from the media center, gym and auditorium.

Installation

The wiring installation shall meet or exceed the recommended minimum standards established by the Connecticut state Department of Education as specified in its publication, "Guidelines for Technology Infrastructure," 1995 or its most recent update.

- All wiring should be placed above ceilings or behind walls and permanent installation should be affixed to appropriate support
- Wire runs are to be supported at intervals that do not permit visible sags, using cable trays
- All penetrations of firewalls are to be properly and completely sealed with non-flammable material
- Safe distances must be maintained from sources of electromagnetic interference

Technology Equipment and Services

Goals of the Technology Program

A. Technology to enhance students learning.
   1. Students will determine and apply the appropriate technology to their learning and information needs across curriculum areas.
   2. Students will have equal access to technology.
   3. Students will participate in ever expanding learning communities.

B. Technology to enhance productivity.
   1. To enhance the interactive communication system among schools, community, and homes creating more opportunities to advance learning.
   2. To expand and enhance a data management system to inform decision-making.
   3. To continue to increase organizational efficiency through the acquisition of up-to-date resources and through ongoing training in how to utilize those resources.

Description of Equipment Needs for Naugatuck High School

1. All regular classrooms shall be equipped with four student computer workstations; SMART Boards with ceiling mounted projectors and a [networked] printer located in a team classroom and/ or shared space. These computers will be connected to a LAN and have access to the Internet.

   Computer stations in each classroom shall be connected to integrated multi-media systems within the school and from outside the building. The classroom teacher shall also have a computer work station connected to the LAN and WAN with access to appropriate software to manage routine classroom functions as well as computer-assisted and or computer-managed instruction programs. All classrooms shall be equipped with ceiling mounted projection devices and teacher computer workstations.

2. The library-media center shall serve as the hub of the computer network serving the school. A twenty-four-station computer lab with three/ four network laser printers should be located within or juxtaposed the media center. The media center should also be equipped with 4-6 workstations, each with four computers, with Internet and LAN access for research work. Ceiling mounted projection devices connected to the LAN and SMART Technologies media distribution system should be located in all general classrooms and other specified instructional or public areas. A head-end for video broadcasting should be located in an area of the media center or community meeting room where public gatherings/ meetings are likely to take place. The media center should be equipped with an electronic card catalog system and a bar code scanning circulation system. The Library office/ work area should be equipped with one teacher workstation and other basic communication devices. A state of the art media distribution system shall be installed, preferably in the media center. Two-three mobile, wireless laptop computer labs should be available for distribution to classrooms on an as needed basis. Portable SMART Boards (2-3) should also be made available to special services and instructional support learning areas. Secure storage for these labs is also needed.

   A wiring room/ computer management space should be located in the vicinity of the media center, to the extent possible. This area should contain computer workstations that would enable district computer coordinators / technicians to manage the networks as well as sufficient space for equipment storage and work benches for various computer repairs that are routinely done. Centralized wiring closets shall be strategically located for security and operational effectiveness.
3. Teachers should have access to controls within their classrooms that would enable them to manage media presentations from the distribution system integrated within the voice, data and video network.
4. The administrative area(s) shall be equipped with computers for the principal and secretaries. Telephones, facsimile machines and high quality network printers need to be provided. A TV monitor for the clock and bell system and school announcements shall be provided in each classroom. High volume and high quality copier systems shall be provided in the general office areas.
5. All special instructional areas shall be connected to the network for teacher and students use. At least three student computer workstations shall be located in each special services area served by a teacher. Special services personnel should have computer workstations located in their office or work area.
6. The gymnasium and cafeteria shall have cabling for video and data drops. A large portable video presentation projector, monitor and twenty-foot screens should be installed or available in these areas.
7. Art, music and physical education areas or offices should be equipped with computer workstations connected to the LAN and WAN. Ceiling mounted presentation screens should be installed. The music rooms should have access to recording equipment.
8. Electronic bulletin boards should be located at the main entrance, in the cafeteria and the gymnasium.
9. A separate, dedicated electrical wiring system and independent power source are recommended for operating the technology infrastructure and its equipment. This is

intended to provide appropriate surge protection at the power source and to ensure an adequate supply of power to operate the system without disruption.

10. Mobile computer labs with twenty-four laptops or tablet devices serviced by wireless technology connected to the local area network could provide increased flexibility in the deployment of technology capacity to classrooms and students. It also provides the potential for increasing access of technology to academic classrooms. It is feasible that the mobile computer labs could be deployed to individual classrooms on an as needed basis rather than to dedicate as many fixed classroom assets for this function. Mobile wireless labs would enable the school to utilize its classroom space in other ways, rather than to take a classroom off-line to function exclusively as a computer lab.
11. The Director of Special Services should be consulted during the design phase of the project about "assistive" technologies that are required or anticipated needs of students and teachers, including "sound field" systems for selected classrooms.

Note: The consultant encourages the Building Committee to establish a Technical Advisory Committee to assist with the design and implementation of the technology component of this project. School district personnel and community volunteers with expertise in this area should be called upon, at the appropriate time, to ensure the technology plan, infrastructure design and equipment requests represent the state of the art in terms of fulfilling the needs of the present and future educational program.

COMMUNITY PROGRAMS

The contemporary public school facility serves the educational interests of student clientele as its primary function and it also embraces the needs of its community for an increasing range of activities that enhance the quality of life of townspeople. Therefore, areas of the building need to be accessible to the community after school hours for a variety of activities ranging from scouts to sports activities to adult education enrichment classes and gatherings of people for meetings, entertainment or recreation. It is the philosophy of the Naugatuck Board of Education that the school buildings belong to the community and they should be used to the fullest extent practical, while maintaining the primary function of the building as its foremost consideration.

The areas most in demand for community use are the following:

- Gymnasiums
- Auditorium
- Natatorium
- Library-Media Center
- Cafeteria
- Computer Labs
- Outdoor athletic facilities

The building design must accommodate public access, including handicapped citizens, to all public places including lavatories, telephones, water fountains and seating. The design should respect the need for security of both the core school facilities and public areas.

Areas of the building should be designed for display of varied art works and historical artifacts. Areas of the building should accommodate visiting lecturers and artists who address gatherings of students and interested adults in formal and informal settings that promote interaction amongst and between these groups.

SITE CONSIDERATIONS

External

The outdoor facilities for the Naugatuck High School complex should provide for the following considerations:

1. Separate access to the building for bus transportation, parent and student vehicular traffic. Modifications for entrance and egress as well as parking will be needed if the Board of Education offices are relocated to the high school.
2. Handicapped access shall be provided as per the American with Disabilities Act (ADA) requirements.
3. Student, visitor and general parking for approximately 450 cars.
4. Separate faculty and staff parking area for approximately 140 cars.
5. Access to the kitchen and custodial storage areas for ease of delivery services.
6. Landscape should be shade and ornamental trees with low maintenance ground cover and other low height plant material.
7. Construct new roads and driveways to accommodate new parking areas, bus queue, and parent drop-off areas; this will be affected by relocation of the preschool program and the relocation of Board of Education offices.
8. Provide for site lighting, utility upgrades, parking improvements, storm drainage, grading and landscaping in all construction areas.
9. School and cafeteria refuse pick-up areas should be fenced with locking gates large enough to allow dumpster style trucks to enter. All fencing should be attractive and sturdy.
10. Outside, removable faucets should be at intervals to allow for window washing and maintenance of plantings.
11. Parking areas and walkways to the parking areas should be well lighted.
12. Consideration shall be made to provide ease in snow plowing and provisions made to accommodate snow piles with out impeding vision of drivers as they enter or leave parking areas.
13. The school name should appear in at least two outside locations, visible from both students and general access roads and driveways. The main entrance to the building should be obvious to persons approaching the school.

14. Walking patterns shall be designed to minimize crossing vehicular traffic as much as possible. Ensure adequate means of egress for emergency evacuation, particularly in winter months when snow plowing may impede evacuation routes.
15. The outside façade exterior renovation areas shall be made compatible or complimentary to that of the existing building.
16. Attention to upgrade all outdoor athletic and physical education space is required; relocation of the football-soccer-lacrosse field with the installation of synthetic turf/grass; relocate bleachers and increase seating capacity.

Internal:

The following considerations should be made in the design of the interior features of new and altered portions of the building:

1. All electrical switches in hallways throughout the building should be key-type.
2. Ceiling materials must be attractive, durable and noise reducing, as well as removable for utility access at a sufficient height to minimize tampering.
3. Wire trays located above all spaces should be large enough and have the capacity to handle additional wiring and cabling for future use.
4. Drinking fountains (at least two per floor area) must be handicapped accessible and not traffic restrictive.
5. Recessed, lighted display cases with lockable doors and adjustable shelving should be located as stated in room specifications.
6. Trophy cases for athletic and academic awards should be located in the entry lobby to the gymnasium area or the main school lobby.
7. All school lockers (built-in combination locks) should be recessed into the walls and be large enough to hold student personal supplies, contain a shelf for books, and hooks for backpacks and outer garments.
8. Classroom doors should be recessed (where practical) to facilitate traffic flow. Each door should have a magnet release for emergency evacuation situations as well as a code-compliant vision panel.
9. Handicapped elevator service should be available with key type restricted operation.
10. Stairways should be planned so students can move quickly from one classroom to another. All space under stairwells should be enclosed.
11. TV security cameras should be strategically placed in hallway locations high enough so as to prevent interference with their security function.
12. All hallway bulletin and tack boards should be code compliant.
13. Departmental classroom color schemes should be different and distinguishable.
14. All hallway windows should be unbreakable glass.
15. Signs for each room should be handicapped coded and set into a space that will prevent them from being removed, except by maintenance personnel.
16. Exit signs must be code compliant and areas of refuge located in selected stair areas.
17. All exit doors should be locked during school hours and should be monitored through the administrative offices for controlling access to the building. Enunciator panels should alert office personnel to a breach of security.

18. A security system should be designed to enable administration to control and monitor visitor access to the building. The system should not intrude upon the normal operation of school functions.

Environment:

1. Acoustics: All classroom and hallway space should be constructed to minimize noise that would interfere with the teaching and learning process. Attention needs to be given to [high noise producing activity and quiet required] areas for special acoustical treatment.
2. Air quality: The entire building should be fully air-conditioned. Increased attention needs to be given to minimize dust and air borne allergenics. Dust collection systems are needed in the technology production and material fabrication areas of the school. The building contains a large technology infrastructure and operating system and, consequently, requires well-controlled heating, cooling and humidity systems.
3. Flooring: Each room description specifies the flooring treatment to be used. Tile rolls that are heat sealed upon installation should be considered for ease of maintenance. It is recommended that carpeting be used sparingly. Where used, carpeting should be of high density, mold resistant fabric that is easily repaired.
4. Hallways: Hallways should be acoustically treated to lessen traffic noise. Lighting in hallways should be recessed. Hallway surfaces should be bright and finished with an epoxy (or similarly durable) glaze for ease of maintenance.
5. Aesthetics: The interior design and color scheme of the building should be inviting and comfortable. Persons entering the building should be immersed in a warm atmosphere that celebrates student learning through color, sound and creative displays of student work and achievements.
6. Every effort should be given to prevent "sealed building syndrome," including exposure to radon gas and other hazards. Adequate ventilation, air circulation, and use of non-allergenic interior finish material should be priority considerations.

The building should incorporate all current technologies to conserve natural resources and use environmentally friendly materials and concepts, to the extent possible.

7. Asbestos abatement is required where identified by the architects.
8. PCB abatement, as may be required by EPA for PCB/40CFR

SYSTEMS CONSIDERATIONS

Internal Communications and Security:

Telephone – Intercom- Public Address System. Each classroom in the school should be equipped with an integrated communication system that allows for receiving emergency and routine announcements, making local area calls and communicating with the main office**,** other offices and classrooms, accessing voice mail service inside and outside the building, and directing emergency assistance calls to one or more designated areas. Offices and other specific designated areas in the building should be equipped with the same integrated system as listed above with the additional services that: allow local and long distance calls, the ability to switch calls to specific telephones after hours with

voice mail services, and back-up emergency power for telephone, voice mail, and intercom services. Include adequate service for future expansion of telephones throughout the building.

The intercom system should also provide for exterior building speakers.

Clock and bell system. Each room should be equipped with a time display showing both hours and minutes. The display shall originate from a central electronic clock module that shall also control chime or tone system circuits and other time-based functions. The system should be capable of being corrected or re-programmed from the master clock module.

Fire alarm and vandal alarm system. The school should be equipped with a fully code compliant smoke detection, alarm and sprinkler system. All equipment should be state of the art. Remote enunciator panels showing location of the source of the alarm shall be located near the administrative area and front door of the school and the custodial office. Upon activation of an alarm, an evacuation signal shall be transmitted to a central station monitoring service. The alarm shall signal until manually reset. Sprinkler heads should be carefully located and positioned to prohibit tampering. Alarms should be easily heard throughout the building, outside the building and visual alarms should be provided as per code. All required fire extinguishers should be placed into recessed cabinets with the doors on audible local alarms.

To protect the building when it is unoccupied, each room shall be equipped to electronically monitor the normal "closed door" status. Interruption of the "closed door" status shall automatically initiate a silent alarm to local police or other security agency. High value areas shall be equipped with additional sensing devices to detect the presence of an intruder.

Building Systems:

Renovate to new. This project seeks "renovate to new" status under the SDE School Facilities Unit guidelines. All building systems – structural, mechanical and operating, must conform to the guidelines that will qualify the school for this status. Architects and engineers will need to examine existing conditions in order to create a design for these systems that meets these requirements.

Code compliance. All renovations, alterations and new construction associated with the Naugatuck High School complex shall be in compliance with local and state building, health and handicapped codes and regulations.

Custodial storage. Custodial storage areas and closets should be strategically located for convenience and efficiency of work.

HVAC System. The heating, ventilating and air conditioning system (HVAC) shall be thoroughly studied so the most reliable, flexible and energy efficient system is provided. An alternate energy efficient source of hot water for domestic use shall be provided for summer operation so major boilers may be shut down during non-heating seasons.

The HVAC system will be controlled by a computerized energy system located in the custodial office with access from outside the school. The building will contain "zones" for managing temperature control for day and evening functions.

Connection to external emergency power sources should be provided to keep vital building components and areas functioning in an emergency.

The HVAC system should have the following characteristics:

- Should be able to provide uniform temperature in all areas of the teaching space.
- Should eliminate drafts and cold areas.
- Should provide superior ventilation in all rooms and bathrooms.
- Should eliminate noise in the classroom from the systems.
- Should be able to provide for varying degrees of humidity control.
- Should provide unquestioned reliability.
- Should be energy efficient.
- The gym and auditorium should have a separate HVAC, mechanical and operating system.

In addition, several of the specific rooms have additional ventilation, exhaust, air conditioning requirements that are specified in the individual room descriptions or "internal site considerations."

Windows. Window frames and sash should be of a material that is maintenance free. The provision of glazing in the classroom is both an educational and psychological enhancement because it provides visual relief and outdoor observation opportunities. The provision of windows or glazing does, however, provide for heat loss or gain and a vulnerable point in security. The provision of solar block glazing is desirable and should be considered in each room. Natural light should be emphasized in the new construction or renovation design to the extent possible and practical.

Handicapped access. The building shall be in full compliance with state and federal handicapped codes and regulations. An elevator (or two elevators) must be strategically located to ensure suitability to meet current code requirements.

Plumbing. The school should meet all code requirements for the number of toilet fixtures, sinks and drinking fountains. All fixtures should be of the heaviest duty, vandal resistant design and include automatic source for water closets, urinals and sinks in the student bathrooms. Adequate clean outs shall be provided and all restrooms must have floor drains. Piping should run in accessible pipe chases. Valves should be ball valves. Toilet partitions should be constructed of solid plastic with color all the way through the product, vandal resistant and equipped with heavy-duty hardware. Fixtures should be wall hung. The building should be divided into sections with isolation drain valves in each section. Ultra-low flush plumbing systems shall be installed in lavatories.

Electrical distribution. The school should meet all code requirements for electrical service. Each normally occupied space shall be furnished with numerous electrical convenience outlets located throughout the space for maximum flexibility of room layout and eliminating a need for use of extension cords. Power in each classroom should come from two sources (to the extent possible and practical), one for exclusive use of computers and peripherals and the other for general use. There should be a separate service for the technology infrastructure to the extent possible and practical. Sufficient outlets (3-4 student computer workstations, one teacher workstation and printer, ceiling hung data projector, additional outlets for miscellaneous items) are to be located in areas of classrooms where computer workstations are to be located. Each electrical panel should have 25% free space to add future circuits. Emergency lighting should be on individual wall packs. All three phase motors should have phase protection. All exit signs should be L.E.D. type with cast housings and lexan lenses.

A source of emergency power should be considered so the building cafeteria and gymnasiums can function as an emergency shelter.

Exterior building structure. All windows should be "low-e" glazing on windows, with screens. The exterior of the building (new construction) should be brick or pre-cast material to be compatible with the existing structure and suit the ambiance of the school setting.

Interior building products. Interior walls in the corridors (new construction) should be brick, glazed block, epoxy paint or a material of high durability and easy maintenance. Student lockers should be adequately sized to secure coats, book bags and other small items and be constructed of a heavy-duty material with heavy-duty hardware. Window covering should be a durable blind product capable of reducing the amount of light in classrooms when video demonstrations are conducted. Carpet should be of the highest quality, mold resistant, durable and void of any odors. A carpet tile or 6'-roll good should be used for easy replacement of small areas as needed. Large recessed doormats should be installed at all entranceways.

Energy conservation. The school building plans should be reviewed by the Connecticut Light and Power Company and should comply in so far as possible with their energy rebate program, to the extent this incentive is currently available.

Hardware. All hardware in the school should be heavy duty. Keying should be mastered with restricted key blanks. The key system shall automatically disallow entrance with regular keys after a specific time of day, when only the master key will operate the doors.

All panic devices should be rim type with removable mullions rather than vertical rod type. All doors such as stairwell doors, corridor-smoke doors, etc. should be held open with magnetic devices connected to the fire alarm system.

Cabinet locks should be set to a single key.

Security. A security system shall be installed to monitor and control access to the building, and to monitor critical areas of the building. A system design will need to be developed in conjunction with school administration to ensure a functional system is implemented without unnecessary disruption to school routines and personnel job responsibilities.

APPENDICES

1. **Dr. Peter Prowda Enrollment Projections**

2. **Naugatuck High School Program of Studies, 2007-08**

APPENDIX 1

ENROLLMENT PROJECTIONS

APPENDIX 2

NAUGATUCK HIGH SCHOOL PROGRAM OF STUDIES 2011-12