New London High School Campus
New Building Project

Educational Specifications

Board of Education Approval June 3, 2014 (rev 6.23.14)

PROJECT RATIONALE

The New London School District has embarked on an ambitious, transformative plan to renovate and extend its current building into a 1400 student middle/ high school that will support two major school pathway themes. The major educational pathways for the school are: STEM Middle School with grades 6-8 and Public Service/Leadership grades 6-12.

Theme schools have become a positive response to Connecticut statutory requirement to reduce student isolation and provide quality educational opportunities for students. The renovated school is in alignment with the New London's Strategic Operational Plan and will support the goal of providing expanded quality educational choices for children in greater New London Theme schools serve the best interest of all children since they provide specialized instructional programs that recognize the uniqueness of students and their interests and have the advantage of offering parents and students more options than would be available in the home communities or traditional schools.

The high school renovations will promote diversity and help meet the goal of reducing and preventing minority group isolation while at the same time promoting equity and academic excellence.

STEM (Science, Technology, Engineering and Mathematics)

One of two school pathways will be the STEM program for students in grades 6-8. With all the acronyms that determine hundreds of different areas of education, it is easy to confuse them all. Since 2001, the letters STEM have been a normal part of educational vocabulary.

STEM stands for Science, Technology, Engineering, and Mathematics. This program was originally started through the efforts of the National Science Foundation's education and human-resources division. This approach to education is designed to change the teaching of subject areas such as mathematics and science by incorporating technology and engineering into regular curriculum by creating a "meta-discipline."

The STEM program is intended to transform the typical teacher-centered classroom by encouraging a curriculum that is driven by problem-solving, discovery, exploratory learning, and require students to actively engage a situation in order to find its solution.

In recent years, there has been a significant decline in the number of college students choosing majors in science or technology related fields. Much of this has to do with poor preparation for the classes during high school and the intense work required outside of the lecture setting in places like laboratories. Students have chosen easier majors and courses of study in place of taking on the fields that they wanted to enter due to poor preparedness. If the graduation rates continue with this trend, there will be a workforce shortage in areas of engineering and science fields.

Traditionally, the four parts of STEM have been taught separately and most of the time independent from each other for years. By adopting the STEM philosophy the subjects of Science, Technology, Engineering, and Mathematics all play an integral part in the teaching of the whole. The science, engineering, and mathematics fields are made complete by the technology component that provides a creative and innovative way to problem solve and apply what has been learned.

All students benefit from the STEM program since it teaches independent innovation and allows students to explore greater depths of all of the subjects by utilizing the skills learned; these skills are going to be required in order for today's students to be tomorrow's global leaders. All jobs are requiring workers to have a greater ability to think critically, work as a member of a team and independently.

Public Service and Leadership

Public Service and Leadership is the second pathways in this school. This broadly based theme will allow students to take advantage of a multitude of community resources and in turn serve community needs. There is a demonstrated local and national need for the following professions which are also stable professions in an ever-changing global economy. Many of the Public Service programs allow for entry level positions as well as for continued study in higher education.

The following strands comprise the Leadership and Public Service Magnet theme of the high school:

- Law and Government – Students will have ample opportunities to pursue fields of interest under the Law and Government strand. Courses engage students in realistic studies and hands-on field experience that provide essential exposure to constructing a framework of legal knowledge. Students will have access to an official courtroom integrated into the classroom setting where students can practice the art of jurisprudence. Additionally, students will examine government theory and management and lawmaking at the local, state and

federal levels while having mock simulations in an integrated Legislative Office equipped for public hearings and legislative matters.

- Public Safety and Education- Students pursuing a career in education will be able to apply teaching methodology in the onsite Child Development center. Public Safety preparation will include courses leading to professional certifications such as EMT, Firefighter I&II, Electronic Telecommunications, and opportunities for dual-enrollment at local community colleges leading to a degree in Criminal Justice and Fire Technology. Classroom experiences within simulated lab environments will provide hands-on opportunities for students to apply knowledge gained in a variety of aspects of public safety leading to certification while enhancing employability, college, and career readiness.

- Military Science - Students will have the opportunity to practice leadership within the structure embedded in the NJROTC program. The school provides all cadets with excellent academic opportunities including Advanced Placement classes; field experiences provided by the Navy; intern experiences and opportunity for travel with academic exploration. Citizenship, physical fitness and leadership development are integral components of the military science strand.

LONG RANGE PLAN

The New London High School Building project falls under the long range facility plans of the City and New London Public Schools. The present building will renovated as new with a required addition supporting classroom that support the school themes of the school: STEM and Public Service/Leadership.

Further, the facility will assist the current needs of supporting the school district and the community by offering a choice to families with children in the grades, 6-12. The multifaceted school program will address the needs of student with a heightened interest in the study of science and public service.

THE PROJECT

Both the City of New London and the New London Board of Education propose the renovation and construction of the New London High School Campus as Renovation as New and Addition Project.

To meet the educational needs of New London, an updated, revised and expanded facility is being proposed under legislation Public Act 07-249, creating a school that will accommodate the projected student enrollment of 1400 students. This building project will provide more opportunities for more students and is in alignment with the district curriculum grade level expectations and scheduling guidelines as adopted New London Board of Education's Strategic Operating Plan and up-to-date facilities in accordance with the Comprehensive Facilities Plan.

LEARNING/EDUCATIONAL ACTIVITIES

The Learning and Educational Activities are currently being developed by the New London Public Schools and will be complement the pathway programs.

SPACE REQUIREMENT

The New London Board of Education envisions the New London High School Campus New Building Project as a diverse learning center for 6-12 grade students, teachers, administrators that will freely interact to identify and achieve individual and collective student learning goals centered around the main pathway themes of the school. Equally important objectives will be to implement on-going improvement to the teaching and learning process and to produce together the best learning outcome with outstanding levels of achievement, using the magnet school pathways as a springboard for successful teaching-learning outcomes.

The space requirements that follow are intended to assist the design professionals in amalgamating a complex building structure that will support the school programs. The spaces identified as a guide and maybe adjusted as the school programs become better defined as well as space requirements.

- **Administration**

The school administration will be located near the main entrance of the building. The design and location is to be the focal point upon entering the school. Spaces in this area are to accommodate a principal, assistant principals, receptionist, and secretarial staff. Also included should be a reception area, a conference room for Planning Placement Teams and other school functions, toilet rooms and adequate space for a workroom with a copier, file room, and storage space for office supplies and materials. Also included near or at the main entrance is a security office for the entire building.

- **Nurse/Health Center**

The Nurse/Health Center is to be located within or near the administration area and is to provide easy access for students and parents. Areas to be included are nurse's office, exam room, waiting area, handicapped accessible toilet room, double lock medication storage closet, refrigerator, and student cots.

- **Resource Media Center**

The resource media center of approximately 2500 sq. ft. is required. It will serve as a library with a variety of reading materials including a special collection of material primarily in reference to the themes of the school. Also included are offices for the Librarian and Media Retrieval Specialist along with a workroom and storage area. A Distance Learning Lab to accommodate 30 student should be in this area.

The design of this area will reflect the changing nature and use of the library as mainly as a place for quiet research. The non-traditional design should be flexible so as to encourage multi-purpose functions and meeting space for core and theme related school curriculum related meetings both with students and faculty.

- **Faculty Rooms (middle and high school staffs)**

Each faculty room is to be large enough to accommodate faculty and staff members and include: a kitchenette for individual food preparation with appropriate tables and a mail stations for teachers. Male and female toilets should be included within the general area as well as workroom space and copier.

- **General Purpose Classrooms**

Classrooms are to be of sufficient size to accommodate 25-30 students, a teaching station, file cabinets and furniture to seat them inclusive of desks. Instruction white boards will be located on at least two walls in each classroom. A lockable storage for teachers' personal items, storage shelves for books and bulletin boards for display and notices. The general-purpose, academic classrooms should be designed to allow flexibility for different teaching/learning styles such as lecture, group work and independent study. These classrooms will be utilized for the teaching of math, English, social studies, world languages and other related general academic subjects.

Classrooms that support the school theme curricula will have similar instructional equipment and configuration including a front and back wall that will serve as

teacher/student presentation areas. Also included will be unique pathway classroom designs that supplement the instructional program.

Teacher stations will be located in the front of the classroom and will have the following component: computer, Smartboard with touch screen control monitor panel with built in audio speakers.

The location and configuration of classroom educational and technology equipment will be consistent for all classrooms to allow faculty ease and confidence in their use. Instructional computer in the teachers' offices should be similar to those in the classrooms (normally laptop computers). The similarity of computers throughout the school provides for uniformity in faculty and student use while reducing maintenance costs.

- **Special Education/In School Suspension Classrooms**

Three specialized classrooms in each middle school and high school are required. The first is for multi-handicapped students and the second is a shared classroom with kitchen space for lifetime training skills. Three self-contained behavior classrooms with a time out room are required.

Two required In School Suspension (ISS) classrooms are required, one in the middle school and one in the high school. Both are to be located near the main administrative building.

- **Faculty Offices**

There will be faculty offices for the core and school theme teachers throughout the building and in areas easily accessible to students. Faculty offices for theme teachers are to be located within the building adjacent to their specialized theme program. In addition there is to be a dedicated shared planning space for instructors supporting the core and main school themes of the school. The planning spaces should be sufficient in size to permit meetings and tutoring of students.

- **Language Learning Labs**

Supporting the school will be 4 computer/language labs: two in the middle school and two in the high school. The language labs will be equipped with the most up to date audio/visual teaching equipment. Each lab should be able to accommodate 28-30 students. Flexibility of the classroom design and student furniture is required for collaborative team teaching and learning.

- **Guidance/Special Education**

Guidance offices will be location near the main administrative offices. Space is to be provided for counselors and secretarial staff. Included in this area will be offices that will be shared by specialists such as a psychologist, social worker, speech and occupational therapists. A conference room will be needed for Planning and Placement Team meetings and within the guidance area will be an area dedicated for career and college placement, a Student Career Center. Students will have the capability of doing research and review information for college and career placement opportunities including meetings with visiting recruiters from area colleges and universities. Space is to be provided for storage of supplies and secure student records.

A smaller computer lab (12-15 computers) will be housed in this area to support students academically as well as for college and career planning. Small tables will be situated throughout the space in order to accommodate tutoring sessions throughout the day and after school.

- **Gymnasium/Fitness Area**

The school curriculum and state requirements encourage a strong emphasis on physical education and fitness. For these reasons, an expanded gym will be provided with appropriate student locker rooms, within and adjacent to the gym will be a dedicated Fitness Room. The regulation sized gym will be used for a variety of athletic activities including basketball, volleyball, climbing wall, rope climbing and other related individual physical exercise programs. A wrestling area is to be included for physical education classes as well and interscholastic competition. Offices for physical education instructors, coaches, trainers and adequate storage space for gym and athletic equipment are to be provided.

A swimming pool with supporting lockers and toilets is required to support the leadership/public service pathways and the physical education curriculum. The size of the pool should be designed to support Intramural and Interscholastic competitions as well as the general public when not in use by the school. Some spectator seating is required.

The pathway to Public Service and Leadership supported by the ROTC program has special requirements facility requirements within the Gymnasium area. A dedicated multifunctional meeting team room is required for such activities as drill instruction and ROTC related activities. A school store is to be located in this general area.

- **Auditorium/Lecture/Performance Halls**

A full sized auditorium with seating capacity at 700 is required plus a smaller Lecture/Performance Hall with seating of 250 people. Both spaces are to be equipped with a professional sound and lighting system. These areas will be used by students, particularly for drama productions and student choral and instrumental performances.

- **STEM Pathway Classrooms (grades 6-8)**

The uniqueness of the STEM pathways will require classrooms that support the program in design and layout. A flexible-designed Lego/Robotics classroom with rubber floor is required. An important adjunct to the STEM program is the inclusion of a life science classroom where student can explore the many curriculum branches of biology and other sciences.

A specialized classroom where students will work on building projects including plan tables is required. Within this cluster of classrooms will be adequate storage for student and group projects.

Capitalizing on the proximity of the school to the sound and area resources, a sailing/marine partnership with the area Coast Guard Academy is anticipated that will highlight studies in boating, sailing and related mutual marine program offered by the Academy.

A project lead the way, a third element in the STEM program, will require a specialized classroom and adequate support space to accommodate the cooperative program.

- **Public Service and Leadership Pathways**

The second pathway program is Public Service and Leadership. Students enrolled in the program will attend regular academic core classes with specialized theme pathways spaces that include the following:

- ROTC Physical Training that includes 2 physical training classrooms with lockers and storage for rifles and other equipment used in training
- Participation in the teaching strand within 2 pre K early childhood center lab with observation rooms

- A public safety vehicle simulation room that should allow for ambulance or other safety vehicles to enter in order to facilitate a lab working assignment including equipment related to public safety fields,
- A mock court room that supports the leadership strand and a simulated legislative office classroom
- A large multi-purpose, task classroom outfitted to instruct and provide demonstrations for fire science safety, a crime lab, EMT treatment lab, emergency operations and dispatch training. This space is to be equipped to promote communication beyond the school walls with a distance learning component.

- **General Art and Music**

There will be three art spaces, two general art rooms, one in the middle and one in the high school. An additional art room is to be included for digital and related arts with a separate kiln room. These rooms will be of sufficient size to accommodate a comprehensive art program with adequate adjacent and separate storage for supplies and student projects. These rooms are to be flexibly designed to allow a variety of art programs, including but not limited to 2-3 dimensional art, ceramics, and pottery.

In addition, there will be a general music room in the high school and middle school with students in these grades sharing the choral and band rooms.

Supporting the music program of the school will be the following specialized music areas:

- A band music room with high ceiling, non-tiered for instrumental music with a minimum of three adjacent practice rooms
- A separate choral room with portable tiered seating to accommodate combined musical chorus groups
- Separate computer keyboarding room for piano
- Adequate storage for instruments, sheet music, marching band uniforms
- Offices for music faculty

- **Food Service (Cafeteria)**

A middle/high school with an expected enrollment of 1400 students require a self-contained cafeteria with supporting kitchen and equipment to service not only the middle and high school student body but also the faculty. It is expected that the cafeteria program will operate as a full service breakfast and lunch program with food preparation being done on-site. The cafeteria will need a servery and food preparation area (kitchen) that includes

dry food and non-food storage, walk-in freezer and refrigerator, dishwashing station, washer/dryer area and manager's office.

This space anticipates that there will be 2 waves of approximately 700 student that will be served lunch during the midday lunch period. Within the cafeteria will be a separate dining room for faculty.

Maintenance/Operations/Common Areas

The non-instruction spaces are estimated at 40% of the net usable area to be allocated for building systems that included corridor circulation, stair towers, locker spaces, elevator and related common areas.

The maintenance and operation spaces should be planned around the following building requirements

- Technology Head End Room
- Data Closets
- Shop/Office Maintenance Area including offices
- Centralized Building storage and adequate storage for teaching supplies
- Employee locker rooms and toilets
- Boiler Mechanical Room
- Electrical Room
- Sprinkler Room
- Custodian Supply Closets (wet)
- Elevator machine room
- Faculty and student toilets
- Storage areas for teaching supplies and materials
- Loading dock to accommodate large delivery trucks for both school supplies and cafeteria food products

COMMUNITY USES

The building will be redesigned to facilitate activities before school, after school and throughout the calendar year when school is not in session.

An important consideration will be given to offer adult education activities for the immediate neighborhood and throughout New London as an Adult Education Facility. Parents will be offered workshops to understand how they may take an active role in the emphasis of the school pathways and in the school curriculum.

Additional consideration for student uses after regular hours by the park and recreation will be given when designing the gymnasium, media center, auditorium as well as play field and recreational facility. Through architectural design, the "Academic Wing" of the building is to have limited access by the general public after hours. The pool, lecture hall, fitness room, gymnasium and other community use-spaces are to be encouraged with separate easy dedicated access through exterior doorways from parking lots.

Parents and community members will be encouraged to use the media center and become engaged in the magnet aspect of the schools programs. City agencies and other communities that are part of the magnet program will be able to use the auditorium and storage space used by the entire school system. Neighborhood and citywide community meetings may take place in the building in the evening and when the building is not used for regular instructional programs. Active involvement by city arts programming is a possibility and will be encouraged.

In addition, summer activities, weekend and vacation activities can be offered because the facility will be available and the communities involved in the magnet school should have a calendar year use of the numerous and various facilities that have been designed into the school.

Site and driveway considerations must be given for easy access of large transportation vehicles in and out of the school property.

BUILDING SYSTEMS

The school will have updated building systems that include automatic control system designed to promote a safe, efficient and healthy indoor environment control. Standards for design selection include reliability, simplicity of operation, comprehensiveness, energy efficiency, low ongoing maintenance and repair costs, length of useful life and operational efficiency overall. The school will require the following systems to meet the educational programmatic needs.

1. Integrated telephone and intercom system with dial-out capabilities and paging from each area of the school is needed.

2. Video surveillance and building security for access and safety are to be provided for interior and exterior areas of the building with particular attention to the areas used after school use by the community and at critical points of entry and high traffic areas of the school. Internally, video surveillance is to be in all hallways, cafeteria

and fitness room. Panic buttons should be provided for immediate access to the New London Police Department via a telephone dial-out switch.

3. A state of the art fire alarm system with sprinklers, pull stations, horns, flashing, and lighting, voice evacuation in areas of large assembly, smoke and heat detectors, and battery backup, and plastic shields on pull stations is required. The fire alarm system should have a direct connect to the Central New London Fire Department in case of activation.

4. Energy management system to monitor and control mechanical systems for heating, ventilation, air conditioning, interior and exterior lighting with appropriate manual overrides is required.

5. A lighting plan to promote an optimal learning and working environment. Lighting should be designed to maximize the use of natural lighting in all areas of the building and supplemental artificial lighting to ensure appropriate foot candles of low glare brightness and illumination.

6. All interior surfaces, carpeting and related interior finishes should be used that are easy to clean and maintain.

Technology

Computer technology for language labs will need to be able to have internet access.

The most up to date voice/video/data systems will be added to all instructional and support areas. They will be supported by the New London districtwide technology plan.

Training and Development

Lecture Theater and the auditorium will need to have facilities for video conferencing, as well as Smart Boards.

Security

All rooms will need to be wired to the intercom, telephone system, fire, and security alarm systems. All security systems must be in conformity with the most recent regulations established by the State Board of Education as well as the Board of Education's policy on security in schools.

ENVIRONMENT

The electrical service provided to the building should be designed to meet the needs of all mechanical equipment, lighting, and educational equipment. Controls should be through circuit breakers and the entire system must be properly grounded.

All light fixtures, controls, motors, switches, and electrical components must be of an energy conscious design to reduce the use of electricity. All operating systems must be monitored and controlled by an energy management system capable of reducing peak demand and load shedding. These operating systems can be located on or off-site.

Plumbing in the school must meet present codes; and the sanitary sewer lines must be properly sized and located to handle the anticipated load.

The entire facility should be properly heated and cooled, including the air conditioning of the entire building.

The facility must be accessible to handicapped individuals and appropriate provisions made for all doors, stairs, built-in equipment, sinks, toilets, and other fixtures used by handicapped individuals.

As a minimum, there is to be acoustic treatment of rooms that are in accordance with the latest noise abatement standards for new school construction, in order to provide the best listening environment possible for the hearing-impaired students. Music rooms should receive special acoustical treatment for sound retention.

An elevator must be installed if the facility is over one story.

EQUIPMENT

A review of the existing inventory of furniture and equipment will need to take place before the building project commences. Furniture and equipment that still has a useful life and that will support the new building is be retained and supplemented with additional furniture and fixtures provided that support the educational programs within the renovated and expanded building.

SITE DEVELOPMENT

No land will be acquired for this construction project since it is anticipated that it will be constructed on the current site of the high school. Careful consideration will have to be given to preserving the athletic fields while providing for the expansion of the footprint of the building due to a greater enrollment. Parking for staff and visitors will be redeveloped to accommodate the increased faculty as well as student area. In the development of parking lots, consideration of the size of the lots will be given to the number of people who must park in order to participate in the programs designed by the magnet school theme, both during the school day for evening program. Paramount to all concerns in design is student safety as well as ADA compliance.

Important consideration will be given to bus traffic since a considerable number of student will take buses to and from school. Walkways will be provided around the perimeter of the school. Easy and safe access to parking lots, athletic playfields and bus pickup/drop-off will be addressed.

Outdoor athletic facilities will be upgraded and expansion will be needed to accommodate the increased enrollment to the building, with accessibility to ensure conformance with handicapped and other code requirements.

Landscaping will be designed to allow the school to blend with the environment. Trees and other plantings will be of a hearty variety which require little maintenance and which complement the building and school site. Planted trees will be sufficient distance from the building to avoid future maintenance problems. Consideration will be given to safety and security around walkways and areas of building access.

School site will be graded as necessary for construction and as necessary to finish the site at the completion of construction.

PRIORITY CATEGORY

The New London High School Campus New Building Project will operate as an improved theme school for New London. This ~~renovated and expanded~~ construction project addresses the State Department of Education's desire for improved education opportunity for student in New London.

This school building project is being submitted as a high priority with support and concurrence of the State of Connecticut Department of Education.