CITY OF MERIDEN

FEASIBILITY STUDY OF

FRANCIS T. MALONEY HIGH SCHOOL
121 Gravel Street

ORVILLE H. PLATT HIGH SCHOOL
202 Coe Avenue

FLETCHER THOMPSON, INC

3 April 2007

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Summary

Meriden high schools, **Francis T. Maloney** and **Orville H. Platt**, were originally constructed in a time period between 1957 and 1958; substantial additions were made in 1970 at both schools providing additional classrooms including science labs and swimming pools. Currently, both school buildings are approximately fifty (50) years old.

Date of original construction of the building was 1958 with drawings by Willard Wilkins, Architect of Hartford, CT.

Additions: 1968 - 1970: Renovations and additions; drawings by Russell Gibson von Dohlen of West Hartford, CT included:

a. Extension to the art / graphics classrooms on the west side of the building
b. Extension of the Cafeteria
c. Added Auxiliary Gymnasium to the south of the main gymnasium
d. Added Swimming Pool
e. South classroom wing including Science classrooms
f. Added Library / Media Center

Although the buildings are well maintained, the City of Meriden is attempting to best identify how to update the existing buildings. Fletcher Thompson has worked with many Connecticut school districts on existing school facilities and has assisted in developing the best approach to renovation and/or expansion.

Fletcher Thompson suggests that there are three (3) possible approaches or options that the City of Meriden can take in improving the performance and appearance of the two high schools. Each approach has differing financial implications as well as scheduling and phasing issues that will impact the staff and students at each school. It should be noted that this **study does not address** the **educational curriculum** and possible changes to the educational programs at both high schools. Fletcher Thompson understands that the Meriden School District will be developing an **educational specification** that will be used in conjunction with this facilities' conditions study in determining the future use of the two existing schools.

A. Limited Scope Improvements
B. "Like New Renovation Project"
C. Demolition and New Construction

In order to make a decision on what approach is best for the City of Meriden, listed below are questions that must be answered:

a. Do the existing building conditions affect the **educational programs** in a negative way?

b. Would building renovations and improvements reduce current **operating costs**? What level of investment in renovation / construction costs are required to reduce the long term facility operating costs? What is the **pay back period** for the expenditures?

A Renovation Project would allow the City of Meriden to perform a thorough analysis of existing operating costs and to develop a plan to address rising **energy costs** that are currently and will continue to be a burden to Meriden's operating budget. It is suggested that the City of Meriden research options to incorporate **"Green" Design** features into any construction project and to seek partial or full "LEED" certification.

Solutions that incorporate **alternative energy sources** such as, fuel cell technology, geothermal, cogeneration and solar should be pursued. In addition to State of Connecticut Department of Education reimbursement, additional reimbursements are available through other State programs and utility company rebates.

c. How does the City of Meriden maximize their **76 % State reimbursement** rate?

d. What level of City of Meriden **local share investment** is palatable to the City Council and tax payers?

e. Is a more economical approach to develop a series of smaller renovation projects over time in an effort to keep initial costs down or is it more economical to tackle a large comprehensive renovation project?

f. Is it possible to get State reimbursement for projects that are less in scope than a full "Like New Renovation"?

g. Which option is **least disruptive** to the students and staff at both high schools? How long will each high school take to renovate? How much will **construction administration costs** and fees be for a prolonged, phased project?

Meriden High Schools - State of Connecticut Square Footage Guidelines

The City of Meriden's current reimbursement rate for school construction projects from the State of Connecticut is **76.07%** based on the June 30, 2007 rate. Each year the State of Connecticut adjusts the reimbursement rates for all Districts based upon economic need with the reimbursement rates applied between 20% and 80%. The City of Meriden reimbursement rates have fluctuated within a tight range over the last six years as noted below:

Year	Rate (Construction)
2001-02	76.07%
2002-03	76.07%
2003-04	74.64%
2004-05	76.07%
2005-06	77.14%
2006-2007	**76.07%**

The noted **76.07%** reimbursement rate will expire on June 30, 2007 at which time the State of Connecticut will reevaluate all Districts in the state and identify a new rate for the City of Meriden.

The State of Connecticut uses a formula to determine how large of a project a District can build or renovate an existing facility based upon the highest projected enrollment for an eight year period after a District files a grant application for reimbursement. The table below identifies the total allowable gross building area with an enrollment of **1,233 to 1,345** students.

2006-2007 student enrollment as reported by school principals:

Maloney High School 1,345 students

Grade	# of Students		Allowable Area / Student		Total Area
9	336	x	170 SF	=	57,120 SF
10	336	x	184 SF	=	61,824 SF
11	336	x	184 SF	=	61,824 SF
12	337	x	184 SF	=	62,008 SF
Total	**1,345**		180.5 SF		**242,776 SF**

Platt High School 1,233 students

Grade	# of Students		Allowable Area / Student		Total Area
9	308	x	170 SF	=	52,360 SF
10	308	x	184 SF	=	56,672 SF
11	308	x	184 SF	=	56,672 SF
12	309	x	184 SF	=	56,856 SF
Total	**1,233**		180.5 SF		**222,560 SF**

The current District provided gross floor area, as reported to the State of Connecticut, of both high schools is as noted below:

Maloney High School	241,547 SF	- 1,229 SF under State Guidelines
Platt High School	237,603 SF	+ 15,043 SF over State Guidelines

Note: The noted building areas do not include the lower level District Maintenance Department located at Maloney High School.

What the information above indicates is that Maloney High School is slightly undersized for the noted current student enrollment as it relates to the State of Connecticut square footage guidelines.

Platt High School exceeds square footage guidelines by just over 15,000 square feet.
This will result in a slight adjustment downward of the current **76.07% State reimbursement** for the Platt High School project. The City of Meriden does have the option to file a space needs waiver with the State if special educational programs within the buildings result in the need for additional square footage. It should be noted that the City of Meriden can provide facilities that are larger than State guidelines, but the noted reimbursement rate would be prorated downward due to the overage.

Limited Scope Improvements

Example of a 'Limited Scope Improvement' type project.
Booth Hill School, Shelton, CT Existing Façade Booth Hill School, Shelton, CT Exterior Improvements

A. Limited Scope Improvements

A project that is similar to the recent roof replacement work at both high schools. The City would identify projects that they feel are most needed at this time, such as the dire need to upgrade to the existing electrical service, and to maintaining the integrity of the existing buildings and implemented in an effort to not cause further damage.

Rule-of-Thumb for ineligible costs: Items related to repair, replacement, or maintenance are not eligible for reimbursement by the State. Exception: work specifically required for correction of cited code violations is eligible.

Fletcher Thompson suggests that a limited scope project could include:

Window & Exterior Door Replacement

Both the 1958 original windows and the 1970 windows are single pane units that currently leak and are highly energy inefficient. A replacement project would both potentially improve the look of the existing high schools thus potentially creating additional civic pride in the facilities and reduce operating costs associated with heating and cooling the schools.

Under a limited scope project the State of CT will not reimburse for the labor to remove the existing windows and to install new, but will reimburse for the cost of the windows. The State of CT will reimburse for the full cost, labor and material for one egress window per space if the building is not sprinklered. The State will also reimburse for the cost of exterior door replacement only if the replacement is required to make existing non-handicap accessible doors accessible.

Each high school's windows consist of a combination of punched openings in the 1970 portion of the building and a curtain wall system in the 1958 portion. An average window replacement cost between the two types of windows of **$75 per square foot** has been identified.

Replacement of existing window system goals:

- Improve building envelope in an effort to reduce energy costs to heat & cool school. (note through wall air conditioning unit in photo)

- Improve building appearance in an effort to instill civic pride in the facility.

Francis T. Maloney High School – Existing 1957 vintage window system

Francis T. Maloney High School – Exterior elevation study with proposed window configuration. Design intent is to provide a new building exterior that would update the existing dated look, with a defined base (existing brick), middle section and cap (proposed row of upper windows). Dependent on the budget the proposed "solid" elevation areas could be new masonry, metal panel or an exterior insulating finish system. A portion of the window areas are proposed to be operable awning type windows.

Window & Exterior Door Replacement - Estimated Costs

High School	Window Area	(Estimated) Costs	Door Replacement
Maloney	31,000 SF	$2,325,000	$100,000
Platt	30,500 SF	$2,287,500	$100,000
Total (Windows & Doors)		$4,612,500	$200,000

Total Hard Costs (Both HS)	$4,812,500
Fees & Expenses – 15%	$721,875
Total Estimated Cost	**$5,534,375**
Ineligible Labor – 40%	$2,213,750
Total Eligible Amount	$3,320,625
City of Meriden Portion – **23.93%** (76.07% Reimbursement)	$2,213,750 + $794,625 = **$3,008,375**
Meriden Local Share %	**54%**

Notes:
1. Window areas have been extracted and estimated from City of Meriden provided documents. Exact areas to be verified.
2. Estimated square foot costs are based upon December 2006 dollars and escalation costs should be factored per the actual start date.
3. Projected costs do not include any contingencies and are presented for comparison purposes between a Limited Scope Project and a "Like New Renovation" type project.

Scope "Creep" and Associated Costs not identified:

As the City of Meriden discovered during the recent roof replacement project there was associated work, such as ceilings, asbestos abatement and lighting, that was required to perform the main task and was wise to factor into the **cost and schedule** of the project. If a limited scope project such as window replacement is initiated there is the potential to impact existing **asbestos** containing materials such as transite panels, caulking and flashings. Existing window wall system in the 1958 portion of the building also extends behind existing **millwork** that will require removal, modification or replacement.

Mechanical System Replacement – Indoor Air Quality Improvement

Fletcher Thompson's engineering team has toured the two high schools several times between the months of September and November 2006 with each building's head custodian. Building staff has communicated the challenges that are faced in operating the buildings with much of the equipment which is original to the 1958 facilities. As part of a limited scope project, along with the window replacement, Fletcher Thompson suggests that the mechanical systems be replaced. The suggested replacement will achieve the following:

a. Improve occupant comfort
b. Create a more energy efficient building operating system
c. Provide greater temperature control

Mechanical System Replacement - Estimated Costs

High School	Floor Area	Cost per SF	Total Estimated Cost
Maloney	241,547 SF	$58	$14,009,726
Platt	237,603 SF	$58	$13,780,974

Total Hard Costs (Both HS)	$27,790,700
Fees & Expenses – 15%	$4,168,605
Total Estimated Cost	**$31,959,305**

As noted above, the State of Connecticut will not typically reimburse the City of Meriden for work associated with **repair, replacement, or maintenance** under a limited scope, alteration type project. Scope of work that could be potentially deemed **ineligible** for State reimbursement under a limited scope project would include:

Equipment **replacement** - Boilers, pumps, air handling units, piping, perimeter radiation

Swimming pool filtration and mechanical systems that the State could deem as long term **maintenance** items.

Components of a mechanical system replacement project that could potentially qualify for State reimbursement and be identified as **eligible** costs include:

> Work that improves energy efficiency such as a Direct Digital Control (DDC) or Building Management System (BMS), centralized cooling and improved ventilation that meets current codes.

An assumption could be made that **30% to 50%** of the mechanical system replacement **costs** could potentially be deemed **ineligible** for State reimbursement at the City of Meriden's current reimbursement rate.

Total Potential **Ineligible** Costs	$9,587,790
Total **Eligible** Amount	$22,371,515
City of Meriden Portion – **23.93%** (76.07% Reimbursement)	$9,587,790 + $5,353,503 = **$14,941,293**
Meriden Local Share %	**46.75%**

Associated Costs not identified:

A limited scope, alteration project that includes mechanical system replacement would impact the following :

> **Asbestos abatement** of glue daubs that hold some existing ceilings in place, pipe and equipment insulation. Required new finishes such as ceiling systems impacted by the abatement process and the installation of new ductwork and mechanical equipment.
>
> **Electrical supply and distribution** that is inadequate to support improved mechanical systems with central cooling. Much of the costs associated with replacing the electrical service and distribution could be deemed ineligible for reimbursement by the State of Connecticut.

Electrical System Replacement - Estimated Costs

Power only, does not include fire alarm, communications, and security or technology systems.

High School	**Floor Area**	**Cost per SF**	**Total Estimated Cost**
Maloney	241,547 SF	$15	$3,623,205
Platt	237,603 SF	$15	$3,564,045

Total Hard Costs (Both HS)	$7,187,250
Fees & Expenses – 15%	$1,078,087
Total Estimated Cost	**$8,265,337**

Scope of Work	**Total Costs**	**City of Meriden Share**
Window Replacement	$5,534,375	$3,008,375
Mechanical System	$31,959,305	$14,941,293
Electrical System	$8,265,337	$8,265,337
TOTAL	**$45,759,017**	**$26,215,005**

Note: Estimated costs do not include required asbestos abatement or new finishes.

Like New Renovation

Example of “Like New Renovation” type project

Brien McMahon High School, Norwalk, CT
Existing Entry

Brien McMahon High School, Norwalk, CT
New Student Entry after Like New Renovation

B. "Like New Renovation"

What is "Like New Renovation Status"?

In an effort to maximize the City of Meriden's current **76.07%** State reimbursement it maybe in the city's best interest to renovate both existing high schools under the State's "Renovation Status" program. Several years ago the State of Connecticut initiated a reimbursement funding program to assist districts in renovating existing school facilities in lieu of abandoning existing schools and constructing new facilities.

As noted in the State guidelines,

"a ***Renovation*** is a school building project to totally refurbish an existing building and which results in the renovated facility taking on a useful life comparable to that of a new facility. While a ***Renovation*** may include some features of an ***alteration***, it is much more comprehensive and must address all aspects of the building. The benefits of being classified as a ***Renovation*** is that many of the costs considered ineligible for reimbursement in an ***alteration*** may be considered eligible in a ***Renovation***."

Since both existing Meriden high schools appear to be sized appropriately for the current enrollment and the projected future student enrollment, it does not appear that additional building area is required. (To be confirmed that no additional floor area is required after the City completes the Educational Specifications). This reality suggests that further analysis of the **"Renovation Status"**approach could be the preferred approach for the City.

As noted within the first section of this report, the assumption, for cost comparison purposes to a Renovation type project, is that an ***"alteration"*** type project would be limited to:

Window Replacement
Mechanical System Replacement and Upgrade
Limited General Construction

The City of Meriden could increase the scope of work to be performed under a limited scope type alteration project to include elements such as **handicap accessibility**. Alterations to improve the school's handicap accessibility are typically eligible for State reimbursement and due to past citations at both high schools Fletcher Thompson believes that **ADA conformity would be required** as part of any alteration project.

One of the goals of this study is to determine if the existing Meriden high schools warrant a full ***Renovation*** and if the existing structures are constructed in a way to provide the City of Meriden with *"a useful life of at least 20 years following the construction project"* as identified in the State Guidelines that follow this section.

GUIDELINES FOR DETERMINING ELIGIBILITY OF SCHOOL CONSTRUCTION PROJECTS FOR STATUS AS RENOVATIONS AS DEFINED IN C.G.S. 10-282

1. *The City of Meriden must make written application for such status.*

2. *The City of Meriden must have gone through a formal process of evaluating the proposed project. Professional estimates must be available to document that significant cost savings will result. (compared to the cost of new construction)*

   If the City makes a decision to proceed with the "Like New Renovation" approach a detailed estimate for each school must be prepared comparing the cost of a "Like New Renovation" to the costs associated with demolishing one or both high schools and constructing new high schools on the existing sites or other available sites. "Significant" savings must be documented for a "Like New Renovation" type project over demolition and new construction.

3. *The entire facility must be brought into 100 percent compliance with all* ***applicable codes*** *(including* ***handicapped accessibility****) when this renovation is complete. Partial renovations of an entire facility or complete renovations of a wing of a facility do not qualify.*

Code Update

A ***Renovation*** project would require a thorough code review of the two existing high schools including:

a. **Fire / smoke separation** along the **corridor walls** between classroom spaces and corridors which provide circulation through the buildings.

b. Required **rated separations** between **differing use groups** such as assembly, business and educational use spaces. For example the auditoriums are typically classified as assembly use spaces and adjacent classrooms are classified as educational use spaces. The required rated separations can not be confirmed at this time and will require further analysis.

Rated enclosures at the existing **stairwells** will have to be confirmed.

c. Division of the existing high school buildings into 30,000 square foot **smoke compartments.**

d. **Travel distances** to required **means of egress** from the most remote points within the buildings to safe exits.

e. The building configuration at both Maloney and Platt High Schools include an **exterior courtyard** adjacent to the Media Centers. The courtyards are used for educational purposes and carry an occupant load that requires adequate **egress** per the **fire safety codes**. Further analysis of the exiting out of both buildings will be required to determine if the presence of the courtyards would require for the buildings to be sprinklered.

Maloney High School – Courtyard

Platt High School - Courtyard

Handicapped Accessibility

The District has noted that both existing high schools have been cited by both State and Federal agencies for the lack of facility and program accessibility.
The Fletcher Thompson staff noted non-compliance in many areas throughout the buildings including:

A. Building entrances are not fully accessible with **door widths** being inadequate and steps occurring at some entrances. Door hardware was also found to be noncompliant with no required lever type hardware.

B. **Elevators** are not sized properly and the controls require updating and replacement to meet current codes. Staff at both high schools also requested larger elevator cabs to facilitate movement of equipment and furniture between floors. Additional elevators are most likely needed to provide true handicap accessibility to the ground floor (football locker rooms) at both schools. The State of Connecticut Bureau of School Facilities will require a clear indication of handicap accessibility between the gymnasium locker rooms and the playfields at each school.

C. **Accessible seating**, as required by current regulations, is not provided within the auditoriums at either school and a ***Renovation*** project would require modifications to each house to provide complete accessibility to the existing stage. In addition tiered seating within the Choral rooms and swimming pools do not meet accessibility standards. The Music instructor at Platt high school is confined to a wheelchair and does not have access to his files that are located on the upper tier of risers.

Platt HS – Choral Room risers

Natatorium – Inaccessible Seating

D. Both high schools are not provided with interior identifying and directional **signage** required by accessibility standards and codes. All spaces require signage that provides Braille and /or raised text for the sight impaired. Directional signage is also required throughout the building to sign the **accessible route** from the main entry to handicap accessible toilet facilities and elevators.

4. *The renovation must incorporate education technology capability throughout the facility, as recommended in the Guidelines for **Technology** Infrastructure in Connecticut Schools.*

Maloney High School
Media Center Computer Room

Although some computer technology has been implemented at each high school it is the desire of the District to expand the use of computer technology. Using the most recently completed Meriden District school, Lincoln Middle School, as the model, the District wishes to provide the following technology at each high school:

a. Installation of ceiling mounted video projectors and Smartboards in each classroom. Use of video in each classroom for morning announcements.

b. Wiring of each classroom for video production distribution.

c. Updating Media Center technology to include computerized material cataloging system. Although the Media Centers currently use paper card catalogue systems, computerized systems have been purchased and are currently being installed at both Media Centers.

The implementation of additional technology at both high schools has been impacted by the inadequate and **poor condition** of the existing **electrical distribution system**. As noted in the 'Electrical Systems' portion of the report it is recommended that the electrical system be replaced and upgraded to support future technology improvements.

In spaces where computers have been added to support the educational program the school has experienced **over heating of the spaces** due to the heat generated by the computer equipment. Window air conditioning units have been added to address the over heating, further burdening the existing inadequate electrical distribution system.

5. *It must be determined by a structural engineer that the **structural integrity** of the original building has not been compromised and is adequate to provide for continued occupancy for a period of time comparable to that of a new facility.*

   The Fletcher Thompson team of architects and engineers noted that both Maloney and Platt high schools were constructed during a period of time (1958 & 1970) when construction costs were much more affordable than today. Existing interior partitions are constructed of concrete masonry units (CMU) and poured in place concrete, while due to current escalated construction costs school facilities that are being constructed with 2006 dollars are many times being provided with metal stud and gypsum partitions.

   It was noted that both existing Meriden high schools are solid and durable buildings where the building systems are near or past their life expectancy, but the "bones" remain intact. There did appear to be some brick veneer failures along the north elevation of Maloney High School and separation of brick joints along the window heads of the 1970 corbelling.

   If the City of Meriden decides to move forward with a "Like New Renovation" type project a more thorough structural analysis will be required.

6. *A detailed report on all **existing building systems** must be provided, including*
   HVAC
   Electrical Systems
   Water
   Roofing
   Lighting
   Plumbing
   Energy Monitoring
   Communications
   Security Systems

   <u>Professional opinions must be provided that all systems will have a useful life of at least 20 years following construction.</u>

   <u>Architectural Building Systems</u>
   Note – Similar existing conditions were evident at both high schools.

   <u>EXTERIOR</u>

   <u>SIDEWALKS AND ACCESSIBILITY:</u>

   The building floor elevation at the entry is approximately 8 inches above grade. The front entry appeared to be handicap accessible, but the west end of the north classroom wing is accessed via a set of concrete up six (6) risers. The building site slopes from west to east and the playfields are located at an elevation approximately fifteen (15) to twenty (20) feet lower than the main floor and parking areas. Any "Like New Renovation"

project would be required to study and provide handicap accessibility to the playfields from the gymnasium and locker room facilities within the building.

Guard and handrails were missing at most steps to grade from building exterior doors. Where guard and handrails exist they do not meet current codes:

> There are no horizontal extensions of handrails at top and bottom of stairs.
>
> Spacing of pickets in guard rails allows passage of 4 inch diameter sphere between pickets.
>
> Guard rails are less than 42 inches in height.
>
> The design of guardrail infills enables climbing of the guard rail.

ATHLETIC AND PLAYING FIELDS:

The football field and running track are located at the low point of the site. The football field and running track are in good condition; they were reported to have been recently (1990) upgraded.

A retaining wall exists at the southeast corner of the building which forms the access to the football locker rooms located on the lower level.

LANDSCAPING AND LIGHTING:

Both of the high school sites are planted with well maintained grass and mature trees. Residential areas are located around each school property with highway property located to the east of Maloney High School.

The brick patio located to the south of the swimming pools at both schools appeared to be overgrown with grass and did not appear to be an active exterior extension of the swimming pool. Staff noted that the overhead doors no longer operated. Renovation of the openings into windows would allow for day lighting within the pool area.

Pool Patio – Maloney High School

Site lighting consisted of high powered floodlights mounted on poles scattered around the sites and mounted to the building. These fixtures have been aimed to cast light across the sites with little regard to the trespass of light onto adjacent properties.

BUILDING INTERIOR:

FLOORS:

Corridor floors are vinyl asbestos tile on concrete slabs.

Classroom floors, cafeteria floor and others are vinyl asbestos tile of varying ages and condition. It is recommended that these materials be tested and abated if hazardous.

Gymnasium floors are resilient wood floor systems. The Main Gymnasium floor appears to be in fair condition and could be refinished. The Auxiliary Gymnasium floor has suffered water damage along the north wall: an area of the finish floor has rotted out with a larger surrounding area exhibiting sponginess. The condition of the remainder of the subfloor is unknown, nor is it known how far the water has traveled under the resilient floor system. It is recommended that the floor be opened up to determine the extent of damage and remediation required.

INTERIOR WALLS:

Walls are concrete masonry units at corridors, gymnasia, locker rooms and other areas. Numerous small holes exist in some locations as if holes were poked through for anchorage of items to the wall.

Walls of the main gymnasium have wood bleachers on all walls. The finish of the bleachers is worn, and there are no guardrails or provisions for seating within the bleacher system for the physically disabled. *Bleacher replacement is suggested.*

Condition and composition of the **gymnasium operable wall** is poor and school custodial staff noted that the wall had not been used for quite some time. *The removal of the wall and the installation of motorized roll-up dividing nets are suggested.*

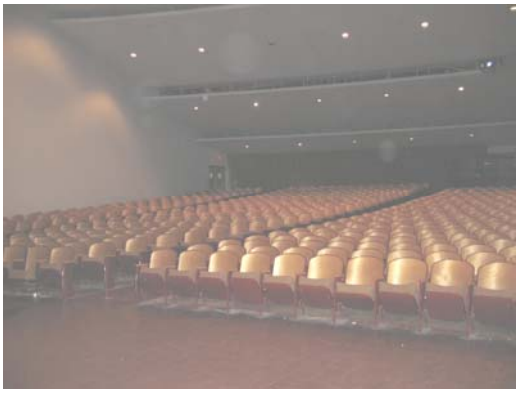
Original wood bleachers – Maloney HS

Auxiliary Gym Floor Patch – Maloney HS

AUDITORIUM AND STAGE:

Both Meriden High School facilities provide auditoriums that seat approximately **1,280 persons**, an asset to the educational program and for community use.

The proscenium wall, proscenium doors and curtain are not rated. The stage has a wood floor and wings which extend out in front of the proscenium. A volume of space exists under the stage; accessed by panels in the stage front. The space is unsprinklered and is currently used for storage.



It appeared that the stage is not sprinklered and code required smoke hatches are not provided. Access to the stage from the house is up stairs, which do not have code compliant hand or guard rails.

The auditorium has 5 blocks of seats, 14 seats in width at the back of the house, with 4 aisles. The floor of the projection booth at the rear of the auditorium is flush with the rear aisle. Aisles and cross aisles are carpeted; floor at auditorium seats is concrete. The condition of auditorium finishes and furnishings is fair.

Renovations to the auditoriums would require updates to meet current handicap accessibility standards including:

a. Modification to the existing seating configuration to provide **handicap seating** dispersed throughout the house.

b. Handicap **access to the stage** from the house via a handicap lift.

c. Assisted listening devices for the hearing impaired.

This narrative is intended to provide a description of the existing **HVAC systems** at both high schools to determine their serviceability for renovate to new projects. Similar existing system conditions were found at both Maloney and Platt High Schools. Each high school is serviced by the original 1950's mechanical room and a second mechanical room provided as part of the 1970 additions. Each high school is also provided with a mechanical room that services the swimming pool filtration and chlorination systems. The older 1950's mechanical rooms are provided with an incinerator and large boilers. A redesign and reworking of these spaces would allow for the removal of the outdated and large pieces of equipment, freeing up floor area.

A comprehensive review of the mechanical systems at both high schools would also allow the City of Meriden to implement **energy efficient systems** that would potentially reduce current operating costs and save money over the long term.

Boilers:

The facility is served by five duel fuel gas/oil fired Hot Water heating boilers of approximately 4,000MBH each. Two are 5 to 6 years old, two are 12 years old and the oldest boiler has been abandoned in place. The boilers are inefficient and costly to maintain. See photo below.

Recommendations:

Due to increased load presented by building code ventilation requirements, the age of two of the boilers (12 years old), the inefficiency of all the boilers, and the abandonment of the fifth boiler. It is recommended that the boilers be replaced with more modern energy efficient equipment with 25 year life expectancies.

Piping and Pumps:

The existing heating piping systems are black iron and some copper piping and are original and are showing signs of deterioration. Some leaks are apparent in various areas. There are primary circulating pumps with tertiary pumps spread out through the facility to provide proper flow. The pumps are of various vintages and are in various states of serviceability. See photo below.

Recommendation:

Replace major heating piping in mechanical rooms, fan rooms and where accessible. Pumps to be replaced with high efficiency motors and variable frequency drives for energy efficiency.

Radiation:

The existing radiation and enclosures are serviceable.

Recommendation:

Leave radiation and enclosures in place, clean and repaint, and change control valves.

Temperature Controls:

The existing temperature controls are pneumatic, original and operate poorly. They require constant maintenance and control temperatures poorly. See photo below.

Recommendation:

Replace the entire temperature control system with a Direct Digital temperature control system (DDC) to save on operating cost and maintenance costs. CO2 sensors will be included to insure that the proper amount of ventilation air is supplied at all times.

Ventilation:

The facilities are presently served by the original exhaust systems and Heating and Ventilating units with ductwork to supply ventilation air to the spaces. The systems are original, in various states of repair, and are not capable of providing classroom code required minimum ventilation per today's codes. See photos below.

Recommendations:

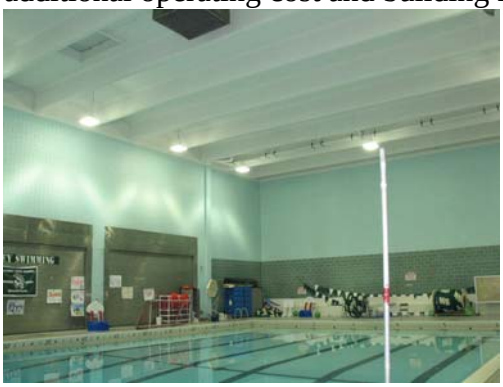
Replace the entire ventilation system with new to meet today's ventilation and Indoor Air Requirements. As the facilities are not presently air conditioned, this recommendation includes completely air conditioning the facilities as well. A combination of rooftop package air handling units and indoor air handling units will be utilized to provide air conditioning and required ventilation. Units will include economizers for free cooling when ambient temperatures allow further saving energy. Cooling will be provided by a chilled water central unit furnishing chilled water to the air handling units. Data rooms, smart closets, tech ed areas will be served by individual units designed for this year round cooling requirement.

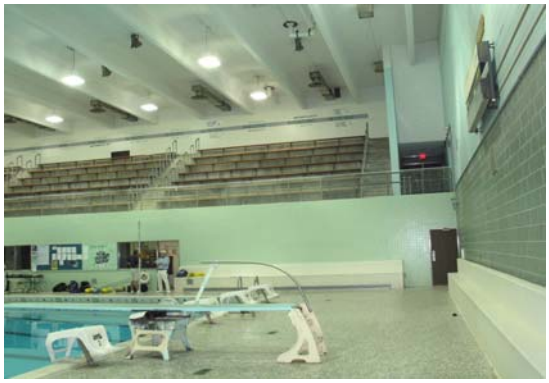
Pool Natatorium:

The existing pool areas are served by heating and ventilating units and exhaust fans. The systems are original, in poor condition, and are not energy efficient. The pool equipment room is used as a plenum area for the air circulation throughout the space. This contributes to building deterioration and maintenance costs. See photos below.

Recommendation:

Replace the existing equipment with new HVAC equipment to properly control temperature and humidity. The systems will also be able to heat the pool water to save additional operating cost and building maintenance costs.





Kitchen HVAC:

The kitchen HVAC equipment is original and is inefficient. The ventilation and makeup air systems are maintenance intensive. See photo below.

Recommendation:

Replace the existing systems with modern energy efficient exhaust and make up air systems.

The following is a description of the existing **plumbing systems** at Maloney High School and the conditions they are in to determine the longevity for future renovation to new projects. Similar existing conditions can be found at Platt High School. It should be noted that the Platt High School is constructed over an existing aquifer and care should be taken when considering any new construction on the site.

Domestic Water Service:

The facility is served by a 4″ ductile iron water service which is original to the building. A meter and pressure reducing valve are installed at the service entrance. The service is adequate for the present building configuration. See photo below.

Recommendations:

Due to the age of the water service pipe any future additions and or renovations would require the service to be upgraded to a new 4″ or possibly a 6″ water service.

Domestic Hot Water:

Domestic hot water is generated in two boiler rooms at this time. The "Old Boiler Room" and "The New Boiler Room". In the old boiler room upgrades are presently underway with the abandonment of the existing 1000 gallon hot water storage tank with heat exchanger and replacing with two new 100 gallon gas fired water heaters. In the new boiler room the original 1000 gallon hot water storage tank with heat exchanger is operational and appears to be adequate at this time. There is also a separate gas fired water heater for summer use; this has reached its life expectancy. See photo below.

Recommendations:

Centralize the domestic hot water heating equipment in a single location. This will cut down on energy consumption, maintenance cost and serviceability. If this recommendation is not feasible, the existing 1000 gallon hot water storage tank in the new boiler room should be removed and replaced with new energy efficient fuel fired water heaters similar to the ones in the old boiler room. Both tanks should be dismantled and removed from the site.

Water Distribution Piping:

Water distribution piping is copper with no visible signs of deterioration or leaking at this time. Piping is insulated with asbestos insulation and is deteriorated in some locations in the boiler rooms. Hot water recirculating problems were noted throughout.

Recommendations:

Piping insulation should be removed and new fiberglass insulation should be installed under an abatement project. Piping in general is in good condition and may be re used based on the extent of any additions and renovations in the near future. Evaluate piping distribution for correcting hot water recirculation. Add new circulating pumps, install balancing valves and balance system.

Sanitary, Waste and Vent Piping:

Sanitary waste and vent piping is extra heavy cast iron pipe with no visible signs of deterioration at this time. Piping in general is in good condition.

Recommendations:

Piping may be re used based on the extent of any additions and renovations in the near future. Would recommend that the main sanitary lines be cleaned out and inspected for any interior damage or deterioration.

Storm Piping:

Storm piping is extra heavy cast iron pipe with no visible signs of deterioration at this time. Piping in general is in good condition. Roof drains as observed were in good condition with a few of them clogged by debris.

Recommendations:

Piping and roof drains may be reused based on the extent of any additions and renovations in the near future. Would recommend that the main storm lines be cleaned out and inspected for any interior damage or deterioration. All roof drains should be inspected and debris removed from strainers.

Gas Piping:

Gas piping is schedule 40 black steel with no visible signs of deterioration at this time. The gas service and meter are located within the building. See photo below. Gas serves both boiler rooms, kitchen and science areas. The administration noted that there is not a sufficient volume of gas to currently fire the boilers.

Recommendations:

Install an exterior gas shut off and remove the existing gas valve indicated in the picture below. Also there is a need to provide **high pressure gas**.

Plumbing Fixtures:

Plumbing fixtures are the original fixtures and are in fair condition. Waterclosets are floor mounted flush valve type. Urinals are floor mounted flush valve type. Lavatories are various types, but in most cases are wall hung. See photo's below.

Two toilet rooms have been updated recently with new fixtures.

Recommendations:

Some handicapped alterations have been done, however Fletcher Thompson would recommend that all toilet rooms be upgraded to conform to current codes and handicapped requirements. Plumbing fixture count should be reviewed for proper quantity based on current code.

Pool Equipment Room:

The pool filters, pumps and piping are original to the building and have reached their life expectancy. The pool heat exchanger has been replaced recently. Piping and fittings within the space are severely corroded to the point where a major leak could occur at any time. The two pool filters have corrosion around the manway and have been repaired a few times. See photos below.

Recommendations:

Replace pool filters, piping, chlorine tanks and chlorine injection pumps with new updated equipment including schedule 80 pvc piping and valves. Existing heat exchanger can be re used.

Fuel Oil Storage Tank:

The school presently has 2 newer (replaced in 1998) 20,000 gallon underground double wall fiberglass fuel oil storage tanks located outside of each boiler room. Existing fuel oil transfer pumps and associated piping are in poor condition.

Recommendations:

Replace both fuel oil transfer pumps and piping. Replace piping from were it enters the building to the burners. Provide new fuel oil tank level and leak detection panel with all necessary probes and wiring.

Kitchen:

The kitchen area in general is outdated with most piping connections to equipment not to current code requirements air gaps and backflow prevention. Grease traps were noted as undersized for equipment served.

Recommendations:

The school will need to comply with The State of Connecticut General Statutes with reference to F.O.G. (Fats, Oils and Grease) discharging into the sewer system by July 2011. Meeting this requirement would require extensive renovation work within the kitchen area to properly discharge required fixtures through a grease interceptor or automatic grease recovery unit.

Fire Protection:

Presently the building is not supplied with an automatic sprinkler system.

Recommendations:

Depending on the scope of renovations to be done, Connecticut General Statutes will require that the building be protected throughout with an automatic sprinkler system conforming to NFPA-13. Water supply, in the street, appears to be adequate at this time to support a wet pipe sprinkler system without the need of a fire pump.

Electrical Systems

Electrical Distribution System

Existing Conditions evident at both high schools.

1.1 The main building switchboard and associated electric room is located in the basement. The switchboard is supplied from a bank of three (3) transformers located within the adjacent transformer vault. (These transformers are controlled and maintained by the utility company.)

1.2 The main switch and distribution system is rated 480/277 volt, 3 phase, 4 wire, sized at 1600 AMP. In addition, there are dry-type transformers rated at 480 volt, 3 phase that reduce the voltage to 120/208 V, 3 phase, 4 wire for general receptacle use, incandescent lighting and other miscellaneous equipment.

1.3 The fluorescent lighting, HV equipment, pumps are supplied by the 480/277 volt system.

1.4 The secondary distribution system is over forty (40) years old and has exceeded its life expectancy and does not provide any capacity for future growth and does not contain spare circuit breakers in any of the existing branch circuit panel-boards.

1.5 In addition, the existing system cannot support a new HV/AC system.

Recommendations

1.1 Replace the existing main switch and distribution equipment with new, including but not limited to a new main switch, transient voltage surge suppressor (TVSS) and ground fault protection, new branch circuit distribution breakers, rated at 480/277 Volt, 3 phase, 4 wire minimum 225 AMP.

1.2 Remove the existing utility company transformers and provide a new, exterior enclosed transformer and concrete pad.

1.3 From the new transformer location provide new, underground secondary electrical feeders to new switch-gear.

1.4 In addition, provide services of new branch circuit panel-boards and distribution transformers to provide for both 480/277 volt and 120/208 volt, 3 phase, 4 wire panel-boards.

1.5 Wherever possible, retain the original panel locations and modify existing wall conditions to suit new panel sizes. Provide new secondary feeders as required.

Branch Circuits

Existing Conditions

1.1 Most of the branch circuit wiring is original installed in both concealed and surface raceways.

1.2 The general use duplex receptacles are also original, limited in quantity and do not provide grounding for electronic equipment or ground fault protection for those located within a water source.

Recommendations

1.1 Replace all of the existing duplex receptacles with new as required. In addition, provide additional receptacles as required for computers and other electronic equipment.

1.2 In addition, replace all existing wiring with new.

Interior Lighting

Existing Conditions

The present lighting installation consists of various style lighting fixtures, i.e., surface mounted 1’x4’ fluorescent with metal sides and plastic lens panels, surface 1’x4’ and/or 1’x8’ fluorescent

with metal sides and metal cross baffles providing downward shielding (original building system) or flush 2'x4' lay-in troffers with a plastic lens panel.

Most of the original light fixtures are equipped with inefficient T12 fluorescent lamps and magnetic type ballasts that contain PCB's.

The light levels in most areas appear to be inadequate.

In the specialty areas, i.e., the gymnasium and other similar multi-purpose spaces, some of the lighting equipment is not operating, housing and guards are broken and lamping is old technology and is not as efficient as current equipment.

As part of the recent re-roofing project, in some of the corridor areas, the acoustical ceilings have been replaced with new, and new 2'x4' fluorescent lay-in troffers have replaced the existing. These light fixtures should be reused.

Exit and emergency lighting units should be replaced as they do not meet current NFPA code requirements.

These did not appear to be any exterior egress lighting at the exit doors.

<u>Recommendations</u>

1.1 Replace all existing lighting fixtures, except for the new lighting fixtures installed in the corridor ceilings which were replaced when the existing roof was replaced.

1.2 Wherever possible light fixtures will be equipped with energy efficient T8 lamps and electronic ballasts.

1.3 All spaces, except gymnasium, auditorium and pool shall be equipped with both local wall switches and occupancy sensors to control all lighting equipment.

1.4 In addition, in the typical classroom, provide dimming ballast(s) in the row of light fixtures adjacent to the window-wall and a light sensor that will automatically control these lights based on the available daylight brightness.

1.5 In the auxiliary gymnasium and main gymnasium, utilize a pulse-start, metal halide light source with a high-bay style, prismatic glass refractor.

1.6 In the pool area, present lighting shall remain.

1.7 Within the auditorium area provide a system of incandescent light fixtures, suitable for dimming.

1.7.1 Provide new system of theatrical lighting equipment including but not limited to both on stage and within the cat-walk system.

1.7.2 In addition, provide a complete dimming system including but not limited to dimmer board, portable remote control console, monitor, entry switches, remote outlets and wiring.

1.8 Replace all of the present exit lights with new LED style exit lights and connect to emergency generator circuits.

1.8.1 In addition, replace all of the present wall mounted self-contained emergency lighting battery units with a series of emergency lamps/lights utilizing selective normal light fixtures and connect to emergency generator circuits.

1.9 Provide a system of exterior fluorescent egress lighting fixtures at each exit door and connect to emergency generator circuits.

Public Address System

Existing Conditions

1.1 The system consists of speakers, telephone handsets, sub-systems in the cafeteria, gymnasium and auditorium.

1.2 The present system is original equipment, many of the speakers are not operating and areas do not receive daily announcements.

Recommendations

1.1 Replace the present equipment with a new P.A. system including but not limited to Head-end equipment, ceiling and/or wall speakers throughout the classrooms, offices/work rooms, corridors with sub-systems in the main gymnasium, pool and auditorium.

1.2 Each of these sub-systems will contain amplifiers, speakers microphones and cassette/CD players.

1.3 In addition, provide an interface at the main Head-End equipment with a new telephone system.

Program Clock System

Existing Conditions

1.1 The system consists of clocks, program bells and a main Simplex Master Clock located in the general office area.

1.2 The present system is original equipment, many of the original wired, corrective style clocks were not working and replaced with non corrective battery clocks.

Recommendations

1.1 Provide a new wireless clock system with a connection to the new P.A. system to utilize speakers to announce a tone for class changes.

Fire Alarm System

Existing Conditions

1.1 The present system is original equipment and does not conform to current codes.

1.2 The system consists of manual pull stations, strobe lights, audible horns, automatic heat and/or smoke detectors and alarm panels.

Recommendations

Replace the present system with a Voice Evacuation, addressable type system, including but not limited to main control panel, annunciator panel, area of Rescue Control Panel/Area of Rescue sub-stations, manual pull stations, speaker/strobe units, heat and/or smoke detectors, magnetic door hold open devices, duct smoke detectors.

Generator

Existing Conditions

1.1 The present generator is 20 KW, gas driven and is approximately 20 years old, currently used to provide emergency back-up power.

1.2 The owner has expressed an interest in using both schools as emergency shelters.

Recommendations

1.1 Replace the present generator with a new diesel generator of sufficient size to accommodate the requirements for exit, emergency egress lighting and requirements for an emergency shelter.

Technology - IT System

Existing Conditions

1.1 It was stated that the present IT system is inadequate.

Recommendation

1.1 Replace the present cabling and outlet system and provide category 6 cabling and outlets as required by owner.

In addition, owner should consider use of video projectors, smart-boards and wireless connectivity.

Security System

Existing Conditions

1.1 There did not appear to be any electronic security equipment or devices within the building, other than an existing Sonitrol burglar intrusion alarm system. It was noted that both high schools are provided with a security system limited to motion sensors and door contacts.

(The owner has expressed the need for an expanded security and a camera system.)

Recommendation

1.1 Provide an expanded system of motion sensors, door contacts, video cameras, monitors, card access system at strategic door locations.

Continuation of "Guidelines for determining eligibility of school construction projects for status as "Renovations" as defined in C.G.S. 10-282.

7. *All new and **replacement windows** must be energy efficient.*

   See write up in "limited scope" type project located on pages 8 & 9.

8. *The site of the existing facility must be central to the area served and adequate to provide the **educational programs** offered.*

SITE CIRCULATION

District administrators have requested that the site circulation regarding bus queue and parent pick-up be improved. A bus queue isolated from the main entrance is preferred.

ROOFING

Roofs at both high schools were replaced within the last year as a result of historical roof leaks. The scope of the roof projects included some asbestos abatement, the installation of additional roof drains and the replacement of existing corridor ceilings and the installation of new corridor lighting. Metal fascias along roof edges as viewed from the ground are in good condition.

It should be noted that if the City decides to move forward with renovations of the two high school facilities, any worked associated with modifying the newly replaced roofs (new mechanical equipment supports, openings and curbing) will most likely be deemed ineligible for State reimbursement. This is due to the fact that the City recently received partial reimbursement to replace the roofs.

EDUCATIONAL SPECIFICATIONS

Although this study addresses facilities conditions only, the City of Meriden will have to determine if the two (2) existing high schools and the spaces that they provide meet the educational needs of the District. The Meriden Board of Education has stated that the long term plan for the District is to continue to educate students at two high schools and it is not the desire to consolidate into one larger facility. An 'Educational Specification' will have to be developed for each high school and filed with the State of Connecticut, Department of Education, Bureau of School Facilities as part of any State funding request. In general Fletcher Thompson staff observed that the size of existing classrooms appeared to be adequate for current utilization, but further analysis should be made between the educational goals of the District and the spaces that the facilities currently provide.

Educational Program - Observations included:

Administrative Offices

The main administrative offices are located in the front of the building but do not provide direct **supervision** of the front entry. For building entry control and **security** purposes it is recommended that the administrative offices be more directly connected with the front entry. The administration has also requested that the **security system** be expanded to include **video cameras with monitoring capabilities** and a card access system at strategic door locations. Guidance offices are located across the hall from the administrative offices.

School administrators have requested additional **conference room space**. Staff also noted that much needed **Department Head Offices** and staff workrooms dispersed throughout the building are needed.

Maloney High School – Main Office

Media Center

Staff has noted that the Media Center space at both high schools is underutilized and is split between the first and second floors presenting staffing and supervision issues. Renovated high schools may provide a consolidated Media Center space on the first floor. Also both Media Centers have been reduced in size providing computer and instructional spaces. A further review of how **technology** would impact the Media Center spaces is needed.

Science Classrooms / Labs

The Science classrooms are vintage 1970 spaces, constructed over thirty-five years ago. Based on Fletcher Thompson's experience many districts invest in the improvement of the science classrooms in support of updated science and math curriculums.

Industrial Arts & Family Consumer Science

Both Meriden High Schools provide spaces to support traditional instructional 'shop' programs. Once again based upon Fletcher Thompson's experience with working with other Connecticut school districts, some of the more traditional programs have been transitioned into "technology" labs. A review of the District's long range plan for implementation of additional technology and the future educational curriculum will be required to determine if the noted spaces will be phased out or modified.

Wood Shop – Maloney High School

Family Consumer Science – Platt HS

Physical Education / Athletics

Administrators noted that a review of the existing gymnasiums and locker room / shower areas is required to determine if the existing floor area is being used efficiently. It was noted that 1957 vintage shower areas are underutilized and the floor area could be better used.

A review of Title 9 regulations is also suggested to confirm that there is equity between male and female sports programs and facilities.

Locker Room – Platt High School

Locker Room – Maloney High School

Educational / Community Use

Both high schools are used extensively for community and after hours use. The swimming pool, auditorium and media center spaces and the location and public access within each building needs further review. Non-code compliant corridor gates, used in an effort to secure the schools in the evening and on weekends, were observed at both schools.

Corridor Gate – Platt High School

The City of Meriden is also interested in providing building systems that would support an **Emergency Shelter** at each high school. Extensive planning will be required to determine what building systems will require emergency back-up to support the planned shelters.

9. *Any other analysis deemed necessary by the Department to properly evaluate the request must be provided.*

   Prior to pursuing requirements 3 through 9, districts are strongly advised to submit documentation in support of Item 2. Failure to receive SDE approval for Item 2 will negate any need to pursue Items 3 through 9

Like New Renovation – Based upon 2006 dollars – Costs do not include escalation or contingencies

High School	**Floor Area**	**Cost per SF**	**Total Estimated Cost**
Maloney	241,547 SF	$180 to $240	$43,478,460 to $57,971,280
Platt	237,603 SF	$180 to $240	$42,768,540 to $57,024,720

The cost per square foot for a "Like New Renovation" type project compared to the cost per square foot for new construction assumes that there is a value in the superstructure of the two existing high schools. Under a "Like New Renovation" type project the estimated costs do not include any new construction.

Total Hard Costs (Both HS) – Like New Reno	**$86,247,000** to **$114,996,000**
CM/Design/Consultant Fees & Expenses – 15% (2)	$12,937,050 to $17,249,400
Total Estimated Cost	**$99,184,050** to **$132,245,400**

City of Meriden Portion – **30%** (76.07% CT Reimbursement) reduced to **70%** (1)	**$29,755,215** to **$39,673,620**

Notes:
(1) The assumption is that both high schools are or will be slightly above State of Connecticut BSF Space Guidelines AND there will be other factors such as ineligible costs that would impact the State reimbursement percentage, thus the City of Meriden will not realize the full 76.07% reimbursement. A reduction in State reimbursement percentage to 70% has been factored.

It should also be noted that the State of Connecticut does not reimburse for costs associated with Building Permits. This potential substantial cost would be factored as an ineligible cost for State reimbursement.

(2) Construction Management (CM) fees could increase over time if the high school renovation projects are extended over an eight year period. If a decision is made to renovate the high schools sequentially then the noted 15% for Fees & Expenses could increase to 25% or higher for the second high school project.

Demolition and New Construction

Wexler-Grant Community School, New Haven, CT
Existing Entry

Wexler-Grant Community School, New Haven, CT
New Entry after Demolition and Construction

C. Demolition and New Construction

The option of demolishing the two (2) existing high schools and constructing new high school buildings either on the existing high school sites or elsewhere within the City of Meriden was the least investigated option due to the potential financial burden to the City of Meriden. If a decision was made to reconstruct one or both existing high schools, in addition to construction costs land purchase costs would have to be factored. The exercise of estimating the cost of two new schools would have to be undertaken if a decision was made to move forward with "A Like New Renovation" type project as noted in requirement number two of the State Guidelines.

There are benefits to constructing two new buildings in that the new facilities could be constructed while the existing high schools remained occupied and would only be vacated and demolished once the new buildings were complete. The construction period for two new high schools would be estimated at 18 to 24 months each. This estimated construction time period compares with a "Limited Scope" or a "Like New Renovation" type project that could take upwards of four (4) full years to complete at each high school. The prolonged construction period is based upon working around students and staff and completing key work, such as **asbestos abatement** only **in the summer months** while the schools are vacated.

It should be noted that if the City of Meriden were to construct new high school facilities there is a potential that new spaces, such as a new auditorium, would be smaller if the City wished to maximize State reimbursement. Current guidelines are based upon allowable floor area per student and many of the existing spaces are oversized.

An initial estimated cost for demolition of the two (2) existing high schools and construction of new is listed below :

New Construction – Based upon 2006 dollars – Costs do not include escalation or contingencies

High School	Floor Area	Cost per SF	Total Estimated Cost
Maloney	241,547 SF	$280	$67,633,160
Platt	237,603 SF	$280	$66,528,840

Total Hard Costs (Both HS) - New	**$134,162,000**
Abatement & Demolition - $20/SF	479,150 SF x $20 = $9,583,000
Total New & Demo	$143,745,000
CM/Design/Consultant Fees & Expenses – 15% (2)	$21,561,750
Total Estimated Cost	**$165,306,750**

City of Meriden Portion – **28%** (76.07% CT Reimbursement) reduced to **72%** (1)	**$46,285,890**

(1) The assumption is that both high schools are or will be slightly above State of Connecticut BSF Space Guidelines thus the City of Meriden will not realize the full 76.07% reimbursement. A reduction in State reimbursement percentage has been factored.
(2) Construction Management (CM) fees could increase over time if the high school renovation projects are extended over an eight year period. If a decision is made to address the two high schools sequentially then the noted 15% for Fees & Expenses could increase to 25% or higher for the second high school project.
(3) Since required additional property for the new construction is not known at this time **property acquisition costs are not included** in the estimated costs above.

City of Meriden Costs –
NOTE : COSTS DO NOT INCLUDE ESCALATION OR CONTINGENCIES

A. Limited Scope Improvements
(Window, Mechanical & Electrical System Replacement)

$26,215,000

B. "Like New Renovation Project"

$29,755,215 to **$39,673,620**

C. Demolition and New Construction

$46,285,890

Project Schedule

As noted at the beginning of the report there are many issues that must be addressed when deciding how to renovate the two existing high schools. Although it would be an easier task and have much less impact on students and staff to construct **two new high schools** on other sites and to then demolish the two existing buildings, the cost of such a project would be **cost prohibitive** to the City of Meriden. Also, as noted earlier in the report it is suggested that there is an economic value in the structure of the existing buildings. Discussions with District staff have identified the following schedule related questions:

a. Should the City renovate both high schools at the same time or renovate one building and then the other? Is there an economy in renovating both buildings at the same time?

b. Should the City proceed with a 'Construction Manager' or 'General Contractor' type approach?

c. Is there an approach that would allow for partial new construction of additions which would provide **"swing space"** for educational programs while existing building area is renovated? Upon completion of the entire project excess, existing floor area would be demolished.

d. Could **temporary portable classrooms** be provided in an effort to empty portions of the existing buildings, allowing for renovations to occur at one school and then reusing the portables at the second high school?

e. Is there a way to completely empty one high school of students and staff in an effort to **renovate an empty high school in a shorter period of time** than if the renovations were phased within a partially occupied building? Could this approach be achieved through use of one of the high schools and a number of portables while the other school was being renovated?

f. If a high school were to be renovated while partially occupied through a phased renovation type project how would **existing building systems be interfaced with new** systems during construction such as fire alarm, telephone and electrical distribution?

g. Due to the **escalation in building material costs** is it prudent to accelerate the renovation of the two high schools in an effort to minimize ever increasing costs?

Construction costs have been escalating in a range of between **4% to 8% per year**. The longer a Meriden High School renovation project is extended into the future the greater the escalation costs will be. If for instance the approach outlined in the schedule below is taken and the project is extended over 8 or more years, the costs to renovate the second high school could possibly increase by 30% or more.

h. District administrators have noted that existing building systems have reached their life expectancy and there is a danger that repairs of existing systems such as the electrical service will not be possible due to the **lack of replacement parts**. It has also been noted that the facilities have been cited for deficiencies, such as **handicap accessibility**, that should be addressed in the near future instead of waiting.

Outline Project Schedule

	Milestone	**Duration**
March 2007	**City of Meriden – Decision to Proceed**	
May 2007	**Contract w/ Architectural – Engineering Firm to develop construction documents**	
May 2007 to October 2007	**Educational Specification Development**	**6 Months**
May 2007 to August 1 2008	**Complete Construction Documents** **City of Meriden regulatory approvals – Planning & Zoning**	**14 Months**
May 2008	**Meriden City Council Funding Approval**	
June 2008	**File State of CT DOE Grant Application – ED049**	
	"Like New Renovation Status" Application	
June 2009 thru August 2009	**Asbestos Abatement – Limited Scope Project** Allowing for Fall 2009 renovations – Note abatement can only occur while high school buildings are unoccupied. Summer 2009 Abatement will require CT BSF PCT Review and bidding process in April – May 2009	**3 Months** 2 Months
June 2009	**Final Connecticut Legislature Grant Approval**	
July 2009 to September 2009	**Bid & Award Project to Contractors**	**2 Months**
October 2009 to October 2017	**Construction Phase** **(Renovation of one High School at a time)** Use of portables to vacate portions of one of the high schools and then reuse of the portables at the second high school. Division of existing high school buildings into four (4) quadrants – renovating one quadrant per year.	**3 ½ to 4 years per HS**

Conclusion

Further collaboration with City of Meriden and School District administrators will be required prior to determining on how to move forward with the high school improvement projects. Based on the information collected by Fletcher Thompson it is our recommendation that the City of Meriden proceed with a **"Like New Renovation"** approach which would maximize the 76.07% State of Connecticut reimbursement and allow the City to realize the value in the existing structures. As noted within the report one of the challenges of this approach will be the intricate construction scheduling required to renovate the buildings while occupied by students and staff.

Existing Floor Plans

Francis T. Maloney High School
Orville H. Platt High School

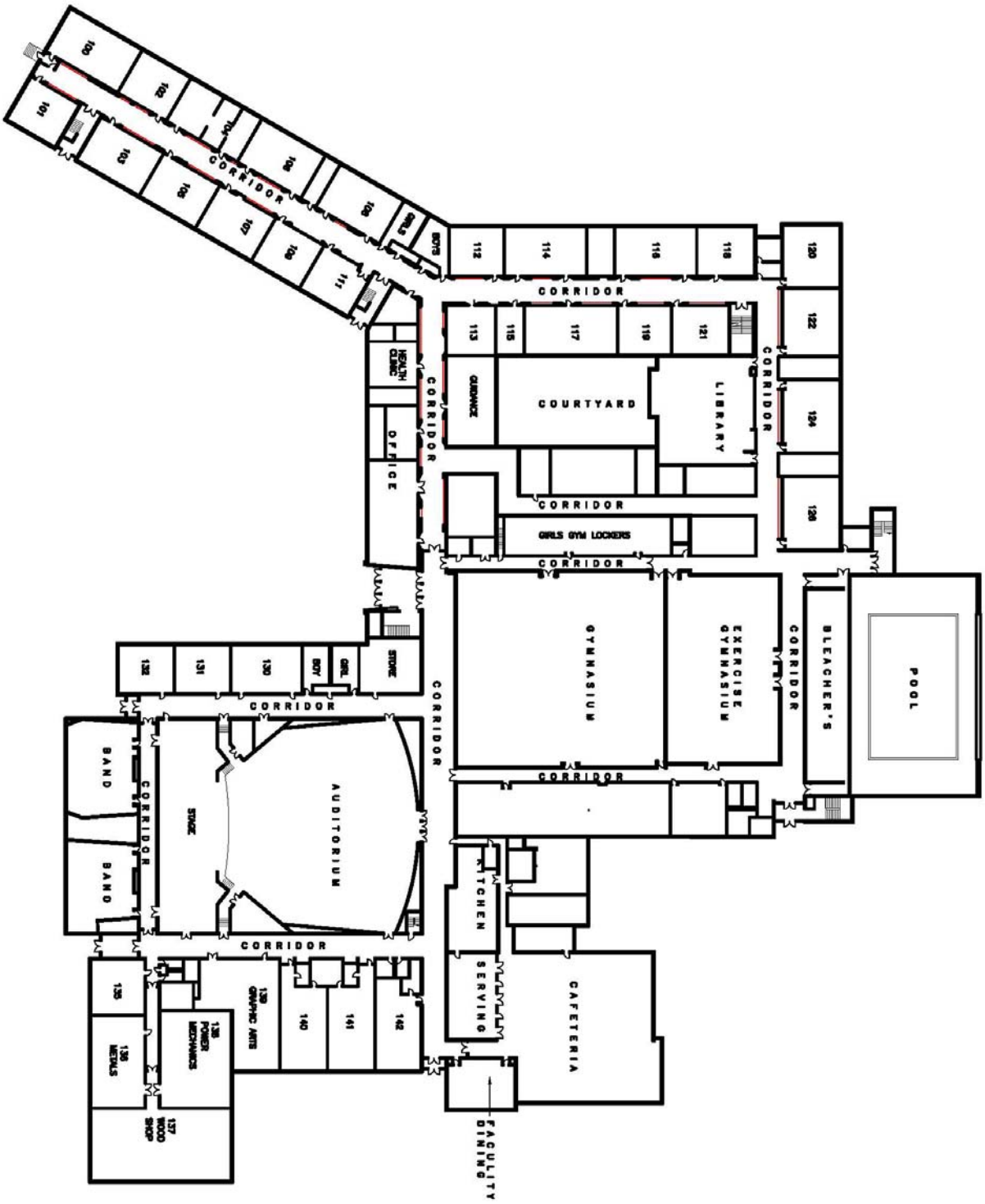
Note: The following floor plans are included for reference only. A complete survey of the existing buildings would be suggested in an effort to develop accurate existing condition floor plans required as a first step for a construction project.

Floor plans do not indicate existing lower level square footage at each school. The District's Maintenance Department, including storage area is located in the lower level of Maloney High School. The maintenance area represents approximately 25,000 square feet of floor area that is not directly associated with the high school program. The reported 241,000 square foot Maloney High School does not include 25,000 square foot District Maintenance area.

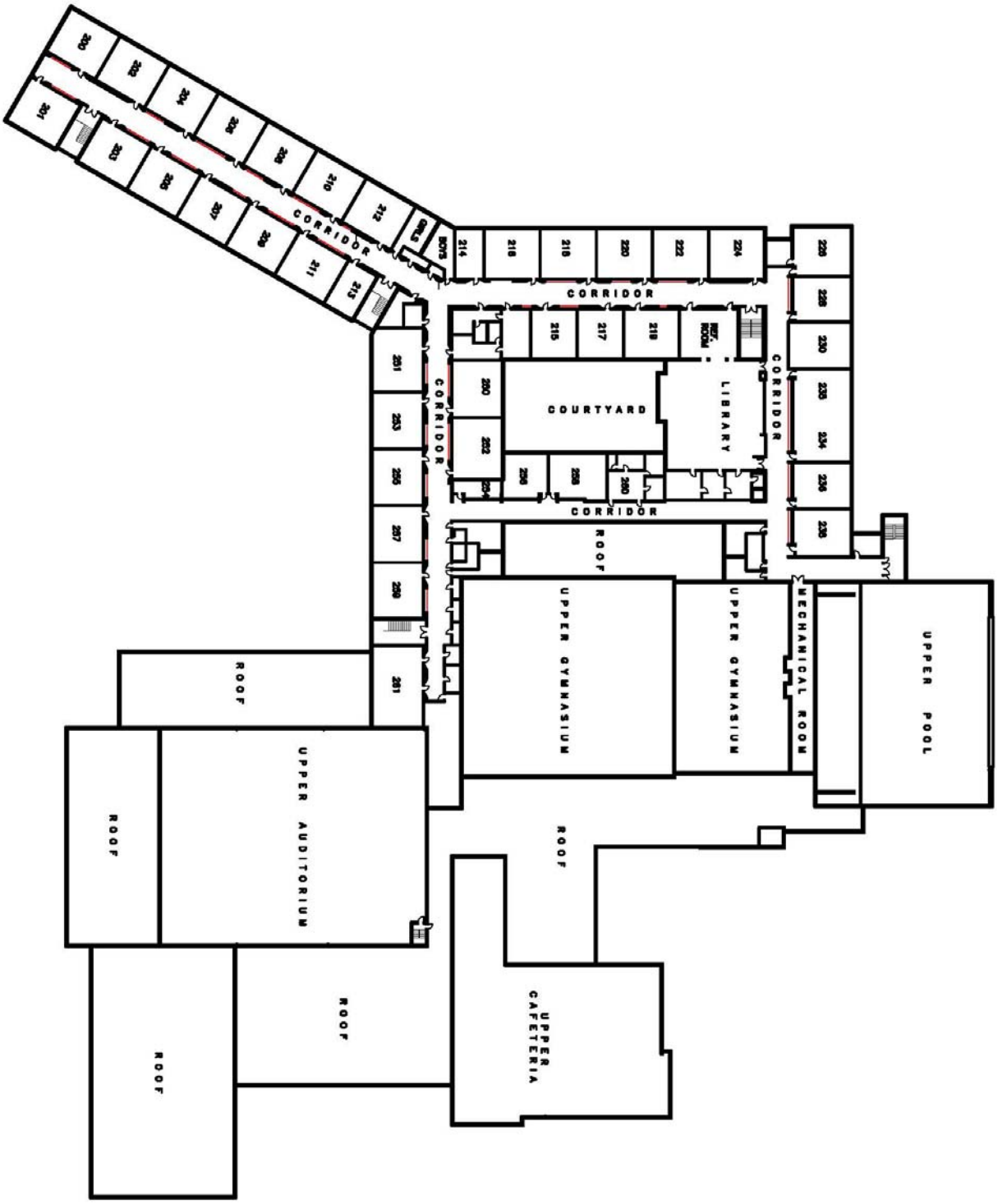
Maloney High School – District Maintenance Department

FRANCIS T. MALONEY HIGH SCHOOL
AERIAL VIEW

TOTAL EXISTING PARKING – 262 SPACES



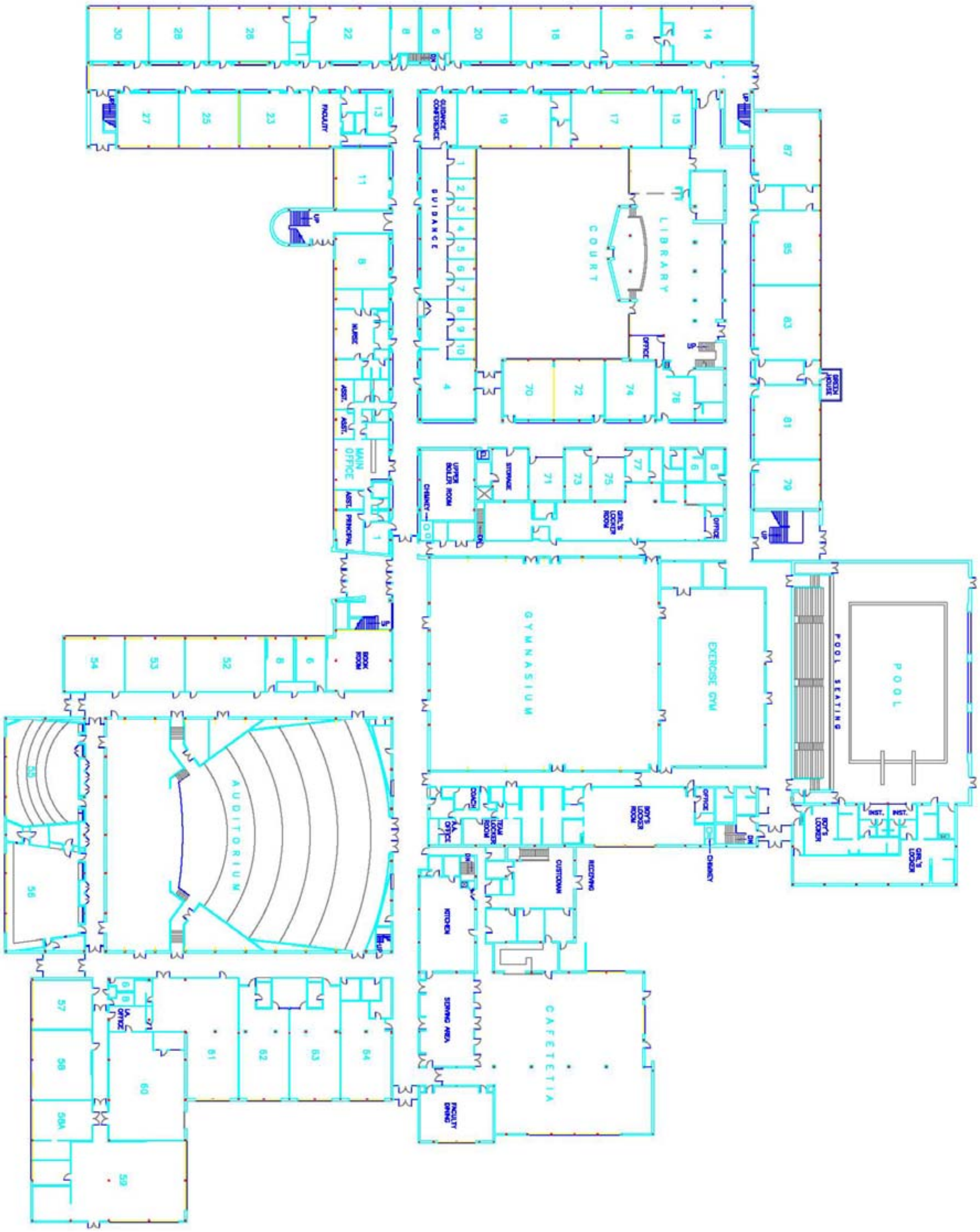
FRANCIS T. MALONEY HIGH SCHOOL – MERIDEN, CT FIRST FLOOR PLAN



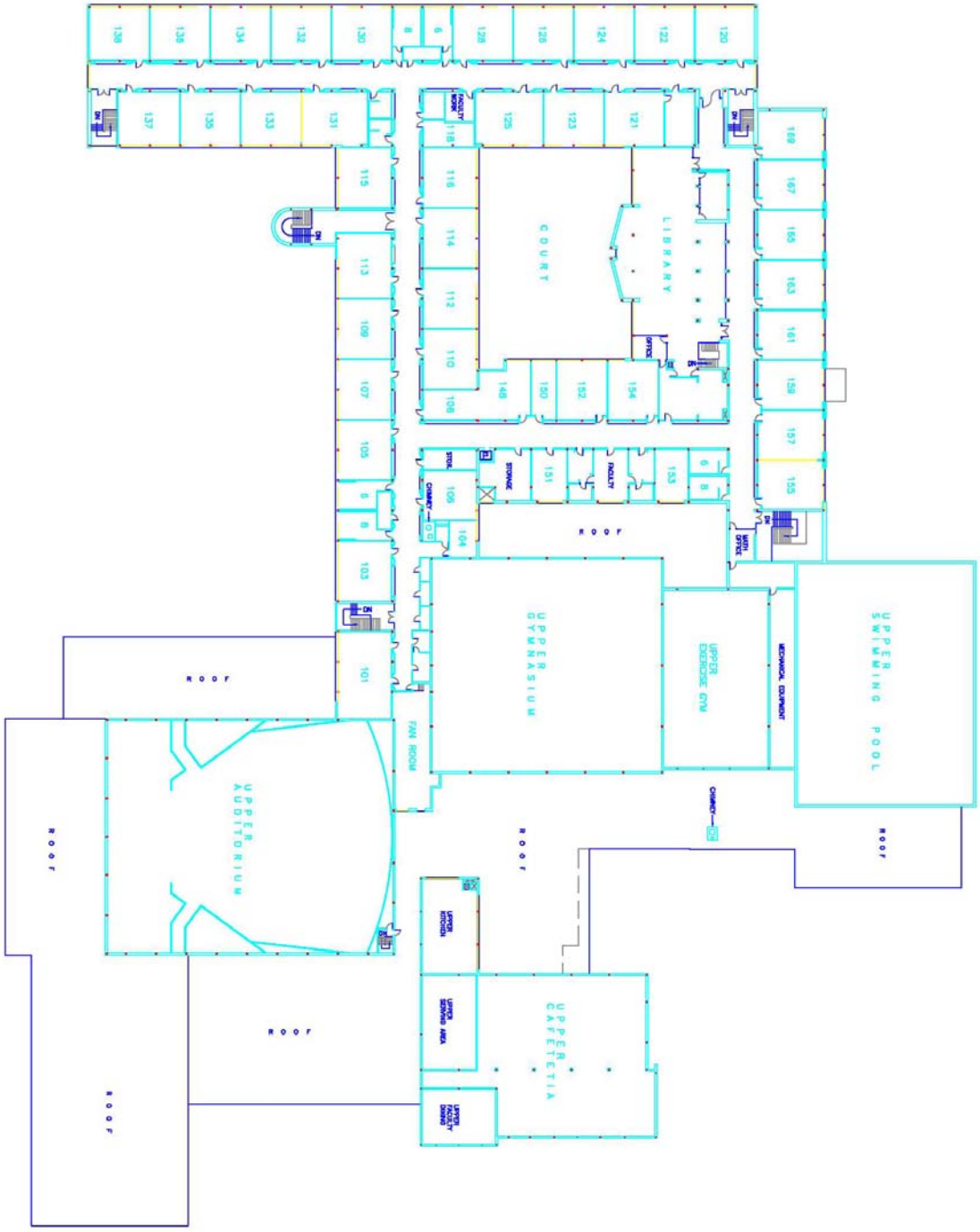
FRANCIS T. MALONEY HIGH SCHOOL–MERIDEN, CT -SECOND FLOOR PLAN

ORVILLE H. PLATT HIGH SCHOOL
AERIAL VIEW

TOTAL EXISTING PARKING – 211 SPACES



ORVILLE H. PLATT HIGH SCHOOL–MERIDEN, CT - FIRST FLOOR PLAN



ORVILLE H. PLATT HIGH SCHOOL–MERIDEN, CT - SECOND FLOOR PLAN

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