Section 08 - SYLVESTER ELEMENTARY SCHOOL

Locus Map - Town of Hanover

Building Summary

Address: 495 Hanover Street
Gross Area: 31,070 sq. ft.
Description of Site: Generally level topography, open treeless site, adjacent to other schools and open park and recreation land. Adjacent to main cross-town roadway. Bituminus asphalt paving at parking and drives.
Description of Building: Constructed 1927. Addition 1956 or 62. Reroofing of addition in 2000; of remainder in 1990. Three stories: partially sub-grade 'basement' level has cafeteria and other student spaces, plus upper two floors of classrooms etc.. No elevator. Serves grades 3 and 4. An attractive older brick building with white painted wood double-hung windows. Is in a state of generally poor condition on the exterior; interior has been maintained and is in fair condition. Not an historic building, but is listed on the National Register as being within the historic town district. Located adjacent to the Center Elementary School; some classrooms are shared and the kids walk back and forth.

Function of Facility: Elementary education, grades 3 and 4 only.
Agency or Department: Hanover Public Schools
Technical Construction Description: Brick masonry exterior walls, with individual wood double-hung windows. Structural system is load-bearing masonry with primarily wood-framed floors and roof. Flat roofs.
Valuation: $3,812,000.00 (estimated replacement cost)

Immediate Needs:

- If replacement of the building is not feasible due to budgetary constraints, then elevator(s) are required for accessibility for disabled persons.
- Also if replacement is not feasible, then an accessible building entrance, accessible drinking fountain on each floor level, and accessible student and staff toilets for each sex on each level, should be provided.
- Repairs should be made to the gymnasium floor, (buckled from moisture) to allow use of that portion of the building.

Near Term Needs:

- Further removal of barriers to universal accessibility, including accessible doorways to classrooms and offices, handrails, widening individual doors and pairs of doors, etc.
- Repair damaged plaster at walls and ceilings.
- Repair damaged and worn wood floors.
- Replace damaged, stained and worn acoustical ceilings.
- Design improved kitchen facilities and reconfigure cafeteria to provide one at-grade emergency egress.

Building Summary

Near Term Needs (continued):

- Investigate and repair leak at foundation wall in cafeteria.

Conditions Summary:

The Sylvester School is in overall poor condition, considering all aspects of the interior, exterior, and site, when generally compared to other state-wide public elementary school facilities. This is not a criticism of the Hanover School Department; there has been adequate periodic maintenance, as would be expected. However, because of the age of this particular building, general periodic maintenance is not a methodology that will elevate the condition of the building above 'poor'. The basic infrastructure and design of this facility is outdated and cannot be adequately remediated except with a major and complete building renovation, or by replacement of the building with a new facility. The combustible nature of the wood framed floor construction, and the (likely) inadequate seismic capacity of the load-bearing masonry construction, are fundamental building systems which are no longer considered adequate by today's standards. The cafeteria space is located in the partially below-grade 'basement' level of the building. Egress from this space is less than ideal, as it requires climbing stairs to all egress points.

Recommendation:

This team recommends that this building should no longer be used for grade school student education; at least not in its current configuration. A substantial renovation is required, which could possibly exceed the cost of a replacement building.

Due to fact that the obvious desire is to combine the Sylvester and Center Schools, it is our recommendation that the Center school should be expanded as needed to accommodate the students of the Sylvester school. Following the construction of this addition on the Center, school, the Sylvester school could then be totally renovated as a vacant building. This would seem to be a good location for a low-income senior-housing project, near the services and historic amenities of the town Center. Until the major program of construction begins, general maintenance should continue, and short-term measures should be utilized to improve access for persons with disabilities.

Conditions Assessment — Site/Architectural

SITE

Site is generally in good condition. Generally level, combination of paved areas and lawn, with plantings and large trees. Adjacent to town-center recreation fields and courts; and located across the street from the historic Stetson House. There is no perimeter fence between the school property and the adjacent busy roadway.

ARCHITECTURAL

Exterior:

- Brick masonry, is in generally fair condition. There are isolated areas of brick deterioration and step-cracking, and repointing is needed. In particular, brick is cracked and displaced at steel, lintels over window openings, perhaps as a result of rusting of the lintels.
- Wood work is in general fair condition, with some carpentry repairs & painting needed.
- Hole in cement stair on south side
- Steel headers could be power washed and new mortar over top
- Ivy on north west side of building

Building Summary (continued)

Exterior:

- Mold and wood deterioration on shed
- Steel headers on window rusty and missing mortar
- Stairs by C-2 door in bad shape, crumbling
- Damaged paint on cornice localized
- Mortar missing from header location at front right
- Open drain pipe – needs end piece – not sure what this pipe is for probably, pipe discolors the wall
- Mold on brick wall all over north side
- Brick damaged at base on north side
- Damaged mortar at visited lintel ends typical rust is re-paintable
- Worn paint and carpentry repairs on door B-2
- Cement deteriorated in areas at stairs by B-2
- Failed exterior Mullins right of door B-2
- Crack in brick to the right of door B-2
- Conduit pipe may not be needed anymore- looks like it was for an old light that was replaced with this light.
- Two new exterior doors were installed during the summer of 2010.

Interior:

Basement:

- Sag in ceiling in cafeteria near serving line.
- Doors need paint
- Paint on columns could use touch up in cafeteria
- Accessible sink needed in art room
- No accessible sink in boy's and girl's bathroom.
- Scuffed up doors need paint leading to north stairway
- Damaged wall needs patch and repair near north stairway

First:

- Floor in gymnasium is warped and heaved in several areas due to expansion, possibly also due to roof leaks. This condition prevents the gymnasium from being used to it's full potential for teaching and physical education activities.
- Patch wall with paint near stage
- Cracked plaster right and left of entrance to auditorium
- Warped floor in southeast classroom
- Patch wall with paint in teachers room and waiting room
- Hardwood floor need to be sanded and refinished in the classroom to the right of the Health room
- Accessible sink needed in special education resource room

Second:

- No sprinklers
- Poor ceiling tile work
- Sticky door
- Evidence of roof leak in bathroom next to auditorium
- Loose wall panel and damaged plaster

Building Summary (continued)

Roof:

- The newer adhered roof is in good condition. The older areas of the roof should be scheduled for replacement within about five years.
- EPDM ballasted membrane on the older (1990) areas. The newer roof on the addition is directly adhered EPDM.
- Aging copper copings & counter flashings, with numerous holes, tears, gaps, and applied caulkings and sealants.
- Hatch hard to operate; needs paint
- Vent near hatch may be source of leak
- Major ponding over auditorium minor ponding over additon.
- Drain line over gymnasium was investigated for leaks during the summer of 2010, with a video camera down the drain line. What appears to be leaking, may actually be condensation on the uninsulated drain line.

Structure:

The structure of this building appears to be load bearing masonry in combination with wood floor and roof framing. This structural system would not meet today's standards for lateral load (seismic) resistance without steel reinforcing. There is some localized step cracking of the exterior brick masonry in a few areas, but this does not indicate any general structural inadequacy.

Building Code:

This building was constructed at a time when there was no statewide Mass. Building Code and the addition was built under a very early edition of the Code. The Construction Type for this building, under the current Mass. Building Code, would be considered Types 3B construction, which is not allowable for a 3-story building in the Educational Use Group, of this size.

The building is non-accessible to persons with disabilities, a condition which would not be accept able under current construction regulations. The degree of non-accessibility means that this public-use facility is exposed to potential complaints being filed with the U.S. Dept. of Justice, under the Americans with Disabilities Act.

Accessibility:

Numerous deficiencies. The building entrances are non-accessible. There is no accessible path of travel through the building, either on individual floors, or between floor levels. Toilet facilities are non-accessible. Basic educational program elements are non-accessible to persons with disabilities.

Energy & Environmental Sustainability:

- The windows have been recently replaced, with the past 3 years, which contributes to reduced energy usage. Windows are thermally insulated double-hung vinyl, high quality historic reproductions with both internal muntins and surface applied exterior muntins. Custodial staff reports that the sealants at windows were abated as hazardous materials at the time the windows were replaced.
- It is assumed that the exterior masonry walls are uninsulated.

Building Summary (continued)

Hazardous Materials:

- As required by Massachusetts regulations, a full program of asbestos survey, remediation, monitoring and reporting has been conducted by the Town of Hanover for all school buildings, and a current updated report is on file with the Public School department. Further detailed investigations of hazardous materials, was beyond the scope of this study. It was reported that asbestos-containing floor tile has already been removed from this building. Due to the age of the building, it is likely to have lead-based paint; this was not specifically investigated. For any future work that might disturb painted surfaces, lead testing should be carried out, and protocols should be used to prevent lead dust from being released.

Historical Value:

- This facility is not individually listed as an historic building, but it is located within the central Hanover Historic District. It is an attractive period building with classical wood detailed cornice, windows, and other elements, particularly at the main entrance. The brickwork is articulated with classical detailing.

Other Issues:

- Program space is limited for art, music and physical education, which requires students to walk to the Center Elementary school, for these programs, during the school day.

ENGINEERING SYSTEMS: PLUMBING

APPLICABLE CODES AND STANDARDS

The plumbing systems were reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements.

- Massachusetts State Building Code 7th Edition
- Massachusetts Fire Prevention Regulations
- Massachusetts State Fuel Gas and Plumbing Code
- ASHRAE 90.1

Plumbing Utilities:

Domestic Water:

- **Existing Domestic Water Service:**
  The existing building is currently served by a 4” domestic water service which enters the boiler room. The domestic water service equipment includes a water meter and isolation valves and is located in the basement women’s toilet area. This water service currently serves all of the Schools domestic water needs. The water distribution system is original to the building and each subsequent addition/renovation.
- **Natural Gas:**
  Existing Natural Gas Service: There is currently a natural gas services to the building serving the boilers and hot water heater. This service enters the rear of the building at the boiler room and serves the boilers and hot water heater.
- **Sanitary:**
  Existing Sanitary Service: The School’s sanitary sewer system provides sanitary waste drainage for plumbing fixtures located throughout the School. The piping material above grade is primarily cast iron. The Plumbing fixtures drain to buried sanitary waste piping exiting the building and running to the buildings sanitary waste system.
- **Fuel Oil:**
  There is currently no on site fuel storage.

ENGINEERING SYSTEMS: PLUMBING (continued)

Plumbing Fixtures and Specialties:

Existing plumbing fixtures are as follows:

- Water closets are a combination of wall mounted on the upper levels and floor mounted in the basement; with flush valves, vitreous china.
- Urinals are wall mounted vitreous china, with flush valves.
- Lavatories are counter top vitreous china. Faucets are a combination of single lever handle and two lever handles.
- Drinking fountains are surface mounted stainless steel units. Most are non-ADA compliant. The units are in good condition.
- Janitor's mop sinks are wall mounted basins with 2-faucets and vacuum breakers. These basins are in good condition.
- Typical classroom sinks are counter top, single lever faucets and are in good condition.

Domestic Hot Water Systems:

- Existing Domestic Hot Water System: The Schools domestic hot water is generated by a 74 gallon gas fired water heater which feed the schools hot water needs. The water heater is new and in very good condition.

Fire Protection Service:

- There is no fire protection coverage (sprinklers) currently at the facility.
- The kitchen hood is supplied with a fire suppression system within the hood and is in very good condition.

ENGINEERING SYSTEMS: MECHANICAL SYSTEMS:

APPLICABLE CODES AND STANDARDS

The mechanical systems were reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements.

- Massachusetts State Building Code 7th edition
- Massachusetts Fire Prevention Regulations
- International Mechanical Code
- NFPA, Latest Version
- ASHRAE 90.1

- The existing building is heated by two steam boilers. These two boilers have their burners currently operating on Natural gas and a capacity of 2713 MBH each. This equipment is approximately 7 years old and in very good condition. The boilers were taken apart and internally re-conditioned during the summer of 2010.
- Steam traps were replaced at the time the new boilers were installed. The custodial staff reports that many have since failed, and it was noted during a site visit on 12/16/2010 that failed units have been tagged to indicate that replacement is needed.
- The present Heating and Ventilating systems consist of steam radiators throughout the facility, there are approximately 6 newer unit ventilators installed in select classrooms/areas and exhaust systems. The gymnasium is served by a closet mounted H & V unit as well as steam radiation. The H & V unit includes a supply air component.
- Unit Ventilators are newer manufactured by Herman Nelson and appear in very good condition with no noted problems.
- Exhaust systems servicing the classrooms utilize a single exhaust grille. Exhaust grills are

ENGINEERING SYSTEMS: MECHANICAL SYSTEMS (continued):

located on the wall high above floor level opposite the exterior walls.

- The existing temperature controls in the school are pneumatic. The temperature control system air compressor is located in the Boiler Room and includes an air dryer and is in very good condition. The temperature control problems that were noted however may be due to the known steam trap issue which at the time of this report writing was in the process of being budgeted under the green communities grant received by the town. Temperature control issues should be re-evaluated after the steam traps have been repaired.
- At a site visit on 12/16/2010 custodial staff pointed out that the compressor for the ATC thermostats runs 24/7.

ENGINEERING SYSTEMS: ELECTRICAL

APPLICABLE CODES AND STANDARDS

The electrical power, interior lighting, and fire alarm systems were reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements.

- Massachusetts State Building Code 7th Edition
- Massachusetts State Fire Prevention Regulations
- NFPA Latest Edition
- 2008 Massachusetts Electrical Code
- Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition
- ASHRAE 90.1

EXISTING ELECTRICAL SYSTEMS

- The building is served by a 120/240 volts, single-phase, 3-wire electrical service; capacity was noted as being rated 400 amps. The service equipment is located in the basement of the building. The service equipment is newer and in very good condition.
- There are a number of electrical panels located throughout the facility. These panelboards are older having been added at the time of various building additions and/or on an as-needed basis. The condition of these panelboards range from fair to poor. The majority of the panel boards do not have spare circuit breakers available for new circuits to be added, or have space to add new circuit breakers.
- The lighting throughout the facility consists primarily of 1’ x 4’ 2-lamp wraparound fluorescent fixtures, these fixtures with the exception of some (approximately 30% in the classrooms) are in very good condition. The light levels appear to be within recommended levels.
- The fire alarm system is a Gamewell main FACP, there are manual fire alarm pull stations, horn strobes and smoke detectors located throughout the building. The system is in very good condition and was noted as having been problem free.
- Site lighting is accomplished via building mounted flood lights.
- There is no standby generator located at this facility.
- Life safety emergency lighting is provided via Emergency battery units with unit mounted emergency light heads and battery powered exit signs, units are newer and in good condition.
- The existing clock and paging system have had ongoing problems. The paging system appears to be older and in need of replacement where as the clock system appears newer and may just need to be repaired.
- There is currently a controlled access system at the main front entry as well as CCTV cameras

ENGINEERING SYSTEMS: ELECTRICAL

EXISTING ELECTRICAL SYSTEMS (continued)

at three exterior locations. Motion sensors are also located throughout the facility. All systems were noted as functioning without any issues.

- Existing fluorescent light lamps and ballasts were replaced throughout the building during the summer of 2010, under a utility company rebate program. The fixtures in the gymnasium were entirely replaced, and occupancy sensors were installed.

MEP SYSTEMS CONCLUSION

In general, the systems vary in age from original to the building, to as recent as 3-5 years old. Boilers have been recently replaced however heating problems still exist. It is believed that these will be corrected once the steam traps have been repaired/replaced.

Plumbing systems throughout seem to be in good physical and working condition. Replacement of faucets and flush valves on toilets and urinals to automatic units should be implemented as a water conservation measure.

The Electrical systems appear to be in good condition and operating without issues. The older distribution equipment (panelboards) should be replaced with newer equipment with additional breaker spaces to meet any future needs and to alleviate the possibility of overloading individual circuits when new equipment and or devices are added to existing circuitry. The lighting systems are newer and in good condition, a small portion of the classroom lighting should be upgraded. The addition of automated lighting controls should be should be implemented in order to meet current energy codes and to save on energy costs. Fire alarm system, exit and emergency lighting systems are newer and appear to be in good condition. Existing paging system which has been problematic should be replaced and clock system should be repaired and/or replaced.

AERIAL PHOTO

Sylvester Elementary School is the building in the center of the photo.
(Source: Hanover GIS)

EXTERIOR PHOTOS

Exterior view of front entrance.

Exterior view of north corner.

Exterior view of west corner.

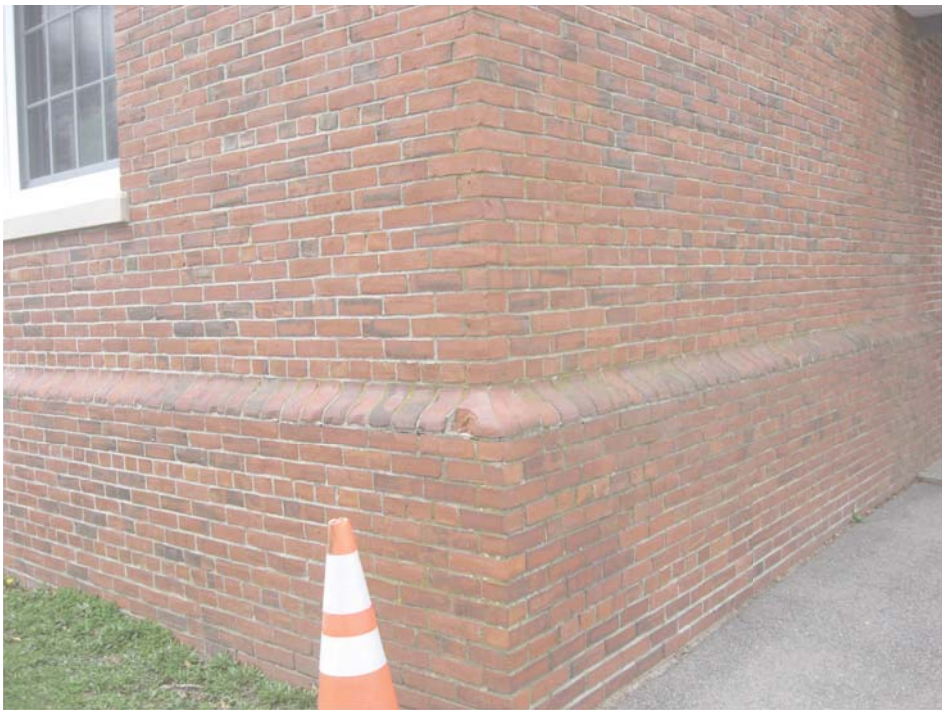
Non-accessible step into entrance.

Detail view of window and brick facade.

View of entrance stairway.

Electrical conduit; large feeder cables inside cut off.

Old exterior light ?, broken fitting



View of brick corner detail. Damage at corner.

View of stair leading to basement & multiple vent pipes from boiler room.

Piping details.

Cracks between block and concrete at steps. This condition was repaired during the summer of 2010 with parging.

Deteriorating concrete stairs (repaired summer 2010).

Cracks in brick near windows (lintels).

INTERIOR PHOTOS

Basement level cafeteria space.

Entrance doors to cafeteria; wood. Narrow doors do not meet access codes.

Non-accessible sinks in basement boys' toilets.

Basement boys' toilets, privacy issues from hallway.

Girls' room lower level, non-accessible.

Double 2'-6" doors at stairs; double-acting hinges modified.

Non-accessible drinking fountain at main lobby.

Threshold too high at gym entrance doors.

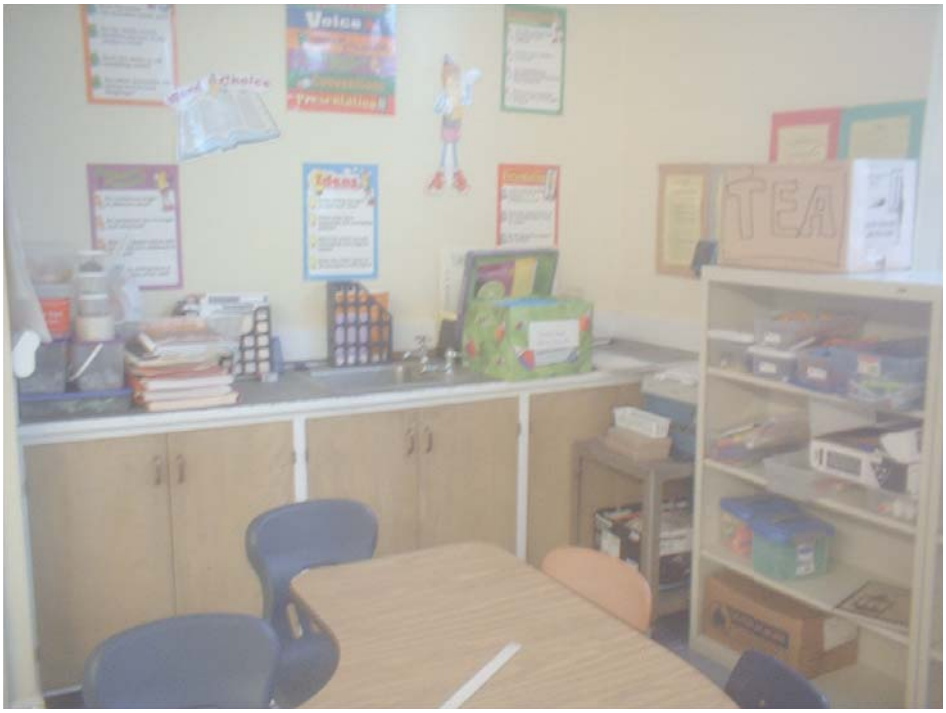
Stage in gym.
No lift; steps missing handrail baulasters.

Steps to stage not code compliant.

12x12 ceiling tiles reported to have black mastic or black mastic-containing asbestos.

Non-accessible toilet in nurse's room.

Steps in hallway with no lift.



Non-accessible sink in classroom on 3rd floor.