TOWN OF SOUTHBRIDGE

Municipal Facilities

Evaluation and Management Plan

Prepared by Financial Advisory Associates, Inc.
258 Main Street, Suite A2
Buzzards Bay, MA 02532

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FINDINGS/RECOMMENDATIONS

The individual facility sub-section reports offer a number of recommendations which we have summarized with estimated costs in Tables 1 & 2. We encourage the readers of this report to review all recommendations within this report. Presented below are the findings we believe to be of critical concern that management should consider pursuing further.

FINDING #1: Fire Station – Built in 1899 this historic structure requires extensive repairs and renovations. The cost of which likely exceeds the cost of a new, modern facility. It is clear that operational requirements of a 21st century fire, EMS and regional dispatch service cannot be met within the constraints of the historic facility. The Fire Headquarters section of this report offers detail and supporting photos of several challenges and concerns regarding this facility.

We recommend the Town pursue the design and construction of a new Fire Headquarters facility.

FINDING #2: Building Exterior Envelopes – Our site visits and subsequent evaluations disclosed a variety of repair and reconstruction needs. We noted that several buildings require improvements to the exterior envelope. For example, the Town Hall needs window, masonry, roof work. The Fire Station needs structural and masonry work. The Library needs integral roof and gutter work and windows. Finally, the DPW Facility needs roof and insulation work. All require some level of immediate repairs.

We recommend the Town retain an engineering firm to develop a corrective action plan for all facilities. A comprehensive high level engineering evaluation will best address these pressing needs. The town can then proceed with a uniform approach to consolidate projects to achieve an economy of scale and thereby contain overall construction costs.

FINDING #3: Animal Shelter Replacement – This building was constructed in 1985. It is in poor condition. There is visible rot, decay, bowing of the walls and sagging in the rafters. The current structure meets no health and sanitation standard and renovations would be costly to implement. We believe that the repair needs and code upgrade requirements are so significant it is cost-prohibitive to pursue the rehabilitation of this structure.

We recommend the Town demolish the existing structure and construct a new Animal Shelter to meet the town's service needs.

FINDING #4: Town Building Organization – After visiting each of the Town's municipal facilities, interviewing the building occupants, and reviewing current operations; we believe that the implementation of a system to provide a superior level of control over all facilities management within the Town of Southbridge should be commenced immediately.

Currently each building manager (i.e. Police Chief, Fire Chief, Library Director) is responsible for the management of the buildings under their control. These individuals are not all

FIRE HEADQUARTERS

Location:	24 Elm Street	Assessors:	047/ 159/ 00001
Date Constructed:	1899 (Additions 1938-1970)	Building area:	22,475 sq ft
Condition:	Poor	Land area:	0.25 acres

1.0 PURPOSE and LIMITATIONS

The purpose of this Property and Conditions Report (the Report) is to assist the Town of Southbridge to assess the general physical condition and maintenance status of the property and to recommend repair and maintenance items consider significant for the property to continue its current operations.

The information reported was obtained through sources deemed reliable, a visual site survey of areas readily observable, access through building "owners" and information presented by the Town. Findings, conclusions, and recommendations in this Report are based on the methods described above, industry standards, and general observations of the equipment and its visible condition.

The report is focused on existing conditions, lifecycle of existing materials, and non-code compliant conditions. Recommendations will include items needed to bring the space/component to a safe, code compliant, and generally accepted facilities condition. The Report does not anticipate change of use, reconfiguration of space, or change in current program.

Estimated Costs are based on professional judgment and the probable or actual extent of the observed defect inclusive of the cost of design, procure, construction and manage corrections.

1.1 Condition

FAA uses terms describing conditions of the various site, building and system components. The terms used are defined below. It should be noted that a term applied to an overall system does not preclude that a part, component, and section of the system may be in a different condition.

Excellent	The component or system is in new or like new condition, and little or no deferred maintenance is recommended, or the scheduled maintenance can be accomplished with routine maintenance.
Good	The component or system is in sound and performing its function. It may show signs of normal aging or wear and tear, and some remedial and routine maintenance or rehabilitation work may be necessary.
Fair	The component or system is performing adequately at this time but is obsolete or is approaching the end of its useful life. The component or system may exhibit Deferred Maintenance, evidence of a previous repair, workmanship not in compliance with common accepted practices. Significant repair or replacement may be recommended to prevent further deterioration, prevent premature failure, or to prolong its useful life.
Poor	The component or system has either failed or cannot be relied upon for continued use performing its original function, excessive Deferred Maintenance or state of disrepair. Repair or replacement is recommended.

Fire Headquarters

1.2 Abbreviations

FAA may use abbreviations to describe various site, building, or system components of legal descriptions.

ACT Acoustical Ceiling Tile

AHU Air handling unit

BTU British Thermal unit (heat measurement)

CMU Concrete Masonry Unit

EDPM Rubber membrane roofing

EUL Expected Useful Life (life cycle)

FCU Fan Coil Unit

FHA Forced Hot Air

IBC International Building Code

ACM Asbestos containing material

ADA Americans with Disabilities Act

GFI Ground Fault interrupt (circuit)

GWB Gypsum Wall Board

HVAC Heating, Ventilating, Air Conditioning

HWH Hot Water Heater

MDP Main electrical distribution panel

PTAC Package through wall A/C unit

RTU Roof top Unit

MSBC Massachusetts State Building Code

VAV Variable Air Volume box

VCT Vinyl Wall covering (floor tile)

MAAB Mass Architectural Access Barriers

2.0 SITE CONDITIONS

2.1 Topography / Pavement, Parking, and Drainage Structures

Description:

Site is a flat, surrounded on three sides by municipal sidewalks and pavement. The fourth side abuts a lawn area in which the 2 bay garage addition is "built into" the existing grade which is approximately 2 feet higher than interior floor. Site has no internal drainage, and pitches on three sides of the building utilize street drainage. The rear paved area drops approximately 2 feet to the rear abutting lot. This drop off is held up with an original field stone retaining wall.

Condition and Observation:

Rear paved area, which services rear access doors and site generator and cell tower equipment shed is in poor condition. The paving is largely broken up into large pieces and barely held together with sublevel binder.

Fencing is largely rusted mesh and provides a visual barrier between the abutting lots. Evidence of damage most likely caused by plowing, is beyond the repair stage.

Rear retaining wall has signs of failure, and the shifting stone work has fallen or leaned out of plumb. This "blow out" of the retaining wall is most likely from rain water run off from the building undermining the soils and structure of the retaining wall.

Recommended Repairs:

The entire rear paved area needs to be reclaimed, retaining walls reconstructed and grading and drainage designed to collect large run off and dispose of it as not to affect the building or site. Table 1

New fencing would need to be incorporated to separate the abutters from the emergency generators and Fire Dept. area. Fencing would need to factor the limited space and potential damage a plowing operation would incur. Table 1

Site drainage would need to be incorporated into the town's drainage system because the site offers no retention capability. Table 2

2.2 Landscaping

Description:

Condition and Observations:

Recommended Repairs NONE

Fire Headquarters

2.3 Municipal Services and Utilities

a. Water and sewer

   Southbridge has its own water and sewerage

b. Gas

   Gas by: NationalGrid

c. Electric

   NStar

3.0 BUILDING CONDITIONS

3.1 Sub Structure/Foundation

Description:

Original building foundation (1899) is a poured in place concrete foundation with a shallow (7'-0" max head room height) basement. The size of the structure required several interior poured concrete walls and large poured in placed columns to support a structural slab for the apparatus bays, first floor firefighter's room and dispatch. The original building was designed for a full walk out basement in the rear and north side of the building. Evidence is seen with blocked up windows and full sized door that it currently exits into a well.

The 1940s/1950s two bay addition (bays 4 & 5) is a poured on grade concrete slab to support vehicles and concrete block wall. The kitchen area was added on to the north side of the building in 1938.

Condition and Observation:

The 1899 foundation and structural slab appear to be in fair condition. While no catastrophic problems are apparent, the structural slab has signs of cracking, water infiltration around drain pipes that has caused damage to the floor. Concerns of road salt coming off the trucks and penetrating the existing slab and deteriorating re-enforcement bar should be considered. Modern fire apparatus is significantly larger, heavier, and the bays are double stacked with vehicles.

Spalling of the slab surface in the apparatus bay indicates that water penetration has affected the slab.

The 1940 Slab is a poorly constructed addition. Stress cracking and slab settlement are readily observed.

Fire Headquarters

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

Drain pipe penetration: Cut out and reinstall a boxed out drain and floor piping. Table 1

Have engineer evaluate the slab structure of the 1940 addition (See Section 3.2 Super Structure) Table 2

3.2 Super Structure

Description:

The original 1899 building is a heavy masonry structure with a wood framed interior structure and roof. The observation tower structure (approximately 5 stories) uses concrete cast columns to support an upper wood framed roof structure. The heavy masonry wall appears to be three wythes thick with no cavity.

The 1940s two bay garage addition (bays 5 & 6) is a light masonry block wall addition with a brick façade with a light steel bar joist roof structure. Bay 6 was originally a small garage offset to the street, later extended in 1950.

Condition and Observation:

The structure has two main areas in poor condition and in immediate need of repair, the tower and the 1940/1950 addition.

The tower has "emergency" heavy timber supports installed to support the tower roof. To use heavy wood framing to support structural masonry failure should be an extremely short term fix. The nature and capacity of wood is not adequate to support masonry which requires a much more rigid support. It has been reported that the wood support has been present for several years. It appears that the structure failure is at the upper cast concrete support columns at exposed beams. Evidence in the settling is readily seen at the cast in place beam. The beam has cracked over the column. The crack has been patched at least twice with epoxy filler and mortar. It was also observed that other column locations have these structural cracks occurring. The cast concrete beams also bear on the outer brick corner masonry. At these bearing locations, the beam appears only to rest on 1 wythe of brick. It was not visible to see if there was any other anchoring of this concrete beam into this brick masonry. These bearing locations also had mortar separation at the brick/concrete column. Much of the observation tower had significant mortar loss in the brick facade and under the concrete column. A concern is that the entire brick façade needs a complete repointing and spot repair of damaged brick. (See 3.3 Façade) The failure of most of the mortar joints may have created internal brick movement. This movement may have contributed to stress on upper brick coursing and movement that contributes to the overall structural integrity problems with this structure. It should be noted that the tower also has valuable radio equipment mounted on exterior (north side) that integrates with communications equipment on the first level.

Fire Headquarters

The 1940s two bay garage is a poorly constructed addition. As noted in the Sub Structure section. The foundation appears to have been on soils that where not structurally sound. Movement and cracking of the slab and foundation are readily observable. The movement has radiated through the 8 inch block wall. This wall shows no sign of having vertical or horizontal reinforcement bar. The lack of reinforcement could have contributed to step cracking in the block wall which is readily available. In the rear where the 1940s block wall meets the original structure brick wall, the wall has separated from the existing building. It is evident that the two structures are acting independently from each other and continued failure should be anticipated. The brick separation gap at the two additions is upwards of an inch. The internal massive brick column, which supports the addition roof structure, has a structural vertical crack from top to bottom. The exterior block wall at the garage door where it ties back into the heavy main building masonry has a large separation gap. The gap has continually been filled with caulking to help seal the gap and water infiltration. The exterior wall of the addition has step cracks in several of the masonry wall sections. All this cracking and masonry separation and movement is indicating major structural problems with the foundation and are not stabilize.

Metal Lintels over the bay doors have been exposed to weather and moisture and have significant rusting occurring. This rusting expands the metal on four sides and the ends of the lintel. This expansion of the rusting metal has led to the lintel deflecting downward and outward at the bearing ends. The outward expansion at the bearing ends has put lateral pressure on the mortar joint causing cracking and movement in the joint. This movement breaks the mortar bond of the brick and structurally weakening the supporting masonry. The downward deflection of the lintel will lead to brick mortar joints of the head brick cracking and failing.

Bay 4 in the 1899 building currently has an "added" steel beam installed to apparently support the existing corbelled structural arch. The steel beam has wood supports under each end of the steel to support it in place. Exposed Wood supports are temporary and subject to shrinking, and may not have the ability to support compressive loading of the steel and possibly the masonry load. This structural component is a concern that should be further investigated by a structural engineer.

The 1940s addition can only be categorized as a significant failure of the site preparation, design, and installation of the structure.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

There is an immediate need for a full and comprehensive structural review of the entire building. No repairs recommendation can be suggested until such time because the structural problems are so varied and so systemic within the superstructure. Table 2

All temporary shoring repairs are far beyond the useful life and need immediate inspection from an engineer. Table 2

Fire Headquarters

3.3 Facades

a) Description Facades: (Brick,)

The 1899 building is a brick façade with structural brick masonry arches. A precast concrete band separates the first floor, upper decorative tie band, window ledges, keystones, headers and is used as the observation tower "window" opening base. Precast columns are used as structural and decorative element to support the observation tower roof structure. The 1899 building brick wall on the rear and north side of the building currently below grade was once an exposed wall.

Condition and observation: Poor

This entire structural heavy masonry walls façade and mortar joints are in need of spot or partial replacement and a total repointing of all masonry joints. The brick and mortar failure is observed in all areas. The following descriptions are highlighting the most severe and prominent damage.

Along portions of the north and rear walls that were originally above grade and have been back filled and are now below grade. One can visually see a moisture line in the brick coursing with efflorescence leaching out of the brick due to the moisture in the earthen fill. This indicates that the brick has absorbed moisture from water run off and wicking of sub surface moisture. The brick in these lower courses has had the face "spall" off the brick and soften the brick component. The mortar joints in the lower sections have also been weakened by the constant moisture and can easily be raked out of the joint. At several building transitions where later additions were tied into the original 1899 structure, brick and mortar of a different structural consistency (harder brick) was used. The materials and buildings move and expand at different rates. This movement, along with questionable structural deficiencies has opened up large cracks and splits in the brick. These openings have not been sealed properly allowing more water to penetrate the brick masonry. This additional moisture from the roof leads to more structural deficiencies, additional expansion due to internal freezing and degradation of the internal wythes of brick. Age and water from leaking downspouts or improperly channeled water of the roof have washed down the face of the brick that needs upgrades as regular maintenance. Lastly, the addition was a poorly executed installation of a brick and block cavity wall. Expansion joints where not coordinated properly, brick façade was not installed with weep holes allowing moisture behind the brick to expand and create structure cracking. The brick shelf on the south side of the building was not properly flashed allowing moisture to enter behind the brick drip edge. This unregulated water entry creates excessive moisture which is subject to freeze thaw and is a cause for failure.

All areas where caulking is required, have missing caulking, or caulking that is dried and cracked offering little or no waterproofing.

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Brick at most garage doors are damage or chipped due to impact loads from trucks. Fire trucks barely fit into the bay. On one vehicle exiting out of the building had 4 inch clearance at top and 2 inch clearance at bottom on both sides on the wheel stops, and less than three inches from the truck roof to arch. This will continue to be a problem with these narrow doors.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

a) Thorough analysis of the structural deficiencies and problems is performed and corrected. Once this work is completed, a full brick repair, restoration, and re-pointing needs to be performed. Table 2

b) Description Windows and Doors:

Windows

As reported, the windows were approximately 20 plus years old. The aluminum framed double glazed windows appear in operational condition. The window has a fixed arch panel on the top to fill the brick arch shape and space. It was observed that many have moisture between panes.

c) Doors

The garage doors are insulated aluminum door installed to the interior face of the brick wall to give the appearance that the door is fitted to the arched opening. The exterior trim is painted wood with a rubber draft stop. All doors are operated with an electric drive door opener. The doors are reportedly 25 plus years of age.

Front man door is an aluminum framed door with a full glazed panel. The rear man doors appear to be the original wood door. The rear door out of the addition is a solid core door that was not original to the building. The basement below grade door is the original double wide barn door, originally used for the horses. The door sits in a well and has a wooden grate system to cover over the door well. Exterior attic level door is an original paneled wood door.

Condition and observations:

The windows are in poor or (in some cases) fair shape. Drafts have been reported at several window locations. While no obvious defect was observed, the poor mortar joints in the masonry walls may have areas of degradation that are allowing air leakage. The windows being 20 plus years old, may require the weather-stripping to be evaluated, and repaired/replaced as part on ongoing maintenance.

The front aluminum door is in good condition.

Fire Headquarters

All rear doors are in poor to failed condition. The wood doors are coming apart at all rails and stiles. Air gaps of up to ½ inch are observed providing no weatherization or energy efficiency. One rear door in apparatus bay is in such poor shape, that the door is considered unusable by firefighters. The attic level wood door is also original to the building, leading to the towers roof, and provides no weatherization and energy efficiency. Some dispatch communications equipment is installed in the attic, and storage access to this area is via a steel ladder; hoisting items by a rope and pulley system.

d) Ladders to tower

The steel vertical ladders to access the tower are simply made welded steel ladder mounted to the wall.

Condition and observations:

The ladders are in operational shape.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

All rear doors should be replaced immediately due to the poor condition and operation. Table 1

All garage doors and operational motors should be scheduled for a systematic replacement. Table 1

Windows should have all weather stripping upgraded and re-evaluate all caulked joints to assure weather tightness. Table 1

If the long term solution is to keep the station operational additional stabilization of the ladders, platforms, and safety equipment per an OSHA standard should be implemented. Table 2

3.4 Roofing

Description:

The building has several roof materials used on this building. The observation tower has an architectural asphalt shingle. The inner flat roof of the observation tower is a copper metal pan with a 2 inch floor drain that dumps water onto a lower roof gutter system. The front "hip" section of the 1899 building has the original slate roof with copper valleys and flashing. The side hip roofs are architectural shingle to match the slate. The flat roof of the second floor is a 50 asphalt rolled roof with glue sealed seamed. The north side flat roof over the kitchen is an EDPM rubber roof. The original station roof (bays 1-4) was replaced in 2009.

Several winters have had ice buildup, due to poor drainage, causing leaks noticeable through ceilings in the administration office area on the second level.

Fire Headquarters

Condition: Good to Fair

It was reported that a majority of the roof is 10-15 years of age. All asphalt shingles areas and slate roof section of the building appear in good condition. The copper pan roof of the observation tower is original to the building. Leak stains could be seen throughout the area directly below the pan. The roof of the tower drains into a down spout and dumps onto the copper pan, which in turn drains the rainwater through a 2 inch pipe to a lower gutter assembly. The second floor flat roof with the 50 lb asphalt roll roofing has areas where the gravel face of the rolled asphalt is wearing thin. Fiberglass reinforcing in several areas of the rolled roof were observed. EDPM membrane appeared in good condition.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

The Town should be planning for the near term to apply a surface coating over the rolled roof section of the roof. The thinning of the protective granules, and the exposed fiberglass reinforcement will begin to break down the base material if left unattended. Table 2

The copper pan in the tower section should be evaluated and re-solder all joints. A second overflow drain should be incorporated to lessen the chance of the drain failure which damages then Fire Department Offices. Table 1

3.5 Basements / Attics

Description:

Basement: The basement is a multi-use storage area for the Fire operation. A large percentage of the space is used as dead storage, portions of the space is used for cleaning and drying fire fighters equipment, several air tanks used for building operations and a small space houses alarm boxes and their maintenance.

The attic space of the main building houses AHU equipment. The attic spaces in the tower section house an air tank for the horn and dead storage for antiquated equipment

Condition:

Basement: the basement is in fair to poor condition. This below grade space has a moisture issues which appeared to be caused by several factors such as, leaking drain pipes, hose discharge from washing machines, water entering in from the below grade double door well, water entering the building though the brick façade and poor exterior site drainage. Floor drain in the basement floor had standing water in the drain.

The below grade brick wall had efflorescent on all areas and water staining was readily observed.

Fire Headquarters

There are decommissioned boilers, old decommissioned piping, decommissioned generator and other old unused equipment that have no purpose. There is a significant amount of old fire equipment, public decorations and other equipment that are stored, but serve no function to the operation.

Potential mold growth scenarios exist.

Attic: The attic space appeared in good condition. The Main building space does not have any specific function other than to house HVAC equipment. Active water staining was observed in the Chief's office below the tower attic. The tower attic has had past water damage due to failure of the copper pan to discharge excessive rain water off the roof system.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

Remove all decommissioned equipment and all unused materials to provide better air flow throughout the basement space. Table 1

Address basement level door rot and gaps (see doors) Table 1

Install outside air to air exchangers in basement to move air and dry out sub basement conditions. Table 1

Fix all leaking pipes, drains and re-plumb as required. Table 1

Clean and camera all below grade drains to assure operation. Table 1

Make weathertight all doors and windows. Table 1

3.6 ADA Compliance

The Americans with disabilities Act (ADA) and the State of Massachusetts Accessibility Code governs public accommodations and commercial properties. This report will only look at accommodations and access to public facilities that are equal or similar to those available to the general public. This report will identify areas of non-compliance, or will be in compliance if upgrades and renovations are made to the facility that trigger mandatory resolutions. However this report is not a full ADA or Accessibility Code assessment. Being "Public" facilities, upgrades to allow for employee or the general public need to be addressed to meet the provisions of Title III of the ADA Act.

Condition:

Other than the front door to dispatch, the building meets no MAAB codes or ADA compliance.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

Fire Headquarters

If the intent of the town is to renovate and upgrade the building, the significant moneys needed to repair this structure will require the building to upgrade all handicap compliance for employees and public use and access. This would include elevator, men's and women's handicap toilets, and locker facilities, and widening and replacement of all doors and hardware. Table 2

3.7 Interior Finishes and Components

Descriptions:

Typical Interior finishes:

Location	Floor	Walls	Ceiling	Other
Apparatus bays	Poured concrete	Block or brick painted	Plaster painted	
Second floor offices	Hardwood linoleum Limited carpet	Plaster painted with wood wainscoting and wood plank walls	Acoustical tile/ main hall tin	
Stair towers	Wood stair	Plaster painted with wood wainscoting and wood plank walls	Plaster painted with wood wainscoting	
Attic Storage Tower	Wood boards	Unfinished brick	Unfinished wood deck	Access via vertical metal ladder

Conditions:

The general conditions of the interior finishes is fair to poor. The finishes are extremely dated. Plaster ceilings and acoustical tile have cracking, holes, water staining prevalent in most areas. Most materials are original to the construction or a 1950- 1960 update. Holes in plaster in the stair ways need repair.

Fire Headquarters

The kitchen's location directly abutting the apparatus bay is subject to fumes, dust, dirt, and moisture; potentially impacting sanitary conditions for staff.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

Washing machine in the rear stairway and its operation may conflict with the emergency use of the stairway by the firefighters. Table 2

4.0 BUILDING SYSTEMS

4.1. Plumbing

Description:

The main water service appears to be in galvanized water service. The observed supply piping is copper, and the waste lines are cast iron. The plumbing fixtures are vitreous china with chrome trim.

The electric water heater is a recent installation and reportedly serves the needs of the building. Piping looks in working condition.

Welded and threaded black iron pipe is used for gas piping within the subject property.

The toilet facilities were basic. No locker-room and a single shower unit exist for the occupants use. The toilet facilities do not have separate male or female toilet/locker facilities.

Washing machine is located in an egress stair and discharges into a basement floor drain.

Condition:

The entire plumbing system is in poor shape. There are no separate toilet facilities, no separate locker rooms or more than one shower stall in a facility that is in constant use 24/7 for the male and female creates potential Human Resource issues.

The floor drain waste piping in the basement has pinhole leaks which adds moisture to the basement area, limiting the usefulness of the basement. Some areas of waste piping also had bad leaded joints which allow effluent to leak into the basement space. A pvc waste pipe which may be non compliant with the code, has had the wye plumbed backward from actual flow. This pipe also had sags and pitches in the pipe that did not allow for proper discharge of waste. It was observed that piping from the washing machine was not operational, and waste water was deflected across the floor into the floor drain system. This is a violation of plumbing code. The age of the waste piping is old and several of the leaded pipe hubs has had the lead missing. The lack of tight seal allows for sewer gasses to enter into the space as well as showed signs of waste water leaking from the joint.

Fire Headquarters

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

Immediate need is to further investigate all waste and drain piping in the basement. Most waste piping will require removal and replacement. Table 1

Replace the bad section of the laundry waste piping to allow for the proper operation of the laundry waste. Relocation of washing machine out of the stair way per building code. Table 1

Remove all non code complaint pvc piping and replace with ductile iron or other metal piping. Table 1

Long term planning for separate male and female locker/shower rooms and toilet facilities. Table 2

Replace galvanized steel water feed to the building. Table 2

4.2 HVAC

a. Heating Plant

Description:

The building has a new (installed in 2014) gas fired Hydroair Furnaces in the attic space that address all second floor heating needs. These units also provide cooling with roof mounted condensing units. The apparatus floor is generally heated with Modine units.

Apparatus bays are vented with a combination of wall mounted fans and a plymovent system.

Condition:

The general condition for the system is good. The cavernous space and poor insulation and lack of energy conservation in the structure itself allow for significant heat loss. This significant heat loss not only incurs large operational expenses, but will premature fail the heating equipment trying to keep up with continual demand.

b. Distribution system (VAV, FCU,, exhaust)

Description:

The newer attic mounted package equipment provides the adequate heat and air flow needed for the facility. The Modine units in the apparatus bays are a common design to provide a minimal heat load in a large space.

Fire Headquarters

Condition:

The heating units are in good condition.

The exhaust air system is in fair to poor condition. The plymovent system addresses a majority of the truck exhaust air, but the depth of the station and the overcrowding of trucks create voids and areas which do not allow for adequate air flow to rid the bays of contaminated air. The apparatus bays have doors and windows that provide little of no air tightness which helps move air. This unintended consequence helps with air changes.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

Engineer an automatic evacuation system that covers all apparatus bay areas with CO and NO sensors. Table 2

4.3 Electric

Description:

The electric service is a 200 Amp service that has had an upgraded circuit breaker panel and sub panels installed. The wiring is a mix of sheathed wiring (romex), metal clad (mc), fabric sheathed and concerns that knob and tube wiring exists in confined/concealed spaces. Communication and Cat 5 data wiring is visible in the basement area.

Condition:

The wiring for this type of facility is poor condition. The main panel and sub-panel are circuit breaker protected and are current technology and are in acceptable shape. The distribution of the wiring is in poor condition. Wires are not properly supported in the basement and are fastened or drape over gas piping. Wiring are often bundled through tight chases or through rough cut cores which do not meet code or manufacturer's standard. The electric and communications wiring use the plumbing waste stacks as chases. The electric and communications wiring come in contact with both waste and supply water piping creating the concern of electrical shorts damage due to water leak. Communications wiring is not separated from the electric wiring which most manufacturers feel that stray current from the electric wiring could interfere with the signal in the communications wiring rendering it in-effective.

Within the building spaces, the old wiring circuit layouts provided minimal outlet coverage within an office or a space. This minimal distribution of outlets creates the need for the use of extension cords and power strips to provide the needed power to the various office equipment.

The concern that knob and tubing wiring may exists within the walls and concealed spaces. This old wiring has far exceeded its life expectancy, and is considered a hazard in a commercial building. The age of the building and wiring observed, there is also a concern that many of the outlets are not grounded. , Ungrounded outlets and circuits can affected most new electronic equipment such as computers, communications equipment and monitors which rely on a grounded wiring.
Fire Headquarters

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

The immediate need is to re-evaluate all electrical distribution to correct all code violation for personal and equipment protection. Table 1

Add outlets in office and working spaces to eliminate extension cords and over used power strips. Table 2

Test all wiring for continuity, ground, and replace any knob and tube and fabric covered wiring. Table 2

Separate communication wiring from electrical wiring and from plumbing piping. Table 2

4.4 Building Fire Suppression and Fire alarm

Description:

No Fire suppression

Fire alarm exist

Condition:

The condition is considered poor. The fire alarm system should be a comprehensive system with horns and strobes with a combination of smoke and heat detection. The Fire Station also should have the carbon monoxide and NO detection tied into an engineered exhaust air system to assure fumes do not penetrate the working and living space of the station.

Recommended Immediate Repairs, Near Term Repairs, or Replacement Reserves:

Upgrade all fire detection, notification, and carbon monoxide detectors to a current building code standard. Table 1

5.0 CODE/OPERATIONAL CONCERNS

Description:

Dispatch area: During our walk through we observed that the dispatch/communications area is negatively impacted due to the building's limitations, including: 1) location abutting the apparatus bays allows for excessive noise, fumes, moisture, and dust all of which impacts the equipment and overall operations; 2) limited size and shape of the space does not allow for adequate workflow to better service the public and to maintain independence from other department operations; 3) industry standards require a secure environment, which this location does not provide; and 4) no option to expand to better service the regional operation.

Air Tanks for horn notification: As described there are three compressed air tanks, with an air compressor, to operate the horn notification system. Two tanks in the basement are newer (2013 models). The older tank in the tower attic has failed its psi testing requirements and is not compliant with the State's certification program. This inability to meet the rating is in violation of State regulations. Replacement is an immediate requirement for non-compliant equipment. Table 2

SCBA recharging station: This equipment is required to be in a separate room to allow the machine to refill firefighters air breathing equipment without concern of contamination. The SCBA system has a direct outside air source and quarterly testing to assure high quality air is going into the SCBA tanks. The existing equipment is located in the rear of the 1940s apparatus bay addition. This location is in direct conflict with the manufacturer's recommendations and National Fire Protection Associations (NFPA) regulations. The unit is exposed to garage bay climatic conditions, moisture and contaminated air. This unit's life span can be affected to these uncontrolled climatic/contaminated conditions. Table 2

Fire Fighters Gear storage: Currently stored within the garage space. The fire fighters gear is exposed to garage climatic conditions and contaminants from vehicle exhaust. NFPA advises against this type of storage to assure health and safety of the owner of the material. Table 2

TABLE 1- IMMEDIATE REPAIR COSTS							FIRE HEADQUARTERS
Section Number	Section Name	Recommended Work	Quantity	Unit Cost	Unit Description	Immediate Repair Cost	Comments or Additional Description
SITE CONDITIONS							
2.1	Asphalt	upgrade all asphalt				20,000	
2.1	Fencing	Replace damaged fence	125	40	lnft	5,000	
2.1	site drainage	add drainage				10,000	
BUILDING CONDITIONS							
3.1	drain pipe	clean/repair drain pipe				8,000	
3.2	see table 2						
3.3	Masonry	table 2					
3.3	Masonry repair		1,000	100	brick	100,000	
3.3	Structural repair	Unknown amount					
3.3	garage doors	replace life cycle	6,000	5	unit	30,000	
3.3	Man doors	replace not operable	1,500	2	unit	3,000	
3.3	sealant caulking	replace all sealant draft issues	10,000	15	lnft	150,000	
3.4	roofing	repair copper pan				8,000	
3.5	clean out basement	remove unused material in storage				4,000	
3.5	clean drains	clean all floor drains				7,000	
3.5	weather tight	Make all basement level penetrations weather tight	1	1000	l day	1,000	
3.5	replace basement door	replace old basement level garage door				5,000	
3.6	table 2						
INTERIOR ELEMENTS							
3.7	Table 2						
BUILDING ELEMENTS							
4.1	basement piping	replace damaged piping and other code items				35,000	
4.1	water service	replace galvanized water service				20,000	
4.1							
4.2							
4.3							
4.4	Fire alarm panel	install a code compliant system				18,000	
CODE COMPLIANCE							
5	Air tank	replace failed compressed air tank				5,000	
5	table 2						
TOTALS						429,000	
1.25 MULTIPLIER						536,250	

3.1 Bay 5 floor failure In corner failure radiates up brick wall

3.1 Bay 6 exterior wall stress crack through brick and block. Radiator is not in service

3.2 Interior beam at exterior addition wall pulling away from wall

3.2 Addition building stress cracking of brick at interior wall

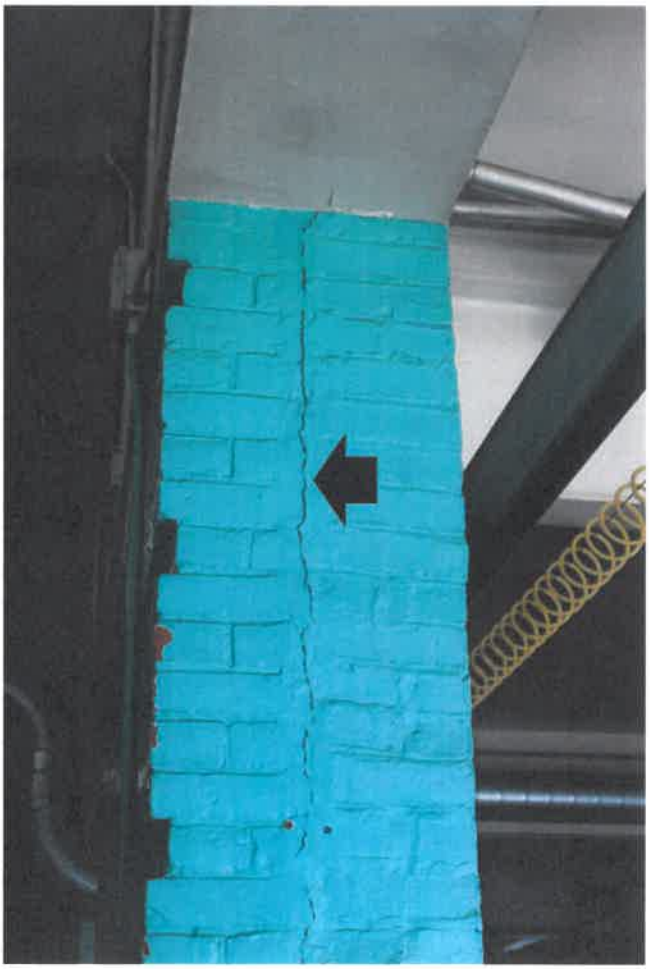
Fire Headquarters

3.2 Bay 5 garage door lintel and mortar failure due to deflection, rusting and movement.

3.2 Added exposed lintel (rusting). Wood support not engineer to support masonry. Upper arrow indicates mortar joints opening up

3.2 Significant brick movement and failure at front façade. Arrow shows rusting lintel that appears to have deflected and expanded opening mortar joint that has been filled with mortar.

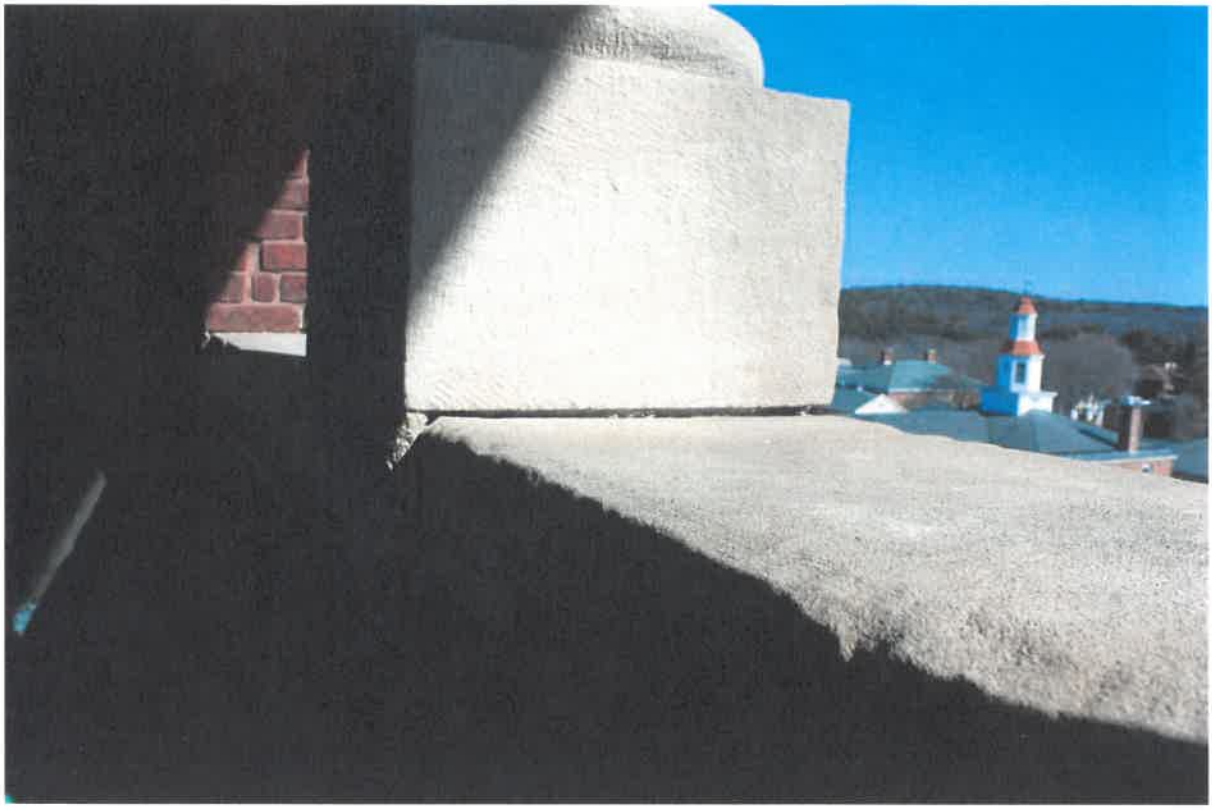
3.2 Interior wall of 1960 addition stress cracks at opening



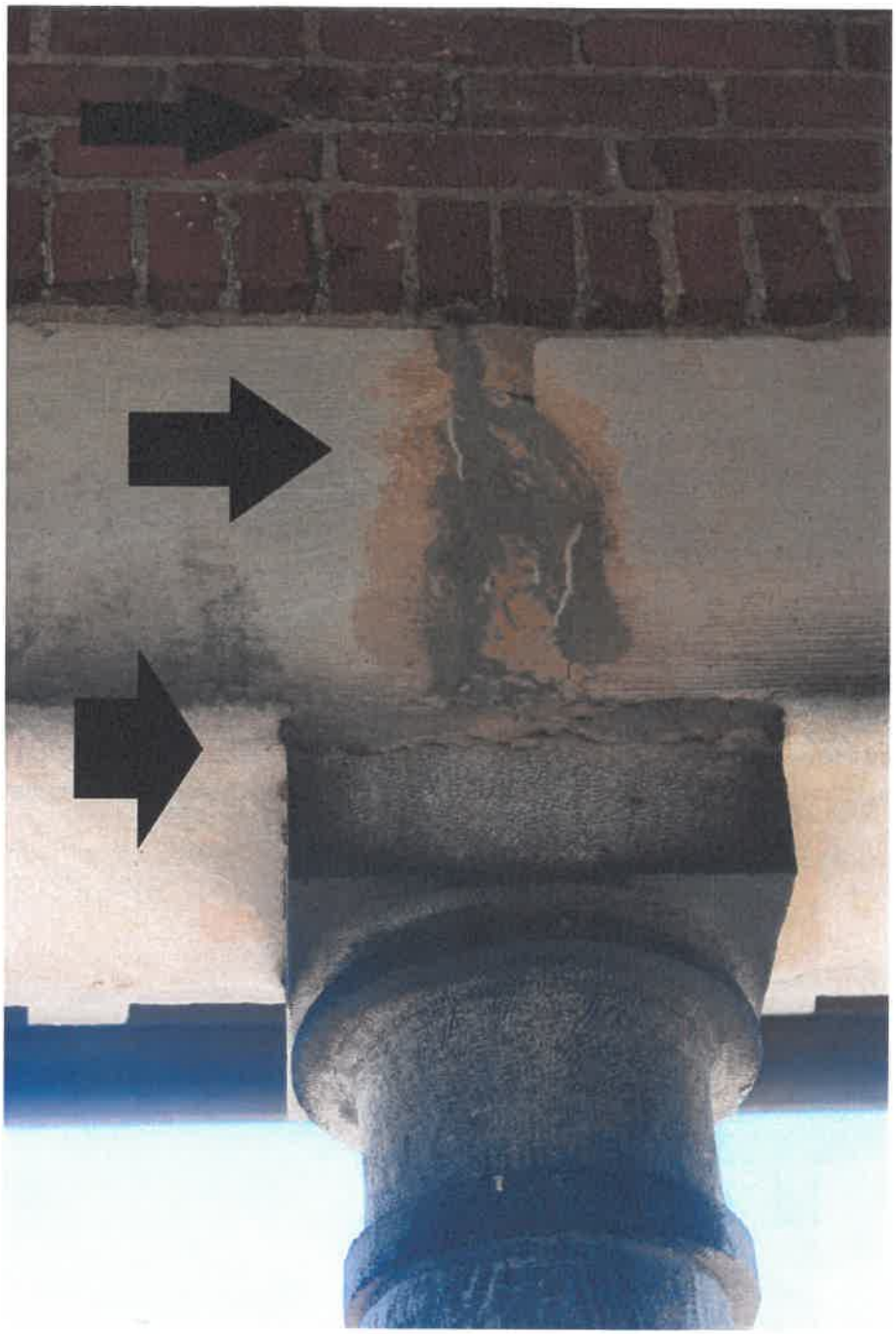
3.2 Interior column at original building/1960 addition stress crack of support column

Main building basement floor lintel movement affecting brick

3.2 Significant brick movement main building at 1940s addition. Excessive water infiltration is occurring causing efflorescence and continual failure.



3.2 Tower column missing mortar



3.2 Upper area cracking in brick joints due to movement

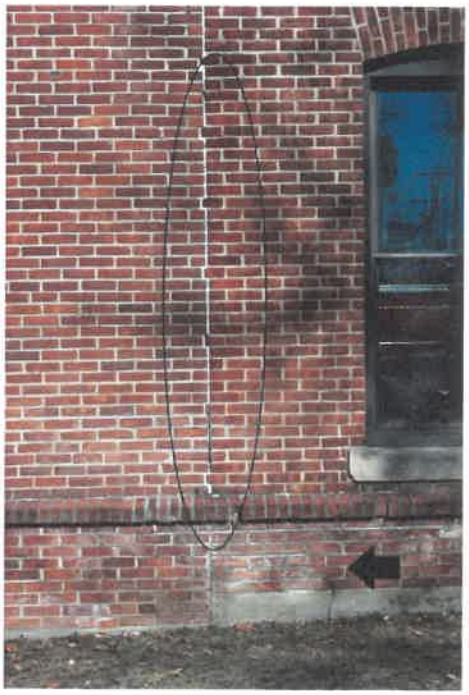
Mid arrow cast lintel joint movement and several patches with epoxy and mortar

Lower arrow trying to seal lintel and column from water

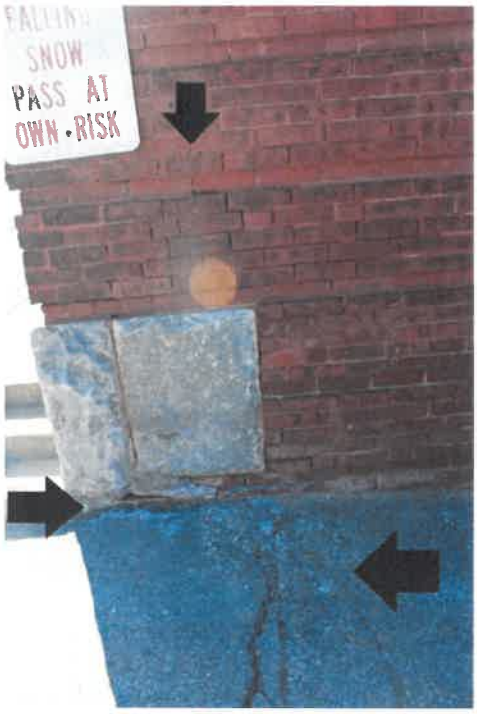
3.2 Wood Temporary support. Concrete lintel support area of concern. Brick and mortar damage (yellow) causing upper cast stone movement. Note: critical communications equipment on right

Arrow Upper cast lintel with minimal support patched Circle typical mortar failure.

3.3 1960 Brick shelf improperly flashed and failing. Caulk joint (arrow) failed, but not a proper application



3.3 1960 addition Foundation cracking.(arrow) Brick wall joint failure.



3.3 Typical mortar failure. Cornerstone stress cracking and poor mortar repairs

3.3 Typical mortar failure around doors

Fire Headquarters

3.3

Penetrations through rear façade allowing water and rodents.

3.3 Typical areas of significant missing grout

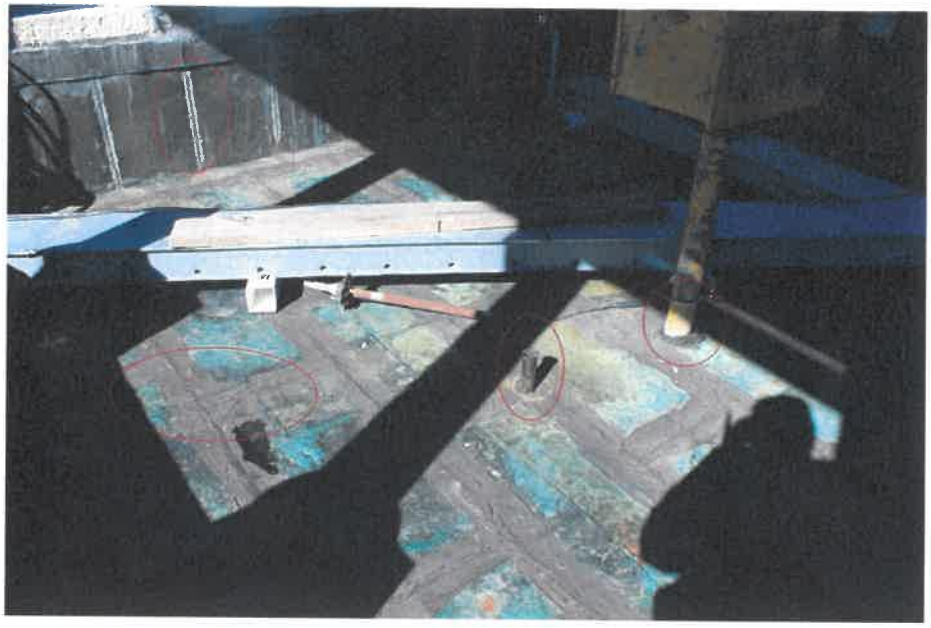
3.3 Door opening too small for operation

Door openings with less than 4 inches of clearance at top and 2 inches of clearance at bottom. Operationally impacts efficiency and creates vehicle damage

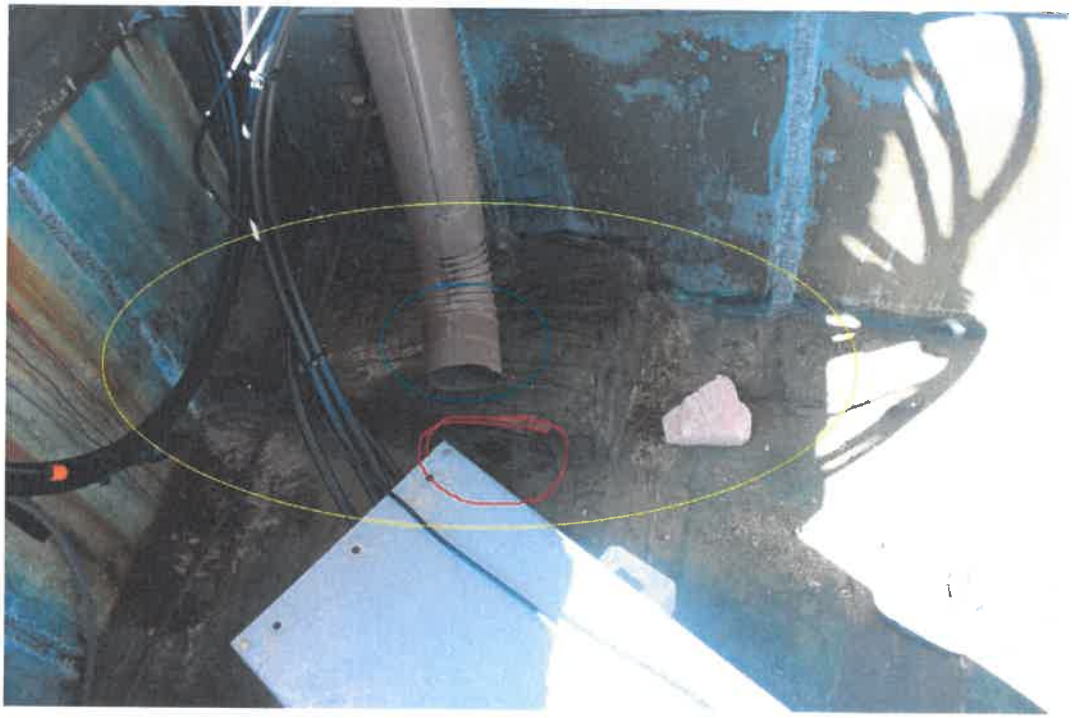
3.3 Southbridge Fire Station Masonry

3.4 Apparatus bay roof. Roof granular stone facing is worn thin

3.4 Detail of worn granular stone exposing fiberglass reinforcement.



3.4 Tower Copper pan roof. Copper seams failing, undersized emergency overflow, improper penetration flashing.



3.4 Tower roof drainage: Upper roof discharge (blue) overwhelms 1 ½ Inch roof drain (red). Corner blocking has mastic over copper to prevent leaking, improper fix.

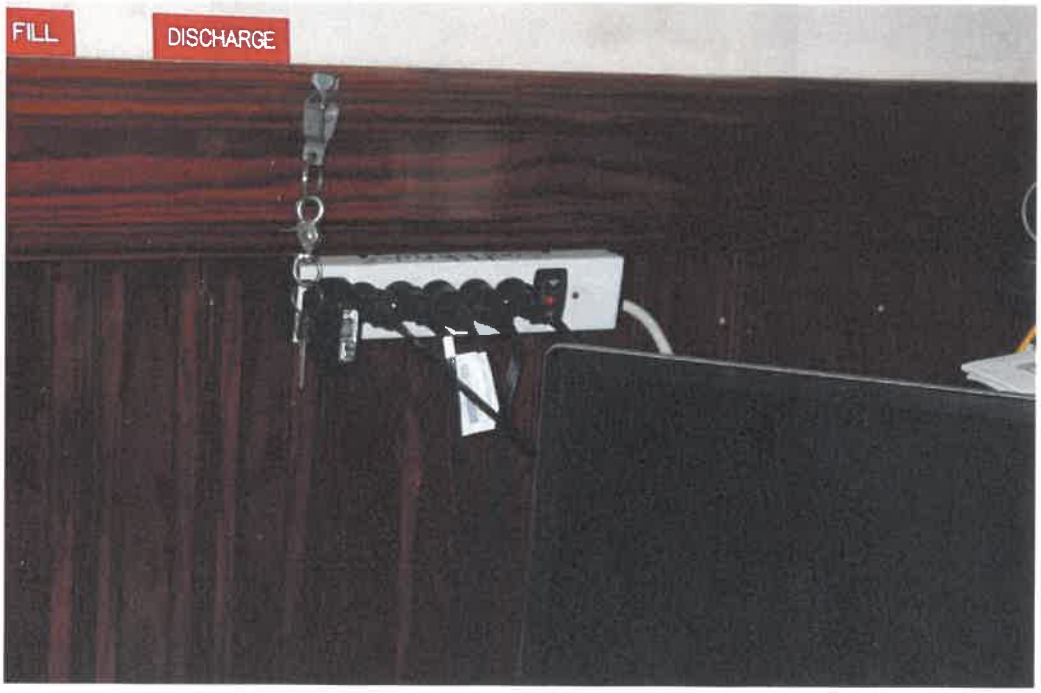
Leak of upper tower pan leaking into Fire Chief's office

3.4 Roofing

3.5 Basement storage affected by excessive moisture

Fire Headquarters

3.7 Second floor of fire station. Limited operational function



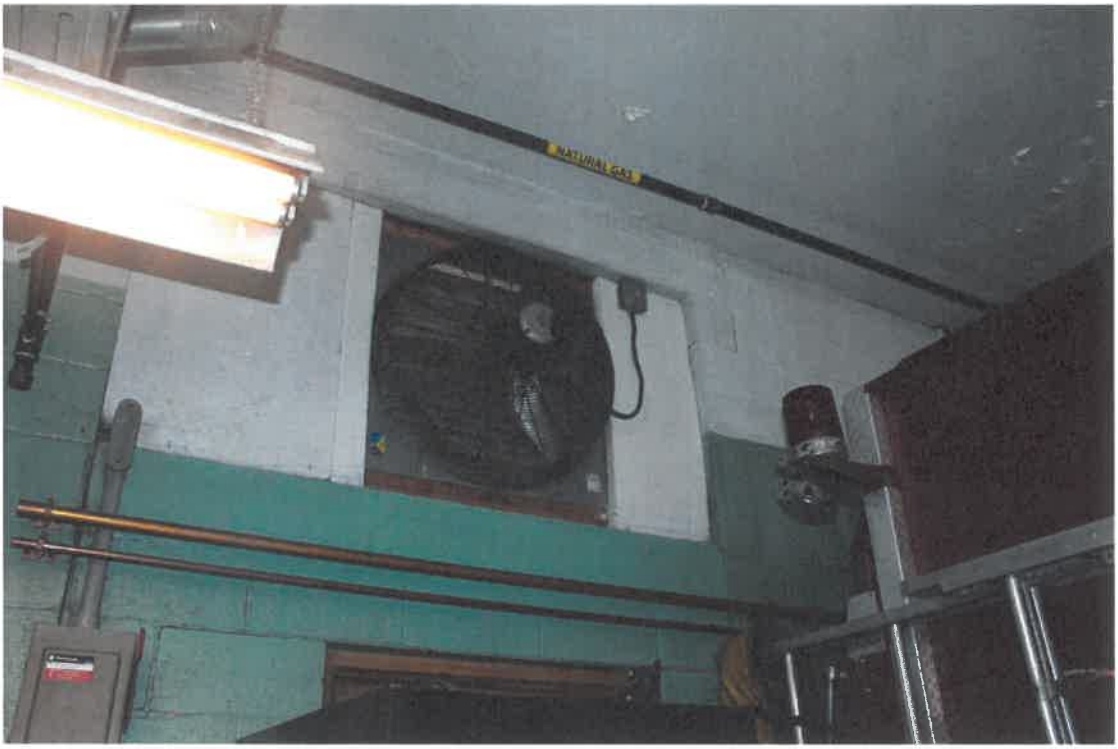
4.3 Typical electrical overloading of circuit due to lack of outlets.

4.1 Leaking waste pipe joints and leaks in piping

4.1 Make shift washing machine drain using the floor drain system

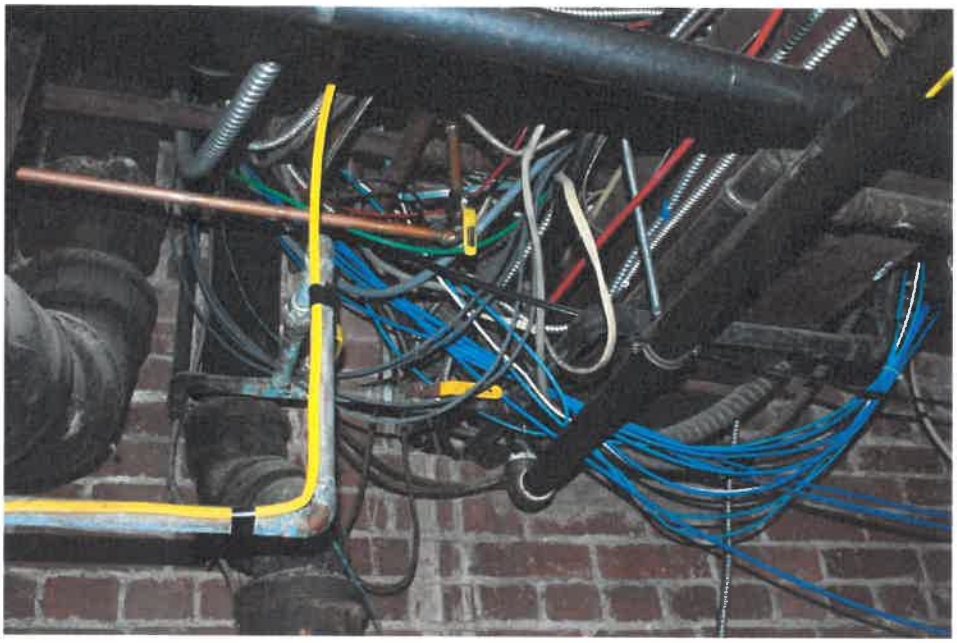
Basement level door

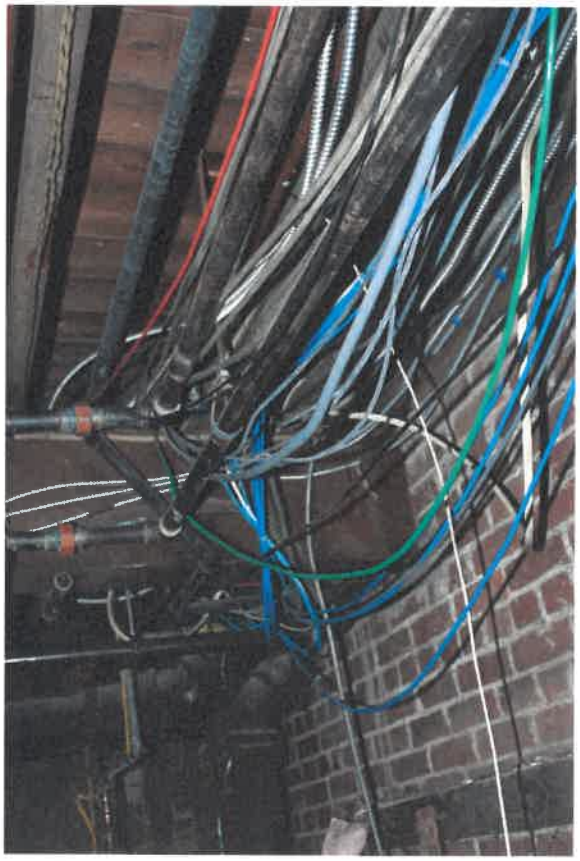
3.5 Door offers no insulation and weatherization. Exterior moisture enters the building.



4.2 Added venting of apparatus bay due to excessive exhaust

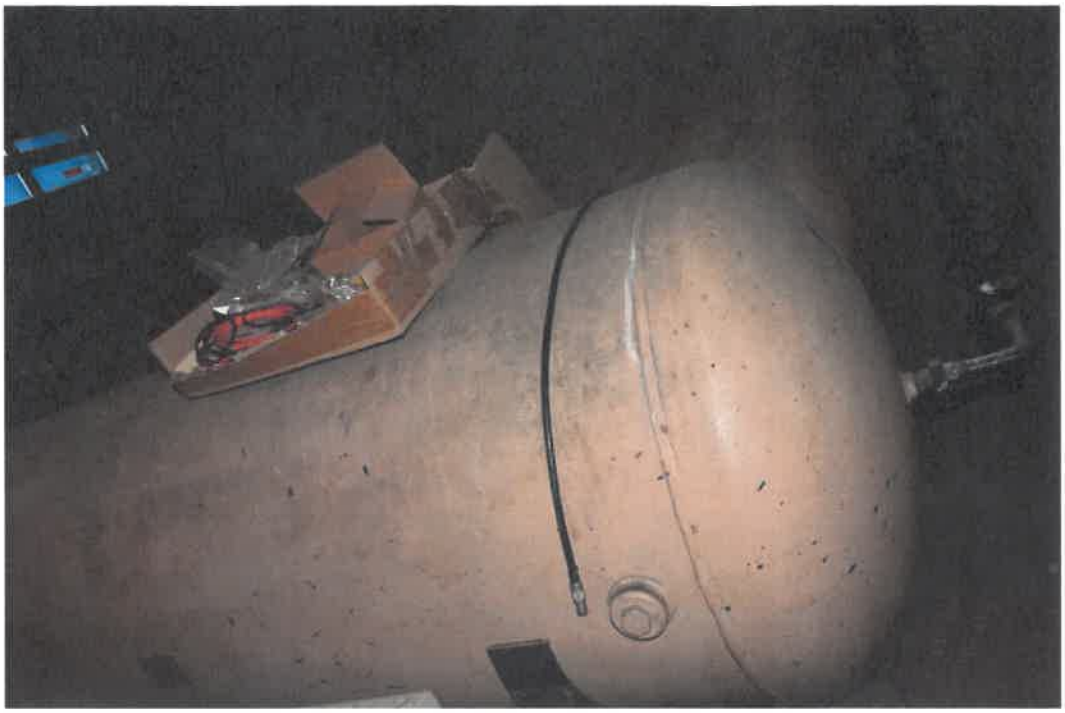
5.0 Bad air tank (air horn system) not in compliance or approved by State of Massachusetts.





4.3 Electric and communication wiring improperly installed and in violation of electric codes and practices.

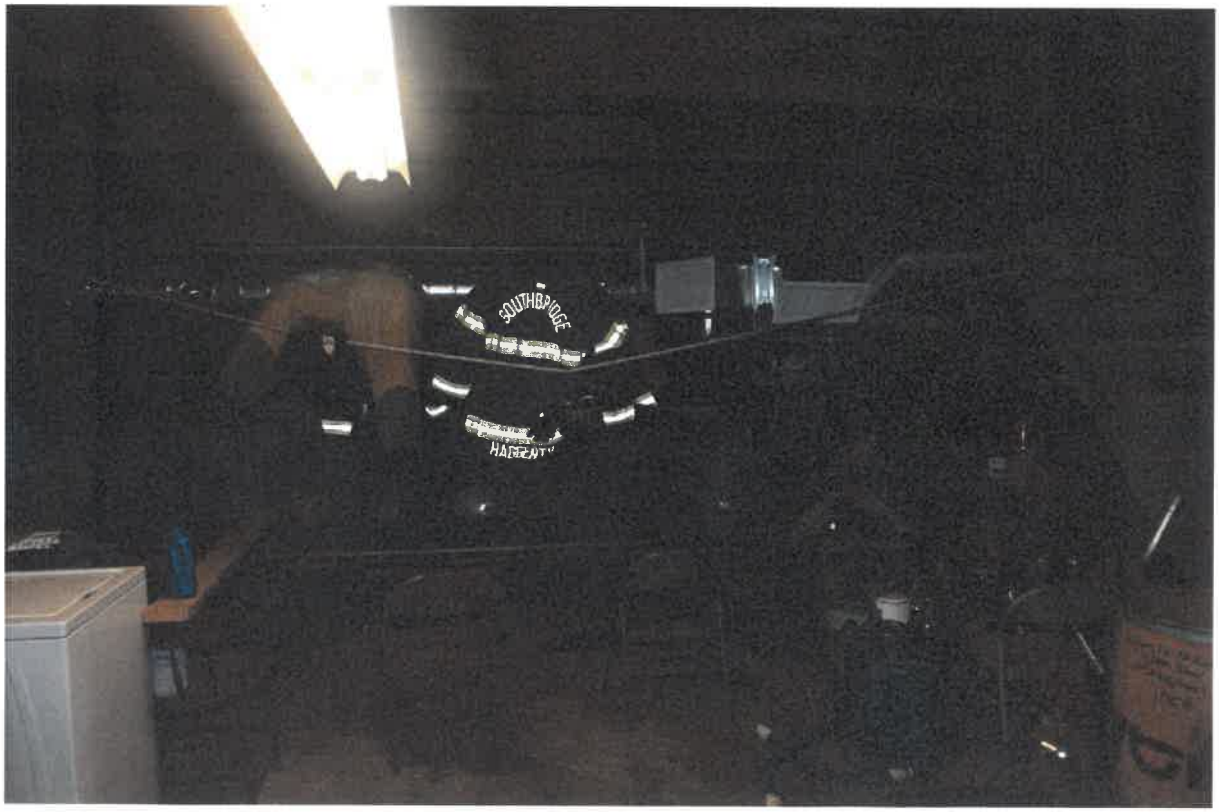
Fire Headquarters



Operation air horn tank not in compliance with State of Massachusetts pressurized tank standards

4.3 Communication equipment in upper tower attic. Concern is questionable roof pan has leaked and could affect equipment

Fire Headquarters



5.0 Fire fighter gear stored in active apparatus bay and makeshift basement level equipment drying operation

Fire Headquarters

4.1 Washing machine in a means of egress stair

5.0 Scotts Pack filing machine located in the rear of the 1960 apparatus bay. No room separation as required per NFPA and Manufacturer.

Fire Headquarters

5.0 Typical lack of operational storage

TABLE 2- REPAIRS/REPLACEMENT PLAN — FIRE HEADQUARTERS

Section Number	Section Name	Recommended Work	Average life cycle years	Effective age	Remaining usefull life	Quantity	Unit Cost	Unit Description	Year 1	Year 2	year 3	year 4	Year 5	Total over the term
SITE CONDITIONS														
2.1	site work	upgrades require to support a new renovated structure						estimate			150,000			150,000
2.2														-
BUILDING CONDITIONS														
3.1														-
3.1														-
3.2														-
3.2	Engineering	architectural/structural engineer to investigate and design repairs					750,000		750,000					750,000
														-
3.2	structure	install seismic bracing/repair lintels						estimate		1,500,000				1,500,000
3.3	Masonry	repoint/repairs				18,000	55	sq ft		1,000,000				1,000,000
3.3	Masonry	replace bricks				1,000	100	unit		100,000				100,000
3.4	Roofing	Replace flat roof				6,550	13	sq ft		85,000				85,000
3.6	ADA	Upgrades required due to construction (elevator/bathrooms)				200,000		estimate			200,000			200,000
INTERIOR ELEMENTS														
3.7	Renovation of interior	upgrade interiors				4,788	300	sq ft			1,436,000			1,436,000
BUILDING ELEMENTS														
4.1	Plumbing /HVAC	upgrade plumbing and hvac for code and need					12% of overall cost				480,000			480,000
4.3	Electric	upgrade for need					9% of overall cost				360,000			360,000
CODE COMPLIANCE														
5														-
5														-
TOTALS									750,000	2,685,000	2,626,000	-	-	6,061,000
1.25 MULTIPLIER														**7,576,250**

RE: Southbridge Covid Stats

Andrew Pelletier <apelletier@southbridgemass.org>

Mon 4/12/2021 4:38 PM

To: Joseph Hulyk <jhulyk@southbridgemass.org>; Paul Normandin <pnormandin@southbridgemass.org>; Shane Woodson <swoodson@southbridgemass.org>

Monday 04/12/2021 (2:00 pm)

1 New Confirmed Cases

889 Eastford Road

0 Reported probable cases

12 Confirmed cases closed

29 Hamilton St #4R
300 Eastford Road
62 Arland Drive
62 Arland Drive
38 Green Ave
53 Taft St #2
28 Chapin St #2
14 Windsor Ct
77 Marc Ave
15 Beech St
960 N. Woodstock Road
69 Brentwood Drive

2 Probable cases closed

211 Breakneck Road
52 Locust Ave
211 Breakneck Road

1776 Total Confirmed Cases

1666 Cases Closed (recovered or lost to follow-up)

13 Cases determined to NOT be residents of Southbridge