



Town of East Troy Town Hall and Municipal Needs Analysis Report

Architecture, Fire Protection, Plumbing, HVAC, Electrical

March 8, 2019

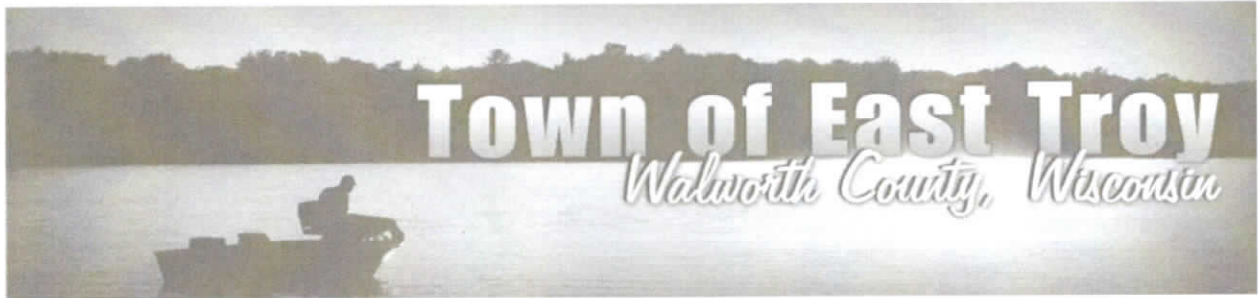
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Executive Summary

Zimmerman Architectural Studios, Inc. is pleased to be requested to perform a Facilities & Needs Analysis Report of the Town Hall Building at N9330 Stewart School Road in the Town of East Troy, WI. The Town of East Troy has asked to be provided a written report containing observations of existing conditions of the building.

Several different purposes served the building during its existence. The original single story piece with a partially exposed basement on the north end was built in about 1904 and served as a one-room school house. An addition occurred in 1960's to the south of a one story building without a basement. Finally, in 1985, the building was purchased by the Town of East Troy and remodeled to support Town Hall functions.

Town Hall services that are based in the building include Administration, City Clerk, Finance, Information Technology, Municipal Court, Police and Building Inspection Services. It is also the only voting station for the citizens of the Town.

This report will identify building features, as well as the condition and type of mechanical, electrical and plumbing systems. It will also partially examine spatial programming needs of the Town Hall departments, with findings from interviews with the departments.

Architecture

Town Hall Building

Exterior

The original exterior panel siding material was replaced by the current vinyl siding a few years ago. The remaining exterior areas that have a brick veneer appear to be in good condition with maybe a bit of tuckpointing required here and there.

The doors and windows appear to be in good condition. The roofing shingles are at the end of their life span and are starting to deteriorate. There are also several areas that have leaks (See A1).

The concrete walk and stairs at the front entry are in good condition but do not provide ADA access to the entry (See A2). The side entry door for the police is in good condition but has roughly a seven inch step so it is also does not provide an ADA entry point (See A3). The rear entry door opens into the meeting room and the concrete walk is in fair condition. A slip lip and threshold is present at the door and a wood ramp piece has been placed to help make it an ADA accessible entry (See A3). A second exit from the court area is through a rusty steel stair structure that is not ADA accessible.

Parking is located across the front of the building (west side) with overflow parking available in the park to the north of the Town Hall building. The building is served by private well and septic system. The water quality is not drinkable. There is no back-up generator in case of emergency.

Interior

There are two distinctive floor plates; the original 1904 built schoolhouse and the 1960's addition to the south. The Town purchased it in 1985 and remodeled it into the Town Hall building. There have been no additions or remodeling's since then.

The basement, which is only under the original 1904 building, is used for file storage but has multiple issues. It has several water infiltration issues and the floor does flood occasionally. There is asbestos floor tile which is buckling. An unused toilet room is locked and situated near some mechanicals (See A4, A5, A6, A7 & A8).

The first floor has two distinct areas. Civil court raised above the main floor serves the original building area and does not have ADA access (See A9). Chambers is adjacent to the court but is not large enough for conferencing. The rear of the court room also serves as overflow file storage which is not secure (See A10). The court room itself does not provide proper areas for court clerk, court reporter, etc. (and is in violation of state statutes) and lacks proper security items and measures (escape or safe area for judge – staff, etc.) (See A11). Locked toilet room and storage areas occupy the remaining space.

The main floor has the restrooms, administrative area, meeting room and police offices. The restrooms do not meet ADA requirements. The administrative area lacks adequate area for current staff and not enough storage space and does not have a break area. One public customer service window serves the Town, Police and courts transactions. A second customer service window is needed for just the court transactions. The meeting room, which is used for elections and town hall meetings, also contains a desk and unsecure file cabinets for the building inspector (See A12). There is inadequate privacy for him to have conversations with the public. The flow is poor for

elections with the meeting room and hallway stacked with people making it hard to maneuver people in and out.

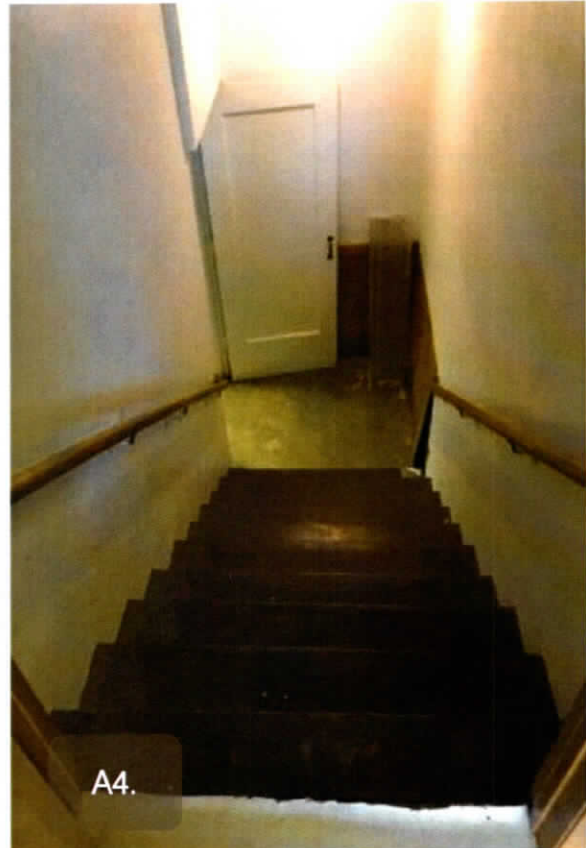
The Public Works department currently does not have an office area in the Town Hall building and would need one to better interact with Town staff on day-to-day matters.

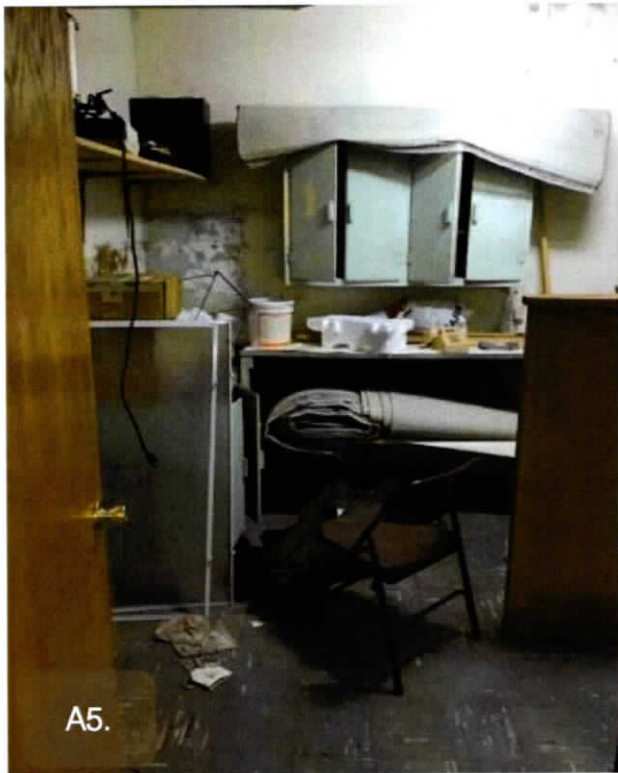
The Police Department currently has 6 full time and 7 part time staff. The current locker room lacks enough space for all of the officers and also doubles as a storage space (See A13). There are currently no rooms for interviews, internet/sensitive crimes, evidence storage (which is stored in the Police area of the DPW garage), meeting/roll call, booking, men's & women's shower/restrooms, breakroom and secure storage area. Weapons are stored in a safe in the current squad room with a lot of staff presence which presents an unsecure scenario. Gun cleaning occurs in the police space in the DPW garage (See A14, A15). There is no sally port adjacent to the department. There is no booking area so the officer fills out the incident report sitting in his squad while another officer watches the accused person. They also do not have an intoximeter. Current squad room serves 2 computer work stations w/1 phone line so no privacy. It becomes very hard at shift change when the officers need to do their computer work and have to wait their turn. The Chief's office lacks privacy. Overall the department area lacks proper security and privacy.

DPW Building

The current space the DPW has in the DPW building (See A16) is crowded with the storage of the town trucks (See A17). Part of the building is being used by the Police Department for evidence storage, gun cleaning and parking of the police vehicles (See A18). By moving this into a new area adjacent to the Police Department, the DPW can use it for their vehicle maintenance and storage. A cold storage takes up the remaining area. By building a new cold storage area by the salt storage shed (See A19), adding a break room, a new restroom and a storage area the DPW can fully utilize the building







A5.



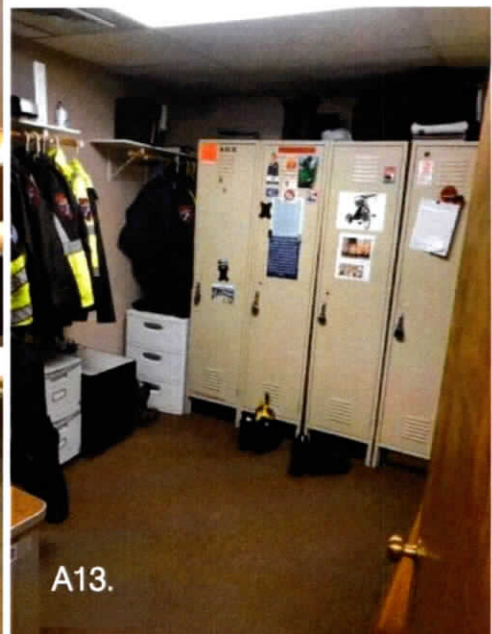
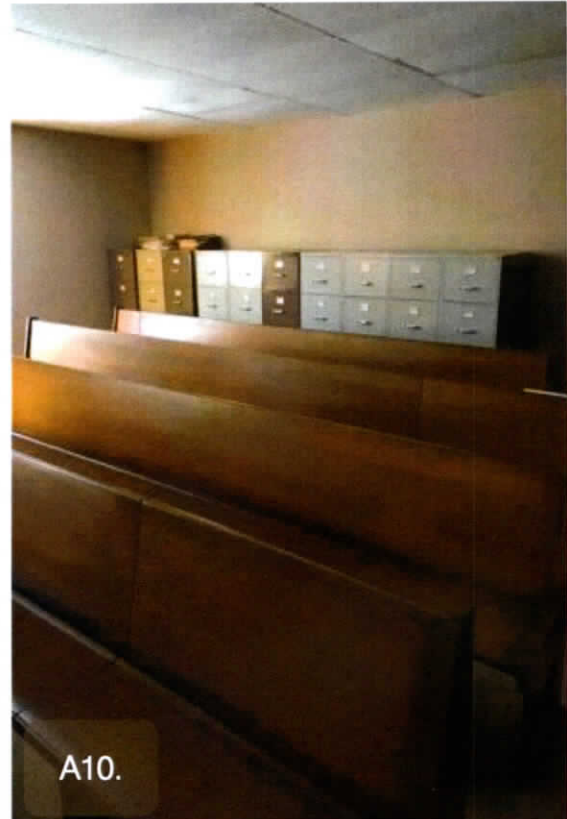
A6.

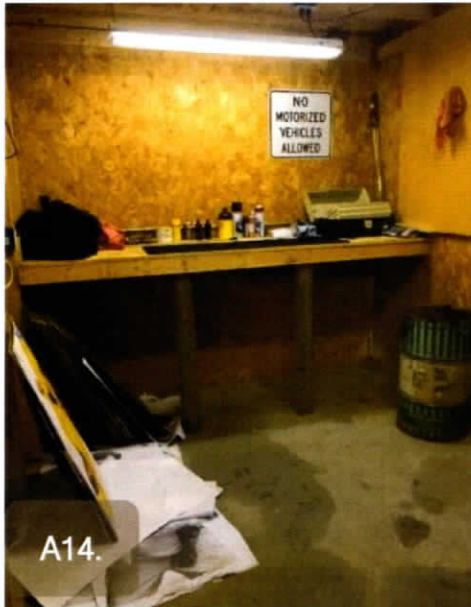


A7.

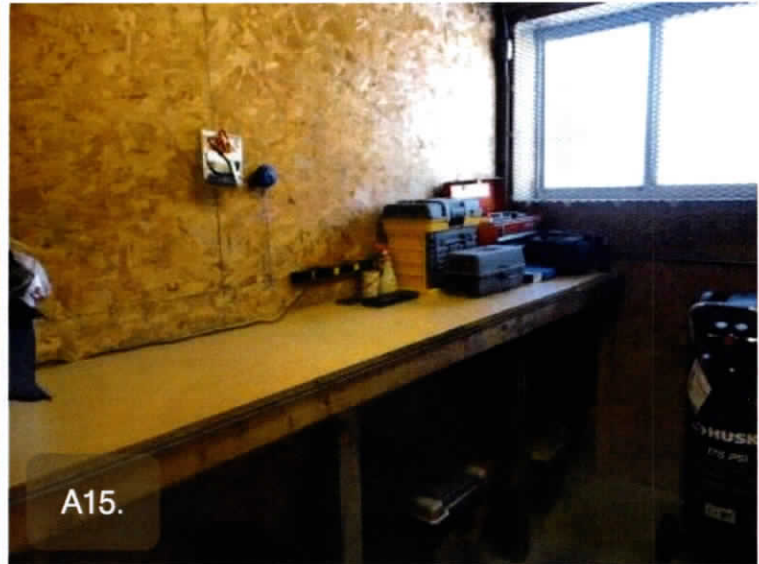


A8.

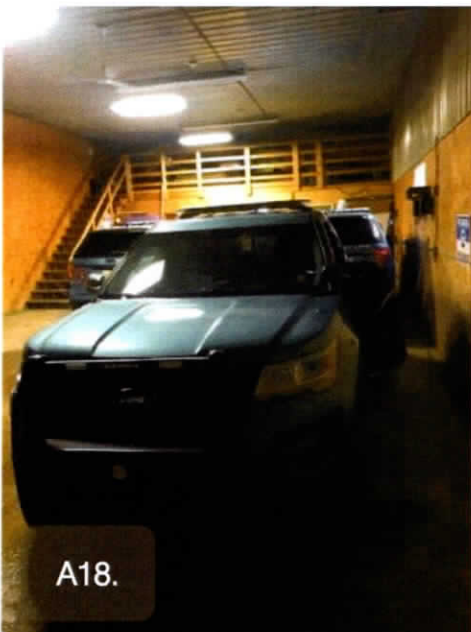




A14.



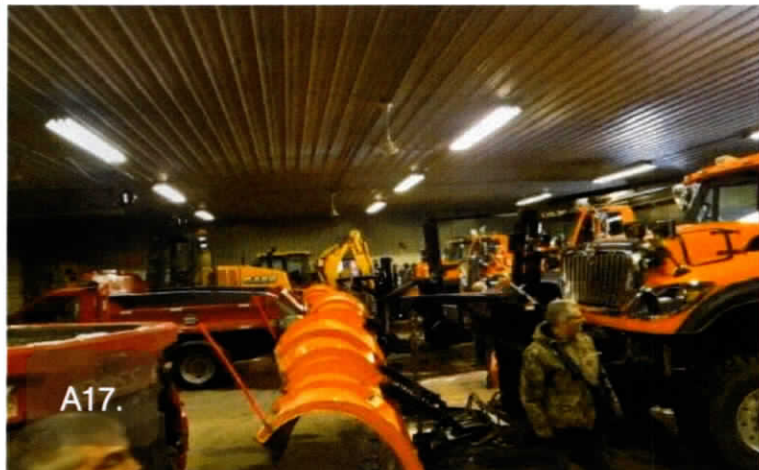
A15.



A18.



A16.



A17.



A19.

Fire Protection

Observation

No wet fire protection coverage present.

Plumbing

General

The plumbing systems infrastructure is primarily original to the building with various system modifications over the years to fixtures, drain lines and site private sewage treatment system.

Utility Infrastructure

Water Distribution

Observations

Domestic water supply is supplied by a private well system serving the hall and municipal building (See P37, P38).

Sanitary Sewer

Observations

System is a below ground private waste treatment system serving the hall and municipal building (See P31).

Town Hall Building

Interior Plumbing Systems

Observations

Waste and water piping is original to building with renovations and upgrades to system where required to keep it functioning.

Interior Domestic Water Distribution System

Observations

System is a mixture of galvanized and copper water piping (See P8, P15, P21, P22, P24, P25, P37, P38, P39). Galvanized piping is original to the building. Modifications and repairs have been made to the system to keep it functioning. Some piping has been abandon in walls (See P1, P12, P26). Hangers are missing and are not code compliant at various locations (See P13, P14, P19, P21, P22, P39). System hot water is supplied by an electric 6 gal water heater (See P19). Well casing located at lower level indicates water damage at floor level (See P37, P38).

Assessment

System is functional with original cast iron and galvanized piping that has reached its life expectancy.

Water quality needs to be checked for fixture and piping maximum life expectancy.

Lower level ground water needs to be addressed to prevent damage to fixture located in lower level.

Hot water heater and piping needs to be checked due to hot water supply volume issues.

Recommendations

Remove all abandon piping.

Replace all water piping with new material.

Install water treatment system.

Insulate all water piping.

Repair foundation drainage to stop water intrusion at lower level.

Properly hang and fasten water piping per Wisconsin state code and manufacture requirements.

Provide service sink style fixture for building maintenance and cleaning.

Interior Sanitary Drainage System

Observations

Piping is a mixture of cast iron, galvanized and PVC. Cast Iron and galvanized is original to the building (See P6, P8, P10, P11, P24, P25, P26, P29, P30). Piping has been replaced or repaired at various locations.

Assessment

Original piping has signs of leakage and has reached its life expectancy (See P6). Newer installed piping due to plumbing renovations or repair has missing hangers (See P6, P10, P11).

Local waste piping isn't installed code complaint (See P24, P30).

Recommendations

Replace all waste piping with in new PVC piping.

Properly install hangers on all waste piping.

Properly install local waste receptor and local waste piping.

Plumbing Fixtures

Observations

Plumbing fixtures have been replaced or renovated to meet current needs. Most of the fixtures are not ADA compliant or water conserving to current standards. Various fixtures have been removed with some exposed uncapped piping. Unknown if waste and water piping is disconnected from waste system and or abandon in walls. Possible foundation water leakage at lower level causes lower level fixtures exposed to water damage.

Water Closets

Water Closets are constructed of vitreous china, are floor mount tank type (See P35 & P36).

Urinal

Urinal is constructed of vitreous china, floor set type with a manual flush valve converted from a tank type washdown flushing type (See P27& P15).

Lavatories

Lavatories are constructed of vitreous wall hung china and integral counter mounted top with manually operated faucets (See P23 & P40).

Assessment

The existing plumbing fixtures are in average condition and functional. The majority of the plumbing fixtures in the building are not ADA compliant. The current faucets do not meet current code stands of 100% lead free materials or current water conservation standards.

Recommendations

Replace water closets and urinals with water conserving and ADA models.

Replace faucets with lead free water conserving type and ADA models.

Replace lavatories with ADA type (See P40).

Add floor set service sink for general building cleaning.

Provide ADA fixtures were required for code compliance.

DPW Building

Interior Plumbing Systems

Waste and water piping is original to building. Systems are supplied from Town Hall private well and private waste systems.

Interior Domestic Water Distribution System

Observations

System is copper water piping and appears to be sized properly. Domestic hot water is supplied by a 50 gallon electric water heater.

Assessment

System is functional with no observed leaks and appears to be operational.

Hangers are missing and are not code compliant at various locations.

Hose reel used for vehicle cleaning and general wash down in vehicle storage area is connected to the laundry tray sink. The type of connection is not code compliant.

Recommendations

Insulate all water piping (See P.13, P35).

Properly hang and fasten water piping per Wisconsin code and manufacture requirements (See P35).

Provide floor set service sink style fixture for building maintenance and cleaning.

Properly connect hose reel with code compliant water connection (See P16, P17, P18).

Interior Sanitary Drainage System

Observations

Piping is original with the building construction and PVC material. Building has catch basins for floor drainage in vehicle storage areas.

Assessment

Floor area drainage may need to be addresses to prevent water on floor in vehicle storage areas (See P3, P4, P5, P41).

Better oil containment needs to be addressed to prevent oil from entering the drain system (See P28).

Code compliant oil containment needs to be determined for in ground private waste drain system connection.

Recommendations

Install more drains or trench drains to collect water on floor areas (See P4, P5, P41).

Repair broken cleanout at vehicle storage area by catch basin (See P3).

Plumbing Fixtures

Observations

Plumbing fixtures are operational and in fair to poor condition.

Water Closets

Water Closets are constructed of vitreous china, are floor mount, manual flush valve operated (See P35).

Laundry Tubs

Laundry tubs are used as lavatories and general use sinks. Fixtures are not ADA compliant. Fixtures are in poor condition (See P32, P34). Laundry tub in police storage area has hose connection with hose reel to spout. (See P16, P17, P18, P32).

Assessment

The existing plumbing fixtures are in average to poor condition and functional. The majority of the plumbing fixtures in the building are not ADA compliant or water conserving. The current faucets do not meet current code stands of 100% lead free materials. Current hose/reel connection to LT faucet spout is not a code compliant connection.

Recommendations

Replace water closet with water conserving models.

Replace faucets with lead free water conserving type.

Replace faucets with water conserving and lead free models.

Add floor set service sinks for general cleaning purposes.

Add code compliant hose reel water connection (See P32).

Install ADA compliant lavatory fixtures where required.

Compressed Air System

Observations

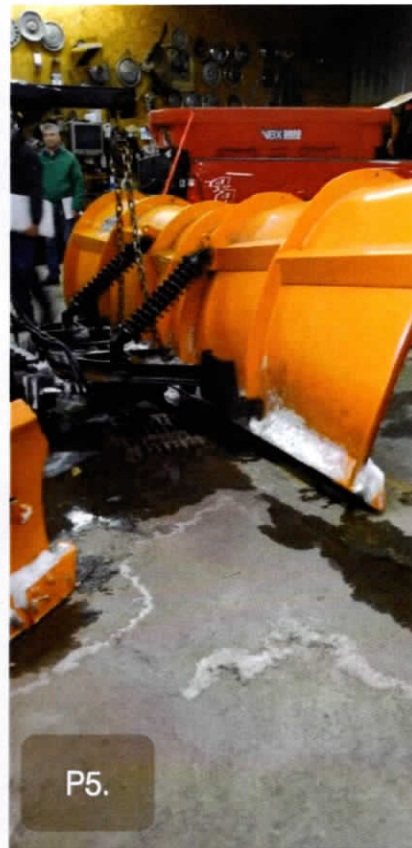
Air system is supplied by a 7.5 vertical air compressor with flexible air hose (See P2).

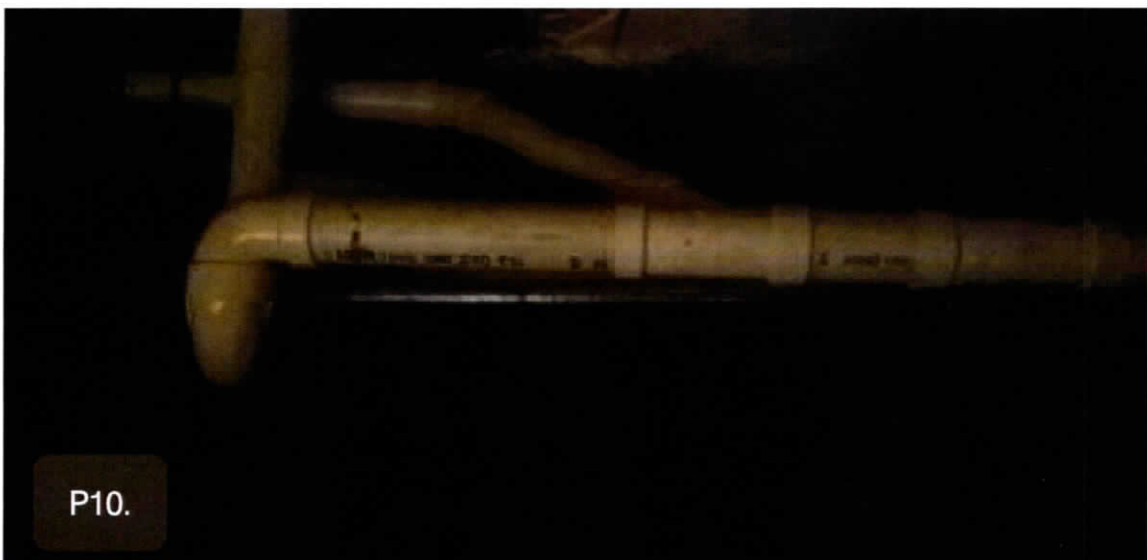
Assessment

System is functional with limited extended use reach locations.

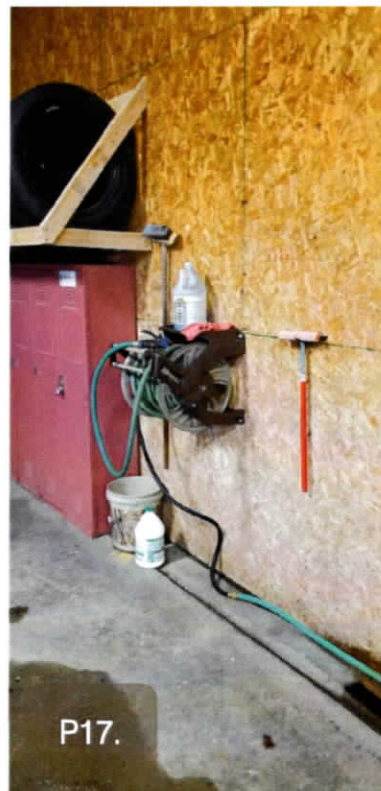
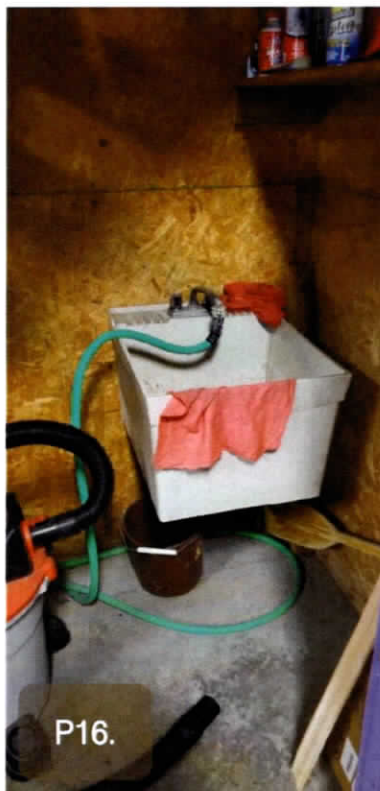
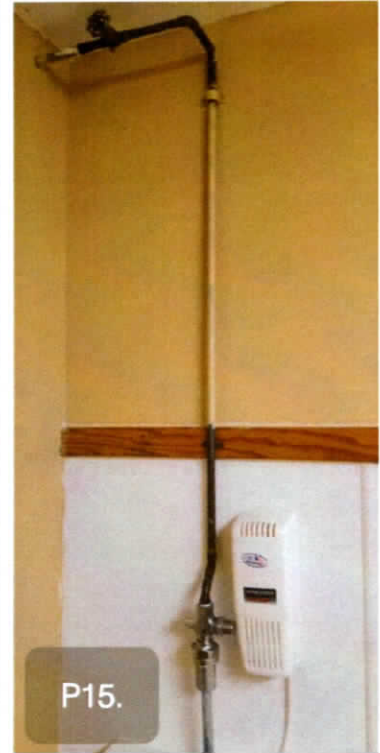
Recommendations

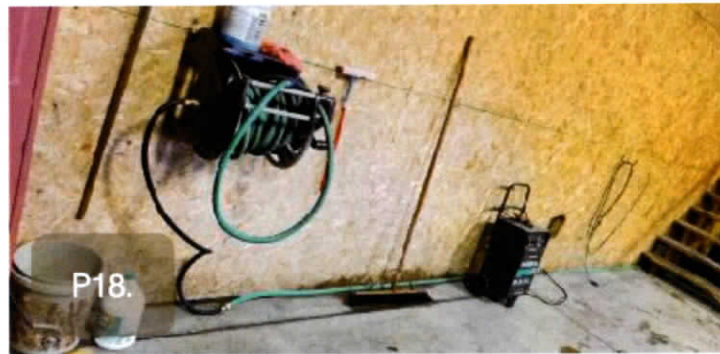
Recommend locating hose reels at owner agreed locations and a hard piped system to serve the hose reels.



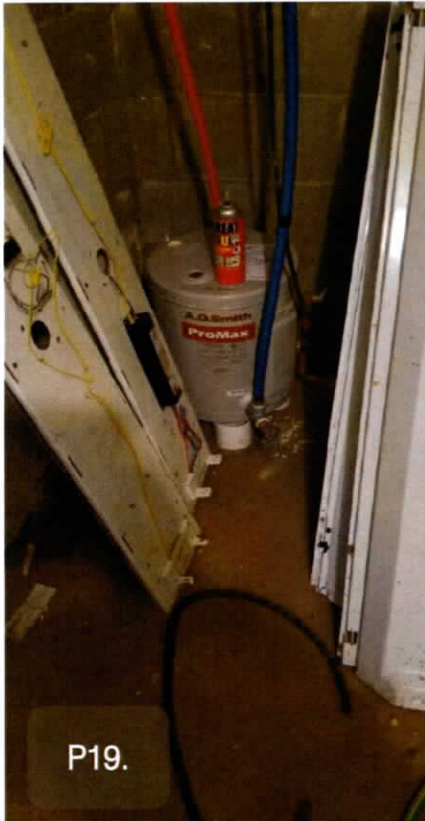








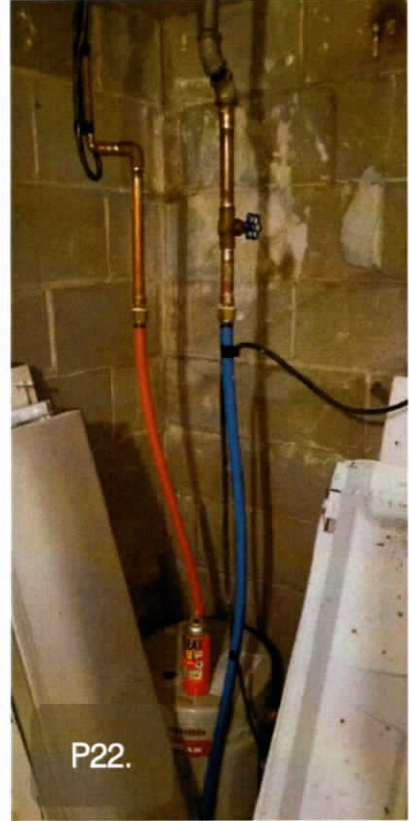
P18.



P19.



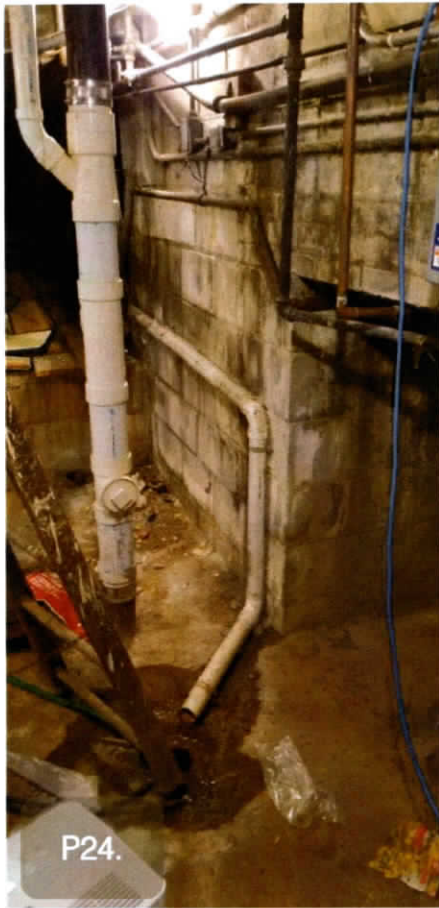
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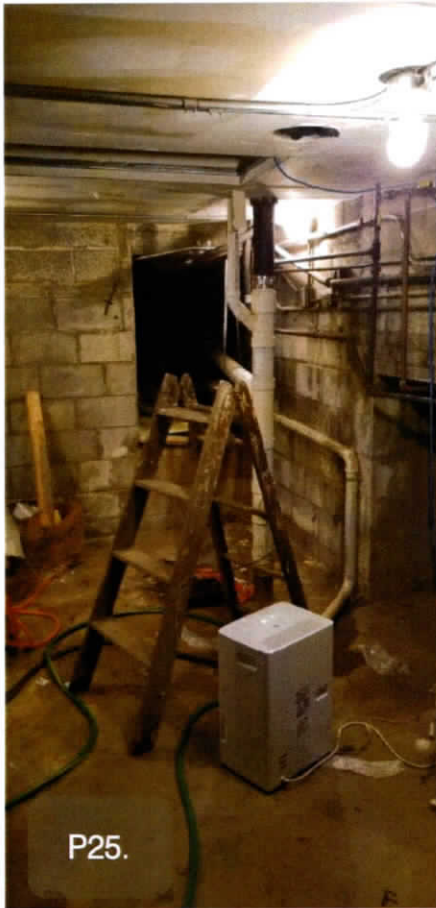
P22.



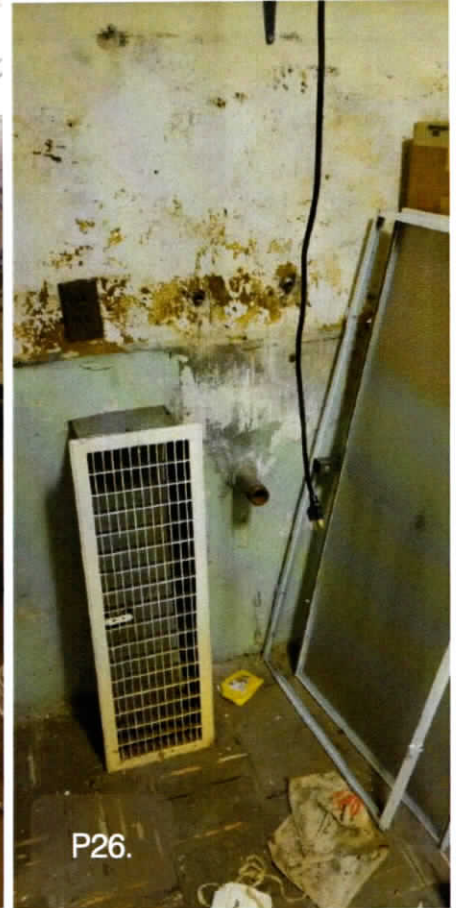
P23.



P24.



P25.



P26.



P27.



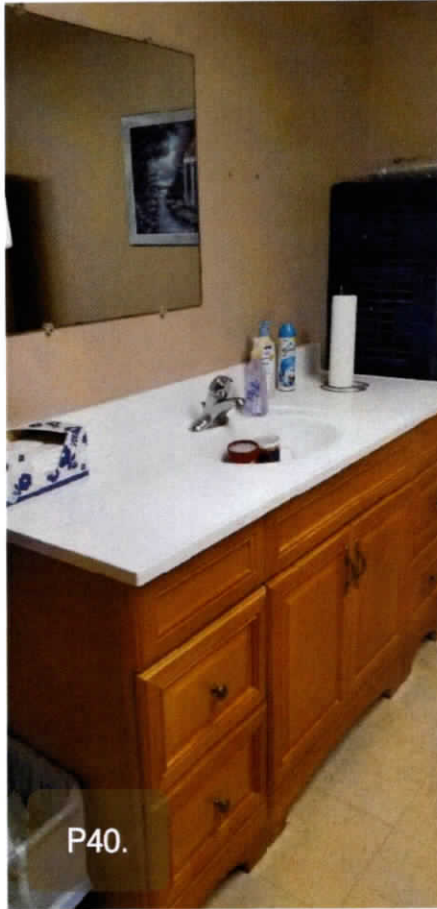
P28.



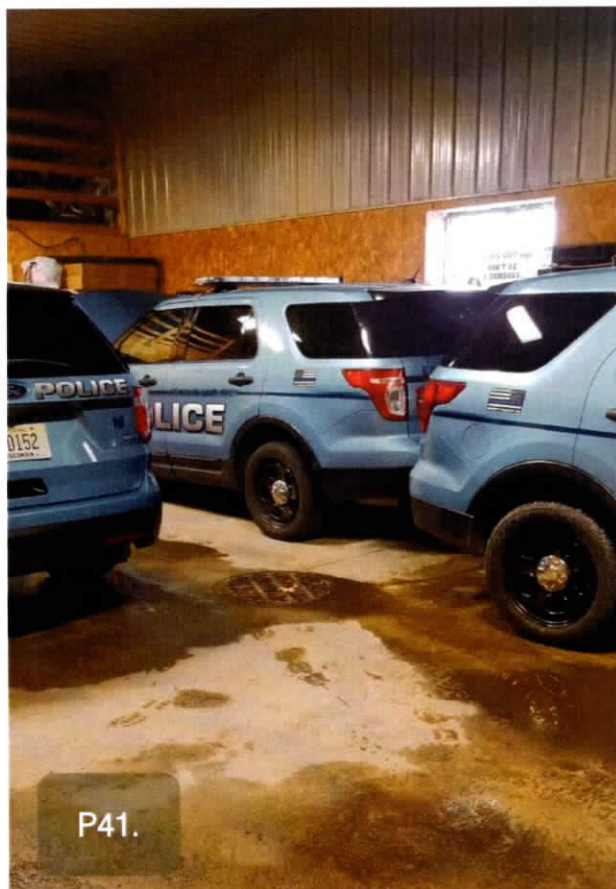




P39.



P40.



P41.

Heating, Ventilating, and Air Conditioning (HVAC)

Commercial Furnaces

Observations

The Heating, Ventilating, and Air Conditioning system was reconfigured in 1985 when the building was last renovated (See M1. and M2.). The system is comprised of three gas-fired furnaces that provide heating to the building. The furnaces also have corresponding air cooled condensing units on grade adjacent to the main entrance. The furnaces and corresponding equipment were last replaced in 2006.

Assessment

The heating and cooling provided by the furnaces is reportedly inadequate by multiple members of the staff. Multiple electric space heaters (See M3.) are spread throughout the building including in the crawl space to prevent pipes from freezing. The building barely survived the 2019 polar vortex event due to these supplemental heating devices. Equipment is nearing end of estimated service life and replacement should be scheduled in the future.

Recommendations

Perform assessment of building envelope losses to ensure equipment is accurately sized. Any changes to the building envelope to better seal the building against infiltration and improve thermal resistance (better windows, wall insulation, etc.) would reduce need to upsize equipment. Verify and update duct sizes as necessary. Provide supplemental heaters near building exits. Replace existing furnaces with new sized to meet calculated envelope losses.



Electrical

General

The electrical systems infrastructure is primarily original to the building with various upgrades/modifications over the years.

Normal Power Distribution System

Observations

Much of the electrical distribution equipment is 1950's vintage. The building is served by a 200A, 120/240V single phase service. However, there are remnants of switches, outlets and (probably) wiring which are decades older. Branch circuit panels are located in the lower and upper levels which serve lighting and receptacle loads as well as other equipment. The main distribution panel (MDP) has water lines above which could potentially cause a major disruption. The building does not have an emergency generator instead it utilizes emergency battery units and battery operated exit signs for egress. (See E1. and E2.)

Throughout the facility, open junction boxes and improperly supported raceways were visible. Highly recommend enclosing these boxes to avoid someone from accidentally electrocuting themselves.

In the garage, there didn't appear to be GFI protection on the receptacles.

Assessment

Overall, the existing distribution system seemed to be functioning and visually appear to be structurally sound. There were a few areas, that the branch circuit wiring from these panels needed attention. (See E3. and E4.) Proper electrical clearances were not present above the main distribution panel.

Recommendations

We recommended replacing the existing electrical infrastructure including any branch circuits that are improperly installed or not structurally sound. A new location for the MDP will be needed unless overhead piping gets relocated. Depending on the future plans for this building, the current service size may need to be increased to accommodate additional load.

Recommend replacing existing receptacles with GFI type. Also, the non-metallic 12/2 cable attached to the raceway system should be replaced and supported with listed supporting devices.

Lighting

Observations

A combination of incandescent, compact fluorescent, T12 and T8 lamps were observed throughout the facility. Ballast failure may be experienced sooner than later due to the age of light fixtures. In general, current controls were on/off which currently don't meet current codes. Egress lighting was also deficient in most areas. (See E5. and E6.)

Assessment

Lighting throughout the facility was dated and needed replacement.

Recommendations

We recommended replacing all lighting with newer technology such as LED. Foot-candle levels based on the IES should be implemented in each space. Automatic shut-off controls should be implemented as required by the new energy codes.

Fire Alarm

Observations

Some fire alarm related life safety components exist, however, they are not all interconnected and do not meet modern codes. Fire Alarm 120V smoke detectors and carbon monoxide alarms were seen in various locations. (See E7.)

Assessment

A proper fire alarm system for this type of building was not in place.

Recommendations

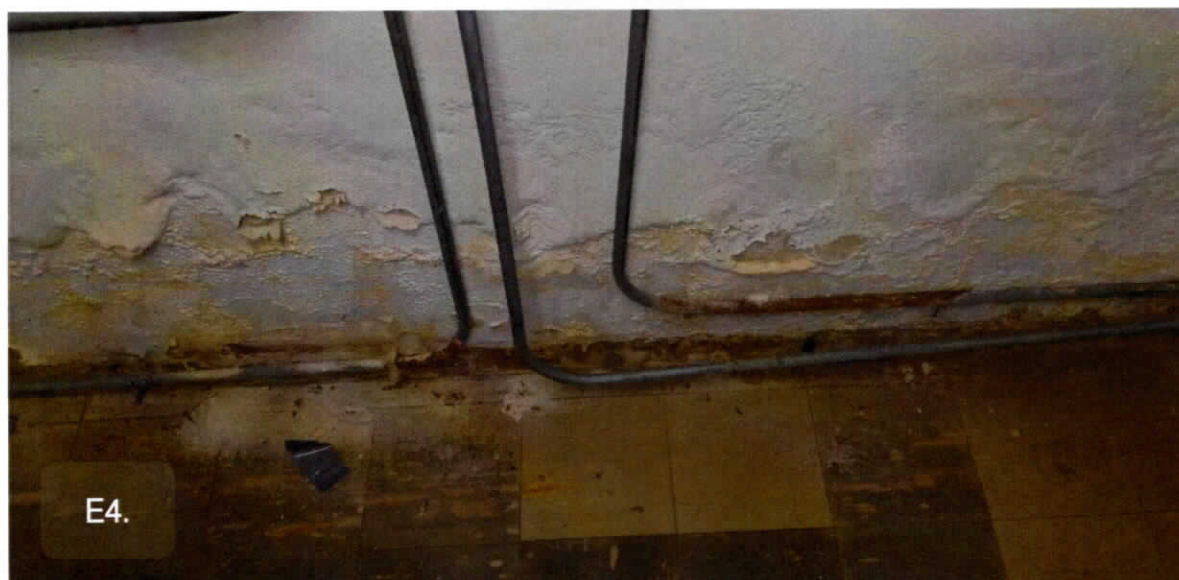
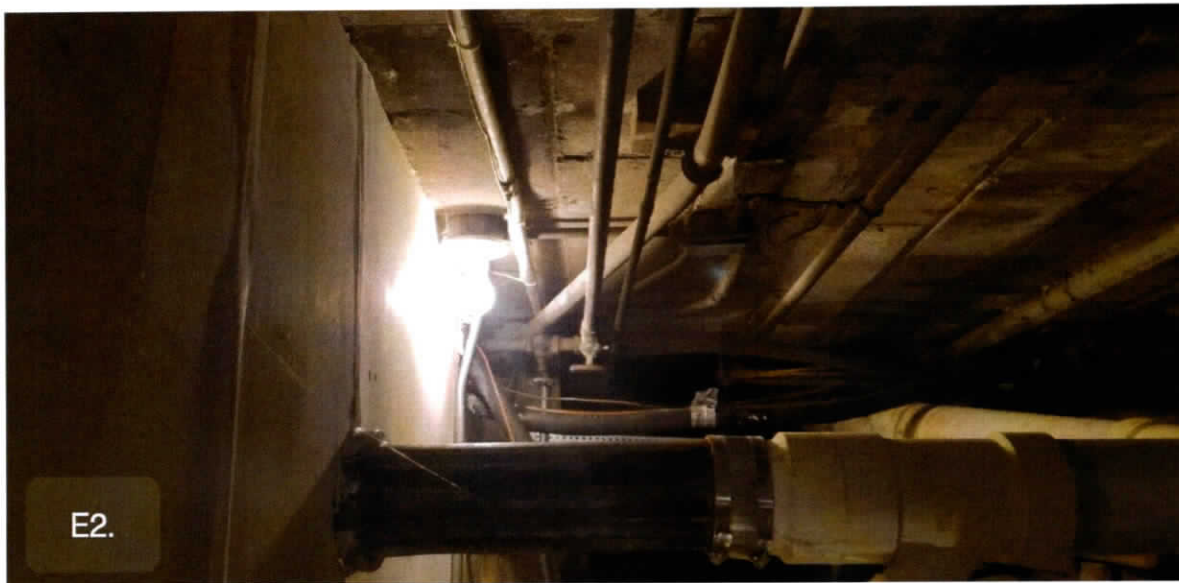
We recommended installing an addressable fire alarm system. Audible and visible device placement shall be per NFPA 72.

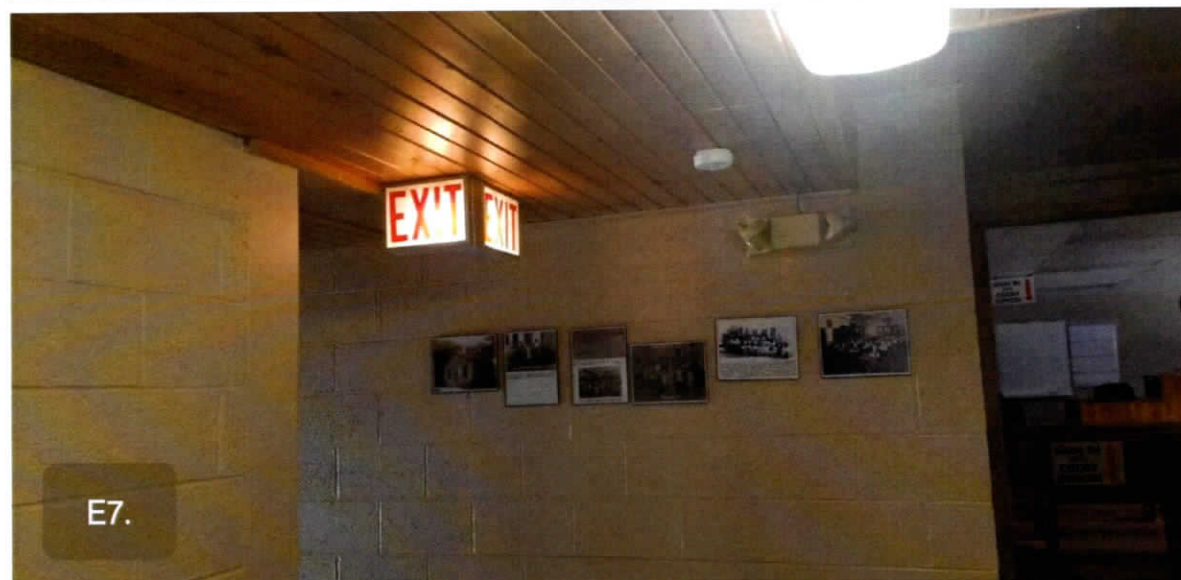
Other Systems

There doesn't appear to be an overall security system that provides access control and surveillance throughout the building. The City should consider installing these systems at some point to protect employees and property.

The main IT equipment is located in the basement area. It didn't have dedicated room conditioned room. The cable management for this equipment lacked organization and should be considered for troubleshooting purposes.







Conclusion

The current Town Hall building structure is in fair condition for its age. However, there are some significant issues which are limiting the building from functioning to its fullest extent. The building is not fully ADA accessible and would need a significant cost commitment impacting all areas of the building. The various departments lack the necessary space to function properly in the current footprint. Certain departments and areas also lack proper security, most notably the Police Department.

The building is undersized to accommodate its purpose of serving the needs of the Town. Adding on to or constructing a new building is the most viable method to accomplish all the needed basic spatial needs required. A building addition would still require significant upgrades to the existing portion of the building, most notably accessibility, mechanical and spatial upgrades.

During the course of the project, Zimmerman interviewed department heads and the Town Chairman. Information was shared regarding current operations and spatial needs, as well as information regarding the building's condition. Zimmerman assembled a space needs study to help determine an appropriate building need. In Exhibit A, it was determined that a fully functioning building for all services except Public Works and Fire Department would require about 17,800 square feet of space. As an attempt to understand this size from a cost perspective, similar buildings of this type would cost between \$175-\$240 per square foot. This equates to construction budget of \$3,115,000 to \$4,272,000.

Zimmerman appreciates the opportunity to help the Town of East Troy evaluate its building conditions and make recommendations based on today's best practices. We feel that the current building fails to provide adequate space, adequate accessible provisions and adequate security for the township and recommend building replacement. Such replacement would be a significant investment, but would these deficiencies and become significantly more efficient, which would validate the long term investment.

Attachment A – Space Summary List / City Hall

East Troy Space Needs Analysis				
Space List Summary - City Hall			Zimmerman Architectural Studios, Inc.	
3/12/2019			Project No. 180146.01	
Space	Quantity	Proposed Square Footage	Extended Sq. Ft.	Remarks
Administration				
Vestibule	1	70	70	
Lobby/ Waiting	1	200	200	
Reception	1	300	300	1 workstation + 200 sq. ft open files area
Offices	2	120	240	
Building Inspector's Office	1	175	175	
Break Room	1	175	175	
Toilets	2	125	250	
Subtotal			1,410	
Meeting				
Board Room	1	3,000	3,000	
Court Room	1	2,000	2,000	
Conference	1	200	200	shared between TH & Court
Subtotal			5,200	
Court				
Chambers	1	200	200	
Clerk's Office	1	120	120	
Subtotal			320	
Public Works				
Director's office	1	120	120	
Subtotal			120	
Police				
Chief's Office	1	250	250	
Sergeants Office	1	120	120	
Squad Room	1	300	300	3 desks
Interview Room	1	120	120	
Locker Room	1	250	250	
IT Room	1	100	100	
Booking Room	1	300	300	
Sallyport	1	600	600	
Garage	1	2,500	2,500	
Weapons/ Cleaning	1	120	120	
Storage	1	600	600	
Evidence	1	1,200	1,200	
Roll Call/ Break	1	600	600	
Child Crimes	1	120	120	
Subtotal			7,180	
Subtotal All Groups			14,230	
Circulation Gross Up @ 25%			3,558	
TOTAL AREA			17,788	