Dewberry

Facility Assessment Report



Decatur Fire Department

City of Decatur, Illinois Final Report: February 22, 2016

SUBMITTED BY:

Dewberry 401 SW Water Street Peoria, Illinois 61602 309.282.8000

SUBMITTED TO:

City of Decatur 1 Gary K. Anderson Plaza Decatur, IL 62523 217.424.2801

TABLE OF CONTENTS

Table of Concerns	т	a	bl	e	of	Со	nte	nts
-------------------	---	---	----	---	----	----	-----	-----

Executive Summary
General Summary of Existing Conditions0-
Existing Building Conditions Assessments
Fire Station #1 – Headquarters 1-
Structural Systems 1-
Mechanical Systems 1-
Electrical Systems 1-
Plumbing Systems 1-0
Technology Systems 1-8
Building Envelope 1-0
Architectural Finishes 1-10
Site Paving and Drainage 1-2:
Vertical Conveyance System & Accessibility 1-2
Summary of Station #1 1-24
Opinion of Probable Cost 1-2
Fire Station #2 – Training Facility 2-
Structural Systems 2-
Mechanical Systems 2-:
Electrical Systems
Plumbing Systems
Technology Systems
Building Envelope 2-
Architectural Finishes 2-1
Site Paving and Drainage 2-1
Accessibility 2-1
Summary of Station #2
Opinion of Probable Cost 2-1
Fire Station #3 3-
Structural Systems
Mechanical Systems
Electrical Systems

	Plumbing Systems	-6
	Technology Systems	-6
	Building Envelope	5-7
	Architectural Finishes	10
	Site Paving and Drainage	12
	Accessibility	13
	Summary of Station #3 3-	13
	Opinion of Probable Cost	14
Fir	e Station #4 4	-1
	Structural Systems 4	ļ −1
	Mechanical Systems 4	-3
	Electrical Systems 4	-4
	Plumbing Systems 4	-6
	Technology Systems 4	-6
	Building Envelope 4	ŀ-7
	Architectural Finishes	10
	Site Paving and Drainage 4-	14
	Accessibility 4-	14
	Summary of Station #4 4-	15
	Opinion of Probable Cost 4-	16
Fir	e Station #5 5	i-1
	Structural Systems 5	j -1
	Mechanical Systems 5	-3
	Electrical Systems	-3
	Plumbing Systems	5-5
	Technology Systems	;-6
	Building Envelope	5- 7
	Architectural Finishes	10
	Site Paving and Drainage 5-	13
	Accessibility 5-	14
	Summary of Station #5 5-	15
	Opinion of Probable Cost 5-	16
Fir	e Station #66	i-1
	Structural Systems 6	5-1

Executive Summary

BACKGROUND

The City of Decatur Fire Department is divided into seven (7) fire station districts throughout the City of Decatur, Illinois. These seven (7) districts have fire stations with buildings of various size and age; serving unique functions for the Fire Department. Due to the age of these facilities, the department has experienced general maintenance issues with the building systems as well as maintenence issues with water infiltration that have been reoccuring since the buildings were constructed. As a result, significant system replacements and building repairs may be necessary for the continued functional use of these facilities.



Figure #i Fire Station #1 - Head Quarters: South Elevation

In addition to physical conditions of the facility, the City of Decatur also understands that the nature of services provided by the fire department is ever changing with technology and scopes of service.

Finally, the demographics of the City of Decatur has changed from the time these fire stations were built. The organization and operations of the fire department services requires evaluation in order to determine if the current facilities and locations provide the functional requirements to serve the City of Decatur.

Therefore the City of Decatur contacted Dewberry Architects to perform a facility conditions and needs assessment for the Fire Department to facilitate future planning and budgeting.

FACILITY CONDITIONS ASSESSMENT

Evaluation of Existing Conditions

The evaluation of existing conditions began with a general walk through some of the facilities with Fire Chief Jeff Abbott, Battalion Chief Mike McGeehon, and Dewberry Architects to determine the scope of the facility conditions and needs assessment. A team of Architects and Engineers then performed a visual survey and assessment of the seven (7) fire station sites and associated facilities to document the conditions of the major building structural systems, mechanical systems, electrical systems, plumbing systems, exterior envelope, interior finishes, and site paving and drainage. All relevant and available documents and drawings were provided to Dewberry for review to assist in the assessment.

Sections 0-7 of this document provide a summary of the existing conditions and specific issues of concern observed for each fire station facility as well as a recommendation for improvement or corrective action. At the end of each section a budget summary is provided for these recommended improvements and corrective actions.

Opinion of Probable Costs and Analysis

After the evaluation of the existing conditions, an analysis of the facilities conditions assessment for each fire station for an opinion of probable cost. The analysis will include a spreadsheet of each issue which is accompanied with a description, priority, and an associated cost for corrective action.

Recommended Action

The final part of the report provides a breakdown or priority ranking of the facilities for recommended action. The rankings will be based on the current condition of the facility, the age of the facility, a general relative comparison to modern fire station, and the cost for recommendations and corrective work relative to the size of the facility. Consideration is also given to location of the station relative to service area as well as the nature of the current site.

General Summary of Existing Conditions General

The City of Decatur Fire Department consists of seven (7) fire station facilities of various size and function. The following are the fire stations broken down into different section and the date of assumed construction:

FIRE STATION #1: HEADQUARTERS – BUILT 1994 FIRE STATION #2: TRAINING FACILITY – BUILT 1975 FIRE STATION #3 – BUILT 1927 FIRE STATION #4 – BUILT 1962 FIRE STATION #5 – BUILT 1962 FIRE STATION #6 – BUILT 1966 FIRE STATION #7: AIRPORT – BUILT 1970

STRUCTURAL SYSTEMS General

The structural elements of each facility were assessed through a general walk through with visual observations. The condition of the structure was judged depending on the condition of the structural system overall. Each structural system within the building is noted and assessed whether it appears to meet the functionality expectation as determined from experience and code requirements. Specific conditions and issues are discussed and may include a recommendation. In some instances, the element may warrant a recommendation for repair based upon external factors such as settlement. There are also instances where water infiltration or general use has damaged elements requiring repair.

Recommendations

All structural elements and systems were surveyed and are noted within the report. Recommendations will be based on experience, building code, importance, and the overall condition of the structural element or system.

MECHANICAL SYSTEMS General

The fire stations are equipped with heating and air conditioning systems with either the rooftop mounted air handling units or units installed in a mechanical room with direct expansion electric cooling and gas fired heating furnaces. The kitchen hoods are exhausted (FS-1) through roof mounted up-blast exhaust fans and the restrooms are exhausted either with rooftop mushroom type fans or ceiling installed fans.

The condition of mechanical systems at each station depends upon the type and size of the system, age of the system, and the operation & maintenance of the systems. All HVAC systems installed on Fire Stations #2 to #7 are standard efficiency equipment, and not very energy efficient relative to current standards.

146 NO.	M0061.40.	509141.90.	SPACE USAGE	T-STAT LOCATION	CONDITION BY MS. INSP.	TEAR BUILT/MSTD	CURRENT UNIT
0944.	0-C15H3	1049062534	SOUTH MAIN HILLINGY	SOUTH MAIN HAIL/MAY	6000	2010	\$3600 ×
679-2	9-00183	1049009274	CONM. & CONF. BAL	COMM & CONF. RM.	6000	2010	\$7500 ×
eTp-3	714006043	1044121586	AGED MAIN MILL	NORTH MAARINALL	6000	2912	\$5,300 +
RTU-6A	PHOEP283	0.049049434	eloin	NTO 4N	6000	2014	\$2500+
672-48	19403483	1049000776	(DAT ROOM)	OVY ROOM	6000	3008	\$5500 +
870-5	794006063	[040236948	DORMFORT	ocess/losy	6000	3004	36.300 ×
870-81	79401308.3	[1401118218.	BASEMENT EAST SIDE	50.514/RMAT	6000	3004	20000 ×
AUX .	FE308	A/A	UPBLAST	AL REPORT EXHAUSE	FAR	7163	\$1350*
A0A -	Ficks	4/4	UPBLAST		FAR	2003	\$1300*
•	NTU S THROU DO YEARS OF D	CHARU-S-COST 258F2CURE AVX	IS ONLY THE UNIT COST, NO I SAME.	NETHILATION COST IS INCL.	IOEO AL UNITS I	AND MORE THE	
•	CURRENT REP	LICEMENT COV	INCLUDES TIORS, FREIGHT,	AND INSTRUMPTIONS			
	2ND FLOOR: N	OTCHER: CAREN	THRE SYSTEM HOOD, WILCOM	N & BUANER \$30VE, 2 BOW	L CONNECTOR	TEDELP SINKL	
	STAALISE ST	IFL COUNTERTO	P, GE UNDERCOUNTER DEMW	ASHER, A MICADAWAY, 3 R	EPROEALTOAS		
	EINNING ARE	ALL REFERENCES	TOR, 1 FREEZOR, 1 POPODINI N	ANCHINE, 1 COTTOE MAKER,	1 TUDY50%		

Figure #0-1 Example of mechanical equipment table.

Recommendations

Recommendations are based on industry standard life expectancy for the types of systems installed according to ASHRAE's (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) published materials. Other supporting information such as observations of current existing conditions and reports provided by the owner will also be considered.

ELECTRICAL SYSTEMS General

It should be noted that the condition of the electrical equipment is dependent on the location of installation. In most cases the major electrical equipment appears to be in good condition for its age. It does not appear that the interior equipment is subjected to high ambient temperatures which could shorten the equipment life. Building power demand is unknown, but there have been no reports of outages due to system overloads. Under loading of the system limits expansion/contraction of conductors at terminals which inturn leads to heating, arcing, and pitting of the conductors at the terminals which ultimately leads to system failures.

Per code, it is the recommendation of Dewberry Architects that all facilities have full emergency generator back-up as their operation has direct impact to public health and safety. Per this definition, the National Electrical Code in Article 708 requires that these facilities are to have Critical Power Operations Systems and the systems shall comply with the code. The recommended fuel source for the generators is natural gas. Per the National Electrical code Article 700 emergency generators shall not be solely dependent on a public utility gas system for their fuel supply, however an exception can be made if the authority having jurisdiction deems that there is a low probability of simultaneous failure from both the offsite fuel distribution system and power from the outside electrical utility. Chief Abbott has said that the single source is acceptable.

Recommendations

Recommendations for replacement life are based on many sources, including equipment manufacturers, our experience, government lists and times with broad general acceptance. Many times equipment can last much longer than listed, especially in ambient temperatures below their rating and when good preventative maintenance is provided. For purposes of our report we have used the standard published data and have not increased the life based on the conditions or maintenance.

PLUMBING SYSTEMS General

The condition of the building plumbing systems are varied throughout dependent upon the age of the facility and updates that have been made. The assessment is based on visual observations during a site visit and reports from the fire department.

The majority of the plumbing fixtures in the fire stations are dated and could be replaced, but are in working order. The plumbing equipment varies greatly in age from station to station. In most stations, the equipment appears to be in working order, however older equipment may be replaced in order to improve efficiency.

In several stations, cold water is not available while the hot water heater and circulating pump is functioning. A more thorough investigation may be required to determine whether this is due to equipment failure or to a cross connection between the lines.

Recommendations

Recommendations are based on experience, the nature of each condition, and general industry standards where applicable. In some instances plumbing fixtures are integral to architectural finishes, where this is the case they are to be considered with the system.

TECHNOLOGY SYSTEMS General

The condition and the use of technology systems is varied between each station. In most cases it is very basic in its function and application. Improvements to the structured cabling network and the Department's alert/alarm notification systems at each station would have a significant impact on the Department's desire to bring the operational performance of their facilities closer to that of modern day fire stations.

Low voltage improvements recommended for upgrade and modification include the structure cabling network and the station alert/alarm notification system. Structured cabling systems are no longer limited to supporting phone and computer. They have expanded to support wireless devices, system alerting systems, and virtually any network enabled device from tablets, to smart phones, building automation systems, audio/visual systems, security electronics, etc. Station alert systems have gone beyond traditional audible alarm notification to include visual display of data applicable to the alarm announcement as well as integration with software that tracks alarm events and the stations performance and response to those events.

BUILDING ENVELOPE General

A visual assessment was conducted of the exterior envelope at all seven (7) fire station locations and associated facilities from the ground level and on roof areas to determine the overall condition of the exterior wall and roof systems relative to water infiltration and physical condition of the system.

All of the fire station's exterior wall construction primarily consist of brick masonry veneer for the buildings. The condition and nature of the brick masonry is largely dependent on the age and era of which the building was constructed as some buildings are true cavity wall construction with an air space and others are constructed monolithically with the backup masonry. Therefore recommendations will vary from facility to facility. Other exterior wall construction present include exterior plaster stucco, wood siding, and metal panels.

The majority of the fire station roofs are low sloping (flat) roofs with single ply membranes that are in fair condition based on the age of the roofs. Other roof systems observed include ballasted built up asphalt roofs and a sloping architectural shingle roof. Most of the issues relating to roof leaks are a result of construction detailing around the perimeter of the roofs. The majority of the fire station entrances and window systems are anodized aluminum storefront systems with a few access or exit doors that are hollow metal doors and frames. There are various issues relating to these systems ranging from water infiltration due to detailing, deterioration of the systems from age and water damage, and air infiltration.

Recommendations

Recommendations for replacement life are based on experience and various industry standards for specific systems. Repair recommendation are based on standard detailing of the systems utilized. In many cases the extent of repair required and the cost associated with the repair may warrant the recommendation of replacing the system.

ARCHITECTURAL FINISHES General

The interior of each facility was assessed through a general walk through with visual observations. The condition of interior finishes is largely dependent on the age of the facility, however, in some instances the nature and location of the finish may warrant a recommendation for replacement. There are also instances where water infiltration or general use has damaged finishes requiring replacement or repair.

The typical finishes are subdivided into different areas and locations for this report. In each area or location the typical finishes have been described and assessed for the overall condition of the finishes. In some instances, specific conditions and issues will be addressed.

Recommendations

Recommendations will be based on experience and the overall condition of the finishes for each space. Functional issues will also receive recommendations.



SITE PAVING AND DRAINAGE General

Visual assessment of the site paving and site drainage was conducted. At each facility there is a combination of both asphalt paving and concrete paving for parking lots, access drives, and Apparatus Bay aprons.

Site drainage was limited to only visual observation of the surface conditions and relative grade elevations. Some facilities have significant grade elevation changes while other have very little grade elevation variation.

Recommendations

Recommendations are provided for site paving based on observed condition as well as the age of the paving. Site drainage recommendations are provided based on the specific issues observed.

ACCESSIBILITY General

No vertical conveyance systems were observed at any of the facilities.

The facilities were also reviewed for conformance to accessibility standards from both the Illinois Accessibility Code as well as the Americans with Disabilities Act. In most cases the facilities were constructed prior to the adoption of an accessibility code. Facilities are only required to conform to the accessibility requirements of the code that was in place at the time of construction. However, under both the current Illinois Accessibility Code 1997 and the Americans with Disabilities Act 2010 there are requirements for alterations of existing buildings. It should be noted that neither of the accessibility codes provide exceptions for fire station facility.

Illinois Accessibility Code 1997 Subpart F: Section 400.510 provides the minimum requirements for alterations. This section provides the different level of requirements depending on the extent of the 'alterations'. The likely applicable requirements are summarized as follows:

- No alteration can decrease or has the effect of degreasing accessibility below the requirements for new construction at the time.
- If alteration costs 15% or less of the reproduction cost of the facility, the following must comply with new construction requirements.

The element being altered.

0

- If alteration costs 15% to 50% of the reproduction cost of the facility and less than \$100,000. The following must comply with new construction requirements.
 - The element being altered; and
 - An entrance and a means of egress intended for use by the general public.
- (least likely) If alteration costs 15% to 50% of the reproduction cost of the facility and greater than \$100,000. The following must comply with new construction requirements.
 - The element being altered; and
 - An entrance and a means of egress intended for use by the general public.
 - The path from accessible entrance to element being altered.
 - At least one accessible toilet room for each sex or a unisex toilet, when permitted, if toilets are provided or required.
 - Accessible parking spaces, where parking is provided.
 - An accessible route from public sidewalks or from the accessible parking spaces, if provided, to an accessible entrance.

Americans with Disabilities Act 2010 Section 35.151 of 28 CFR Part 35 provides the requirements for alterations. The requirements are summarized as follows:

- The element of the facility altered shall be altered in such a manner that the element is readily accessible to and usable by individuals with disabilities.
- Path of travel from alteration that contains a 'primary function' to the exterior exit and approach, to the restrooms, and to the drinking fountains shall be altered in such a manner that the element is readily accessible to and usable by individuals with disabilities; unless the cost and scope of such

alterations is disproportionate to the cost of the overall alteration.

 Disproportionality is when the cost for alterations made to provide an accessible path of travel to the altered area exceeds 20% of the alteration of the 'primary function'.

While the requirements have been summarized, each condition and alteration should be reviewed with the accessibility codes to determine the full extent of their application.

Recommendations

Recommendations are based on the requirements of the Illinois Accessibility Code and the Americans with Disabilities Act.

Dewberry has attempted to provide additional comments within the recommendations.

STATION SUMMARY General

A summary of the general condition of the fire station facility will be provided at the end of each station section.

At the end of the report an overall assessment and recommendation summary will be provided that considers all of the stations.



Fire Station #1 – Headquarters Existing Conditions



Figure #1-1 Fire Station #1 & Public Safety: Front Entrance.

STRUCTURAL SYSTEMS General

Station #1 is a three-story building located within the city limits of Decatur, IL. The structure has a flat roof and a partial basement level on each side of the apparatus bay. The entrance level contains the administrative offices and conference room, storage, and the apparatus bay. The second floor extends over the administrative area and contains the living quarters and dormitory. A small hose tower exits at the core of the building. The basement level contains the storage and mechanical areas.

From original drawings, it is apparent the structure was constructed in 1994. If structural renovations are to be undertaken at this facility, the International Building Code 2009 would categorize the following criteria for structural renovations as such:

Occupancy Category: Ground Snow Load: IV 20 psf

Basic Wind Velocity:	90 mph
Wind Importance Factor:	1.15
Wind Exposure Category:	В
Seismic Importance Factor:	1.50
Mapped Spectral Response:	Ss = 0.28g , S1 = 0.11g

Utilizing the original construction documents in conjunction with information obtained from the site visit, the foundation of the facility could be verified. Conventional reinforced concrete foundation walls outline the exterior of the basement level and a reinforced concrete slab-on-grade provides the floor. Interior spread footings provide support for basement level columns. The administrative entrance and apparatus bay are constructed as slab-on-grades with 5" and 7" thickness respectively as indicated by the plans. A continuous reinforced concrete perimeter / frost wall and footing outline the balance of the building's perimeter where the basement level is not present.

The original construction documents detail the superstructure to be constructed as noted below. Basement level steel tube columns support wide flange structural steel girders. Twelve and fourteen inch deep steel bar joists provide support for the first floor over the basement level. Metal form deck and a 2 1/2" deep reinforced concrete floor sit atop the bar joists. Tube steel columns extend to the second floor to support wide flange structural steel girders and steel bar joists. Metal form deck and a 2 1/2" deep reinforced concrete floor sit atop the bar joists to form the second floor. Bearing walls are constructed of reinforced 8" nominal Concrete Masonry Units around the entire perimeter of the facility and in core openings and extend to the roof level. The third floor hose tower is constructed in the same fashion. The roof is supported by various types of steel bar joists (K series and LH series) and sit primarily on CMU bearing walls. The metal roof deck is 1 1/2" thick throughout. The 3 5/8" nominal brick exterior veneer is laid in running bond and is likely anchored to the CMU backup with veneer anchors.

The lateral force resisting system for the building could not be verified in field and is not explicitly stated in the construction documents. Given the structural system in



place, the CMU bearing walls are assumed to act as shear walls to resist the effects of winds and earthquakes.

Conditions Assessment

Overall, the structure is in good condition. The building slab is in good condition with the only noted damage to be a few cracked slabs in the apparatus bay. No noted heaving has occurred and the location suggests the damage is due to shrinkage. The structural steel framing and floor system was noted to be in good condition. The steel bar joists and roof deck were noted as being in good overall condition. There is one location of bar joist bridging along the eastern wall of the apparatus bay where the post-installed anchor pulled out of the CMU.



Figure #1-2 Vertical shrinkage cracking in mortar joints and through CMU.

Regarding the CMU walls, some horizontal and vertical cracking was noted at a partition wall in the service area but is not of concern. Some vertical cracking in the mortar joints in the apparatus bay bearing wall above a lintel bearing location. This cracking is suggestive of shrinkage due to inadequate control joints. Throughout the apparatus bay, there are some noted minor stair step cracks indicative of minor differential settlement. Minor differential settlement (inconsistent settlement) in structures can be common and is generally not a cause of concern.



Figure #1-3 Joist bridging anchor pulled from wall.

Recommendations

Dewberry recommends that visible cracks in the CMU should be sealed to prevent water intrusion. Dewberry also recommends that the anchorage of the joist bridging be repaired. This will ensure that the roof joists will be properly braced as originally designed. Visible cracks in the CMU should be sealed to prevent water intrusion.

MECHANICAL SYSTEMS General

The HVAC system is comprised of roof mounted packaged units with direct expansion (Dx) electric cooling and natural gas-fired heating, and couple of exhaust fans.



Figure #1-4 Rooftop Units, Dx Cooling, Gas Heating.

The following table shows existing roof mounted equipment and their particular information. the coils clean - (or sooner as required for cleaner air quality). The units also should be checked out for their damper operation for economizer function that saves energy by not having to run compressors when outdoor air temperature is around 55°F. The life of the thermostats is 5 to 8 years and need to make sure they are functioning according to their intended operation. And finally, once in a five year period, consider having the duct system professionally cleaned.

The listed exhaust fans do seem to have outlived their expected life and need to be replaced. In order to verify the correct amount of the exhaust air quantity from the exhaust fan serving the ventilation system of the kitchen and amount of make-up air required for operation of the kitchen hood, it is recommended that recent air balancing of the systems should be performed before selection and installation of the new exhaust fan and balance out with the unit serving kitchen (RTU-4A) and intake hood.

TAG NO.	MODEL NO.	SERIAL NO.	SPACE USAGE	T-STAT LOCATION	CONDITION BY VIS. INSP.	YEAR BUILT/INST'D	CURRENT UNIT							
RTU-1	YHC120E3	1049102131	LOBBY (SOUTH MAIN HALLWAY)	SOUTH MAIN HALLWAY	GOOD	2010	\$9600+							
RTU-2	YHC072E3	1049109271	1ST FLR BOARD ROOM (COMM. & CONF. RM)	COMM. & CONF. RM.	GOOD	2010	\$7500 +							
RTU-3	YHC050F3	124412168L	NORTH MAIN HALL	NORTH MAIN HALL	6000	2012	\$6200+							
RTU-4A	YHC072E3	104910919L	KITCHEN	KITCHEN	HEN 6000 201									
RTU-48	YHC048E3	1049100771	2ND FLOOR TV ROOM (DAY ROOM)	DAY ROOM	GOOD	2010	\$5500 +							
RTU-5	YHC060F3	14021034L	DORMITORY	TORY DORMITORY GOOD 2014										
RTU-81	YHC120E3	140111821L	BASEMENT EAST SIDE	SEMENT EAST SIDE SO. STAIRWAY GOOD 2014										
N/A	FX108	N/A	UPBLAST	U: KITCHEN EXHAUST	FAIR	19XX	\$1550*							
N/A	FX88	N/A	UPBLAST		FAIR	19XX	\$1500*							
*	RTU-1 THROU 10 YEARS OF U	GH RTU-S: COST USEFUL LIFE AVA	IS ONLY THE UNIT COST, NO LABLE.	INSTALLATION COST IS INCLU	JDED AS UNITS H	AVE MORE THAT	4							
•	CURRENT REP	LURRENT REPLACEMENT COST (INCLUDES TAXES, FREIGHT, AND INSTALLATION).												
	2ND FLOOR: N	KITCHEN: CAPTIVEAIRE SYSTEM HOOD, VULCAN & BURNER STOVE, 2 BOWLS STAINLESS STEEL DEEP SINKS,												
	STAINLESS ST	EEL COUNTERTO	P, GE UNDERCOUNTER DISH	WASHER, A MICROWAVE, 3 R	EFRISERATORS									
	DINNING ARE	A: 1 REFRIGERAT	OR, 1 FREEZER, 1 POPCORN	MACHINE, 1 COFFEE MAKER,	1 TELEVISION.									

Figure #1-5 Rooftop Units, Dx Cooling, Gas Heating.

Recommendations

DECATUR FIRE STATIONS:

All of the listed rooftop units are installed in the fiscal years as listed and seem to be in good condition. No immediate attention required for them other than regular periodic maintenance - such as bimonthly or quarterly filters and belts replacement, lubricating the moving parts and keeping It was observed that the gas piping on the roof is supported by 4"x4" wood blocks. Through past experience, Dewberry has seen these blocks deteriorate over time resulting in the pipe hanging over long distance without support. It is recommended that MIRO pipe supports – specifically made to support piping - should be used. Condensate drain pipes should also be fastened to the roof in similar fashion.





Figure #1-6 Roof top gas pipe supported by wood block.

Apparatus Bay CO exhaust and radiant heating systems are in good condition and current at the time of observation; with adequate upkeep, maintenance, and good repair, the systems should be expected to provide another 10 years of service.

Building Exhaust Fans

	EXHAUST FAN SCHEDULE													
TAG	ARGIY.	CSP (IN.	ORINE	ROOF	ILICIBLE .	AL OHAMA	CERNETCS	SCRES	MANUE.	MODEL	REMARKS	INSTALLED		
140.	0.00	was	86.7	Des la co	100		1150.00	(MAN)	Diam.	0.000		0011		
10-1	200	2.0	Bear .	201220	102	100	115(1990	4.10	1000	1000 100	1.1.7	1000		
11-2	1300	0.85	BELT	26.20 564	1000	4/4	2010 11:00	3.58	PEAN	PWX 2.08	44.4.4.4.9	2003		
0.5	6.75	0.25	BOLT	26.25 50	828	1.16	115/1/90	4.67	PEAN	TWO LOB	1.2.3	1993		
0-4	2020	9.0	PELI	1912-20	200	1.00	115(1/90	2.01	PINY	1008 220	1.6.9	1201		
11-5	300	0.0	10.0	36.25 10.	703	1/0	115(1/90	1.17	PEAN	PMX 228	1, 2, 3, 4	1993		
EP-6	4300	0.23	BELT	26.030	963	1	115/1/90	30.37	PEAN	PMX 188	1.2.3.4	1993		
07-7	205	0.14	OWNER	6.050	1550	0.00	1050,000	2.9	PENN	FMX 68	1.2.3.4	1993		
L/-0	275	0.185	DIRECT	1010.	1550	0.00	115/1/90	2.79	PENN	FMX BR	1,2,3,4	1993		
EP-9	3.70	6.2	ORICT	8.030	1300	0.03	115/1/90	2.45	PEAN	FMX 68	1,2,1,4	1993		
EL-10	230	0.134	OWNER	8.030	1554	0.00	115/1/90	2.53	PONN	TMOC 68	1.2.3.4	1993		
07-11	330	0.119	DIRECT	1050	1550	0.00	115(1/90	2.61	PENN	FMX BR	1.2.3.4	1553		
19-12	280	0.178	DIRECT	1.010.	1500	0.00	115/1/90	2.75	PENN	FMX DR.	1.2.3.4	1993		
EF-13	295	0.433	DIRECT	31.8.50	1550	0.1	113/1/80	3.88	PEAN	FMX 98	1.2.3.4	1993		
0'-14	150	0.25	OWNER	6.050	1550	0.00	1150,99	2.41	PINN	EMOC SR	1234	1993		
17-15	25000	8.5	BULT	61.5 50.	150	7-3/3	208/1/30	11.4	PINY	0400	1.2.3.4	1993		
EP-18	230	0.134	DIRECT	8.010	1550	0.03	111/1/10	2.38	PENN	FMX 68	1.2.1.4	1993		
RENAA	KS:													
1	PROVIDE	MCK DRA	/T DAMPI	18										
2	PROVIDE	PRETAB IN	DOT CURE											
	PROVIDE	DRESCRE	IN AND FA	AN GUARON										
	RECORDE	DOCONN	CT SWEET											
	1000000	NAMES OF	IR. BAUE											
	-	CARALE CO	Distance of the local		0.84									
	Pres West	CALCASE OF	2010/102	Con Albert	1000							_		

Figure #1-7 Typical Exhaust Fans Type and Capacity.

As per building's available drawings, the above scheduled exhaust fans have been installed in the year 1994. That makes these fans 22 years old. According to the ASHRAE published data, the life expectancy of this type of fans is 12 to 15 years. These fans have provided service for almost double of that.

Recommendations

For continued trouble free service in the future, Dewberry recommends these exhaust fans be replaced instead of further repairs.

Apparatus Bay Support Spaces

The apparatus bay support spaces including the locker rooms, workshops, storage rooms, and storage basement do not have any temperature conditioning for these spaces. The result is that these spaces do not have the full functionality intended.

Recommendations

To satisfy the temperature condition, it is recommended that these rooms be provided with indirect gas-fired ceiling hung unit heaters. Depending on the size of the spaces to be heated and design criteria, following chart is a general understanding of the capacities and performance of the heaters that can be provided.

M	odels	HD30	HD45	HD60	HD75	HD100	HD125
8tu/	Hr Input	30,000	45,000	60,000	75,000	100.000	125.000
8tu/H	r Output	24,000	36,000	48,000	60,000	80,000	100,000
Entering A	Arflow (CFM)	505	720	990	1,160	1,490	1,980
Outle	t Velocity	523	749	653	769	565	747
Air Tem	p. Rise (°₽)	44	46	45	48	50	47
Mounting H	leight (Max It.)	10	10	12	14	12	16
Heat T	hrow (ft.)	25	27	36	38	42	56
	Horsepower	1/15	1/15	1/12	1/12	1/12	1/8
Motor	RPM	1,550	1,550	1.625	1,625	1.050	1,550
Data	Туре	S.P.	S.P.	P.S.C.	P.S.C.	\$.P.	P.S.C.
	Amps	2.4	2.4	1.2	1.2	2.7	2.2
Unit To	dal Amps	3.7	3.7	2.5	2.5	4.7	4.2
Vent Conne	ector Size (in.)	3	3	3	3	4	4

Figure #1-8 Typical Space Heater Type and Capacity.

Further analysis and design calculations will be required to determine the appropriate mechanical solution to condition these spaces.

ELECTRICAL SYSTEMS Electrical Service and Main Distribution Equipment

This facility is served by an 800A, 120/208V, 3-phase, 4wire underground service from Ameren. The CT cabinet and meter are located outside with the 800A Main Disconnect located within the maintenance shop area.

The entire facility has emergency generator back-up through a 314KVA generator located in the main electrical room. The Generator is a Caterpillar 3306 Engine rated for 871A at 208 Volts. The generator has a 500 gallon diesel fuel belly tank that will provide 26 hours of run time at full load. The generator is serviced by Altorfer Power Systems in East Peoria, IL.

All major electrical equipment is located in the main electrical room except for the main service disconnect and panels B, C, and D. Due to the generator running in the main electrical room all surfaces are covered in an oily residue. All equipment should be wiped down to remove the oil. This may be sign of a loose connection in the exhaust line. Dewberry recommends further investigation on the condition of the exhaust system.

All equipment is original to the 1994 construction. It appears to be in good condition and should have another 10-15 years of useful life. All panels have spare capacity and it is assumed that the system peak demand load is not near the equipment rating. Additional study will be required to determine system capacity. All equipment is GE Spectra series which is still manufactured and readily available. New, compatible equipment will be available for the remaining life of the equipment.

Recommendations

Dewberry recommends that within the next year the system distribution components be thermally imaged to identify any impending damage before the damage occurs. Thermal imaging locates abnormally high resistance within systems that may be caused by under-sized conductors, loose connections, or excessive current flow which may cause abnormally high unwanted heating that results in dangerously hot electrical circuits. In some cases, components can become hot enough to melt. The automatic transfer switch, panels, and large disconnects should all be thermal tested. Dewberry estimates that an inspection and report of findings by a firm with expertise in thermal imaging will be approximately \$800.

A load study should be performed to determine the maximum demand load within the facility. For a service this size, peak load information should be available from the utility as their meter tracks this information.

There was no observed surge protection devices on any electrical equipment. Dewberry recommends that at a minimum a UL 1449, 3rd edition surge protection device be added to the main system disconnect, main distribution panel, and branch circuit panels. As equipment becomes microprocessor based it becomes more susceptible to power surges. Surge suppression devices will guard equipment against these conditions. A 60A, 3-pole circuit breaker will be required on the main panel, and 30A, 3-pole breaker will need to be installed in each branch circuit breaker for connection of the surge protection devices. The cost to add this equipment will be approximately \$10,000.

Within the next 15 years Dewberry recommends replacement of equipment installed in the original 1994 construction. Beyond the next 15 years it is assumed that the equipment will become a generation old and spare parts will become increasingly difficult to obtain.

Lighting and Controls

The majority of the lighting in the facility is linear fluorescent and has been modernized within the last two years from T12 to T8 fluorescent lamping. Existing fixtures remain, but the ballast and sockets have been replaced to accept the new lamps. Down lights throughout the facility are compact fluorescent bi-axial type. The majority of the lighting is still controlled via wall mounted snap switches. In select areas such as restrooms and storage spaces, ceiling or wall mounted occupancy sensing devices have been added to provide automatic control of light fixtures. Emergency Life Safety Egress lighting is provided throughout the facility by



emergency battery packs. The facility has only one emergency transfer switch, however the National Electrical Code requires separate transfer switches for life safety and non-life safety loads. By providing the emergency battery units it removes the requirement for the second transfer switch.

Recommendations

Any upgrades or additions to the facility would require compliance with the latest adopted Energy Conservation Code. Advanced automatic lighting control systems will need to be provided in all non-sleeping areas to automatically turn lights off. Additional daylight harvesting devices will need to be installed in code defined "daylight zones". Daylighting zones are defined areas around windows and skylights where lights within the zone are controlled by day light sensors. Dewberry recommends stand-alone, room based control options similar to Acuity nLight or equals by Eaton or Hubbell. Lights in secure areas or any area where automatic control could compromise safety may continue to be manually controlled. Upgraded controls to the latest energy efficiency code will cost approximately \$4,000.

It is recommended that in 15 years the fluorescent lighting be replaced in entirety. Can lights should be replaced with modern equivalent LED or the standard technology of the time. The benefits of LED over fluorescent fixtures is longer life, lower maintenance cost, lower operating costs, and superior control. Where the architectural narrative calls for ceiling replacement, it is recommended that the light fixtures be replaced at the same time.

Fire Alarm System

Currently, there is not a fire alarm system on site. There is an alarm bell in the equipment apparatus bay that operates when there is water flow in the sprinkler system. Residential style smoke detectors are provided in the sleeping areas for compliance with the IBC.

Recommendations

Per review of the International Building Code this type of facility would likely be a combination of B, R-2, and S-2. None of the conditions are met to require a fire alarm

system. Dewberry would recommend that existing smoke detectors within the facility be replaced with hard wired units with battery back-up. The new units shall utilize wireless technology to transmit alarm signals to all other units within the facility so that all units alarm when one unit detects smoke.

Arc Flash Labeling

In accord with NEC (National Electrical Code) and NESC (National Electrical Safety Code) electrical equipment shall be labeled to indicate the potential for Arc Flash Hazard and level of PPE (Personal Protective Equipment) used when maintaining or operating the equipment. All of the equipment in this facility do not include the required labels.

Recommendations

A study to perform the Arc Flash Hazard analysis is recommended to be performed immediately. The cost for this study and arc flash labeling would be approximately \$5000.

PLUMBING SYSTEMS Domestic Water System

There is a 4" combined domestic water and fire service main entering the building at the southwest corner of the basement which splits into a 4" fire service and a 2" domestic water service. The domestic water service has a 2" reduced pressure backflow preventer installed before the water meter.

The domestic water is heated by 2 domestic water heaters. On the second floor the gas fired domestic water heater WH-1 is a State, model SBF100 260 NETI, 260 MBH installed in 1993. This heater does not have a corresponding circulating pump, expansion tank or thermostatic mixing valve and serves the east side of the building. On the first floor the gas fired domestic water heater WH-2 is a Bradford White, model MI75S6BN, 76 MBH. This heater has a corresponding hot water recirculation pump and a master thermostatic mixing valve. This heater does not have a corresponding expansion tank and serves the west side of the building. The station contains four sump pumps and two sewage ejector pumps all located in the basement. The Apparatus Bay drains drain through a triple basin oil interceptor before entering the sanitary sewer system.



Figure #1-9 Station #1 toilet room urinals.

Urinals and toilets are vitreous china, wall mounted and manufactured by American Standard with Sloan manual flush valves. Lavatories are vitreous china, counter mounted and manufactured by Kohler with manual faucets. Sinks are stainless steel single and double bowl counter mounted with manual faucets. All fixtures appear to be in working order. Water pressure is low at most of the stations fixtures, particularly while equipment is being tested.

The sanitary sewer in the basement has drainage issues due to insufficient slope at the foundation wall invert leaving the building. The remaining PVC section of pipe at the foundation wall appears to be at an incline creating a low point at the connection between the cast iron pipe and PVC pipe.



Figure #1-10 Sanitary Sewer line in basement of Station #1.

The kitchen is mostly a residential set up, but does utilize some commercial equipment. The sink in the kitchen drains slowly which is believed to be a result of grease build up from the absence of a grease trap interceptor.

Recommendations

Dewberry recommends that a master thermostatic mixing valve be added at WH-1, expansion tanks be added to both WH-1 and WH-2 and WH-1 be replaced. Dewberry recommends that a flow test be done to verify water pressure and evaluate if a domestic water booster system is required. Dewberry recommends to have the sanitary sewer system televised to confirm the condition and pitch of the pipe in the basement. Based upon visual observation of existing conditions, Dewberry believes that the sanitary sewer pipe in the basement will need to be replaced and re-routed to accommodate minimum required slope of 1/8" per 1'-0" to the foundation wall invert leaving the building.

In addition to this, it is recommended that a grease trap interceptor be installed after the kitchen drain and the existing drain pipes from the kitchen to the basement be cleaned with a rotor cleaning service.

Fire Protection System

The fire service has a 4" double check detector backflow preventer. The valves on the backflow preventer are provided with tamper switches. The fire riser includes a pressure gauge, which reads 110 psi; a drain valve which is piped to a floor drain and a flow switch. There is a check valve on the pipe that serves the fire department connection. The fire department connection is a Siamese type. The entire building is provided with fire sprinklers.

Recommendations

None.



TECHNOLOGY SYSTEMS Structured Cabling

In its present state, the structured cabling system meets the basic operational needs of the department. Hardwired drops are present where they are needed, but there are limited spare drops that prevent support of future systems. Much of the existing structured cabling system has been installed in phases over time and done so in a haphazard manner. The installation does not meet current industry standards and most likely was not tested for performance. As a result, it's questionable whether the cabling system is performing to its optimum level, or if it meets a manufacturer's warranty for performance. Staff also expressed difficulty in identifying active network cable versus cable for other systems or even abandoned cable.

Support of an upgraded wireless LAN is needed. The current wireless LAN is basic in nature and is shared by both emergency systems and personal use by the staff.

Recommendations

It is recommended that the existing cabling system be replaced with a standards compliant Category 6 performance grade system. In addition to an immediate improvement of the cosmetic nature of the existing installation, replacement of the cabling system would result in:

- A standards based installation that has been tested for performance.
- A centralized location for termination and housing of head end electronics for emergency systems.
- Identified cabling that is clearly labeled.

In addition to replacement of the existing cabling, provisions should be made for support of future network based devices for signage, displays and other devices integral to station alert and notification systems.

It is also recommended that a wireless survey of each building be performed to identify preferred locations of wireless access points. It was noted that internet services is provided via broadband from the local cable provider. Should the City extend its fiber optic network to include each fire station, each station would benefit not only from direct access to City networks, but also shared use of the City's internet service provider. It is also strongly suggested that the Department work with the City's IT department to develop partitioned networks that separate emergency system network traffic from personal use. Unless otherwise noted, it is assumed that cellular coverage is sufficient throughout all facilities and that no supporting antenna systems are required for amplification of cellular service.

Station Alert and Alarm Notification

The existing station alert system is very basic in nature and is limited to tone and alarm only.

Recommendations

Modifications and upgrades are recommended resulting in both audible and visual notification methods. Modern computer aided dispatch systems utilize a variety of signaling devices including LED signage and large format wall displays, in addition to traditional audible announcements. Providing visual representation of the alert provides additional direction and input that a simple audible alarm lacks.

Station paging systems should be evaluated on a case by case basis. Performance of the systems should be evaluated to confirm:

- Consistency in coverage of each station
- Clear audible reproduction.
- Sound pressure levels sufficient to overcome the ambient sound levels of each space.

In addition to evaluation of each system, consideration of the acoustics of each space should also be evaluated. When needed, architectural modification should be made to minimize unwanted reflections that would otherwise deter the quality of reproduced sound.

Additional Considerations

As noted above, centralization of emergency system electronics is recommended. In addition to providing a secure location for this equipment, dedicated emergency power can be provided that utilizes uninterruptable power supplies and generator backup.

Consideration should also be given to future enhancements to building security including access control/alarm monitoring and closed circuit television monitoring and recording. In addition to securing these valuable properties, electronic systems can be used to simplify staff access to the facility, control and monitor secure locations such as pharmaceutical and equipment storage, and provide a visual record of events in key areas such as the apparatus bay, entrances to the facility, etc.

BUILDING ENVELOPE Exterior Walls

Exterior walls consist of modular and custom shaped brick veneer cavity wall construction with reinforced concrete masonry unit (CMU) back up wall according to the drawings provided by the fire department.

Masonry cavity construction is dependent upon adequate drainage of the air cavity space. While much of the existing construction has sufficient detailing to drain the cavity, there were some visible issues and evidence of issues apparent.



Figure #1-11 Grade covering weeps at base of wall.

The existing wall construction shows consistent weep hole placement at the base of the wall throughout the facility, however there were a few locations where grade was covering the base course of brick and the weep holes. There were also a few locations were weep holes were not provided.



Figure #1-12 Weep holes filled with sealant.

Weep holes are visible at lintels above windows in most locations. However, as a result of some major leaks in the 2nd floor kitchen, many of the weeps have been filled with sealant which were assumed to be the source. From observations, the leaks are likely from another condition and the weep holes should not be filled.

In many locations, the base of the wall and at lintels indicate thru wall flashing without a drip edge. However at roof to wall transitions, there is not visible thru wall flashing in the cavity wall system to prevent water in the cavity from entering the interior of the building. There is only surface mount counter flashing with sealant.



Figure #1-13 Roof to Wall transition condition at Station #1. No thru wall flashing at brick cavity wall construction.



Typically at this condition, thru wall flashing with a drip edge integrates with a 2-piece counter flashing covering roof terminations for a consistent drainage path. These conditions correspond directly with evidence of severe leaks in the interior spaces below. Particularly around the 2nd floor kitchen.

A similar issue is also seen at the tall parapet wall at the main entrance to the building. On the interior there is consistent evidence of efflorescence on the exposed masonry on the interior that extends through the roof as a parapet.



Figure #1-14 Tall parapet wall condition at Station #1. No thru wall flashing at roof termination provided.

The tall parapet wall functions as an aesthetic element for the entrance with a specific purpose in keeping the masonry above the roof line visible. However, the roof detail only provides a surface mount counter flashing into the masonry and a sheet metal coping cap, leaving roughly 42" of masonry wall exposed to absorb water and allow water infiltration into the building. The absorbed water into the masonry is the cause of the efflorescence on the interior.

In a few locations on the north side of the building, there is discoloration or a darkening of the masonry indicating the presence of water absorbed into the masonry that is unable to escape through the cavity. Based on drawings provided, a mortar net or means of preventing the mortar from creating water dams in the cavity were not provided which can result in water accumulating in the cavity.



Figure #1-15 Saturated brick masonry is evidence of water in cavity unable to escape.

While there are a number of expansion joints in the brick masonry throughout, they are missing from some key recommended locations according to published standards for masonry detailing. Clay brick masonry units expand and contract year round from cold and hot temperatures. The lack of masonry expansion joints at building corners, openings, and long lengths of walls will result in cracking over the course of time. These cracks start in mortar joints, but can also carry through the brick. Cracks as a result of expansion and contraction were not observed at the locations where expansion joints are missing.

Ends of roof coping capes that terminate into masonry do not have thru wall flashing condition. The joint is simply a bead of sealant or upturned leg with fasteners and sealant. This condition does not provide a means for water to exit before entering the interior.



Figure #1-16 Wall coping cap termination at adjacent wall.

The basement is experiencing water infiltration whenever there is significant rain fall. From the information provided by the occupants and pictures taken during a rain fall event, water infiltrates into the basement at any foundation wall penetration where it is an exterior wall, at beam and bar joist pockets at the top of the foundation walls, and some other locations along the top of the wall. There doesn't appear to be as much water infiltration where the foundation wall isn't a floor joist bearing wall and the joists run parallel to the wall. However this could also indicate water is collecting elsewhere. It seems clear that the main source of the water infiltration is coming from the brick veneer cavity wall system.



Figure #1-17 Water infiltration into basement.



Figure #1-18 Base of wall, no drip edge and open weeps.

It should be noted that the base thru wall flashing was specified to be asphalt coated copper fabric flashing. Visual observations on site could not explicitly confirm this, but there were a few locations where what could be seen appear to confirm this type of flashing. It also should be noted that the base thru wall flashing does not extend to the exterior of the brick and a stainless steel drip edge was not provided. Finally the cavity wall system doesn't appear to be detailed or specified to have a mortar net system to prevent mortar from collecting at the thru wall flashing. Thru wall flashing conditions above windows and lintels likely have similar issues. As a result of the detailing and products specified, these are potential issues that might be the cause or contribute to the water infiltration into the basement:

- Asphalt coated copper fabric is a somewhat difficult product to work with in the field when installing. It tends not to be flexible enough like a true fabric or membrane, but not rigid enough to maintain its shape during installation. The result is that sealing lap joints and sealing the flashing to the foundation or drip edge is difficult if not done carefully. The seals are done with a mastic that can be pulled apart when the flashing doesn't want to maintain its shape. It is also possible that the sealing with mastic wasn't completed at all. This results in the possibility of water and moisture in the cavity wall to bypass the thru wall flashing through the lap joints or from underneath between the flashing and the foundation wall.
- Asphalt coated copper fabric flashing was typically stripped, cut, or held back from projecting to the exterior. The reason was aesthetics driven as the fabric doesn't look appealing and when taken all the way to the exterior the asphalt would be exposed to the heat of the sun, resulting in staining the brick. Since the flashing was held back from the edge of the foundation or face of the brick, there is the potential that water exiting the cavity can seep back under the flashing before it gets to the exterior.
- Mortar nets are typically used at the base of the cavity where there is thru wall flashing. The purpose of the mortar net is to prevent mortar droppings from collecting at the base of the cavity which ultimately block weeps and trap moisture in the cavity wall. When water is trapped in the cavity it follows the least path of resistance which in some cases is into gaps, holes, and failed seals of the flashing system.
- Finally, the beam and joist pockets extend under the CMU block wall and get close to the cavity. If water is by passing the flashing in the cavity, it

would most likely manifest itself in the beam and joist pockets.

These are some other considerations to be given in regard to the basement water infiltration:

- The foundation wall was treated with a damp proofing system on the exterior and the project specification explicitly states that it is <u>not a</u> <u>waterproofing system</u>. Damp proofing systems typically do not have the ability to protect cracks formed in the foundation wall after damp proofing was applied. They do not have the elasticity to expand or move when the crack occurs. Basement foundation walls should receive a waterproofing system due to the high levels of hydrostatic pressure from ground water and during rain fall events. It does not appear this is the source of the current water infiltration, but should not be excluded as a possibility and should be expected in the future.
- Another consideration is that in a couple locations the pavement adjacent to the foundation wall has settled which results in the inability to divert water away. Recommendations to correct these locations are found in the site drainage and paving section.
- There is significant water infiltration through foundation wall penetrations where the electrical service enters the building on the north side.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the exterior wall masonry.

- Regrade where soil covers weep holes and provide weep holes in locations where they have been omitted.
- 2) Remove sealant from weep holes and along lintel above kitchen storefront system.
- At roof to wall transitions, remove 24" of masonry above roof termination and install thru wall flashing, mortar net, and drip edge w/ weeps at 24" o.c.. Provide 2-piece counter flashing system over roof membrane termination.
- At tall parapet wall at building entrance, install thru wall flashing above the roof termination that is

continuous through the wall with drip edge on each side. Provide 2-piece counter flashing over roof membrane termination. This will likely require removing and reinstalling the parapet. Install new parapet coping cap with secondary membrane/flashing below coping to protect top of masonry.

- 5) At north side of building where brick shows evidence of retaining water, drill holes in mortar at base of wall to relieve any water that might be retained in cavity.
- 6) The current placement of masonry expansion joints on the facility appear to be controlling cracking and therefore additional expansion joints may not be as critical to prevention of cracking. To ensure prevention of any cracking, it is recommended to cut expansion joints into brick veneer at corners of building, lintels above openings, or where lengths of wall exceed 40'-50' where the building does not currently have expansion joints.
- 7) Rework coping cap terminations into masonry by providing a thru wall flashing piece that integrates with the coping cap, counter flashing, and roof membrane.
- Investigate base of cavity wall thru wall flashing system by removing some portion of the masonry to inspect and confirm the source of water infiltration.
 - a. Assuming a failure in the thru wall flashing system. Remove 24" of brick masonry at base of cavity wall and potentially at lintels and other thru wall flashing locations. Install new thru wall flashing system with stainless steel pan drip edge and reinstall brick masonry.
- Provide water proofing system when water is infiltrating foundation wall through cracking and/or control joints. Two options:
 - a. Excavate perimeter of foundation walls and install a fluid applied or sheet applied waterproofing membrane with drainage mat. Back fill with drainage rock and filter fabric.
 - i. This would not provide protection where the exterior side

of foundation wall is below Apparatus Bay due to inability to access it.

- b. Apply crystalline water proofing system to interior side of foundation wall which integrates with foundation wall to create a water proofing barrier.
- 10) Determine the nature of the water infiltration. At exterior side of foundation wall, excavate to penetrations. Determine condition of damp proofing and flashing. Wrap new membrane flashing around conduit penetrations and flash against foundation wall. Or install Linkseal system at each penetration through the wall.

Roofing

Roofs were replaced in 2007 with a Firestone single ply black EPDM membrane roof. The installed system has a warranty of 30 years. Over all the condition of the roof is in good condition with no visible signs of ponding.

From the interior there was visible evidence of roof leaks at the exterior wall as water stains are present on the ceiling tile and on the walls in the office area as well as the apparatus bay and support spaces. After review of the existing drawings, re-roofing drawings, existing conditions, and feedback from the occupants, it is presumed that the leak issues have been resolved since the re-roof. The existing drawings did not detail the roof membrane to extend and lap over the exterior parapet walls, however the re-roof drawings indicate that this was corrected by lapping the membrane over the parapet and covered with a sheet metal coping cap.



Figure #1-19 Roof membrane laps up parapet wall and under coping cap.

Where exterior doors exit onto the roof or roof patio deck, the roof termination does not wrap and return into the door jamb. Likewise the sill of the door is less than 8" above the roof and the membrane does not terminate under the door sill. This is a potential spot for water infiltration.



Figure #1-20 Exposed masonry at door jamb of second floor patio of Station #1.

Roof patio deck guard rails are rusting and need to be refinished and repainted with epoxy based primer and paint.



Figure #1-21 Roof patio.

It is typically recommended that the roof membrane flash a minimum of 8" up walls. The hose tower floor is approximately the same elevation of the roof membrane elevation. The door to the roof does not allow any space for membrane flashing and the flashing is not returned into the opening. This condition is a potential leak issue from rain as well as snow drifting.

Other roof related issues were covered under the exterior wall section.





Figure #1-22 Door from hose tower onto roof. Exposed masonry and insufficient roof flashing height.

The following is a summary of recommended corrective actions for the issues pertaining to the roofing systems.

- Verify roof membrane was lapped over exterior parapet walls by removing sections of coping cap.
- 2) In conjunction with thru wall flashing work of masonry, return roof membrane flashing into exterior door jambs and door sill. This likely will require removal/replacement of exterior doors and jambs.
- 3) Refinish and repaint roof patio deck guard rail.
- 4) Re-work hose tower door opening to allow for membrane flashing termination to be consistent height at a minimum of 8". Counter flashing would return into door sill. The revised condition would create a curb that requires stepping over onto the roof. This work should be done in conjunction with roof and masonry flashing described in different section.

Windows and Entrance Systems

All exterior window glazing systems are anodized aluminum storefront including main entrances into the facility. Secondary and egress exit doors are hollow metal doors and frames.

The storefront systems have issues depending on the locations of these units. Generally where window sills are elevated off the ground or floor line, there is evidence of water damage to plastic laminate sills on the interior side. Further investigation is likely required to determine the exact cause of the water damage. The potential causes include the following:

- Despite specifications indicating thermally broken storefront system, it is possible that the systems installed were not thermally broken, including the sill pan flashing. The result would be condensation is building up on the interior side of the sill. At door location the exterior and interior sides of the storefront seemed to be same or similar temperature when touched (cold) which suggests cold transfer is taking place within the system.
- 2) Despite drawings indicating sill plan flashing, it is possible that sill pan flashing was not installed in all locations (some locations where sill was removed, the sill pan was visible). Without sill pan flashing, water is able divert into the wall or back to the interior.
- 3) Storefront systems drain through the vertical mullions down to the sill and then weeped out to the exterior. It appears that most of the sills were caulked/sealed without any ability to weep. Causing water to back flow to the interior.



Figure #1-23 Storefront windows at sleeping quarters. No apparent sill pan flashing extending to edge of brick & evidence of sealant at window sill preventing weeping.



Figure #1-24 Sill flashing provided and extends beyond masonry. Evidence of sealant at window sill preventing weeping.

Sill pan flashing was not installed at the base of the storefront systems that sit on the foundation wall at the floor line. Sill pan flashing is highly recommended.



Figure #1-25 Missing sill pan flashing at base of storefront.

Perimeter sealant joints are failing at windows and doors. Much of the perimeter sealant has lost adhesion and is cracking.



Figure #1-26 Failed perimeter sealant.

Some hollow metal doors and frames are rusting or beginning to rust at the base of the doors and jambs.



Figure #1-27 Base of door and frame rusting.

Exterior door weather stripping and gasketing should be replaced as gaps are visible at many locations.

At numerous locations, the glass in entrances and doors do not have safety label and do not appear to match rating of the door.

Compliant hardware was missing from rated door openings in rated assemblies. Closers were missing and/or latching devices were missing/removed. Smoke seals were not provided around rated assembly. Many rated doors (required to be self-closing) were being held open with wedges or other means.

Four (4) of the apparatus bay overhead doors are missing the safety sensors at base of door.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the windows and entrance systems.

 Investigate storefront installation at a single location by the following: Perform hose stream test to check for leaks, remove glass from system to determine if storefront is thermally broken, and remove storefront framing system to determine if



sill pan is installed and if sill pan is thermally broken.

- a. Replace storefront system if not thermally broken.
- b. Install sill pan flashing if not provided, replace if not thermally broken.
- c. Be sure that all storefront joints are sealed and installed according to manufacturer's instructions and no leaks are present during hose stream test, provide weep holes in sealant if no path for weeps is available.
- d. It's likely the best value for corrective action is to replace storefront system.
 Which allows correcting any inherent problems with the rough opening and then installing a storefront system with the appropriate detail and components.
- 2) Install sill pan flashing at base of full height storefront.
- 3) Replace all perimeter sealant at openings.
- Replace hollow metal doors and frames that are rusting at base.
- 5) Replace all weather stripping at jambs, heads, and double door stiles. Install door sweeps. Install head shield at hollow metal frames.
- Replace glass in doors and entrances that do not have safety glass label or do not match the rated label of the opening.
- 7) Provide compliant hardware for rates openings.
- 8) Install safety sensors at four (4) overhead doors where they are missing.

ARCHITECTURAL FINISHES Lobby and Administrative Offices

The lobby wall finishes consist of exposed brick masonry, painted gypsum wallboard, and some wallcovering. Floor finishes are largely carpet tile, broad loom carpet, and sheet vinyl flooring. The ceiling is a 1x1 acoustical tile with concealed suspended grid.

The exposed brick has efflorescence which can be cleaned off, but will return if flashing work at roof is not completed.

Wallcovering has been removed in many rooms where water infiltration has caused staining, peeling, or damage. There are still locations where there is evidence of past and current water infiltration.



Figure #1-28 Efflorescence on 8x8 exposed brick on interior.



Figure #1-29 Evidence of water infiltration on wall. covering.

Much of the carpet tile is a recent installation in the lobby, hallway, and offices. The remaining original broadloom carpet is worn and dirty. The vinyl sheet floor is a replacement and in good condition with tight joints. The wood door frames are water stained at the base from mopping.

Many of the 1x1 ceiling tiles are stained around the perimeter of the exterior walls where previous or current water infiltration has occurred. There are some locations where the grid has pulled away from the wall causing some loose tile. There are also many locations where tile is missing from technology installations. As can be seen from where tile was removed, concealed tile systems are inconvenient for access to above the ceiling making maintenance and installation of systems above and in the ceiling difficult.



Figure #1-30 1x1 ceiling tile that is damaged from removal for access above ceiling.

The majority of window sills are plastic laminate and are damaged from water infiltration or condensation (see window comments). Some of the sills have been replaced by the fire department with a solid surface material like Corian, but the gypsum wallboard at the ends of the sills needs to be refinished.



Figure #1-31 Damaged window sill at storefront system.



Figure #1-32 Solid surface window sill replacement, unfinished around perimeter.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the lobby and administrative areas.

- 1) Clean masonry after flashing work is completed.
- 2) Remove wall covering from walls and refinish and paint walls.
- 3) Continue with replacing broadloom carpet with carpet tile.
- Replace 1x1 concealed ceiling grid system with 2x2 ceiling tile system to improve access and maintenance.
- 5) Continue to replace damaged window sills with solid surface sills and refinish drywall around opening. Recommend replacing when windows are addressed.

1st Floor & 2nd Floor Toilet Rooms.

The finishes of the Toilet Rooms include mosaic tile floors, glazed ceramic block walls, and painted gypsum wallboard ceilings. The toilet partitions are prefinished steel.

The tile is stained at the perimeter of the room along the walls.

The plastic laminate countertops are beginning to warp from water damage and the sealant at the joint against the wall is failing.



Figure #1-33 Restroom countertops are warped.



The following is a summary of recommended corrective actions for the issues pertaining to 1st Floor & 2nd Floor Toilet Rooms.

1) Replace countertops with solid surface for longevity.

Stairways

Stairways are a combination of painted gypsum wallboard and painted CMU walls, painted gypsum wallboard ceilings, and VCT flooring. Guardrails and handrails are painted steel.

The guardrail heights are 36" and do not meet min. guardrail heights of 42". At the base of the stair the handrail doesn't return as required by ADA and Illinois Accessibility Code.



Figure #1-34 Combination guardrail/handrail at base of stair.

The travel width at the stair landings are all narrower than the width of the stair, which would not meet current design requirements and may not have met the code requirements at the time of construction (existing drawings do not indicate a Building Code to which the facility was designed).

Stairs to storage basement do not have compliant handrail.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Stairways.

1) Provide 42" height guardrail in stairway with 34" handrails.

Sleeping Quarters

The finishes are painted gypsum wallboard walls, carpet tile floors, and 2x2 acoustical ceilings.

Minor scratches and scuffs at corners of gypsum walls at entrance into sleeping quarters.

Along the perimeter of the room at exterior walls a number of ceiling tiles are stained.



Figure #1-35 Stained 2x2 ceiling in Sleeping Quarters.

The majority of window sills are plastic laminate and are damaged from water infiltration or condensation (see window comments). Some have been replaced with a solid surface material like Corian by the fire department, but the wall around hasn't been finished.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Sleeping Quarters.

- 1) Refinish and repaint damaged corners and add corner guards.
- 2) Replace stained ceiling tile (Roof leaks were addressed in different section).
- Continue to replace damaged window sills with solid surface sills and refinish drywall around opening. Recommend replacing when windows are addressed.

Day Room

The finishes are painted gypsum wallboard walls, carpet tile floors, and 2x2 acoustical ceilings.

The Day Room recently was revised to have tiered seating, but some of the work was left unfinished near the windows.

Some stained ceiling tile was present along the perimeter of exterior wall.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Day Room.

- 1) Complete finishes of tiered seating near window.
- 2) Replace stained ceiling tile.

Kitchen

The finishes are painted gypsum wallboard walls, VCT floors, and 2x2 acoustical ceilings. All Kitchen casework was updated with wood cabinets and stainless steel countertops.

A number of ceiling tiles above the refrigerators have been removed due to constant water leaks. Some other stained tile present.



Figure #1-36 Stained 2x2 ceiling tile and removed ceiling tile where significant roof leak occurs.

It was reported that the Kitchen does not have a grease trap or a garbage disposer.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Kitchen.

- 1) Replace stained ceiling tile (Roof leaks were addressed in different section).
- 2) Provide grease trap and garbage disposer.

2nd Floor Corridor & Fire Poles

The finishes are painted gypsum wallboard walls, VCT floors, and 2x2 acoustical ceilings.

Some stained ceiling tile is present along stair exterior wall.

Fire poles are separated by doors and are currently being used by the department. Since there is not a trap door to prevent fumes from apparatus bay to enter the office building, the doors must have good seals around perimeter and at the threshold.

The current setup for how the fire poles are used is missing modern day safety equipment to prevent accidental falls from the second floor. It should be noted that many departments and administrations throughout the U.S. are abandoning the use of fire poles due to injury risk & the rising cost of insurance.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the 2nd Floor Corridor & Fire Poles.

- 1) Replace stained ceiling tile.
- 2) Replace perimeter seals of fire pole doors when failure occurs.
- 3) Add preventative safety guardrails at opening to fire poles to prevent accidental falls from the second floor and/or provide trap door system like Model 23 by McIntire Brass Works, Inc.



Office Building Basement

No finishes were provided in Basement. Exposed concrete foundation walls, exposed concrete slab, and exposed structure.

The Basement is currently being used for a workout room with exercise equipment and weights. No athletic flooring or floor mats have been provided.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Office Building Basement.

1) Provide athletic floor mats or flooring at workout space.

Apparatus Bay

The finishes in the apparatus bay are painted CMU, painted steel roof structure, and unfinished concrete slab.

The paint on the walls is fading or discolored. In a few locations the paint is peeling.



Figure #1-37 Apparatus bay CMU walls stained and discolored.

The bare concrete floor was likely treated with a sealer at time of construction, but appears to have worn off over time. Mentioned in another section, there are many doors and windows that don't appear to have glazing that matches the label on the door.

Some shrinkage cracks in the CMU are visible due to lack of control joints at openings.



Figure #1-38 Shrinkage cracks in CMU.

At exterior walls there is evidence of water infiltration at the roof bearing locations. This is addressed in the Roofing and Building Envelope sections.



Figure #1-39 Water infiltration at exterior perimeter walls.

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay.

- Repaint apparatus bay, an epoxy based paint is recommended if trucks are washed in apparatus bay.
- 2) Recommend applying a new sealer/hardener to concrete floor and seal cracks. An epoxy floor is an option as well.
- Provide appropriate rated glazing and door assemblies for 1 hr separation where indicated by existing drawings.

Apparatus Bay Support Spaces

The finishes in the Apparatus Bay support spaces are painted CMU, painted steel roof structure, and unfinished concrete slab.

The paint on the walls is fading or discolored. In a few locations the paint is peeling.



Figure #1-40 Discolored CMU and evidence of water infiltration at exterior wall.

There are a few locations where there are significant cracks in the CMU as well as shrinkage cracks due to lack of control joints.

Work room, SCBA fill room, and storage rooms appear to be rated wall assemblies. Some penetrations do not have penetration fire stopping. As previously mentioned, many of these doors do not have compliant hardware for the rated assembly. At exterior walls there is evidence of water infiltration at the roof bearing locations. This is addressed in the Roofing and Building Envelope sections.

Wing wall at stair to storage basement does not extend beyond end of stair and thus hand rail does not extend past the top step or wrap around the wall.



Figure #1-41 No handrail extension.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay Support Spaces.

- 1) Repaint Apparatus Bay Support Spaces, an epoxy based paint is recommended in washing areas.
- 2) Repoint cracks in CMU.
- 3) Provide penetration fire stopping in rated walls of work room, SCBA room, and storage rooms where indicated on existing walls.
- 4) Provide compliant hardware at rated openings.
- 5) Provide railing that extends beyond top step to meet hand rail requirements.

Apparatus Bay Toilet Rooms

The finishes in the Apparatus Bay Toilet Rooms are glazed CMU, bare concrete floors, and painted gypsum wallboard ceilings.

At exterior walls there is evidence of water infiltration at the roof bearing locations. This is addressed in the Roofing and Building Envelope sections.

Lockers are blocking the women's room shower.



The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay Toilet Rooms.

1) Remove lockers that are blocking women's shower.

Apparatus Bay Basement Storage

No finishes were provided in basement. Exposed concrete foundation walls, exposed concrete slab, and exposed steel joist and steel deck structure. Space is strictly used as a storage space.

There is significant water infiltration through foundation wall penetrations where electrical service enters the building on north side.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay Basement Storage.

1) See Building Envelope and Exterior Wall sections for recommendations.

SITE PAVING AND DRAINAGE General

Site paving is made up of concrete aprons, concrete drives, concrete sidewalks, and asphalt parking lots. The drainage on the site is mostly from storm water sewer management. All building roof drainage utilizes internal gutters which are connected into the site storm sewer.

The south side of the building has concrete drives for the apparatus in which some sections are spalling or damaged at edges of the concrete section. Some sections of concrete have surface wear in which the aggregate is beginning to show through. Exposed aggregate and cracks tend to increase the possibility of spalling from freeze thaw cycles and overall deterioration.



Figure #1-42 Patched sections of concrete where deterioration is significant.

At the north side of the building it appears that the west portion of the concrete drive along the Apparatus Bay Storage spaces exterior wall has settled a few inches with cracks supporting this assumption.

The asphalt parking area on the north side of the building has some locations where the asphalt is deteriorating and coming loose as well as some long cracks. This area is also subject to flooding during heavy rains and when snow and ice melt. This contributes to slippery conditions as well as accelerated deterioration of the paving.



Figure #1-43 Asphalt parking area on north side of building.

The side walk on the east side of the building has settled significantly. There is evidence of soil erosion below the stoop at the public entrance into the Training Room.



Figure #1-44 Side walk at east side of building has settled significantly.

The following is a summary of recommended corrective actions for the issues pertaining to the site paving and drainage.

- Patch spalled concrete throughout as required to protect exposed aggregate.
- Replace settled concrete drive on north side of building. Compact subgrade and add additional compactable base as required.
- 3) Develop replacement strategy for replacement sections of site concrete paving.
- Replace staff parking lot on north side of building and address site drainage to prevent ponding.
- 5) Replace settled concrete sidewalk on east side of building. Compact subgrade and add additional compactable base as required.

VERTICAL CONVEYANCE SYSTEMS & ACCESSIBILITY General

This facility was built in 1994, therefore, it would be under the requirements of the Illinois Environmental Barriers Act of 1988 and the Federal ADA of 1990. This facility has accessibility addressed for the first floor and the areas understood for 'public' use with a few minor exceptions. However, the 2nd floor in its entirety was not planned or designed for accessibility. The facility was built at a time when there was confusion over Federal vs. State requirements and might have contributed to the possible violations. As a fire station, there is also an aspect of assumed exemption from accessibility codes by nature of the facility use which was not necessarily the case. The comments below are based on the codes at the time of construction as Dewberry understands them.

The facility does not have an elevator to access the 2nd floor or the basement. Under the EBA of 1988, the dormitory level of a fire station and storage occupancies are exempt from meeting elevator requirements for accessibility. However the Federal ADA of 1990 does not provide this exemption and specifically requires local, state, and federally owned buildings to provide an elevator for buildings with multiple stories. It is unknown as to why the facility was allowed to be built without an elevator.

On the first floor, the accessibility issues include lack of a compliant urinal, lavatory countertop required clearances, and mirror heights in the public bathrooms. The reception service countertop is not at the required 34" height. The kitchenette does not have 34" countertop height.



Figure #1-45 Public service counter is not accessible.

The second floor does not have accessible toilet rooms, including shower, toilet stall, urinal, and lavatory. Kitchen does not have accessible 34" countertops. Under the EBA of 1988, the dormitory level of a fire station and storage occupancies are exempt from meeting accessibility, but no exception is listed in the Federal ADA of 1990.

Under the alteration requirements of Illinois Accessibility Codes, the kitchen cabinet replacement was to meet accessibility requirements.





Figure #1-44 Lavatories and countertops do not meet accessibility requirements.

The following is a summary of recommended corrective actions for the issues pertaining accessibility.

- Correct countertops to meet 34" height at 1st floor kitchenette, administrative office, and service window.
- 2) Provide fully accessible toilet room on 1st floor level.
- 3) Update kitchen casework to meet accessibility.
- Update 2nd floor bathrooms to include 1 accessible shower and lavatory.
- 5) Provide elevator to east portion of building with multiple floors.

SUMMARY OF STATION #1 General

Station #1 is generally in fair to good condition relative to a station built in 1994. The issues regarding this facility are not related to the anticipated useful life of systems or deterioration, but are issues related to the construction detailing and design of the building. These issues are significant to the day to day operation of the facility and create regular maintenance problems and should be addressed.

These issues include but are not limited to the following:

- Sanitary sewer line in basement does not have positive flow.
- Missing temperature conditioning of Apparatus Bay support spaces.

- Missing waterproofing membrane on foundation wall.
- Improper brick cavity wall masonry flashing or missing flashing entirety resulting in water infiltration.
- Aluminum storefront glazing system has water infiltration from improper sill detailing, installation, or system specification.
- Accessibility issues such as no elevator provided in facility.

The core building structure is in good condition. Provided that the issues are resolved, proper building maintenance, replacement of systems beyond anticipated life, and continual upgrades to technology, the fire department should expect this fire station to provide continued service in the foreseeable future.

	Si	tation #1 - Capital Re	eplacement Costs b	y Year		
Year	Cost Today	Budget Need	Priority 1	Priority 2	Prority 3	Priority 4
		cost escalated to replacement date	1	2	3	
2015	\$915,466	\$915,466	\$416,220	\$419,012	\$36,494	\$43,740
2016	\$17,578	\$18,105	\$0	\$0	\$0	\$18,105
2017	\$0	\$0	\$0	\$0	\$0	\$0
2018	\$7,500	\$8,195	\$0	\$0	\$0	\$8,195
2019	\$52,352	\$58,923	\$0	\$58,923	\$0	\$0
2020	\$5,000	\$5,796	\$0	\$5,796	\$0	\$0
2021	\$7,500	\$8,955	\$0	\$0	\$0	\$8,955
2022	\$0	\$0	\$0	\$0	\$0	\$0
2023	\$0	\$0	\$0	\$0	\$0	\$0
2024	\$514,194	\$670,907	\$0	\$351,636	\$80,827	\$238,443
Sub Total After 10 Years	\$1,519,590	\$1,686,348	\$416,220	\$835,367	\$117,321	\$317,439
2025	\$40,500	\$54,429	\$0	\$54,429	\$0	\$0
2026	\$4,400	\$6,091	\$0	\$0	\$0	\$6,091
2027	\$314,650	\$448,616	\$0	\$14,258	\$0	\$434,358
2028	\$0	\$0	\$0	\$0	\$0	\$0
2029	\$64,511	\$97,579	\$0	\$25,412	\$0	\$72,167
2030	\$71,500	\$111,395	\$0	\$0	\$0	\$111,395
2031	\$0	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$C
2033	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$16,800	\$29,458	\$0	\$0	\$0	\$29,458
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$307	\$572	\$0	\$0	\$572	\$0
2037	\$229,124	\$439,025	\$0	\$0	\$0	\$439,025
2038	\$0	\$0	\$0	\$0	\$0	\$0
2039	\$0	\$0	\$0	\$0	\$0	\$0
2040	\$0	\$0	\$0	\$0	\$0	\$C
2041	\$0	\$0	\$0	\$0	\$0	\$0
2042	\$0	\$0	\$0	\$0	\$0	\$0
2043	\$0	\$0	\$0	\$0	\$0	\$0
2044	\$118,860	\$280,101	\$0	\$0	\$0	\$280,101
Sub Total for Remainder Years	\$860,652	\$1,467,265	\$0	\$94,098	\$572	\$1,372,59
Overall Total	\$2,380,242	\$3,153,613	\$416,220	\$929,465	\$117,893	\$1,690,03

BUDGET SUMMARY

	CONSOLIDATED SYSTEMS DATA														capital replacement budget								
							Evalua	ated Condition	Estimated Replacement Budget														
	Building or Zone (If more than one)				Description & Loo	cation of Asset				Year Installed	Anticipated Years of Life	Calculated Renewal Year	Evaluation Date	Remaining Life Expectancy	Recommended Action		Cost Basis		Current Replacement Cost	Escalated Cost at BUDGET YEAR	Priority Level	Budget Year	Comments
Entry #	Building ID	Category	Family		Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty.	units pro-ratio	n unit cost	cost	Budget	Priority	Year	Comment
1	Station #1 HQ	EXT. BLDG.	Roofs or Decks	Roofing		Single Ply EPDM Roofing Membrane	Firestone Roofing		AII	2007	30	2037	2015	22	Replacement	16,366 sf	100%	\$14.00	\$229,124	\$439,025	- 4	. 2037	Replace roof at end of warranty.
2	Station #1 HQ	EXT. BLDG.	Roofs or Decks	Roofing		Single Ply EPDM Roofing Membrane			Doors that exit onto roof.	2007	0	2007	2015	> -8	Return roof membrane flashing into door jambs and sill.	2 ea	100%	\$600.00	\$1,200	\$1,200	• 1	2015	Work should be completed when doors and frames are replaced or they will need to be removed and reinstalled.
3	Station #1 HQ	EXT. BLDG.	Roofs or Decks	Decking		Wood Patio Deck			Outside Kitchen on Roof.	1994	15	2009	2015		Refinish wood patio.	235 sf	100%	\$3.50	\$823	\$823	3	2015	Refinish Patio on regular basis as maintenance to increase life of patio.
4	Station #1 HQ	EXT. BLDG.	Roofs or Decks	Decking		Wood Patio Deck			Outside Kitchen on Roof.	1994	30	2009	2015	3 -6	Refinish guard rails.	270 sf	0W 100%	\$1,500.00	\$1,500	\$1,500	3	2015	Refinish patio guard rall. Remove rust and paint with marine epoxy coating to increase life.
6	Station #1 HQ	EXT. BLDC	Deefs as Deeks	Openings		Chuliabte			Roof.	1004	25	2010	2015		Deplace system	210 51	100%	¢3000	\$15,000	¢1,001		2010	replacement with composite deck material which would have the longest life and least maintenance, but highest first cost.
5	Station #1 HQ	EXT. BLDG.	Roots or Decks	Openings		Skylights			Apparatus Bay	2014	25	2019	2015	4	Replace system.	8 ea	100%	\$2,000.00	\$16,000	\$18,008	2	2019	Replace skylights as they fail and leaks begin. Currently 1 skylight is leaking.
,	Station #1 HQ	EXT. BLDG.	Wans	Cladding		Wasonry-Brick Thru Wall Flashing			All ROOF to Wall transitions.	2014	U	2014	2015	-1	instali tnru wali nasning.	262 11	100%	\$100.00	\$26,200	526,20L	1	2015	recommended roof flashing termination height. Install recommended roof flashing termination height. Install flexible membrane thru wall flashing with sheet metal drip and reinstall removed brick. Install 2-piece counter flashing system connected to drip edge to cover roof termination.
8	Station #1 HQ	EXT. BLDG.	Walls	Cladding		Masonry-Brick Thru Wall Flashing			Tall brick parapet at Entrance	1994	21	2015	2015	0	Install thru wall flashing and Replace coping.	33 lf	100%	\$120.00	\$3,960	\$3,960	• 1	2015	Remove brick parapet down to roof flashing termination height. Install thru wall flashing that continues to each side of masonry wall. Seal reinforcing penetrations. Reinstall removed brick. Install 2-piece counter flashing system connected to drip edge to cover roof termination. Replace coping cap with properly sealed cap with positive drainage slope.
9	Station #1 HQ	EXT. BLDG.	Walls	Cladding		Masonry-Brick			All Facades	1994	21	2015	2015	O	Cut in masonry expansion joints at exterior brick and install backer rod and sealant at openings and corners of building.	1 all	ow 100%	\$10,000.00	\$10,000	\$10,000	2	2015	There are a lack of masonry expansion joints in brick though there are many in appropriate locations. To prevent cracks in mortar and possible brick, cut in expansion joints at openings, corners, and other recommended locations.
10	Station #1 HQ	EXT. BLDG.	Walls	Cladding		Masonry-Brick Sealant			All Facades	1994	20	2014	2015	☑ -1	Strip out failed sealant, prep, and re-seal.	1 all	ow 100%	\$2,500.00	\$2,500 ¢200	\$2,500	2	2015	Existing sealant is cracking and losing adhesion in a few existing expansion joints.
	station #1 HQ	EXT. BEDG.	W alls	Clauding		Wasoni y-brick			Storefront Window.	1334	21	2013	2013	0	flashing and weep holes.		JW 100%	\$300.00	\$300	<i>330</i>		2013	above storefront at kitchen. Weep holes allow water to exit the cavity.
12	Station #1 HQ	EXT. BLDG.	Walls	Cladding		Masonry-Brick			North Façade of Apparatus Bay storage	1994	21	2015	2015	0	Drill holes in mortar at saturated brick to relieve any trapped moisture.	1 all	ow 100%	\$500.00	\$500	\$500	2	2015	Continuously saturated brick is a sign of trapped moisture or water in a brick cavity due to missing flashings, weeps, mortar traps, etc Drill holes in mortar in logical locations to relieve any moisture.
13	Station #1 HQ	EXT. BLDG.	Walls	Cladding		Masonry-Brick			Base of exterior walls.	1994	21	2015	2015	0	Investigate base of wall flashing system where water infiltrates into basement.	1 all	DW 100%	\$2,000.00	\$2,000	\$2,000	• 1	2015	Investigate flashing at base of wall by removing 24" of brick masonry at locations where water infiltrates into the basement. Determine nature and condition of Bashies developed by the set
14	Station #1 HQ	EXT. BLDG.	Walls	Cladding		Masonry-Brick Thru Wall Flashing			Base of exterior walls.	1994	21	2015	2015	0	Install thru wall flashing.	500 lf	100%	\$100.00	\$50,000	\$50,000	2	2015	Based on results of investigation. Replace and/or repair thru wall flashing at base of wall by removing 24" of masonry and installing a S.S. drip edge with thru wall flashing and cavity weeps. Seal all joints in flashing. Provide mortar net and necessary terminations.
15	Station #1 HQ	EXT. BLDG.	Walls	Openings		Windows-Aluminum Storefront	Kawneer		All storefront systems.	1994	21	2015	2015	0	Investigate if storefront installed is thermally broken system with sill pan flashing as specified in original documents.	1 all	ow 100%	\$500.00	\$500	\$500	• 1	2015	Investigate storefront installation at a single location by the following: Perform hose stream test to check for leaks, remove glass from system to determine if storefront is thermally broken, and remove storefront framing system to determine if sill pan is installed and if sill pan is thermally broken.

Printed: 2/22/2016

Decatur Fire Department




Ent	try #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty. un	its pro-ration	unit cost	cost	Budget	Priority	Year	Comment
:	16 Stat	ion #1 HQ	EXT. BLDG.	Walls	Openings	Windows-Aluminum K. Storefront	awneer		All storefront systems.	1994	21	2015	2015	0	Replace storefront system.	1,500 sf	100%	\$60.00	\$90,000	\$90,000	• 1	2015	Assume the results of investigation will confirm that either significant rework, reinstallation, or possibly replacement of components of system will be required to solve water infiltration/condensation problem. Replacement might be logical outcome and therefore is assumed cost. Replacement should be thermally broken storefront system with high-performance sill.
:	17 Stat	tion #1 HQ	EXT. BLDG.	Walls	Joints	Perimeter Sealants			Windows-Aluminum Storefront	1994	20	2014	2015	◎ -1	Strip out failed sealant, prep, and re-seal.	1 allow	100%	\$5,000	\$5,000	\$5,000	2	2015	If storefront system is replaced or reinstalled, this would be included with that work.
	18 Stat	ion #1 HQ	EXT. BLDG.	Walls	Openings	Hollow Metal Doors			Hollow Metal Doors	1994	20	2014	2015	-1	Replace rusted doors and	6 ea	100%	\$3,000	\$18,000	\$18,000	2	2015	
:	19 Stat	ion #1 HQ	EXT. BLDG.	Walls	Joints	Perimeter Sealants			Hollow Metal Doors and Frames	1994	20	2014	2015	⊘ -1	Strip out failed sealant, prep, and re-seal.	1 allow	100%	\$1,000	\$1,000	\$1,000	2	2015	If doors and frames are replaced this would be included with that work.
:	20 Stat	ion #1 HQ	EXT. BLDG.	Walls	Openings	Hardware			Exterior Openings	1994	21	2015	2015	0	Replace weather stripping.	11 ea	100%	\$350	\$3,850	\$3,850	2	2015	Weather stripping includes, jambs, heads, stiles, sweeps, etc If doors and frames are replaced this would be included with that work.
	21 Stat	ion #1 HQ	EXT. BLDG.	Walls	Openings	Hollow Metal Doors and Frames			Exterior opening from stair to upper roof.	1994	21	2015	2015	O	Rework opening to provide sufficient height of 8" for roof flashing.	1 allow	100%	\$2,000	\$2,000	\$2,000	2	2015	Ideally roof flashing should lap up walls 8". The current door is only a few inches above the roof level. Could be problematic with snow accumulation. Also recommend a raised weather seal at threshold. Cost of door and frame replacement are provided in separate line item.
:	22 Stat	tion #1 HQ	GROUNDS	Softscape	Grade				North side of administrative office building.	1994	21	2015	2015	0 (9)	Re-grade to uncover weep holes and fill in areas where erosion has taken place.	1 ea	100%	\$800	\$800	\$800	• 1	2015	Grade covers weeps holes in this location where grade is elevated above first floor elevation.
:	23 Stat	ion #1 HQ	GROUNDS	Hardscape	Concrete	Sidewalks			East side of administrative office building from stair exit.	1994	21	2015	2015	 0 	Replace sidewalk and re-grade.	220 sf	100%	\$8.00	\$1,760	\$1,760	• 1	2015	Remove sidewalk that has settled and re-compact grade and install sub-base material and concrete sidewalk.
:	24 Stat	ion #1 HQ	GROUNDS	Hardscape	Concrete	Stoop			Public Access to training room.	1994	30	2024	2015	9	Replace concrete stoop.	50 sf	100%	\$8.00	\$400	\$522	• 4	2024	Concrete stoop is has some settling where there is some erosion taking place below slab. Replace when settling increases.
1	25 Stat	ion #1 HQ	GROUNDS	Hardscape	Concrete	Sidewalks			East sidewalk.	1994	30	2024	2015	9	Replace concrete sidewalk.	1,800 sf	100%	\$8.00	\$14,400	\$18,789	• 4	2024	Remainder of site sidewalks.
	26 Stat	ion #1 HQ	GROUNDS	Hardscape	Concrete Paving	Entrance drives			North Apparatus Bay	1994	30	2024	2015	9	Replace concrete paving.	780 sy	100%	\$110.00	\$85,800	\$111,950	2	2024	Some paving has settled a few inches along Apparatus Bay storage area. Many of the edges of concrete sections are starting to spall requiring patching. Most sections of concrete have exposed aggregate on surface. Patch as required until replacement. Replace sections if deterioration becomes severe.
:	27 Stat	ion #1 HQ	GROUNDS	Hardscape	Concrete Paving	Entrance drives			South Apparatus Bay	1994	30	2024	2015	9	Replace concrete paving.	1,670 sy	100%	\$110.00	\$183,700	\$239,687	2	2024	Many of the edges of concrete sections are starting to spall requiring patching. Most sections of concrete have exposed aggregate on surface and some cracking. A few small sections have been patched and/or replaced. Patch as required until replacement. Replace sections if deterioration becomes severe.
	28 Stat	ion #1 HQ	GROUNDS	Hardscape	Asphalt Paving	Parking			North Parking	1994	15	2009	2015	⊗ -6	Replace asphalt paving with mill and overlay.	700 sy	100%	\$25.00	\$17,500	\$17,500	• 1	2015	Asphalt paving is beginning to see a significant amount of cracking throughout with some spots crumbling. Mill and overlay should be sufficient with some patching/repair of sub-base of low areas where there has been some settling.
	29 Stat	ion #1 HQ	GROUNDS	Hardscape	Asphalt Paving	Parking			East Parking	1994	15	2009	2015	❷ -6	Replace asphalt paving with mill and overlay.	940 sy	100%	\$25.00	\$23,500	\$23,500	2	2015	Asphalt paving is beginning to see a fair amount of cracking throughout. Mill and overlay should be sufficient with some patching/repair of sub-base of low areas where there has been some settling.
	30 Stat	tion #1 HQ	CORE SYST.	Accessibility	Building Elevator	Elevator				1994	0	1994	2015	3 -21	No elevator provided in facility.	1 allow	100%	\$200,000.00	\$200,000	\$200,000	• 1	2015	Assumed cost of elevator and addition/renovation work associated with it.
	31 Stat 32 Stat	ion #1 HQ	INT. FIT-OUT	Finishes Finishes	Flooring	Carpet Carpet			Vestibule & Main Corridor Work Room &	2014	15 15	2029 2029	2015 2015	1414	Replace Replace	851 sf	100%	\$8.00	\$6,808 \$4,011	\$10,298 \$6,067	• 4 • 4	2029	
									Reception											+ -,			
	33 Stat 34 Stat	tion #1 HQ tion #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Conference Room Kitchenette	1994 2014	15 15	2009 2029	2015	✓ -6✓ 14	Replace Replace	380 sf 196 sf	100%	\$8.00	\$3,036 \$1.564	\$3,036	3	2015 2029	Carpet is original broadloom and worn.
	35 Stat	ion #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Deputy Chief Office	1994	15	2009	2015	⊗ -6	Replace	154 sf	100%	\$8.00	\$1,233	\$1,233	3	2015	
	36 Stat	ion #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Fire Chief Office	2014	15	2029	2015	14	Replace	276 sf	100%	\$8.00	\$2,208	\$3,340	• 4	2029	
	s7 Stat	tion #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Battalion Chief's Office	2014	15	2029	2015	9 14	Replace	388 sf	100%	\$8.00	\$3,100	\$4,690	4	2029	
	38 Stat 39 Stat	tion #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet Vinyl Floor Covering			Back Corridor	2014 2014	15 20	2029 2034	2015	1419	Replace	682 sf 365 sf	100%	\$8.00 \$10.00	\$5,456 \$3,646	\$8,252 \$6,392	• 4 • 4	2029 2034	
	40 Stat	ion #1 HQ	INT. FIT-OUT	Finishes	Flooring	Vinyl Floor Covering			Report Room	2014	20	2034	2015	19	Replace	460 sf	100%	\$10.00	\$4,600	\$8,066	• 4	2034	





Entry # Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluatio	n Remainin	g Action	qty.	units pro-ration	unit cost	cost	Budget	Priority	Year	Comment
41 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Plan Review Office	1994	15	2009	2015	⊘ -6	Replace	198 sf	100%	\$8.00	\$1,582	\$1,582	3	3 2015	
42 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Fire Marshal's Office	1994	15	2009	2015	⊗ -6	Replace	177 sf	100%	\$8.00	\$1,417	\$1,417	3	3 2015	
43 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Office	1994	15	2009	2015	⊘ -6	Replace	185 sf	100%	\$8.00	\$1,481	\$1,481	3	2015	
44 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Inspections Office	1994	15	2009	2015	⊗ -6	Replace	198 sf	100%	\$8.00	\$1,582	\$1,582	3	3 2015	Existing is carpet tile that could be more recent than
																					original broadloom. It is worn pretty well.
45 Station #1 HO	INT FIT-OUT	Finishes	Flooring	Carnet			Interview Room	2014	15	2029	2015	14	Replace	116 sf	100%	\$8.00	\$929	\$1.405		2029	
46 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Mosaic tile			1st Floor Men's Room	1994	30	2024	2015	9	Replace	175 sf	100%	\$16.00	\$2,797	\$3,649	• 4	2024	
47 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Mosaic tile			1st Floor Women's	1994	30	2024	2015	9	Replace	161 sf	100%	\$16.00	\$2,576	\$3,361	. 🗨 4	2024	
48 Station #1 HO	INT. FIT-OUT	Finishes	Flooring	Carpet			Sleeping Quarters	2014	15	2029	2015	14	Replace	1.564 sf	100%	\$8.00	\$12.512	\$18.926	• 4	2029	
																	+ /	+/			
49 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			2nd Floor Corridor	2014	15	2029	2015	14	Replace	437 sf	100%	\$8.00	\$3,496	\$5,288	• 4	2029	
50 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Battalion Chief's	2014	15	2029	2015	14	Replace	414 sf	100%	\$8.00	\$3,312	\$5,010	• 4	2029	
							Sleeping Quarters														
51 Station #1 HO	INT FIT-OUT	Finishes	Flooring	Carnet			Day Room	2014	15	2029	2015	14	Replace	38/ cf	100%	\$8.00	\$3.073	\$4.645		2029	
52 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Mosaic tile			2nd Floor Men's	1994	30	2024	2015	9	Replace	337 sf	100%	\$16.00	\$5,391	\$7,034	• 4	2024	
							Room					-									
53 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Mosaic tile			2nd Floor Women's	1994	30	2024	2015	9	Replace	166 sf	100%	\$16.00	\$2,650	\$3,457	4	2024	
54 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Carpet			Lounge/Study Room	2014	15	2029	2015	14	Replace	155 sf	100%	\$8.00	\$1,242	\$1,879	• 4	2029	
			·				,					-							-		
55 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Vinyl Composite			Kitchen	1994	30	2024	2015	9	Replace	258 sf	100%	\$8.00	\$2,061	\$2,689	• 4	2024	
56 Station #1 HO	INT. FIT-OUT	Finishes	Flooring	Vinvl Composite			Dining	1994	30	2024	2015	Q 9	Replace	445 cf	100%	\$8.00	\$3.560	\$4 644		2024	
				Tile					50	2027					10076		ç5,500		- 1	2024	
57 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Sheet Vinyl and			Stair #1 Angular	2014	20	2034	2015	19	Replace	58 sf	100%	\$10.00	\$575	\$1,008	• 4	2034	Note: Some sheet vinyl flooring and wall base needs to
				Rubber Treads &			Shape														be re-adhered to floor and wall at lower landing.
				NISELS																	
58 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Sheet Vinyl and			Stair #2	2014	20	2034	2015	19	Replace	58 sf	100%	\$10.00	\$575	\$1,008	• 4	2034	Note: Some sheet vinyl flooring and wall base needs to
				Rubber Treads &																	be re-adhered to floor and wall at lower landing.
				KISERS																	
59 Station #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling			Main Corridor	1994	30	2024	2015	9	Replace System.	851 sf	100%	\$4.00	\$3,404	\$4,441	• 4	2024	The 1x1 concealed grid systems are difficult for
				Tile Concealed Grid															-		accessing above the ceiling for mechanical equipment
																					or technology drops. In many locations the ceiling tile
																					is damaged or grid is loose and out of plane from
																					ceiling. *Note: This corridor needs a 1 hour rated
																					ceiling for continuing the rated exit path from stair.
60 Station #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling			Deputy Chief Office	1994	30	2024	2015	9	Replace System.	154 sf	100%	\$4.00	\$616	\$804	• 4	2024	The 1x1 concealed grid systems are difficult for
				Tile Concealed Grid								-							-		accessing above the ceiling for mechanical equipment
																					or technology drops. In many locations the ceiling tile
																					is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace
																					ceiling.
C1 01 11 110							5 - 01: 1 010	4004	10	2024	2015			276 (1000/		<u> </u>	A1 001		2024	
61 Station #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling			Fire Chief Office	1994	40	2034	2015	V 19	Replace System.	276 st	100%	\$4.00	\$1,104	\$1,936	4	2034	The 1x1 concealed grid systems are difficult for accessing above the ceiling for mechanical equipment
				The concealed ond																	or technology drops. In many locations the ceiling tile
																					is damaged or grid is loose and out of plane from
																					accessing above the ceiling. Recommend replace
																					ceiling.
62 Station #1 HO	INT, FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling			Battalion Chief's	1994	30	2024	2015	9	Replace System.	388 sf	100%	\$4.00	\$1.550	\$2.023	• 4	2024	The 1x1 concealed grid systems are difficult for
biadonni riq		i moneo	comps	Tile Concealed Grid			Office	1331	50	2021	2015		hepidee bysterni	500 5	100,0	\$ 1.00	ç2,550	<i>v</i> =) <i>v</i> =:		2021	accessing above the ceiling for mechanical equipment
																					or technology drops. In many locations the ceiling tile
												1									is damaged or grid is loose and out of plane from
																					ceiling.
																					Ĭ
63 Station #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling			Work Room &	1994	30	2024	2015	9	Replace System.	501 sf	100%	\$4.00	\$2,006	\$2,617	• 4	2024	The 1x1 concealed grid systems are difficult for
				The Concealed Grid			Reception														or technology drops. In many locations the ceiling tile
																					is damaged or grid is loose and out of plane from
																					accessing above the ceiling. Recommend replace
																					ceiling.
64 Station #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling			Kitchenette	1994	30	2024	2015	9	Replace System.	196 sf	100%	\$4.00	\$782	\$1,020	• 4	2024	The 1x1 concealed grid systems are difficult for
				Tile Concealed Grid																	accessing above the ceiling for mechanical equipment
																					or technology drops. In many locations the ceiling tile
																					accessing above the ceiling. Recommend replace
																					ceiling.
	INT OT OUT	Cipitala an	Collins	4.4.4.			Carlana C	(00)	20	202	2017	0	Dealers Co. 1							207.1	
65 Station #1 HQ	INT. FIT-OUT	Finishes	Cellings	1x1 Acoustical Ceiling			Conference Room	1994	30	2024	2015	9	Replace System.	117 sf	100%	\$4.00	\$469	\$612	- 4	2024	I ne 1X1 concealed grid systems are difficult for
				The concealed Grid																	or technology drops. In many locations the ceiling tile
																					is damaged or grid is loose and out of plane from
																					accessing above the ceiling. Recommend replace
																					cening.
		And the second		And the second									A second s								





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty. units	pro-ration	unit cost	cost	Budget Priority	Year	Comment
66 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	Gypsum Soffit		Conference Room	1994	0	1994	2015	🔕 -21	Repair and repaint	1 allow	100%	\$300	\$300	\$300	2015	Repair and repaint water damaged soffit.
67 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling Tile Concealed Grid		Training Room	1994	30	2024	2015	9	Replace system.	682 sf	100%	\$4.00	\$2,728	\$3,559 ● 4	2024	The 1x1 concealed grid systems are difficult for accessing above the ceiling for mechanical equipment or technology drops. In many locations the ceiling tile is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace ceiling.
68 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Celling Tile Concealed Grid	5	Back Corridor	1994	30	2024	2015	9	Replace system.	365 sf	100%	\$4.00	\$1,458	\$1,903 • 4	2024	The 1x1 concealed grid systems are difficult for accessing above the ceiling for mechanical equipment or technology drops. In many locations the ceiling tile is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace ceiling.
69 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling Tile Concealed Grid		Report Room	1994	30	2024	2015	9	Replace system.	460 sf	100%	\$4.00	\$1,840	\$2,401 ● 4	2024	The 1x1 concealed grid systems are difficult for accessing above the ceiling for mechanical equipment or technology drops. In many locations the ceiling tile is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace ceiling.
70 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling Tile Concealed Grid	3	Plan Review Office	1994	30	2024	2015	9	Replace system.	198 sf	100%	\$4.00	\$791	\$1,032 • 4	2024	The 1x1 concealed grid systems are difficult for accessing above the ceiling for mechanical equipment or technology drops. In many locations the ceiling tile is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace ceiling.
71 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling Tile Concealed Grid		Fire Marshal's Offi	ie 1994	30	2024	2015	9	Replace system.	177 sf	100%	\$4.00	\$708	\$924 • 4	2024	The 1x1 concealed grid systems are difficult for accessing above the ceiling for mechanical equipment or technology drops. In many locations the ceiling tile is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace ceiling.
72 5	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling Tile Concealed Grid	5	Inspections Office	1994	30	2024	2015	9	Replace system.	388 sf	100%	\$4.00	\$1,550	\$2,023 • 4	2024	The 1x1 concealed grid systems are difficult for accessing above the celling for mechanical equipment or technology drops. In many locations the ceiling tile is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace ceiling.
73 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling Tile Concealed Grid		Office	1994	30	2024	2015	9	Replace system.	185 sf	100%	\$4.00	\$741	\$966 • 4	2024	The 1x1 concealed grid systems are difficult for accessing above the ceiling for mechanical equipment or technology drops. In many locations the ceiling tile is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace ceiling.
74 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	1x1 Acoustical Ceiling Tile Concealed Grid	3	Interview Room	1994	30	2024	2015	9	Replace system.	116 sf	100%	\$4.00	\$465	\$606 • 4	2024	The 1x1 concealed grid systems are difficult for accessing above the ceiling for mechanical equipment or technology drops. In many locations the ceiling tile is damaged or grid is loose and out of plane from accessing above the ceiling. Recommend replace ceiling.
75 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	2x2 Acoustical Ceiling Tile Grid		2nd Floor	1994	30	2024	2015	9	Replace stained ceiling tile.	3,779 sf	15%	\$2.00	\$1,134	\$ 1,479 • 4	2024	Replace stained ceiling tile when convenient.
76 S	tation #1 HQ	INT. FIT-OUT	Finishes	Ceilings	2x2 Acoustical Ceiling Tile Grid	5	2nd Floor	1994	30	2024	2015	9	Replace system.	3,779 sf	100%	\$4.00	\$15,116	\$ 19,722 • 4	2024	Replace entire system at end of life.
77 S	tation #1 HQ	INT. FIT-OUT	Finishes	Partitions	Wall Corners		Sleeping Quarters	1994	0	1994	2015	S -21	Repair damaged corners and install corner guards.	1 allow	100%	\$800	\$800	\$800 🗨 4	2015	
78 S	tation #1 HQ	INT. FIT-OUT	Finishes	Partitions	Brick Finish		Reception/ Corrido	r 1994	0	1994	2015	-21	Clean Efflorescence from masonry.	1 allow	100%	\$500	\$500	\$500 • 4	2015	
79 S	tation #1 HQ	INT. FIT-OUT	Finishes	Partitions	Wall Covering		All Administrative Offices on 1st Floo	1994 r	30	2024	2015	9	Remove wall covering and refinish and paint walls.	1 allow	100%	\$5,000	\$5,000	\$6,524 • 4	2024	Some wall covering is peeling from water infiltration.
80 S	tation #1 HQ	INT. FIT-OUT	Finishes	Casework	Plastic Laminate Countertop		1st and 2nd Floor Restrooms	1994	0	1994	2015	3 -21	Replace countertops.	4 ea	100%	\$2,500	\$10,000	\$ 10,000 🛑 2	2015	Countertops are warping from water damage. *Must be replaced to meet accessibility standards.
81 S	tation #1 HQ	INT. FIT-OUT	Finishes	Casework	Plastic Laminate Window Sills		All administrative building window s	1994 Ils.	0	1994	2015	3 −21	Replace plastic laminate window sills through out with solid surface material.	160 lf	100%	\$50	\$8,000	\$8,000 🔵 2	2015	Damage at window sills are result of window issues.
82 S	tation #1 HQ	INT. FIT-OUT	Finishes	General	Flooring & Risers		Day Room	2015	1	2016	2015	1	Complete remodel work around window where gap from previous wall was removed.	1 allow	100%	\$500	\$500	\$515 • 4	2016	
83 S	tation #1 HQ	CORE SYST.	Apparatus Bay Access	Fire Pole	Fire Pole Hatch/ Trap Door		Both Fire Pole Locations	1994	21	2015	2015	0	Provide system with trap door that is integrated with alarm system.	2 ea	100%	\$50,000	\$100,000	\$100,000 D	2015	It is recommended that a trap door hatch system be installed at each fire pole to prevent accidental falls. These systems also are fire rated and seal against exhaust. Currently the doors are the barrier, but rated doors are required to have latch which may not be ideal for quick access. *It should be noted that many departments and administrations throughout the U.S. are beginning to abandon the use of fire poles due to injury risk.





Entry # Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluatio	n Remainin	g Action	qty.	units pro-ration	unit cost	cost	Budget	Priority	Year	Comment
84 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Athletic Floor			Basement workout space.	2015	1	2016	2015	0 1	Provide an athletic floor system in the entire work out area.	1,553 sf	100%	\$11	\$17,078	\$17,590	• 4	2016	Some floor mats are provided at weight lifting areas.
85 Station #1 HQ	INT. FIT-OUT	Exiting	Guardrails and Handrails	Stair Guardrails			Stairs #1 and #2	1994	21	2015	2015	0	Provide guardrail height of 42" and a separate hand rail at 34".	1 all	ow 100%	\$15,000.00	\$15,000	\$15,000	• 4	2015	Wouldn't meet accessibility codes. Wouldn't meet building codes since construction. Handralis at base of stair are to return to floor or back to railing.
86 Station #1 HQ	INT. FIT-OUT	Finishes	Flooring	Concrete sealer/			Apparatus Bay	1994	15	2009	2015	⊘ -6	Re-seal floor with concrete	6,500 sf	100%	\$1.50	\$9,750	\$9,750	2	2015	*Another option is to provide an epoxy floor coating,
				hardener.									sealer/hardener.								but at additional cost of approximately \$8-13 SF.
87 Station #1 HQ	INT. FIT-OUT	Finishes	Ceilings	Gypsum Ceiling			2nd Floor Restroom showers.	1994	21	2015	2015	0 🥑	Remove peeling paint and re- paint with paint for wet locations.	1 all	ow 100%	\$400	Ş400	\$400	• 4	2015	
88 Station #1 HQ	INT. FIT-OUT	Rated Assemblies	Rated Openings	Glazing			All rated Doors	1994	21	2015	2015	0	Replace glazing in rated doors and side lites with fire resistive glazing that is also safety glass.	18 ea	100%	\$300	\$5,400	\$5,400	93	2015	Most rated door assemblies have wired glass which was acceptable at the time of construction, however wired glass is a safety hazard unless specifically designed as safety wired glass. Traditional wired glass is actually less resistant that typical annealed glass. It is recommended that wired glass be replaced with fire resistive glazing that is also safety glass.
89 Station #1 HQ	INT. FIT-OUT	Rated Assemblies	Rated Openings	Rated Doors			Fire Pole Room Doors	1994	21	2015	2015	0	Replace doors with rated doors and compliant hardware.	2 ea	100%	\$3,000	\$6,000	\$6,000	• 1	2015	If fire pole trap doors are provided, these are not required.
90 Station #1 HQ	INT. FIT-OUT	Rated Assemblies	Rated Openings	Rated Doors			Apparatus Bay Storage area rated doors.	1994	21	2015	2015	0	Provide compliant hardware.	10 ea	100%	\$500	\$5,000	\$5,000	• 1	2015	Many of the doors do not have compliant sills or thresholds, are missing closers or are on hold opens, and at times missing latch sets.
91 Station #1 HQ	INT. FIT-OUT	Partitions	Openings	Wood Doors			Doors with narrow lites and sidelites.	1994	21	2015	2015	0	Replace all narrow lites and side lites that do not have safety label.	12 ea	100%	\$125	\$1,500	\$1,500	• 1	2015	*glazing that is also required to be fire resistive is not included.
92 Station #1 HQ	INT. FIT-OUT	Finishes	Painting	CMU Walls			Apparatus Bay	1994	20	2014	2015	⊗ -1	Repaint walls of Apparatus Bay.	6,320 sf	100%	\$2.00	\$12,640	\$12,640	• 3	2015	Recommend epoxy paint if washing is done in the Apparatus Bay.
93 Station #1 HQ	INT. FIT-OUT	Finishes	Painting	CMU Walls			Apparatus Bay Storage Areas	1994	20	2014	2015	S -1	Repaint walls of Apparatus Bay storage areas.	7,360 sf	100%	\$1.50	\$11,040	\$11,040	• 4	2015	
94 Station #1 HQ	EXT. BLDG.	Foundations	Water Infiltration	Foundation Penetrations - Electrical service and other utilities.			Apparatus Bay Basement and Office Basement	1994	10	2004	2015	-11	Seal foundation penetrations.	1 all	ow 100%	\$4,500	\$4,500	\$4,500	• 1	2015	Excavate down to electrical service and other utility service penetrations in foundation. Flash around conduits and pipes against foundation with flexible membrane and/or install Linkseal system. Back fill with drainage fill.
95 Station #1 HQ	CORE SYST.	Structural Systems	Load Bearing Masonry	CMU Walls			Apparatus Bay and Apparatus Bay support spaces.	1994	21	2015	2015	0	Tuck point at cracks in CMU mortar. Cut in control joints at openings and corners of building.	1 all	ow 100%	\$15,000	\$15,000	\$15,000	2	2015	Most cracks are shrinkage cracks or movement in steel structure, and not due to settlement.
96 Station #1 HQ	EXT. BLDG.	Walls	Openings	Overhead Doors			Apparatus Bay overhead doors.	2010	20	2030	2015	15	Replace	8 ea	100%	\$8,000	\$64,000	\$99,710	• 4	2030	If increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000.
97 Station #1 HQ	INT. FIT-OUT	Finishes	Acoustical Treatments	Tectum Panels			Apparatus Bay	1994	21	2015	2015	0	Add 2" Tectum Panels with 2x furring strips (C40 method) to CMU walls and bottom of deck. Painted.	1 all	pw 100%	\$12,000.00	\$12,000	\$12,000	• 4	2015	Perform acoustical study to determine appropriate treatments to improve intelligibility of the speaker system for emergency calls.
98 Station #1 HQ	EXT. BLDG.	Foundations	Water Infiltration	Water proofing membrane.			All basement walls	1994	20	2014	2015	⊗ -1	Install crystalline water proofing system to the interior side of the foundation wall.	7,105 sf	100%	\$4.50	\$31,973	\$31,973	• 2	2015	The existing foundation walls were treated with a damp proofing system which is not designed to span cracking in the foundation system. As cracks form in the foundation wall, hydrostatic pressure will likely result in water infiltration. Recommend a crystalline water proofing system that can be applied to the interior side of the foundation wall. Product manufacturer: Xypex
99 Station #1 HQ	CORE SYST.	Structural Systems	Steel Joists	Joist Bridging Connection			Apparatus Bay	1994	21	2015	2015	0	Repair anchor connection between joist bridging and east CMU wall	1 all	ow 100%	\$300	\$300	\$300	• 1	2015	Replace with equivalent post-installed anchor. If hole is insufficient for type of anchor, select epoxy anchor.
100 Station #1 HQ	CORE SYST.	Power	Air Compressor Disconnect - 60A, 3-phase, 240V, fused at 60A	d Fused Disconnect	GE	Heavy Duty Safety Sw	Compressor Room	1994	30	2024	2015	9	Replace with new.	1 ea	100%	\$420.00	\$420	\$548	3	2024	Replace when reached end of useful life.
101 Station #1 HQ	CORE SYST.	Power	Automatic Transfer Switch, 800A, 3-phase, 208V	ATS	ASCO	754035001	Main Electrical Room	1994	30	2024	2015	9	Replace with new	1 ea	100%	\$14,212.00	\$14,212	\$18,543	3	2024	Replace when reached end of useful life.
102 Station #1 HQ	CORE SYST.	Power	Disconnect switch, 30A, 240V, 3-phase, NEMA 3R	Vehicle Exhaust Fan	GE	General Duty Disconn	Roof	2006	30	2036	2015	21	Replace with new	1 ea	100%	\$307.42	\$307	\$572	3	2036	Replace when reached end of useful life.
103 Station #1 HQ	CORE SYST.	Lighting	Emergency Battery Units	Interior EBUs.	Dual Lite		Facility Interior	1994	20	2014	2015	♂ -1	Replace with new LED Equivalent	8 ea	100%	\$171.22	\$1,370	\$1,370	2	2015	Replace fixtures with new modern equivalents when units fail.
104 Station #1 HQ	CORE SYST.	Power	Emergency Generator, 314kVA, 241KW, Standby, 208v 87.1A, 3-Phase, WYE. 500 Gal Diesel Belly Tank.	/, Emergency Generator	r Caterpillar	3360	Main Electrical Room	1994	30	2024	2015	9	Refurbish or Replace with new	1 ea	100%	\$82,192.00	\$82,192	\$107,242	• 4	2024	Replace with new dependent of condition of equipment. Useful life is recommended by manufacturer. However regular maintenance may extend useful life to 50 years.
105 Station #1 HQ	CORE SYST.	Lighting	Exterior Lighting	Pole Mounted Light Fixtures			Exterior	1994	25	2019	2015	4	Replacement with new LED equivalent	16 ea	100%	\$2,272.00	\$36,352	\$40,914	2	2019	Replace fixtures with new modern equivalents when units fail.
106 Station #1 HQ	CORE SYST.	Lighting	Exterior Lighting	Wall Mounted Metal Halide Fixtures			Exterior Wall	1994	15	2009	2015	⊗ -6	Replace with new LED Equivalent	8 ea	100%	\$279.95	\$2,240	\$2,240	2	2015	Replace fixtures with new modern equivalents when units fail.
107 Station #1 HQ	CORE SYST.	Power	Full Voltage Motor Starters, NEMA 00	Motor Starter	GE	300-Line Control	Main Electrical Room	1994	30	2024	2015	9	Replace with new.	4 ea	100%	\$261.80	\$1,047	\$1,366	3	2024	Replace when reached end of useful life.







Entry	# Building	g ID C	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluatio	on Remain	ing Action	atv.	units a	pro-ration	unit cost	cost	Budget Priority	Year	Comment
108	Station #1 H		E SYST.	Power	Fused Disconnect Switch, 30A, 240V, 3-phase, 20A	Hose Tower Hoist	GE Ge	eneral Duty Disconne	Hose Tower	1994	30	2024	2015	9	Replace with new	1	ea	100%	\$308.91	\$309	\$403 3	2024	Replace when reached end of useful life.
109	Station #1 H	IQ CORE	E SYST.	Power	fusing Generator Maintenance (1)	Disconnect	Altorfer		Mech Space	2015	3	2018	2015	3	Dealer's 3-year Maintenance	1	ea	100%	\$7,500.00	\$7,500	\$ 8,195 • 4	2018	Renewal of maintenance Package
110	Station #1 H	IQ CORE	E SYST.	Power	Generator Maintenance (2)		Altorfer		Mech Space	2018	3	2021	2015	6	package Dealer's 3-year Maintenance	1	ea	100%	\$7,500.00	\$7,500	\$8,955	2021	Renewal of maintenance Package
111	Station #1 H	IQ CORE	E SYST.	Power	Generator Maintenance (3)		Altorfer		Mech Space	2021	3	2024	2015	9	Dealer's 3-year Maintenance	1	ea	100%	\$7,500.00	\$7,500	\$9,786 • 4	2024	Renewal of maintenance Package
112	Station #1 H	IQ CORE	E SYST.	Power	Generator Maintenance (4)		Altorfer		Mech Space	2024	3	2027	2015	12	Dealer's 3-year Maintenance	1	ea	100%	\$7,500.00	\$7,500	\$ 10,693 4	2027	Renewal of maintenance Package
113	Station #1 H	IQ CORE	E SYST.	Power	Generator Maintenance (5)		Altorfer		Mech Space	2027	3	2030	2015	15	Dealer's 3-year Maintenance	1	ea	100%	\$7,500.00	\$7,500	\$11,685 • 4	2030	Renewal of maintenance Package
114	Station #1 H		FSVST	Power	HW Pump Switch	Eused Disconnect	GE SI	C-30		1994	30	2024	2015		Package Replace with new	1	02	100%	\$198.75	\$100	¢250 3	2024	Replace when reached end of useful life
11	Station #1 H	IQ CORE	E SYST.	Lighting	Interior Lighting	All interior lighting fixtures	Misc Mi	lisc	Facility Interior	2012	15	2027	2015	12	Replace fixtures with modern equivalents	29,715	sf	100%	\$10.00	\$297,150	\$ 423,665 • 4	2027	Light fixtures upgraded to T8 circa 2012. Replace with new LED fixtures when existing reach end of useful life.
110	Station #1 H	IQ CORE	E SYST.	Power	Main Disconnect, 208V, 3-Phase, 800A	800A Main	GE		Maintenance Room	1994	30	2024	2015	9	Provide New switch of same	1	ea	100%	\$4,865.00	\$4,865	\$6,348 3	2024	Replace when reached end of useful life.
117	Station #1 H	IQ CORE	E SYST.	Power	Main Distribution Panel - 120/208V, 3ph, 4-wire, 800A	Main distribution	GE Sp	pectra Series,	Main Electrical Room	1994	30	2024	2015	9	Replace with new.	1	ea	100%	\$4,147.00	\$4,147	\$5,411 3	2024	Replace when reached end of useful life.
118	Station #1 H	IQ CORE	E SYST.	Power	Panel A - MLO 120/208V, 3-Phase, 4-Wire, 225A, 2-	Branch Circuit Panel	GE A S	Series #AQF3422SB	Main Electrical Room	1994	30	2024	2015	9	Replace with new.	1	ea	100%	\$1,260.00	\$1,260	\$1,644 3	2024	Replace when reached end of useful life.
119	Station #1 H	IQ CORE	E SYST.	Power	Panel B, 120/208V, MLO, 100A, 3-phase, 4-wire	Branch Circuit Panel	GE A S	Series #AQF330MBX	Basement	1994	30	2024	2015	9	Replace with new	1	ea	100%	\$1,962.00	\$1,962	\$2,560 3	2024	Replace when reached end of useful life.
120	Station #1 H	IQ CORE	E SYST.	Power	Panel C - 2 Section, MLO, 120/208V, 225A, 3-Phase, 4- Wire	Branch Circuit Panel	GE A S	Series #AQF3302SB	Corridor	1994	30	2024	2015	9	Replace with new.	1	ea	100%	\$4,950.58	\$4,951	\$6,459 3	2024	Replace when reached end of useful life.
12:	Station #1 H	IQ CORE	E SYST.	Power	Panel C - 2 Section, MLO, 120/208V, 400A, 3-Phase, 4- Wire	Branch Circuit Panel	GE A S	Series #AQF34242SB	2nd Floor Mechanical	1994	30	2024	2015	9	Replace with new.	1	ea	100%	\$4,931.00	\$4,931	\$6,434 3	2024	Replace when reached end of useful life.
122	Station #1 H	IQ CORE	E SYST.	Power	Panel SL - MLO, 120/208V, 100A, 3-Phase, 4-Wire	Branch Circuit Panel	GE A S	Series #AQF3301LB	Main Electrical Room	1994	30	2024	2015	9	Replace with new.	1	ea	100%	\$2,145.00	\$2,145	\$2,799 3	2024	Replace when reached end of useful life.
123	Station #1 H		E SYST.	Fire Alarm/Detection	Smoke Detectors in sleeping areas	Smoke Detectors			2nd Floor Sleeping Areas	1994	20	2014	2015	⊗ -1	Replace with new	6	ea	100%	\$80.00	\$480	\$480 2	2015	Replace existing smoke detectors with hardwired smoke detectors with battery back-up. Detectors shall wirelessly interconnect so that the activation of one device will cause all to sound.
124	Station #1 H	IQ CORE	E SYST.	Power	Thermal Scan Electrical Systems	Electrical Equipment				1994	21	2015	2015	0 🚷	Thermal scan equipment per report.	1	ea	100%	\$800.00	\$800	\$800 3	2015	Thermal Scan electrical equipment to identify existing hazardous conditions.
12	Station #1 H	IQ CORE	E SYST.	Power	Arc Flash Labeling	Electrical Equipment				1994	21	2015	2015	0 ()	Perform an arc flash study and provide labels at equipment	1	LS	100%	\$5,000.00	\$5,000	\$5,000 3	2015	Provide labels per NEC and NESC requirements.
120	Station #1 H	IQ CORE	E SYST.	Power	Recommended addition of Surge Protection Equipmen	t. Electrical Equipment				1994	21	2015	2015	0	Provide Surge Protection Equipment.	1	LS	100%	\$10,000.00	\$10,000	\$10,000 2	2015	Provide surge protection devices at service panel and branch circuit panels.
127	Station #1 H	IQ CORE	E SYST.	Lighting	Provide modern lighting controls	Lighting				1994	21	2015	2015	0 📀	Provide lighting control devices	1	LS	100%	\$4,000.00	\$4,000	\$ 4,000 4	2015	Provide lighting control devices for compliance with latest energy efficiency code.
128	Station #1 H	IQ CORE	ie syst.	HVAC	Air Handling Unit	RTU-1	TRANE YH	HC120E3	Roof	2010	15	2025	2015	10	Periodic maintenance such s lubricating and filter and belts replacement will provide trouble free remaining life of the unit.	1	ea	100%	\$13,000.00	\$13,000	\$ 17,471 2	2025	Serves the Lobby (south main hallway) with T-Stat located in the south main hallway.
129	Station #1 H	IQ CORE	ie syst.	HVAC	Air Handling Unit	RTU-2	TRANE YH	HC072E3	Roof	2010	15	2025	2015	10	Periodic maintenance such s lubricating and filter and belts replacement will provide trouble free remaining life of the unit.	1	ea	100%	\$10,000.00	\$10,000	\$ 13,439 2	2025	Serves 1st Floor Board Room (community and Conference Room),T-Stat is located in the Community and Conference Room.
130	Station #1 H		e syst.	HVAC	Air Handling Unit	RTU-3	TRANE YH	HC060F3	Roof	2012	15	2027	2015	12	Periodic maintenance such s lubricating and filter and belts replacement will provide trouble free remaining life of the unit.	1	ea	100%	\$10,000.00	\$10,000	\$ 14,258 2	2027	Serves 1st Floor Board Room (community and Conference Room),T-Stat is located in the Community and Conference Room.
13:	Station #1 H		ie syst.	HVAC	Air Handling Unit	RTU-4A	TRANE YH	HC072E3	Roof	2010	15	2025	2015	10	Periodic maintenance such s lubricating and filter and belts replacement will provide trouble free remaining life of the unit.	1	ea	100%	\$10,000.00	\$10,000	\$ 13,439 2	2025	Serves Kitchen, T-Stat is located in the Kitchen.
13	Station #1 H		E SYST.	HVAC	Air Handling Unit	RTU-4B	TRANE YH	HC048E3	Roof	2010	15	2025	2015	10	Periodic maintenance such s lubricating and filter and belts replacement will provide trouble free remaining life of the unit.	1	ea	100%	\$7,500.00	\$7,500	\$10,079 2	2025	Serves 2nd floor TV Room (Day Room),T-Stat is located in the Day Room.
13	Station #1 H	IQ CORE	ie syst.	HVAC	Air Handling Unit	RTU-5	TRANE YH	HC060F3	Roof	2014	15	2029	2015	14	Periodic maintenance such s lubricating and filter and belts replacement will provide trouble free remaining life of the unit.	1	ea	100%	\$8,400.00	\$8,400	\$ 12,706 2	2029	Serves 2nd floor TV Room (Day Room),T-Stat is located in the Day Room.
134	Station #1 H	IQ CORE	ie syst.	HVAC	Air Handling Unit	RTU-B1	TRANE YH	HC120E3	Roof	2014	15	2029	2015	14	Periodic maintenance such s lubricating and filter and belts replacement will provide trouble free remaining life of the unit.	1	ea	100%	\$8,400.00	\$8,400	\$12,706 2	2029	Serves Basement east side,T-Stat is located in South Stairway.
13:	Station #1 H	IQ CORE	ie syst.	HVAC	Kitchen Exhaust Fan - Tag: EF-2	EF-2	Penn Vent FN	MX 128	Roof	1996	12	2008	2015	⊗ -7	Periodic maintenance such as lubricating and belts replacement will provide adequate service, but need to replace for continued trouble free service.	1	ea	100%	\$4,200.00	\$4,200 _	\$ 4,200 2	2015	Serves Kitchen Hood exhaust.
130	Station #1 H	IQ CORE	IE SYST.	HVAC	Building Exhaust Fan - Tag: EF-15	EF-15	Penn Vent LF	60	Roof	1996	12	2008	2015	⊗ -7	Periodic maintenance such as Iubricating and belts replacement will provide adequate service, but need to replace for continued trouble free service.	1	ea	100%	\$16,500.00	\$16,500	\$ 16,500 2	2015	Serves general building exhaust.





Ent	ry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty.	units pr	o-ration	unit cost	cost	Budget	Priority	Year	Comment
1	37 Sta	ition #1 HQ	CORE SYST.	HVAC	Fractional Horsepower exhaust Fans - Tags: EF-1, EF-3 N, to EF-14 and EF-16. (Except EF-2 and EF-15)	/Α	Penn Vent	EF-1 to EF-5: FMX 12B, EF-6: FMX 18B, EF-7, 9, 10, 14, & 16: FMX 6R, EF-8, 11, 12: FMX 8R, EF-13: FMX 9R.	Roof	1993	12	2005	2015	⊗ -10	Exhaust fans have provided service almost twice as of their life expectancy. For continued trouble free service it is highly advisable to replace the fans instead of repairs.	14		100%	\$2,650.00	\$37,100	\$37,100	2	2015	Serves general building exhaust.
1	38 Sta	ntion #1 HQ	CORE SYST.	HVAC	Duct System Cleaning N,	/Α	N/A	N/A	N/A	2015	5	2020	2015	⊘ 5	Periodic coil cleaning, condensate pan and drain cleaning will provide adequate continued trouble free service.	1 e	a	100%	\$5,000.00	\$5,000	\$5,796	2	2020	
1	39 Sta	ation #1 HQ	CORE SYST.	HVAC	Basement Workshops and Utility Rooms where it is N, lacking comfort temperature.	/Α	N/A	N/A	Ceiling hung	1994	15	2009	2015	⊗ -6	Periodic coil cleaning, condensate pan and drain cleaning will provide adequate continued trouble free service.	5 e	a	100%	\$1,150.00	\$5,750	\$5,750	2	2015	
1	40 Sta	tion #1 HQ	CORE SYST.	Plumbing	Domestic Water Backflow Preventer 2"		Watts	909	9 Basement	1994	40	2034	2015	19		1 e	a	100%	\$1,300.00	\$1,300	\$2,280	• 4	2034	
1	41 Sta	ation #1 HQ	CORE SYST.	Plumbing	Gas Fired Water Heater WH-1 serving east side of building		State	SBF100 260 NET	Second Floor Janitor Closet	1994	15	2009	2015	⊘ -6	Replace water heater, add expansion tank and thermostatic mixing valve.	1 e	a	100%	\$12,000.00	\$12,000	\$12,000	1	2015	
1	42 Sta	ation #1 HQ	CORE SYST.	Plumbing	Gas Fired Water Heater WH-2 serving west side of building		Bradford White	M1556BN	First Floor	2011	15	2026	2015	V 11	Add expansion tank.	1 e	a	100%	\$4,400.00	\$4,400 ¢500	\$6,091	• 4	2026	
1	43 Sta	tion #1 HQ	CORE SYST.	Plumbing	Domestic Water Circulating Pump		Bell & Gossett	SLC-30	Basement	1994	15	2009	2015	<mark>⊗ -</mark> 6		1 e	a	100%	\$500.00	\$500	\$500		2015	
1	44 Sta 45 Sta	ation #1 HQ	CORE SYST.	Plumbing	Sewage Elector		2	2	Basement	1994	30	2009	2015	9		2 e	a	100%	\$1,500.00	\$1,500	\$1,500	3	2015	-
1	46 Sta	tion #1 HQ	CORE SYST.	Plumbing	Sump Pump		?	?	Basement	1994	30	2024	2015	9		4 e	a	100%	\$1,500.00	\$6,000	\$7,829	3	2024	
1	47 Sta	ation #1 HQ	CORE SYST.	Plumbing	Water Closets & Urinals: Vitreous china wall mounted		American Standard	?	First & Second Floors	1994	30	2024	2015	9		22 e	a	100%	\$250.00	\$5,500	\$7,176	3	2024	
1	48 Sta	ition #1 HQ	CORE SYST.	Plumbing	Flush Valves (manual)		Sloan	?	First & Second Floors	1994	20	2014	2015	Ø -1		22 e	a	100%	\$500.00	\$11,000	\$11,000	• 1	2015	
1	49 Sta	ition #1 HQ	CORE SYST.	Plumbing	Lavatories: vitreous china drop-in countertops		Kohler	?	First & Second Floors	1994	30	2024	2015	9		13 e	a	100%	\$250.00	\$3,250	\$4,241	• 4	2024	
1	50 Sta	ation #1 HQ	CORE SYST.	Plumbing	Faucets for lavatories, sinks and mop sinks		:	·	Second Floors	1994	20	2014	2015	✓ -1✓ 0		20 e	28	100%	\$500.00	\$10,000	\$10,000	1	2015	
1	51 Sta	ation #1 HQ	CORE SYST	Plumbing	countertops Mos conice basis: floor mounted		2	·	Pasamont First &	1994	20	2024	2015			2 0	:d	100%	\$200.00	\$1.500	\$765	4	2024	
1	52 Sta	ation #1 HQ	CORE SYST	Plumbing	Showers faucets and shower heads		2	2	Second Floors	1994	20	2024	2015	✓ ³		9.0	2	100%	\$300.00	\$1,500	\$1,537	- 1	2024	
1	54 Sta	ation #1 HQ	CORE SYST.	Plumbing	Electric Water Cooler compressor		2	?	First Floor	1994	15	2014	2015	Ø -6		1 e	a	100%	\$500.00	\$500	\$500	1	2015	
1	55 Sta	tion #1 HQ	CORE SYST.	Plumbing	Grease Trap interceptor				Kitchen	1994	10	2004	2015	S -11	Provide a grease trap interceptor at the kitchen sanitary line and clean existing waste line.	1 e	a	100%	\$10,000.00	\$10,000	\$10,000	1	2015	Kitchen drains have continuously had issues with slow drainage due to grease clogs. In addition to the grease trap installed, the drainage pipe should be cleaned from kitchen to basement with a rotor cleaning device by a qualified professional. The location of the grease trap is to be determined upon further investigation.
1	56 Sta	ition #1 HQ	CORE SYST.	Plumbing	Sanitary Sewer				Basement	1994	20	2014	2015	S -1	Replace main cast iron sanitary sewer pipe in basement to provide adequate 1/8" per foot slope to to existing invert of pipe leaving building.	1 a	llow	100%	\$6,500.00	\$6,500	\$6,500	• 1	2015	The existing invert of sanitary pipe leaving the building through the foundation wall is higher than the end of the sanitary sewer line. The result is a PVC pipe connected to the cast iron pipe slopes up to the foundation wall invert 'penetration', preventing positive drainage at this location. The invert elevation is likely set by the required slope from the manhole to the foundation wall. The recommended solution is to reinstall the cast iron pipe higher in the structure to provide positive drainage. There is a possibility that conflicts with existing ductwork exist and require unique pathing to avoid or require rework of duct work to accommodate sewer pipe. *Cost includes potential duct work modifications.
1	57 Sta 58 Sta	ation #1 HQ	CORE SYST.	Fire Suppression	Backflow Preventer		Watts ?	709DCDA ?	Basement Throughout Building	1994 1994	40	2034	2015	1929		29.715 s	a ft	100%	\$5,000.00 \$4.00	\$5,000 \$118.860	\$8,768		2034	
-	59 C+-	ation #1 H0	CORE SYST	Technology	Structured Cabling System 9: Station Alart Natification				Throughout Puilding	1994	20	2014	2015		Replace structured cabling	1.0	llow	100%	\$50,000,00	¢50.000	¢50,101		2015	Replacement of structured cabling system for support
1	sə Sta	nion #1 HQ	CORE STST.	rechnology	Structured Cabring System & Station Alert Notification System				nrougnout Building	1994	20	2014	2015	<i>₩</i> -1	Neprate structured cabling system and upgrade station alert notification system.	1 a	iii.UW	100%	Ş50,000.00	\$50,000	\$50,000	2	2015	nepractiment or structured cabling system for support of existing and future devices and systems. Upgrades to station alert/paging notification systems. Infrastructure for support of Owner furnished and installed technologies.
																				\$2,380,242	\$3,153,613			



Fire Station #2 – Training Facility Existing Conditions



Figure #2-1 Station #2 North Elevation.

STRUCTURAL SYSTEMS General

Station #2 is a two-story building located within the city limits of Decatur, IL. The structure has a flat roof divided between two roof elevations. The lower elevation contains the living quarters, administrative offices, dormitory, and training facility while the higher elevation contains the apparatus bay. A small mechanical balcony exists within the apparatus. The second story is small platform at the top of the hose drying tower which extends up through the apparatus bay. There is no basement level.

The structure was constructed in 1975. If structural renovations are to be undertaken at this facility, the International Building Code 2009 would categorize the following criteria for structural renovations as such:

Occupancy Category:	IV
Ground Snow Load:	20 psf
Basic Wind Velocity:	90 mph
Wind Importance Factor:	1.15
Wind Exposure Category:	В
Seismic Importance Factor:	1.50
Mapped Spectral Response:	Ss = 0.28g, $S1 = 0.11g$

The foundation of the structure could not be verified without further investigation. Though from the site visit, it is apparent that a continuous perimeter bearing/frost wall constructed of reinforced concrete supports the brick veneer and bearing wall backup. It follows that a continuous reinforced concrete grade beam supports the perimeter wall. Additional foundation walls are likely present for interior bearing and partition walls. A reinforced concrete slab-ongrade provides the floor for the structure and is an unknown depth. It is likely that the slab in the Apparatus Bay is 6"-8" thick while the slab in balance of the facility is 4"-6" thick.

The superstructure of the facility has been verified. Bearing walls support the roof and mechanical balcony in the apparatus bay. The bearing walls consist of 8" nominal Concrete Masonry Units (CMU) laid in a stack bond. The 3 5%" nominal brick exterior veneer is laid in running bond and may be anchored to the CMU with veneer anchors. Interior partition walls are also constructed of CMU and laid in stack bond. The presence of reinforcing steel in the CMU walls could not be verified and may not be present depending on the age of the structure. The roof construction in the apparatus bay consists of metal roof deck laid on steel bar joists. The roof construction for the lower elevation is likely constructed in the same manner, but could not be verified.

The lateral force resisting system for the building could not be verified. Depending on the age of the structure, a defined lateral system to resist the effects of winds and earthquakes may or may not be present. Given the structural system in place, the CMU walls and roof diaphragm will resist the lateral loads regardless if the system was designed to restrain the quantified forces.

Conditions Assessment

Overall, the structure is in good condition. The building slab does not have noticeable damage. Also, the roof deck and steel bar joists in the apparatus bay do not have noticeable damage. The exterior brick veneer has various locations where the mortar bed is cracked and is likely a sign of minor settlement or shrinkage. Minor differential settlement (inconsistent settlement) in structures can be common and is



generally not a cause of concern. Damage from shrinkage can occur in masonry walls that do not have adequate control joints.

The CMU bearing and partition walls appear to be in fairly good condition throughout the facility. Some stair step pattern and horizontal cracks can be found in the mortar beds of the CMU bearing walls in the apparatus bay. Also, similar style cracking can be found at the top of the hose tower bearing walls. This location has the most extensive structural distress noted onsite and has been sealed in the past to prevent water infiltration. The cracking may be a sign of settlement, shrinkage, or overstress, with the first two issues being common and not a cause of concern. Although, the damage may be indicative of overstress resulting from high lateral loading and/or an insufficient lateral system.



Figure #2-2 Significant cracking at hose tower CMU.

As mentioned above in the structural systems description, the lateral force resisting system for the building could not be verified. Though, for the age of the structure this is common. Modern structures incorporate an engineered system designed to resist calculated wind and seismic loads. This practice was adopted in the 1980s and has become increasingly more detailed and complex. Although actual winds and earthquakes have not necessarily become stronger, the structural engineering community better understands the likelihood of the event occurring, how the loads are collected and dispersed within the structure, and the required details to prevent structural damage from occurring. With this understanding, the building code now incorporates analysis and details that may not have been considered during the design of this facility. The absence of a recognizable lateral system is noteworthy but no further evaluation of the lateral system is warranted at this time due to the condition.

Recommendations

Dewberry recommends that visible cracks in the CMU be sealed to prevent water intrusion. Dewberry also recommends periodic observation of the cracks apparent in the apparatus bay and hose tower CMU bearing walls. It should be noted whether the existing cracks continue to enlarge and whether the propagation continues further. Further signs of damage should be revisited by a licensed structural engineer for assessment.

MECHANICAL SYSTEMS General

The listed air handling units serving the training area and living quarters are of sizes 10 tons and 7.5 tons respectively. The larger of the two units was installed in 1993, which makes the unit 22 years of age and the second unit was installed in 1997, as of now it is 18 years of age. Each have exceeded the expected length of life according to ASHRAE published data.



Figure #2-3 Station #2 Roof top units above the apparatus bay.

The roof mounted, direct drive exhaust fan serving the Apparatus Bay is mounted on a 4"x4" wood studs and in poor condition. The motor support is rusted.

The exhaust fans in the locker rooms according to occupants no longer work and are beyond their useful life per ASHRAE published data and industry standards. The exhaust fans with a fractional horsepower, can be similar to the ones indicated in the schedule below.

DECATU	R FIRE STATIONS	(
FIRE STA	TION NO. 2					
TAG NO.	MODEL NO.	SERIAL NO.	SPACE USAGE	CONDITION BY VIS. INSP.	YEAR BUILT/INST'D	CURRENT UNIT COST
RTU-1	YHD12083H0CA	H30143523D	TRAINING AREA	BELOW AVERAGE	1993	\$13000+
RTU-2	усрояосзнове	M43101082D	LIVING QUARTER, TV ROOM	BELOW AVERAGE	1997	\$10000+
ROOF EF	N/A	N/A	APPARATUS BAY	BELOW AVERAGE	N/A	N/A
GUH-1	N/A	N/A	APPARATUS BAY	POOR	N/A	N/A
GUH-2	N/A	N/A	APPARATUS BAY	Fair	N/A	N/A

Figure #2-4 Station #2 roof top mechanical equipment table.

				E	XHAU	JST F	AN SCH	IEDU	LE			
TAG	AIRQTY.	ESP (IN.	-	800F	ELECTRIC	AL CHARA	CTERISTICS	SONES		MODEL	ACREA DAY	INSTALLED
NO.	CFM	WG.)	DRIVE	OPENING	RPM	HP	V/Ph/Hz	(MAX)	MANUF.	NO.	REMARKS	DATE
EF-1	525	0.25	BELT	16.25 50.	775	1/6	115/1/60	4.28	PENN	FMX 128	1, 2, 3, 4	1975
EF-2	525	0.25	BELT	16.25 50.	775	1/6	115/1/90	4.28	PENN	FMX 128	1, 2, 3, 4	1975
REMAR	R\$:											
1	PROVIDE	BACK DRA	FT DAMP	ER								
2	PROVIDE	PREFAB RO	DOF CURB	1								
3	PROVIDE	BIRDSCREE	N AND F	AN GUARDS								
4	PROVIDE	DISCONNE	CT SWTIC	ж								

Figure #2-5 Typical Exhaust Fan Type and Capacity



Figure #2-6 Exhaust fan mounted on 4x4 blocks.

Recommendations

Due to the age of the equipment, Dewberry recommends that the RTU's and space heaters serving the apparatus bay to be replaced for continuous trouble free service. It is also recommended that a reputable duct cleaning service is engaged to do a thorough duct cleaning. The Apparatus Bay roof exhaust fan should be replaced or if not replaced in near future, at least it could use cleaning and a coat of paint and lubricated. The unit can be better installed with proper roof rails attached to the roof. The Toilet and Locker Rooms exhaust fans should be replaced. It was observed that the gas piping on the roof is supported by 4"x4" wood blocks. Through past experience, Dewberry has seen these blocks deteriorate over time resulting in the pipe hanging over long distance without support. It is recommended that MIRO pipe supports – specifically made to support piping - should be used. A coat of paint on the pipe would add durability.

Having noticed several ceiling tiles with water marks, it is recommended that the RTU curbs from inside and outside of the units be checked out for leak-proof water tightness.



Figure #2-7 Gas lines to mechanical units.



ELECTRICAL SYSTEMS Electrical Service and Main Distribution Equipment

The facility is served by an 800A, 120/208V, 3-phase, 4-wire underground service from Ameren. The CT cabinet and meter are located outside with an 800A Main Disconnect located in the gear. The main gear is original to the facility which was constructed in 1975. The gear is manufactured by Federal Pacific Electric Company which is no longer manufactured. In the early 1980s several lawsuits were brought against Federal Pacific and UL rescinded approval of Federal Pacific systems. This equipment should be replaced immediately due to potential hazards from protective devices not working properly.

An emergency panel is installed adjacent to the main distribution panel. Loads on this panel include select receptacles, fire alarm, radio, and one set of overhead doors. No roll-up generator connection point was observed.

A 120/240V, 1-phase, 3-wire, 225A sub panel is located in the apparatus bay. This panel feeds Apparatus Bay loads as well as receptacles and lights in adjacent areas. This panel is also original to the facility and made by Federal Pacific. This panel should be replaced immediately with a similar piece of equipment.

All equipment disconnects are original to the facility with the exception of a few added as equipment was added to the facility.

Recommendations

Dewberry recommends that all Federal Pacific equipment be replaced immediately with equipment of same size and ratings. This includes electrical panels and disconnect switches at equipment. Other Square D equipment is within its useful life and has several years of operation remaining.

Per code, an emergency generator is required for this facility due to its operation impacting public safety. This facility has a service the same size as Fire Station #1. It is recommended that a similar size diesel generator be installed at this fire station in a rainproof enclosure exterior to the facility. A smaller generator may be able to carry the building load, but additional load study and analysis of actual power usage will be required. Transfer switch and generator will be located on the building exterior. The cost to add this genset with the associated controls and circuitry is approximately \$116,200.

A load study should be performed to determine the maximum demand load within the facility. For a service this size, peak load information should be available from the utility (Ameren) as the meter tracks this information.

There were no surge protection devices observed on any electrical equipment. Dewberry recommends that at a minimum a UL 1449, 3rd edition surge protection device be added to the main distribution panel. The cost to add surge protection devices would be approximately \$4,350.

Within the next 20 years Dewberry recommends replacement of Square D disconnects.

Lighting and Controls

The majority of the lighting in the facility is by linear fluorescent and has been modernized within the last two years from T12 to T8 fluorescent lamping. Existing fixtures remain, but the ballast and sockets have been replaced to accept the new lamps. Down lights throughout the facility are incandescent screw base type with self-ballasted fluorescent lamps. All of the lighting is still controlled via wall mounted snap switches except for select areas where occupancy sensing devices have been added. Emergency Life Safety Egress lighting is provided throughout the facility by emergency battery packs. Exit lights do not appear to have integral battery back-up.

Recommendations

Any upgrades or additions to the facility would require compliance with the latest adopted Energy Conservation Code. Advanced automatic lighting control systems will need to be provided in all non-sleeping areas to automatically turn lights off. Additional daylight harvesting devices will need to be installed in code defined "daylight zones". Daylighting zones are defined areas around windows and skylights where lights within the zone are controlled by day light sensors. Lights in secure areas or any area where automatic control could compromise safety may continue to be manually controlled. Exterior lighting will also be controlled by automatic means to shut off lighting when sufficient daylight is present. Upgraded controls to the latest energy efficiency code will cost approximately \$2,500.

There is no immediate need to upgrade lighting fixtures in the apparatus bay. Down lights are recommended to be replaced with modern LED retrofit kits or LED surface mounted fixtures and shall utilize the existing fixture locations to the greatest extent. If the entire ceiling is to be replaced, the light fixtures shall be replaced with modern LED fixtures that are appropriate for the spaces and modern in appearance. Benefits of LED vs Fluorescent are longer lamp life, lower maintenance costs, lower operating costs, ease of disposal, and superior controllability.

Exit signs shall be replaced with modern LED exit signs with integral battery back-up. All emergency battery units shall have new batteries installed or be replaced with new modern equivalents.

Fire Alarm System

There currently is no fire alarm system on site. Residential style smoke detectors are provided in the sleeping areas for compliance with the IBC.

Recommendations

Per review of the International Building Code, this type of facility would likely be a combination of B, R-2, and S-2. None of the conditions are met to require a fire alarm system. Dewberry would recommend that existing smoke detectors within the facility be replaced with hard wired units with battery back-up. The new units shall utilize wireless technology to transmit alarm signals to all other units within the network so that all units alarm when one unit detects smoke.

Arc Flash Labeling

In accord with NEC (National Electrical Code) and NESC (National Electrical Safety Code) electrical equipment shall be labeled to indicate the potential for Arc Flash Hazard and level of PPE (Personal Protective Equipment) used when maintaining or operating the equipment. All of the equipment in this facility does not include the required labels.

Recommendations

A study to perform the Arc Flash Hazard analysis is recommended to be performed immediately. The cost for the study and labels would be approximately \$500.

PLUMBING SYSTEMS Domestic Water System

The domestic water service enters the building off the Apparatus Bay in same room as the gas water heater. The water service is 2-1/2", there is no backflow preventer on the water service. There is one hose reel in the Apparatus Bay.

The gas fired domestic water heater is an A.O. Smith, model BT 100 300, 75.1 MBH, with a Grundfos model UP 15-42 SF circulating pump. The domestic water heater was installed in 2007. While the water heating system is on, cold water is unavailable.

Urinals and toilets are wall mounted and manufactured by American Standard with Sloan manual flush valves. Lavatories are Kohler, wall mounted with manual faucets. Sinks are stainless steel double bowl counter mounted with manual faucets.

Recommendations

Dewberry recommends that a master mixing valve be added at the water heater. That the circulating pump be removed and replaced with one that has been properly sized in order to prevent inadvertent mixing of hot and cold domestic water. Domestic fixtures are dated, but functioning, so replacement is not necessary. Within the next 15 years Dewberry recommends replacement of the domestic water heater.

Fire Protection System

The fire protection system is connected to the domestic water system with a 2 ¹/₂" shut-off valve that is locked open and a 2 ¹/₂" check valve. There are exposed sprinkler heads in the apparatus bay. This appears to be the only room with sprinklers and it is not clear why the rest of the building was excluded.

Recommendations

None.

TECHNOLOGY SYSTEMS Structured Cabling

In its present state, the structured cabling system meets the basic operational needs of the department. Hardwired drops are present where they are needed, but there are limited spare drops that prevent support of future systems. Much of the existing structured cabling system has been installed in phases over time and done so in a haphazard manner. The installation does not meet current industry standards and most likely was not tested for performance. As a result, it's questionable whether the cabling system is performing to its optimum level, or if it meets a manufacturer's warranty for performance. Staff also expressed difficulty in identifying active network cable versus cable for other systems or even abandoned cable.



Figure #2-8 Cat 5 cable on wall at work station.

Support of an upgraded wireless LAN is needed. The current wireless LAN is basic in nature and is shared by both emergency systems and personal use by the staff.

Recommendations

It is recommended that the existing cabling system be replaced with a standards compliant Category 6 performance grade system. In addition to an immediate improvement of the cosmetic nature of the existing installation, replacement of the cabling system would result in:

- A standards based installation that has been tested for performance.
- A centralized location for termination and housing of head end electronics for emergency systems.
- Identified cabling that is clearly labeled.

In addition to replacement of the existing cabling, provisions should be made for support of future network based devices for signage, displays and other devices integral to station alert and notification systems.

It is also recommended that a wireless survey of each building be performed to identify preferred locations of wireless access points. It was noted that internet services is provided via broadband from the local cable provider. Should the City extend its fiber optic network to include each fire station, each station would benefit not only from direct access to City networks, but also shared use of the City's internet service provider. It is also strongly suggested that the Department work with the City's IT department to develop partitioned networks that separate emergency system network traffic from personal use. Unless otherwise noted, it is assumed that cellular coverage is sufficient throughout all facilities and that no supporting antenna systems are required for amplification of cellular

Station Alert and Alarm Notification

The existing station alert system is very basic in nature and is limited to tone and alarm only.

Recommendations

service.

Modifications and upgrades are recommended resulting in both audible and visual notification methods. Modern computer aided dispatch systems utilize a variety of signaling devices including LED signage and large format wall displays, in addition to traditional audible announcements. Providing visual representation of the alert provides additional direction and input that a simple audible alarm lacks.

Station paging systems should be evaluated on a case by case basis. Performance of the systems should be evaluated to confirm:

- Consistency in coverage of each station
- Clear audible reproduction.
- Sound pressure levels sufficient to overcome the ambient sound levels of each space.

In addition to evaluation of each system, consideration of the acoustics of each space should also be evaluated. When needed, architectural modification should be made to minimize unwanted reflections that would otherwise deter the quality of reproduced sound.

Additional Considerations

As noted above, centralization of emergency system electronics is recommended. In addition to providing a secure location for this equipment, dedicated emergency power can be provided that utilizes uninterruptable power supplies and generator backup.

Consideration should also be given to future enhancements to building security including access control/alarm monitoring and closed circuit television monitoring and recording. In addition to securing these valuable properties, electronic systems can be used to simplify staff access to the facility, control and monitor secure locations such as pharmaceutical and equipment storage, and provide a visual record of events in key areas such as the Apparatus Bay, entrances to the facility, etc.

BUILDING ENVELOPE Exterior Walls

Exterior walls consist of modular brick veneer construction with CMU back up wall. It is assumed based on typical construction from the era of the building (1970s), that the wall construction is a cavity wall system which contains an air space between the back up and the veneer. The building also has a wall panel type of construction above windows which appears to be sand textured painted metal.



Figure #2-9 Roof to brick masonry transition.

Masonry construction has drip edge at base of wall with regularly spaced weeps and thru wall flashing providing drainage of the cavity wall. However, at the clerestory of the apparatus bay where the roof terminates at the masonry wall drip edge, there was evidence of water infiltration on the interior of the Apparatus Bay.



Figure #2-10 Crack at corner of building due to masonry expansion



There is a lack of masonry expansion joints provided throughout the facility. Clay brick masonry units expand and contract year round from cold and hot temperatures. The lack of masonry expansion joints at building corners, openings, and long lengths of walls will result in cracking over the course of time. These cracks start in mortar joints, but can also carry through the brick. In some locations this has already started.

In a few locations on the north side of the building, there is discoloration or a darkening of the masonry indicating the presence of water absorbed into the masonry that is unable to escape through the cavity. There were also spots where brick is spalling and mortar failure.



Figure #2-11 Mortar join failure and brick spalling.



Figure #2-12 Metal panel with organic growth.

The north side of the building is seeing growth of moss on the brick mortar as well as on the metal panels.

The mortar joints at all of the stone sills below the window have failed. There doesn't appear to be any flashing or weeps below the stone sill.

Steel lintels above all the windows are rusting.



Figure #2-13 Mortar join failure at stone sill.



Figure #2-14 Rusted steel lintel.

The following is a summary of recommended corrective actions for the issues pertaining to the Exterior Walls.

- Remove some masonry at clerestory wall of apparatus bay to determine if thru wall flashing was provided (exterior wall between lower roof and upper roof). If thru wall flashing was not provided, remove 24" of masonry and install thru wall flashing in conjunction with 2-piece counter flashing that covers roof termination (roof covered in another section).
- To prevent any cracking, it is recommended to cut expansion joints into brick veneer at corners of building, lintels above openings, or where lengths of wall exceed 40'-50'.
- 3) Clean masonry and metal panels on north side of the building.
- 4) Where water may be trapped in the cavity of walls on the north side of the building, drill some holes to relieve water. Replace spalled masonry and tuck point masonry on the north side of building.
- 5) Rake out mortar at all stone sills and replace with sealant.
 - a. If done in conjunction with a window replacement, recommend removing stone sill and providing appropriate masonry flashing and weeps.
- 6) Remove rust and repaint steel lintels.

Roofing

Roof over Apparatus Bay was replaced approximately 7-10 years ago with single ply EPDM membrane system. The typical roof warranty for this system is 20 years. Over all the condition of the roof is in good condition with no visible signs of ponding. The two (2) lower roofs over the recreation area and the living spaces have built up ballasted asphalt roofs that are more than 20 years old and possibly original.



Figure #2-15 EPDM roof above Apparatus Bay.

Evidence of leaks are present on the interior side of exterior walls throughout. Based on the construction with a stone coping cap, it is possible there is not thru wall flashing below the coping stone and none of the roofs lap over the top the stone copings. This maybe a primary cause of roof leaks.



Figure #2-16 Stone coping and flashing at ballasted roof.

Based on age of the two (2) built up ballasted asphalt roofs, they are past its useful life. These sections of roof also have ponding water from lack of slope and tapering.



Figure #2-17 Ponding on built up ballasted asphalt roof.

The following is a summary of recommended corrective actions for the issues pertaining to the Roofing Systems.

- Replace built up ballasted asphalt roofs with single ply membrane roofs.
- 2) Remove stone coping caps and provide thru wall flashing to exterior side of coping cap with drip edge, cover roofing termination with 2-piece counter flashing. OR lap single ply membrane roof flashing over the top of coping cap and provide metal edge termination or sheet metal coping cap to protect membrane termination.
 - a. This work should be done in conjunction with other exterior building envelope work.

Windows and Entrance Systems

All exterior window glazing systems are anodized aluminum storefront including main entrances into the facility. Secondary and egress exit doors are hollow metal doors and frames.



Figure #2-18 Recently installed storefront window system.

Many of the storefront systems have experienced some leaking, likely from lack of sill pan flashing. A few sections of storefront have been replaced at the Day Room and occupants have not noticed water infiltration on the sill as they did before. These 2 window sections were replaced approximately 1-2 years ago. It should be noted the new installations have high performance sill pan flashing which allow the storefront to weep properly.

Occupants also complain of the air infiltration and 'drafty' nature of the windows and the exterior doors, especially the egress door of the sleeping quarters. Replacement of the storefront in the Day Room improved this.

Most of the original sealant around the perimeter of the windows, doors, and overhead doors is failing. They are either losing adhesion or they are hardened and cracked.



Figure #2-19 Failing joint sealant.

Storefront entrances do not have sufficient weather stripping at head, jambs, stills, and stiles.

Many doors with in the facility do not have compliant hardware for rated openings under current code requirement. Some of the doors and frames have rated labels, but do not always match up. Much of the glazing does not meet safety glazing ratings or flame resistance ratings.

Two (2) of the apparatus bay overhead doors are missing the safety sensors at base of door.

The following is a summary of recommended corrective actions for the issues pertaining to the Windows and Entrance Systems.

- Replace all storefront systems with thermally broken storefront with high performance sill pan flashing and silicone sealant. Provide appropriate compliant hardware.
- 2) Replace hollow metal door with insulated hollow metal door and replace all weather stripping.
- 3) Provide compliant hardware for rated openings.
- 4) Provide compliant glazing for safety glazing and rated glazing.
- 5) Install safety sensors at two (2) overhead doors where they are missing.

ARCHITECTURAL FINISHES Day Room

The Day Room wall finish is panelized wood veneer over CMU walls, 2x2 ceiling tile system, and VCT flooring.

Stained ceiling tile along the perimeter of the exterior walls is present.



Figure #2-20 Stained ceiling tile.

The acoustical ceiling tile helps with acoustics in the room for intelligibility of call system, however with the hard floor the acoustics in the room can be improved more so with carpet in part of the room.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Day Room.

- 1) Replace stained ceiling tile. (Roof leaks were addressed in the roofing section)
- 2) Install carpet in part of Day Room to improve acoustics if intelligibility of call system needs improvement.

Kitchen

The Kitchen finishes include painted gypsum wallboard soffits, painted CMU walls, 2x2 ceiling tile system, and VCT flooring. The cabinets are plastic laminate wood and particle board core cabinets with plastic laminate countertops.

Some of the countertop plastic laminate is delaminating at the backsplash and some plastic laminate is chipping along the edge.



Figure #2-21 Delaminated plastic laminate at back splash.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Kitchen.

 Repair plastic laminate. Replace countertop when plastic laminate delaminates and is unrepairable. Under current accessibility codes direct alterations must meet ADA 2010 and Illinois Accessibility Code. Replacement will require 34" countertop height and accessible sink.



Toilet and Locker Room

The Toilet and Locker Room finishes include painted gypsum wallboard ceilings, painted CMU walls, and mosaic tile floor. The lockers and toilet partitions are prefinished steel.

There is evidence of water infiltration at exterior walls at the ceiling causing some staining on the CMU. There are also shrinkage cracks on exterior CMU. Some cracks have formed on the gypsum wallboard ceiling. At the entrance to the shower area the steel lintel is rusting.



Figure #2-22 Water infiltration at exterior wall.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Toilet and Locker Room.

- 1) Clean and repaint CMU walls.
- 2) Repoint CMU cracks.
- 3) Repaint steel lintel.
- Repair gypsum wallboard ceiling cracks and repaint.

Sleeping Quarters

The Sleeping Quarters wall finish is panelized wood veneer over CMU walls, 2x2 ceiling tile system, and VCT flooring.

Stained ceiling tile along the perimeter of the exterior walls is present.

The acoustical ceiling tile helps with acoustics in the room for intelligibility of call system, however with the hard floor the acoustics in the room can be improved more so with carpet in part of or throughout the room.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Sleeping Quarters.

- 1) Replace stained ceiling tile (Roof leaks were addressed in the roofing section).
- 2) Install carpet in sleeping quarters to improve acoustics for intelligibility of call system.

Apparatus Bay

The finishes in the Apparatus Bay are painted CMU, painted steel roof joists, painted tectum deck, and unfinished concrete slab.



Figure #2-23 Apparatus Bay.

The paint on the walls is fading or discolored. In a few locations the paint is peeling.

The bare concrete floor was likely treated with a sealer at time of construction, but has likely worn off over time. As mentioned in Windows and Entrance system section, the doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware.

Some shrinkage cracks in the CMU are visible due to lack of control joints at openings.

At exterior walls there is evidence of water infiltration at the roof bearing locations. This addressed in the Roofing and Building Envelope sections.



Figure #2-24 Water infiltration and CMU cracking.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay.

- Repaint Apparatus Bay, an epoxy based paint is recommended if trucks are washed in Apparatus Bay.
- 2) Recommend applying a new sealer/hardener to concrete floor. An epoxy floor is an option as well.
- 3) Verify rating and separation requirements of openings into Apparatus Bay.
- 4) Repoint CMU cracks.

Recreation Room

The Recreation Room finishes include painted CMU walls, exposed concrete floor, and 2x2 ceiling tile system.

CMU is cracking around sill of window and in other locations at exterior wall.



Figure #2-25 Stained ceiling tile in Recreation Room at exterior wall.

Some stained ceiling tiles at exterior walls.

Room originally served as a training room for classes and thus required 2 exits. 1 of the exits is blocked with excessive equipment, however since the occupancy of the room changed, 2 exits are not required.

Athletic floor mats do not cover the entire floor where equipment is used. Some weight stations are directly on concrete.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Recreation Room.

- 1) Repoint CMU cracks.
- 2) Replace stained ceiling tile. (Roof leaks were addressed in different section)
- 3) Provide additional athletic floor mats.

Recreation Kitchenette

The Recreation Kitchenette finishes include painted gypsum wallboard soffits, painted CMU walls, 2x2 ceiling tile system, and VCT flooring. The cabinets are plastic laminate wood and particle board core cabinets with plastic laminate countertops.

CMU is cracking around sill of window.





Figure #2-26 CMU cracking.

Some ceiling tiles at exterior wall are water stained.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Recreation Kitchenette.

- 1) Repoint CMU cracks at window.
- 2) Replace stained ceiling tile. (Roof leaks were addressed in different section)

Recreation Locker Rooms

The Recreation Locker Rooms finishes include painted gypsum wallboard ceilings, painted CMU walls, and mosaic tile floor. The lockers and toilet partitions are prefinished steel. Finishes are in good condition.

There is evidence of water infiltration at exterior walls at the ceiling causing some staining on the CMU. There are also shrinkage cracks on exterior CMU. Some cracks have formed on the gypsum wallboard ceiling. At the entrance to the shower area the steel lintel is rusting.



Figure #2-27 Water infiltration and CMU cracking.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the recreation Locker Rooms.

- 1) Clean and repaint CMU walls.
- 2) Repoint CMU cracks.
- 3) Repaint steel lintel.
- 4) Repair gypsum wallboard ceiling cracks and repaint.

SITE PAVING AND DRAINAGE General

Site paving is made up of concrete aprons, concrete drives, concrete sidewalks, and asphalt parking lots. The drainage on the site is mostly from storm water sewer management. All building roof drainage utilizes internal roof drains which are connected into the site storm sewer.

Most of the site concrete is in good condition, but a few sections have a worn surface with exposed aggregate and full length cracks. Exposed aggregate tends to increases the possibility of spalling from freeze/thaw cycles and overall deterioration.



Figure #2-28 Worn concrete paving with exposed aggregate and multiple cracks.



Figure #2-29 Asphalt paved parking.

The asphalt parking lot is in decent condition, but some settlement cracks are continuous through the parking lot.

The concrete slab at the exterior egress door from the sleeping quarters is 6" lower than the door threshold.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the site paving and drainage.

- 1) Patch any spalled concrete throughout as required to protect exposed aggregate.
- 2) Seal concrete cracks.
- 3) Develop replacement strategy for replacement sections of site concrete paving as they become worn and deteriorate.
- 4) Repair asphalt parking lot cracks, mill-and-overlay parking lot when cracks are beyond repair.
- 5) Replace egress door slab with an elevated slab at the door threshold.

ACCESSIBILITY General

The facility was built prior to the adoption of accessibility codes by the State of Illinois or the Federal Government and is not required to be brought up to code unless specific elements are 'altered' or when 'alterations' of a building exceed a percentage of the replacement cost of the facility. This should be considered when any alterations are made to a facility.

There is not an accessible entrance to the facility. The slopes of the drive and sidewalk up to the front door appear to be greater than 5%. Likewise there is a small step at each entrance.

Recommendations

The following is a summary of recommendations to provide more accessibility to the facility.

1) Provide accessible entrance from handicap parking space.



SUMMARY OF STATION #2 General

Fire Station #2 is in fair condition overall with most of the concern being replacement of equipment and systems that are beyond their anticipated useful life which should be expected for original equipment in a facility constructed in 1975.

These systems are functioning in varying capacities depending on the age of the system, amount of use, and amount of maintenance provided. Where some of these systems have failed the department has begun partial replacement. It is recommended that, due to the age of the original systems, all components of a systems be replaced concurrently and/or in its entirety. This provides continuity in expected future maintenance and replacement of the systems.

The core building structure is in good condition. With proper building maintenance, replacement of systems beyond anticipated life, and continual upgrades to technology, the fire department should expect this fire station to provide continued service in the foreseeable future.

	St	ation #2 - Capit	al Replacement Co	osts b	y Year		
Year	Cost Today	Budget Need	Priorit	ty 1	Priority 2	Prority 3	Priority 4
		cost escalated to		1	2	з	
2015	\$394 084	\$394 084	\$1	11 781	\$255.470	\$12 383	\$14.450
2015	φ00,+004 \$0	φ00 , ,004 \$0	Ψ	\$0	φ200,470 \$0	\$0	φ1+,+30 \$0
2010	\$0 \$0	φ0 \$0		\$0	\$0 \$0	\$0 \$0	¢0 ۵۵
2018	\$0 \$0	\$0 \$0		\$0	\$0	\$0 \$0	\$0
2019	\$0 \$0	\$0 \$0		\$0	\$0	\$0	\$0
2020	\$13 550	\$15 708		\$0	\$4 057	\$0	\$11 651
2021	\$0	¢ 10,1 00 \$0		\$0	\$0	\$0	\$0
2022	\$4 900	\$6 026		\$0	\$0	\$0	\$6 026
2023	\$0	\$0		\$0	\$0	\$0	\$0
2024	\$0	\$0		\$0	\$0	\$0	\$0
Sub Total After	\$412,534	\$415,819	\$1	11.781	\$259.527	\$12.383	\$32,127
10 Years					,,.	. ,	,
2025	\$217,595	\$292,429		\$0	\$137,079	\$0	\$155,350
2026	\$0	\$0		\$0	\$0	\$0	\$0
2027	\$74,000	\$105,506		\$0	\$0	\$0	\$105,506
2028	\$0	\$0		\$0	\$0	\$0	\$0
2029	\$0	\$0		\$0	\$0	\$0	\$0
2030	\$5,900	\$9,192		\$0	\$9,192	\$0	\$0
2031	\$0	\$0		\$0	\$0	\$0	\$0
2032	\$0	\$0		\$0	\$0	\$0	\$0
2033	\$0	\$0		\$0	\$0	\$0	\$0
2034	\$0	\$0		\$0	\$0	\$0	\$0
2035	\$66,443	\$120,004		\$0	\$119,203	\$800	\$0
2036	\$0	\$0		\$0	\$0	\$0	\$0
2037	\$0	\$0		\$0	\$0	\$0	\$0
2038	\$0	\$0		\$0	\$0	\$0	\$0
2039	\$0	\$0		\$0	\$0	\$0	\$0
2040	\$86,700	\$181,531		\$0	\$138,189	\$0	\$43,341
2041	\$0	\$0		\$0	\$0	\$0	\$0
2042	\$0	\$0		\$0	\$0	\$0	\$0
2043	\$0	\$0		\$0	\$0	\$0	\$0
2044	\$0	\$ 0		\$0	\$0	\$0	\$0
Sub Total for	\$450,638	\$708,662		\$0	\$403,664	\$800	\$304,198
Remainder Years							
Overall Total	\$863,172	\$1,124,480	\$1	111,781	\$663,191	\$13,184	\$336,32

BUDGET SUMMARY

			CONSOL	IDATED SYSTER	MS DATA																				capital replacement budget
						Existing	Asset Log								Evalua	ated Condition					Estimate	ed Replaceme	nt Budg	et	
		Building or Zone (If more than one)				Description &	Location of Asset				Year Installed	Anticipated Years of Life	Calculated Renewal Year	Evaluation Date	Remaining Life Expectancy	Recommended Action		C	ost Basis		Current Replacement Cost	Escalated Cost at BUDGET YEAR	Priority Level	Budget Year	Comments
Entr 16	y#	Building ID	Category	Family Boofs or Decks	Roofing	Component	Entity Single Ply EPDM	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	Replace Action	qty.	units p	ro-ration	unit cost	cost \$37.100	Budget	Priority	Year 2025	Comment
10	Juli	511 #2	EXT. BEDG.	NOOIS OF DECKS	Roomig		Roofing Membrane			over Apparatus Bay.	2005	20	2025	2015	- 10	nepiace.	2,050		10070	Ş14.00	Ş57,100	¢-5,655	-	2025	replace foor at end of warranty.
16	1 Stati	on #2	EXT. BLDG.	Roofs or Decks	Roofing		Built up Roof			Tower, Living Area, and Recreation Area	1995	20	2015	2015	0	Replace.	4,000	sf	100%	\$14.00	\$56,000	\$56,000	• 1	2015	There is ponding in some parts of roof and clear evidence of water infiltration on the interior. This roof could be anywhere from 20-30 years old.
16	2 Stati	on #2	EXT. BLDG.	Roofs or Decks	Roofing		Coping caps			All roof perimeters.	1975	40	2015	2015	0	Flash membrane roof over stone coping and install perimeter coping cap to prevent roof leaks.	125	If	100%	\$50.00	\$6,250	\$6,250	2	2015	Most roof leaks are at perimeters of roofs at the parapets. At these conditions the roof is flashed up to coping where there is some form of metal flashing below the stone coping. This flashing doesn't continue to the exterior side of the stone coping. This is the logical location of roof leaks. There are a couple options available. Simplest option would be to flash membrane over the top of the stone coping and terminate the roof with a full metal coping cap or roof edge. The second option would require removing stone coping cap and install a full thru wall metal flashing and then reset the stone coping which would be a similar cost. *Cost is reflective of existing EPDM roof only as other roofs should be replaced soon.
16	3 Stati	on #2	EXT. BLDG.	Walls	Cladding		Masonry-Brick Thru Wall Flashing			All Flashings.	1975	40	2015	2015	0	Investigate masonry for cavity thru wall flashings.	1	allow	100%	\$1,000.00	\$1,000	\$1,000	2	2015	It is uncertain if the building wall system is a true cavity wall construction with a drainage cavity between back up CNU and brick veneer. Before proceeding with any masonry work, an initial investigation of the wall system should be done by removing small portions of brick veneer at flashings to determine the make up of the wall system.
16	4 Stati	on #2	EXT. BLDG.	Walls	Cladding		Masonry-Brick Thru Wall Flashing			Apparatus Bay clerestory wall.	1975	40	2015	2015	0	Install thru wall flashing.	150	lf	100%	\$100.00	\$15,000	\$15,000	2	2015	Remove 24" of brick masonry above the min. recommended roof flashing termination height. Install flexible membrane thru wall flashing with sheet metal drip and reinstall removed brick. Install 2-piece counter flashing system connected to drip edge to cover roof termination.
16	5 Stati	on #2	EXT. BLDG.	Walls	Cladding		Masonry-Brick Thru Wall Flashing			Above Doors	1975	40	2015	2015	0	Install thru wall flashings.	10	lf	100%	\$100.00	\$1,000	\$1,000	2	2015	Remove 24" of brick masonry above lintel. Install flexible membrane thru wall flashing with sheet metal drip and reinstall removed brick.
16	6 Statio	on #2	EXT. BLDG.	Walls	Cladding		Masonry-Brick			All Facades	1975	40	2015	2015	0	Cut in masonry expansion joints at exterior brick and install backer rod and sealant at openings and corners of building.	1	allow	100%	\$10,000.00	\$10,000	\$10,000	2	2015	No expansion joints are present in brick veneer. To prevent cracks in mortar and possibly brick, cut in expansion joints at openings, corners, and other recommended locations.
16	7 Stati	on #2	EXT. BLDG.	Walls	Cladding		Masonry-Brick & Metal panel			North Façade	1975	40	2015	2015	0	Clean brick veneer and metal panels.	1	allow	100%	\$1,500.00	\$1,500	\$1,500	• 4	2015	Recommend cleaning moss and other organics growing on masonry. Power washing should be sufficient.
16	8 Statio	on #2	EXT. BLDG.	Walls	Cladding		Masonry-Brick			North Façade and others	1975	40	2015	2015	0	Tuck point mortar and replace spalling bricks.	1	allow	100%	\$10,000.00	\$10,000	\$10,000	2	2015	The north side of the building and a few other locations have mortar that has weathered away, delaminated, or has spalled out of joint with damaged bricks. Tuck pointing and brick repair is required.
16	9 Stati	on #2	EXT. BLDG.	Walls	Cladding		Masonry-Stone Sills			175778.99	9 1975	40	2015	2015	0 0	Rake out mortar and install sealant or mortar.	1	allow	100%	\$2,500.00	\$2,500	\$2,500	2	2015	
17	0 Stati	on #2	CORE SYST.	Structural Systems	Steel Lintels		Masonry Lintel			All exterior steel lintels at openings	1975	40	2015	2015	0	Remove rust and repaint lintels.	1	allow	100%	\$2,000.00	\$2,000	\$2,000	2	2015	
17	1 Stati	on #2	EXT. BLDG.	Walls	Openings		Windows-Aluminum Storefront			All windows except Day Room Windows	1975	40	2015	2015	0	Replace existing storefront windows and entrances.	300	sf	100%	\$60.00	\$18,000	\$18,000	• 1	2015	Existing window systems do not appear to be thermally broken systems. Occupants believe they are quite drafty indicating air infiltration. Occupants indicated that day room windows that were replaced improved draft and resolved some water infiltration issues. At the age of the system, recommend replacing.
17	2 Stati	on #2	EXT. BLDG.	Walls	Openings		Hollow Metal Doors and Frames			Exterior hollow metal door and frame at Apparatus Bay.	1975	30	2005	2015	⊘ -10	Replace existing hollow metal door and frame.	1	ea	100%	\$3,000.00	\$3,000	\$3,000	1	2015	Doors and frames are rusting. (Exterior door of Sleeping Quarters recently replaced.)
17	3 Stati	on #2	GROUNDS	Hardscape	Concrete		Sidewalks			All	1975	45	2020	2015	5	Replace concrete.	700	sf	100%	\$8.00	\$5,600	\$6,492	• 4	2020	Sidewalks are in good condition. Some aggregate showing, but not much settling or spalling.





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model Location	Installed	Lifespan	Renewal	Evalua	ation Remainir	g Action	qty.	units p	ro-ration	unit cost	cost	Budget	Priority	Year	Comment
174 St	ation #2	GROUNDS	Hardscape	Concrete	Stoop		Egress door from	1975	40	2015	201	15 🕓 0	Replace concrete stoop.	30 sf		100%	\$8.00	\$240	\$240	3	2015	Egress pad steps down from door sill. Should be same
							Siceping Quarters															
175 St	ation #2	GROUNDS	Hardscape	Concrete	Drives		North Drive	1995	30	2025	201	15 🔮 10	Replace concrete paving.	290 sy	/	100%	\$110.00	\$31,900	\$42,871	2	2025	Some sections of concrete have cracked through, but
																						until replacement. Replace sections if deterioration
																						becomes severe.
176 St	ation #2	GROUNDS	Hardscape	Concrete	Drives		South Drive	1995	30	2025	201	15 🥝 10	Replace concrete paving.	1,500 sy	/	20%	\$110.00	\$33,000	\$44,349	2	2025	Area includes all concrete paving on the south side of the apparatus hav up to the storage building, but
																						stopping short of training to the ower site. Different sections
																						in different conditions.
																						Some sections of concrete have cracked through and
																						have a much of the aggregate exposed on the surface. Very little spalling.
177 St	ation #2	GROUNDS	Hardscape	Concrete	Drives		South Drive	2005	30	2035	201	15 🔮 20	Replace concrete paving.	1,500 sy	/	40%	\$110.00	\$66,000	\$119,203	2	2035	Area includes all concrete paving on the south side of
																						the apparatus bay up to the storage building, but
																						of concrete have been placed at various times and are
																						in different conditions.
																						Some sections of concrete have cracked through and have a much of the aggregate exposed on the surface.
																						Very little spalling.
178 St	ation #2	GROUNDS	Hardscape	Concrete	Drives		South Drive	2010	30	2040	201	15 🔮 25	Replace concrete paving.	1,500 sy	/	40%	\$110.00	\$66,000	\$138,189	2	2040	Area includes all concrete paving on the south side of
																						stopping short of training tower site. Different sections
																						of concrete have been placed at various times and are in different conditions.
																						Some sections of concrete have cracked through and
																						have a much of the aggregate exposed on the surface.
																						very little spalling.
170 64	- #2		Tinink as	Floring.	View d. Commonstea		Livian Arres (Dev	4005	20	2015	201	15 0 0	Declare flagging	2 200 -6		4.000/	ća oo	640.400	ć10.400		2015	Description of the in Devices and Cleaning
179 50	ation #2	INT. FIT-OUT	Finisnes	Flooring	Tile		Room, Kitchen,	1995	20	2015	201	15 🕑 0	Replace nooring	2,300 ST		100%	\$8.00	\$18,400	\$18,400	1	2015	Quarters to improve acoustics. Cleanable surface for
							Sleeping Quarters)															Dining and Kitchen.
180 St	ation #2	INT. FIT-OUT	Finishes	Flooring	Mosaic tile		Restroom/Locker	1975	50	2025	201	15 🔮 10	Replace flooring	575 sf		100%	\$16.00	\$9,200	\$12,364	• 4	2025	Mosaic tile is in good condition and appears to be
181 St	ation #2	INT. FIT-OUT	Finishes	Flooring	Mosaic tile		Room Restroom/ Locker	1975	50	2025	201	15 🔮 10	Replace flooring	920 sf		100%	\$16.00	\$14,720	\$19,782	• 4	2025	Mosaic tile is in good condition and appears to be
							Rooms on Recreati side.	on														original.
182 St	ation #2	INT. FIT-OUT	Finishes	Flooring	Athletic Floor		Recreation Room	1975	40	2015	201	15 🕗 0	Provide additional athletic mats or install flooring.	575 sf		100%	\$10.00	\$5,750	\$5,750	• 4	2015	Currently have floor mats in some parts of the room.
183 St	ation #2	INT. FIT-OUT	Finishes	Flooring	Concrete sealer/		Apparatus Bay	1975	15	1990	201	15 🔕 -25	Re-seal floor with concrete	2,800 sf		100%	\$1.50	\$4,200	\$4,200	• 4	2015	There is still a sheen to parts of the floor so its possible the floor has been re-sealed since the initial
					in denen								Scalelynardenen									application.
																						but at additional cost.
184 St	ation #2	INT. FIT-OUT	Finishes	Ceilings	2x2 Acoustical Ceiling		Living Areas &	1975	30	2005	201	15 🔇 -10	Replace ceiling tile. Salvage Grid.	2,300 sf	-	100%	\$2.00	\$4,600	\$4,600	2	2015	Many stained tile and others have some abuse.
					Tile Grid		Recreation Room															Around 30-40% could be replaced, so recommend replacing all.
185 St	ation #2	INT. FIT-OUT	Finishes	Ceilings	Gypsum/Plaster		Restroom/ Locker	1975	50	2025	201	15 🔮 10	Repair cracks in ceiling.	1,300 sf		100%	\$1.00	\$1,300	\$1,747	• 4	2025	
186 St	ation #2	INT. FIT-OUT	Finishes	Casework	Plastic Laminate		Kitchen	1975	45	2020	201	15 🔮 5	Replace plastic laminate	1 al	llow	100%	\$4,000.00	\$4,000	\$4,637	• 4	2020	Countertop has some delamination and chipping.
					Countertop								countertop.									When replaced, it must meet ADA and Accessibility Codes for lavatory access.
187 St	ation #2	INT. FIT-OUT	Finishes	Casework	Plastic Laminate Countertops and		Kitchen & Kitchene	te 1975	50	2025	201	15 🔮 10	Replace casework.	1 al	low	100%	\$10,000.00	\$10,000	\$13,439	• 4	2025	Casework is in pretty good condition and should last for quite a few years. Especially the Kitchenette which is
199 Ct			The internet	Detetter	Cabinets		Annematic Devi	1005	20	2015	201	15 0 0	De Delet	4.500 -6		1000(ća.00	¢0.000	ćo 000		2015	not utilized.
100 50	ation #2	INT. FIT-OUT	Finisnes	Painting			Apparatus Bay	1995	20	2015	201	15 0 0	Re-Paint	4,500 ST		100%	\$2.00	\$9,000	\$9,000	3	2015	apparatus bay.
189 St	ation #2	INT. FIT-OUT	Finishes	Painting	Steel Lintel		Restrooms	1975	45	2020	201	15 🔮 5	Remove rust and repaint lintels.	3 ea	a	100%	\$150.00	\$450	\$522	• 4	2020	Rust is developing on steel lintels.
190 St	ation #2	INT. FIT-OUT	Rated Assemblies	Rated Openings	Hollow Metal Doors and Frames		Apparatus Bay	1975	30	2005	201	15 🔇 -10	Replace doors with rated doors and compliant hardware and	5 ea	a	100%	\$3,000.00	\$15,000	\$15,000	2	2015	Doors do not always have matching label with frame and some doors stick. Current codes require rated
													glazing.									separation from the apparatus bay to the living spaces
																						hollow metal doors with compliant hardware and
																						glazing.
191 St	ation #2	CORE SYST.	Structural Systems	Load Bearing Masonry	CMU Walls		All CMU walls.	1975	40	2015	201	15 🕡 0	Tuck point at cracks in CMU	1 al	llow	100%	\$15,000.00	\$15,000	\$15,000	2	2015	Most cracks are in the mortar from shrinkage or
													mortar.									movement in steel structure, and not due to settlement or major structural failures. Tuck pointing
																						would only be for cosmetic reasons, as cracks could re-
																						tower which is no longer in use, has the most
																						significant cracking which was likely caused by the lateral forces from the hoist.







Entry	# Build	ling ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluati	ion Remaining	g Action	qty. units	pro-ration	unit cost	cost	Budget	Priority	Year	Comment
192	Station #2	E	EXT. BLDG.	Walls	Openings	Overhead Doors			Apparatus Bay overhead doors.	2005	20	2025	2015	10	Replace.	4 ea	100%	\$8,000.00	\$32,000	\$43,005	• 4	2025	If increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000 ea.
193	Station #2	G	GROUNDS	Hardscape	Asphalt Paving	Asphalt Parking Lot			East Parking Lot	2010	15	2025	2015	10	Replace with mill and overlay.	620 sy	100%	\$25.00	\$15,500	\$20,831	• 4	2025	Seal cracks and patch and repair settled sections as required until full replacement. Cost includes replacement with mill and 1 1/2" overlay , repair of the base/subbase for 20% of the parking lot, and striping.
194	Station #2	G	GROUNDS	Hardscape	Asphalt Paving	Asphalt Parking Lot			South Parking Lot at metal building training center.	2010	15	2025	2015	✓ 10	Replace with mill and overlay.	675 sy	100%	\$25.00	\$16,875	\$22,679	• 4	2025	Seal cracks and patch and repair settled sections as required until full replacement. Cost includes replacement with mill and 1 1/2" overlay , repair of the base/subbase for 20% of the parking lot, and striping.
195	Station #2	E	EXT. BLDG.	Walls	Cladding	Metal Panel Siding			East exit door of metal building training center.	2010	5	2015	2015	0	Repair and seal penetration at light fixture.	1 allow	100%	\$500.00	\$500	\$500	• 4	2015	Metal Building Storage and Training Room. There is water stained tile above the exit door. From observations of exterior, the only obvious potential infiltration is the exterior light fixture above the door.
196	Station #2	11	NT. FIT-OUT	Finishes	Flooring	Vinyl Composite			Training Room	2010	30	2040	2015	25	Replace.	1,725 sf	100%	\$8.00	\$13,800	\$28,894	• 4	2040	Metal Building Storage and Training Room.
197	Station #2	11	NT. FIT-OUT	Finishes	Ceilings	2x2 Acoustical Ceiling	3		Training Room	2010	30	2040	2015	25	Replace.	1,725 sf	100%	\$4.00	\$6,900	\$14,447	• 4	2040	Metal Building Storage and Training Room.
198	Station #2	C	CORE SYST.	Power	Air Compressor Disconnect - 60A, 3-phase, 240V, fuse	d Fused Disconnect	Square D	General Duty Safety	/ Sv Apparatus Bay	2005	30	2035	2015	20	Replace with new	1 ea	100%	\$443.08	\$443	\$800	3	2035	Replace current stained tile. Replace when reached end of useful life.
199	Station #2	C	CORE SYST.	Power	at 60A Apparatus Bay Panel, MLO, 120/240V, 1-phase, 3-wire	e, Branch Circuit Panel	Federal Pacific	NBLP	Apparatus Bay	1975	30	2005	2015	-10	Replace with new	1 ea	100%	\$1,962.00	\$1,962	\$1,962	• 1	2015	Federal Pacific Panel shall be replaced ASAP.
200	Station #2	0	ORE SYST	Power	225A Disconnect Switch 240V 3-Pole 30A	Disconnect Switch	Square D		Mech Space	1975	30	2005	2015	🛛 -10	Replace with new	1 ea	100%	\$308.91	\$309	\$309	3	2015	Replace when reached end of useful life
201	Station #2	0	CORE SYST.	Power	Disconnect Switch, 240V, 3-pole 100A	Disconnect Switch	Federal Pacific		Mech Space	1975	30	2005	2015	3 −10	Replace with new	1 ea	100%	\$502.83	\$503	\$503	1	2015	Federal Pacific Panel shall be replaced ASAP.
202	Station #2	C	CORE SYST.	Power	Dryer Circuit Breaker, 20A, 2-pole, 240V	Enclosed Circuit	Square D		By Dryer	1975	30	2005	2015	3 -10	Replace with new	1 ea	100%	\$253.16	\$253	\$253	3	2015	Replace when reached end of useful life.
203	Station #2	C	CORE SYST.	Power	Emergency Power Panel, MLO, 120/240V, 100A, 1- phase, 3-wire	Breaker Panelboard	Federal Pacific	HNBLPT	Mech Space	1999	15	2014	2015	⊘ -1	Replace with new	1 ea	100%	\$1,962.00	\$1,962	\$1,962	• 1	2015	Replace with standard 60A load center and new automatic transfer switch when Emergency Genset is added to facility.
204	Station #2	C	CORE SYST.	Lighting	Interior Lighting	All interior lighting fixtures	Misc	Misc	Facility Interior	2012	15	2027	2015	12	Replace fixtures with modern equivalents	7,400 sf	100%	\$10.00	\$74,000	\$105,506	• 4	2027	Light fixtures upgraded to T8 circa 2012. Replace with new LED fixtures when existing reach end of useful life.
205	Station #2	C	CORE SYST.	Power	Main Distribution Panel - 120/208V, 3-phase, 4-wire, 800A	Panelboard	Federal Pacific	CDP	Mech Space	1975	30	2005	2015	-10	Replace with new	1 ea	100%	\$6,954.00	\$6,954	\$6,954	• 1	2015	Federal Pacific Panel shall be replaced ASAP.
206	Station #2	C	CORE SYST.	Power	Rooftop Unit Disconnect Switches	Disconnect Switch			Roof	1975	30	2005	2015	3 -10	Replace with new	2 ea	100%	\$490.66	\$981	\$981	3	2015	Replace when reached end of useful life.
207	Station #2	C	CORE SYST.	Fire Alarm/Detection	Smoke Detectors in sleeping areas	Smoke Detectors			Throughout	1994	20	2014	2015	⊗ -1	Replace with new	2 Is	100%	\$80.00	\$160	\$160	2	2015	Replace existing smoke detectors with hardwired smoke detectors with battery back-up. Detectors shall wirelessly interconnect so that the activation of one device will cause all to sound.
208	Station #2	C	CORE SYST.	Lighting	Wall Mounted Fixtures at man doors.	Exterior Lighting			Exterior Wall	1975	15	1990	2015	25	Replace with modern LED fixtures	5 ea	100%	\$279.95	\$1,400	\$1,400	2	2015	Replace fixtures with new modern equivalents when units fail.
209	Station #2	C	CORE SYST.	Lighting	Wall Mounted Metal Halide Fixtures	Exterior Lighting			Exterior Wall	1975	15	1990	2015	25	Replace with modern LED fixtures	4 ea	100%	\$1,065.00	\$4,260	\$4,260	2	2015	Replace fixtures with new modern equivalents when units fail.
210	Station #2	C	CORE SYST.	Lighting	Provide Exterior lighting control	Exterior Lighting				1975	40	2015	2015	0	Provide photo cell lighting control for exterior fixtures	1 allow	100%	\$500.00	\$500	\$500	2	2015	Add photo cell, timer, or both forms of exterior lighting control per the departments requirements. This function would be integrated with interior lighting controls when they are provided.
211	Station #2	C	CORE SYST.	Power	Add new Emergency Generator	Generator				1975	40	2015	2015	0	Provide new per AHJ	1 ea	100%	\$116,200.00	\$116,200	\$116,200	2	2015	Provide new including pad, transfer switch, fuel source,
212	Station #2	C	CORE SYST.	Power	Thermal Scan Electrical Systems	Electrical Equipment				1975	40	2015	2015	0	Thermal scan equipment per	1 ea	100%	\$500.00	\$500	\$500	3	2015	Thermal Scan electrical equipment to identify existing
213	Station #2	C	CORE SYST.	Power	Arc Flash Labeling	Electrical Equipment				1975	40	2015	2015	0	Perform an arc flash study and provide labels at equipment	1 LS	100%	\$500.00	\$500	\$500	3	2015	Provide labels per NEC and NESC requirements.
214	Station #2	C	CORE SYST.	Power	Recommended addition of Surge Protection Equipment	nt. Electrical Equipment				1975	40	2015	2015	0	Provide Surge Protection Equipment.	1 LS	100%	\$4,350.00	\$4,350	\$4,350	2	2015	Provide surge protection devices at service panel and branch circuit panels.
215	Station #2	C	CORE SYST.	Lighting	Provide modern lighting controls	Lighting				1975	40	2015	2015	0	Provide lighting control devices	1 LS	100%	\$2,500.00	\$2,500	\$2,500	• 4	2015	Provide lighting control devices for compliance with latest energy efficiency code
216	Station #2	c	CORE SYST.	HVAC	Building A/C system	RTU-1	TRANE	YHD120B3H0CA	Roof	1993	15	2008	2015	⊗ -7	Periodic maintenance such as lubricating and belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$13,000.00	\$13,000	\$13,000	2	2015	uner energi energi e
217	Station #2	c	CORE SYST.	HVAC	Building A/C system	RTU-2	TRANE	ҮНD090ВЗН0ВЕ	Roof	1997	15	2012	2015	⊗ -3	Periodic maintenance such as lubricating and belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$1,000.00	\$1,000	\$1,000	2	2015	
218	Station #2	c	CORE SYST.	HVAC	Roof Exhaust Fan for Apparatus Bay	N/A	N/A	N/A	Roof	2015	15	2030	2015	15	Periodic maintenance such as lubricating and belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$3,500.00	\$3,500	\$5,453	2	2030	





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remaini	ng Action	qty.	units	pro-ration	unit cost	cost	Budget	Priority	Year	Comment
219	Station #2	CORE SYST.	HVAC	Exhaust Fan for Toilet and Locker Rooms	N/A	N/A	N/A	As per Drawings	1975	12	1987	2015	⊗ -28	Replace.		2 ea	100%	\$800.00	\$1,600	\$1,600	2	2015	
220	Station #2	CORE SYST.	HVAC	Gas Fired Unit Heater - Apparatus Bay	GUH-1	Modine	Hot Dawg	Ceiling	2015	15	2030	2015	15	Periodic maintenance such as lubricating and belts replacement will provide adequate service, but need to replace for continued trouble free service.		1 ea	100%	\$1,200.00	\$1,200	\$1,870	2	2030	
221	Station #2	CORE SYST.	HVAC	Gas Fired Unit Heater - Apparatus Bay	GUH-2	Modine	Hot Dawg	Ceiling	2015	15	2030	2015	15	Periodic maintenance such as lubricating and belts replacement will provide adequate service, but need to replace for continued trouble free service.		1 ea	100%	\$1,200.00	\$1,200	\$1,870	2	2030	
222	Station #2	CORE SYST.	HVAC	Duct System Cleaning	N/A	N/A	N/A	N/A	2015	5	2020	2015	⊘ 5	Periodic coil cleaning, condensate pan and drain cleaning will provide adequate continued trouble free service.		1 ea	100%	\$3,500.00	\$3,500	\$4,057	2	2020	
223	Station #2	CORE SYST.	Plumbing	Gas Fired Water Heater		A.O. Smith	BT 100-300	First Floor	2007	15	2022	2015	7			1 ea	100%	\$4,400.00	\$4,400	\$5,411	• 4	2022	
224	Station #2	CORE SYST.	Plumbing	Domestic Water Circulating Pump		Grundfos	UP15-42 SF	First Floor	2007	15	2022	2015	7			1 ea	100%	\$500.00	\$500	\$615	• 4	2022	
225	Station #2	CORE SYST.	Plumbing	Water Closets & Urinals: Vitreous china wall mounted			?	First Floor	1975	30	2005	2015	lo 🔇			6 ea	100%	\$250.00	\$1,500	\$1,500	2	2015	
226	Station #2	CORE SYST.	Plumbing	Flush Valves (manual)		Sloan	?	First Floor	1975	20	1995	2015	🙆 -20			6 ea	100%	\$500.00	\$3,000	\$3,000	1	2015	
227	Station #2	CORE SYST.	Plumbing	Lavatories: vitreous china wall hung			?	First Floor	1975	30	2005	2015	🔕 -10			6 ea	100%	\$250.00	\$1,500	\$1,500	2	2015	
228	Station #2	CORE SYST.	Plumbing	Faucets For lavatories, sinks and service sinks		?	?	First Floor	1975	20	1995	2015	🔕 -20			1 ea	100%	\$500.00	\$500	\$500	1	2015	
229	Station #2	CORE SYST.	Plumbing	Sink: double bowl stainless steel drop-in countertops		?	?	First Floor	1975	30	2005	2015	li 🔇			2 ea	100%	\$300.00	\$600	\$600	• 3	2015	
230	Station #2	CORE SYST.	Plumbing	Service Sink		?	?	First Floor	1975	30	2005	2015	🔕 -10			1 ea	100%	\$250.00	\$250	\$250	2	2015	
231	Station #2	CORE SYST.	Plumbing	Showers faucets and shower heads		?	?	First Floor	1975	20	1995	2015	🙆 -20			3 ea	100%	\$300.00	\$900	\$900	2	2015	
232	Station #2	CORE SYST.	Plumbing	Shower panel with two shower station		?	?	First Floor	1975	20	1995	2015	🙆 -20			1 ea	100%	\$1,000.00	\$1,000	\$1,000	2	2015	
233 234	Station #2 Station #2	CORE SYST.	Plumbing Plumbing	Electric Water Cooler compressor Thermostatic Mixing Valve		?	?	First Floor Mechanical Room	1975 2007	8	1990 2015	2015	 -25 0 	No temperature limiting device for hot water. Install thermostatic mixing valve.		1 ea 1 allow	100%	\$500.00	\$500 \$1,500	\$500 \$1,500		2015 2015	Water at lavatories and showers must be tempered water at 110° per Illinois Plumbing Code. Thermostatic mixing valves mix cold water with the hot water to reduce temperature of water. These can be done with a master mixing valve or at the point of use.
235	Station #2	CORE SYST.	Fire Suppression	Sprinkler Heads		?	?	Apparatus Bay	1975	50	2025	2015	10		4,00	0 sq ft	100%	\$4.00	\$16,000	\$21,503	• 4	2025	
236	Station #2	CORE SYST.	Technology	Structured Cabling System & Station Alert Notification System				Throughout Building	1994	20	2014	2015	⊗ -1	Replace structured cabling system and upgrade station alert notification system.		1 allow	100%	\$25,000.00	\$25,000	\$25,000	2	2015	Replacement of structured cabling system for support of existing and future devices and systems. Upgrades to station alert/paging notification systems. Infrastructure for support of Owner furnished and installed technologies.
											_								\$863 172	\$1 124 480			
	1		1		1			I					1			1	1		3003,172	ş1,124,40U			11



Fire Station #3 – Existing Conditions



Figure #3-1 Station #3 South Elevation.

STRUCTURAL SYSTEMS General

Station #3 is a two-story building located within the city limits of Decatur, IL. The structure has a pitched roof and a partial basement level. The entrance level contains the Day Room, Administrative offices, and Apparatus Bay. The upper level extends over the entire lower level and contains the Sleeping Quarters. The basement level contains the Mechanical Room.

The structure was constructed in 1927. If structural renovations are to be undertaken at this facility, the International Building Code 2009 would categorize the following criteria for structural renovations as such:

Occupancy Category:	IV
Ground Snow Load:	20 psf
Basic Wind Velocity:	90 mph
Wind Importance Factor:	1.15
Wind Exposure Category:	В
Seismic Importance Factor:	1.50
Mapped Spectral Response:	Ss = 0.28g , S1 = 0.11g

The foundation of the structure could not be entirely verified without further investigation. Though from the site visit, it is apparent that reinforced concrete walls were constructed to form the basement level. Portions of the foundation wall were infilled with clay brick. Assuming this construction type is consistent, a continuous perimeter bearing/frost wall constructed of reinforced concrete would support the brick veneer and bearing wall backup. Also, a continuous reinforced concrete grade beam would support the perimeter walls. A reinforced concrete slab-on-grade provides the floor for the structure and is an unknown depth. It is likely that the slab in the Apparatus Bay is 6"-8" thick while the slab in balance of the facility is 4"-6" thick.

The superstructure could not be verified entirely throughout the facility. Although, it was noted that 8" nominal Concrete Masonry Units (CMU) laid in a stack bond form bearing walls and enclose the north, west, and south sides of the apparatus bay. Several beams were also apparent in the bay supported by 4" nominal steel posts. Although the beams were covered by a fascia, the location indicates structural framing. This framing supports part of the second level. Conventional construction practices were likely used in the balance of the facility and would utilize wood stud bearing walls. The roof is likely constructed of wood rafters but could not be verified. The 3 5%" nominal brick exterior veneer is laid in running bond in front of the stud or CMU backup.

The lateral force resisting system for the building could not be verified. Depending on the age of the structure, a defined lateral system to resist the effects of winds and earthquakes may or may not be present. Given the structural system in place, the CMU walls and stud bearing walls will resist the lateral loads regardless if the system was designed to restrain the quantified forces.

Conditions Assessment

Overall, the structure is in good condition. The Apparatus Bay slab is in good condition with the only noted damage to be a few cracked slabs. No noted heaving has occurred and the location suggests the damage is due to shrinkage. Minor joint cracking exists in the brick veneer which suggests some differential settlement has occurred. This inconsistent



settlement in structures can be common and is generally not a cause of concern. No other typical characteristics of settlement were noted. Some cracking was noted at a window lintel in the northern apparatus bay CMU bearing wall. This location and type of crack is indicative of settlement and not a cause of concern.



Figure #3-2 Crack in porch slab susceptible to freeze thaw cycles.



Figure #3-3 Deteriorated concrete foundation pier and horizontal crack through retaining wall.

The front porch does show signs of distress and appears to have had some repair. The concrete slab is supported by a cast-in place concrete wall approximately three feet above grade. Concrete steps lead from the slab down to the entrance drive. A tight horizontal crack stretches along the length of the western wall supporting the stoop. An open and heaved crack exists in the slab running due north and south within the middle third of the slab width. A brick pilaster supports the patio roof and has been tuck-pointed at the elevation of the slab. Also, the concrete pier supporting the pilaster has been patched with a cement grout. The distress apparent in the slab, wall, and pilaster may have been formed from many environmental factors including shrinkage, settlement, and freeze/thaw action. The unsealed joints along the stairway may have also attributed to allowing water infiltration and thus freeze/thaw damage. It is also possible the damage may be caused by other factors.

Recommendations

Dewberry recommends that the deteriorating foundation pier be replaced along with associated concrete porch slab, retaining wall, and stair. This will require temporary supporting of the porch roof and reconstruction of the brick pier after foundation replacement. Prior to replacement; the crack in the slab, joints between the slab/stair, and joints between stair/pilaster should be sealed with an appropriate exterior sealant to prevent water infiltration.

MECHANICAL SYSTEMS General

The listed air handling units serving the underfloor duct distribution. The units installed in 2006 are in fair to poor condition and often times is due to the improper filter replacement duration.



Figure #3-4 Station #3 mechanical equipment in basement.



Figure #3-5 Station #3 mechanical equipment in basement.



Figure #3-6 Station #3 GUH-1 Apparatus Bay Heater.

In its current condition with scheduled maintenance and service, the unit can provide for the remaining 3-5 years of its expected life.

The American Standard coupled with the "A" coil is six (6) years old and in good condition.

DECATU	R FIRE STATIONS:					
FIRE STA	TION NO. 3					
TAG NO.	MODEL NO.	SERIAL NO.	CONDITION BY VIS. INSP.	YEAR BUILT/INST'D	CURRENT UNIT COST	
	AMERISTAR	641272065	5410	2005	C1000 +	
0.1	2A7M3024A1000AA	04131205F	FAIR	2006	\$1000 T	
CU-2	10AC36-4P - LENNOX	5894E21388	POOR	N/A	\$2000 +	
N/A	AUX18060A9361AC	N/A	GOOD	2009	\$2400 +	
A-COIL	2TXCB025BC3HCAA	9054LB35G	GOOD	2009	\$875 +	
GUH-1	MODINE HOT DAWG	N/A	GOOD	N/A	N/A	
GUH-2	MODINE HOT DAWG	N/A	GOOD	N/A	N/A	

Figure #3-7 Station #3 mechanical equipment table.

With proper care and maintenance, periodic overhauling, the pair of air handling units should be expected to service the building for the remaining expected life of the equipment for the next 5 years.

The gas unit heaters in the Apparatus Bay (Modine Hot Dawg) appear to be in good working order, and should not require replacement for 5-10 years.

	EXHAUST FAN SCHEDULE													
TAG NO.	AIR QTY.	ESP (IN.	0005	800F	8	LECTRI	CAL	SONES (MAX)	MANUF.	MODEL NO.	REMARKS	INSTALLED		
	CFM	W0.]	DIGIVE	OPENIN	RPM	HP	V/26					DATE		
EF-1	525	0.25	BELT	16.25 SQ.	775	1/6	115/1	4.28	PENN	FMOX 128	1, 2, 3, 4	1900C		
EF-2	150	0.25	DIRECT	8.0 SQ.	1550	0.03	115/1	2.41	PENN	FMX 6R	1, 2, 3, 4	1900C		
REMA	BKS:													
1)	PROVIDE	BACK DR	AFT DAM	APER										
2)	PROVIDE	PREFAR	ROOF CL	88										
3)	PROVIDE	BIRDSCR	EEN AND	FAN GUA	805									
-4)	PROVIDE	DISCONT	VECT SW	TICH										

Figure #3-8 Typical Exhaust Fan Type and Capacity

The aged exhaust fans service toilet and shower area in this 1927 building seems old. The existing grille seems laden with smudge.

Also noted the Frigidaire window air conditioner serving the office is outdated.

Recommendations

Provide regularly scheduled preventative maintenance for the mechanical equipment to achieve the life expectancy for the system. Periodic overhaul the units, replace filters and belts, lubricate the moving parts will provide trouble free service for the remaining duration of life of the equipment.



It is also recommended that a reputable duct cleaning service be engaged to do a thorough duct cleaning. Replace equipment at the end of its useful life. Keep the outdoor installed condensing units clear of leaves and debris and periodically have the condensing coils cleaned.

The window air conditioner serving the office is outdated and should be replaced with a new unit for more efficient operation.

The toilet/shower exhaust fan should be replaced along with the exhaust grille over the shower stall. The apparatus bay toilet also should be equipped with a new exhaust fan.

ELECTRICAL SYSTEMS

Electrical Service and Main Distribution Equipment

This facility is served by a 250A, 120/240V, 1-phase, 3-wire overhead service from Ameren. The meter is located outside with the Main Disconnect located in the Apparatus Bay adjacent to the main distribution panel. This fire station is the oldest with construction being in 1927, however, it appears that electrical panels have been replaced at least once in the life of the building. The gear is Square D NQOB. Replacement breakers are still available for this equipment however it appears as this gear is over 30 years old.

A small roll up generator interconnection panel was provided in 1999. This panel has select loads deemed essential for the operation of the fire station and has a mechanical interlock to prevent interconnection of normal and emergency power at the same time. A 5kW, 120/240V, portable gasoline generator is located within the apparatus bay. This unit is intended to power the emergency load panel. Manual interconnection and switching of loads is required.

All equipment disconnects appear to have been replaced around the same time that the main panel was replaced with the exception of those added as equipment was added to the facility.

Recommendations

Dewberry recommends that the main panel and disconnects be replaced within the next few years. The exact age of the equipment is unknown, but it appears to be near the end of its rated life.

Dewberry recommends that within the next year the system distribution components be thermally imaged to identify any impending damage before the damage occurs. Thermal imaging locates abnormally high resistance within systems that may be caused by under-sized conductors, loose connections, or excessive current flow which may cause abnormally high, unwanted heating that results in dangerously hot electrical circuits. In some cases components can become hot enough to melt. The panels and large disconnects should all be thermal tested. Dewberry estimates that an inspection and report of findings by a firm with expertise in thermal imaging will be approximately \$500.

A load study should be performed to determine the maximum demand load within the facility. This should be done over the summer when the facility is seeing its peak demand. Dewberry recommends a meter be placed at the main incoming feeds and tracked for one week to capture the peak demand on the system.

It is required by the authority having jurisdiction that an onsite natural gas generator be provided for full facility backup. Based on the service size Dewberry recommends a 25kW, 120/240V single phase, natural gas generator for full facility back up with a 250A, 120/240V, single phase, automatic transfer switch with bypass isolation. A smaller unit may carry the entire facility, but additional load study and analysis of existing demand will be required. The cost to add this generator with all required circuitry is approximately \$36,500.

Dewberry recommends that a 1kW, line interactive, free standing uninterruptable power supply (UPS) be provided at the computer station to provide battery back-up power to the radio and facility desktop. The UPS will provide up to 6 minutes of run time at full load to allow for an orderly shutdown of the systems or ride through power until the temporary generator connection is made. The cost to add this UPS is approximately \$1,000.

There were no surge protection devices observed on any electrical equipment. Dewberry recommends that at a minimum a UL 1449, 3rd edition surge protection device be added to the main distribution panel. The cost to add surge protection devices would be approximately \$4,350.

Within the next 20 years Dewberry recommends replacement of the generator interconnection panel. With full facility back-up this panel may be eliminated with loads transferred to the main distribution panel.

Lighting and Controls

The majority of the lighting in the facility is linear fluorescent and has been modernized within the last two years from T12 to T8 fluorescent lamping. Existing fixtures remain, but the ballast and sockets have been replaced to accept the new lamps. Down lights throughout the facility are compact fluorescent screw-in type. The majority of the lighting is still controlled via wall mounted snap switches. Emergency Life Safety Egress lighting is provided throughout the facility by emergency battery packs. Exit lights do not appear to have integral battery back-up.

Recommendations

Any upgrades or additions to the facility would require compliance with the latest adopted Energy Conservation Code. In Decatur, IL the 2015 International Energy Conservation Code will be enforced beginning in January of 2016. Advanced automatic lighting control systems will need to be provided in all non-sleeping areas to automatically turn lights off. Additional daylight harvesting devices will need to be installed in code defined "daylight zones". Daylighting zones are defined areas around windows and skylights where lights within the zone are controlled by day light sensors. Lights in secure areas or any area where automatic control could compromise safety may continue to be manually controlled. Exterior lighting will also be controlled by automatic means to shut off lighting when sufficient daylight is present. Upgraded controls to the latest energy efficiency code will cost approximately \$1,500.

There is no immediate need to upgrade lighting fixtures in the apparatus bay. Dewberry recommends that down lights be replaced with LED retrofit kits or LED surface mounted fixtures and shall utilize the existing fixture locations to the greatest extent. The continued use of drop glass lenses in down lights should not be utilized to provide a modern appearance to the light fixtures. If the entire ceiling is to be replaced, the light fixtures shall be replaced with modern LED fixtures that are appropriate for the spaces and modern in appearance. Benefits of LED vs Fluorescent are longer lamp life, lower maintenance costs, lower operating costs, ease of disposal, and superior controllability.

Exit signs shall be replaced with modern LED exit signs with integral battery back-up. All emergency battery units shall have new batteries installed.

Fire Alarm System

There currently is no fire alarm system on site. There is an alarm bell in the equipment Apparatus Bay that operates when there is water flow in the sprinkler system. No residential style smoke detectors were observed in the sleeping areas for compliance with the IBC.

Recommendations

Per review of the International Building Code this type of facility would likely be a combination of B, R-2, and S-2. None of the conditions are met to require a fire alarm system. Dewberry would recommend that existing smoke detectors within the facility be replaced with hard wired units with battery back-up. The new units shall utilize wireless technology to transmit alarm signals to all other units within the network so that all units alarm when one unit detects smoke.

Arc Flash Labeling

In accord with NEC (National Electrical Code) and NESC (National Electrical Safety Code) electrical equipment shall be labeled to indicate the potential for Arc Flash Hazard and level of PPE (Personal Protective Equipment) used when maintaining or operating the equipment. All of the equipment in this facility does not include the required labels.

Recommendations

A study to perform the Arc Flash Hazard analysis is recommended to be performed immediately. Approximate cost for the study and labeling would be \$500.

PLUMBING SYSTEMS Domestic Water System

The domestic water service enters the building in the Apparatus Bay. The size of the water service is 2" and located on the left wall of the Apparatus Bay, looking inside from the overhead door. There is not a backflow preventer on the water service. There is one hose reel on the same wall, near the entering water service.

The gas fired domestic water heater is a State, model number PRV 40 NORT6, 35.5 MBH, installed in 1989. There is no hot water circulating pump.

Toilets are floor mounted with flush tanks and manufactured by American Standard. Lavatories are stainless steel counter mounted with manual faucets. Sinks are stainless steel double bowl counter mounted with manual faucets. All appear to be in working order.

Recommendations

Dewberry recommends that a master mixing valve be added at the water heater, the gas water heater be replaced in the next 5 years, and perhaps the addition of a hot water circulating pump

Fire Protection System

None.

Recommendations

None.

TECHNOLOGY SYSTEMS Structured Cabling

In its present state, the structured cabling system meets the basic operational needs of the department. Hardwired drops are present where they are needed, but there are limited spare drops that prevent support of future systems. Much of the existing structured cabling system has been installed in phases over time and done so in a haphazard manner. The installation does not meet current industry standards and most likely was not tested for performance. As a result, it's questionable whether the cabling system is performing to its optimum level, or if it meets a manufacturer's warranty for performance. Staff also expressed difficulty in identifying active network cable versus cable for other systems or even abandoned cable.

Support of an upgraded wireless LAN is needed. The current wireless LAN is basic in nature and is shared by both emergency systems and personal use by the staff.

Recommendations

It is recommended that the existing cabling system be replaced with a standards compliant Category 6 performance grade system. In addition to an immediate improvement of the cosmetic nature of the existing installation, replacement of the cabling system would result in:

- A standards based installation that has been tested for performance.
- A centralized location for termination and housing of head end electronics for emergency systems.
- Identified cabling that is clearly labeled.

In addition to replacement of the existing cabling, provisions should be made for support of future network based devices for signage, displays and other devices integral to station alert and notification systems.

It is also recommended that a wireless survey of each building be performed to identify preferred locations of wireless access points. It was noted that internet services is provided via broadband from the local cable provider. Should the City extend its fiber optic network to include each fire station, each station would benefit not only from direct access to City networks, but also shared use of the City's internet service provider. It is also strongly suggested that the Department work with the City's IT department to develop partitioned networks that separate emergency system network traffic from personal use.

Unless otherwise noted, it is assumed that cellular coverage is sufficient throughout all facilities and that no supporting antenna systems are required for amplification of cellular service.

Station Alert and Alarm Notification

The existing station alert system is very basic in nature and is limited to tone and alarm only.

Recommendations

Modifications and upgrades are recommended resulting in both audible and visual notification methods. Modern computer aided dispatch systems utilize a variety of signaling devices including LED signage and large format wall displays, in addition to traditional audible announcements. Providing visual representation of the alert provides additional direction and input that a simple audible alarm lacks.

Station paging systems should be evaluated on a case by case basis. Performance of the systems should be evaluated to confirm:

- Consistency in coverage of each station
- Clear audible reproduction.
- Sound pressure levels sufficient to overcome the ambient sound levels of each space.

In addition to evaluation of each system, consideration of the acoustics of each space should also be evaluated. When needed, architectural modification should be made to minimize unwanted reflections that would otherwise deter the quality of reproduced sound.

Additional Considerations

As noted above, centralization of emergency system electronics is recommended. In addition to providing a secure location for this equipment, dedicated emergency power can be provided that utilizes uninterruptable power supplies and generator backup.

Consideration should also be given to future enhancements to building security including access control/alarm monitoring and closed circuit television monitoring and recording. In addition to securing these valuable properties, electronic systems can be used to simplify staff access to the facility, control and monitor secure locations such as pharmaceutical and equipment storage, and provide a visual record of events in key areas such as the Apparatus Bay, entrances to the facility, etc.

BUILDING ENVELOPE Exterior Walls

Exterior walls consist of modular brick veneer construction with CMU back up wall at the Apparatus Bay and wood framed with sheathing at other locations. The building also has stucco and wood trim above the brick veneer.

There are two different types of brick veneer on the facility, as the back portion of the Apparatus Bay is an addition from a later date. It is assumed that the veneer system is a monolithic system without a drainage cavity based on the era of the building (1920s) and supported by the fact that there are no weep or flashings provided at the base of the wall or above openings.



Figure #3-9 Cast window sill is spalling and cracked.



The cast concrete window sills on the east side of the building are in poor shape. They are crumbling and falling apart.

Expansion joint sealant has hardened and is likely to fail soon. Other perimeter sealant is failing. Some chimney mortar has eroded away in places and the flashing at the base of the chimney and roof is missing.

The base of the west porch column is showing signs of deterioration and failure. The mortar joints of the brick base has been recently reworked, but many of the joints are wide and spread apart. At the brick column base, much of the concrete and parging have spalled and re-patched. There is a continuous horizontal crack on the concrete foundation retaining wall on the west part of the porch adjacent to the driveway. Finally the porch concrete slab has a crack from the front of the house to the front of the porch with the west portion of the slab having a slight slope. These all are evidence of the horizontal movement of the slab from freeze/thaw cycles, a settlement issue at the foundation, or foundation failure, see Structural Systems for additional comments.



Figure #3-10 Foundation of brick pier and retaining wall.

Some of the wood trim at the brick to stucco transition needs to be replaced and/or re-secured. It also appears that the wood cap is the only barrier preventing water from infiltrating behind the brick at the top.



Figure #3-11 Trim boards are not fastened securely.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Exterior Walls.

- 1) Remove and replace expansion joint sealant.
- 2) Remove and replace cast concrete window sills.
- 3) Add flashing at base of chimney.
- 4) Prior to column foundation replacement, seal porch concrete slab crack and joint between stair and foundation to prevent freeze/thaw cycle damage to the foundation.
- 5) Replace column foundation. Temporarily support porch, remove portion of porch slab, retaining wall, and column based. Compact subbase material and place new foundations. Reconstruct masonry as required and place new porch slab.
- 6) When replacing wood trim cap at brick to stucco transitions, investigate if water infiltration has been occurring. If condition infiltration is occurring, replace all trim and install flashing below trim to protect masonry and prevent water infiltration.

Roofing

The roof construction is wood framed rafters at 6/12 pitch roof with shingle roof. The shingles were recently replaced in 2014 with architectural style shingles. At the time of observations, the sheet metal gutters and downspouts were being replaced.

There is some evidence of ice dam damage at eave of roof on the south side of the building.



Figure #3-12 Possible ice dam damage.

The following is a summary of recommended corrective actions for the issues pertaining to the Roof.

1) Investigate the bump in the roof and repair.

Windows and Entrance Systems

Exterior window glazing is a combination of aluminum storefront system at the Apparatus Bay and aluminum windows for the rest of the living spaces. Front door is a residential wood door with screen storm door.



Figure #3-13 West elevation of station

The Sleeping Quarters windows are approximately 20-30 years old and appear to be single pane windows. There is air infiltration and occupants indicate they don't block out noise.

Door from Apparatus Bay into Day Room and Kitchen is worn on the edges from repeated use and doesn't carry any rating.



Figure #3-14 Door from Apparatus Bay into living spaces.

Overhead door jamb sealant is failing. Parts of the jamb are not securely anchored to wall.

One (1) of the apparatus bay overhead doors is missing the safety sensor at base of door.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Windows and Entrance Systems.

- 1) Replace Sleeping Quarters windows on the upper floor.
- Replace door from Apparatus Bay into the living spaces with rated assembly and compliant hardware.
- 3) Replace sealant around overhead doors and secure loose jamb.
- Install safety sensor at the single overhead door where it is missing.


ARCHITECTURAL FINISHES Day Room & Kitchen

The Day Room and Kitchen finishes include painted plaster walls and ceiling, sheet vinyl floor, wood cabinetry with stainless steel countertops.



Figure #3-15 Kitchen Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Day Room & Kitchen.

1) None.

Sleeping Quarters & Toilet Room

The Sleeping Quarters finishes include painted plaster walls and ceiling, sheet vinyl floor, 9x9 floor tile. The Toilet Room finishes are ceramic floor and wall tile with wood cabinetry and stainless steel countertops.

The 9x9 tile is potentially asbestos tile and should be tested before any work is done.

Paint is chipping and peeling away on ceiling. Some cracking in the ceiling plaster.

Since the building is essentially residential style construction and layout, there are issues with egress from the 2nd floor Sleeping Quarters as well as construction. The existing stair is not sufficient in size to meet standards for egress and exiting under current life safety codes and building codes. The Sleeping Quarters also lacks a second exit which would be required under current life safety codes and building codes. It should also be noted that current codes typically require smoke and/or fire separation from other spaces particularly the Apparatus Bay.



Figure #3-16 Sleeping Quarters, peeling paint, no secondary exit.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Sleeping Quarters and Toilet Room.

- 1) Test and replace potential ACM 9x9 floor tile.
- 2) Remove peeling paint and repaint walls and ceilings.
- 3) Provide a secondary means of egress from sleeping quarters.

Basement & Stair

The Basement and Stair finishes include painted plaster walls and ceiling, 9x9 floor tile at stair and concrete floor in the Basement. Basement is utilized for washing machine and some storage. There is limited use for this space.

The 9x9 tile is potentially asbestos tile and should be tested before any work is done.

Plaster is in poor condition in places.

The exterior walls are exposed brick and block. In one location water was infiltrating and coming into the basement due to downspout issue. Work at down spout was completed and infiltration stopped.



Figure #3-17 Basement location where water infiltration occurred.

The stair has a 4x4 wood post at the base that is not securely attached to the concrete base.



Figure #3-18 Unsecured 4x4 post.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Basement and Stair.

- 1) Test and replace potential ACM 9x9 floor tile.
- 2) Repair plaster cracks and repaint in stairway.
- 3) Secure wood column to concrete base.

Apparatus Bay

The Apparatus Bay finishes are painted CMU walls, bare concrete floors, and plaster finished ceiling.

The office and call system is located in a small isolated area in the corner of the Apparatus Bay. While partially enclosed, this is not an ideal location for the office as it does not have a clear exit path and is exposed to the operation of the Apparatus Bay.

The Apparatus Bay doors are approximately 12x12 doors which makes a tighter opening for parking and maneuvering. In addition to the door sizes, the room size and ceiling clearances are also relatively small. This also creates a limitation on the type and size of apparatus that can be



stationed at station #3, limiting the functionality of the station. Evidence of this is the cushion pad placed over the beam wrap for what is assumed protection from apparatus.



Figure #3-19 Station #3 Apparatus Bay.

Apparatus Bay concrete floor sealer has likely worn off and should be reapplied periodically if washing takes place inside.

A floor drain cover grate is partially damaged and open.

Apparatus Bay toilet room enclosure has plaster falling off of the brick.

Drywall panel is placed in ceiling to cover plumbing access instead of an access panel.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay.

- Office should be located out of the Apparatus Bay, but there isn't really a location for it to be moved to within the building.
- 2) 14x14 overhead doors are recommended, but will not fit in this Apparatus Bay.
- 3) Replace floor drain cover.
- 4) Apply sealer to concrete floor.

- Remove plaster from masonry at toilet enclosure. Install furring with abuse resistant gypsum wallboard. (or leave exposed brick)
- 6) Replace drywall panel with access panel.
- 7) Perform acoustical analysis and add acoustical treatments to the wall and ceiling/roof deck to improve intelligibility. Painted 2" tectum panels using C-20 or C-40 method would be recommended for this application.

SITE PAVING AND DRAINAGE General

The building sits on a significant grade change and positive slope away from the building has been provided on all sides. The downspouts feed into a sub drainage system and presumed to a city storm sewer manhole.



Figure #3-20 South Apparatus Bay concrete drive.



Figure #3-21 Cracking at north concrete parking area.

The site concrete paving on the north parking area and the south Apparatus Bay drive are from early to mid 2000s. The south entrance drive is in good condition with minor cracking. The north parking area has more significant cracking, but no noticeable differential movement.

Landscape block retaining walls are all recent installations and are in good stable condition.

At northeast downspout there was an issue with water infiltration into the basement. A concrete pad was poured to divert water away, but it's possible there is another issue that caused the problem.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Basement and Stair.

- 1) Seal concrete cracks.
- 2) Recommend excavating around the downspout to determine if there is another underlying issue.
 - a. Repair sub drainage system if necessary.
 - b. Provide water proofing at infiltration site.
 - c. Back fill with drainage rock and filter fabric.

ACCESSIBILITY

General

The facility was built prior to the adoption of accessibility codes by the State of Illinois or the Federal Government and is not required to be brought up to code unless specific elements are 'altered' or when 'alterations' of a building exceed a percentage of the replacement cost of the facility. This should be considered when any alterations are made to a facility.

The direct alterations made to the cabinetry in the Kitchen and the Toilet Room should have been updated to accessibility standards under ADA 2010 and Illinois Accessibility Code.

The following are only recommendations.

There is not an accessible entrance to the facility. The slopes of the sidewalk up to the front door are greater than 5% and there are a set of steps up to the front door from the drive. Likewise there is a small step at each door into the living spaces.

Recommendations

The following is a summary of recommendations to provide more Accessibility to the facility.

- 1) Provide accessible Kitchen and Toilet Room countertops and lavatories.
- 2) Provide accessible entrance from handicap parking space.

SUMMARY OF STATION #3 General

Fire Station #3 is in fair to good condition overall as the building has seen many updates and system replacements over the past decade, although there are still systems beyond their anticipated useful life. The core building structure is in fair condition for a structure building in 1927. Despite the facility being in fair condition, there are greater concerns with this facility due to the nature of the layout and construction of a fire station built in 1927.

This fire station is designed and built very much like a residential building. The result is a layout that would not meet current codes for life safety, fire separation, or accessibility. Alterations to this facility would be very limiting and/or will result in significant costs.

Finally, the layout also results in limiting function for the fire department. The size of the apparatus bay is not sufficient to accommodate different types of apparatus and is undersized for the apparatus currently in place. The lack of space at the station also has resulted in placing the administrative office in the back of the Apparatus Bay along with recreational equipment.

Based on the nature of the facilities age and layout, it is not an adequate layout or in adequate condition for a modern functioning fire station.



	St	ation #3 - Capita	Replacement Costs	by Year		
Year	Cost Today	Budget Need	Priority 1	Priority 2	Prority 3	Priority 4
		cost escalated to		1 2	2	
2015	¢202.970		\$4 500	¢175 770	ر ۵۵۵ ع¢	\$17.600
2015	\$203,679 ¢0	φ203,879	φ4,500 Φ0	φ1/0,//9 ΦΟ	φ0,000 ¢0	φ17,000 Φ(
2010	\$U	\$U		ξ υ το	φU ©	φ(Φ(
2017	ቅሀ ድር 1 900	 محم محم		۵ ۵ (۲۵۵ (۲۵۵ (۲۵۵ (۲۵۵ (۲۵۵ (۲۵۵ (۲۵۵ (φU ¢O	
2010	000,1C¢	\$00,003		φ _{20,003}	φU ©	ቅር
2019	۵۵ ۳11 ۵۵۵	 هدار جون		Φ (10, 7 50)	\$U ©0	<u></u>
2020	\$11,000	\$12,752	50	\$12,752	\$U ©0	\$L
2021	\$2,000	\$2,388	\$0	\$2,388	\$0	\$0
2022	\$0	\$0	\$0	\$0	\$0	\$0
2023	\$0	\$0	\$0	\$0	\$0	\$0
2024	\$3,275	\$4,273	\$0	\$4,273	\$0	\$0
Sub Total After	\$271,954	\$279,896	\$4,500	\$251,796	\$6,000	\$17,600
10 Years						
2025	\$23,125	\$31,078	\$0	\$31,078	\$0	\$C
2026	\$0	\$0	\$0	\$0	\$0	\$0
2027	\$28,200	\$40,206	\$0	\$0	\$0	\$40,206
2028	\$0	\$0	\$0	\$0	\$0	\$0
2029	\$886	\$1,340	\$0	\$0	\$0	\$1,340
2030	\$0	\$0	\$0	\$0	\$0	\$0
2031	\$0	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$57,750	\$98,316	\$0	\$0	\$0	\$98,316
2034	\$6,200	\$10,872	\$0	\$3,507	\$0	\$7,365
2035	\$0	\$0	\$0	\$0	\$0	\$0
2036	\$0	\$0	\$0	\$0	\$0	\$0
2037	\$0	\$0	\$0	\$0	\$0	\$0
2038	\$0	\$0	\$0	\$0	\$0	\$0
2039	\$0	\$0	\$0	\$0	\$0	\$0
2040	\$0	\$0	\$0	\$0	\$0	\$0
2041	\$0	\$0	\$0	\$0	\$0	\$0
2042	\$0	\$0	\$0	\$0	\$0	\$0
2043	\$0	\$0	\$0	\$0	\$0	\$0
2044	\$33,625	\$79,240	\$0	\$0	\$0	\$79.240
Sub Total for	\$149,786	\$261,051	\$	0 \$34.585	\$0	\$226.46
Remainder Years	,	, - ,	•	,		,
Overall Total	\$421,740	\$540,947	\$4,50	0 \$286,381	\$6,000	\$244,06

BUDGET SUMMARY

		CONSO	LIDATED SYSTE	MS DATA																capital replacement budget
				E	xisting Asset Log						Evalu	ated Condition				Estimate	d Replaceme	nt Budg	;et	
	Building or Zone (If more than one)			Des	scription & Location of Asset		Year Installed	Anticipated Years of Life	Calculated Renewal Year	Evaluation Date	Remaining Life Expectancy	Recommended Action		Cost Basis		Current Replacement Cost	Escalated Cost at BUDGET YEAR	Priority Level	Budget Year	Comments
Entry # 237	# Building I Station #3	EXT. BLDG.	Family Roofs or Decks	Component Roofing	Entity Manu Asphalt Shingle	facturer Model Location All roofing.	Installed 2014	Lifespar	n Renewal	Evaluation	n Remainir	Replace shingle system at end of	qty. units 3,350 sf	pro-ration	unit cost \$9.50	cost \$31,825	Budget \$74,998	Priority	Year 2044	Comment All roofing, gutters, and downspouts were replaced in
												warranty or when deteriorated.						-		2015. Replacement would include underlayment, ice water shield, shingles, gutters, downspouts, and misc. flashings.
238	Station #3	EXT. BLDG.	Roofs or Decks	Decking	Deck	Southwest side of	2014	1	2015	2015	0	Investigate the 'hump' and	1 allow	100%	\$1,500.00	\$1,500	\$1,500	2	2015	Could be a location of ice dam damage. Repair deck
239	Station #3	EXT. BLDG.	Walls	Cladding	Masonry-Brick Flashing	Chimney	2014	1	2015	2015	0	Install flashing.	1 allow	100%	\$500.00	\$500	\$500	• 4	2015	Some of the flashing at the chimney to the roof was missing, but is at the 'overhang' portion of the roof.
240	Station #3	EXT. BLDG.	Walls	Cladding	Masonry-Stone Sills	East Windows	1927	75	2002	2015	-13	Replace crumbling stone sills below window.	2 ea	100%	\$800.00	\$1,600	\$1,600	2	2015	
241	Station #3	EXT. BLDG.	Walls	Cladding	Masonry-Brick	All Facades	1927	75	2002	2015	◎ -13	Minor tuck pointing requires.	1 allow	100%	\$2,500.00	\$2,500	\$2,500	2	2015	Some minor locations where mortar has delaminated, failed, or weathered.
242	Station #3	EXT. BLDG.	Walls	Joints	Perimeter and Expansion Joint Sealants	All openings and masonry expansio joints.	1985 in	30	2015	2015	0 0	Strip out failed sealant, prep, and re-seal.	1 allow	100%	\$800.00	\$800	\$800	• 4	2015	
243	Station #3	CORE SYST.	Foundations	Concrete Foundation	Porch Column	Front Entrance	2010	5	2015	2015	0	Seal joints along stair and porch crack to prevent water infiltration and freeze/thaw cycle damage.	1 allow	100%	\$500.00	\$500	\$500	1	2015	Foundation is showing signs of concrete deterioration and/or settlement at west porch column. The masonry and exposed foundation pier have been reinstalled and patched. The porch concrete slab is cracked in a location suggesting settlement or horz. movement from freeze/thaw cycle. Retaining wall also has a horz. crack indicating similar stress from porch slab. These issues are caused either from settlement or water infiltration with freeze/thaw cycles.
244	Station #3	CORE SYST.	Foundations	Concrete Foundation	Porch Column	Front Entrance	2010	8	2018	2015	3	Replace porch column foundation.	1 allow	100%	\$50,000.00	\$50,000	\$54,636	2	2018	Foundation is showing signs of concrete deterioration and/or settlement at west porch column. The masonry and exposed foundation pier have been reinstalled and patched. The porch concrete slab is cracked in a location suggesting settlement or horz. movement from freeze/thaw cycle. Retaining wall also has a horz. crack indicating similar stress from porch slab. These issues are caused either from settlement or water infiltration with freeze/thaw cycles. Replacement requires the following: Temporarily shoring of porch roof, removal of masonry and column support, remove stair, half of concrete porch slab, retaining wall, and failing foundation. Place concrete foundation footing and pier for column, retaining wall, stair, and slab. install support column and reinstall masonry. Install handrail/guardrail at stair.
245	Station #3	EXT. BLDG.	Walls	Cladding	Wood Cap	Stucco to Brick Transitions	2010	5	2015	2015	0	Repair wood cap.	1 allow	100%	\$500.00	\$500	\$500	2	2015	Some wood caps and trim board at top of masonry is loose. Replace and/or re-secure cap. Potentially a source for water infiltration if wood board is the only protective covering at this transition. When replacing board investigate for water infiltration. If condition warrants, install sheet metal flashing from stucco to face of brick before installing wood cap and trim.
246	Station #3	EXT. BLDG.	Walls	Cladding	Wood Cap Flashing	Stucco to Brick Transitions	1927	75	2002	2015	-13	Add flashing and reinstall wood cap.	230 lf	100%	\$9.00	\$2,070	\$2,070	2	2015	If water infiltration exists at the stucco to brick transition. Install sheet metal flashing from stucco to face of brick before installing wood cap and trim.
247	Station #3	EXT. BLDG.	Walls	Openings	Windows-Aluminum	Sleeping Quarters windows	1990	30	2020	2015	✓ 5	Replace windows.	100 sf	100%	\$75.00	\$7,500	\$8,695	9 2	2020	Window are drafty and are not very sound proof. Also not as easy to open. Replace with aluminum clad wood window, thermally broken aluminum window, or thermally broken storefront.
248	Station #3	EXT. BLDG.	Walls	Openings	Windows-Aluminum	Day Room	1995	30	2025	2015	10	Replace	95 sf	100%	\$75.00	\$7,125	\$9,575	2	2025	
249	Station #3	GROUNDS	Hardscape	Landscape Retaining Wall	Dumpster slab	North side of buil	ding. 1980	30	2010	2015	⊗ -5	Install landscape retaining block, replace concrete slab, and install fence.	1 allow	100%	\$5,000.00	\$5,000	\$5,000	3	2015	Soil is eroding at the alley exit where garbage dumpster slab is located. Erosion is taking place below slab and around the perimeter of the alley exit and sidewalk adjacent to dumpster slab.
					D	wberry Architects Inc.	401 SW	/ Wate	er Stre	et. Pe	eoria.	IL 61602 tel. 309	9.282.8000)			₽]	De)W	' berry www.dewberry.com 1



Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainir	a Action	atv. unit	pro-ration	unit cost	cost	Budget	Priority	Year	Comment
250	Station #3	GROUNDS	Softscape	Building Perimeter Drainage	Downspout transition.			Northeast corner of building.	2013	2	2015	2015	0	Excavate the solid around the downspout leader. Install water proofing. Fix subgrade downspout. Back Fill with drainage rock and filter fabric.	1 allow	100%	\$2,500.00	\$2,500	\$2,500	2	2015	Reports of water infiltration at the NE down spout transition to sub grade ds leader. Excavate the downspout repair and clean out downspout. Install water proofing on foundation wall. Back fill with drainage rock and filter fabric.
251	Station #3	CORE SYST.	Exiting	2nd Exit				West Side of Building	1927	88	2015	2015	0	Provide a 2nd exit from Sleeping Quarters.	1 allow	100%	\$50,000.00	\$50,000	\$50,000	2	2015	Sleeping Quarters should have a second exit. Recommend an exit out the west wall of the gable end to an external stair. Budget assumes the following: Rework of exterior wall for exterior door, concrete foundations, covered landing, and galvanized exterior steel stair system with epoxy paint finish.
252	Station #3	GROUNDS	Hardscape	Concrete Paving	Drives			South Side of Apparatus Bay	2003	30	2033	2015	18	Replace.	280 sy	100%	\$110.00	\$30,800	\$52,435	• 4	2033	Replace when concrete is deteriorated.
253	Station #3	GROUNDS	Hardscape	Concrete Paving	Parking Lot			North Side of Apparatus Bay	2003	30	2033	2015	18	Replace	245 sy	100%	\$110.00	\$26,950	\$45,881	• 4	2033	Replace when concrete is deteriorated.
254	Station #3	INT. FIT-OUT	Finishes	Partitions and Ceilings	Plaster Walls & Ceilings			All rooms	1927	88	2015	2015	0 0	Repair plaster ceiling and walls.	1 allow	100%	\$2,500.00	\$2,500	\$2,500	• 4	2015	Repair cracks and damaged plaster.
255	Station #3	INT. FIT-OUT	Finishes	Painting	Walls and Ceilings			Sleeping Quarters	1980	35	2015	2015	0 0	Repaint ceiling and walls.	3,500 sf	100%	\$1.00	\$3,500	\$3,500	• 4	2015	
256	Station #3	INT. FIT-OUT	Finishes	Flooring	ACT/VCT			Sleeping Quarters & Stairs	1927	88	2015	2015	0	Replace flooring	1,200 sf	100%	\$12.00	\$14,400	\$14,400	2	2015	The existing 9x9 tile flooring potentially could be asbestos containing tile (ACT), but must be tested by a qualified professional. Cost includes removal of tile and installing VCT.
257	Station #3	INT. FIT-OUT	Finishes	Flooring	Sheet vinyl Flooring			Kitchen/Day Room	2014	20	2034	2015	19	Replace flooring	420 sf	100%	\$10.00	\$4,200	\$7,365	• 4	2034	Replace when deteriorated.
258	Station #3	CORE SYST.	Wood Structure	Stair	4x4 Wood post			Basement Stair	1927	88	2015	2015	0	Secure stair post in basement with baseplate or similar connector.	1 allow	100%	\$300.00	\$300	\$300	2	2015	
259	Station #3	INT. FIT-OUT	Finishes	Flooring	Concrete sealer/ hardener.			Apparatus bay	1990	20	2010	2015	⊗ -5	Re-seal floor with concrete sealer/hardener.	2,000 sf	100%	\$1.50	\$3,000	\$3,000	2	2015	There is still a sheen to parts of the floor so its possible the floor has been re-sealed since the initial application. "Another option is to provide an epoxy floor coating, but at additional cost.
260	Station #3	INT. FIT-OUT	Finishes	Rated Openings	Wood Doors			Apparatus Bay	1927	75	2002	2015	⊗ -13	Replace door with rated assembly.	1 ea	100%	\$3,000.00	\$3,000	\$3,000	2	2015	Current codes require separation between apparatus bay and living spaces. Recommend additional protection with rated assembly at door between apparatus bay and living spaces.
261	Station #3	INT. FIT-OUT	Finishes	Partitions and Cellings	Plaster Walls & Ceilings			Apparatus Bay	1927	75	2002	2015	Ø -13	Remove remaining brittle plaster from brick wall around Apparatus Bay toilet. Install furring and abuse resistant gypsum with skim coat.	1 allow	100%	\$8,000.00	\$8,000	\$8,000	2	2015	
262	Station #3	INT. FIT-OUT	Finishes	Partitions and Ceilings	Plaster Walls & Ceilings			Apparatus Bay	2010	5	2015	2015	0	Remove drywall panel covering plumbing access in ceiling. Install access panel.	1 allow	100%	\$800.00	\$800	\$800	• 4	2015	
263	Station #3	CORE SYST.	Structural Systems	Clearance	Floor Beam clearanc	e.		Apparatus Bay	1927	88	2015	2015	() 0	Floor beam plaster wrap has cushion for protection from bumping it.	1 allow	100%	\$0.00	\$0	\$0	• 4	2015	Uncertain of what is at risk of bumping the plaster beam wrap. Clearance seems to be sufficient for truck that is currently in the apparatus bay. Potentially not sufficient for other types of apparatus.
264	Station #3	EXT. BLDG.	Walls	Openings	Overhead Doors			Apparatus Bay	1995	30	2025	2015	10	Replace.	2 ea	100%	\$8,000.00	\$16,000	\$21,503	2	2025	If increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000 ea.
265	Station #3	INT. FIT-OUT	Finishes	Acoustical Treatments	Tectum Panels			Apparatus Bay	1927	88	2015	2015	() 0	Add 2" Tectum Panels with 2x furring strips (C40 method) to CMU walls and bottom of deck. Painted.	1 allow	100%	\$8,000.00	\$8,000	\$8,000	• 4	2015	Perform acoustical study to determine appropriate treatments to improve intelligibility of the speaker system for emergency calls.
266	Station #3	CORE SYST.	Power	Emergency Load Center, 60A, 120/240V, Two inputs for manual transfer to genset.	r Panelboard	Siemens	E0408MB6030GC	Apparatus Bay	1999	30	2029	2015	14	Replace with new	1 ea	100%	\$886.00	\$886	\$1,340	• 4	2029	Replace with standard 60A load center and new automatic transfer switch when Emergency Genset is added to facility.
267 268	Station #3 Station #3	CORE SYST. CORE SYST.	Power Lighting	Exterior HVAC Disconnect, 30A, 600V, 3-Phase. Exterior Parking Lot Fixture	Fused Disconnect Exterior Lighting	Square D	A 81341-RO	Exterior Rear of Facility	1985 1990	30 15	2015 2005	2015 2015	033-10	Replace with new Replace with new.	1 lf 1 ea	100% 100%	\$490.66 \$3,000.00	\$491 \$3,000	\$491 \$3,000	2	2015 2015	Replace when reached end of useful life. Remove existing fixture and provide new pole mounted
269	Station #3	CORE SYST	Lighting	Interior Lighting	All interior lighting	Misc	Misc	Facility Interior	2012	15	2027	2015	2 12	Replace fixtures with Modern	2 820 sf	100%	\$10.00	\$28,200	\$40.206		2027	fixture in greenspace with integral photocell control.
					fixtures									Equivalents			÷ = 1.00	÷==;200	÷			new LED fixtures when existing reach end of useful life.
270 271	Station #3 Station #3	CORE SYST. CORE SYST.	Power Power	Main Disconnect switch, 250A, 240V, 2-pole. Main Distribution Panel, 250A, 1-phase, 3-wire, 10kAIC	Fused Disconnect	Square D Square D	NQOB	Apparatus Bay Apparatus Bay	1985 1985	30 30	2015 2015	2015 2015	0 0	Replace with new Replace with new	1 ea 1 ea	100%	\$2,104.53 \$6,372.00	\$2,105 \$6,372	\$2,105 \$6,372	2	2015 2015	Replace when reached end of useful life. Replace when reached end of useful life.
272	Station #3	CORE SYST.	Lighting	Wall Mounted Metal Halide Fixtures	Exterior Lighting			Exterior Wall	1990	15	2005	2015	-10	Replace with Modern LED	4 ea	100%	\$297.95	\$1,192	\$1,192	2	2015	Replace fixtures with new modern equivalents when
273	Station #3	CORE SYST.	Lighting	Provide Exterior lighting control	Exterior Lighting				1990	15	2005	2015	③ -10	Fixtures Provide photo cell lighting	1 allow	100%	\$500.00	\$500	\$500	2	2015	units fail. Add photo cell, timer, or both forms of exterior lighting
														control for exterior fixtures								control per the departments requirements. This function would be integrated with interior lighting controls when they are provided.





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	n Remainir	g Action	qty.	units a	pro-ration	unit cost	cost	Budget	Priority	Year	Comment
274	Station #3	CORE SYST.	Power	Add new Emergency Generator	Generator				1927	88	2015	2015	0 🜔	Provide new per AHJ	1	ea	100%	\$36,500.00	\$36,500	\$36,500	2	2015	Provide new including pad, transfer switch, fuel source,
275	Station #3	CORE SYST.	Power	Thermal Scan Electrical Systems	Electrical Equipment				1927	88	2015	2015	0	requirement. Thermal scan equipment per report.	1	ea	100%	\$500.00	\$500	\$500	3	2015	and other required upgrades. Thermal Scan electrical equipment to identify existing bazardous conditions.
276	Station #3	CORE SYST.	Power	Arc Flash Labeling	Electrical Equipment				1927	88	2015	2015	0	Perform an arc flash study and provide labels at equipment	1	LS	100%	\$500.00	\$500	\$500	• 3	2015	Provide labels per NEC and NESC requirements.
277	Station #3	CORE SYST.	Power	Recommended addition of Surge Protection Equipmen	t. Electrical Equipment				1927	88	2015	2015	0	Provide Surge Protection Equipment.	1	LS	100%	\$4,350.00	\$4,350	\$4,350	2	2015	Provide surge protection devices at service panel and branch circuit panels.
278	Station #3	CORE SYST.	Lighting	Provide modern lighting controls	Lighting				1927	88	2015	2015	0	Provide lighting control devices	1	LS	100%	\$1,500.00	\$1,500	\$1,500	• 4	2015	Provide lighting control devices for compliance with latest energy efficiency code.
279	Station #3	CORE SYST.	Power	Main Utility service.	Service				1990	25	2015	2015	0	Electric service utility conduit is not adequately supported to the building.	1	allow	100%	\$1,000.00	\$1,000	\$1,000	2	2015	
280	Station #3	CORE SYST.	HVAC	Building A/C System	CU-1	Aamerista	2A7M3024A1000AA	Outdoor	2006	12	2018	2015	3	Periodic maintenance such as lubricating and belts replacement will provide adequate continued trouble free service.	1	ea	100%	\$1,800.00	\$1,800	\$1,967	2	2018	
281	Station #3	CORE SYST.	HVAC	Building A/C system	CU-2	Lennox	10AC36-4P	Outdoor	2009	12	2021	2015	3 6	Periodic maintenance such as lubricating and belts replacement will provide adequate continued trouble free service.	1	ea	100%	\$2,000.00	\$2,000	\$2,388	2	2021	
282	Station #3	CORE SYST.	HVAC	Building Air handling unit system			AUX1B060A9361AC		2009	15	2024	2015	9	Periodic maintenance such as lubricating and filters replacement will provide adequate continued trouble free service.	1	ea	100%	\$2,400.00	\$2,400	\$3,131	2	2024	
283	Station #3	CORE SYST.	HVAC	Building Furnace "A" coil			2TXCB025BC3HCAA		2009	15	2024	2015	9	Periodic coil cleaning, condensate pan and drain cleaning will provide adequate continued trouble free service.	1	ea	100%	\$875.00	\$875	\$1,142	2	2024	
284	Station #3	CORE SYST.	HVAC	Exhaust Fan for Toilet Rooms	N/A	N/A	N/A		1975	12	1987	2015	፟፟⊗ -28	Replace.	2	ea	100%	\$800.00	\$1,600	\$1,600	2	2015	
285	Station #3	CORE SYST.	HVAC	Exhaust Fan For Apparatus Bay	N/A	N/A	N/A		1995	15	2010	2015	⊗ -5		1	ea	100%	\$3,500.00	\$3,500	\$3,500	2	2015	
286	Station #3	CORE SYST.	HVAC	Duct System Cleaning	N/A	N/A	N/A	N/A	2015	5	2020	2015	9 5	Periodic coil cleaning, condensate pan and drain cleaning will provide adequate continued trouble free service.	1	ea	100%	\$3,500.00	\$3,500	\$4,057	2	2020	
287 288	Station #3 Station #3	CORE SYST. CORE SYST.	Plumbing Plumbing	Gas Fired Water Heater Water Closets: Vitreous china floor mounted tank type		State ?	PRV 40 ?	Basement First Floor	1989 1975	15 30	2004 2005	2015 2015	 -11 -10 		1	ea ea	100% 100%	\$2,500.00 \$250.00	\$2,500 \$500	\$2,500 \$500	1	2015 2015	
289	Station #3	CORE SYST.	Plumbing	Lavatories: Stainless Steel drop-in countertop		?	?	First Floor	2014	30	2044	2015	29		3	ea	100%	\$500.00	\$1,500	\$3,535	4	2044	
290	Station #3	CORE SYST.	Plumbing	Sink: double bowl stainless steel drop-in countertops		?	?	First Floor	2014	30	2034	2015	29		1	ea	100%	\$300.00	\$2,000 \$300	\$3,507 \$707	• 4	2034	
292	Station #3	CORE SYST.	Plumbing	Showers faucets and shower heads		?	?	First Floor	1975	20	1995	2015	-20		1	ea	100%	\$300.00	\$300	\$300	2	2015	
293	Station #3	CORE SYST.	Plumbing	Thermostatic Mixing Valve				Mechanical Room	1989	15	2004	2015	-11	No temperature limiting device for hot water. Install thermostatic mixing valve.	1	allow	100%	\$1,500.00	\$1,500	\$1,500	• 1	2015	Water at lavatories and showers must be tempered water at 110° per Illinois Plumbing Code. Thermostatic mixing valves mix cold water with the hot water to reduce temperature of water. These can be done with a master mixing valve or at the point of use.
294	Station #3	CORE SYST.	Technology	Structured Cabling System & Station Alert Notification System				Throughout Building	1994	20	2014	2015	3 −1	Replace structured cabling system and upgrade station alert notification system.	1	allow	100%	\$25,000.00	\$25,000	\$25,000	2	2015	Replacement of structured cabling system for support of existing and future devices and systems. Upgrades to station alert/paging notification systems. Infrastructure for support of Owner furnished and installed technologies.
																			\$421,740	\$540.947			



Fire Station #4 – Existing Conditions



Figure #4-1 Station #4 west elevation.

STRUCTURAL SYSTEMS General

Station #4 is a one-story building located within the city limits of Decatur, IL. The structure has a flat roof divided between two roof elevations. The lower elevation contains the Day Room, Sleeping Quarters, Administrative Office, and Mechanical Storage Room while the higher elevation contains the Apparatus Bay. There is no basement level.

The structure was constructed in 1962. If structural renovations are to be undertaken at this facility, the International Building Code 2009 would categorize the following criteria for structural renovations as such:

Occupancy Category:	IV
Ground Snow Load:	20 psf
Basic Wind Velocity:	90 mph
Wind Importance Factor:	1.15
Wind Exposure Category:	В
Seismic Importance Factor:	1.50
Mapped Spectral Response:	Ss = 0.28g, $S1 = 0.11g$

The foundation of the structure could not be verified without further investigation. Though from the site visit, it is apparent that a continuous perimeter bearing/frost wall composed of Concrete Masonry Units (CMU) supports the brick veneer and bearing wall backup. It follows that a continuous reinforced concrete grade beam supports the CMU perimeter wall. Additional foundation walls are likely present for interior bearing and partition walls. A reinforced concrete slab-on-grade provides the floor for the structure and is an unknown depth. It is likely that the slab in the apparatus bay is 6"-8" thick while the slab in the balance of the facility is 4"-6" thick.

The superstructure of the facility has been verified. Bearing walls support the roof and consist of 8" nominal Concrete Masonry Units (CMU) laid in a stack bond. The 3 ⁵/8" nominal brick exterior veneer is laid in running bond in front of the CMU backup. Interior partition walls are also constructed of CMU and laid in stack bond. The presence of reinforcing steel in the CMU walls could not be verified and may not be present depending on the age of the structure. The roof construction could not be verified due to inaccessibility, but is likely constructed of metal roof deck laid on steel bar joists.

The lateral force resisting system for the building could not be verified. Depending on the age of the structure, a defined lateral system to resist the effects of winds and earthquakes may or may not be present. Given the structural system in place, the CMU walls and roof diaphragm will resist the lateral loads regardless if the system was designed to restrain the quantified forces.

Condition Assessment

Overall, the structure is in good condition. The building slab does not have noticeable damage. The concrete pavement in front of the apparatus bay does appear to be relatively new and in good condition except for one cracked panel. The roof deck and steel bar joists were not able to be surveyed. The exterior brick veneer has various locations where the mortar bed is cracked and at least one location where the brick face has spalled off. From the location where the cracking occurs,



it is likely a sign of settlement. Minor differential settlement (inconsistent settlement) in structures can be common and is generally not a cause of concern. The location where the spalled brick occurs is on the bottom course beneath an area of cracked mortar joints. The unsealed joints have likely allowed water intrusion and has damaged the brick through freeze/thaw cycles.

The CMU bearing and partition walls appear to be in good condition with one exception. The wall dividing the Mechanical Storage Room from the Sleeping Quarters has a vertical crack though the block and mortar joints. The bottom course beneath this crack has several spalled sections of block where the wall meets the floor on the Sleeping Quarters side of the wall. The vinyl tile is also curled and heaving at this location, likely an effect of the spalling from the CMU. The location of the cracking coincides with an HVAC duct penetration. The re-entrant corner of a penetration is often a location of heightened stress where cracking is more common. No conclusive cause for the distress can be suggested at this time.



Figure #4-2 Shrinkage crack at duct penetration on CMU wall between Mechanical Storage Room and The Sleeping Quarters.



Figure #4-3 CMU is spalling at base of the CMU wall between the Mechanical Storage Room and the Sleeping Quarters.

As mentioned above in the structural systems description, the lateral force resisting system for the building could not be verified. Though, for the age of the structure this is common. Modern structures incorporate an engineered system designed to resist calculated wind and seismic loads. This practice was adopted in the 1980s and has become increasingly more detailed and complex. Although actual winds and earthquakes have not necessarily become stronger, the structural engineering community better understands the likelihood of the event occurring, how the loads are collected and dispersed within the structure, and the required details to prevent structural damage from occurring. With this understanding, the building code now incorporates analysis and details that may not have been considered during the design of this facility. The absence of a recognizable lateral system is noteworthy, but no further evaluation of the lateral system is warranted at this time due to the condition.

Recommendations

Dewberry recommends that the cracks apparent in the CMU wall in the mechanical room be packed with grout to prevent water infiltration. Sealing the cracks will prevent moisture intrusion and possible freeze/thaw effects from further deteriorating the wall. Dewberry also recommends periodic observation of the spall and crack in the CMU wall for any further signs of deterioration.

MECHANICAL SYSTEMS

General

The listed air handling units are in fair condition.



Figure #4-4 Apparatus Bay gas unit heater.



Figure #4-5 Air handling unit in Mechanical Storage Room.

There is no immediate action to replace the units required. With regularly scheduled maintenance – such as lubricating, replacing filters and belts and proper repair – unit will provide remaining 3 to 5 years or more of service.

The smudgy and dirty grille is indicative of not having the filters replaced as needed and is a reason to recommend a reputable duct cleaning service be engaged to do a thorough duct cleaning. The gas unit heaters in the Apparatus Bay appear to be in good working order, and do not appear to be immediately repaired or replaced

DECATUR FIRE ST	TATIONS:				
FIRE STATION NO	0.4				
TAG NO.	MODEL NO.	SERIAL NO.	CONDITION BY VIS. INSP.	YEAR BUILT/INST'D	CURRENT UNIT COST
CU-1	TT8048D100A0	2172YTT5F	FAIR	2002	\$3600 +
CU-2	2A7M3048A1000AA	7404NUJ4#	FAIR	2007	\$3600 +
AHU-1	TXC054E5HPC0	41535415G	FAIR	2004	\$1600 +
AHU-2	TXC054E5HPC0	415353W5G	FAIR	2004	\$1600 +
GUH-1	MODINE HOT DAWG	N/A	GOOD	N/A	N/A
GUH-2	MODINE HOT DAWG	N/A	GOOD	N/A	N/A
ROOF EF CENTRIFUGAL	14"	N/A	GOOD	N/A	N/A
ROOF EF DOWNBLAST	N/A	N/A	N/A	N/A	N/A

Figure #4-6 Station #4 mechanical equipment table.



Figure #4-7 Ceiling grille.



Figure #4-8 Exhaust Fan.



The exhaust fans in the Toilet and Locker Room are original to the building and have exceeded their anticipated useful life by 2-3 times. These fans no longer operate as originally designed.

Recommendations

Provide regularly scheduled preventative maintenance for the mechanical equipment to achieve the life expectancy for the system. Replace equipment at the end of its useful life.

The Toilet and Locker Room exhaust fans should be replaced with type and capacity similar to those shown in the following schedule.

				1	EXHAL	JST F	AN SCH	IEDU	LE			
116	ARQTY.	ESP (IN.	-	ROOF	RECTRIC	AL CHURA	CTERNING	SONES		MODEL		INSTALL
NO.	CFM	WS.)	ONUNE	OPENING	8PM	HP	V/P5/Hz	(MAA)	MANUF.	NO.	REMARKS	DATE
07-1	205	0.14	DIRECT		1550	0.03	115/1/60	2.51	PENN	FMIX 6R	1.1.4	19xx
07-2	275	0.165	DIRECT		1550	0.03	115/1/60	2.74	PENN	FM0X8R	1.2.1.4.5	1900
REMAR	85:											
1	PROVIDE	BACK DRA	FT DAMPI	(A -							EF-3/WBLLMO	UNTED
2	PROVIDE	PREFAB R	DOF CURB								EF-2: CELING M	OUNTED
3	PROVIDE	BADSCAR	IN AND FA	AN GUARDS								
4	PROVIDE	DISCONN	ICT SWTIC	ж								
5	PROVIDE	GOOSENE	CK DISONA	3044								
6	PROVIDE	GREASE O	DULECTION	LON ROOF	CURB							

Figure #4-9 Exhaust Fan schedule.

ELECTRICAL SYSTEMS

Electrical Service and Main Distribution Equipment

This facility is served by a 250A, 120/240V, 1-phase, 3-wire overhead service from Ameren. The meter is located outside with the Main Disconnect located in the main distribution panel. The electrical equipment in this fire station is Square D NQOB. Replacement breakers are still available for this equipment. The gear appears to be original to the 1962 construction.

Also installed in the original construction is a sub-panel installed in an existing block wall located in the lounge area. This panel is Square D NQOB sub fed from the main distribution panel. Capacity for this panel is 60A. Spare capacity for new loads is provided on in both panels.

A small roll up generator interconnection panel was provided in 1999. This panel has select loads deemed essential for the operation of the fire station and provides a mechanical interlock to prevent normal and emergency power from interconnection. To provide emergency power, a portable generator similar to the unit in Station #3 must be transported to the site and manually connected. There is no automatic back up for loads on site.

All equipment disconnects appear to have been replaced around the same time that the main panel was replaced with the exception of a few added as equipment was added to the facility.

Recommendations

Dewberry recommends that the main panel and disconnects

be replaced within the next few years. The exact age of the equipment is unknown, but it past its rated useful life.

It is required by the authority having jurisdiction that an on-site natural gas generator be provided for full facility back-up. Based on the service size, Dewberry recommends a 25kW, 120/240V single

phase, natural gas generator for full facility back up with a 250A, 120/240V, single phase, automatic transfer switch with bypass isolation. A smaller unit may carry the entire facility, but additional load study and analysis of existing demand will be required. The cost to add this generator with all required circuitry is approximately \$36,500.

Dewberry recommends that a 1kW, line interactive, free standing Uninterruptable Power Supply (UPS) be provided at the computer station to provide battery back-up power to the radio and facility desktop. The UPS will provide up to 6 minutes of run time at full load to allow for an orderly shutdown of the systems or ride through power until the temporary generator connection is made. The cost to add this UPS is approximately \$1,000.

A load study should be performed to determine the maximum demand load within the facility. This should be done over the summer when the facility is seeing its peak demand. Dewberry recommends a meter be placed at the main incoming feeds and tracked for one week to capture the peak demand on the system. Dewberry recommends that within the next year the system distribution components be thermally imaged to identify any impending damage before the damage occurs. Thermal imaging locates abnormally high resistance within systems that may be caused by under-sized conductors, loose connections, or excessive current flow which may cause abnormally high unwanted heating that results in dangerously hot electrical circuits. In some cases components can become hot enough to melt. The panels and large disconnects should all be thermal tested. Dewberry estimates that an inspection and report of findings by a firm with expertise in thermal imaging will be approximately \$500.

There were no surge protection devices observed on any electrical equipment. Dewberry recommends that at a minimum a UL 1449, 3rd edition surge protection device be added to the main distribution panel. The cost to add surge protection devices would be approximately \$4,350.

Within the next 20 years, Dewberry recommends replacement of the generator interconnection panel. This panel may be removed with full facility generator back-up.

Lighting and Controls

The majority of the lighting in the facility is linear fluorescent and has been modernized within the last two years from T12 to T8 fluorescent lamping. Existing fixtures remain, but the ballast and sockets have been replaced to accept the new lamps. Down lights throughout the facility are original with Edison screw bases. Lamping has been upgraded to fluorescent screw in with integral ballast. The majority of the lighting is still controlled via wall mounted snap switches. Emergency Life Safety Egress lighting is provided throughout the facility by emergency battery packs. Exit lights do not appear to have integral battery back-up.

Recommendations

Any upgrades or additions to the facility would require compliance with the latest adopted Energy Conservation Code. In Decatur, IL the 2015 International Energy Conservation Code will be enforced beginning in January of 2016. Advanced automatic lighting control systems will need to be provided in all non-sleeping areas to automatically turn lights off. Additional daylight harvesting devices will need to be installed in code defined "daylight zones". Daylighting zones are defined areas around windows and skylights where lights within the zone are controlled by day light sensors. Lights in secure areas or any area where automatic control could compromise safety may continue to be manually controlled. Exterior lighting will also be controlled by automatic means to shut off lighting when sufficient daylight is present. Upgraded controls to the latest energy efficiency code will cost approximately \$2,000.

There is no immediate need to upgrade lighting fixtures in the Apparatus Bay. Down lights shall be replaced with LED retrofit kits or LED surface mounted fixtures and shall utilize the existing fixture locations to the greatest extent. If the entire ceiling is to be replaced, the light fixtures shall be replaced with modern LED fixtures that are appropriate for the spaces and modern in appearance. Benefits of LED vs Fluorescent are longer lamp life, lower maintenance costs, lower operating costs, ease of disposal, and superior controllability.

Exit signs shall be replaced with modern LED exit signs with integral battery back-up. All emergency battery units shall have new batteries installed.

Fire Alarm System

There currently is no fire alarm system on site. Residential style smoke detectors were observed in the sleeping areas and area outside of sleeping areas for compliance with the IBC.

Recommendations

Per review of the International Building Code this type of facility would likely be a combination of B, R-2, and S-2. None of the conditions are met to require a fire alarm system. Dewberry would recommend that existing smoke detectors within the facility be replaced with hard wired units with battery back-up. The new units shall utilize wireless technology to transmit alarm signals to all other units within the network so that all units alarm when one unit detects smoke.

Arc Flash Labeling

In accord with NEC (National Electrical Code) and NESC (National Electrical Safety Code), electrical equipment shall be labeled to indicate the potential for Arc Flash Hazard and level of PPE (Personal Protective Equipment) used when maintaining or operating the equipment. All of the equipment in this facility do not include the required labels.

Recommendations

A study to perform the Arc flash Hazard analysis is recommended to be performed immediately. The cost to perform this study and provide labeling is approximately \$500.

PLUMBING SYSTEMS

Domestic Water System

The domestic water service enters the building in the mechanical room near the gas water heater. The size of the service is 2". There is not a backflow preventer on the water service. There are three hose reels located in the Apparatus Bay.

The gas fired domestic water heater is an A.O. Smith, Model GCV 40 300, 40 MBH heater, and was installed in 2014 with a Grundfos model UP15-10SU7P circulating pump. While the circulating pump is on, cold water is unavailable.

Urinals and toilets are wall hung, American Standard with Sloan manual flush valves. Lavatories are in a countertop, with Kohler manual faucets.

Recommendations

Dewberry recommends that a master mixing valve be added at the water heater. That the circulating pump be removed and replaced with one that has been properly sized in order to prevent inadvertent mixing of hot and cold domestic water. Fixtures appear to be dated, but in working order.

Fire Protection System

None.

Recommendations

None.

TECHNOLOGY SYSTEMS Structured Cabling

In its present state, the structured cabling system meets the basic operational needs of the department. Hardwired drops are present where they are needed, but there are limited spare drops that prevent support of future systems. Much of the existing structured cabling system has been installed in phases over time and done so in a haphazard manner. The installation does not meet current industry standards and most likely was not tested for performance. As a result, it's questionable whether the cabling system is performing to its optimum level, or if it meets a manufacturer's warranty for performance. Staff also expressed difficulty in identifying active network cable versus cable for other systems or even abandoned cable.

Support of an upgraded wireless LAN is needed. The current wireless LAN is basic in nature and is shared by both emergency systems and personal use by the staff.

Recommendations

It is recommended that the existing cabling system be replaced with a standards compliant Category 6 performance grade system. In addition to an immediate improvement of the cosmetic nature of the existing installation, replacement of the cabling system would result in:

- A standards based installation that has been tested for performance.
- A centralized location for termination and housing of head end electronics for emergency systems.
- Identified cabling that is clearly labeled.

In addition to replacement of the existing cabling, provisions should be made for support of future network based devices for signage, displays and other devices integral to station alert and notification systems.

It is also recommended that a wireless survey of each building be performed to identify preferred locations of wireless access points. It was noted that internet services is provided via broadband from the local cable provider. Should the City extend its fiber optic network to include each fire station, each station would benefit not only from direct access to City networks, but also shared use of the City's internet service provider. It is also strongly suggested that the Department work with the City's IT department to develop partitioned networks that separate emergency system network traffic from personal use. Unless otherwise noted, it is assumed that cellular coverage is sufficient throughout all facilities and that no supporting

Station Alert and Alarm Notification

The existing station alert system is very basic in nature and is limited to tone and alarm only.

antenna systems are required for amplification of cellular

Recommendations

service.

Modifications and upgrades are recommended resulting in both audible and visual notification methods. Modern computer aided dispatch systems utilize a variety of signaling devices including LED signage and large format wall displays, in addition to traditional audible announcements. Providing visual representation of the alert provides additional direction and input that a simple audible alarm lacks.

Station paging systems should be evaluated on a case by case basis. Performance of the systems should be evaluated to confirm:

- Consistency in coverage of each station.
- Clear audible reproduction.
- Sound pressure levels sufficient to overcome the ambient sound levels of each space.

In addition to evaluation of each system, consideration of the acoustics of each space should also be evaluated. When needed, architectural modification should be made to minimize unwanted reflections that would otherwise deter the quality of reproduced sound.

Additional Considerations

As noted above, centralization of emergency system electronics is recommended. In addition to providing a secure location for this equipment, dedicated emergency power can be provided that utilizes uninterruptable power supplies and generator backup.

Consideration should also be given to future enhancements to building security including access control/alarm monitoring and closed circuit television monitoring and recording. In addition to securing these valuable properties, electronic systems can be used to simplify staff access to the facility, control and monitor secure locations such as pharmaceutical and equipment storage, and provide a visual record of events in key areas such as the Apparatus Bay, entrances to the facility, etc.

BUILDING ENVELOPE Exterior Walls

Exterior walls consist of modular brick veneer construction with CMU back up. It is assumed that the veneer system is a monolithic system without a drainage cavity based on the era of the building (1960s) and supported by the fact that there are no weep or flashings provided at the base of the wall or above openings. There is some wood framed overhangs with aluminum siding and soffits. At above and below windows there is vertical aluminum siding.

Some cracks in brick at corners of building and below and above windows. These are a result of expansion and contraction of brick masonry. However with monolithic brick and CMU backup systems, expansion joints are likely not effective unless the joint is continuous through the CMU back up as the system is a 'unified' system through the mortar bed. Cutting control joints into existing CMU bearing masonry walls requires special investigation and consideration to be done properly. Since the cracking is not significant, causing extensive brick bond failure, or combined with other masonry issues, repointing and repair of mortar cracks is the recommended course of action.





Figure #4-10 Crack at corner of window.

At lintels above openings, mortar is loose and failing. The flue and parapet walls above roof also have failing mortar joints. There are some places where mortar is delaminating or no longer bonded with brick. Typically repointing of mortar joints for buildings is needed after 50 years.



Figure #4-11 Mortar failure at lintel. Rusted steel lintel.

Lintels above overhead doors are severely rusted with some sagging. It is likely that the brick is not bearing on steel lintel plate and is dependent on 'arching' of the running bond pattern.



Figure #4-12 Rusting and sagging lintel.

Some mechanical penetrations are not sealed.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to Exterior Walls.

- Repoint and repair brick mortar joints at parapet walls, lintels, cracks, and delaminated mortar joints. Consideration to full building repointing or brick should be given based on age of building.
- 2) Replace masonry lintels above overhead doors.
- 3) Seal mechanical penetrations.

Roofing

The roof was replaced approximately 7-10 years ago with single ply EPDM membrane system. The typical roof warranty for this system is 20 years. Overall the condition of the roof is in good condition with no visible signs of ponding (observations were taken on a day when it was raining, any 'ponding' that existed was minor and expected when raining.).

There were some signs of water infiltration on the interior of the Apparatus Bay along the perimeter of the ceiling from possible roof leaks. This could be from before roof replacement or because the roof membrane doesn't lap over parapet coping.



Figure #4-13 EPDM roof with positive drainage.



Figure #4-14 Stone coping cap with sealant likely to stop reoccurring water infiltration into Apparatus Bay.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Roofing Systems.

- 1) Replace roof at end of warranty.
- 2) Lap membrane over top of coping cap and install sheet metal coping or edging.

Windows and Entrance Systems

Exterior window glazing is mostly an operable aluminum window system throughout with the exception of the vestibule entrance which is an aluminum storefront system. The remaining entrance doors are wood with wood frames. All window systems are 15+ years old. Some do not operate correctly and are not energy efficient. The window opening frames are wrapped with similar color sheet metal, but are only secured with sheet metal nails which are missing or loose in some locations. The systems are all faded and some gasketing around glazing or panels are failing. Apparatus Bay windows appear to be in the worst condition.



Figure #4-15 Failing gasket in window system.



Figure #4-16 Sealant missing at perimeter of opening.





Figure #4-17 Failing sealant.

For most of the exterior openings, the perimeter sealant has either failed or is not present.

The north exterior door is difficult to open and rubs against the threshold. The base is deteriorating and damaged from use. Door also needs updated weather stripping.



Figure #4-18 Deterioration at base of door.

Door from Apparatus Bay into Living Quarters and into Mechanical Storage Room is worn on the edges from repeated use and doesn't carry any rating.

Safety glazing was not found on storefront entrance system. The window and door lite into Apparatus Bay is wired glass which does not meet safety ratings and is not recommended.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Windows and Entrance systems.

- 1) Replace window systems with thermally broken systems.
- 2) Replace sealant around all openings.
- 3) Replace exterior egress door with insulated hollow metal door and frame.
- 4) Provide compliant hardware for rated openings and accessibility.
- 5) Provide compliant glazing for safety glazing and rated glazing.

ARCHITECTURAL FINISHES Day Room

The Day Room wall finish is panelized wood veneer over CMU walls, painted CMU, painted plaster ceiling, and VCT flooring.



Figure #4-19 Day Room.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Day Room.

- Install carpet in the Day Room to improve acoustics.
- 2) Replace hard ceiling with suspended acoustical ceiling tile to improve the acoustics in the space.
 - The hard ceiling also results in surface mounted cabling for power and technology. The hard ceiling also makes lighting replacement very limited in options without replacing the ceiling.

Kitchen

The Kitchen finishes include painted plaster soffits, painted CMU walls, painted plaster ceiling, and VCT flooring. The cabinets are finished wood with stainless steel countertops and ceramic tile back splash.

All finishes are updated except VCT floor which is in good condition.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Kitchen.

1) None.

Toilet and Locker Room

The Toilet and Locker Room finishes include painted gypsum wallboard ceilings, painted CMU walls mosaic tile wainscot, and mosaic tile floor. The lockers and toilet partitions are prefinished steel. The lavatories are drop sinks in metal base cabinets with plastic laminate countertops.

Rust is developing on the side of the toilet partition next to urinal. Some rust is developing on lockers and cabinets.



Figure #4-20 Rust on toilet partition.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Toilet and Locker Room.

- Replace cabinets when based has rusted through. Under current accessibility codes direct alterations must meet ADA 2010 and Illinois Accessibility Code. Replacement will require 34" countertop height and accessible sink.
- 2) Remove rust from toilet partition and repaint or replace.

Sleeping Quarters

The Sleeping Quarters wall finish is painted CMU walls, plaster ceiling, and VCT flooring. Wood trim around windows and wood frame doors.

Water from mopping has stained base of interior door.

CMU at base of wall is cracked and separating from wall. This movement has also pushed against the VCT floor tile.





Figure #4-21 Spalling CMU at base of wall. Wood trim at perimeter of ceiling is sagging.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Sleeping Quarters.

- 1) Install carpet in the day room to improve acoustics.
- 2) Replace hard ceiling with suspended acoustical ceiling tile to improve the acoustics in the space.
 - The hard ceiling also results in surface mounted cabling for power and technology. The hard ceiling also makes lighting replacement very limited in options without replacing the ceiling.
- 3) Repair and patch CMU base.

Storage/Pantry

The Storage/Pantry wall finish is painted CMU walls, plaster ceiling, and VCT flooring. Simple wood veneered cabinets.



Figure #4-22 Cabinets in storage area.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Storage/Pantry.

 Replace wall cabinets with full height cabinets when they no longer function as intended.

Apparatus Bay

The finishes in the Apparatus Bay are painted CMU, painted gypsum ceiling, and unfinished concrete slab.



Figure #4-23 Apparatus Bay.

The paint on the walls is fading or discolored. In many locations the paint is peeling.

The bare concrete floor was likely treated with a sealer at time of construction, but has likely worn off over time.

As mentioned in Windows and Entrance System section, the doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware.

Some shrinkage cracks in the CMU are visible due to lack of control joints at openings.

At exterior walls and on the ceilings there is evidence of water infiltration at the roof bearing locations. The leaks are addressed in the Roofing and Building Envelope sections. However, since the space above the hard plaster ceiling is concealed, there is concern of potential mold growth above the ceiling. It should be noted that at Station #5 there was a similar issue and condition at the Sleeping Quarters which revealed a mold issue when the ceiling collapsed and was then removed in its entirety.



Figure #4-24 Water infiltration at perimeter of room, peeling paint.

There is a step down from living spaces to Apparatus Bay which is not ideal for safety.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay.

- 1) Repaint Apparatus Bay, an epoxy based paint is recommended if trucks are washed inside.
- 2) Recommend applying a new sealer/hardener to concrete floor. An epoxy floor is an option as well.
- 3) Improve separation with rated doors, frames, glazing, and hardware.
- 4) Repoint cracks in CMU.
- Investigate and test for mold above plaster ceiling.
 a. If mold is present, remove ceiling and
- remediate mold issue.
 6) Perform acoustical analysis and add acoustical treatments to the wall and ceiling/roof deck to improve intelligibility. Painted 2" tectum panels using C-20 or C-40 method would be recommended for this application.

Mechanical Storage Room

The finishes in the Mechanical Storage Room off of the Apparatus Bay are painted CMU, painted gypsum ceiling, and unfinished concrete slab.

The paint on the walls is fading or discolored. In many locations the paint is peeling.

As mentioned in another section, the doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware.

Some shrinkage cracks in the CMU are visible due to lack of control joints at openings.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Mechanical Storage Room.

- 1) Repaint CMU.
- 2) Improve separation with rated doors, frames, glazing, and hardware.
- 3) Repoint cracks in CMU.



SITE PAVING AND DRAINAGE General

Site paving is made up of concrete aprons, concrete drives, concrete sidewalks, and asphalt parking lots. The drainage on the site is mostly from storm water sewer management. All building roof drainage utilizes internal gutters which are connected into the site storm sewer.

Most of the site concrete is in good condition, but a few sections have a worn surface with exposed aggregate and full length cracks. Exposed aggregate and cracking tends to increases the possibility of spalling from freeze/thaw cycles and overall deterioration.



Figure #4-25 Entrance concrete drive. Some cracking has formed.

The asphalt parking lot and drive has a fair amount of deterioration, cracks, and some settlement.



Figure #4-26 Asphalt parking lot area with alligator cracking, joint cracks, and some settlement.

The concrete slab at the exterior egress door from the sleeping quarters is 6" lower than the door threshold.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Site Paving and Drainage.

- 1) Patch any spalled concrete throughout as required to protect exposed aggregate.
- 2) Seal concrete cracks.
- 3) Develop replacement strategy for replacement sections of site concrete paving as they become worn and deteriorate.
- 4) Replace asphalt parking lot and drive with mill and overlay. Repair areas of settlement.
- 5) Replace egress door slab with an elevated slab at the door threshold.

ACCESSIBILITY

General

The facility was built prior to the adoption of accessibility codes by the State of Illinois or the Federal Government and is not required to be brought up to code unless specific elements are 'altered' or when 'alterations' of a building exceed a percentage of the replacement cost of the facility. This should be considered when any alterations are made to a facility.

The direct alterations made to the cabinetry in the kitchen and the toilet room should have been updated to accessibility standards under ADA 2010 and Illinois Accessibility Code.

The following are only recommendations.

There is not an accessible entrance to the facility. There is a small step at each entrance.

Recommendations

The following is a summary of recommendations to provide more accessibility to the facility.

- 1) Provide accessible Kitchen and Toilet Room countertops and lavatories.
- 2) Provide accessible entrance from handicap parking space.

SUMMARY OF STATION #4 General

Fire Station #4 is in good condition overall. Some of the exterior and interior finishes have been updated or replaced over the life of the building. There are still some systems and equipment that are beyond their anticipated useful life and will require replacement. There are also a few conditions inherent to the construction of the building that should be addressed, but do not impact the day to day operation of the facility.

The core structure of the facility is in good condition with the exterior brick veneer in fairly good condition. With continued maintenance and joint re-pointing, the building has the potential to last a significant amount of time.

The layout of this 1962 building is minimally adequate for its intended purpose, as the 2nd bay of the Apparatus Bay serves as a recreation/work out space, laundry space, and additional storage space. Any expansion of capacity and/or services would require further investigation.

With minor updates and technological updates, this fire station should continue to serve the fire department in its current capacity.



	St	tation #4 - Capita	I Replaceme	nt Costs b	y Year		
Year	Cost Today	Budget Need		Priority 1	Priority 2	Prority 3	Priority 4
		cost escalated to		1	0	2	
2015	¢000 470			¢67.040	2 147 022	ۍ 1 000	¢15 000
2015	φ230,473 ¢10,400	\$230,473 \$10,712		φ07,240 ΦΟ	\$147,033	φ1,000 ¢0	φ15,200 ¢0
2010	ቅ 10,400 ድር	φ10,712 ΦΟ		φ0 ©	\$10,712 ¢0	\$U ¢O	ው
2017	φ0 ¢0	φ0 ¢0		φ0 \$0	\$0 ¢0	\$0 \$0	φι ¢(
2010	ψ0 \$0	 ΦΦ		0¢ 02	υψ 0.2	\$0 \$0	φu
2019	0 0 0 2 2	φ0 \$11 100		0¢ 02	ΨU \$11 100	φ0 \$0	ምር ይ
2020	ψ3,000 \$0	\$0		00 \$0	\$0	φ0 \$0	ΨC \$(
2021	φ0 \$0	φυ 		\$0 \$0	0¢ 02	φ0 \$0	ψυ \$(
2022	90 \$67 900	\$86 014		\$0 \$0	\$86.014	φ0 \$0	ΨC \$(
2020	¢07,500 \$500	\$652		\$0	\$0 \$0	\$0 \$0	\$652
Sub Total After	\$318 933	\$339.049		\$67 240	\$254 957	\$1 000	\$15 852
10 Years	••••	+,		, , , , , , , , , ,	+=0 1,001	• .,	÷:0,002
2025	\$47.395	\$63.695		\$0	\$34,774	\$0	\$28.921
2026	\$0	\$0		\$0	\$0	\$0	\$C
2027	\$44,400	\$63,304		\$0	\$0	\$0	\$63,304
2028	\$0	\$0		\$0	\$0	\$0	\$0
2029	\$3,386	\$5,122		\$0	\$0	\$0	\$5,122
2030	\$0	\$0		\$0	\$0	\$0	\$0
2031	\$0	\$0		\$0	\$0	\$0	\$C
2032	\$491	\$811		\$0	\$0	\$0	\$811
2033	\$42,900	\$73,034		\$0	\$0	\$0	\$73,034
2034	\$0	\$0		\$0	\$0	\$0	\$0
2035	\$0	\$0		\$0	\$0	\$0	\$C
2036	\$0	\$0		\$0	\$0	\$0	\$0
2037	\$491	\$940		\$0	\$0	\$0	\$940
2038	\$0	\$0		\$0	\$0	\$0	\$C
2039	\$0	\$0		\$0	\$0	\$0	\$C
2040	\$0	\$0		\$0	\$0	\$0	\$0
2041	\$0	\$0		\$0	\$0	\$0	\$0
2042	\$0	\$0		\$0	\$0	\$0	\$C
2043	\$0	\$0		\$0	\$0	\$0	\$0
2044	\$0	\$0		\$0	\$0	\$0	\$0
Sub Total for	\$139,062	\$206,906		\$0	\$34,774	\$0	\$172,13
Remainder Years							
Overall Total	\$457,995	\$545,955		\$67,240	\$289,731	\$1,000	\$187,98

BUDGET SUMMARY

			CONSOL	IDATED SYSTEI	MS DATA																		capital replacement budget
					Existin	ng Asset Log									ated Condition				Estimate	d Replaceme	nt Budg	et	
		Building or Zone (If more than one)			Description -	& Location of Asset				Year Installed	Anticipated Years of Life	Calculated Renewal Year	Evaluation Date	Remaining Life Expectancy	Recommended Action		Cost Basis		Current Replacement Cost	Escalated Cost at BUDGET YEAR	Priority Level	Budget Year	Comments
Ent 2	try # 195 Stati	Building ID on #4	Category EXT. BLDG.	Family Roofs or Decks	Component Roofing	Entity Single Ply EPDM	Manufacturer	Model	All	Installed 2003	Lifespan 20	Renewal 2023	Evaluation 2015	Remaini	Replace.	qty. un 4,850 sf	its pro-ration 100%	unit cost \$14.00	cost \$67,900	Budget \$86,014	Priority 2	Year 2023	Comment Replace at end of warranty.
2	196 Stati	on #4	EXT. BLDG.	Roofs or Decks	Roofing	Roofing Membrane Coping caps			Parapet Walls	1962	53	2015	2015	0	Flash membrane roof over stone coping and install perimeter coping cap to prevent roof leaks.	175 lf	100%	\$50.00	\$8,750	\$8,750	2	2015	Most roof leaks are at perimeters of roofs at the parapets. At these conditions the roof is flashed up to coping where there is some form of metal flashing below the stone coping. This flashing doesn't continue to the exterior side of the stone coping. This is the logical location of roof leaks. There are a couple options available. Simplest option would be to flash membrane over the top of the stone coping and terminate the roof with a full metal coping cap or roof edge. The second option would require removing stone coping cap and install a full thru wall metal flashing and then reset the stone coping which would be a similar cost.
2	197 Stati	on #4	EXT. BLDG.	Walls	Cladding	Masonry-Brick			All Facades	1962	53	2015	2015	0	Replace damaged bricks and tuck point delaminated mortar joints, joint cracks, and failing mortar in brick and CMU.	1 allow	100%	\$20,000.00	\$20,000	\$20,000	2	2015	At some corners of the building and below the windows there are cracks due to lack of masonry expansion joints and control joints in the brick and back up CMU. There are also locations of delaminated mortar. Replace damaged bricks and replace failing mortar joints in brick and CMU.
2	98 Stati	on #4	CORE SYST.	Structural Systems	Steel Lintels	Masonry Lintel			Overhead doors	1962	53	2015	2015	0	Replace rusted lintel.	2 ea	100%	\$3,500.00	\$7,000	\$7,000	• 1	2015	Lintel is rusted and sagging severely. Replace.
2	199 Stati	on #4	CORE SYST.	Structural Systems	Steel Lintels	Masonry Lintel			Apparatus Bay Windows	1962	53	2015	2015	0	Replace rusted lintels.	3 ea	100%	\$1,500.00	\$4,500	\$4,500	2	2015	Lintels are rusted and based on condition assumed to be no longer useable. Removing rust and refinish would be a temporary solution.
3	00 Stati	on #4	EXT. BLDG.	Walls	Cladding	Masonry-Brick			Window Stone Sills	1962	53	2015	2015	0 🜔	Rake out mortar and install sealant or mortar.	1 allow	100%	\$1,200.00	\$1,200	\$1,200	2	2015	Mortar is failing at stone sill joints.
3	01 Stati	on #4	EXT. BLDG.	Walls	Openings	Windows - Aluminum			Day Room	1995	30	2025	2015	10	Replace	160 sf	100%	\$75.00	\$12,000	\$16,127	2	2025	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames.
3	02 Stati	on #4	EXT. BLDG.	Walls	Openings	Windows - Aluminum			Sleeping Quarters/ Storage	1995	30	2025	2015	10	Replace	85 sf	100%	\$75.00	\$6,375	\$8,567	2	2025	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames.
3	103 Stati	on #4	EXT. BLDG.	Walls	Openings	Windows - Aluminum			Apparatus Bay	1995	30	2025	2015	10	Replace	100 sf	100%	\$75.00	\$7,500	\$10,079	2	2025	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames. These windows appear to be in the worst shape as they do not all operate and the panels have some damage on the exterior. These are also the most faded systems (no overhang protection).
3	104 Stati	on #4	EXT. BLDG.	Walls	Openings	Aluminum - Storefront Entrance			Front Entrance	1990	30	2020	2015	9 5	Replace	60 sf	100%	\$100.00	\$6,000	\$6,956	2	2020	Storefront entrance has single pane glass (non safety), dead bolt lock, failing weather strips, and is assumed to be non-thermally broken. Replace with thermally broken system, insulated glass, and sill pan flashing.
3	05 Stati	on #4	EXT. BLDG.	Walls	Openings	Wood doors and Frames			Sleeping Quarters	1965	30	1995	2015	⊗ -20	Replace door and frame.	1 ea	100%	\$3,000.00	\$3,000	\$3,000	• 1	2015	Door is deteriorating at the base and damage elsewhere on the door. Door hardware isn't functioning as intended. Some damage to door frame. Recommend replacing with hollow metal door and frame.
3	06 Stati	on #4	EXT. BLDG.	Walls	Openings Cladding	Perimeter Sealants			All openings	1995	20	2015	2015	0	Strip out failed sealant, prep, and re-seal.	1 allow	100%	\$2,000.00	\$2,000	\$2,000	1	2015	Sealant is cracked, failing, or missing at all openings.
3	Stati	лт#4	EAT. BLUG.	v#dil5	Cradung	тиазопгу-впск			Penetrations	1902	53	2015	2015	0	through exterior wall.	Tanow	100%	Ş250.00	Ş250	\$250	1	2015	
3	08 Stati	on #4	INT. FIT-OUT	Finishes	Flooring	Vinyl Composite Tile			Day Room, Kitchen, Sleeping Quarters	1995	20	2015	2015	0 ()	Replace flooring	1,955 sf	100%	\$8.00	\$15,640	\$15,640	• 1	2015	Recommend carpet tile in day area and Sleeping Quarters to improve acoustics. Cleanable surface for dining and kitchen.
3	09 Stati	on #4	INT. FIT-OUT	Finishes	Flooring	Mosaic tile			Restroom	1965	60	2025	2015	10	Replace flooring	345 sf	100%	\$16.00	\$5,520	\$7,418	• 4	2025	Tile appear to be in good condition.





E	intry #	Building ID	Category	Family	Component	Entity	Manufacturer Model	Location	Installed	Lifespan	Renewal	Evaluation Remain	ng Action	qty. u	inits pro-ration	unit cost	cost	Budget	Priority	Year	Comment
	310 5	itation #4	INT. FIT-OUT	Finishes	Flooring	Concrete sealer/ hardener.		Apparatus bay	1990	20	2010	2015 🔇 -5	Re-seal floor with concrete sealer/hardener.	1,750 sf	100%	\$1.50	\$2,625	\$2,625	2	2015	There is still a sheen to parts of the floor so its possible the floor has been re-sealed since the initial application. *Another option is to provide an epoxy floor coating, but at additional cost.
	311 9	tation #4	INT. FIT-OUT	Finishes	Ceilings	Plaster Ceilings		All Areas.	1962	53	2015	2015 🕹 0	Replace with 2x2 ceiling grid as part of lighting and technology upgrades.	2,300 sf	100%	\$4.00	\$9,200	\$9,20C	• 1	2015	Plaster ceiling are in good condition and only require repair to minor cracks, however the hard ceilings with the hard wall and floor surfaces makes the acoustics poor in all spaces and difficult to understand calls coming through the system. The hard ceiling also does not allow for easy lighting replacement and cable management. Recommend replacement with a suspended 2x2 ceiling.
	312 9	tation #4	INT. FIT-OUT	Finishes	Painting	CMU Walls		Apparatus Bay	1995	20	2015	2015 🙆 0	Re-paint	3,200 sf	100%	\$2.00	\$6,400	\$6,400	• 1	2015	Apparatus bay has significant peeling of paint, discoloring, and water stains. Prep and repaint.
	313 5	tation #4	INT. FIT-OUT	Finishes	Ceilings	Plaster Ceilings		Apparatus Bay	1962	53	2015	2015 🚱 0	Remove Plaster Ceiling	2,400 sf	100%	\$5.00	\$12,000	\$12,000	• 1	2015	Perimeter of the apparatus bay demonstrates water infiltration and potential water damage on ceiling. Peeling through out ceiling maybe a result of water damage. Based on Station #5 sleeping quarter ceiling, there is a probability of mold growth above the ceiling. Cost includes investigating and testing for mold, removing the ceiling, painting structure, supporting systems suspended at ceiling.
	314 9	tation #4	GROUNDS	Hardscape	Asphalt Paving	Asphalt Parking Lot		East Parking Lot and Drive	1995	15	2010	2015 🔇 -5	Replace asphalt paving with mill and overlay.	575 sy	100%	\$25.00	\$14,375	\$14,375	2	2015	Asphalt paving is beginning to see a significant amount of cracking throughout with some sports crumbling. Mill and overlay with some patching/repair of sub-base of low areas where there has been some settling.
	315	tation #4	GROUNDS	Hardscape	Concrete Paving	Concrete Drive		Apparatus Bay Drive	2003	30	2033	2015 🔮 18	Replace	390 sy	100%	\$110.00	\$42,900	\$73,034	• 4	2033	Replace when concrete is deteriorated.
	316 5	tation #4	INT. FIT-OUT	Rated Assemblies	Rated Openings	Wood Doors		Apparatus Bay	1965	40	2005	2015 🔇 -10	Replace doors from apparatus bay into adjacent spaces with rated doors and frames	2 ea	100%	\$3,000.00	\$6,000	\$6,000	2	2015	Current codes require separation between apparatus bay and living spaces. Recommend additional protection with rated assembly at door between apparatus bay and living spaces. Existing doors are also worn and have some abuse.
	317 5	tation #4	INT. FIT-OUT	Rated Assemblies	Rated Openings	Glazing		Viewing Window into Apparatus bay	1965	40	2005	2015 🔇 -10	Replace wired glazing and wood frame with rated frame and fire resistive glazing.	1 ea	100%	\$1,500.00	\$1,500	\$1,500	2	2015	Current codes require separation between apparatus bay and living spaces. Recommend additional protection with rated assembly at window between apparatus bay and day room. Wired glass is also not safety glass.
	318 9	tation #4	INT. FIT-OUT	Finishes	Casework	Lavatory		Restroom	1965	40	2005	2015 🔕 -10	Replace lavatory and casework	1 allov	w 100%	\$6,000.00	\$6,000	\$6,000	• 1	2015	Outdated casework and metal base inside is rusting
	319	tation #4	INT. FIT-OUT	Finishes	Toilet Accessories	Toilet Partition		Restroom	1962	53	2015	2015 🕑 0	Remove rust and repaint toilet	1 allov	w 100%	\$150.00	\$150	\$150	• 4	2015	infougit. Should be replaced.
-	320 9	itation #4	CORE SYST.	Structural Systems	Load Bearing Masonry	CMU Walls		Sleeping Quarters	1962	53	2015	2015 🕗 0	partition. Remove damaged CMU at base	1 allov	w 100%	\$800.00	\$800	\$800	2	2015	CMU at base of wall is spalling or popping out. Remove
													of wall and patch.								Damaged CMU and replace or patch with appropriate material. Prime and Paint.
	321 5	itation #4	CORE SYST.	Structural Systems	Load Bearing Masonry	CMU Walls		All	1962	53	2015	2015 🕗 0	Tuck point at cracks in CMU mortar.	1 allov	w 100%	\$5,000.00	\$5,000	\$5,000	• 4	2015	r
	322	tation #4	INT. FIT-OUT	Finishes	Trim	Perimeter ceiling trim	1	Sleeping Quarters	1962	53	2015	2015 🚷 0	Re-secure ceiling trim.	1 allov	w 100%	\$50.00	\$50	\$50	• 4	2015	
	323	tation #4	INT. FIT-OUT	Finishes	Acoustical Treatments	Tectum Panels		Apparatus Bay	1962	53	2015	2015 🕢 0	Add 2" Tectum Panels with 2x furring strips (C40 method) to CMU walls and bottom of deck. Painted.	1 allov	w 100%	\$8,000.00	\$8,000	\$8,000	• 4	2015	Perform acoustical study to determine appropriate treatments to improve intelligibility of the speaker system for emergency calls.
	324	itation #4	EXT. BLDG.	Walls	Openings	Overhead Doors		Apparatus Bay	1995	30	2025	2015 🔮 10	Replace.	2 ea	100%	\$8,000.00	\$16,000	\$21,503	• 4	2025	If increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000 ea.
	325 S	tation #4	CORE SYST.	Power	Branch Circuit Panel - MLO, 120/240V, 225A, 1-phase, : wire	Branch Circuit Panel	Square D NQOD	Lounge Area	1962	30	1992	2015 🔇 -23	Replace with new	1 ea	100%	\$1,962.00	\$1,962	\$1,962	2	2015	Replace with new. Existing is located within block wall. Due to age of equipment the panel does not meet modern depth requirements. New panel may need to be surface mounted over existing tub.
	326	tation #4	CORE SYST.	Power	Emergency Load Center, 60A, 120/240V, Two inputs fo manual transfer to genset.	r Panelboard	Siemens E0408MB6030GC	Apparatus Bay	1999	30	2029	2015 🥑 14	Replace with new	1 ea	100%	\$886.00	\$886	\$1,340	4	2029	Replace with standard 60A load center and new automatic transfer switch when Emergency Genset is
	327 S	itation #4	CORE SYST.	Lighting	Existing Soffit eyeball lights.	Exterior Lighting		Exterior soffit at station sign.	1962	15	1977	2015 🔇 -38	Replace with new LED retrofit fixture.	1 ea	100%	\$98.16	\$98	\$98	2	2015	added to facility. Replace with new LED retrofit fixture in existing aperture.





Entry # Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty. uni	ts pro-ration	unit cost	cost	Budget	Priority	Year	Comment
328 Station #4	CORE SYST.	Power	Exterior Eused Disconnect for HVAC, 60A, 240V, 2-pole	Fused Disconnect	Mars	8331	7 Exterior	2007	30	2037	2015	22	Replace with new	1 ea	100%	\$490.66	\$491	\$940	6 4	2037	Replace when reached end of useful life.
Station		i onei	NEMA 3R	, l'asca bisconnect	indio 1	0001	Exterior	2007	50	2007	2015		hepidee married	100	10070	÷ 150100	<i>V</i> 10 1	\$510	• ·	2007	Replace interredence end of discrariner
329 Station #4	CORE SYST.	Power	Exterior Fused Disconnect for HVAC, 60A, 240V, 2-pole	, Fused Disconnect	Square D	General Duty	Exterior	2002	30	2032	2015	17	Replace with new	1 sf	100%	\$490.66	\$491	\$811	• 4	2032	Replace when reached end of useful life.
330 Station #4	CORE SYST.	Lighting	Exterior Wall Mounted Fixtures around perimeter.	Exterior Lighting			Exterior Wall	1962	15	1977	2015	-38	Replace with new	4 ea	100%	\$279.95	\$1,120	\$1,120	2	2015	Replace with new full Cutoff LED Fixtures.
331 Station #4	CORE SYST.	Lighting	Exterior Wall Mounted Fixtures at Apparatus Bay doors	s Exterior Lighting			Exterior Wall	1990	15	2005	2015	③ -10	Replace with new	2 ea	100%	\$1,065.35	\$2,131	\$2,131	2	2015	Replace with new full Cutoff LED Fixtures.
222 Chatting #4	CODE OVET	Linking	Descride Extension lighting exerted	Cutories Liebtics				1000	45	2005	2015	A 10	Descride abote cell listation	4 = 11 = 11	4.000/	00.003	ć roc	ć.coo		2015	And shade call times as both forms of subside lighting
332 Station #4	CORE SYST.	Lighting	Provide Exterior lighting control	Exterior Lighting				1990	15	2005	2015	J -10	Provide photo cell lighting	1 allow	100%	\$500.00	\$500	\$500	2	2015	Add photo cell, timer, or both forms of exterior lighting
													control for exterior fixtures								control per the departments requirements. This
																					function would be integrated with interior lighting
																					controls when they are provided.
333 Station #4	CORE SYST.	Lighting	Interior Lighting	All interior lighting	Misc	Misc	Facility Interior	2012	15	2027	2015	12	Replace fixtures with modern	4,440 sf	100%	\$10.00	\$44,400	\$63,304	• 4	2027	Light fixtures upgraded to T8 circa 2012. Replace with
				fixtures									Equivalents								new LED fixtures when existing reach end of useful life.
334 Station #4	CORE SYST.	Power	Main Distribution Panel, 250A, 1-phase, 3-wire, 10kAIC	. Panelboard	Square D	NQOB-8018-1A	Mech Space	1962	30	1992	2015	-23	Replace with new.	1 ea	100%	\$6,372.00	\$6,372	\$6,372	2	2015	Replace when reached end of useful life.
335 Station #4	CORE SYST.	Fire Alarm/Detection	Smoke Detectors in sleeping areas	Smoke Detectors			Sleeping Areas	2000	20	2020	2015	5	Replace with new	2 ea	100%	\$80.00	\$160	\$185	2	2020	Replace existing with new.
336 Station #4	CORE SYST.	Power	Add new Emergency Generator	Generator		1		1962	53	2015	2015	0	Provide new per AHJ	1 ea	100%	\$36,500.00	\$36,500	\$36,500	2	2015	Provide new including pad, transfer switch, fuel source.
												- · ·	requirement.								and other required upgrades.
337 Station #4	CORE SYST	Power	Thermal Scan Electrical Systems	Electrical Equipment				1962	53	2015	2015	0	Thermal scan equipment per	1 ea	100%	\$500.00	\$500	\$500	2	2015	Thermal Scan electrical equipment to identify existing
Station 1		i onci	The man bean electrical systems	Lieuriun Equipment				1502	55	2015	2015	l v	report	100		\$500.00	<i>\$</i> 566	ç500	- J	2015	hazardous conditions
338 Station #4	CORE SYST	Power	Arc Elash Labeling	Electrical Equipment				1962	53	2015	2015	0	Perform an arc flash study and	115	100%	\$500.00	\$500	\$500	3	2015	Provide labels per NEC and NESC requirements
Station #4								1002	55	2010		1 ×	provide labels at equipment		10070	\$500.00	\$500	\$ 300	'	2015	restautions per recound reconcentents.
329 Station #4	CORE SVST	Power	Recommended addition of Surge Protection Facility	t Electrical Equipment				1962	50	2015	2015		Provide Surge Protection	115	100%	¢4.250.00	64.350	64.250		2015	Provide surge protection dovices at convice panel and
555 Station #4	CORE STST.	l ower	Recommended addition of Surge Protection Equipmen	checchical Equipment				1902	55	2015	2015	0	Equipment	115	100%	94,550.00	\$4,550	ə4,350	2	2015	branch circuit papels
240 Station #4	CORESYST	Lighting	Provido modorn lighting controls	Lighting			-	1062	50	2015	2015	0 0	Provide lighting control device	410	1000/	¢2.000.00	62.000	A3 000		2015	Provide lighting control devices for any light of the
540 Station #4	CORE STST.	Lighting	Fromue modern lighting controls	Lighting				1902	55	2015	2015	<u>۷</u>	FIGVICE Ignuing control devices	1 15	100%	\$2,000.00	\$2,000	\$ 2,00 0	4	2015	latest energy efficiency code
244 Charle He	CODE OVET	10/40	Air boardline that a Constant in 11.11		Tanaa	TVCOF 4 . TTOO 40	In marken i	2001	12	2010	2015	0	Denie die enginte		1000	ér 200 00	AT 257	A=		2010	latest energy emiciency code.
341 Station #4	CORE SYST.	HVAC	Air nandling Unit + Condensing Unit	AHU-1 + CU-1	Irane	1xC054 + ITB048	in mechanical room +	2004	12	2016	2015	1	Periodic maintenance such as	1 ea	100%	\$5,200.00	\$5,200	\$5,356	2	2016	serves general building HVAC needs
							Outdoors						lubricating and filters & belts								
													replacement will provide								
													adequate service, but need to								
													replace for continued trouble								
													free service.								
342 Station #4	CORE SYST.	HVAC	Air handling Unit + Condensing Unit	AHU-2 + CU-2	TRANE - XL80	TXC054 + 2A7M30	In mechanical room +	2004	12	2016	2015	0 1	Periodic maintenance such as	1 ea	100%	\$5,200.00	\$5,200	\$5,356	2	2016	Serves general building HVAC needs
							Outdoors						lubricating and filters & belts								
													replacement will provide								
													adequate service, but need to								
													replace for continued trouble								
													free service.								
343 Station #4	CORE SYST.	HVAC	Space Unit Heater		Modine	N/A	In garage	2005	10	2015	2015	0	In fairly good condition	1 ea	100%	\$1,000.00	\$1,000	\$1,000	2	2015	Garage space heating
344 Station #4	CORE SYST.	HVAC	Space CO exhaust		Modine	N/A	In garage/roof	2005	10	2015	2015	0	In fairly good condition	1 ea	100%	\$1.000.00	\$1.000	\$1.000	2	2015	Garage space heating
345 Station #4	CORE SYST.	HVAC	Exhaust Ean for Toilet Rooms	 N/A	N/A	N/A		1962	12	1974	2015	Ø -41	Replace.	2 ea	100%	\$800.00	\$1,600	\$1,600	2	2015	
												T									
346 Station #4	CORE SYST	HVAC	Exhaust Fan For Annaratus Bay	N/A	N/A	N/A		1962	15	1977	2015	.38		1 ea	100%	\$3,500,00	\$3.500	\$3 500	2	2015	
																+-,	+-,	+-,			
247 Station #4	CORE SYST	HVAC	Duct System Cleaning	NI/A	N/A	N/A	N/A	2015	c.	2020	2015		Poriodic coil clossing	1.00	100%	\$2.500.00	63.500	64 OF 7		2020	
Station #4	CONE 3131.	ITVAC	Duct System cleaning	N/A	N/P	N/A	IN/PA	2013	5	2020	2015	• · ·	condensate nan and desire	Tea	100%	\$5,500.00	\$3,500	\$4,057	2	2020	
													condensate pari and drain								
													creating will provide adequate								
													continued trouble free service.								
240	CODE DUCE	Dhumhin	Con Final Water U. 1		10.5	60148	Circle Circ	2011		2027	20/7					An roc	Ac	A		0000	
348 Station #4	CORE SYST.	Piumping	Gas Fired Water Heater		A.U. Smith	GCV 40	FIRST FIOOR	2014	15	2029	2015	14		1 ea	100%	\$2,500.00	\$2,500	\$3,781	4	2029	l
349 Station #4	CORE SYST.	Plumbing	Domestic Water Circulating Pump		Grundfos	UP15-10SU7P	First Floor	2014	10	2024	2015	9		1 ea	100%	\$500.00	\$500	\$652	4	2024	
350 Station #4	CORE SYST.	Plumbing	Water Closets & Urinals: Vitreous china wall mounted		American Standard	?	First Floor	1962	30	1992	2015	🥴 -23		3 ea	100%	\$250.00	\$750	\$750	2	2015	
351 Station #4	CORE SYST.	Plumbing	Flush Valves (manual)		Sloan	?	First Floor	1962	20	1982	2015	🔕 -33		3 ea	100%	\$500.00	\$1,500	\$1,500	1	2015	
352 Station #4	CORE SYST.	Plumbing	Lavatories: vitreous china drop-in countertops		?	?	First Floor	1962	30	1992	2015	-23		2 ea	100%	\$250.00	\$500	\$500	2	2015	
353 Station #4	CORE SYST.	Plumbing	Faucets For lavatories, sinks and service sinks		?	?	First Floor	1962	20	1982	2015	🔕 -33		4 ea	100%	\$500.00	\$2,000	\$2,000	• 1	2015	
354 Station #4	CORE SYST.	Plumbing	Sink: double bowl stainless steel drop-in countertops		?	?	First Floor	1962	30	1992	2015	-23		1 ea	100%	\$300.00	\$300	\$300	2	2015	
		-																			
355 Station #4	CORE SYST.	Plumbing	Service Sink		?	?	First Floor	1962	30	1992	2015	-23		1 ea	100%	\$250.00	\$250	\$250	1	2015	
356 Station #4	CORE SYST.	Plumbing	Electric Water Cooler compressor		Oasis	?	First Floor	1962	15	1977	2015	-38		1 ea	100%	\$500.00	\$500	\$500	1	2015	
357 Station #4	CORE SYST	Plumbing	Showers faucets and shower heads		?	?	First Floor	1962	20	1982	2015	33		2 63	100%	\$300.00	\$600	\$600	2	2015	
358 Station #4	CORE SYST	Plumbing	Thermostatic Mixing Valve			1	Mechanical Room	1966	20	1986	2015	-29	No temperature limiting device	1 allow	100%	\$1.500.00	\$1.500	\$1 500	1	2015	Water at lavatories and showers must be tempered
Station #+								1000	-0	1000		1	for hot water Install		10070	\$2,500.00	Ŷ1,500	÷1,500	- 1	2015	water at 110° per Illinois Plumbing Code Thermostatic
													thermostatic mixing value								mixing values mix cold water with the bet water to
													and the static mixing valve.								reduce temperature of water. These see he does with
																					a master mixing value or at the action of the
																					a master mixing valve or at the point of use.
359 Station #4	CORE SYST.	Technology	Structured Cabling System & Station Alert Notification				Throughout Building	1994	20	2014	2015	-1	Replace structured cabling	1 allow	100%	\$25,000.00	\$25,000	\$25,000	2	2015	Replacement of structured cabling system for support
			System										system and upgrade station alert								of existing and future devices and systems. Upgrades
													notification system.								to station alert/paging notification systems.
																					Infrastructure for support of Owner furnished and
																					installed technologies.
					_					-		-			_						
	1	1		1		1					11	1				1	\$457,995	\$545,955			







Fire Station #5 – Existing Conditions



Figure #5-1 Station #5 entrance.

STRUCTURAL SYSTEMS General

Station #5 is a one-story split level building located within the city limits of Decatur, IL. The structure has a flat roof divided between two roof elevations. The lower elevation contains the Day Room, Administrative Office while the higher elevation contains the Apparatus Bay, Sleeping Quarters, and Mechanical Storage Room. There is no basement level.

The structure was constructed in 1962. If structural renovations are to be undertaken at this facility, the International Building Code 2009 would categorize the following criteria for structural renovations as such:

Occupancy Category:	IV
Ground Snow Load:	20 psf
Basic Wind Velocity:	90 mph
Wind Importance Factor:	1.15
Wind Exposure Category:	В
Seismic Importance Factor:	1.50
Mapped Spectral Response:	Ss = 0.28g, $S1 = 0.11g$

The foundation of the structure could not be verified without further investigation. Although, it is likely the construction follows conventional practice which would utilize a continuous perimeter/frost wall constructed of either reinforced concrete or Concrete Masonry Units (CMU) setting directly on a reinforced concrete footing. Additional foundation walls are likely present for interior bearing and partition walls. A reinforced concrete slab-on-grade provides the floor for the structure and is an unknown depth. It is likely that the slab in the Apparatus Bay is 6"-8" thick while the slab in balance of the facility is 4"-6" thick.

The superstructure of the facility has been verified. Bearing walls support the roof and consist of 8" nominal Concrete Masonry Units (CMU) laid in a stack bond. The 3 ⁵/s" nominal brick exterior veneer is laid in running bond in front of the CMU backup. Interior partition walls are also constructed of CMU and laid in stack bond. The presence of reinforcing steel in the CMU walls could not be verified and may not be present depending on the age of the structure. The roof construction could be verified in the dormitory and is likely to continue throughout the structure. The roof observed is constructed from metal roof deck laid on steel bar joists.

The lateral force resisting system for the building could not be verified. Depending on the age of the structure, a defined lateral system to resist the effects of winds and earthquakes may or may not be present. Given the structural system in place, the CMU walls and roof diaphragm will resist the lateral loads regardless if the system was designed to restrain the quantified forces.

Condition Assessment

Overall, the structure is in good condition for the age of the facility. Although, the structure will begin to deteriorate if the water infiltration issues as discussed in the architectural section are not resolved. The building and pavement slabs do not have noticeable damage. The roof deck and steel bar joists in the dormitory appeared in good condition. The exterior brick veneer and the CMU bearing/partition walls have various locations where the mortar bed or block is cracked. The cracking observed is indicative of shrinkage or minor differential settlement (inconsistent settlement) which is common in structures and generally not a cause of



concern. Overall, the CMU bearing and partition walls appear to be in good condition.

The front entrance vestibule is supported in part by a small concrete wall bounded by the front steps. A hole is apparent in the base of this wall with a void formed behind. It appears that a repair has been conducted in the past to patch the deteriorated area but has spalled away leaving the hole and void open again to the elements. The reason for the damage is not evident but it is clear that rainwater can easily collect behind the wall causing further damage. See the Architectural section for further information and recommendations.



Figure #5-2 Failed foundation wall patch at entrance stair.

A damaged plate is also apparent above the eastern overhead door at the Apparatus Bay. The steel plate and brickwork appear to have been struck by an object from below leaving an approximately 2" cut through the lintel and crushing the brick above. Studying the original construction documents prepared for Station #6 (constructed very similarly to this facility), it is unclear whether the lintel strength has been compromised. The plate was likely provided as an enclosure and engineered to support the brick above. The cut in the steel plate has reduced the plate's ability to support the brick above.



Figure #5-3 Damaged steel lintel at overhead door opening.

As mentioned above in the structural systems description, the lateral force resisting system for the building could not be verified. Though, for the age of the structure this is common. Modern structures incorporate an engineered system designed to resist calculated wind and seismic loads. This practice was adopted in the 1980s and has become increasingly more detailed and complex. Although actual winds and earthquakes have not necessarily become stronger, the structural engineering community better understands the likelihood of the event occurring, how the loads are collected and dispersed within the structure, and the required details to prevent structural damage from occurring. With this understanding, the building code now incorporates analysis and details that may not have been considered during the design of this facility. The absence of a recognizable lateral system is noteworthy but no further evaluation of the lateral system is warranted at this time due to the condition.

Recommendations

Dewberry recommends that visible cracks in the CMU should be sealed to prevent water intrusion. Dewberry also recommends the plate over the eastern overhead door be repaired to limit the potential for future damage. Dewberry recommends a steel patch be engineered to repair the steel lintel to the original strength. The damaged brick above should also be replaced at the same time to prevent water infiltration. See the architectural portion of this report for recommendations regarding the damage at the front entrance steps.

MECHANICAL SYSTEMS

General

The listed air handling units are in fair to good condition.

DECATU	R FIRE STATIONS:								
FIRE STATION NO. 5									
TAG NO.	MODEL NO.	SERIAL NO.	CONDITION BY VIS. INSP.	CURRENT UNIT COST					
CU-1	CLQ48-18	0602498946	FAIR	\$3600 +					
CU-2	7A0048A100A1	N2460HGCF	FAIR	\$3600 +					
AHU-1	XB90 - TUC100C9488A	N/A	GOOD	\$1600 +					
AHU-2	HA05248D2108200584	6099F57228	GOOD	\$1600 +					
GUH-1	MODINE HOT DAWG	N/A	GOOD	\$1,200					
GUH-2	MODINE HOT DAWG	N/A	GOOD	\$1,200					

Figure #5-4 Station #5 mechanical equipment table.



Figure #5-5 Station #5 condensing units.



Figure #5-6 Station #5 twin air handling units.

These two Trane units XB90 and XE90 are 90 percent efficient furnaces. There is no immediate action for replacement of these units required. Regularly scheduled maintenance – such as lubricating, replacing filters and belts and proper repair – will provide remaining 3 to 5 years or more of service.

The exhaust fans in the Toilet and Locker Room are original to the building and have exceeded their anticipated useful life by 2-3 times. These fans no longer operate as originally designed.

Recommendations

Provide regularly scheduled preventative maintenance for the mechanical equipment to achieve the life expectancy for the system. It is also recommended that a reputable duct cleaning service engaged to do a thorough duct cleaning. Replace equipment at the end of its useful life.

The Toilet and Locker Room exhaust fans should be replaced with type and capacity similar to those shown in the following schedule.

EXHAUST FAN SCHEDULE												
ING AIRC	AIR QTY.	ESP (IN.	ORIVE	ROOF	ELECTRICAL CHARACTERISTICS		SONES		MODEL		INSTALLED	
	CEM	WG.)			8PM	HP	V/Ph/Hz	(MAX)	manue.	NO.	REMARKS	DATE
(7-1	205	0.14	DIRECT		1350	0.03	135/3/60	2.51	PENN	FMX 68	1,3,4	150
0-2	275	0.185	DIRECT		1550	0.03	115/1/60	2.74	PENN	FMX68	1.2.3.4.5	1500
REMAR	85:								-			
1) PROVIDE BACK DRAFT DAMPER											EF-1: WALL MO	UNITED
2] PROVIDE PREFAB ROOF CURB											EF-2: CELING MOUNTED	
3	PROVIDE	BIRDSCREI	IN AND FA	IN GUMROS								
4	PROVIDE	DISCONNE	ICT SWTIC	н								
5	PROVIDE	GOOSENE	CK DISCHA	ACR .								
6	PROVIDE	GREASE CO	outerios	ON ROOF	CUR8							

Figure #5-7 Exhaust Fan Schedule

ELECTRICAL SYSTEMS Electrical Service and Main Distribution Equipment

This facility is served by a 250A, 120/240V, 1-phase, 3-wire overhead service from Ameren. The meter is located outside with the Main Disconnect located in the main distribution panel. The electrical equipment in this fire station is Eaton Pow-R-Line C. Replacement breakers are still available for this equipment. This panel was installed in 2003. The panel has several prepared spaces for future loads.



A sub-panel from the original 1962 construction is installed in an existing block wall located in the pantry area. This panel is Square D NQOB sub fed from the main distribution panel. Capacity for this panel is 60A. Prepared spaces are available for future use.

A small roll up generator interconnection panel was provided in 1999. This panel has select loads essential for the operation of the fire station and provides a mechanical interlock to prevent both generator and utility power from interconnecting at the same time. To provide emergency power a portable generator similar to the unit in Station 3 must be transported to the site and manually connected. There is no automatic back up for loads on site.

All equipment disconnects appear to have been replaced around the same time that the main panel was replaced with the exception of a few added as equipment was added to the facility.

Recommendations

Dewberry recommends that the main panel be replaced in 2034. The sub panel and disconnects original to the facility be replaced within the next few years. The exact age of the equipment is unknown, but it past its rated useful life.

It is required by the authority having jurisdiction that an onsite natural gas generator be provided for full facility backup. Based on the service size, Dewberry recommends a 25kW, 120/240V single phase, natural gas generator for full facility back up with a 250A, 120/240V, single phase, automatic transfer switch with bypass isolation. A smaller unit may carry the entire facility, but additional load study and analysis of existing demand will be required. The cost to add this generator with all required circuitry is approximately \$36,500.

Dewberry recommends that a 1kW, line interactive, free standing uninterruptable power supply (UPS) be provided at the computer station to provide battery back-up power to the radio and facility desktop. The UPS will provide up to 6 minutes of run time at full load to allow for an orderly shutdown of the systems or ride through power until the temporary generator connection is made. The cost to add this UPS is approximately \$1,000.

A load study should be performed to determine the maximum demand load within the facility. This should be done over the summer when the facility is seeing its peak demand. Dewberry recommends a meter be placed at the main incoming feeds and tracked for one week to capture the peak demand on the system.

There were no surge protection devices observed on any electrical equipment. Dewberry recommends that at a minimum a UL 1449, 3rd edition surge protection device be added to the main distribution panel. The cost to add surge protection devices would be approximately \$4,350.

Within the next 20 years Dewberry recommends replacement of the generator interconnection panel. If the facility receives full generator back-up this panel may be eliminated.

Lighting and Controls

The majority of the lighting in the facility is by linear fluorescent and has been modernized within the last two years from T12 to T8 fluorescent lamping. Existing fixtures remain, but the ballast and sockets have been replaced to accept the new lamps. Down lights throughout the facility are original with Edison screw bases. Lamping has been upgraded to fluorescent screw in with integral ballast. The majority of the lighting is still controlled via wall mounted snap switches. Emergency Life Safety Egress lighting is provided throughout the facility by emergency battery packs. Exit lights do not appear to have integral battery back-up.

Recommendations

Any upgrades or additions to the facility would require compliance with the latest adopted Energy Conservation Code. In Decatur, IL the 2015 International Energy Conservation Code will be enforced beginning in January of 2016. Advanced automatic lighting control systems will need to be provided in all non-sleeping areas to automatically turn lights off. Additional daylight harvesting devices will need to be installed in code defined "daylight zones." Daylighting zones are defined areas around windows and skylights where lights within the zone are controlled by day light sensors. Lights in secure areas or any area where automatic control could compromise safety may continue to be manually controlled. Exterior lighting will also be controlled by automatic means to shut off lighting when sufficient daylight is present. Upgraded controls to the latest energy efficiency code will cost approximately \$2,000.

There is no immediate need to upgrade lighting fixtures in the Apparatus Bay. Down lights shall be replaced with LED retrofit kits or LED surface mounted fixtures and shall utilize the existing fixture locations to the greatest extent. If the entire ceiling is to be replaced, the light fixtures shall be replaced with modern LED fixtures that are appropriate for the spaces and modern in appearance. Benefits of LED vs Fluorescent are longer lamp life, lower maintenance costs, lower operating costs, ease of disposal, and superior controllability.

Exit signs shall be replaced with modern LED exit signs with integral battery back-up. All emergency battery units shall have new batteries installed.

Fire Alarm System

There currently is no fire alarm system on site. Residential style smoke detectors were observed in the sleeping areas and area outside of sleeping areas for compliance with the IBC.

Recommendations

Per review of the International Building Code this type of facility would likely be a combination of B, R-2, and S-2. None of the conditions are met to require a fire alarm system. Dewberry would recommend that existing smoke detectors within the facility be replaced with hard wired units with battery back-up. The new units shall utilize wireless technology to transmit alarm signals to all other units within the network so that all units alarm when one unit detects smoke.

Arc Flash Labeling

In accord with NEC (National Electrical Code) and NESC (National Electrical Safety Code), electrical equipment shall be labeled to indicate the potential for Arc Flash Hazard and level of PPE (Personal Protective Equipment) used when maintaining or operating the equipment. All of the equipment in this facility does not include the required labels.

Recommendations

A study to perform the Arc Flash Hazard analysis is recommended to be performed immediately. The cost to perform this study and provide labeling is approximately \$500.

PLUMBING SYSTEMS

Domestic Water System

The domestic water service enters the building in the mechanical room near the gas water heater. The size of the service is 2". There is not a backflow preventer on the water service. There are three hose reels located in the Apparatus Bay.

The gas fired domestic water heater is a State, model SBT50 65 NEO, 65 MBH heater. The installation date is not apparent. There is a hot water circulating pump Grundfos.

Urinals and toilets are wall hung, American Standard with Sloan manual flush valves. Lavatories are mounted in the countertops with manual faucets. Sinks are stainless steel double bowl counter mounted with manual faucets. All appear to be in working order.

Recommendations

Dewberry recommends that a master mixing valve be added at the water heater. Lavatories should be replaced, as one is warping, creating sharp edges. Other fixtures appear dated, but not in dire need of repair or replacement.

Fire Protection System

None.



Recommendations

None.

TECHNOLOGY SYSTEMS Structured Cabling

In its present state, the structured cabling system meets the basic operational needs of the department. Hardwired drops are present where they are needed, but there are limited spare drops that prevent support of future systems. Much of the existing structured cabling system has been installed in phases over time and done so in a haphazard manner. The installation does not meet current industry standards and most likely was not tested for performance. As a result, it's questionable whether the cabling system is performing to its optimum level, or if it meets a manufacturer's warranty for performance. Staff also expressed difficulty in identifying active network cable versus cable for other systems or even abandoned cable.

Support of an upgraded wireless LAN is needed. The current wireless LAN is basic in nature and is shared by both emergency systems and personal use by the staff.

Recommendations

It is recommended that the existing cabling system be replaced with a standards compliant Category 6 performance grade system. In addition to an immediate improvement of the cosmetic nature of the existing installation, replacement of the cabling system would result in:

- A standards based installation that has been tested for performance.
- A centralized location for termination and housing of head end electronics for emergency systems.
- Identified cabling that is clearly labeled.

In addition to replacement of the existing cabling, provisions should be made for support of future network based devices for signage, displays and other devices integral to station alert and notification systems.

It is also recommended that a wireless survey of each building be performed to identify preferred locations of wireless access points. It was noted that internet services is provided via broadband from the local cable provider. Should the City extend its fiber optic network to include each fire station, each station would benefit not only from direct access to City networks, but also shared use of the City's internet service provider. It is also strongly suggested that the Department work with the City's IT department to develop partitioned networks that separate emergency system network traffic from personal use.

Unless otherwise noted, it is assumed that cellular coverage is sufficient throughout all facilities and that no supporting antenna systems are required for amplification of cellular service.

Station Alert and Alarm Notification

The existing station alert system is very basic in nature and is limited to tone and alarm only.

Recommendations

Modifications and upgrades are recommended resulting in both audible and visual notification methods. Modern computer aided dispatch systems utilize a variety of signaling devices including LED signage and large format wall displays, in addition to traditional audible announcements. Providing visual representation of the alert provides additional direction and input that a simple audible alarm lacks.

Station paging systems should be evaluated on a case by case basis. Performance of the systems should be evaluated to confirm:

- Consistency in coverage of each station.
- Clear audible reproduction.
- Sound pressure levels sufficient to overcome the ambient sound levels of each space.

In addition to evaluation of each system, consideration of the acoustics of each space should also be evaluated. When needed, architectural modification should be made to minimize unwanted reflections that would otherwise deter the quality of reproduced sound.

Additional Considerations

As noted above, centralization of emergency system electronics is recommended. In addition to providing a secure location for this equipment, dedicated emergency power can be provided that utilizes uninterruptable power supplies and generator backup.

Consideration should also be given to future enhancements to building security including access control/alarm monitoring and closed circuit television monitoring and recording. In addition to securing these valuable properties, electronic systems can be used to simplify staff access to the facility, control and monitor secure locations such as pharmaceutical and equipment storage, and provide a visual record of events in key areas such as the Apparatus Bay, entrances to the facility, etc.

BUILDING ENVELOPE Exterior Walls

Exterior walls consist of modular brick veneer construction with CMU back up. It is assumed that the veneer system is a monolithic system without a drainage cavity based on the era of the building (1960s) and supported by the fact that there are no weep or flashings provided at the base of the wall or above openings. There is some wood framed overhangs with aluminum siding and soffits. At above and below windows there is vertical wood siding.

Some cracks in brick at corners of building and below and above windows. These are a result of expansion and contraction of brick masonry. However, with monolithic brick and CMU backup systems, expansion joints are likely not effective unless the joint is continuous through the CMU back up as the system is a 'unified' system through the mortar bed. Cutting control joints into existing CMU bearing masonry walls requires special investigation and consideration to be done properly.

Throughout the façade there are a number of locations where mortar joints are failing. At lintels above openings, mortar is loose and failing. Parapet walls above roof also have failing mortar joints. There are some places where mortar is delaminating or no longer bonded with brick. Typically repointing of mortar joints for buildings is needed after 50 years.

There are also locations where bricks are spalling as a result of constant saturation from poor site drainage conditions. These can be observed on the west, south, and east sides of the building.

The lintels above windows are rusted and in poor condition, particularly on the south side of the building off of the Day Room, the lintels are sagging/failing.



Figure #5-8 Spalling bricks at base of wall.



Figure #5-9 Rusted and failing steel lintel.

As outlined later in the assessment for Station #5, water infiltration has constantly been an issue at this facility. Daily, the staff is emptying de-humidifiers 2-3 times. The conditions have also resulted in poor working conditions for the staff as a result of a mold problem. The issues are multifaceted and relate to the roof systems, wall systems, site drainage, and to some degree, foundation systems. While the obvious symptoms from the water infiltration are seen and experienced by the staff on the inside the building, the exterior wall system also suffers from these existing issues. Much of the brick deterioration on the west, south, and east side of the building is a result of constant saturation of the



bricks from the poor site drainage as well as roof flashing detailing at the parapet walls.

It is believed that the wall system is constantly holding water since it has no way of removing moisture from the monolithic wall system effectively before the wall is under conditions of saturation. It is believe that this is contributing to humidity problem son the interior. The recommended work to deal with all of the related issues must be comprehensive to be completely effective.

Lintels above overhead doors are rusted with one having some impact damage.



Figure #5-10 Damaged steel lintel at overhead door.

Based on drainage on east side of building, the wood vertical siding at the base of the wall is showing signs of water damaged and deterioration. There is a concerned about water infiltration damage to the interior wall construction. Destructive investigation will be required to determine extent of damage.



Figure #5-11 Site drainage path washout against wood siding.

Penetrations at mechanical equipment need to be sealed.

At entrance steps, there is some settlement causing the steps to 'pitch' forward. Likewise the retaining wall at the entrance vestibule has a hole exposed with a void behind it. Visually it appears the cause was from the steps settling.

Handrail and guardrail at steps are rusted, particularly at base.



Figure #5-12 Steps settling and damaged retaining wall.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to exterior walls.

- It is recommended that in conjunction with site drainage recommendations and roof recommendations that at a minimum the brick masonry veneer on the west, south, and east side of the building be stripped and removed to effectively deal with all of the symptoms. From there the following is recommended.
 - a. Allow load bearing CMU wall back up to dry out if showing signs of saturation.
 - b. Install fluid or sheet applied air barrier.
 - c. Install cavity wall brick veneer system with air space by adding foundation to support veneer, utilizing brick ties, install rigid insulation, and thru wall flashing system at base of wall, lintels, and other recommended locations.

- d. It is recommended that window, doors, and roofs be replaced in conjunction with this work.
- 2) Report brick mortar joints where not replaced.
- 3) Repair damaged lintel at overhead door.
- Replace siding below windows and investigate for further damage in wall.
- 5) Seal mechanical penetrations.
- 6) Replace steps and patch retaining wall. Replace handrails and guardrails.

Roofing

The roof was replaced approximately 7-10 years ago with single ply EPDM membrane system. The typical roof warranty for this system is 20 years. Overall, the condition of the roof membrane is in good condition with no visible signs of ponding.

There were some signs of water infiltration on the interior of the Apparatus Bay along the perimeter of the ceiling from roof leaks. This is likely because the roof membrane doesn't lap over parapet coping.





There is continual infiltration into the Sleeping Quarters which has resulted in issues with mold, structural deterioration, and mechanical duct work deterioration. Unique to this facility compared to its 'sister' stations, is that the roof elevation of the sleeping quarters is the same height as the Apparatus Bay. It's possible this is the link to why the other stations don't experience water infiltration in the sleeping quarters. At this facility, the Sleeping Quarters exterior walls are all parapets instead of a roof overhang condition. Since at all 3 locations (stations 4, 5, & 6), the Apparatus Bay has evidence of water infiltration, it appears the parapet detail is part of the issue. There is the possibility of saturated insulation and standing water on the metal roof deck. From test cores of roof system, it was discovered that a vapor barrier was not installed as part of the roof system. A vapor barrier is a preventative measure to stop condensation that develops on the warm side of the roof insulation from settling on the steel structural deck. This may also be a contributing factor to the water leak Dewberry observed.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Roofing Systems.

- 1) To resolve the perimeter water infiltration, there are a few actions that could be considered.
 - a. Have a forensic investigation service inspect the roof (Tremco WTI or similar service).
 - b. Replace existing roof and insulation and have perimeter conditions inspected prior to installation of roof. Provide perimeter detail where roof membrane is lapped over top of coping cap and provide coping cap and or roof edge detail.
 - c. Install vapor barrier in conjunction with roof replacement.
 - d. Work should be completed in conjunction with other site drainage work and wall work.

Windows and Entrance Systems

Exterior window glazing is mostly an operable aluminum window system throughout with the exception of the vestibule entrance which is an aluminum storefront system. The remaining entrance doors are wood with wood frames.

All window systems are 15+ years old. Some do not operate very well and are not energy efficient. The window opening frames are wrapped with similar color sheet metal, but are only secured with sheet metal nails which are missing or loose in some locations. The systems are all faded.


At some of the exterior openings, the perimeter sealant has either failed or is not present.

The east exterior door is difficult to open and the base is rusted and deteriorating.



Figure #5-14 Base of door is rusting.

Door from Apparatus Bay into living quarters and into Mechanical Storage Room is worn on the edges from repeated use and doesn't carry any rating.

Safety glazing was not found on storefront entrance. The window and door into Apparatus Bay is wired glass which does not meet safety ratings and is not recommended.

One (1) of the apparatus bay overhead doors is missing the safety sensor at base of door.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Windows and Entrance Systems.

- 1) Replace window systems with thermally broken systems.
- 2) Replace sealant around all openings.
- 3) Replace exterior egress door with insulated hollow metal door and frame.
- Provide compliant hardware for rated openings and accessibility.
- 5) Provide compliant glazing for safety glazing and rated glazing.
- 6) Install safety sensor at the single overhead door where it is missing.

ARCHITECTURAL FINISHES Day Room

The Day Room wall finish is panelized wood veneer over CMU walls, painted CMU, painted plaster ceiling, and VCT flooring.

There is some concern about the potential water infiltration at the base of the east windows into the wall system as a result of the site drainage issues. There is a potential mold concern in the wall system.

There is peeling paint at the corner of the room adjacent to the glass block likely from water infiltration.



Figure #5-15 Water stain on ceiling in Day Room.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Day Room.

- If investigation covered under previous section reveals water infiltration and mold, remove interior wall finish at east windows and remove any present mold.
- 2) Touch up paint. (Roof leaks were addressed in roofing section).
- 3) Install carpet in the Day Room to improve acoustics.
- 4) Replace hard ceiling with suspended acoustical ceiling tile to improve the acoustics in the space.

a. The hard ceiling also results in surface mounted cabling for power and technology. The hard ceiling also makes lighting replacement very limited in options without replacing the ceiling.

Kitchen

The Kitchen finishes include painted plaster soffits, painted CMU walls, painted plaster ceiling, and VCT flooring. The cabinets are metal cabinets with plastic laminate countertops.

Cabinets are showing signs of wear in hardware and rust in the base of shelves and cabinets. Some of the bases have rusted out completely. Walls are dirty and faded.



Figure #5-16 Kitchen casework.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Kitchen.

- Replace cabinets when based has rusted through. Under current accessibility codes direct alterations must meet ADA 2010 and Illinois Accessibility Code. Replacement will require 34" countertop height and accessible sink.
- 2) Clean and repaint walls.

Toilet and Locker Room

The Toilet and Locker Room finishes include painted gypsum wallboard ceilings, painted CMU walls, mosaic tile wainscot, and mosaic tile floor. The lockers and toilet partitions are prefinished steel. The lavatories are drop sinks in metal base cabinets with plastic laminate countertops.

Rust is developing on the side of the toilet partition next to urinal. Some rust is developing on lockers and cabinets.



Figure #5-17 Lavatory cabinets.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Toilet and Locker Room.

- Replace cabinets. Under current accessibility codes direct alterations must meet ADA 2010 and Illinois Accessibility Code. Replacement will require 34" countertop height and accessible sink.
- 2) Remove rust from toilet partition and repaint.

Sleeping Quarters

The Sleeping Quarters wall finish is painted CMU walls, exposed painted structure, and carpet tile. Wood trim around windows and wood frame doors.



Figure #5-18 Sleeping quarters with updated finishes.



The finishes in this space were updated along with the mechanical systems as a result of the water infiltration problem. The occupants still have issues with minor roof leaks and constant humidity issues.

Water from mopping has stained base of interior door.

Sleeping Quarters is elevated above the Day Room floor. There is no landing space between the door and the stair which can be a safety hazard.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Sleeping Quarters.

1) Find and repair ongoing roof leak issue.

Storage/Pantry

The Storage/Pantry wall finish is painted CMU walls, plaster ceiling, and VCT flooring. Simple wood veneered cabinets.

Paint on ceiling is peeling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Storage/Pantry.

- 1) Replace wall cabinets with full height cabinets when they no longer function as intended.
- 2) Repaint ceiling.

Apparatus Bay

The finishes in the Apparatus Bay are painted CMU, painted gypsum ceiling, and unfinished concrete slab.

The paint on the walls and ceiling is fading or discolored. In many locations the paint is peeling.

The bare concrete floor was likely treated with a sealer at time of construction, but has likely worn off over time.

As mentioned in Windows and Entrance system section, the doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware. Some shrinkage cracks in the CMU are visible due to lack of control joints at openings.

At exterior walls and on the ceilings there is evidence of water infiltration at the roof bearing locations. The leaks are addressed in the Roofing and Building Envelope sections. However, since the space above the hard plaster ceiling is concealed, there is concern of potential mold growth above the ceiling. It should be noted that there is a similar issue and condition at the Sleeping Quarters which revealed a mold issue when the ceiling was removed.



Figure #5-19 Water infiltration in Apparatus Bay.

There are multiple steps down from living spaces to Apparatus Bay which is not ideal for safety.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay.

- Repaint Apparatus Bay, an epoxy based paint is recommended if trucks are washed in Apparatus Bay.
- 2) Recommend applying a new sealer/hardener to concrete floor. An epoxy floor is an option as well.
- 3) Improve separation with rated doors, frames, glazing, and hardware.
- 4) Repoint cracks in CMU.
- 5) Investigate and test for mold above plaster ceiling.

- a. If mold is present, remove ceiling and remediate mold issue.
- 6) Perform acoustical analysis and add acoustical treatments to the wall and ceiling/roof deck to improve intelligibility. Painted 2" tectum panels using C-20 or C-40 method would be recommended for this application.

Mechanical Storage Room

The finishes in the Mechanical Storage Room off of the Apparatus Bay are painted CMU, painted gypsum ceiling, and unfinished concrete slab.

The paint on the walls is fading or discolored. In many locations the paint is peeling.



Figure #5-20 Peeling paint.

The doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware.

Some shrinkage cracks in the CMU are visible due to lack of control joints at openings.

At exterior walls there is evidence of water infiltration at the roof bearing locations. This addressed in the Roofing and Building Envelope sections.

Mechanical Storage Room is elevated above the Apparatus Bay floor. There is no landing space between the door and the stair which can be a safety hazard.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Mechanical Storage Room.

- 1) Repaint CMU walls and ceiling.
- 2) Improve separation with rated doors, frames, glazing, and compliant hardware.
- 3) Repoint cracks in CMU.

SITE PAVING AND DRAINAGE General

Site paving is made up of concrete aprons, concrete drives, concrete sidewalks, concrete parking. The drainage on the site is mostly from storm water sewer management. All building roof drainage utilizes internal gutters which are connected into the site storm sewer.

Most of the site concrete is in good condition, but a few sections have a worn surface with exposed aggregate and full length cracks. Exposed aggregate tends to increases the possibility of spalling from freeze thaw/cycles and overall deterioration.

The concrete slab at the exterior egress door from the sleeping quarters is 6" lower than the door threshold.

There is significant site surface grade drainage issues. The adjacent properties all drain to the site of the facility. Specifically, the parking lot of the grocery store and the apartment building downspouts drain onto the property. This has resulted in water infiltration issues. At the back of the building a concrete slab was placed along the building to assist in dealing with surface drainage. On the east, rock has been provided on top of the grade in an attempt to deal with surface drainage.

Another concern with the site is the parking situation. There is insufficient parking available for the fireman. Currently the three (3) fireman are required to park on the drive in line which results in blocking in two (2) of the vehicles. This also creates an issue during shift changes to shuffle the vehicles. The site is quite small with significant grade changes. It does



not appear the parking and drive area can be expanded to accommodate independent parking spaces easily.



Figure #5-21 Insufficient site drainage on south side.



Figure #5-22 Insufficient site drainage at east side of building in between apartment complex.



Figure #5-23 Insufficient parking area.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the site paving and drainage.

- Patch any spalled concrete throughout as required to protect exposed aggregate.
- 2) Develop replacement strategy for replacing sections of site concrete paving as they become worn and deteriorate.
- 3) Replace egress door slab with an elevated slab at the door threshold.
- 4) Provide subsurface drainage system with perforated drain tiles and manholes at south and east side of building. Regrade according to how the current site drains.
- 5) Provide additional parking spaces to accommodate all active staff and during shift changes.

ACCESSIBILITY General

The facility was built prior to the adoption of accessibility codes by the State of Illinois or the Federal Government and is not required to be brought up to code unless specific elements are 'altered' or when 'alterations' of a building exceed a percentage of the replacement cost of the facility. This should be considered when any alterations are made to a facility.

The following are only recommendations.

There is not an accessible entrance to the facility. The slopes of the drive and sidewalk up to the front door are greater than 5%. Likewise there are steps up to the entrances.

Recommendations

The following is a summary of recommendations to provide more accessibility to the facility.

1) Provide accessible entrance from handicap parking space.

SUMMARY OF STATION #5 General

Fire Station #5 is in fair to poor condition overall. While the core structure of the building is good condition, the nature of the building's relationship to the site as well as the construction detailing of the building has resulted in some significant issues and continual maintenance problems. If the site drainage around the building is not addressed, additional issues and further deterioration of the building from water infiltration will continue.

In addition to surface drainage issues, the sloped site has resulted in a split-level layout which is not ideal and would also result in dealing with accessibility issues should alterations and/or updates be made to the facility. The site also is quite small and landlocked, which has resulted in insufficient parking and would not likely be able to support expansion of services and/or capacity.

Finally, while the facility has had some finish updates in the sleeping quarters, there are a number of systems that are beyond their anticipated useful life and will require replacement soon. The layout of this 1962 building is minimally adequate for its intended purpose, as the 2nd bay of the Apparatus Bay serves as a recreation/work out space, laundry space, and additional storage space. Any expansion of capacity and/or services would require further investigation, but is not likely possible.

Based on these conditions and explained above, this facility requires significant attention if it is to serve the fire department for the foreseeable future.



Station #5 - Capital Replacement Costs by Year Year Cost Today Budget Need Priority 1 Priority 2 Prority 3 Priority 4 cost escalated to cost secalated to cost secala														
Year	Cost Today	Budget Need	Pri	ority 1	Priority 2	Prority 3	Priority 4							
		cost escalated to		1	2	3								
2015	\$505 312	\$505 312		\$381.665	\$112 347	\$1,000	\$10.300							
2015	φ000,012 ¢0	\$0		\$001,000	\$0	\$0	φ10,000 \$(
2010	\$0 \$0	\$0		\$0	\$0	\$0 \$0	φ. S(
2018	\$0 \$0	\$0		\$0	\$0	\$0	\$(
2019	\$0 \$0	\$0		\$0	\$0	\$0 \$0	\$(
2020	\$9 660	\$11 199		\$0	\$11 199	\$0	\$(
2021	\$0	\$0		\$0	\$0	\$0	\$0							
2022	\$0 \$0	\$0		\$0	\$0	\$0	\$0							
2023	\$0 \$0	\$0		\$0	\$0	\$0	\$0							
2024	\$0	\$0		\$0	\$0	\$0	\$0							
Sub Total After	\$514,972	\$516,511		\$381,665	\$123,546	\$1,000	\$10,300							
10 Years				. ,		. ,	. ,							
2025	\$33,520	\$45,048		\$0	\$37,630	\$0	\$7,418							
2026	\$0	\$0		\$0	\$0	\$0	\$0							
2027	\$44,400	\$63,304		\$0	\$0	\$0	\$63,304							
2028	\$0	\$0		\$0	\$0	\$0	\$C							
2029	\$886	\$1,340		\$0	\$0	\$0	\$1,340							
2030	\$253	\$394		\$0	\$0	\$394	\$C							
2031	\$0	\$0		\$0	\$0	\$0	\$C							
2032	\$0	\$0		\$0	\$0	\$0	\$C							
2033	\$44,872	\$76,392		\$0	\$0	\$10,848	\$65,544							
2034	\$0	\$0		\$0	\$0	\$0	\$C							
2035	\$0	\$0		\$0	\$0	\$0	\$C							
2036	\$0	\$0		\$0	\$0	\$0	\$C							
2037	\$0	\$0		\$0	\$0	\$0	\$C							
2038	\$0	\$0		\$0	\$0	\$0	\$C							
2039	\$0	\$0		\$0	\$0	\$0	\$C							
2040	\$0	\$0		\$0	\$0	\$0	\$C							
2041	\$0	\$0		\$0	\$0	\$0	\$C							
2042	\$0	\$0		\$0	\$0	\$0	\$C							
2043	\$0	\$0		\$0	\$0	\$0	\$C							
2044	\$0	\$0		\$0	\$0	\$0	\$0							
Sub Total for	\$123,931	\$186,478		\$0	\$37,630	\$11,242	\$137,60							
Remainder Years														
Overall Total	\$638,903	\$702,989		\$381,665	\$161,175	\$12,242	\$147,90							

BUDGET SUMMARY

		CONSOL																					capital replacement budget
				Existing	Asset Log								Evalua	ted Condition					Estimat	ed Replacem	ent Bud	get	
	Building or Zone (If more than one)			Description & Lo	ocation of Asset				Year Installed	Anticipated Years of Life	Calculated Renewal Year	Evaluation Date	Remaining Life Expectancy	Recommended Action			Cost Basis		Current Replacement Cost	Escalated Cost at BUDGET YEAR	Priority Level	Budget Year	Comments
Entry # 360	Building ID Station #5	Category EXT. BLDG.	Family Roofs or Decks	Component Roofing	Entity Single Ply EPDM Roofing Membrane	Manufacturer	Model	All	Installed 2003	Lifespan 10	Renewal 2013	Evaluation 2015	Remainin	g Action	qty. 4,85	units O sf	pro-ration 100%	unit cost \$14.00	cost \$67,900	Budget 3 \$67,90	Priority	Year 1 2015	Comment Water continues to leak into the Sleeping Quarters and evidence of continual inflitration into apparatus bay is present. Evidence and comments from occupants suggest that water drips from metal deck penetrations as well as from the perimeter. The surface of the membrane looks to be in good condition. It is likely that the water inflitration is coming through at the perimetre vall flashings at coping caps. It is recommended that the system be replaced before warranty expires due to the presence of water on the roof deck. When installing roof system, lap roof membrane over top of coping cap and install a sheet metal coping cap. Another option is to remove the stone coping cap and install thru wall flashing with two piece flashing protecting roof termination.
361	Station #5	EXT. BLDG.	Roofs or Decks	Roofing	Coping caps			Parapet Walls	2003	12	2015	2015	0	Flash membrane roof over stone coping and install perimeter coping cap to prevent roof leaks.	. 26	6 lf	100%	\$50.00	\$13,300	\$13,3(•••	1 2015	Most roof leaks are at perimeters of roofs at the parapets. At these conditions the roof is flashed up to coping where there is some form of metal flashing below the stone coping. This flashing doesn't continue to the exterior side of the stone coping. This is the logical location of roof leaks. There are a couple options available. Simplest option would be to flash membrane over the top of the stone coping and terminate the roof with a full metal coping cap or roof edge. The second option would require removing stone coping cap and install a full thru wall metal flashing and then reset the stone coping which would be a similar cost.
362	Station #5	EXT. BLDG.	Walls	Cladding	Masonry-Brick			All Facades	1962	53	2015	2015	0	Excavate and remove brick veneer from building down to foundation. Install masonry veneer cavity wall system. Water proof wall covered by grade.	3,50	0 sf	100%	\$45.00	\$157,500	\$157,50		1 2015	Grade on south part of building covers the exterior masonry. Due to pour drainage on site and grade covering masonry wall, brick and CMU back up have become continually saturated and requires constant dehumidification in the interior of the building. This saturated system has also damaged the masonry, lintels, and mortar throughout. The brick surface is popping in places, mortar delaminated or crumbling, and the lintels are rusted. Recommend replacing the brick veneer from the building particularly on the south side. Excavate to foundation level. Remove brick veneer. Allow CMU to dry out. Install air/vapor barrier over CMU back up. Install masonry veneer cavity wall system with flashings, lintels, and brick ties. Add concrete corbel to foundation to support thrick. This type of work would require replacement of doors, windows, and other elements on the building. This also would affect roof flashing if its lapped over copping cap. *Note if this work is not done, lintel replacement, tuck pointing, brick replacement, and corrective work will need to be completed.
363	Station #5	CORE SYST.	Structural Systems	Steel Lintels	Masonry Lintel			Overhead doors	1962	53	2015	2015	0 🜔	Replace damaged lintel.		1 ea	100%	\$3,500.00	\$3,500	\$3,50	0	1 2015	Lintel has been damaged from some type of collision. Replace damaged lintel.
364	Station #5	EXT. BLDG.	Walls	Cladding	Masonry-Brick			Window Stone Sills	1962	53	2015	2015	0	Rake out mortar and install sealant or mortar.		1 allow	100%	\$1,200.00	\$1,200	\$1,20		1 2015	Mortar is failing at stone sill joints.
365	Station #5	EXT. BLDG.	Walls	Openings	Windows - Aluminun	n		Day Room	1995	30	2025	2015	10	Replace	16	0 sf	100%	\$75.00	\$12,000	\$16,13	27	2 2025	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames.
366	Station #5	EXT. BLDG.	Walls	Openings	Windows - Aluminun	n		Sleeping Quarters/ Storage	1995	20	2015	2015	() 0	Replace	8	5 sf	100%	\$75.00	\$6,375	\$6,3	'5 🛑	1 2015	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames.





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remaining	g Action	qty. u	nits pro-ration	unit cost	cost	Budget Priority	Year	Comment
367	Station #5	EXT. BLDG.	Walls	Openings	Windows - Aluminum			Apparatus Bay	1995	20	2015	2015	0	Replace	100 sf	100%	\$75.00	\$7,500	\$7,500 •	2015	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames. These windows appear to be in the worst condition as they do not all operate and the panels have some damage on the exterior. These are also the most faded systems (no overhang protection).
368	Station #5	EXT. BLDG.	Walls	Openings	Wood doors and Frames			Sleeping Quarters	1965	30	1995	2015	⊗ -20	Replace door and frame.	1 ea	100%	\$3,000.00	\$3,000	\$3,000	2015	Door is deteriorating at the base and damage elsewhere on the door. Door hardware isn't functioning as intended. Some damage to door frame. Recommend replacing with hollow metal door and frame.
369	Station #5	EXT. BLDG.	Walls	Openings	Perimeter Sealants			All openings	1995	20	2015	2015	0	Strip out failed sealant, prep, and	1 allov	v 100%	\$2,000.00	\$2,000	\$2,000	2015	Sealant is cracked, failing, or missing at all openings.
370	Station #5	EXT. BLDG.	Walls	Cladding	Masonry-Brick			Mechanical Penetrations	1962	53	2015	2015	0	Seal mechanical penetration through exterior wall.	1 allov	v 100%	\$250.00	\$250	\$250	. 2015	
371	Station #5	GROUNDS	Softscape	Site Drainage	Topography & Sub- Drainage System			Southeast Side of Building	1962	0	1962	2015	S -53	Install sub-drainage system around perimeter of the building. Re-grade as required to divert water away from building.	1 allov	y 100%	\$35,000.00	\$35,000	\$35,000	2015	Adjacent properties on the South and East side of building drain toward the fire station. Due to lack of proper drainage and topography, water is not diverted adequately away from the building, resulting in saturated exterior walls and infiltration. This has resulted in mold problems within the facility in conjunction with roof leaks issues. As an example, a de- humidifier in the sleeping quarters is emptied 1-2 times daily. Along with the roof replacement, the site drainage should be addressed with a sub-drainage system and re grading the area to diver water.
372	Station #5	EXT. BLDG.	Walls	Cladding	Wood siding			Below East windows.	1962	53	2015	2015	0	Replace wood siding & sheathing below windows. Investigate for mold.	1 allow	v 100%	\$6,000.00	\$6,000	\$6,000	2015	The grade along the east side of the building is above the wood siding and floor elevation of the day room. As a result, the wood siding is deteriorating and is evidence that potential water infiltration is occurring. Replace wood siding below windows, investigate for mold. This work should be done in conjunction with site drainage and recommended to be done in conjunction with a window replacement.
373	Station #5	INT. FIT-OUT	Finishes	Flooring	Vinyl Composite Tile			Day Room, Kitchen, Sleeping Quarters	1995	20	2015	2015	0	Replace flooring.	1,955 sf	100%	\$8.00	\$15,640	\$15,640	2015	Recommend carpet tile in day area and Sleeping Quarters to improve acoustics. Cleanable surface for dining and kitchen.
374	Station #5	INT. FIT-OUT	Finishes	Flooring	Mosaic tile			Restroom	1965	60	2025	2015	10	Replace flooring	345 sf	100%	\$16.00	\$5,520	\$7,418	2025	Tile appear to be in good condition.
375	Station #5	INT. FIT-OUT	Finishes	Flooring	Concrete sealer/ hardener.			Apparatus bay	1990	20	2010	2015	⊗ -5	Re-seal floor with concrete sealer/hardener.	1,750 sf	100%	\$1.50	\$2,625	\$2,625	2015	There is still a sheen to parts of the floor so its possible the floor has been re-sealed since the initial application. *Another option is to provide an epoxy floor coating, but at additional cost.
376	Station #5	INT. FIT-OUT	Finishes	Ceilings	Plaster Ceilings			All Areas.	1962	53	2015	2015	0	Replace with 2x2 ceiling grid as part of lighting and technology upgrades.	2,300 sf	100%	\$5.00	\$11,500	\$11,500	2015	Plaster ceiling are in good condition and only require repair to minor cracks, however the hard ceilings with the hard wall and floor surfaces makes the acoustics poor in all spaces and difficult to understand calls coming through the system. The hard ceiling also does not allow for easy lighting replacement and cable management. Recommend replacement with a suspended 2x2 ceiling.
377	Station #5	INT. FIT-OUT	Finishes	Painting	CMU Walls			Apparatus Bay	1995	20	2015	2015	0	Re-paint	3,200 sf	100%	\$2.00	\$6,400	\$6,400	2015	Apparatus bay has significant peeling of paint, discoloring, and water stains. Prep and repaint.
378	Station #5	INT. FIT-OUT	Finishes	Ceilings	Plaster Ceilings			Apparatus Bay	1962	53	2015	2015	O	Remove Plaster Ceiling	2,400 sf	100%	\$5.00	\$12,000	\$12,000 •	2015	Perimeter of the apparatus bay demonstrates water infiltration and potential water damage on ceiling. Peeling through out ceiling maybe a result of water damage. Based on Station #5 sleeping quarter ceiling, there is a probability of mold growth above the ceiling. Cost includes investigating and testing for mold, removing the ceiling, painting structure, supporting systems suspended at ceiling.
379	Station #5	GROUNDS	Hardscape	Concrete Paving	Concrete Drive			Apparatus Bay Drive	2003	30	2033	2015	18	Replace	350 sy	100%	\$110.00	\$38,500	\$65,544	2033	Replace when concrete is deteriorated.
380	Station #5	EXT. BLDG.	Walls	Openings	Aluminum - Storefront Entrance			Front Entrance	1990	30	2020	2015	⊘ 5	Replace	60 sf	100%	\$100.00	\$6,000	\$6,956 🥌	2020	Storefront entrance has single pane glass (non safety), dead bolt lock, failing weather strips, and is assumed to be non-thermally broken. Replace with thermally broken system, insulated glass, and sill pan flashing.







Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	ng Action	qty.	units	pro-ration	unit cost	cost	Budget	Priority	Year	Comment
381	Station #5	GROUNDS	Hardscape	Concrete Walks	Concrete Steps			Front Entrance	1962	53	2015	2015	0 🜔	Replace	1	1 allow	100%	\$5,000.00	\$5,000	\$5,000	2	2015	The steps from the apparatus drive up to the front entrance are settling and 'tipped' forward. The handrails are also deteriorating and need replacing.
382	Station #5	GROUNDS	Hardscape	Concrete Wall	Concrete retaining			Front Entrance	1962	53	2015	2015	0	Replace or patch if possible.	1	1 allow	100%	\$2,000.00	\$2,000	\$2,000	2	2015	As a result of the settling of the concrete stair, the
					wall																		retaining wall has damaged or is exposing a flaw in the retaining wall. The exposed hole and spalling around hole appear to show a hollow spot in the wall. Replace concrete retaining wall.
383	Station #5	INT. FIT-OUT	Rated Assemblies	Rated Openings	Wood Doors			Apparatus Bay	1965	40	2005	2015	-10	Replace doors from Apparatus Bay into adjacent spaces with rated doors and frames		2 ea	100%	\$3,000.00	\$6,000	\$6,000	2	2015	Current codes require separation between apparatus bay and living spaces. Recommend additional protection with rated assembly at door between apparatus bay and living spaces. Existing doors are also worn and have some abuse.
384	Station #5	INT. FIT-OUT	Rated Assemblies	Rated Openings	Glazing			Viewing Window into Apparatus bay	1965	40	2005	2015	⊗ -10	Replace wired glazing and wood frame with rated frame and fire resistive glazing.	1	l ea	100%	\$1,500.00	\$1,500	\$1,500	2	2015	Current codes require separation between apparatus bay and living spaces. Recommend additional protection with rated assembly at window between apparatus bay and day room. Wired glass is also not safety glass.
385	Station #5	INT. FIT-OUT	Finishes	Casework	Kitchen Casework			Kitchen	1965	40	2005	2015	⊗ -10	Replace casework.	1	1 allow	100%	\$18,000.00	\$18,000	\$18,000	• 1	2015	Outdated casework and metal base inside is rusting through. Some of the drawers are difficult to open. Cabinet faces are worn. Should be replaced.
386	Station #5	INT. FIT-OUT	Finishes	Casework	Lavatory			Restroom	1965	40	2005	2015	⊗ -10	Replace lavatory and casework with ADA compliant sink and casework.	1	1 allow	100%	\$6,000.00	\$6,000	\$6,000	• 1	2015	Outdated casework and metal base inside is rusting through. Should be replaced.
387	Station #5	INT. FIT-OUT	Finishes	Toilet Accessories	Toilet Partition			Restroom	1962	53	2015	2015	0 ()	Remove rust and repaint toilet partition.	1	1 allow	100%	\$300.00	\$300	\$300	• 4	2015	
388	Station #5	CORE SYST.	Structural Systems	Load Bearing Masonry	CMU Walls			All	1962	53	2015	2015	0	Tuck point at cracks in CMU mortar.	1	1 allow	100%	\$5,000.00	\$5,000	\$5,000	2	2015	Most cracks are in the mortar from shrinkage or movement in steel structure, and not due to major structural failures. Tuck pointing would only be for cosmetic reasons, as cracks could re-occur.
389	Station #5	INT. FIT-OUT	Finishes	Acoustical Treatments	Tectum Panels			Apparatus Bay	1962	53	2015	2015	0	Add 2" Tectum Panels with 2x furring strips (C40 method) to CMU walls and bottom of deck. Painted.	1	1 allow	100%	\$8,000.00	\$8,000	\$8,000	• 4	2015	Perform acoustical study to determine appropriate treatments to improve intelligibility of the speaker system for emergency calls.
390	Station #5	EXT. BLDG.	Walls	Openings	Overhead Doors			East Door	1995	30	2025	2015	10	Replace Door.	2	2 ea	100%	\$8,000.00	\$16,000	\$21,503	2	2025	*If increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000 ea.
391	Station #5	CORE SYST.	Power	Branch Circuit Panel - MLO, 120/240V, 225A, 1-phase, wire	3 Branch Circuit Panel	Square D	NQOB-8017-1A	Pantry	1962	30	1992	2015	⊗ -23	Replace with new	1	1 ea	100%	\$1,962.00	\$1,962	\$1,962	2	2015	Not immediate need for replacement as it is still functional, but should have priority over other electrical equipment.
392 393	Station #5 Station #5	CORE SYST. CORE SYST.	Power Power	Dryer Disconnect - 30A, 240V, 2-pole, Emergency Load Center, 60A, 120/240V, Two inputs fo	Disconnect Switch r Panelboard	Square D Siemens	General Duty E0408MB6030GC	Apparatus Bay Apparatus Bay	2000 1999	30 30	2030 2029	2015 2015	1514	Replace with new Replace with new	1	1 ea 1 ea	100% 100%	\$253.16 \$886.00	\$253 \$886	\$394 \$1,340	● 3 ● 4	2030 2029	Replace when reached end of useful life. Replace with standard 60A load center and new
304	Station #5	CORF SYST	Lighting	manual transfer to genset.	Exterior Lighting			Exterior soffit at	1962	15	1977	2015	22	Replace with new LED retrofit		l ea	100%	¢08.16	¢no	¢00	2	2015	automatic transfer switch when Emergency Genset is added to facility. Replace with new LED retrofit future in existing
395	Station #5	CORESYST	Power	Exterior HVAC Disconnect 60A 240V 2-Pole fused	Eused Disconnect	Square D		station sign.	1962	30	1992	2015		fixture.			100%	\$490.66	\$950	\$981	2	2015	aperture.
396	Station #5	CORE SYST.	Lighting	Exterior Wall Mounted Fixtures around perimeter.	Exterior Lighting			Exterior Wall	1962	15	1977	2015	38	Replace with new LED Fixture.		5 ea	100%	\$279.95	\$1.400	\$1.400	2	2015	life. Replace when funding is available.
397	Station #5	CORE SYST.	Lighting	Exterior Wall Mounted Fixtures at Apparatus Bay door	S Exterior Lighting			Exterior Wall	1990	15	2005	2015	· -10	Replace with new		2 ea	100%	\$1.065.35	\$2,131	\$2,131	2	2015	Replace with new full Cutoff LED Fixtures.
398	Station #5	CORE SYST	Lighting	Provide Exterior lighting control	Exterior Lighting				1990	15	2005	2015	■ 10	Provide photo cell lighting	1	1 allow	100%	\$500.00	\$500	\$500	2	2015	Add photo cell, timer, or both forms of exterior lighting
	510101 #5	CORE STST.	Lighting		Exterior Egitting				1990	15	2005	2015		control for exterior fixtures			10070		<u> </u>		2	2015	control per the departments requirements. This function would be integrated with interior lighting controls when they are provided.
399	Station #5	CORE SYST.	Lighting	Interior Lighting	All interior lighting fixtures	Misc	Misc	Facility Interior	2012	15	2027	2015	12	Replace fixtures with modern equivalents	4,44() sf	100%	\$10.00	\$44,400	\$63,304	• 4	2027	
400	Station #5	CORE SYST.	Power	Main Distribution Panel - 120/240V, 250A, 1-phase, 3- wire.	Panelboard	Eaton	PRL-3A	Mech Space	2003	30	2033	2015	18	Replace with new	1	l ea	100%	\$6,372.00	\$6,372	\$10,848	3	2033	Replace when reached end of useful life.
401 402	Station #5 Station #5	CORE SYST. CORE SYST.	Fire Alarm/Detection Power	Smoke Detectors in sleeping areas Add new Emergency Generator	Smoke Detectors Generator			Sleeping Areas	2000 1962	20 53	2020 2015	2015 2015	50	Replace with new Provide new per AHJ	2	2 ea 1 ea	100% 100%	\$80.00 \$36,500.00	\$160 \$36,500	\$185 \$36,500	2	2020 2015	Replace existing with new. Provide new including pad, transfer switch, fuel source,
403	Station #5	CORE SYST.	Power	Thermal Scan Electrical Systems	Electrical Equipment				1962	53	2015	2015	0	requirement. Thermal scan equipment per	1	L ea	100%	\$500.00	\$500	\$500	3	2015	and other required upgrades. Thermal Scan electrical equipment to identify existing
404	Station #5	CORE SYST.	Power	Arc Flash Labeling	Electrical Equipment				1962	53	2015	2015	0	report. Perform an arc flash study and	1	1 LS	100%	\$500.00	\$500	\$500	3	2015	hazardous conditions. Provide labels per NEC and NESC requirements.
405	Station #5	CORE SYST.	Power	Recommended addition of Surge Protection Equipmen	t. Electrical Equipment				1962	53	2015	2015		provide labels at equipment Provide Surge Protection	1	L LS	100%	\$4,350.00	\$4,350	\$4,350	2	2015	Provide surge protection devices at service panel and branch circuit panels
														Equipment.	11								pranch circuit panels.







Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty.	units	pro-ration	unit cost	cost	Budget	Priority	Year	Comment
406	Station #5	CORE SYST.	Lighting	Provide modern lighting controls	Lighting				1962	53	2015	2015	0	Provide lighting control devices	1	1 LS	100%	\$2,000.00	\$2,000	\$2,000	• 4	2015	Provide lighting control devices for compliance with latest energy efficiency code.
407	Station #5	CORE SYST.	HVAC	Air handling Unit + Condensing Unit	AHU-1 + CU-1	Trane	XB-90 + CLQ48-1B	In mechanical room + Outdoors	2000	12	2012	2015	⊗ -3	Periodic maintenance such as lubricating and filters & belts replacement will provide adequate service, but need to replace for continued trouble free service.	1	1 ea	100%	\$5,200.00	\$5,200	\$5,200	2	2015	Serves general building HVAC needs
408	Station #5	CORE SYST.	HVAC	Air handling Unit + Condensing Unit	AHU-2 + CU-2	Trane	HA05248 + 7A0048	In mechanical room + Outdoors	2000	12	2012	2015	⊗ -3	Periodic maintenance such as lubricating and filters & belts replacement will provide adequate service, but need to replace for continued trouble free service.	1	1 ea	100%	\$5,200.00	\$5,200	\$5,200	2	2015	Serves general building HVAC needs
409	Station #5	CORE SYST.	HVAC	Exhaust Fan for Toilet Rooms	N/A	N/A	N/A		1962	12	1974	2015		Replace.	2	2 ea	100%	\$800.00	\$1,600	\$1,600	2	2015	
410	Station #5	CORE SYST.	HVAC	Exhaust Fan For Apparatus Bay	N/A	N/A	N/A		1962	15	1977	2015	⊗ -38		1	1 ea	100%	\$3,500.00	\$3,500	\$3,500	2	2015	
411	Station #5	CORE SYST.	HVAC	Duct System Cleaning	N/A	N/A	N/A	N/A	2015	5	2020	2015	S 5	Periodic coil cleaning, condensate pan and drain cleaning will provide adequate continued trouble free service.	1	1 ea	100%	\$3,500.00	\$3,500	\$4,057	2	2020	
412	Station #5	CORE SYST.	Plumbing	Gas Fired Water Heater		State	SBT 50	First Floor	1962	15	1977	2015	38		1	1 ea	100%	\$2,500.00	\$2,500	\$2,500	1	2015	
413	Station #5	CORE SYST.	Plumbing	Domestic Water Circulating Pump		Grundfos	?	First Floor	1962	10	1972	2015	-43		1	1 ea	100%	\$500.00	\$500	\$500	• 1	2015	
414	Station #5	CORE SYST.	Plumbing	Water Closets & Urinals: Vitreous china wall mounted		American Standard	?	First Floor	1962	30	1992	2015	-23		3	3 ea	100%	\$250.00	\$750	\$750	2	2015	
415	Station #5	CORE SYST.	Plumbing	Flush Valves (manual)		Sloan	?	First Floor	1962	20	1982	2015	🔕 -33		3	3 ea	100%	\$500.00	\$1,500	\$1,500	• 1	2015	
416	Station #5	CORE SYST.	Plumbing	Lavatories: vitreous china drop-in countertops		?	?	First Floor	1962	30	1992	2015	-23		2	2 ea	100%	\$250.00	\$500	\$500	2	2015	
417	Station #5	CORE SYST.	Plumbing	Faucets for lavatories, sinks and service sinks		?	?	First Floor	1962	20	1982	2015	🔕 -33		2	4 ea	100%	\$500.00	\$2,000	\$2,000	• 1	2015	
418	Station #5	CORE SYST.	Plumbing	Sink: double bowl stainless steel drop-in countertops		?	?	First Floor	1962	30	1992	2015	-23			1 ea	100%	\$300.00	\$300	\$300	2	2015	
419	Station #5	CORE SYST.	Plumbing	Service Sink		?	?	First Floor	1962	30	1992	2015	🔕 -23		1	1 ea	100%	\$250.00	\$250	\$250	2	2015	
420	Station #5	CORE SYST.	Plumbing	Showers faucets and shower heads		?	?	First Floor	1962	20	1982	2015	S -33		2	2 ea	100%	\$300.00	\$600	\$600	1	2015	
421	Station #5	CORE SYST.	Plumbing	Thermostatic Mixing Valve				Mechanical Room	1962	20	1982	2015	V -33	No temperature limiting device for hot water. Install thermostatic mixing valve.	1	1 allow	100%	\$1,500.00	\$1,500	\$1,500	• 1	2015	Water at lavatories and showers must be tempered water at 110° per Illinois Plumbing Code. Thermostatic mixing valves mix cold water with the hot water to reduce temperature of water. These can be done with a master mixing valve or at the point of use.
422	Station #5	CORE SYST.	Technology	Structured Cabling System & Station Alert Notification System				Throughout Building	1994	20	2014	2015	⊗ -1	Replace structured cabling system and upgrade station alert notification system.	1	1 allow	100%	\$25,000.00	\$25,000	\$25,000	2	2015	Replacement of structured cabling system for support of existing and future devices and systems. Upgrades to station alert/paging notification systems. Infrastructure for support of Owner furnished and installed technologies.
										_									\$638.903	\$702,989			



Fire Station #6 – Existing Conditions



Figure #6-1 Station #6 north elevation.

STRUCTURAL SYSTEMS General

Station #6 is a one-story building located within the city limits of Decatur, IL. The structure has a flat roof divided between two roof elevations. The lower elevation contains the Day Room, Sleeping Quarters, Administrative Office, and Mechanical Storage Room while the higher elevation contains the Apparatus Bay. There is no basement level.

From original drawings, it is apparent the structure was constructed in 1966. If structural renovations are to be undertaken at this facility, the International Building Code 2009 would categorize the following criteria for structural renovations as such:

Occupancy Category:	IV
Ground Snow Load:	20 psf
Basic Wind Velocity:	90 mph
Wind Importance Factor:	1.15
Wind Exposure Category:	В
Seismic Importance Factor:	1.50
Mapped Spectral Response:	Ss = 0.28g, $S1 = 0.11g$

The foundation of the structure could not be verified without further investigation. Although, it is likely the construction follows conventional practice which would utilize a continuous perimeter/frost wall constructed of either reinforced concrete or Concrete Masonry Units (CMU) setting directly on a reinforced concrete footing. Additional foundation walls are likely present for interior bearing and partition walls. A reinforced concrete slab-on-grade provides the floor for the structure and is an unknown depth. It is likely that the slab in the Apparatus Bay is 6"-8" thick while the slab in balance of the facility is 4"-6" thick.

The superstructure of the facility has been verified. Bearing walls support the roof and consist of 8" nominal Concrete Masonry Units (CMU) laid in a stack bond. The 3 ⁵/₈" nominal brick exterior veneer is laid in running bond in front of the CMU backup. Interior partition walls are also constructed of CMU and laid in stack bond. The presence of reinforcing steel in the CMU walls could not be verified and may not be present depending on the age of the structure. The roof construction could not be verified due to inaccessibility but is likely constructed of metal roof deck laid on steel bar joists.

The lateral force resisting system for the building could not be verified. Depending on the age of the structure, a defined lateral system to resist the effects of winds and earthquakes may or may not be present. Given the structural system in place, the CMU walls and roof diaphragm will resist the lateral loads regardless if the system was designed to restrain the quantified forces.

Conditions Assessment

Overall, the structure is in good condition. The building slab and concrete pavement in front of the apparatus bay do not have noticeable damage. The roof deck and steel bar joists were not able to be surveyed. The exterior brick veneer has various locations where the mortar bed is cracked and/or the brick is cracked. This is likely a sign of minor differential settlement (inconsistent settlement) which is common in structures and generally not a cause of concern. One condition was noted at the lintel above the eastern apparatus bay overhead door. It appears that the steel plate under the



lintel has deflected away from supporting the brick above. The original contract drawings show the lintel construction to include a steel wide flange beam and plate beneath. This plate was likely placed to enclose the opening and to carry the brick veneer load. The facade may now be entirely supported from back-up anchors to the CMU as opposed to the steel plate as designed.



Figure #6-2 Sagging steel lintel at overhead door opening.

The CMU bearing and partition walls appear to be in good condition. A few cracks were found in the bearing walls but are not concerning as they appear to be due from either differential settlement or shrinkage. Cracks can be found in the wall near precast lintel above the Apparatus Bay viewing window and at the wall dividing the Mechanical Storage Room from the Sleeping Quarters.

As mentioned above in the structural systems description, the lateral force resisting system for the building could not be verified. Though, for the age of the structure this is common. Modern structures incorporate an engineered system designed to resist calculated wind and seismic loads. This practice was adopted in the 1980s and has become increasingly more detailed and complex. Although actual winds and earthquakes have not necessarily become stronger, the structural engineering community better understands the likelihood of the event occurring, how the loads are collected and dispersed within the structure, and the required details to prevent structural damage from occurring. With this understanding, the building code now incorporates analysis and details that may not have been considered during the design of this facility. The absence of a recognizable lateral system is noteworthy but no further evaluation of the lateral system is warranted at this time due to the condition.

Recommendations

Dewberry recommends that visible cracks in the CMU should be sealed to prevent water intrusion. Dewberry also recommends further investigation into the overhead lintel. This should include verifying whether the steel plate is welded to the backup wide flange beam, if a cavity wall is evident, and whether any additional pattern cracking can be verified. Replacement of the lintel may be required depending on the findings from the structural investigation.

MECHANICAL SYSTEMS General

The listed air handling units are in fair to good condition.

FIRE STA	TION NO. 6				
TAG NO.	MODEL NO.	SERIAL NO.	CONDITION BY VIS. INSP.	YEAR BUILT/INST'D	CURRENT UNIT COST
CU-1	2A7A1036A1000AA	41038N45F	FAIR	2004	\$2800 +
CU-2	2A7B3042A1000AA	5421L484F	FAIR	2005	\$3200 +
AHU-1	XR90	N/A	GOOD	2004	\$1600 +
AHU-2	XR90	N/A	GOOD	2005	\$1600 +

Figure #6-3 Station #6 mechanical equipment table.



Figure #6-4 Station #6 mechanical condensing unit and air handler.

There is no immediate action for replacement of these units required. Regularly scheduled maintenance – such as lubricating, replacing filters and belts and proper repair – will provide remaining 3 to 5 years or more of service. The gas unit heaters in the Apparatus Bay appear to be in good working order, and do not require immediate repairs or replacement. Apparatus Bay exhaust system is in good condition. No immediate action is required.



Figure #6-5 Exhaust Fans in Toilet and Locker Room

The exhaust fans in the Toilet and Locker Room are original to the building and have exceeded their anticipated useful life by 2-3 times. These fans no longer operate as originally designed.

Recommendations

Provide regularly scheduled preventative maintenance for the mechanical equipment to achieve the life expectancy for the system. It is also recommended that a reputable duct cleaning service be engaged to do a thorough duct cleaning. Replace equipment at the end of its useful life.

The Toilet and Locker Room exhaust fans should be replaced with type and capacity similar to those shown in the following schedule.

	EXHAUST FAN SCHEDULE														
116	ARQTY.	ESP (IN.	-	ROOF	RECTRIC	AL CHARA	CTERISTICS	SONES		MODEL		INSTALLED			
NO.	CFM	WG.)	ORIVE	OPENING	82M	HP	V/P6/H2	(MAA)	MANUE.	NO.	REMARKS	DATE			
07-1	205	0.14	DIRECT		1550	0.03	115/1/60	2.51	PENN	FMIX 6R	1, 1, 4	19xx			
07-2	275	0.185	DIRECT		1550	0.03	115/1/60	2.74	PENN	FMIXER	1.2.1.4.5	1900			
REMAR	85:														
1	PROVIDE	BACK DRA	FT DAMPI	(8							EF-3 WALL MO	UNTED			
2	PROVIDE	PREFAB R	COF CURB								EF-2: CELING M	IOUNTED			
3	PROVIDE	BADSCAR	IN AND FA	AN CUARDS											
- 4	PROVIDE	DISCONN	ICT SWTK	ж											
5	PROVIDE	GOOSENE	CK DISON	AAGE .											
6	PROVIDE	GREASE O	DUDCTION	LON ROOF	CURB										

Figure #6-6 Exhaust Fan Schedule

ELECTRICAL SYSTEMS Electrical Service and Main Distribution Equipment

This facility is served by a 250A, 120/240V, 1-phase, 3-wire overhead service from Ameren. The meter is located outside with the Main Disconnect located in the main distribution panel. The electrical equipment in this fire station is Square D NQOB. Replacement breakers are still available for this equipment. The gear appears to be original to the 1966 construction.

Also noted in the original construction is a sub-panel installed in an existing block wall located in the lounge area. This panel is also Square D NQOB sub fed from the main distribution panel. Capacity for this panel is 150A. Spare capacity for new loads is provided on in both panels.

A small roll up generator interconnection panel was provided in 1999. This panel has select loads essential for the operation of the fire station. This panel is completely filled.

All equipment disconnects appear to have been replaced around the same time that the main panel was replaced with the exception of a few added as equipment was added to the facility.

Recommendations

Dewberry recommends that the main panel and disconnects be replaced within the next few years. The exact age of the equipment is unknown, but it past its rated useful life.

It is required by the authority having jurisdiction that an onsite natural gas generator be provided for full facility backup. Based on the service size Dewberry recommends a 25kW, 120/240V single phase, natural gas generator for full facility back up with a 250A, 120/240V, single phase, automatic

> transfer switch with bypass isolation. A smaller unit may carry the entire facility, but additional load study and analysis of existing demand will be required. The cost to add this generator with all required circuitry is approximately \$36,500.



Dewberry recommends that a 1kW, line interactive, free standing uninterruptable power supply (UPS) be provided at the computer station to provide battery back-up power to the radio and facility desktop. The UPS will provide up to 6 minutes of run time at full load to allow for an orderly shutdown of the systems or ride through power until the temporary generator connection is made. The cost to add this UPS is approximately \$1,000.

A load study should be performed to determine the maximum demand load within the facility. This should be done over the summer when the facility is seeing its peak demand. Dewberry recommends a meter be placed at the main incoming feeds and tracked for one week to capture the peak demand on the system.

There were no surge protection devices observed on any electrical equipment. Dewberry recommends that at a minimum a UL 1449, 3rd edition surge protection device be added to the main distribution panel. The cost to add surge protection devices would be approximately \$4,350.

Within the next 20 years Dewberry recommends replacement of the generator interconnection panel.

Lighting and Controls

The majority of the lighting in the facility is by linear fluorescent and has been modernized within the last two years from T12 to T8 Fluorescent lamping. Existing fixtures remain, but the ballast and sockets have been replaced to accept the new lamps. Down lights throughout the facility are original with Edison screw bases. Lamping has been upgraded to fluorescent screw in with integral ballast. The majority of the lighting is still controlled via wall mounted snap switches. Emergency Life Safety Egress lighting is provided throughout the facility by emergency battery packs. Exit lights do not appear to have integral battery back-up.

Recommendations

Any upgrades or additions to the facility would require compliance with the latest adopted Energy Conservation Code. In Decatur, IL the 2015 International Energy Conservation Code will be enforced beginning in January of 2016. Advanced automatic lighting control systems will need to be provided in all non-sleeping areas to automatically turn lights off. Additional daylight harvesting devices will need to be installed in code defined "daylight zones." Daylighting zones are defined areas around windows and skylights where lights within the zone are controlled by day light sensors. Lights in secure areas or any area where automatic control could compromise safety may continue to be manually controlled. Exterior lighting will also be controlled by automatic means to shut off lighting when sufficient daylight is present. Upgraded controls to the latest energy efficiency code will cost approximately \$2,000.

There is no immediate need to upgrade lighting fixtures in the apparatus bay. Down lights shall be replaced with LED retrofit kits or LED surface mounted fixtures and shall utilize the existing fixture locations to the greatest extent. If the entire ceiling is to be replaced, the light fixtures shall be replaced with modern LED fixtures that are appropriate for the spaces and modern in appearance. Benefits of LED vs Fluorescent are longer lamp life, lower maintenance costs, lower operating costs, ease of disposal, and superior controllability.

Exit signs shall be replaced with modern LED exit signs with integral battery back-up. All emergency battery units shall have new batteries installed.

Fire Alarm System

There currently is no fire alarm system on site. Residential style smoke detectors were observed in the sleeping areas and area outside of sleeping areas for compliance with the IBC.

Recommendations

Per review of the International Building Code this type of facility would likely be a combination of B, R-2, and S-2. None of the conditions are met to require a fire alarm system. Dewberry would recommend that existing smoke detectors within the facility be replaced with hard wired units with battery back-up. The new units shall utilize wireless technology to transmit alarm signals to all other units within the network so that all units alarm when one unit detects smoke.

Arc Flash Labeling

In accord with NEC (National Electrical Code) and NESC (National Electrical Safety Code) electrical equipment shall be labeled to indicate the potential for Arc Flash Hazard and level of PPE (Personal Protective Equipment) used when maintaining or operating the equipment. All of the equipment in this facility does not include the required labels.

Recommendations

A study to perform the Arc Flash Hazard analysis is recommended to be performed immediately. The cost to perform this study and provide labeling is approximately \$500.

PLUMBING SYSTEMS Domestic Water System

The domestic water service enters the building in the Mechanical Storage Room near the gas water heater. The size of the service is 2". There is not a backflow preventer on the water service. There are three hose reels located in the Apparatus Bay.

The gas fired domestic water heater is a State Sandblaster, model SBT75 75 NE1, 75.1 MBH heater and installed in 1996 and last inspected in 1998. There is no hot water circulating pump.

Urinals and Water Closets are Kohler, wall mounted, with Sloan manual flush valves. Lavatories are mounted in the countertops with manual faucets. Sinks are stainless steel double bowl counter mounted with manual faucets. All appear to be in working order.

Recommendations

Dewberry recommends that a master mixing valve be added at the water heater. Fixtures are dated, but do not require replacement. The grease trap occasionally needs to be cleaned out. Re-routing of piping and/or replacement of the grease interceptor is recommended.

The gas water heater should be replaced, perhaps with the addition of a hot water circulating pump.

Fire Protection System

None.

Recommendations

None.

TECHNOLOGY SYSTEMS Structured Cabling

In its present state, the structured cabling system meets the basic operational needs of the department. Hardwired drops are present where they are needed, but there are limited spare drops that prevent support of future systems. Much of the existing structured cabling system has been installed in phases over time and done so in a haphazard manner. The installation does not meet current industry standards and most likely was not tested for performance. As a result, it's questionable whether the cabling system is performing to its optimum level, or if it meets a manufacturer's warranty for performance. Staff also expressed difficulty in identifying active network cable versus cable for other systems or even abandoned cable.

Support of an upgraded wireless LAN is needed. The current wireless LAN is basic in nature and is shared by both emergency systems and personal use by the staff.

Recommendations

It is recommended that the existing cabling system be replaced with a standards compliant Category 6 performance grade system. In addition to an immediate improvement of the cosmetic nature of the existing installation, replacement of the cabling system would result in:

- A standards based installation that has been tested for performance.
- A centralized location for termination and housing of head end electronics for emergency systems.

• Identified cabling that is clearly labeled.

In addition to replacement of the existing cabling, provisions should be made for support of future network based devices for signage, displays and other devices integral to station alert and notification systems.

It is also recommended that a wireless survey of each building be performed to identify preferred locations of wireless access points. It was noted that internet services is provided via broadband from the local cable provider. Should the City extend its fiber optic network to include each fire station, each station would benefit not only from direct access to City networks, but also shared use of the City's internet service provider. It is also strongly suggested that the Department work with the City's IT department to develop partitioned networks that separate emergency system network traffic from personal use.

Unless otherwise noted, it is assumed that cellular coverage is sufficient throughout all facilities and that no supporting antenna systems are required for amplification of cellular service.

Station Alert and Alarm Notification

The existing station alert system is very basic in nature and is limited to tone and alarm only.

Recommendations

Modifications and upgrades are recommended resulting in both audible and visual notification methods. Modern computer aided dispatch systems utilize a variety of signaling devices including LED signage and large format wall displays, in addition to traditional audible announcements. Providing visual representation of the alert provides additional direction and input that a simple audible alarm lacks.

Station paging systems should be evaluated on a case by case basis. Performance of the systems should be evaluated to confirm:

- Consistency in coverage of each station
- Clear audible reproduction.

• Sound pressure levels sufficient to overcome the ambient sound levels of each space.

In addition to evaluation of each system, consideration of the acoustics of each space should also be evaluated. When needed, architectural modification should be made to minimize unwanted reflections that would otherwise deter the quality of reproduced sound.

Additional Considerations

As noted above, centralization of emergency system electronics is recommended. In addition to providing a secure location for this equipment, dedicated emergency power can be provided that utilizes uninterruptable power supplies and generator backup.

Consideration should also be given to future enhancements to building security including access control/alarm monitoring and closed circuit television monitoring and recording. In addition to securing these valuable properties, electronic systems can be used to simplify staff access to the facility, control and monitor secure locations such as pharmaceutical and equipment storage, and provide a visual record of events in key areas such as the Apparatus Bay, entrances to the facility, etc.

BUILDING ENVELOPE Exterior Walls

Exterior walls consist of modular brick veneer construction with CMU back up. It is assumed that the veneer system is a monolithic system without a drainage cavity based on the era of the building (1960s) and supported by the fact that there are no weep or flashings provided at the base of the wall or above openings. There is some wood framed overhangs with wood siding and soffits. At above and below windows there is vertical wood siding.

Some cracks in brick at corners of building and below and above windows. These are a result of expansion and contraction of brick masonry. However with monolithic brick and CMU backup systems, expansion joints are likely not effective unless the joint is continuous through the CMU back up as the system is a 'unified' system through the mortar bed. Cutting control joints into existing CMU bearing masonry walls requires special investigation and consideration to be done properly. Since the cracking is not significant, causing extensive brick bond failure, or combined with other masonry issues, repointing and repair of mortar cracks is the recommended course of action.



Figure #6-7 Sagging lintels above overhead doors.

Throughout the façade there are a number of locations where mortar joints are failing. At lintels above openings, mortar is loose and failing. Parapet walls above roof and the flue also have failing mortar joints. Typically repointing of mortar joints for buildings is needed after 50 years.

Lintels above overhead doors are severely rusted with some sagging. It is likely that the brick is not bearing on steel lintel plate and is dependent on 'arching' of the running bond pattern. The lintels above windows are also rusted.



Figure #6-8 Sagging steel lintels above overhead doors.

Penetrations at mechanical equipment need to be sealed.

The wood siding at windows the paint is peeling or worn. Sealant at edge of siding is cracked and failing.

The overhang has wood siding and wood soffit with trim. Some parts of the siding and soffit the paint is peeling and the wood trim is loose in some locations and need to be resecured.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to Exterior Walls.

- Tuck pointing is required for many locations on all sides of the building where mortar has failed or delaminated from brick. Particularly at lintels.
- 2) Replace masonry lintels above overhead doors.
- 3) Seal mechanical penetrations.
- 4) Repaint wood siding or replace.
- 5) Repaint overhang siding and soffit and re-secure trim.

Roofing

The roof was replaced approximately 7-10 years ago with single ply EPDM membrane system. The typical roof warranty for this system is 20 years. The membrane is in good condition, however there are issues with drainage and ponding.

The roof drain was blocked during observation due to fall foliage falling on the roof being carried to roof drain from the recent rain. There were also places that looked like there wasn't sufficient slope at the crickets to shed water to the drain. The center drain has ponding that looks to be clearly a result of the insulation below not secured or installed incorrectly as the edge of the insulation is pushing up. Occupants remove the leaves every few weeks during the fall as part of regular maintenance, but there





Figure #6-9 Ponding on roof due to insulation failure.

There were some signs of water infiltration on the interior of the Apparatus Bay along the perimeter of the ceiling from possible roof leaks. This could be from before roof replacement or because the roof membrane doesn't lap over parapet coping.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Roofing Systems.

- 1) Replace portion of roof and repair insulation where there is significant ponding and poor drainage.
- 2) Replace roof at end of warranty.
- 3) Lap membrane over top of coping cap.

Windows and Entrance Systems

Exterior window glazing is mostly an operable aluminum window system throughout with the exception of the vestibule entrance which is an aluminum storefront system. The remaining entrance doors are wood with wood frames.

All window systems are approximately 15+ years old. The window opening frames are wrapped with similar color sheet metal. Unlike stations 4 & 5, most of the systems appear to be in better condition with less fading and according to occupants are working properly. The exception is that the Apparatus Bay windows are very difficult to operate, according to the occupants.



Figure #6-10 Aluminum windows and wood siding.

Perimeter sealants are in good condition in most locations, but some locations are missing sealant at wood siding. Door from Apparatus Bay into Living Quarters and into Mechanical Storage Room is worn on the edges from repeated use and doesn't carry any rating.

Safety glazing was not found on storefront entrance. The window and door into apparatus bay is wired glass which does not meet safety ratings and is not recommended.

One (1) of the apparatus bay overhead doors is missing the safety sensor at base of door.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Windows and Entrance systems.

- 1) Replace window systems with thermally broken systems.
- 2) Replace failed sealants.
- 3) Replace exterior egress doors with insulated hollow metal doors and frames.
- Provide compliant hardware for rated openings and accessibility.
- 5) Provide compliant glazing for safety glazing and rated glazing.
- 6) Install safety sensor at the single overhead door where it is missing.

ARCHITECTURAL FINISHES Day Room

The Day Room wall finish is panelized wood veneer over CMU walls, painted CMU, painted plaster ceiling, and VCT flooring.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.



Figure #6-11 Day Room.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Day Room.

- 1) Install carpet in the Day Room to improve acoustics
- 2) Replace hard ceiling with suspended acoustical ceiling tile to improve the acoustics in the space.
 - The hard ceiling also results in surface mounted cabling for power and technology. The hard ceiling also makes lighting replacement very limited in options without replacing the ceiling.

Kitchen

The Kitchen finishes include painted plaster soffits, painted CMU walls, painted plaster ceiling, and VCT flooring. The cabinets are metal cabinets with plastic laminate countertops.

Cabinets are showing signs of wear in hardware and rust in the base of shelves and cabinets.



Figure #6-12 Metal base cabinets are rusting.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Kitchen.

- Replace cabinets when based has rusted through. Under current accessibility codes direct alterations must meet ADA 2010 and Illinois Accessibility Code. Replacement will require 34" countertop height and accessible sink.
- 2) Clean and repaint walls.

Toilet and Locker Room

The Toilet and Locker Room finishes include painted gypsum wallboard ceilings, painted CMU walls, mosaic tile wainscot, and mosaic tile floor. The lockers and toilet partitions are prefinished steel. The lavatories are drop sinks in metal base cabinets with plastic laminate countertops.

Rust is developing on the side of the toilet partition next to urinal. Some rust is developing on lockers and cabinets.



Figure #6-13 Metal base cabinets are rusting.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Toilet and Locker Room.

- Replace cabinets when based has rusted through. Under current accessibility codes direct alterations must meet ADA 2010 and Illinois Accessibility Code. Replacement will require 34" countertop height and accessible sink.
- 2) Remove rust from toilet partition and repaint or replace.

Sleeping Quarters

The Sleeping Quarters wall finish is painted CMU walls, plaster ceiling, and VCT flooring. Wood trim around windows and wood frame doors.

Water from mopping has stained base of interior door.

Plaster ceiling has cracks in multiple locations.



Figure #6-14 Sleeping Quarters.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Sleeping Quarters.

- 1) Install carpet in Sleeping Quarters to improve acoustics.
- 2) Replace hard ceiling with suspended acoustical ceiling tile to improve the acoustics in the space.
 - The hard ceiling also results in surface mounted cabling for power and technology. The hard ceiling also makes lighting replacement very limited in options without replacing the ceiling.

Storage/Pantry

The Storage/Pantry wall finish is painted CMU walls, plaster ceiling, and VCT flooring. Simple wood veneered cabinets.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Storage/Pantry.

1) None.

Apparatus Bay

The finishes in the Apparatus Bay are painted CMU, painted gypsum ceiling, and unfinished concrete slab.



Figure #6-15 Apparatus Bay.

The paint on the walls is fading or discolored. In many locations the paint is peeling.

The bare concrete floor was likely treated with a sealer at time of construction, but has likely worn off over time.

As mentioned in the Windows and Entrance system section, the doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware.

Some shrinkage cracks in the CMU are visible due to lack of control joints at openings.

At exterior walls and on the ceilings there is evidence of water infiltration at the roof bearing locations. The leaks are addressed in the Roofing and Building Envelope sections. However, since the space above the hard plaster ceiling is concealed, there is concern of potential mold growth above the ceiling. It should be noted that at station #5 there was a similar issue and condition at the sleeping quarters which revealed a mold issue when the ceiling was removed.

There is a step down from Living Spaces to Apparatus Bay which is not ideal for safety.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay.

- Repaint Apparatus Bay, an epoxy based paint is recommended if trucks are washed in Apparatus Bay.
- 2) Recommend applying a new sealer/hardener to concrete floor. An epoxy floor is an option as well.
- 3) Improve separation with rated doors, frames, glazing, and hardware.
- 4) Repoint cracks in CMU.
- 5) Investigate and test for mold above plaster ceiling.
 - a. If mold is present, remove ceiling and remediate mold issue.
- 6) Perform acoustical analysis and add acoustical treatments to the wall and ceiling/roof deck to improve intelligibility. Painted 2" tectum panels using C-20 or C-40 method would be recommended for this application.

Mechanical Storage Room

The finishes in the Mechanical Storage Room off of the Apparatus Bay are painted CMU, painted gypsum ceiling, and unfinished concrete slab.

The paint on the walls is fading or discolored. In many locations the paint is peeling.



The doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware.

Some shrinkage cracks in the CMU are visible due to lack of control joints at openings.

At exterior walls there is evidence of water infiltration at the roof bearing locations. This addressed in the Roofing and Building Envelope sections.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Mechanical Storage Room.

- 1) Repaint CMU.
- 2) Improve separation with rated doors, frames, glazing, and compliant hardware.
- 3) Repoint cracks in CMU.

SITE PAVING AND DRAINAGE General

Site paving is made up of concrete aprons, concrete drives, concrete sidewalks, and asphalt parking lots. The drainage on the site is mostly from storm water sewer management. All building roof drainage utilizes internal gutters which are connected into the site storm sewer.

Most of the site concrete is in good condition and was installed in the last 10-15 years.



Figure #6-16 Deteriorating asphalt parking lot paving.

The asphalt parking lot has a fair amount of deterioration, cracks, pot holes, and some settlement.

The storm water from the building exits the building through a concrete discharge structure approximately 10' below building elevation and is directed toward a drainage creek. The concrete structure of the discharge is in good condition, but the soil behind has washed out against the concrete wall exposing the clay tile. The clay tile is damaged and soil and debris is partially blocking the drainage path.



Figure #6-17 Damaged storm water outlet.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Site Paving and Drainage.

- Patch any spalled concrete throughout and seal cracks as required to protect exposed aggregate.
- 2) Develop replacement strategy for replacement sections of site concrete paving as they become worn and deteriorate.
- Replace asphalt parking lot with mill overlay. Repair areas of settlement.
- Excavate around clay pipe and replace with durable drain pipe. Regrade around discharge and provide a grate over the discharge opening.

ACCESSIBILITY General

The facility was built prior to the adoption of accessibility codes by the State of Illinois or the Federal Government and is not required to be brought up to code unless specific elements are 'altered' or when 'alterations' of a building exceed a percentage of the replacement cost of the facility. This should be considered when any alterations are made to a facility.

The following are only recommendations.

There is not an accessible entrance to the facility. There is a small step at each entrance.

Recommendations

The following is a summary of recommendations to provide more accessibility to the facility.

Provide accessible entrance from handicap parking space.

SUMMARY OF STATION #6 General

Fire Station #6 is in good condition overall. The station does not have significant issues except for a few minor repairs that are needed, but these do not impact the day to day operation of the facility. However, many of the systems are beyond their anticipated useful life and will require replacement.

The core structure of the facility is in good condition with the exterior brick veneer in fairly good condition. With continued maintenance and joint re-pointing, the building has the potential to last a significant amount of time.

The layout of this 1966 building is minimally adequate for its intended purpose, as the 2nd bay of the Apparatus Bay serves as a recreation/work out space, laundry space, and additional storage space. Any expansion of capacity and/or services would require further investigation.

With minor updates and technological updates, this fire station should continue to serve the fire department in its current capacity.



Station #6 - Capital Replacement Costs by Year Year Cost Today Budget Need Priority 1 Priority 2 Prority 3 Priority 4 cost escalated to cost escala														
Year	Cost Today	Budget Need	Priority 1	Priority 2	Prority 3	Priority 4								
		cost escalated to		1 2	3									
2015	\$242 030	\$242.030	\$80.84	50 \$149.880	\$1.000	\$10 300								
2015	\$4 400	\$4 532		\$4 532	\$0 \$0	\$10,500 \$0								
2010	\$4 800	\$5,092		\$5 092	\$0 \$0	\$0 \$0								
2018	\$0	\$0		so \$0	\$0 \$0	\$0								
2019	\$0 \$0	\$0 \$0		\$0 \$0	\$0	\$0								
2020	\$15 820	\$18 340		\$0 \$18,340	\$0 \$0	\$0								
2021	¢:0,0 <u>=</u> 0 \$0	\$0		so \$0	\$0	\$0								
2022	\$0 \$0	\$0		50 \$0	\$0	\$0								
2023	\$67 900	\$86 014		\$0 \$86 014	\$0 \$0	\$0								
2024	\$0. \$0	\$0		50 \$0	\$0	\$0								
Sub Total After	\$334.950	\$356.007	\$80.8	\$263.857	\$1.000	\$10.300								
10 Years	,,				+ ,,	+ ,								
2025	\$38.675	\$51.976	5	\$45.525	\$0	\$6.451								
2026	\$0	\$0	5	\$0 \$0	\$0	\$0								
2027	\$44,400	\$63.304	5	50 \$0	\$0	\$63.304								
2028	\$0	\$0	5	50 \$0	\$0	\$0								
2029	\$886	\$1,340	5	\$0 \$0	\$0	\$1,340								
2030	\$0	\$0	5	\$0	\$0	\$0								
2031	\$0	\$0	5	\$0	\$0	\$0								
2032	\$0	\$0	5	\$0 \$0	\$0	\$0								
2033	\$91,630	\$155,994	5	\$0	\$0	\$155,994								
2034	\$491	\$860	5	\$0	\$860	\$0								
2035	\$491	\$886	5	\$0	\$886	\$0								
2036	\$0	\$0	5	\$0	\$0	\$0								
2037	\$0	\$0	5	\$0	\$0	\$0								
2038	\$0	\$0	5	\$0	\$0	\$0								
2039	\$0	\$0	5	\$0	\$0	\$0								
2040	\$0	\$0	5	\$0	\$0	\$0								
2041	\$0	\$0	5	\$0	\$0	\$0								
2042	\$0	\$0	5	\$0	\$0	\$0								
2043	\$0	\$0		\$0	\$0	\$0								
2044	\$0	\$0		\$0	\$0	\$0								
Sub Total for	\$176,572	\$274,360		\$0 \$45,525	\$1,747	\$227,08								
Remainder Years														
Overall Total	\$511,522	\$630,368	\$80,8	50 \$309,382	\$2,747	\$237,38								

BUDGET SUMMARY

		CONSO	LIDATED SYSTE																				capital replacement budget
					Existing Asset Log							Evalua	ated Condition					Estimate	d Replaceme	nt Bud	get		
	Building or Zone (If more than one)				Description & Location of Asset			Year Installed	Anticipated Years of Life	Calculated Renewal Year	Evaluation Date	Remaining Life Expectancy	Recommended Action		C	Cost Basis		Current Replacement Cost	Escalated Cost at BUDGET YEAR	Priority Level	:	Budget Year	Comments
Entry #	Building ID	Category	Family Boofs or Decks	Component	Entity Manufacturer	Model	Location	Installed	Lifespan 20	Renewal	Evaluation	Remainir	g Action	qty.	units p	100%	unit cost \$14.00	cost \$67.900	Budget \$86.01	Priority	2 2(/ear	Comment Replace at end of warranty.
424	itation #6	EXT. BLOG.	Roofs or Decks	Roofing	Roofing Membrane Coping caps	P	arapet Walls	1965	50	2015	2015	0	Flash membrane roof over stone coping and install perimeter coping cap to prevent roof leaks.	175	51 5 f	100%	\$50.00	\$8,750	\$8,75		2 22	2015	Most roof leaks are at perimeters of roofs at the parapets. At these conditions the roof is flashed up to coping where there is some form of metal flashing below the stone coping. This flashing doesn't continue to the exterior side of the stone coping. This is the logical location of roof leaks. There are a couple options available. Simplest option would be to flash membrane over the top of the stone coping and terminate the roof with a full metal coping cap or roof edge. The second option would require removing stom coping cap and install a full thru wall metal flashing and then reset the stone coping which would be a similar cost.
425	Station #6	EXT. BLDG.	Roofs or Decks	Roofing	Single Ply EPDM Roofing Membrane	C	Center roof area	2007	0	2007	2015	8	Repair portion of roof where ponding is occurring due to insulation 'bowing' up at seams.	1	Lallow	100%	\$2,000.00	\$2,000	\$2,00	0	1 20	2015	Ponding is taking place at parts of the roof due to insulation 'bowing' or 'popping' up at edges/seams. This prevents some areas of roof from reaching cricket and drains.
426	Station #6	EXT. BLDG.	Walls	Cladding	Masonry-Brick	A	Il Facades	1965	50	2015	2015	0	Replace damaged bricks and tuck point delaminated mortar joints, joint cracks, and failing mortar in brick.	1	allow	100%	\$20,000.00	\$20,000	\$20,00		2 20	2015	At some corners of the building and below the windows there are cracks due to lack of masonry expansion joints and control joints in the brick and back up CMU. There are also locations of delaminated mortar. Replace damaged bricks and replace failing mortar joints in brick.
427	Station #6	CORE SYST.	Structural Systems	Steel Lintels	Masonry Lintel	0	Overhead doors	1965	50	2015	2015	0	Replace rusted lintel.	1	Lea	100%	\$3,500.00	\$3,500	\$3,50	0	1 20	2015	Lintel is rusted and sagging severely. Replace.
428	Station #6	CORE SYST.	Structural Systems	Steel Lintels	Masonry Lintel	A	upparatus Bay Vindows	1965	50	2015	2015	0	Repaint Lintels.	3	ea 🛛	100%	\$150.00	\$450	\$45		2 20	2015	Lintels are rusting.
429	Station #6	EXT. BLDG.	Walls	Cladding	Masonry-Brick	W	Vindow Stone Sills	1965	50	2015	2015	0	Rake out mortar and install sealant or mortar.	1	lallow	100%	\$1,200.00	\$1,200	\$1,20	D 🥌	2 20	2015	Mortar is failing at stone sill joints.
430	Station #6	EXT. BLDG.	Walls	Openings	Windows - Aluminum	D	Day Room	1995	30	2025	2015	10	Replace	160) sf	100%	\$75.00	\$12,000	\$16,12	7	2 20	2025	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames.
431	Station #6	EXT. BLDG.	Walls	Openings	Windows - Aluminum	SI	leeping Quarters/ torage	1995	30	2025	2015	10	Replace	85	5 sf	100%	\$75.00	\$6,375	\$8,56	7	2 20	2025	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames.
432	Station #6	EXT. BLDG.	Walls	Openings	Windows - Aluminum	A	opparatus Bay	1995	30	2025	2015	10	Replace	100) sf	100%	\$75.00	\$7,500	\$10,07	9	2 20	2025	Replace windows with thermally broken windows. Including wrapped aluminum trim and frames. These windows appear to be in the worst shape as they do not all operate and the panels have some damage on the exterior. These are also the most faded systems (no overhang protection).
433	Station #6	EXT. BLDG.	Walls	Openings	Aluminum - Storefront Entrance	F	ront Entrance	1990	30	2020	2015	✓ 5	Replace	60) sf	100%	\$100.00	\$6,000	\$6,95	5	2 20	2020	Storefront entrance has single pane glass (non safety), dead bolt lock, failing weather strips, and is assumed to be non-thermally broken. Replace with thermally broken system, insulated glass, and sill pan flashing.
434	Station #6	EXT. BLDG.	Walls	Openings	Perimeter Sealants	A	II openings	1995	20	2015	2015	0	Strip out failed sealant, prep, and re-seal.	1	Lallow	100%	\$2,000.00	\$2,000	\$2,00		1 20	2015	Sealant is cracked, failing, or missing at all openings.
435	station #6	EXT. BLDG.	Walls	Openings	Overhead Doors	E	ast Door	1995	20	2015	2015	0	Replace damaged door or replace damaged panel and repaint.	1	ea	100%	\$8,000.00	\$8,000	\$8,00	D	2 20	2015	Door has many dents and dings in it. The base of the door is deflecting 'in' due to something backing into door. Door also has not been painted like adjacent door. Replace damaged door panel and repair any other damage and then repaint. Or replace door. "If increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000 ea.





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty.	units pro-	ration un	t cost	cost	Budget	Priority	Year	Comment
436	Station #6	EXT. BLDG.	Walls	Cladding	Masonry-Brick			Mechanical Penetrations	1965	50	2015	2015	0	Seal mechanical penetration through exterior wall.	1 a	allow 1	00%	\$250.00	\$250	\$25	0 1	2015	
437	Station #6	EXT. BLDG.	Walls	Openings	Overhead Doors			East Door	1995	30	2025	2015	2 10	Replace damaged door or replace damaged panel and repaint.	1 e	28 1	00%	\$8,000.00	\$8,000	\$10,75	1 2	2025	*If increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000 ea.
438	Station #6	EXT. BLDG.	Walls	Cladding	Wood Siding & Soffit			Perimeter Siding and soffit.	1965	50	2015	2015	0	Repaint siding and soffit. Re- secure soffit trim.	1 a	allow 1	00%	\$800.00	\$800	\$80	0 🔸 1	2015	
439	Station #6	INT. FIT-OUT	Finishes	Flooring	Vinyl Composite Tile			Day Room, Kitchen, Sleeping Quarters	1995	20	2015	2015	0	Replace flooring.	1,700 s	if 1	00%	\$8.00	\$13,600	\$13,60	0	2015	Recommend carpet tile in day area and Sleeping Quarters to improve acoustics. Cleanable surface for dining and kitchen.
440	Station #6 Station #6	INT. FIT-OUT	Finishes	Flooring	Mosaic tile Concrete sealer/ hardener.			Restroom Apparatus Bay	1965 1990	<u>20</u>	2025 2010	2015	 10 -5 	Replace flooring Re-seal floor with concrete sealer/hardener.	<u>300 s</u> 1,750 s	sf 1. sf 1.	00%	\$16.00 \$1.50	\$4,800 \$2,625	\$6,45 \$2,62	1 4 5 2	2025 2015	Tile appear to be in good condition. There is still a sheen to parts of the floor so its possible the floor has been re-sealed since the initial application. *Another option is to provide an epoxy floor coating, but at additional cost.
442	Station #6	INT. FIT-OUT	Finishes	Ceilings	Plaster Ceilings			All Areas.	1965	50	2015	2015	0	Replace with 2x2 ceiling grid as part of lighting and technology upgrades if required.	2,000 s	sf 1	00%	\$5.00	\$10,000	\$10,00	0 • 1	2015	Plaster ceiling are in good condition and only require repair to minor cracks, however the hard ceilings with the hard wall and floor surfaces makes the acoustics poor in all spaces and difficult to understand calls coming through the system. The hard ceiling also does not allow for easy lighting replacement and cable management. Recommend replacement with a suspended 2x2 ceiling.
443	Station #6	INT. FIT-OUT	Finishes	Painting	CMU Walls			Apparatus Bay	1995	20	2015	2015	0	Re-paint	3,200 s	if 1	00%	\$2.00	\$6,400	\$6,40	0 🔍 1	2015	Apparatus bay has significant peeling of paint, discoloring, and water stains. Prep and repaint.
444	Station #6	INT. FIT-OUT	Finishes	Ceilings	Plaster Ceilings			Apparatus Bay	1965	50	2015	2015	0	Remove Plaster Ceiling	2,400 s	sf 1	00%	\$5.00	\$12,000	\$12,00	0 • 1	2015	Perimeter of the apparatus bay demonstrates water infiltration and potential water damage on ceiling. Peeling through out ceiling maybe a result of water damage. Based on Station #5 sleeping quarter ceiling, there is a probability of mold growth above the ceiling. Cost includes investigating and testing for mold, removing the ceiling, painting structure, supporting systems suspended at ceiling.
445	Station #6	GROUNDS	Hardscape	Asphalt Paving	Asphalt Parking Lot			East Parking Lot and Drive	1995	15	2010	2015	⊗ -5	Replace asphalt paving with mill and overlay.	240 s	sy 1	00%	\$25.00	\$6,000	\$6,00	0 🗭 2	2015	Asphalt paving is beginning to see a significant amount of cracking throughout with some sports crumbling. Mill and overlay with some patching/repair of sub-base of low areas where there has been some settling.
446	Station #6	GROUNDS	Hardscape	Concrete Paving	Concrete Drive			Apparatus Bay Drive	2003	30	2033	2015	18	Replace	833 s	Sy 1	00%	\$110.00	\$91,630	\$155,99	4 ● 4	2033	Replace when concrete is deteriorated.
447	Station #6	GROUNDS	Hardscape	Drainage Discharge	Concrete Discharge			West Side of Building	1965	50	2015	2015	0	Repair clay drain tile where soil has eroded away. Clean out discharge and provide grate cover. Regrade behind discharge to protect drainage pipe.	1 a	allow 1	00%	\$800.00	\$800	\$80	0 🔸 1	2015	
448	Station #6	EXT. BLDG.	Walls	Openings	Aluminum - Storefront Entrance			Front Entrance	1990	30	2020	2015	5	Replace	60 s	if 1	00%	\$100.00	\$6,000	\$6,95	6 🛑 2	2020	Storefront entrance has single pane glass (non safety), dead bolt lock, failing weather strips, and is assumed to be non-thermally broken. Replace with thermally broken system, insulated glass, and sill pan flashing.
449	Station #6	INT. FIT-OUT	Rated Assemblies	Rated Openings	Wood Doors			Apparatus Bay	1965	40	2005	2015	⊗ -10	Replace doors from apparatus bay into adjacent spaces with rated doors and frames	2 e	20 1	00%	\$3,000.00	\$6,000	\$6,00	0	2015	Current codes require separation between apparatus bay and living spaces. Recommend additional protection with rated assembly at door between apparatus bay and living spaces. Existing doors are also worn and have some abuse.





Entry	# Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty.	units	pro-ration	unit cost	cost	Budget	Priority	Year	Comment
450	Station #6	INT. FIT-OUT	Rated Assemblies	Rated Openings	Glazing			Viewing Window into Apparatus Bay	1965	40	2005	2015	S -10	Replace wired glazing and wood frame with rated frame and fire resistive glazing.	1	1 ea	100%	\$1,500.00	\$1,500	\$1,500	2	2015	Current codes require separation between Apparatus Bay and Living Spaces. Recommend additional protection with rated assembly at window between Apparatus Bay and Day Room. Wired glass is also not safety glass.
451	Station #6	INT. FIT-OUT	Finishes	Casework	Kitchen Casework			Kitchen	1965	40	2005	2015	⊗ -10	Replace casework.	1	1 allow	100%	\$18,000.00	\$18,000	\$18,000	• 1	2015	Outdated casework and metal base inside is rusting through. Some of the drawers are difficult to open. Cabinet faces are worn. Should be replaced.
452	Station #6	INT. FIT-OUT	Finishes	Casework	Lavatory			Restroom	1965	40	2005	2015	◎ -10	Replace lavatory and casework with ADA compliant sink and casework.	1	1 allow	100%	\$6,000.00	\$6,000	\$6,000	• 1	2015	Outdated casework and metal base inside is rusting through. Should be replaced.
453	Station #6	INT. FIT-OUT	Finishes	Toilet Accessories	Toilet Partition			Restroom	1965	50	2015	2015	0 📀	Remove rust and repaint toilet	1	1 allow	100%	\$300.00	\$300	\$300	• 4	2015	
454	Station #6	CORE SYST.	Structural Systems	Load Bearing Masonry	CMU Walls			Sleeping Quarters	1965	50	2015	2015	0	Remove damaged CMU at base of wall and patch.	1	1 allow	100%	\$800.00	\$800	\$800	2	2015	CMU at base of wall is spalling or popping out. Remove Damaged CMU and replace or patch with appropriate material. Prime and Paint.
455	Station #6	CORE SYST.	Structural Systems	Load Bearing Masonry	CMU Walls			All	1965	50	2015	2015	0	Tuck point at cracks in CMU mortar.	1	1 allow	100%	\$5,000.00	\$5,000	\$5,000	2	2015	Most cracks are in the mortar from shrinkage or movement in steel structure, and not due to major structural failures. Tuck pointing would only be for cosmetic reasons, as cracks could re-occur.
456	Station #6	INT. FIT-OUT	Finishes	Acoustical Treatments	Tectum Panels			Apparatus Bay	1965	50	2015	2015	0	Add 2" Tectum Panels with 2x furring strips (C40 method) to CMU walls and bottom of deck. Painted.	1	1 allow	100%	\$8,000.00	\$8,000	\$8,000	• 4	2015	Perform acoustical study to determine appropriate treatments to improve intelligibility of the speaker system for emergency calls.
457	Station #6	CORE SYST.	Power	Branch Circuit Panel - MLO, 120/240V, 225A, 1-phase, wire	3 Branch Circuit Panel	Square D	NQOB-13551-1A	Kitchen Area	1962	30	1992	2015	⊗ -23	Replace with new	1	1 ea	100%	\$1,962.00	\$1,962	\$1,962	2	2015	Not immediate need for replacement as it is still functional, but should have priority over other electrical equipment.
458	Station #6	CORE SYST.	Power	Emergency Load Center, 60A, 120/240V, Two inputs for manual transfer to genset.	r Panelboard	Siemens	E0408MB6030GC	Apparatus Bay	1999	30	2029	2015	☑ 14	Replace with new	1	1 ea	100%	\$886.00	\$886	\$1,340	• 4	2029	Replace with standard 60A load center and new automatic transfer switch when Emergency Genset is added to facility.
459	Station #6	CORE SYST.	Power	Exterior Fused Disconnect for HVAC, 60A, 240V, 2-pole NEMA 3R.	, Fused Disconnect	Mars	8331	7 Exterior	2005	30	2035	2015	✓ 20	Replace with new	1	1 ea	100%	\$490.66	\$491	\$886	3	2035	Replace with new at the end of useful life.
460	Station #6	CORE SYST.	Power	Exterior HVAC Disconnect, 60A, 240V, 2-Pole, non- fused.	Disconnect Switch	Square D	DU 332-RO	Exterior	2004	30	2034	2015	☑ 19	Replace with new	1	1 ea	100%	\$490.66	\$491	\$860	3	2034	Replace with new at the end of useful life.
461	Station #6	CORE SYST.	Lighting	Exterior Wall Mounted Fixtures around perimeter.	Exterior Lighting			Exterior Wall	1966	15	1981	2015	⊗ -34	Replace with new LED Fixture.	3	3 ea	100%	\$279.95	\$840	\$840	2	2015	Replace with new full Cutoff LED Fixtures.
462	Station #6	CORE SYST.	Lighting	Exterior Wall Mounted Fixtures at Apparatus Bay door	s Exterior Lighting			Exterior Wall	1990	15	2005	2015	⊗ -10	Replace with new	2	2 ea	100%	\$1,065.35	\$2,131	\$2,131	2	2015	Replace with new full Cutoff LED Fixtures.
463	Station #6	CORE SYST.	Lighting	Provide Exterior lighting control	Exterior Lighting				1990	15	2005	2015	⊗ -10	Provide photo cell lighting control for exterior fixtures	1	1 allow	100%	\$500.00	\$500	\$500	2	2015	Add photo cell, timer, or both forms of exterior lighting control per the departments requirements. This function would be integrated with interior lighting controls when they are provided.
464	Station #6	CORE SYST.	Lighting	Interior Lighting	All interior lighting fixtures	Misc	Misc	Facility Interior	2012	15	2027	2015	☑ 12	Replace fixtures with modern equivalents	4,440	D sf	100%	\$10.00	\$44,400	\$63,304	• 4	2027	
465	Station #6	CORE SYST.	Power	Main Distribution Panel - 250A, 120/240V, 1-phase, 3- wire.	Panelboard	Square D	NQOB-8018-1A	Mech Space	1966	30	1996	2015	○ -19	Replace with new	1	1 ea	100%	\$6,372.00	\$6,372	\$6,372	2	2015	Not immediate need for replacement as it is still functional, but should have priority over other electrical equipment.
466	Station #6	CORE SYST.	Fire Alarm/Detection	Smoke Detectors in sleeping areas	Smoke Detectors			Sleeping Areas	2000	20	2020	2015	✓ 5	Replace with new	2	2 ea	100%	\$80.00	\$160	\$185	2	2020	Replace existing with new.
467	Station #6	CORE SYST.	Fire Alarm/Detection	Smoke Detectors in sleeping areas	Smoke Detectors			Sleeping Areas	2000	20	2020	2015	✓ 5	Replace with new	2	2 ea	100%	\$80.00	\$160	\$185	2	2020	Replace existing with new.





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation R	Remaining	Action	qty.	units pro-ration	unit cost	cost	Budget	Priority	Year	Comment
468	Station #6	CORE SYST.	Power	Add new Emergency Generator	Generator				1965	50	2015	2015	0	Provide new per AHJ requirement.	1 ea	100%	\$36,500.00	\$36,500	\$36,500	2	2015	Provide new including pad, transfer switch, fuel source, and other required upgrades.
469	Station #6	CORE SYST.	Power	Thermal Scan Electrical Systems	Electrical Equipment				1965	50	2015	2015 🤇	0	Thermal scan equipment per report.	1 ea	100%	\$500.00	\$500	\$500	• 3	2015	Thermal Scan electrical equipment to identify existing hazardous conditions.
470	Station #6	CORE SYST.	Power	Recommended addition of Surge Protection Equipment	t. Electrical Equipment				1965	50	2015	2015 🤇	0	Provide Surge Protection Equipment.	1 LS	100%	\$4,350.00	\$4,350	\$4,350	2	2015	Provide surge protection devices at service panel and branch circuit panels.
471	Station #6	CORE SYST.	Power	Arc Flash Labeling	Electrical Equipment				1965	50	2015	2015 🤇	0	Perform an arc flash study and provide labels at equipment	1 LS	100%	\$500.00	\$500	\$500	• 3	2015	Provide labels per NEC and NESC requirements.
472	Station #6	CORE SYST.	Lighting	Provide modern lighting controls	Lighting				1965	50	2015	2015 🤇	0	Provide lighting control devices	1 LS	100%	\$2,000.00	\$2,000	\$2,000	• 4	2015	Provide lighting control devices for compliance with latest energy efficiency code.
473	Station #6	CORE SYST.	HVAC	Air handling Unit + Condensing Unit	AHU-1 + CU-1	Trane	XR90 + 2A7A1036A	In mechanical room + Outdoors	2004	12	2016	2015 🤇	1	Periodic maintenance such as lubricating and filters & belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$4,400.00	\$4,400	\$4,532	2	2016	Serves general building HVAC needs
474	Station #6	CORE SYST.	HVAC	Air handling Unit + Condensing Unit	AHU-2 + CU-2	Trane	XR90 + 2A7A1036A	In mechanical room + Outdoors	2005	12	2017	2015 🧯	2	Periodic maintenance such as lubricating and filters & belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$4,800.00	\$4,800	\$5,092	2	2017	Serves general building HVAC needs
475	Station #6	CORE SYST.	HVAC	Exhaust Fan for Toilet Rooms	N/A	N/A	N/A		1966	12	1978	2015 🔇	37	Replace.	2 ea	100%	\$800.00	\$1,600	\$1,600	2	2015	
476	Station #6	CORE SYST.	HVAC	Exhaust Fan For Apparatus Bay	N/A	N/A	N/A		1966	15	1981	2015 🔇	34		1 ea	100%	\$3,500.00	\$3,500	\$3,500	2	2015	
477	Station #6	CORE SYST.	HVAC	Duct System Cleaning	N/A	N/A	N/A	N/A	2015	5	2020	2015	5	Periodic coil cleaning, condensate pan and drain cleaning will provide adequate continued trouble free service.	1 ea	100%	\$3,500.00	\$3,500	\$4,057	2	2020	
478	Station #6	CORE SYST.	Plumbing	Gas Fired Water Heater		State	SBT75	First Floor	1996	15	2011	2015 🔇	3 -4		1 ea	100%	\$4,400.00	\$4,400	\$4,400	• 2	2015	
479	Station #6	CORE SYST.	Plumbing	Water Closets & Urinals: Vitreous china wall mounted		American Standard	\$	First Floor	1966	30	1996	2015 🔇	3 -19		3 ea	100%	\$250.00	\$750	\$750	2	2015	
480	Station #6	CORE SYST.	Plumbing	Flush Valves (manual)		Sloan	?	First Floor	1966	20	1986	2015 🔇	3 -29		3 ea	100%	\$500.00	\$1,500	\$1,500	• 1	2015	
481	Station #6	CORE SYST.	Plumbing	Lavatories: vitreous china drop-in countertops		?	?	First Floor	1966	30	1996	2015	3 -19		2 ea	100%	\$250.00	\$500	\$500	2	2015	
482	Station #6	CORE SYST.	Plumbing	Faucets for lavatories, sinks and service sinks		?	?	First Floor	1966	20	1986	2015 🔇	》 -29		4 ea	100%	\$500.00	\$2,000	\$2,000	1	2015	
483	Station #6	CORE SYST.	Plumbing	Sink: double bowl stainless steel drop-in countertops		?	?	First Floor	1966	30	1996	2015 🔇	3 -19		1 ea	100%	\$300.00	\$300	\$300	2	2015	





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remaining	Action	qty.	units	pro-ration	unit cost	cost	Budget	Priority	Year	Comment
484	Station #6	CORE SYST.	Plumbing	Service Sink		?	?	First Floor	1966	30	1996	2015	-19		1	L ea	100%	\$250.00	\$250	\$250	2	2015	
485	Station #6	CORE SYST.	Plumbing	Electric Water Cooler compressor		Halsey Taylor	Ş	First Floor	1966	15	1981	2015	⊗ -34		1	L ea	100%	\$500.00	\$500	\$500	• 1	2015	
486	Station #6	CORE SYST.	Plumbing	Showers faucets and shower heads		?	?	First Floor	1966	20	1986	2015	⊗ -29		2	2 ea	100%	\$300.00	\$600	\$600	2	2015	
487	Station #6	CORE SYST.	Plumbing	Thermostatic Mixing Valve				Mechanical Room	1966	20	1986	2015	⊗ -29	No temperature limiting device for hot water. Install thermostatic mixing valve.		allow	100%	\$1,500.00	\$1,500	\$1,500	• 1	2015	Water at lavatories and showers must be tempered water at 110° per Illinois Plumbing Code. Thermostatic mixing valves mix cold water with the hot water to reduce temperature of water. These can be done with a master mixing valve or at the point of use.
488	Station #6	CORE SYST.	Technology	Structured Cabling System & Station Alert Notification System				Throughout Building	1994	20	2014	2015	-1	Replace structured cabling system and upgrade station alert notification system.	1	allow	100%	\$25,000.00	\$25,000	\$25,000	2	2015	Replacement of structured cabling system for support of existing and future devices and systems. Upgrades to station alert/paging notification systems. Infrastructure for support of Owner furnished and installed technologies.
																			\$511,522	\$630,368			



Fire Station #7 – Airport Location Existing Conditions



Figure #7-1 Station #7 entrance.

STRUCTURAL SYSTEMS General

Station #7 is a one-story building situated next to the Decatur airport. The structure has a flat roof divided between two roof elevations. The lower elevation contains the Day Room, Sleeping Quarters, Administrative Office, and Mechanical Storage Room while the higher elevation contains the Apparatus Bay. There is no basement level.

The structure was constructed in 1970. If structural renovations are to be undertaken at this facility, the International Building Code 2009 would categorize the following criteria for structural renovations as such:

Occupancy Category:	IV
Ground Snow Load:	20 psf
Basic Wind Velocity:	90 mph
Wind Importance Factor:	1.15
Wind Exposure Category:	С
Seismic Importance Factor:	1.50
Mapped Spectral Response:	Ss = 0.28g, $S1 = 0.11g$

The foundation of the structure could not be verified without further investigation. It is likely the construction follows conventional practice which would utilize a continuous reinforced concrete perimeter/frost wall. Additional foundation walls are likely present for interior bearing and partition walls. A reinforced concrete slab-on-grade provides the floor for the structure and is an unknown depth. It is likely that the slab in the Apparatus Bay is 6"-8" thick while the slab in the balance of the facility is 4"-6" thick.

The superstructure of the facility has been verified. Bearing walls with pilasters support the roof and consist of 8" nominal Concrete Masonry Units (CMU) laid in a running bond. The 3 5%" nominal brick exterior veneer is also laid in running bond and may be anchored to the CMU with veneer anchors. Interior partition walls are also constructed of CMU and laid in stack bond. The presence of reinforcing steel in the CMU walls could not be verified and may not be present depending on the age of the structure. The roof construction in the Apparatus Bay consists of metal roof deck laid on steel bar joists. The roof construction for the lower elevation is likely constructed in the same manner but could not be verified.

The lateral force resisting system for the building could not be verified. Depending on the age of the structure, a defined lateral system to resist the effects of winds and earthquakes may or may not be present. Given the structural system in place, the CMU walls and roof diaphragm will resist the lateral loads regardless if the system was designed to restrain the quantified forces.

Condition Assessment

Overall, the structure is in moderate to good condition. The building and pavement slabs do not have noticeable damage. The roof deck and steel bar joists surveyed appear to be structurally sound. The exterior brick veneer is cracked in some locations and is likely a sign of settlement, shrinkage, or stress. Minor differential settlement, or inconsistent settlement in structures can be common and is generally not a cause of concern. Damage from shrinkage can occur in walls that do not have adequate control joints. Possible



stress seen in the brick veneer may be caused by the CMU wall backup deflecting greater than anticipated. There does appear to be areas of significant cracking in all of the CMU walls around the Apparatus Bay. Some cracks are visible along the north and south walls forming a stair step pattern. Precast lintels provide support for the northern wall. At two instances, a crack through the mortar joint is apparent between two adjacent lintels setting on pilasters. Also, the two easternmost pilasters along the northern wall have a cracked bearing point through the block. Noteworthy horizontal joint bed cracks are apparent in-line with the lower roof. This is likely the location of a masonry bond beam with horizontal reinforcing and is also a location of differential temperature. Vertical cracks appear consistently from the roof level down to the lower roof level line. These cracks may be indicative of shrinkage.



Figure #7-2 Continuous crack through masonry below and above concrete lintel.



Figure #7-3 Continuous crack through masonry below and above concrete lintel.



Figure #7-4 Horizontal cracking at CMU.

As mentioned in the structural systems description, the lateral force resisting system for the building could not be verified. Though, for the age of the structure this is common. Modern structures incorporate an engineered system designed to resist calculated wind and seismic loads. This practice was adopted in the 1980s and has become increasingly more detailed and complex. Although actual winds and earthquakes have not necessarily become stronger, the structural engineering community better understands the likelihood of the event occurring, how the loads are collected and dispersed within the structure, and the required details to prevent structural damage from occurring. With this understanding, the building code now incorporates analysis and details that may not have been considered during the design of this facility. The absence of a recognizable lateral system paired with possible lateral load damage in the load bearing CMU walls does warrant further consideration as described below.

Recommendations

Dewberry recommends that visible cracks in the CMU should be sealed to prevent water intrusion. Dewberry also recommends reconstruction of the two CMU pilasters along the North wall of the Apparatus Bay. This will require shoring the existing CMU lintels, removing existing cracked CMU block in the pilasters, and replacing with sound units. Steel reinforcing may be required at the discretion of the design engineer. A proposed design and construction sequence should be designed by a licensed structural engineer with experience in masonry construction. Reconstruction of the pilaster will provide adequate bearing for the lintel.

MECHANICAL SYSTEMS General

The listed air handling units are in fair to good condition.

TAG NO.	MODEL NO.	SERIAL NO.	CONDITION BY VIS. INSP.	YEAR BUILT/INST'D	CURRENT UNIT COST
CU-1/2	TTA120A300FA	51932Y7A	6000	2005	\$13000 +
AHU-1 & 2	TXV060C5HPC0	4401PCN5G	6000	2005	\$7500 +
ROOF EF	CENTRIFUGAL	N/A	POOR	N/A	\$750
ROOF EF	DOWNBLAST	N/A	FAIR	N/A	\$750
ROOF	GRAVITY	N/A	FAIR	N/A	\$350

Figure #7-5 Station #7 mechanical equipment table.

This equipment is fashioned in such a way that a single 10 ton condensing unit is serving two five ton indoor air units. This 2005 installation is 10 years old; no immediate action for replacement of these units required. The rooftop exhaust fan seems in poor condition and may need replacement in near future. Regularly scheduled maintenance – such as lubricating, replacing filters and belts and proper repair – will provide remaining 3 to 5 years or more of service for the major equipment. It is also recommended that a reputable duct cleaning service engaged to do a thorough duct cleaning.



Figure #7-6 Air handling unit and condensing unit.

The exhaust fan in the Toilet and Locker Room are original to the building and has exceeded its anticipated useful life by 2-3 times. This fan no longer operate as originally designed. The location of this fan also does not sufficiently cover the shower area of the locker room where humidity has caused paint to peel.

Recommendations

Provide regularly scheduled preventative maintenance for the mechanical equipment to achieve the life expectancy for the system. It is also recommended that a reputable duct cleaning service engaged to do a thorough duct cleaning. Replace equipment at the end of its useful life.

The Toilet and Locker Room exhaust fan should be replaced with type and capacity similar to those shown in the following schedule. An additional exhaust fan should be installed in the shower area.

	EXHAUST FAN SCHEDULE													
TAG NO.	AIR QTY.	ESP (IN.	CONT	ROOF	ELECTRIC	AL CHARA	CTERISTICS	SONES	MANUE	MODEL NO.	REMARKS	INSTALLED		
	CFM	WG.)	-	OPENING	RPM	HP	V/Ph/Hz	(MAX)	moreor.					
EF-1	205	0.14	DIRECT		1550	0.03	115/1/60	2.51	PENN	FMX 6R	1, 3, 4	19xx		
EF-2	275	0.165	DIRECT		1550	0.03	115/1/60	2.74	PENN	FMX BR	1, 2, 3, 4, 5	19xx		
REMAR	KS:													
1)	PROVIDE	BACK DRA	FT DAMPS	BR							EF-1: WALL MO	UNTED		
2) PROVIDE PREFAB ROOF CURB											EF-2: CEIUNG N	NOUNTED		
3)	PROVIDE	DIROSCREI	IN AND FA	AN GUARDS										
4)	PROVIDE	DISCONNE	CT SWTIC	ж										
5)	PROVIDE	GOOSEND	CK DISCH/	RGE										
6)	PROVIDE	GREASE CO	DULECTION	ON ROOF	CURB									

Figure #7-7 Exhaust Fan Schedule



ELECTRICAL SYSTEMS Electrical Service and Main Distribution Equipment

This facility is served by a 400A, 120/208V, 3-phase, 4-wire overhead service from Ameren. The meter is located outside with the Main Disconnect outside adjacent to the meter. The electrical equipment in this fire station is a 2-section 400A Square D NQO located in a room off the Apparatus Bay. Replacement breakers are still available for this equipment. The gear appears to be original to the 1970 construction. All electrical loads are fed from this panel.

The facility appears to have full generator back-up via transfer switch mounted on the exterior wall. Per discussions with on-site staff the natural gas generator is owned and maintained by the airport. The fire station has no data on the unit other than it was installed circa 2013.

All equipment disconnects appear to be a mix of original equipment and new equipment added as equipment was added to the facility.

Recommendations

Dewberry recommends that the main panel and disconnects be replaced within the next few years. The exact age of the equipment is unknown, but it past its rated useful life.

A load study should be performed to determine the maximum demand load within the facility. This should be done over the summer when the facility is seeing its peak demand. Dewberry recommends a meter be placed at the main incoming feeds and tracked for one week to capture the peak demand on the system.

There were no surge protection devices observed on any electrical equipment. Dewberry recommends that at a minimum a UL 1449, 3rd edition surge protection device be added to the main distribution panel. The cost to add surge protection devices would be approximately \$4,350.

Lighting and Controls

The majority of the lighting in the facility is by linear fluorescent and has been modernized within the last two years from T12 to T8 Fluorescent lamping. Existing fixtures remain, but the ballast and sockets have been replaced to accept the new lamps. Down lights throughout the facility are original with Edison screw bases. Lamping has been upgraded to fluorescent screw in with integral ballast. The majority of the lighting is still controlled via wall mounted snap switches. Emergency Life Safety Egress lighting is provided throughout the facility by emergency battery packs. Exit lights do not appear to have integral battery back-up.

Recommendations

Any upgrades or additions to the facility would require compliance with the latest adopted Energy Conservation Code. In Decatur, IL the 2015 International Energy Conservation Code will be enforced beginning in January of 2016. Advanced automatic lighting control systems will need to be provided in all non-sleeping areas to automatically turn lights off. Additional daylight harvesting devices will need to be installed in code defined "daylight zones". Daylighting zones are defined areas around windows and skylights where lights within the zone are controlled by day light sensors. Lights in secure areas or any area where automatic control could compromise safety may continue to be manually controlled. Exterior lighting will also be controlled by automatic means to shut off lighting when sufficient daylight is present. Upgraded controls to the latest energy efficiency code will cost approximately \$2,000.

There is no immediate need to upgrade lighting fixtures in the Apparatus Bay. Down lights shall be replaced with LED retrofit kits or LED surface mounted fixtures and shall utilize the existing fixture locations to the greatest extent. If the entire ceiling is to be replaced, the light fixtures shall be replaced with modern LED fixtures that are appropriate for the spaces and modern in appearance. Benefits of LED vs Fluorescent are longer lamp life, lower maintenance costs, lower operating costs, ease of disposal, and superior controllability. Exit signs shall be replaced with modern LED exit signs with integral battery back-up. All emergency battery units shall have new batteries installed.

Fire Alarm System

There currently is no fire alarm system on site. Residential style smoke detectors were observed in the sleeping areas and area outside of sleeping areas for compliance with the IBC.

Recommendations

Per review of the International Building Code, this type of facility would likely be a combination of B, R-2, and S-2. None of the conditions are met to require a fire alarm system. Dewberry would recommend that existing smoke detectors within the facility be replaced with hard wired units with battery back-up. The new units shall utilize wireless technology to transmit alarm signals to all other units within the network so that all units alarm when one unit detects smoke.

Arc Flash Labeling

In accord with NEC (National Electrical Code) and NESC (National Electrical Safety Code) electrical equipment shall be labeled to indicate the potential for Arc Flash Hazard and level of PPE (Personal Protective Equipment) used when maintaining or operating the equipment. All of the equipment in this facility does not include the required labels.

Recommendations

A study to perform the Arc flash Hazard analysis is recommended to be performed immediately. The cost to perform this study and provide labeling is approximately \$500.

PLUMBING SYSTEMS

Domestic Water System

The domestic water service enters the building on the north wall of the Apparatus Bay. The size of the service is 1-1/2". There is not a backflow preventer on the water service. The gas fired domestic water is an A.O. Smith, model GCV 50 200, 40 MBH heater and installed in 2006, with a Grundfos model UP15-58 FC circulating pump.

Urinals and toilets are wall hung, American Standard with Sloan manual flush valves. Lavatories are mounted in the countertops with manual faucets. Sinks are stainless steel double bowl counter mounted with manual faucets. All appear to be in working order.

A floor drain in the Apparatus Bay occasionally starts to smell.

Recommendations

Dewberry recommends that a master mixing valve be added at the water heater. That the gas water heater be replaced in the next 10 years.

Fire Protection System

None.

Recommendations

None.

TECHNOLOGY SYSTEMS Structured Cabling

In its present state, the structured cabling system meets the basic operational needs of the department. Hardwired drops are present where they are needed, but there are limited spare drops that prevent support of future systems. Much of the existing structured cabling system has been installed in phases over time and done so in a haphazard manner. The installation does not meet current industry standards and most likely was not tested for performance. As a result, it's questionable whether the cabling system is performing to its optimum level, or if it meets a manufacturer's warranty for performance. Staff also expressed difficulty in identifying active network cable versus cable for other systems or even abandoned cable.

Support of an upgraded wireless LAN is needed. The current wireless LAN is basic in nature and is shared by both emergency systems and personal use by the staff.



Recommendations

It is recommended that the existing cabling system be replaced with a standards compliant Category 6 performance grade system. In addition to an immediate improvement of the cosmetic nature of the existing installation, replacement of the cabling system would result in:

- A standards based installation that has been tested for performance.
- A centralized location for termination and housing of head end electronics for emergency systems.
- Identified cabling that is clearly labeled.

In addition to replacement of the existing cabling, provisions should be made for support of future network based devices for signage, displays and other devices integral to station alert and notification systems.

It is also recommended that a wireless survey of each building be performed to identify preferred locations of wireless access points. It was noted that internet services is provided via broadband from the local cable provider. Should the City extend its fiber optic network to include each fire station, each station would benefit not only from direct access to City networks, but also shared use of the City's internet service provider. It is also strongly suggested that the Department work with the City's IT department to develop partitioned networks that separate emergency system network traffic from personal use. Unless otherwise noted, it is assumed that cellular coverage is sufficient throughout all facilities and that no supporting

antenna systems are required for amplification of cellular service.

Station Alert and Alarm Notification

The existing station alert system is very basic in nature and is limited to tone and alarm only.

Recommendations

Modifications and upgrades are recommended resulting in both audible and visual notification methods. Modern computer aided dispatch systems utilize a variety of signaling devices including LED signage and large format wall displays, in addition to traditional audible announcements. Providing visual representation of the alert provides additional direction and input that a simple audible alarm lacks.

Station paging systems should be evaluated on a case by case basis. Performance of the systems should be evaluated to confirm:

- Consistency in coverage of each station.
- Clear audible reproduction.
- Sound pressure levels sufficient to overcome the ambient sound levels of each space.

In addition to evaluation of each system, consideration of the acoustics of each space should also be evaluated. When needed, architectural modification should be made to minimize unwanted reflections that would otherwise deter the quality of reproduced sound.

Additional Considerations

As noted above, centralization of emergency system electronics is recommended. In addition to providing a secure location for this equipment, dedicated emergency power can be provided that utilizes uninterruptable power supplies and generator backup.

Consideration should also be given to future enhancements to building security including access control/alarm monitoring and closed circuit television monitoring and recording. In addition to securing these valuable properties, electronic systems can be used to simplify staff access to the facility, control and monitor secure locations such as pharmaceutical and equipment storage, and provide a visual record of events in key areas such as the Apparatus Bay, entrances to the facility, etc.

BUILDING ENVELOPE Exterior Walls

Exterior walls consist of modular brick veneer construction with CMU back up wall. It is assumed based on typical construction from the era of the building (1970s), that the wall construction is a cavity wall system which contains an air space between the back up and the veneer. However it is possible this structure is a monolithic with the CMU back up
wall without a cavity. The lack of thru wall flashing and weeps at the base of the wall indicates monolithic system, however, on the interior the backup CMU has significant cracks developed that are severe enough that it would be expected to come through the veneer as well. Without destructive investigation, it is not possible to determine with certainty. For the purposes of the assessment, a cavity wall system is assumed. There is also vertical sheet metal siding/fascia with sheet metal soffits around the perimeter edge of the roof.



Figure #7-8 Saturated brick with weathered joints and spalling bricks and mortar is evidence of captured moisture.

On the east and north side of the building, the brick shows signs of repeated water infiltration without a means of escaping the facility. Particularly where there isn't an overhang, however it should be noted that at the time of the observation it was raining. In addition to the saturated brick, there are many weathered and failing mortar joints.

Assuming that this system is indeed a cavity wall with an air space, there should be thru wall flashing and weeps at the base of the brick wall, at roof to wall transitions, as well as above openings. None were observed. This would contribute to the saturated brick if water is collecting in the cavity wall and mortar joints are failing. It can also contribute to water infiltration at roof to wall transitions if no thru wall flashing is provided.



Figure #7-9 No thru wall flashing with weeps.



Figure #7-10 No control joints provided in masonry resulting in cracking at corners and at openings.

At corners of the building the brick is cracking likely because of expected movement in brick veneer cavity wall systems.

There are a few damaged bricks at the upper corner of one of the overhead doors on the east side of the Apparatus Bay. Cast stone sills all have failing mortar joints.



Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to exterior walls.

- Investigate cavity wall construction by removing small portion of masonry at base of wall. Determine if cavity wall construction.
- With cavity wall construction verified, remove 24" of masonry at base of wall and above openings. Install thru wall flashing with weeps and drip edge.
- 3) Similarly to Station #1, remove 24" of masonry at roof to wall transitions and install thru wall flashing with weeps and a drip edge. Install 2-piece counter flashing to protect roof termination.
- 4) Repointing is required on all sides of the building where mortar has failed or delaminated from brick.
- 5) Cut in expansion joints at corners of building and at openings. Locate joints at existing cracks.
- 6) Replace damaged bricks.
- 7) Rake out mortar joints at cast stone sills and provide sealant. When window system is replaced it is recommended to remove cast stone sills and installing flashing with weeps and reinstall sill.

Roofing

The roof was replaced approximately 7-10 years ago with single ply EPDM membrane system. The typical roof warranty for this system is 20 years. The membrane is in good condition. There is good drainage provided with crickets and the edge terminations are done well.



Figure #7-11 EPDM membrane roof.



Figure #7-12 Missing thru wall flashing.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the roofing systems.

- 1) Replace roof at end of warranty.
- 2) Address roof termination where thru wall flashing work is described in exterior wall section.

Windows and Entrance Systems

All exterior window glazing systems are anodized aluminum storefront including main entrances into the facility and an interior entrance from Apparatus Bay into Day Room. Secondary and egress exit doors are hollow metal doors and frames.

The storefront systems have experienced repeated water infiltration which is likely due to age of system, lack of sill pan flashing, and no weeps at base of storefront. The worst section of storefront has been replaced at the Day Room and occupants have not noticed water infiltration. It should be noted the new installations have high performance sill pan flashing which allow the storefront to weep properly.

Occupants also complain of the air infiltration and 'drafty' nature of the windows and the exterior doors, especially in the Sleeping Quarters.



Figure #7-13 Storefront system at sleeping quarters.

It appears that the storefront systems are original to the building and assumed not to be thermally broken systems. It appeared that the insulated glazing units had bugs in the air space which indicates failed seals in the glazing units.



Figure #7-14 Failing sealant at perimeter of openings.

Most of the original sealant around the perimeter of the windows, doors, and overhead doors is failing. They are either losing adhesion or they are hardened and cracked. Storefront entrances do not have sufficient weather stripping at head, jambs, stills, and stiles.

Hollow metal door and frame for egress from sleeping quarters is rusting at base and does not have sufficient weather stripping. The transom also appears to have cracked glazing or panel. The hinges are also rusting.



Figure #7-15 Door is rusting with damaged transom panel.

Many doors with in the facility do not have compliant hardware for rated openings under current construction standards. Some of the doors and frames have rated labels, but do not always match up. Much of the glazing does not meet safety glazing ratings or flame resistance ratings.

There is water infiltration through the overhead doors on the east side of the building. The windows in the door also leak. One of the Apparatus Bay overhead doors on the west side cannot open fully due to exhaust system duct work that was installed in its way. This prevents engine use on the west side of the building (currently the engine in this bay is a backup for the airport according to the occupants).

Dewberry

Three (3) of the Apparatus Bay overhead doors are missing the safety sensors at base of door.



Figure #7-16 Water infiltration at overhead door and missing safety sensor.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Windows and Entrance Systems.

- Replace all storefront systems and glazing with thermally broken storefront with high performance sill pan flashing and silicone sealant. Provide appropriate compliant hardware.
- 2) Replace hollow metal door and frame with insulated hollow metal door and frame and weather stripping. Provide compliant hardware.
- 3) Provide compliant hardware for rated openings.
- Provide compliant glazing for safety glazing and rated glazing.
- 5) Replace weather seals and glazing on east overhead doors. Doors also need to be painted. Replacement might be a consideration.
- 6) Rework duct work that prevents west overhead door from opening.
- 7) Install safety sensors at three (3) overhead doors where they are missing.

ARCHITECTURAL FINISHES Day Room

The Day Room wall finish is panelized wood veneer over CMU walls, painted CMU, painted plaster ceiling, and VCT flooring.

Some VCT was recently replaced due to water infiltration at storefront. The storefront has recently been replaced. The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.



Figure #7-17 Day Room with full height storefront glazing system.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Day Room.

- 1) Add carpet to Day Room to improve acoustics.
- 2) Replace hard ceiling with suspended acoustical ceiling tile to improve the acoustics in the space.
 - a. The hard ceiling also results in surface mounted cabling for power and technology. The hard ceiling also makes lighting replacement very limited in options without replacing the ceiling.

Kitchen

The Kitchen finishes include painted plaster soffits, painted CMU walls, painted plaster ceiling, and VCT flooring. The cabinets are metal cabinets with plastic laminate countertops.



Figure #7-18 Kitchen cabinets are dated and worn from repeated use.

Cabinets are showing signs of wear in hardware and rust in the base of shelves and cabinets.

Walls are dirty and faded. Ceiling exhaust and supply grilles are dirty.

VCT floor has open joints between tiles around the room perimeter.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Kitchen.

- Replace cabinets when based has rusted through. Under current accessibility codes direct alterations must meet ADA 2010 and Illinois Accessibility Code. Replacement will require 34" countertop height and accessible sink.
- 2) Clean and repaint walls and ceiling.
- 3) Replace VCT floor.

Toilet and Locker Room

The Toilet and Locker Room finishes include painted gypsum wallboard ceilings, painted CMU walls mosaic tile wainscot, and mosaic tile floor. The lockers and toilet partitions are prefinished steel. The lavatories are drop sinks in metal base cabinets with plastic laminate countertops.

The base of the cabinet is rusting through. Currently has plywood for support.



Figure #7-19 Lavatory in Toilet and Locker Room is rusting in the base cabinet.

Paint is peeling in different locations, particularly at shower area. It is likely is a result of the exhaust fan being located in the toilet area rather than the shower area.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Toilet and Locker Room.



- Replace cabinets. Under current accessibility codes direct alterations must meet ADA 2010 and Illinois Accessibility Code. Replacement will require 34" countertop height and accessible sink.
- 2) Remove peeling paint and repaint.

Sleeping Quarters

The Sleeping Quarters wall finish is painted CMU walls and wood veneer panels over wood furring, painted plaster ceiling, and VCT flooring.

Plaster ceiling has cracks in multiple locations.

Ceiling paint is peeling in a few locations.



Figure #7-20 Peeling paint in Sleeping Quarters.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Sleeping Quarters.

- 1) Repair plaster ceiling.
- 2) Remove peeling paint and repaint.
- 3) Add carpet to Sleeping Quarters to improve acoustics.
- Replace hard ceiling with suspended acoustical ceiling tile to improve the acoustics in the space.

 a. The hard ceiling also results in surface mounted cabling for power and technology. The hard ceiling also makes lighting replacement very limited in options without a replacement.

Apparatus Bay

The finishes in the Apparatus Bay are painted CMU, exposed painted steel structural deck and joists, and unfinished concrete slab.

The paint on the walls is fading or discolored throughout. In many locations the paint is peeling.

There are a number of cracks in the CMU throughout. Some can be attributed to shrinkage cracks in the CMU or lack of control joints at openings. However many of the cracks are much more serious in size and pattern which could be due to structural loading and/or lateral loading. Some cracks break horizontally along the roof structure of the living space. Others break directly vertical through the CMU blocks (particularly at precast lintels). Finally many are diagonal and stem from corners of openings and generally follow the mortar joints. See structural section for additional information and recommendations.



Figure #7-21 Horizontal crack in CMU in Apparatus Bay.

The bare concrete floor was likely treated with a sealer at time of construction, but has likely worn off over time. As mentioned in Windows and Entrance system section, the doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware.

There is a step down from Living Spaces to Apparatus Bay which is not ideal for safety.

Occupants complain that due to the lack of air seal on doors from Apparatus Bays into the Living Spaces, when large jets fly and take off, the fumes from the jets enter the living space. Particularly when the overhead doors are open.



Figure #7-22 Vertical cracks in CMU.



Figure #7-23 Spalling concrete at man hole in Apparatus Bay.

The concrete around the manhole inside Apparatus Bay is cracking and spalling. Occupants also complain of the smell coming from the man hole.

The acoustics in the room are not very good for intelligibility of the call speaker system due to hard/reflective surfaces on the floor, wall, and ceiling.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Apparatus Bay.

- 1) Refer to structural recommendations for CMU.
- Repaint Apparatus Bay, an epoxy based paint is recommended if trucks are washed in Apparatus Bay.
- 3) Recommend applying a new sealer/hardener to concrete floor. An epoxy floor is an option as well.
- 4) Improve separation with rated doors, frames, glazing, and compliant hardware.
- 5) Patch concrete at manhole.
- 6) Perform acoustical analysis and add acoustical treatments to the wall and ceiling/roof deck to improve intelligibility. Painted 2" tectum panels using C-20 or C-40 method would be recommended for this application.

Mechanical Storage Room

The finishes in the Mechanical Storage Room off of the Apparatus Bay are painted CMU, painted gypsum ceiling, and unfinished concrete slab.

The paint on the walls is fading or discolored. Paint is peeling.

The doors and windows would not meet current separation requirements for the frames, doors, glazing, and hardware.

There is a water leak that comes through the exhaust fan.

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the Mechanical Storage Room.

- 1) Repaint CMU.
- 2) Improve separation with rated doors, frames, glazing, and hardware.
- 3) Repoint cracks in CMU.

SITE PAVING AND DRAINAGE General

Site paving is made up of concrete aprons, concrete drives, concrete sidewalks, asphalt drives, and asphalt parking. The drainage on the site is mostly from storm water sewer management. All building roof drainage utilizes internal gutters which are connected into the site storm sewer.

Most of the site concrete is in good condition with only minimal cracking and spalling. Sidewalks on south side of building have exposed aggregate, but no signs of spalling or significant settlement.

The asphalt parking lot and drive are aged and have a fair number of cracks, but have been sealed. Not many locations showing depressions or settlement.



Figure #7-24 East asphalt parking and concrete drive

Recommendations

The following is a summary of recommended corrective actions for the issues pertaining to the site paving and drainage.

 Patch any spalled concrete throughout as required to protect exposed aggregate.

- 2) Develop replacement strategy for replacement sections of site concrete paving as they become worn and deteriorated.
- 3) Replace asphalt parking lot with mill overlay. Patch and repair areas of settlement.

General

The facility was built prior to the adoption of accessibility codes by the State of Illinois or the Federal Government and is not required to be brought up to code unless specific elements are 'altered' or when 'alterations' of a building exceed a percentage of the replacement cost of the facility. This should be considered when any alterations are made to a facility.

The following are only recommendations.

There is not an accessible entrance to the facility. There is a small step at each entrance.

Recommendations

The following is a summary of recommendations to provide more accessibility to the facility.

Provide accessible entrance from handicap parking space.

SUMMARY OF STATION #7 General

Fire station #7 is in fair condition overall. There are some issues with the masonry that are inherent to the construction of the facility that require attention to prolong the life of the building. There are also a few issues that could potentially interfere with day to day operations of the station. In addition to these issues there are systems that are beyond their anticipated useful life and will require replacement.

The core structure of the facility is in fair condition with a significant amount of cracking to the CMU walls in the Apparatus Bay due to settlement and/or differential movement. The exterior brick veneer has some inherent

issues with cavity drainage, expansion & contraction, and some mortar & brick deterioration.

It should be noted that nature and use of this station is unique in that the City of Decatur Fire Department and the Decatur Park District Airport Fire Department both operate out of this facility. The facility is owned by the Decatur Park District and they assign 4 firefighters to 2 shifts to directly serve the airport with 2 types of apparatus. The City of Decatur Fire Department assigns 12 firefighters to 3 shifts of 4 firefighters with a single 75' aerial ladder apparatus to operate out of this facility. The City of Decatur Fire Department covers their own territory outside of the airport and then serves as back up to the Airport Fire Department. Since the facility is owned by the Park District, this restricts the Fire Department in different ways.

Station #7 - Capital Replacement Costs by Year Year Cost Today Budget Need Priority 1 Priority 2 Prority 3 Pr cost escalated to replacement date 1 2 3														
Year	Cost Today	Budget Need	Priority 1	Priority 2	Prority 3	Priority 4								
		cost escalated to		1 0	2									
2015	\$320 501	\$320 501	\$113.6	35 \$151 523	\$7 843	\$47 500								
2015	40 <u>20,00</u> 1 ۳۵	φ020,001 \$0	\$113,0	\$0 \$0	φ7,0 1 0 \$0	φ-77,500 \$0								
2010	\$41 000	\$43.497		\$0 \$43.497	\$0 \$0	\$0 \$0								
2018	φ+1,000 \$0	\$0		\$0 \$0 \$0	\$0 \$0	\$0								
2019	\$0 \$0	\$0		\$0 \$0	\$0 \$0	\$0								
2020	\$39 100	\$45,328		\$0 \$4 057	\$0 \$0	\$41 270								
2021	\$3,000	\$3,582		\$0 \$0	\$0	\$3 582								
2022	\$0	\$0		\$0 \$0	\$0	\$0,002								
2023	\$84,000	\$106.409		\$0 \$106,409	\$0	\$0								
2024	\$0	\$0		\$0 \$0	\$0	\$0								
Sub Total After	\$487,601	\$519,316	\$113,6	35 \$305,486	\$7,843	\$92,352								
10 Years					. ,									
2025	\$550	\$739		\$0 \$739	\$0	\$0								
2026	\$0	\$0		\$0 \$0	\$0	\$0								
2027	\$56,000	\$79,843		\$0 \$0	\$0	\$79,843								
2028	\$0	\$0		\$0 \$0	\$0	\$0								
2029	\$0	\$0		\$0 \$0	\$0	\$0								
2030	\$9,453	\$14,728		\$0 \$0	\$394	\$14,333								
2031	\$0	\$0		\$0 \$0	\$0	\$0								
2032	\$0	\$0		\$0 \$0	\$0	\$0								
2033	\$88,181	\$150,123		\$0 \$0	\$63,043	\$87,079								
2034	\$0	\$0		\$0 \$0	\$0	\$0								
2035	\$449	\$811		\$0 \$0	\$811	\$0								
2036	\$307	\$572		\$0 \$0	\$572	\$0								
2037	\$0	\$ 0		\$0 \$0	\$0	\$0								
2038	\$0	\$ 0		\$0 \$0	\$0	\$0								
2039	\$0	\$O		\$0 \$0	\$0	\$0								
2040	\$0	\$ 0		\$0 \$0	\$0	\$0								
2041	\$0	\$ 0		\$0 \$0	\$0	\$0								
2042	\$0	\$O		\$0 \$0	\$0	\$0								
2043	\$0	\$0		\$0 \$0	\$0	\$0								
2044	\$0	\$0		\$0 \$0	\$0	\$0								
Sub Total for	\$154,941	\$246,816		\$0 \$739	\$64,821	\$181,25								
Remainder Years														
Overall Total	\$642,542	\$766,132	\$113,6	35 \$306,225	5 \$72,664	\$273,60								

BUDGET SUMMARY

		CONSOL	IDATED SYSTEM	IS DATA																			capital replacement budget
				Existing				Evalua	ated Condition	Estimated Replacement Budget													
	Building or Zone (If more than			Description & L	Year Installed	Anticipated Years of Life	Calculated Renewal Year	Evaluation Date	Remaining Life Expectancy	Recommended Action			Cost Basis		Current Replacement Cost	Escalated Cost at BUDGET YEAR	Priority Level	Budget Year	Comments				
Entr 48	y # Building ID 9 Station #7	Category EXT. BLDG.	Family Roofs or Decks	Component Roofing	Entity Single Plv EPDM	Manufacturer	Model	All	Installed 2003	Lifespan 20	Renewal 2023	Evaluatio	on Remainir	Replace.	qty.	units	pro-ration	unit cost \$14.00	cost \$84.000	Budget \$106.409	Priority	Year 2023	Comment Replace at end of warranty.
					Roofing Membrane				2003		2023	2013			0,000		10070	ţ1 liu	ço ijuus	\$100J.105	_	2023	
49	0 Station #7	CORE SYST.	Structural Systems	Load Bearing Masonry	CMU Walls			Apparatus Bay	1970	45	2015	2015	0	Repair (2) distressed CMU pilasters on northern Apparatus Bay wall.	1	1 ea	100%	\$10,000.00	\$10,000	\$10,000	• 1	2015	Procure a licensed structural engineer to prepare a design to repair the distressed pilasters. Cost will also include labor, materials, etc
49	1 Station #7	EXT. BLDG.	Walls	Cladding	Masonry-Brick			All Facades	1970	45	2015	2015	O	Replace damaged bricks and tuck point delaminated mortar joints, joint cracks, and failing mortar in brick.	< 1	1 allow	100%	\$20,000.00	\$20,000	\$20,000	• 2	2015	At some corners of the building and below the windows there are cracks due to lack of masonry expansion joints and control joints in the brick and back up CMU. There are also locations of delaminated mortar. Replace damaged bricks and replace failing mortar joints in brick.
49	2 Station #7	EXT. BLDG.	Walls	Cladding	Masonry-Brick Thru Wall Flashing			All Flashings.	1970	45	2015	2015	0	Investigate masonry for cavity thru wall flashings.		l allow	100%	\$1,000.00	\$1,000	\$1,000	2	2015	It is uncertain if the building wall system is a true cavity wall construction with a drainage cavity between back up CMU and brick veneer. Before proceeding with any masonry work, an initial investigation of the wall system should be done by removing small portions of brick veneer at flashings to determine the make up of the wall system.
49	3 Station #7	EXT. BLDG.	Walls	Cladding	Masonry-Brick Thru Wall Flashing			Base of exterior walls	. 1970	45	2015	2015	0	Install thru wall flashing.	225	5 lf	100%	\$100.00	\$22,500	\$22,500	2	2015	Remove 24" of brick masonry at base of wall. Install flexible membrane thru wall flashing with sheet metal drip and reinstall removed brick.
49	4 Station #7	EXT. BLDG.	Walls	Cladding	Masonry-Brick Thru Wall Flashing			Apparatus Bay clerestory wall.	1970	45	2015	2015	()	Install thru wall flashing.	115	5 If	100%	\$100.00	\$11,500	\$11,500	• 2	2015	Remove 24" of brick masonry above the roof flashing termination height. Install flexible membrane thru wall flashing with sheet metal drip and reinstall removed brick. Install 2-piece counter flashing system connected to drip edge to cover roof termination.
49	5 Station #7	EXT. BLDG.	Walls	Cladding	Masonry-Brick Thru Wall Flashing			Above Doors	1970	45	2015	2015	0	Install thru wall flashings.	25	5 lf	100%	\$100.00	\$2,500	\$2,500	2	2015	Remove 24" of brick masonry above lintel. Install flexible membrane thru wall flashing with sheet metal drip and reinstall removed brick.
49	6 Station #7	EXT. BLDG.	Walls	Cladding	Masonry-Brick			All Facades	1970	45	2015	2015	0	Cut in masonry expansion joints at exterior brick and install backer rod and sealant at openings and corners of building		I allow	100%	\$8,000.00	\$8,000	\$8,000	2	2015	No expansion joints are present in brick veneer. To prevent cracks in mortar and possibly brick, cut in expansion joints at openings, corners, and other recommended locations.
49	7 Station #7	EXT. BLDG.	Walls	Cladding	Masonry-Stone Sills			All Windows with Stone sills	1970	45	2015	2015	0	Rake out mortar and install sealant or mortar.	1	1 allow	100%	\$2,500.00	\$2,500	\$2,500	2	2015	
49	8 Station #7	CORE SYST.	Structural Systems	Steel Lintels	Masonry Lintel			All exterior steel lintels at openings	1970	45	2015	2015	0	Remove rust and repaint lintels.	1	1 allow	100%	\$2,000.00	\$2,000	\$2,000	2	2015	
49	9 Station #7	EXT. BLDG.	Walis	Openings	Windows-Aluminum Storefront			All windows except Day Room Windows	1970	40	2010	2015	⊗ -5	Replace existing storefront windows and entrances.	456	5 sf	100%	\$60.00	\$27,360	\$27,360	• 1	2015	Existing window systems do not appear to be thermally broken systems. Occupants believe they are quite drafty indicating air infiltration. Occupants indicated that day room windows that were replaced improved draft and resolved some water infiltration issues. At the age of the system, recommend replacing.
50	0 Station #7	EXT. BLDG.	Walls	Openings	Hollow Metal Doors and Frames			All exterior hollow metal doors and frames	1970	30	2000	2015	-15	Replace existing hollow metal door and frame.	1	1 ea	100%	\$3,000.00	\$3,000	\$3,000	1	2015	Doors and frames are rusting.
50	station #7	GROUNDS	нагозсаре	Concrete	Sidewalks			All	1970	50	2020	2015	5	Replace concrete.	450	JIST	100%	\$8.00	\$3,600	\$4,173	4	2020	showing, but not much settling or spalling.
50	2 Station #7	GROUNDS	Hardscape	Concrete	Drives			North Drive	2003	30	2033	2015	18	Replace concrete paving.	465	5 sy	100%	\$110.00	\$51,150	\$87,079	• 4	2033	Some sections of concrete have cracked through, but no movement. Very little spalling. Patch as required until replacement. Replace sections if deterioration becomes severe.
50	3 Station #7	GROUNDS	Hardscape	Asphalt Paving	Asphalt Parking Lot			East Parking Lot	2000	15	2015	2015	() 0	Replace with mill and overlay.	1,500	Disy	100%	\$25.00	\$37,500	\$37,500	• 4	2015	Seal cracks and patch and repair settled sections as required until full replacement. Cost includes replacement with mill and 11/2" overlay, repair of the base/subbase for 20% of the parking lot, and striping.

Printed: 2/22/2016





Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifespan	Renewal	Evaluation	Remainin	g Action	qty. unit	s pro-ration	unit cost	cost	Budget Pi	riority	Year	Comment
504	Station #7	INT. FIT-OUT	Finishes	Rated Openings	Hollow Metal Doors and Frames			Apparatus Bay	1970	40	2010	2015	⊗ -5	Replace door with rated assembly.	2 ea	100%	\$3,000.00	\$6,000	\$6,000	2	2015	Current codes require separation between Apparatus Bay and Living Spaces. Recommend additional protection with rated assembly at door between Apparatus Bay and Living Spaces.
505	Station #7	INT. FIT-OUT	Finishes	Rated Openings	Aluminum - Storefront Entrance			Apparatus Bay	1970	40	2010	2015	⊗ -5	Replace door with rated assembly.	1 ea	100%	\$4,000.00	\$4,000	\$4,000 🛑	2	2015	Current codes require separation between Apparatus Bay and Living Spaces. Recommend additional protection with rated assembly at door between Apparatus Bay and Living Spaces.
506	Station #7	EXT. BLDG.	Walls	Openings	Overhead Doors			Apparatus Bay - West Doors	2000	20	2020	2015	✓ 5	Replace. 1 door cannot open as a result of duct work.	2 ea	100%	\$8,000.00	\$16,000	\$18,548	4	2020	If increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000 ea.
507	Station #7	EXT. BLDG.	Walls	Openings	Overhead Doors			Apparatus Bay - East Doors	2000	20	2020	2015	⊘ 5	East doors do not seal very well with water penetrating in around perimeter. Glazing in doors have failed gasketing. Replace.	2 ea	100%	\$8,000.00	\$16,000	\$18,548	4	2020	if increase response time is a priority, a fast 4-fold door system should be considered for some of the bays. These doors should be budgeted at \$35,000 ea.
508	Station #7	CORE SYST.	HVAC	Apparatus Bay exhaust system.	Duct Work			Apparatus Bay - West Doors	1995	20	2015	2015	0	Rework duct work of exhaust system to allow door to operate as intended.	1 allow	100%	\$3,500.00	\$3,500	\$3,500	2	2015	Currently there is work out equipment in the way of the door and this bay of the Apparatus Bay has a truck that serves the airport out the east doors.
509	Station #7	EXT. BLDG.	Walls	Cladding	Masonry-Brick			All Facades	1970	45	2015	2015	O	Replace damaged bricks and tuck point delaminated mortar joints, joint cracks, and failing mortar in brick.	1 allow	100%	\$20,000.00	\$20,000	\$20,000	2	2015	At some corners of the building and below the windows there are cracks due to lack of masonry expansion joints and control joints in the brick and back up CMU. There are also locations of delaminated mortar. Replace damaged bricks and replace failing mortar joints in brick.
510	Station #7	INT. FIT-OUT	Finishes	Flooring	Vinyl Composite Tile			Day Room, Kitchen, Sleeping Quarters	1995	20	2015	2015	0	Replace flooring.	2,300 sf	100%	\$8.00	\$18,400	\$18,400 🔴	1	2015	Recommend carpet tile in day area and Sleeping Quarters to improve acoustics. Cleanable surface for dining and kitchen.
511	Station #7	INT. FIT-OUT	Finishes	Flooring	Mosaic tile			Restroom	1970	60	2030	2015	15	Replace flooring	575 sf	100%	\$16.00	\$9,200	\$14,333 🔵	4	2030	Tile appear to be in good condition.
512	Station #7	INT. FIT-OUT	Finishes	Flooring	Concrete sealer/ hardener.			Apparatus Bay	1990	20	2010	2015	⊗ -5	Re-seal floor with concrete sealer/hardener.	2,500 sf	100%	\$1.50	\$3,750	\$3,750	2	2015	There is still a sheen to parts of the floor so its possible the floor has been re-sealed since the initial application. *Another option is to provide an epoxy floor coating, but at additional cost.
513	Station #7	INT. FIT-OUT	Finishes	Casework	Kitchen Casework			Kitchen	1970	40	2010	2015	⊗ -5	Replace casework.	1 allow	100%	\$18,000.00	\$18,000	\$18,000	1	2015	Outdated casework and metal base inside is rusting through. Some of the drawers are difficult to open. Cabinet faces are worn. Should be replaced.
514	Station #7	INT. FIT-OUT	Finishes	Casework	Lavatory			Restroom	1970	40	2010	2015	⊗ -5	Replace lavatory and casework with ADA compliant sink and casework.	1 allow	100%	\$6,000.00	\$6,000	\$6,000	1	2015	Outdated casework and metal base inside is rusting through. Should be replaced.
515	Station #7	INT. FIT-OUT	Finishes	Cellings	Plaster Ceilings			All Areas.	1970	45	2015	2015	0	Replace with 2x2 ceiling grid as part of lighting and technology upgrades.	2,875 sf	100%	\$5.00	\$14,375	\$14,375	1	2015	Plaster ceiling are in good condition and only require repair to minor cracks, however the hard ceilings with the hard wall and floor surfaces makes the acoustics poor in all spaces and difficult to understand calls coming through the system. The hard ceiling also does not allow for easy lighting replacement and cable management. Recommend replacement with a suspended 2x2 ceiling.
516	Station #7	INT. FIT-OUT	Finishes	Painting	CMU Walls			Apparatus Bay	1995	20	2015	2015	0	Re-paint	4,000 sf	100%	\$2.00	\$8,000	\$8,000	1	2015	Apparatus bay has significant peeling of paint, discoloring, and water stains. Prep and repaint.
517	Station #7	INT. FIT-OUT	Finishes	Painting	CMU Walls & Ceilings			Kitchen & Restroom	1995	20	2015	2015	0 🚱	Re-paint walls and ceilings.	2,000 sf	100%	\$1.50	\$3,000	\$3,000	1	2015	Paint is peeling on the ceiling in restroom and the walls are dirty in the kitchen and restroom.
518	Station #7	INT. FIT-OUT	Finishes	Acoustical Treatments	Tectum Panels			Apparatus Bay	1970	45	2015	2015	0	Add 2" Tectum Panels with 2x furring strips (C40 method) to CMU walls and bottom of deck. Painted.	1 allow	100%	\$8,000.00	\$8,000	\$8,000	4	2015	Perform acoustical study to determine appropriate treatments to improve intelligibility of the speaker system for emergency calls.
519	Station #7	CORE SYST.	Power	Air Compressor Disconnect - 30A, 2-phase, 240V, fused at 20A	Disconnect Switch	Square D	General Duty	Mech Space	1970	30	2000	2015	-15	Replace with new equivalent.	1 ea	100%	\$1,962.00	\$1,962	\$1,962	3	2015	Not immediate need for replacement as it is still functional, but should have priority over other electrical equipment.
520	Station #7	CORE SYST.	Power	Air Compressor Disconnect, 30A, 240V, 1-Phase, 2- pole, NEMA 1, Fused at 20A	Fused Disconnect	Square D	D221-N	Apparatus Bay	2000	30	2030	2015	15	Replace with new equivalent.	1 ea	100%	\$253.16	\$253	\$394	3	2030	Replace with new at the end of useful life.

Printed: 2/22/2016







Entry #	Building ID	Category	Family	Component	Entity	Manufacturer	Model	Location	Installed	Lifesnan	Renewal	Evaluation	Remainin	g Action	atv.	units pro-ration	unit cost	cost	Budget	Priority	Year	Comment
521	Station #7	CORE SYST.	Power	Automatic Transfer Switch, 400A, 3-phase, 208V. Park	Automatic Transfer	Siemens	SR	Outside	2003	30	2033	2015	18	Replace with new equivalent.	1 ea	100%	\$3,367.40	\$3,367	\$5,733	3	2033	Replace with new at the end of useful life.
522	Station #7	CORE SYST.	Power	District Owned. Circ. Pump Disconnect, 30A, 125V, 1-pole, NEMA 1.	Switch Fused Disconnect Switch	Square D	D111-N	Mech Space	1970	30	2000	2015	-15	Replace with new equivalent.	1 ea	100%	\$198.75	\$199	\$199	2	2015	Not immediate need for replacement as it is still functional, but should have priority over other
523	Station #7	CORE SYST.	Lighting	Existing Soffit downlights.	Exterior Lighting			Exterior soffit at	1970	15	1985	2015	S -30	Replace with new LED retrofit	6 ea	100%	\$98.16	\$589	\$589	2	2015	Replace with new LED retrofit fixture in existing
524	Station #7	CORE SYST.	Lighting	Exterior Wall Mounted Fixtures at Apparatus Bay door.	s Exterior Lighting			Exterior Wall	2000	15	2015	2015	0	Replace with new	5 ea	100%	\$1,065.35	\$5,327	\$5,327	2	2015	Replace with new full Cutoff LED Fixtures.
535	Charling #7	CODE SVET	L'abrica	Extension Molt Manuscher Finderen Laure Land Adams de erro	Freedom Linksing			Entering Mall	2000	45	2015	2015	0	Dealers with a sw	C	100%	6070 OF	Ć1 (500	¢4.000		2015	Paralase with a second all Code of LED Finduces
525	Station #7	CORE SYST.	Lighting	Exterior wall Mounted Fixtures Low Level/Man doors	Exterior Lighting			Exterior wall	2000	15	2015	2015	0	Replace with new	b ea	100%	\$279.95	\$1,68U	\$1,680	2	2015	Replace with new full Cutoff LED Fixtures.
526	Station #7	CORE SYST.	Lighting	Provide Exterior lighting control	Exterior Lighting				1990	15	2005	2015	⊘ -10	Provide photo cell lighting control for exterior fixtures	1 all	pw 100%	\$500.00	\$500	\$500	2	2015	Add photo cell, timer, or both forms of exterior lighting control per the departments requirements. This function would be integrated with interior lighting controls when they are provided.
527	Station #7	CORE SYST.	Lighting	Interior Lighting	All interior lighting	Misc	Misc	Facility Interior	2012	15	2027	2015	12	Replace fixtures with modern	5,600 sf	100%	\$10.00	\$56,000	\$79,843	• 4	2027	
528	Station #7	CORE SYST.	Power	Main Disconnect Switch, 400A, 240V, 3-phase, 4-wire,	F Disconnect Switch	Square D		Exterior Wall	1970	30	2000	2015	-15	Replace with new equivalent.	1 ea	100%	\$2,628.41	\$2,628	\$2,628	2	2015	Not immediate need for replacement as it is still functional, but should have priority over other electrical equipment
529	Station #7	CORE SYST.	Power	Main Distribution Panel Section 1&2, 400A, 240V, 1-Ph	a Main distribution panel	Square D	NQO-41-423-4	Mech Space	1970	30	2000	2015	-15	Replace with new equivalent.	1 ea	100%	\$4,881.00	\$4,881	\$4,881	3	2015	Not immediate need for replacement as it is still functional, but should have priority over other electrical equipment
530	Station #7	CORE SYST.	Power	Natural Gas Generator. Owned by Park District per on	s Generator	Siemens	SGN048CBAL/SGN04	3 Outside	2003	30	2033	2015	18	Replace with new equivalent.	1 ea	100%	\$33,664.00	\$33,664	\$57,311	3	2033	Replace with new at the end of useful life.
531	Station #7	CORE SYST.	Power	Rooftop Unit Disconnect Switch, 100A, 240V, 2-pole, fu	us Disconnect Switch	Siemens	GF323NR	Roof	2005	30	2035	2015	20	Replace with new equivalent.	1 ea	100%	\$449.20	\$449	\$811	3	2035	Replace with new at the end of useful life.
532	Station #7	CORE SYST.	Power	Vehicle Exhaust Fan Disconnect	Disconnect Switch.	Square D	General Duty	Roof	2006	30	2036	2015	21	Replace with new equivalent.	1 ea	100%	\$307.43	\$307	\$572	3	2036	Replace with new at the end of useful life.
533	Station #7	CORE SYST.	Power	Thermal Scan Electrical Systems	Electrical Equipment				1970	45	2015	2015	0	Thermal scan equipment per	1 ea	100%	\$500.00	\$500	\$500	3	2015	Thermal Scan electrical equipment to identify existing
534	Station #7	CORE SYST	Power	Arc Elash Labeling	Electrical Equipment				1970	45	2015	2015	0	report. Perform an arc flash study and	115	100%	\$500.00	\$500	\$500	3	2015	hazardous conditions.
535	Station #7	CODE SYST	Dower	Pasammandad addition of Curae Protection Equipmon	t Electrical Equipment				1070	45	2015	2015	0	provide labels at equipment	1 10	100%	\$4.250.00	¢300	\$4.250	2	2015	Dravide surge protection devices at service papel and
555	Station #7	CORE STST.	Power						1970	45	2015	2015	0	Equipment.	1 L5	100%	\$4,550.00	\$4,550	\$4,550	2	2015	branch circuit panels.
536	Station #7	CORE SYST.	Lighting	Provide modern lighting controls	Lighting				1970	45	2015	2015	0	Provide lighting control devices	115	100%	\$2,000.00	\$2,000	\$2,000	- 4	2015	latest energy efficiency code.
537	Station #7	CORE SYST.	HVAC	Air handling Units	AHU-1 & 2 (5 -tons each)	American Standard	TXV060	In mechanical room + Outdoors	2005	12	2017	2015	2	Periodic maintenance such as lubricating and filters & belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$13,000.00	\$13,000	\$13,792	2	2017	Serves general building HVAC needs
538	Station #7	CORE SYST.	HVAC	Condensing Unit	CU-1/2 (1) 10-ton un	it American Standard	TTA120A300FA	Roof	2005	12	2017	2015	2	Periodic maintenance such as lubricating and filters & belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$7,500.00	\$7,500	\$7,957	2	2017	Serves general building HVAC needs
539	Station #7	CORE SYST.	HVAC	Duct System Cleaning	N/A	N/A	N/A	N/A	2015	5	2020	2015	⊘ 5	Periodic coil cleaning, condensate pan and drain cleaning will provide adequate continued trouble free service.	1 ea	100%	\$3,500.00	\$3,500	\$4,057	2	2020	
540	Station #7	CORE SYST.	HVAC	Exhaust Fan for Toilet Rooms	N/A	N/A	N/A		1970	12	1982	2015	⊗ -33	Replace.	2 ea	100%	\$800.00	\$1,600	\$1,600	2	2015	
541	Station #7	CORE SYST.	HVAC	Exhaust Fan	N/A	N/A	N/A	Roof	2015	10	2025	2015	10		1 ea	100%	\$550.00	\$550	\$739	2	2025	
542	Station #7	CORE SYST.	HVAC	Air handling Units	AHU-1 & 2 (5 -tons each)	American Standard	TXV060	In mechanical room + Outdoors	2005	12	2017	2015	2	Periodic maintenance such as lubricating and filters & belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$13,000.00	\$13,000	\$13,792	2	2017	Serves general building HVAC needs
543	Station #7	CORE SYST.	HVAC	Condensing Unit	CU-1/2 (1) 10-ton un	it American Standard	TTA120A300FA	Roof	2005	12	2017	2015	2	Periodic maintenance such as lubricating and filters & belts replacement will provide adequate service, but need to replace for continued trouble free service.	1 ea	100%	\$7,500.00	\$7,500	\$7,957	2	2017	Serves general building HVAC needs
544	Station #7	CORE SYST.	Plumbing	Gas Fired Water Heater		A.O. Smith	GCV 50 200	First Floor	2006	15	2021	2015	 ✓ 6 ✓ 6 		1 ea	100%	\$2,500.00	\$2,500	\$2,985	• 4	2021	
545	Station #7	CORE SYST.	Plumbing	Water Closets & Urinals: Vitreous china wall mounted		American Standard	?	First Floor	1970	30	2021	2015	667777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777777<l< td=""><td></td><td>1 ea 3 ea</td><td>100%</td><td>\$500.00</td><td>\$500 \$750</td><td>\$597 \$750</td><td>2</td><td>2021</td><td></td></l<>		1 ea 3 ea	100%	\$500.00	\$500 \$750	\$597 \$750	2	2021	
547	Station #7	CORE SYST.	Plumbing	Flush Valves (manual)		Sloan	?	First Floor	1970	20	1990	2015	8 -25		3 ea	100%	\$500.00	\$1,500	\$1,500	• 1	2015	
548	Station #7	CORE SYST.	Plumbing	Lavatories: vitreous china drop-in countertops		?	?	First Floor	1970	30	2000	2015	 -15 -15 		2 ea	100%	\$250.00	\$500	\$500	2	2015	
549 550	Station #7 Station #7	CORE SYST. CORE SYST.	Plumbing	Faucets for lavatories, sinks and service sinks Sink: double bowl stainless steel drop-in countertops		?	?	First Floor First Floor	1970 1970	20 30	1990 2000	2015	25-15		4 ea 1 ea	100%	\$500.00 \$300.00	\$2,000 \$300	\$2,000 \$300	1	2015 2015	
551	Station #7	CORE SYST.	Plumbing	Service Sink		?	?	First Floor	1970 1970	30	2000	2015	 -15 .30 		1 ea	100%	\$250.00	\$250	\$250	2	2015	
553	Station #7	CORE SYST.	Plumbing	Showers faucets and shower heads		?	?	First Floor	1970	20	1990	2015	-25		2 ea	100%	\$300.00	\$500	\$600	2	2015	

Printed: 2/22/2016







Entry #	Building ID	Category	Family	Component	Entity Manu	facturer Model	Location	Installed	Lifespan	Renewal	Evaluation Remainin	g Action	qty.	units	pro-ration	unit cost	cost	Budget Priority	Year	Comment
554	Station #7	CORE SYST.	Plumbing	Thermostatic Mixing Valve			Mechanical Room	1970	20	1990	2015 🔇 -25	No temperature limiting device for hot water. Install thermostatic mixing valve.	1	Lallow	100%	\$1,500.00	\$1,500	\$1,500	1 2015	Water at lavatories and showers must be tempered water at 110° per lilinois Plumbing Code. Thermostatic mixing valves mix cold water with the hot water to reduce temperature of water. These can be done with a master mixing valve or at the point of use.
555	Station #7	CORE SYST.	Technology	Structured Cabling System & Station Alert Notification System			Throughout Building	1994	20	2014	2015 🔇 -1	Replace structured cabling system and upgrade station alert notification system.	1	l allow	100%	\$25,000.00	\$25,000	\$25,000	2 2015	Replacement of structured cabling system for support of existing and future devices and systems. Upgrades to station alert/paging notification systems. Infrastructure for support of Owner furnished and installed technologies.
																	\$642,542	\$766,132		



Overall Assessment & Recommendation Summary

OVERVIEW

Upon review of the seven (7) fire station facilities, Dewberry provides the following assessed rankings based on the current condition of the facility, the age of the facility, a general relative comparison to modern fire station, and the cost for recommendations and corrective work relative to the size of the facility. Consideration is also given to location of the station relative to service area as well as the nature of the current site.

The budget summary provided for each station in this section is the combined dollar amount of Priority Levels 1&2 for the first 10 years utilizing the escalated 'Budget cost' from the Capital Replacement Assessment Spreadsheet. These are an 'opinion of probable costs'. Priority levels 3&4 and anything beyond 10 years were not included in the budget summary for these sections as the purpose is to create a ranking based on the current state of each fire station and their immediate needs. The Priority Level 3&4 items are considered non-important and non-urgent, these along with anything beyond 10 years could skew the comparison. It should also be noted that the budget summary numbers do not include soft costs. For a complete overview of the budget summary for each station including Priority Items 3&4 and items beyond 10 years, please refer to the Capital Replacement Assessment Spreadsheet and the associated tables and data which can be found at the end of each fire station section.

Station #5: Worst Condition

Station #5 is the station that is in the worst condition and in need of repair and necessary corrective work to prevent reoccurring issues. There are also a number of systems that are beyond their useful life or missing all together. A few of the main concerns of this facility are the nature of the site conditions with poor site drainage as well as the continual roof leaks. These root problems have caused damaged to much of the exterior of the building as well as humidity and mold problems to the interior of the building. The corrective work will require re-working of existing grades and installation of appropriate sub-drainage systems as well as re-building and repairing the exterior brick masonry work.

This facility lacks many of the modern technology available to commercial buildings and modern fire stations. Also because of its age, the fire station is lacking in appropriate fire and smoke separations that are required by modern life safety and building codes. The building itself is split level which is not ideal for safety purposes or for response calls. If significant work is done to this facility, it would likely require meeting current accessibility codes which would be costly to accommodate.

By the nature of the proximity of adjacent buildings, size of the site, and grade elevations, there is extremely limited ability to expand or enhance the building or site. Any expansion of services at this facility that would require alterations or additions to the building would be quite difficult, if not impossible.

Finally, the location of Station #5 is no longer centrally located within its service area as the City of Decatur has expanded north.

Escalated Budget Summary: \$505,211 or \$114/sqft (4400 \pm sqft)

Recommendation:

Based on the overall condition of the building, the cost to repair the current issues, and the cost & ability to modernize the facility and the nature of the site, Dewberry recommends that this facility be replaced and relocated to a more central location within its service area to reduce response times to the far north area of the City.





Figure #8-1 City of Decatur Fire Department Response Coverage Map.

Station #3

Station #3 by nature of its age and layout, Dewberry believes, this facility is not in adequate layout or in adequate condition for a modern functioning fire station.

The nature of this station is residential in its construction and function, which is partially expected from a building built in 1927. As a result, the building is lacking in fire and smoke separations between the Apparatus Bay, Day Room, and Sleeping Quarters. The building also does not have sufficient or appropriate egress as the stair is too small and narrow and exits into the apparatus bay. The Sleeping Quarters on the upper floor only has one (1) exit and needs a secondary exit.

The station also lacks modern technology available to commercial buildings and fire stations. This station is also built on a site with significant grade changes which would prove difficult to accommodate any expansion or enhancement to the building.

If significant work is done to this facility, it would likely require meeting current accessibility codes. As a result of the multiple levels of the building, age and layout of the building, and the site grade differential; the cost to make the facility accessible or meet any required existing building code would be significant.

Escalated Budget Summary: 256,296 or 91/sqft (2820± sqft)

Recommendation:

Based on the age and overall condition of the building, the cost to repair the current issues, the cost & ability to modernize the facility, and the nature of the site, Dewberry recommends that this facility be replaced.

Station #7

Station #7 at the Airport is a building in fair condition, but has some inherent issues with its construction as well as its location. This facility is owned by the Decatur Park District rather than the City of Decatur Fire Department. In addition to this joint use relationship with Park District Airport Fire Department, the City of Decatur Fire Department takes on responsibility for maintaining this station.

The building has significant cracking to the load bearing CMU that have developed and can be observed in the Apparatus Bay. This at minimum needs to be monitored to determine if condition worsens, but warrants a more thorough forensic investigation to determine the nature and extent of the issue which cannot be resolved by visual observation.

The exterior brick masonry also does not have the appropriate detailing at the base of the wall, above openings, and at roof transitions for flashing. This results in water infiltration and deterioration of the brick masonry. The building also lacks expansion joints to control brick cracking.

Finally, the location of the facility results in a service coverage area that is not ideal for the department. The current location of fire stations #2, #6, and #7 results in a coverage area that requires Station #2 to service an area on the other side of Lake Decatur by crossing the bridge on US route 36 and Station #6 to service an area on the other side of Lake Decatur by crossing the bridge on US 51 (Franklin St.) and crossing Lost Bridge Road bridge. By changing the location of Station #7, the service coverage area could be adjusted to minimize the need to cross Lake Decatur to serve partial areas. This would result in more efficient coverage.

Escalated Budget Summary: \$419,121 or \$75/sqft (5600± sqft)

Recommendation:

When considering the condition of the facility in conjunction with the issues relative to service coverage, replacement of the facility might be the appropriate course of action. It is recommended that facility be repaired and a maintenance plan and budget be assembled to plan for future system replacement costs, unless replacement and relocation of the facility is a strong possibility.

Station #1 HQ

Although Station #1 is the most recent construction, there are several issues that requires corrective work to alleviate re-occurring issues that are inherent to the construction detailing of the building. Therefore it is ranked as a higher priority.

The main issues are related to water infiltration in the exterior cavity walls, perimeter foundation walls, roof edge detailing, and aluminum storefront systems. These particular issues should be addressed as a priority to prevent accelerated deterioration and continual maintenance of existing building systems.

One final consideration is the facility does not meet accessibility requirements as required by the Americans with Disabilities Act that were adopted at the time of the construction. It is not certain why the facility was constructed without an elevator or other means of accessibility.

Escalated Budget Summary: 1,251,587 or 42/sqft (29,715± sqft)



Recommendations:

It is recommended that issues related to water infiltration be completed as a priority along with any other priority repairs. Accessibility issues should be resolved in accordance with the Americans with Disabilities Act (ADA) and Illinois Accessibility Code.

Then produce and follow a regular maintenance plan and budget for dealing with other repairs and system replacements. Finally provide modern upgrades to the fire station.

Station #2

Station #2 is in fair condition and mostly requires replacement of building systems that are beyond their expected life. In particular, electrical panels, mechanical equipment, and roofing systems are at or near the end of useful life. There are also some conditions that require repair that are beyond expected maintenance. However most repairs and system replacements fall under regular expected maintenance for a building of this age.

The site is the most generous with space with other storage buildings on site for additional apparatus or miscellaneous storage. It would be a site that could accommodate expansion or enhancements.

Escalated Budget Summary: 371,308 or 50/sqft (7400± sqft)

Recommendations:

It is recommended that systems beyond their useful life be replaced. Then produce and follow a regular maintenance plan and budget for dealing with other repairs and system replacements. Finally provide modern upgrades to the fire station.

Station #6

Station #6 is in fairly good condition and mostly requires replacement of building systems that are beyond their expected life. There are also some conditions that require repair. All of these generally fall under a regular expected maintenance budget for a building of this age.

The site is sufficient for its current function, but based on grade changes, it would prove difficult to expand or enhance the facility.

Escalated Budget Summary: \$344,707 or \$78/sqft (4400± sqft)

Recommendations:

It is recommended that systems beyond their useful life be replaced. Then produce and follow a regular maintenance plan and budget for dealing with other repairs and system replacements. Finally provide modern upgrades to the fire station.

Station #4

Station #4 is in good condition and mostly requires replacement of building systems that are beyond their expected life. There are also some conditions that require repair. All of these generally fall under a regular expected maintenance budget for a building of this age.

The site, although relatively small, should be able to accommodate expansion or enhancements to the facility.

Escalated Budget Summary: 322,197 or 73/sqft (4400± sqft)

Recommendations:

It is recommended that systems beyond their useful life be replaced. Then produce and follow a regular maintenance plan and budget for dealing with other repairs and system replacements. Finally, provide modern upgrades to the fire station.

