



Fire Station 6 - Exterior

Fire Station 6 Space and Operational Issues

Public and Staff Parking

- A small off-street parking lot is provided at the rear of the station off of the alley, but it will not accommodate shift change. Staff utilizes street parking in addition.
- The site of the station is severely landlocked, allowing very little possibility of expansion or additional construction.
- Bays are a combination of drive-thru and single discharge. The smaller vehicle backs in and the truck drives thru. Size of the front apron doesn't allow for maneuvering off street to achieve the back in approach, resulting in stopping of traffic on 16th Street. The drive thru requires the vehicle to approach the station in a very specific direction in order to make the turn into the bay.



Office Area in Dayroom

Lobby

- No Lobby is provided. Entry is direct into the living quarters of the facility. No public space is provided. The original front entry to the station has been eliminated due to access and use of space within the station, using the existing vestibule for storage. Public is directed to the side entry door on the apparatus bay.

Administration

- An office is located within the officer's bunk within the private side of the station. Space is small, and access is congested through the living quarters.
- Additional office area is located adjacent to the dayroom in the living quarters. The space is appropriate for use but does not provide a privacy if required.

Private Quarters

- The department utilizes a rack room concept for its private (sleeping) quarters at all stations. The room contains bunks and lockers for all shifts. This is the only station that does not provide bunks for each person on shift. This layout maintains the most flexibility but does not address gender concerns within the facility.
- No female toilet/ shower facilities are provided within the facility.
- Separate changing rooms should be provided to accommodate gender.
- Toilet/ shower conditions are undersized.



Private Quarters – Bunk Room



Dining/ Kitchen

Living Quarters

- The living quarters are located adjacent to the bay on the first floor. A buffer zone is provided between spaces to maintain isolation between cold and hot zones.
- The kitchen and dining room is undersized for staff use, not providing enough storage.
- The facility has multiple levels that are not accessible.

Apparatus Bays & Support Storage

- Turnout gear storage is stored directly on the bay floor, adding to potential contamination.
- No bay support storage is located directly adjacent to the bay floor. The work room is located on the bay floor, congesting access and flow around the vehicles. Equipment and other support is located along the walls of the apparatus bay, creating further congestion and safety concerns. Laundry is located in the basement, which is accessed through the house. This conflicts with national guidelines and defies the 'hot' vs 'cold' zone separation.
- EMS central supply is located in the entry vestibule and dayroom of the residence within the station, requiring access through the station for equipment. A separated isolated area off of the bay should be provided to maintain 'hot' vs 'cold' zone separation.
- The fitness equipment for the station is located in the basement.
- No hose tower is provided at this facility, which is the exception within the department.



Apparatus Bay

Storage

- Storage is severely deficient throughout the facility. The few storage rooms are filled to capacity, making retrieval of items difficult. The basement has the largest storage room available (an entire crawl space), but it requires space to access, and not all storage is appropriate that far from the bay.



Dayroom - Training

Training

- No training room is provided at this facility. Training occurs within the living quarters. The educational training should occur in a learning environment, whether at a computer, video distribution, vidcon learning experience, etc. Currently any training occurs within the living quarters of the station in living room couches or at the dining room table. These spaces

already pull multi-duty on operation, and don't provide the proper environment to properly nurture and promote learning. The addition of a meeting room, library, and office area that can be used for training during shift will help to keep staff in quarters and reduce the need to pull shifts out of service to maintain training level requirements.

The issues identified above provide an overview of some of the operational and space issues the existing building suffers from. Correcting these deficiencies will require additional space and proper design of the floor plans.

Room/Area/Space		Sq. Ft.		Notes
		Existing	Proposed	
A. PUBLIC ENTRY / PUBLIC ACCESS AREAS				
1.0	Entry Vestibule	54	60	
2.0	Lobby	-	100	
3.0	Public Toilet		80	(1) single user toilet room, also available to Apparatus Bay
	Public Entry / Public Access Areas Sub-Total	54	240	
	Circulation, Wall, and Mechanical Shaft Space		72	
	PUBLIC ENTRY / PUBLIC ACCESS AREAS TOTAL	54	312	
B. ADMINISTRATION				
1.0	Shift Office	-	180	Office w/ counter, (1-2) work spaces, mailboxes, also utilized for study
2.0	Officers Office/ Quarters	245	200	Currently located in Officers Bunk. Desk, credenza, seating for 2, file storage
3.0	Officers Bunk	-	200	double bunk w (6) lockers
	Administration Sub-Total	245	580	
	Circulation, Wall, and Mechanical Shaft Space		203	
	ADMINISTRATION TOTAL	245	783	
C. RESIDENTIAL				
1.0	Library/Meeting Room	-	150	counter w/ (2-3) work stations, meeting table with video con capability
2.0	Dayroom	458	400	Television area, (8) recliners
3.0	Kitchen	171	220	60" range/oven, sink, dishwasher, (3) refrigerators, (3) pantries, work island
4.0	Dining	217	200	Table to accommodate (8), open to Kitchen, not Dayroom
5.0	Bunkroom/ Rackroom	481	950	area for 8 person shift, (1) rack with 4 lockers (24"x24") per.
6.0	Toilet Rooms	156	240	2 single user unisex rooms - (1) sink, 1 toilet, 1 shower
7.0	Locker Room	-	-	located in Bunkroom/ Rackroom
8.0	Janitor's Closet	-	40	mop basin, mop sink, supplies
9.0	Residential Laundry	-	80	currently on Bay floor, washer, dryer, supply storage
10.0	Uniform Storage	-	40	
11.0	Fitness	720	500	Currently shared with Mechanical and Storage
12.0	Storage Room	80	80	Currently shared with Fitness and Mechanical
	Residential Sub-Total	2,203	2,900	
	Circulation, Wall, and Mechanical Shaft Space		1,015	
	RESIDENTIAL TOTAL	2,203	3,915	

City of Racine
Fire Department - Fire Station 6
 Space Needs Program

FGM ARCHITECTS
 DRAFT
 March 13, 2018
 FGM #: 18-2434.01

City of Racine Fire Department - Fire Station 6 Space Needs Program		DRAFT		FGM ARCHITECTS	
		Sq. Ft.		Notes	
		Existing	Proposed		
D. APPARATUS BAY					
1.0	Apparatus Bays	1,810	2,320	(2) Bays. (2) 20x58' - (1) Squad, (1) Medic.	
1.1	Recessed Map Counter		25	Map, counter, casework (binders), computer, printer, etc.	
2.0	Hose Tower	-	200	Currently using hose dryer. Stair/ landings. Some training props built in.	
3.0	Hose Storage	-	-	Hose storage located in base of hose tower	
4.0	Turn-out Gear	-	250	Room for (24) 24"x24" lockers	
5.0	Tool/Work Room	-	80	currently on Bay floor. 8x10' room for tools, workbench, equipment	
6.0	Bay Laundry/Extractor/ Hot Zone	-	120	currently on Bay floor. Washer, extractor, dryer, dry zone, etc.	
7.0	EMS Supply/ Decon	-	100	EMS supply cabinets, stainless scullery sink w/ sprayer, drying	
8.0	Charging Alcove	-	25	for immediate radios. AEDs, batteries, flashlights, tablets, etc. Located off bay floor	
9.0	Lawn/ Yard Maintenance	-	100	currently on Bay floor. Storage for mower, snowblower, fuel, etc.	
10.0	Station Storage	-	100	station supplies, misc., also houses toy dropoffs	
11.0	Training Prop Area	-	100	alcove off bay, area to house/ utilize roaming training props (IRT, FP, etc.)	
12.0	Toilet	25	-	share/utilize public toilet	
Apparatus Bay Sub-Total		1,835	3,420		
Circulation, Wall, and Mechanical Shaft Space			684		
APPARATUS BAY TOTAL		1,835	4,104		
E. SUPPORT/ STORAGE					
1.0	Mechanical Room	-	200	Currently shared with Fitness and Storage. HVAC supply, boilers, hot water, pumps, etc., could be reduced if utilizing rooftop	
2.0	Electrical Room	-	100	electrical service and distribution	
3.0	I.T. Room	-	80	Space for (1) 42" deep cabinet and storage	
4.0	Generator	-	-	locate outside, but recommend security enclosed	
5.0	Water Service/ Sprinkler Room	-	100	incoming water service, fire protection service, fire alarm, etc.	
Support/ Storage Sub-Total			480		
Circulation, Wall, and Mechanical Shaft Space			144		
SUPPORT/ STORAGE TOTAL			624		
NET BUILDING AREA SUB-TOTAL		4,337	9,738		
Multi-Floor Factor			-	Assume Single story (add min. of 1,000 sq.ft. per floor for stairs/ elev)	
TOTAL BUILDING AREA REQUIRED		6,395	9,738	Existing sq.ft. vs. Proposed	

City of Racine Fire Department - Fire Station 6 Space Needs Program		DRAFT		FGM ARCHITECTS	
				March 13, 2018 FGM #: 18-2434.01	
Room/Area/Space	Existing	Sq. Ft. Proposed	Notes		
OUTDOOR SPACES					
F. PARKING REQUIREMENTS					
1.0 Public	-	2	Includes ADA required parking space		
2.0 Department Vehicles	-	-	Space for BC/ Officer vehicle		
3.0 Administration Staff	-	-			
4.0 Staff - At Shift Change	6	8			
5.0 Emergency Vehicle Parking	-	-			
Total Public Parking Required		10			
G. MISCELLANEOUS OUTDOOR SPACES					
1.0 Trash Enclosure		50			
2.0 Generator Enclosure		100	Allow area 10x10'		
3.0 Transformer Enclosure		-			
4.0 Storage Building		-	Current shed houses yard tools & toy dropoff. Lawn storage & station storage to cover		

SECTION 5.6
FIRE STATION NO. 6
EXISTING BUILDING PLANS

The following diagrams illustrate the building as it currently is being utilized and will provide a frame of reference for the space needs requirements identified in Section 4 of this report. The breakdown of the existing police station areas are as follows:

Area	Square Feet
Basement	2,050
First Floor	4,345
Total Gross Building Area	6,395

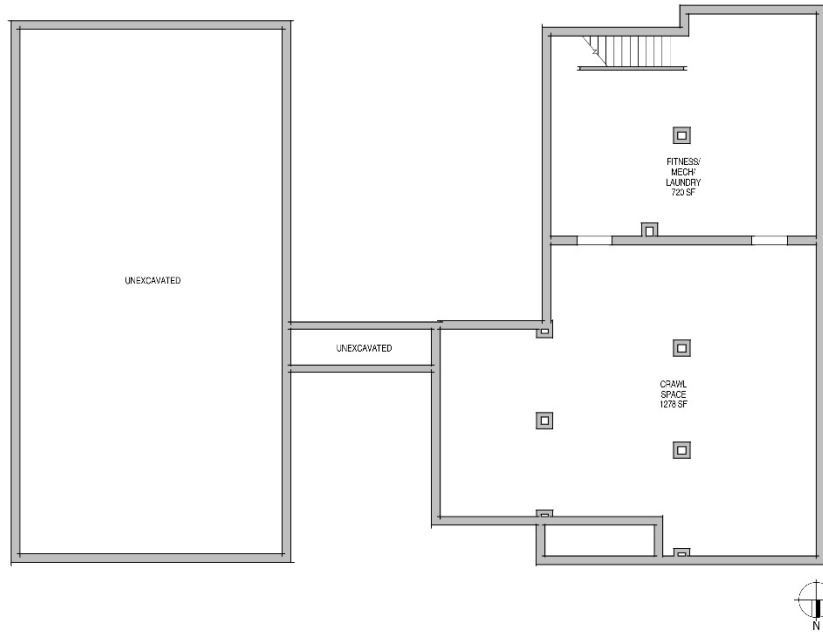
There are approximately 7 parking spaces at the rear of the building for staff use.

The site area occupied by the existing building is approximately 0.25 acres

EXISTING SITE

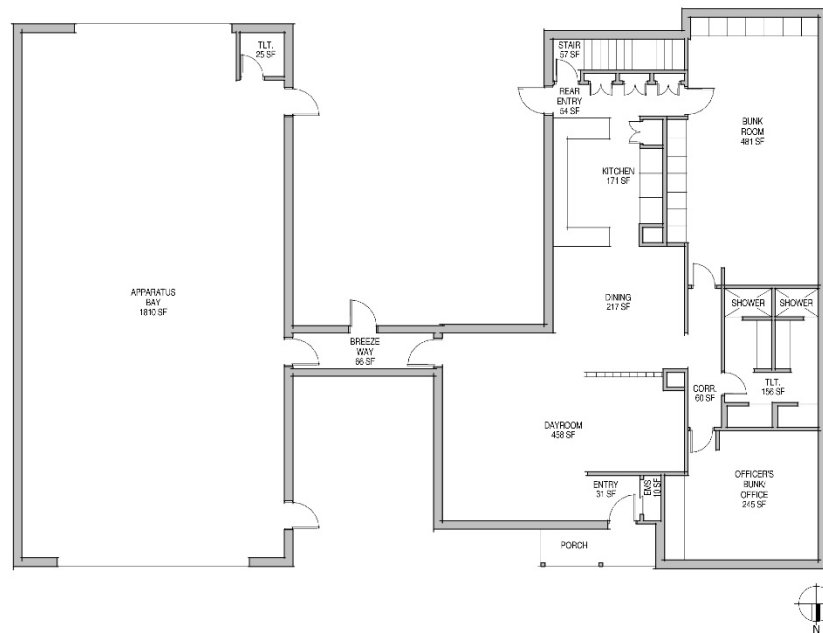


Aerial Photograph of the Existing Fire Station No. 6 Site



Basement Net Area: 1,998 sq.ft.

Basement Gross Area: 2,050 sq.ft.



First Floor Net Area: 3,841 sq.ft.

First Floor Gross Area: 4,345 sq.ft.

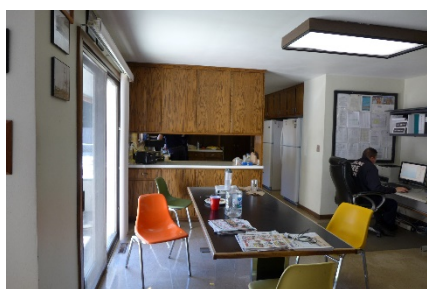
**SECTION 5.6
FIRE STATION NO. 6 -
EXISTING CONDITION
ANALYSIS**



Front view of Fire Station 6



Front view of Fire Station 6



View of dining and kitchen



Existing Building Condition Analysis

The Racine Fire Station No. 6 was originally constructed as a single-family house. The house was acquired by the City of Racine and converted to a fire station in 1974. A large apparatus bay with 2 bays was constructed adjacent to house and connected with a breezeway. The residential side of the station is a one-story building with basement constructed out of wood studs and wood roof trusses. The apparatus bay constructed in 1974 was built with load bearing CMU walls and wood trusses. The apparatus bay is not currently large enough to handle all their storage needs. Additional utility sheds are located in the rear of the building to house the overflow equipment.

Site and Parking

The fire station is located in a residential neighborhood roughly in the center of Racine on a site of approximately 0.25 acres. The building is bordered by 16th Street to the North and Austin Avenue to the East. Parking and access to the south of the station is accessible from a small alley that runs between Austin Ave. and Morton Ave.

The current site provides 8 parking stalls for staff. Overflow parking is located on the street within the nearby residential neighborhood.

Building Envelope

The facility is a wood framed structure with CMU walls, brick veneer and wood siding. The majority of the exterior brick and siding appears to be in good condition with the exception of the CMU walls and framing over the apparatus bay doors. The structural narrative will review in further detail the condition framing.

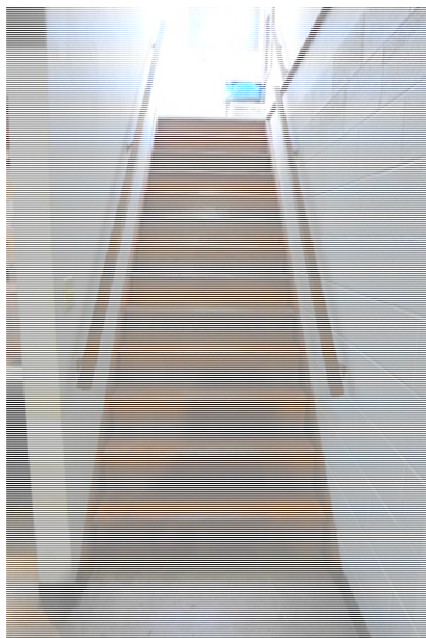
The roof is constructed of standing asphalt shingles on plywood sheathing. The roof appears to be in good condition.

Apparatus Bay

**SECTION 5.6
FIRE STATION NO. 6 -
ACCESSIBILITY**



No accessible access to front door



Staircase to basement



Inaccessible shower stall and accessories

Accessibility

Since the building was constructed, accessibility requirements have changed with the Americans with Disabilities Act. The accessibility guidelines mandate that all public facilities are to be designed, constructed or altered to assure equal accessibility to all members of society. If any type of building renovation were to occur, multiple accessibility violations would need to be addressed. The violations range from minor issues to larger problems that would require significant renovation work. Below is a summary of violations reviewed during the building assessment:

- Both the front entrance and rear entrances to the station are raised above grade approximately 6" and do not have accessible wheelchair ramps.
- The rear entry door does not have the proper ADA approach clearances on both the exterior and interior sides.
- The entrance to the shower stalls is approximately only 24" wide with a 4" step. The entrance would need to be widened to 30" and the step removed in order to allow for ADA access.
- The toilet stalls within the restrooms are lacking all of the required grab bars, they are too small and do not allow clear floor space for the required 5'-0" turning radius. Additionally, all of the toilet accessories within the restroom are at inaccessible heights and locations. In order to make the restrooms accessible they would need to be fully renovated.
- There is a 6" step at the doorway from the breezeway to the apparatus bay. Aside from creating a tripping hazard this step also makes the doorway inaccessible for anyone in a wheelchair. An accessible ramp would be required at this location, however due to the tight space within the bays it is not feasible to install a ramp here.
- Most of the door hardware throughout the building are knobs and cannot be operated with a closed fist or a loose grip as is required by ADA.
- The drinking fountain within the apparatus bay projects into the walking path more than the allowable 4". Cane detection would need to be installed on either side of the drinking fountain.

SECTION 5.6
FIRE STATION NO. 6 –
BUILDING CODE ISSUES



Station has one primary multi-user restroom to serve all firefighters.



Lack of security for EMS supplies

Building Code Issues

Overall not many building code violations were observed during the building assessment review. The major violation is the lack of separated toilet rooms for women and men. Currently there is one large restroom with 2 toilets, 2 showers and 4 sinks. The building code requires separate facilities be provided for each sex.

The front entrance door currently swings into the building. This door needs to be replaced with a door that swings to the exterior to allow for egress from within. Additionally, the door at the top of the staircase needs to swing in the opposite direction for egress. It is recommended that this door be removed as there is not enough clear floor space for this door to swing out.

The existing exterior walls of the apparatus bay are a single wythe concrete masonry unit. There is no insulation located within the wall. Modern design would require a min. of 3" of insulation within this wall assembly in order to meet the current energy code requirements.

NFPA Life Safety Code

The National Fire Prevention Association (NFPA) is a series of life safety codes and standards devoted to minimizing the possibility of fire and other risks. As a public facility dedicated to minimizing fires and other risks Fire Stations No. 6 is required to follow the standards set forward by the NFPA Life Safety Code Standards. Below is a list of NFPA violations that were observed:

- Lack of an NFPA 72 compliant gas detection system within the apparatus bay
- There is no fire suppression system within the residential area or apparatus bay in violation of the NFPA 25 standards.
- According to NFPA 99, medication storage and work areas shall be secured against unauthorized personnel through either; a physical access control, unique identification for the area or a secure storage and controlled dispensing of the drugs. Currently the medical supplies are not secured and there is no identification system to monitor who has access to these supplies.
- NFPA 1710 guidelines recommend an 80 second turn out time for fire operations. The current building was not originally designed as a fire station, because of this the sleeping quarters are located at the back of the building. When a call comes in late at night the fire fighters need to

travel through several rooms before reaching the apparatus bay. Ideally a designated path should be clearly laid out leading from all rooms in the station to the apparatus bay.

NFPA 1851 lays out the guidelines for handling elements that have been contaminated with hazardous materials. Many of the standards are related to standard operating procedures that need to be developed by the fire department, however some of the procedures also require physical spaces that need to be integrated into the existing building. Listed below are some of the violations observed of NFPA 1851 due to space limitations within the current station:

- To prevent cross contamination a designated decontamination area is required for routine cleaning of personal protective equipment that has been in contact with hazardous materials. There was no dedicated decontamination room observed within the current station.
- Soiled or contaminated elements shall not be brought into the residential area nor washed in laundry machines that are not equipped to handle protective ensembles and elements.

SECTION 5.6
FIRE STATION NO. 6 –
BUILDING ISSUES



Sagging beam at overhead door



Delamination of back door



Broken downspout allowing water to collect near foundation wall.

Building Issues

Overall, the interior of the building has been well maintained and appears in good condition. However, the main residence of the station was not built to withstand the wear and tear that occurs in a 24/7 fire station facility nor does it meet the essential facility requirements of the current code.

- The main support above the overhead bay doors appears to be sagging
- The concrete apron at the front of the apparatus bay has major cracking and spalling.
- The CMU walls on the east side of the building appear to be spalling due to moisture infiltration into the block.
- The rear entry door is made of wood and has begun delaminating after years of exposure to the elements with little maintenance.
- The apparatus bay doors are only 12'-0" high which limits what equipment can be stored at the station. The department of transportation standards recommend a minimum height of 13'-10" that will accommodate most equipment.
- Many downspouts were noted to have added drain pipes to them to direct the water further away from the building. At some locations the downspouts have broken and allow water to discharge directly at the foundation wall.
- Rainwater has been directed to discharge into the adjacent property which appears to have caused water issues on their property.
- There has been site work done in the rear parking area that has been left as open gravel. In general, the rear parking area and rear apron need to be repaired and resurfaced.
- Several areas of water leakage were noted in the basement, most likely caused by water pooling at the exterior foundation wall and seeping in.
- The original floor structure is residential grade and was not designed to withstand the live loads that are required of commercial buildings.
- The exterior windows are residential grade and do not meet the energy efficiency requirements of the current energy code.



Lack of lighting within bunk area



Residential grade appliances and cabinets within kitchen

- All finished within the occupied spaces are residential grade and beyond their useful life.
- There is a lack of adequate lighting throughout the station. Small residential lamps are being used as supplemental lights in several areas.
- The kitchen cabinets and appliances are residential grade. It is not recommended using residential ranges and cabinets in fire stations due to the heavy wear and tear that occurs with multiple people using the space on a daily basis.
- **There is no mechanical air exchange within the building.**

SECTION 5.6
FIRE STATION NO. 6 –
SECURITY

Security

The building currently does not have any electronic access system or camera system. It is recommended that an electronic card access system be installed to provide a higher level of security. Access cards are preferred to keys as user's access can be easily updated when personnel changes occur rather than trying to keep track of everyone who may have a key to the building.

It is recommended that a recording camera system be installed. Fire Station Number 6 is located in a more urban area with numerous vacant properties that is susceptible to theft and vandalism. A camera system would be beneficial in providing better security for the building and for the safety of the employees.

Overall the facility was not built for the current technology needs that a modern-day fire station requires. Upgrading the current building to meet these needs would be costly and difficult.

**SECTION 5.6
FIRE STATION NO. 6 –
MECHANICAL**



Furnace and water heater

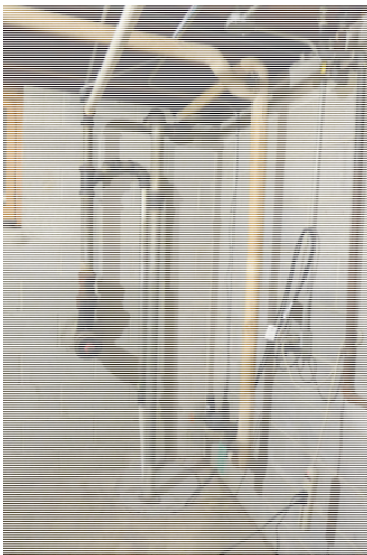
Mechanical Assessment

The fire house was designed in the early 1970's. The survey of the facility was general in nature and included a walk-thru and observation of the existing plumbing and mechanical infrastructure.

The fire house had been originally designed to be heated with a gas fired furnace, and the apparatus bay with gas fired unit heaters. Central air conditioning is provided by the furnace unit with a remote, outdoor mounted, condensing unit. Ventilation is based on operable windows similar to the typical residential home. No significant issues are reported from station personnel stationed at the fire house.

The apparatus bay has a Carbon Monoxide exhaust system for the fire truck, and a local electric domestic hot water heater to serve fixtures installed within the bay.

**SECTION 5.6
FIRE STATION NO. 6 –
PLUMBING**



PVC and cast-iron waste piping

Domestic Plumbing System

The existing water service size is a nominal 1" size. There is no reduced pressure backflow preventer on the main water service to protect the municipal water system from possible contamination. The fire station has a newer 40-gallon storage type domestic gas-fired hot water heater of 50,000 BTU capacity, sufficient for the number of fixtures installed. There could be a potential for asbestos insulation on the domestic water piping elbows and fittings, but the insulation does not appear to be disturbed.

There were no reported issues with the domestic water or waste piping from the station personnel, however, most fixtures are older, and likely in need of up-dating and replacing. Some waste piping in the basement had been replaced from cast-iron to PVC plastic. It was not apparent whether this was due to deterioration or renovation.

In summary, the fire house is typical in condition to that of a residential home of similar vintage. The water service, sump pump, and ejector pump are all residential in nature, and appear to be in good condition with regular maintenance and replacement to be expected. The apparatus bay systems are in good condition.

Fire Protection System

There is no existing sprinkler system within the station.

SECTION 5.6
FIRE STATION NO. 6 –
ELECTRICAL



Original Main Service



Portable Generator



Transfer switch

Main Electrical Services

The existing electrical service appears to be a basic 225-amp, 240-volt, single phase, three wire residential style service with a ct/meter on the outside of the building which feeds a main disconnect switch located in the apparatus bay panelboard. The electrical service appears to be original and in overall poor condition.

There is no permanently installed generator set installed. The 6500-watt portable generator appears to be older and in somewhat poor condition overall. There is a 30-amp 240-volt single phase, three wire manual transfer switch in the apparatus which supplies limited loads within the facility. In terms of back-up capacity maybe minimal communications and lighting and an overhead door could be powered from the back-up available.

The main and general power distribution panelboards and circuitry do not appear to have been updated in recent years and are in poor condition overall and consideration should be given to upgrade/replacement of the existing branch circuit panelboards throughout except for possibly two which appear to be somewhat newer and in fair condition.

The building does not appear to have a central electronic fire alarm system installed and any detection and/or annunciation appears to be local in nature. The building does not appear to have fire sprinkler protection either.

The lighting appears to be original for the most part, except for a few areas which have been upgraded with some LED fixtures such as the exterior wall packs. Overall, the lighting is past it's useful service life and no longer energy efficient and lacking in occupancy controls.

There appears to be some newer telecommunications equipment in the building in a basement telecom rack, as well as some older phone terminations and cabling that should be removed. There are many older paging speakers in the building which are in poor condition. This building has a communications radio tower installed adjacent the apparatus bay which appears to be in fair condition. The fire station buildings are supposedly linked via wireless microwave communications to the municipality, some equipment can be seen mounted at the apex of the apparatus bay roof.

SECTION 5.6
FIRE STATION NO. 6 –
STRUCTURAL



Spalling CMU walls at App. Bay



Spalling CMU walls at App. Bay

Structural Conditions

Station 6 consists of a one-story wood framed structure with a brick veneer. The apparatus bay is attached via a breezeway and consisted of wood roof trusses supported on load bearing concrete masonry units (CMU). Despite the CMU structurally supporting the roof structure, the units were laid in a stack-bond pattern.

The exterior appeared in variable condition. Small areas of spalling at the stack-bond CMU were observed around the apparatus bay. The spalls appear to be at locations which were previously patched. Additionally, there is a vertical crack in the stack-bond joint at the northwest corner of the apparatus bay. This crack has translated through to the interior.

Inside the building most of the structure is concealed by architectural finishes. There did not seem to be any items requiring structural repair.

Station 6 was generally in fair condition. We recommend the vertical crack at the CMU head joint be repointed to prevent water infiltration. Water infiltration can cause additional masonry distress including efflorescence, reinforcement corrosion and subsequent CMU cracking and/or spalling. The effects of freeze-thaw can accelerate this damage.

The causation of the spalls should be determined. It is our opinion that the previous patches have failed and are reoccurring. The spalled masonry and failed patches should be reviewed periodically and patched effectively as part of a future exterior repair project.

SECTION 5.6
FIRE STATION NO. 6 -
RECOMMENDATIONS

Analysis of City of Racine's Fire Station No. 6:

The analysis of the facility focuses on two major points of concern:

1. The existing building was built as a single-family home. Despite remodeling of the building in 1974 the main structure was not designed to handle the needs of a 24/7 critical facility commercial building. The mechanical, plumbing, electrical system, interior finishes, cabinets, appliances and lighting are all residential grade and beyond their useful life.
2. The existing square footage of the building is approximately 6,400 s.f. The recommended square footage for this facility is approximately 9,740 s.f. That leaves a shortfall of roughly 3,340 s.f. There is not enough space on the current site to add on 3,340 s.f. to the existing building without purchasing additional property or relocating the building.

It is recommended that a new facility be built conforming to the latest commercial building codes with adequate space to accommodate the proposed program.

SECTION 5.6
FIRE STATION NO 6 -
RECOMMENDATIONS

The analysis of Fire Station No 6 focuses on 5 major points of concern:

1. Systems, equipment, and spaces/ functions that the facility should have with regards to current fire protection standards and recommendations
2. Space the fire station is lacking depending upon size of existing facilities
3. Relationships/ interaction & separation/ isolation of spaces/ departments
4. Building shell issues/ concerns and structural deficiencies
5. Miscellaneous comments/ issues

Each item has also been evaluated on a life safety basis. Certain items should be completed sooner than others based upon the impact they have on the safety of either the occupants, firefighters, or public.

- (a) Urgent – items that present an immediate hazard to the safety of the occupants. These items should be typically corrected within a 1-year period.
- (b) Required – items that are necessary for a safe environment but present less of an immediate hazard to the safety of the occupants. These items should be typically corrected within a 2-year period.
- (c) Recommended – items that do not present any immediate hazard to the occupants. These items should be typically completed within a 3-year period if found to follow the City's plan

This double classification approach is shown to provide a minimum amount of work required to get the current facilities safe for its occupants. It helps define each item according to operations and need. Ultimately it helps give the City a game plan on addressing the facility. Correcting each noted safety item (a) or (b) will still not address any space shortcomings in the building.

City of Racine – Fire Station No 6		Type of Item	Priority of Item	Estimated Impact
Item/ Issue	1, 2, 3, 4, 5	a, b, c		
1	Door clearances meeting ADA accessible approach not provided on several doors	5	c	\$50,000
2	Entrance into the shower doesn't meet ADA accessible width or zero entry approach	5	c	\$80,000
3	No ADA accessible entrance into the building is provided, house and bay is 6" above grade	5	c	\$70,000
4	No ADA accessible toilet is provided within the facility	5	c	\$50,000
5	Door knobs are not ADA accessible lever style	5	c	\$15,000
6	Lack of gender specific toilet and shower facilities	1/3	b	\$100,000
7	Railing and guardrail in stair does not meet ADA accessibility and building code.	1/5	b	\$40,000
8	Rated door from apparatus bay to living quarters does not properly latch and doesn't have seals	1/3	a	\$700
9	Provide gas detection system in apparatus bay	1/3	a	\$25,000
10	Provide fire suppression system throughout facility	1	c	\$50,000 - \$75,000
11	Improve isolation of turnout gear and contaminants from clean areas (hot zone/ cold zone).	1/3	b	\$30,000 - \$100,000
12	Improve venting and separation of turnout gear storage	1/3	b	\$50,000 - \$100,000
13	Doors at stair to basement sing against emergency exit, and impede access during said exit	1/3	b	\$10,000 - \$30,000
14	Apparatus Bay construction is single wythe construction, and provides no resistance to cold and heat, causing cracks in the structure	4	b	\$500,000 - \$750,000
15	Remove furniture from entry doors into station to maintain emergency exits	2	a	\$500
16	Use of a residential house to serve as a fire station can complicate access to the bays, affecting NFPA response turnout time	1/2	b	\$50,000 - \$150,000
17	Only a residential laundry unit is provided in the basement. This potentially allows contamination of material through the residence. An extractor should be provided	1	b	\$30,000 - \$35,000

City of Racine – Fire Station No 6		Type of Item	Priority of Item	Estimated Impact
Item/ Issue	1, 2, 3, 4, 5	a, b, c		
18	Main support lintel over the apparatus bay overhead door is sagging from deflection and should be replaced/ reinforced.	4	b	\$4,000 - \$15,000
19	Repair/ replace major cracks in front bay apron	4	b	\$25,000 - \$35,000
20	Address spalling of masonry and mortar on apparatus bay walls from moisture infiltration and damage	4	b	\$50,000 - \$100,000
21	Replace rear entry door to house that is delaminating	5	b	\$3,000 - \$5,000
22	Increase bay clearance height to meet DOT 13'-10"	1/5	b	\$40,000 - \$50,000
23	Water concerns around building that has caused issues with water in basement, and currently being directed at neighbor	5	b	\$2,000 - \$25,000
24	Repair/ replace rear parking and apron surfaces	5	b	\$20,000 - \$30,000
25	Floor structure is undersized for the live-loads of the current operation and use. Facility not intended to meet essential facility requirements	1/4	b	\$40,000 - TBD
26	Upgrade exterior windows to energy efficient units	5	b	\$80,000 - \$100,000
27	Upgrade kitchen cabinets to commercial grade	5	b	\$60,000 - \$80,000
28	All interior finishes are residential and past their useful life	5	b	\$25,000 - \$30,000
29	Install an access control system for security	5	c	\$10,000 - \$25,000
30	Install a security camera system for security of property and employees	5	c	\$10,000 - \$20,000
31	Upgrade lighting throughout station to proper levels	5	b	\$10,000 - \$15,000
32	Upgrade mechanical system from residential to commercial and provide proper air exchange within facility	5	b	\$30,000 - \$50,000
33	Install a backflow preventer on domestic water service	5	b	\$500 - \$1,000
34	Potential asbestos containing material (ACM) plumbing insulation needs to be abated	5	b	\$15,000 - \$25,000

Summary of Recommendations:

Fire Station No 6 classifications listed above place the required items (a&b) in the following cost range tally:

Low \$1,286,700
High \$1,917,200

This means it will minimally take above to bring the building into usable condition for the foreseeable future for the City. But this still doesn't address any space shortages, inefficiencies, or operation deficits in Fire.

The classifications listed above place the recommended items (c) in the following cost range tally:

Low \$460,000
High \$550,000

These are items that may not be required but should be completed within a proper civic facility to serve its residents, occupants, and employees. The amount of corrections and type of items within the required list (a&b) may even trigger that some of the recommended items (c) may have to be completed. To not complete these items in a major building overhaul would continue to create concern in the future.

This puts total impact on the building in the following cost range tally:

Low \$1,746,700
High \$2,467,200

This would be total impact for all items as listed above (a, b,&c). As stated in explanation of the first numbers above, this still doesn't address any space shortages, inefficiencies, or operation deficits in Fire.

The number of items listed for this facility, the fact that the facility was not built as a fire station, or that it does not meet essential facility structural requirements suggest that this facility should be replaced rather than repaired. Its' property does not allow for a larger facility to be located on site as it is limited to .25 acres. The space needs of the satellite station are substantially greater than the 6,400 sq.ft. currently, but even at the current size, the fixes as stated above exceed the replacement cost of a station of the same size. At current construction costs per sq.ft., the building would be 6,400 sq.ft. times \$350/sq.ft. totaling \$2,275,000. Traditionally if renovation costs reach 75% of replacement costs it is recommended that the facility be replaced to eliminate any concessions that are made to accommodate existing construction.

Therefore, it is our recommendation that a new site be found

to locate a replacement station that would meet the space needs of the station/ department as shared earlier in this report.