

Hamilton Township Fire Dist. 4  
Fire Engine #14  
1085 East State Street, Hamilton, NJ 08609



## Feasibility Study

Prepared by



**NETTA**ARCHITECTS

1084 US Route 22 West, Mountainside, NJ 07092

December 7, 2017

## **Fire Station # 14, Hamilton District 4 – Audit**

### **Fire Station Audits**

Hamilton, NJ

Hamilton Township has authorized Netta Architects to conduct and prepare a Fire District Facilities Audit of the following fire houses: Fire Stations 12 through 19 to assess the Current conditions of these Fire Stations.

#### **Contents**

- Executive Summary
- Introduction
- Analysis of Existing Conditions
  1. General Station Information
  2. Site Analysis
  3. Exterior Building Analysis
  4. Interior Building Analysis- Program Spaces and Deficiencies
  5. Interior Accessibility of Station
  6. Building Code Considerations
  7. Fire Fighting Equipment and Misc Appliances
  8. Building Shortfalls (In addition to the building's deficiencies indicated in Previous Sections)
  9. Mechanical Systems
  10. Plumbing Systems
  11. Electrical Service
  12. Emergency Generator
  13. Fire Alarm
  14. Lighting
  15. Receptacles
- Deficiency Repair Recommendations and Estimated Cost Opinion
- Appendix A – Field Photographical Report



## **Fire Station # 14, Hamilton District 4 – Audit**

### **Executive Summary**

Fire Station #14

1. Is located at 1805 East State Street, Hamilton, NJ
2. The station is district owned.
3. The building was constructed in 1993, and is a two stories in height.

This building's current exterior and interior condition is **Good** as is evident by the few deficient items identified within the Summary of Findings Section, with the exception of the exterior items such as replacing the concrete apron curbs, and repairing the parking lot cracks.

A description of the Site and Building deficiencies is indicated below and recommendations and cost opinions for repairing these deficiencies is summarized in the recommendation section.

### **Introduction**

This feasibility study considered the following items;

- Architectural: Building and Code deficiency conditions.
- Preliminary probable construction costs for the repairs.

Netta Architects conducted an assessment survey of the Building on October 10, 2017 and Concord Engineering (CCE) conducted their assessment survey on October 17, 2017.

### **Analysis of Existing Conditions:**

**(Refer to the Photos located within the Field Report in the Appendix of this report typical)**

#### **1. General Station Information**

- A. The station is approximately 11,695 square feet in size, and has approximately .76 acres of property.
- B. The station has 1 fire pumper/rescue truck, 1 ladder truck, and 1 Fire Chief Command vehicle for a total of 3 vehicles.
- C. There are 4 existing truck bays.
- D. The station is not planning on purchasing any additional fire engine trucks.
- E. There are no current plans to renovate or expand the fire house.
- F. The station is a 24/7 facility, with a total occupant load of 4 fire fighters present during each shift.
- G. The facility appears to have adequate program space requirements.

- H. The Station has an office for the Ladies Auxiliary outside agency.
- I. Currently the fourth truck bay is not being utilized.
- J. The entire building is sprinklered.

## 2. Site Analysis

- A. The concrete apron at the (3) truck bay entrance is in good condition. However the concrete curb located between the apron and street is in poor condition containing many spalls and cracks.
- B. The concrete apron at the fourth currently unused truck entrance bay is in fair condition with one crack. The concrete curb located between the apron and street is in poor condition containing many spalls and cracks.
- C. The asphalt parking lot has a few cracks but is in fair condition.
- D. There are designated parking lot barrier free parking spaces.
- E. The station has barrier free entrances.
- F. There is a crack in concrete sidewalk along Hubert Ave.

## 3. Exterior Building Analysis

- A. Building Façade Conditions
  - 1. North elevation (Hubert Ave)
    - i. The overhead truck bay doors all operate properly and are in fair condition.
    - ii. There is some damage to the weatherstripping on one of the overhead doors.
    - iii. The aluminum fixed and awing windows are original and in fair operational condition with no reported water infiltration leaks. The sealant around the perimeter of the windows is oxidizing causing it to split open and fail.
  - 2. South elevation
    - i. There is a cell tower on site which is owned by the district and is in fair condition.
    - ii. The sealant around the exterior ductwork penetration through the exterior wall is either missing or oxidizing causing it to split open and fail.
    - iii. There are no overhead truck bay doors on this facade.
  - 3. East Elevation
    - i. The aluminum fixed and awing windows are original and in fair operational condition with no reported water infiltration leaks. The sealant around the perimeter of the windows is oxidizing causing it to split open and fail.

- ii. The hollow metal personnel door and frame are in poor condition with, rusting at the door sill and the bottom of the door frame.
  - iii. The building expansion joint is either missing or oxidizing causing it to split open and fail.
  - iv. The previous masonry patch in the ground face concrete masonry unit is starting to opening up around the edges.
  - v. There are no overhead truck bay doors on this facade.
4. West Elevation (E State Street)
- i. The hollow metal personnel door is in fair condition.
  - ii. There are no overhead truck bay doors on this facade.
  - iii. The sealant around the perimeter of the doors and windows is oxidizing causing it to split open and fail.
- B. Roofs
- i. The facility has a pitched standing seam metal roofing system with gutters and downspouts on the various roofs. These roofs are in good condition and there have been no reported roof leaks.

#### 4. **Interior Building Analysis - Program Spaces and Deficiencies**

##### A. Living Spaces

##### First Floor

- i. The truck apparatus room is in good condition.
- ii. The kitchen, dining and day room are located off the apparatus room are in good condition.
- iii. The Commissioners Office and Captains Office are in good condition.
- iv. The mens dormitory has 5 beds however, there is a separate female dormitory which has 1 bed.
- v. The recreational room is in good condition.
- vi. There are barrier free mens and womens bathrooms, showers and locker rooms located on the first floor. One of the mens shower stalls is currently slightly blocked by the recent installation of the with commercial fire department extractor/gear washer.
- vii. This facility has a radio room which is in good condition. The station, does not conduct dispatching from is facility.
- viii. This facility does not have a rental hall or a commercial kitchen.
- ix. There appears to be adequate storage areas.
- x. There is a generator is located outdoors and provides backup for the entire building.

##### Second Floor

- i. The Meeting/Training Room and offices are in good condition.
- ii. The exercise room is in good condition.
- iii. There are two sets of mens and womens bathrooms on the second floor and all four sets of bathrooms are non-barrier free and are in fair condition. The pair of toilets serving the Exercise Room have 1 shower stall in each. The pair of toilets serving the meeting room and offices are similar except they do not have a shower stall in each.
- iv. The second floor HVAC unit is located in a closet within the Ladies Auxiliary Office.
- v. The storage room contains a drop down ladder providing access to the roof attic space.
- vi. The offices are in fair condition.

**5. Interior Accessibility of Station**

- i. The first floor is barrier free accessible.
- ii. This facility does not contain an elevator to provide access to the second floor.
- iii. There are no barrier free bathrooms located on the second floor.

**6. Building Code Considerations**

The following items identified below are not in compliance with the latest IBC Building Code, 2015 NJ Edition requirements. – N/A

**7. Fire Fighting Equipment and Misc Appliances**

- A. There are standard clothes washer and dryer which are in good condition.
- B. There are several flammable cabinets located within the facility which are in fair condition.
- C. There is a commercial fire department extractor/gear washer which is in good condition.
- D. The facility does have equipment storage and a SCBA compressor unit.

**8. Building Shortfalls (In addition to the building's deficiencies indicated in Previous Sections)**

- A. There is no barrier free access to the second floor.
- B. There is no barrier free bathrooms located on the second floor.

**9. Mechanical Systems**

- A. Cooling and heating for all spaces in the facility is provided by four 5 ton capacity air cooled DX split AC units by Trane. All the condensing units are installed on grade. All the indoor units and two of the condensing units were installed in 1993 and are over 23 years old and two of the condensing units are 2 years old. The old units utilize R-22 refrigerant that is no longer produced while the new units utilize R410A refrigerant.

Conditioned air is circulated to the spaces by means of sheet metal ductwork and air outlets.

- B. The fire truck bays are provided only with heating through four ceiling mounted natural gas fired unit heaters. The unit heaters are original and over 23 years old. Ceiling fans are also provided to ventilate the truck bays. Plymovent vehicle exhaust systems are provided for the fire trucks. Restrooms as well as truck bays are provided with roof mounted exhaust fans. Exhaust fans appear to be over 15 years old.
- C. An air compressor unit by Speedaire with an 80 gallon storage tank is provided for the facility. The unit supplies compressed air to the fire trucks as well as the self contained breathing apparatus (SCBA) unit. The SCBA unit is by Compare Mako. There were no records to determine the capacity rating of the air compressor unit. The air compressor unit as well as the SCBA unit is over 23 years old.
- D. CCE used the nameplate data on the units to estimate the age of the units. Age of units that had no nameplates was based on interview with the Fire Station officials.
- E. All the installed equipment appears to be in good condition and well maintained. The Fire Station officials stated that the air conditioning units, hot water boiler associated pumps and equipment perform satisfactorily and that there are no major issues with them. Maintenance service is provided by an outside contractor.
- F. As per ASHRAE, median life expectancy of split AC units is 15 years, and that of exhaust fans is 20 years. The installed equipment, except the two 5 ton air cooled condensing units, is over 23 years old and has lived its useful life.

## **10. Plumbing Systems**

- A. The facility is provided with one Bradford White 75 gallon capacity natural gas fired water heater installed in 2015. The water heater is new and appears to be in good working condition.
- B. Urinals and water closets are provided with manual flushometers and wash basins are provided with manual faucets. The fixtures appear to be in good working condition.

## **11. Electrical Service**

- A. Electrical service is comprised of 208v-3 phase 400 amp service. The electrical equipment consists of two unlabeled electrical panels, 200 amp disconnect switch, ATS switch and one electrical meter. The equipment is relatively new and appears to be in good condition. The electrical service equipment is located in the water meter room which houses the sprinkler main and water main.
- B. Panel schedules seem accurate and up to date.



- C. The electrical loads consists of lighting, site lighting, general receptacles, TV outlets, roll up doors, mechanical and plumbing equipment ( rooftop units, fans, air conditioners, boilers, water heaters, heaters etc), cooking equipment and other miscellaneous loads. The electrical service appears to be adequate for the existing electrical loads.

**12. Emergency Generator**

- A. A 60 KW natural gas generator serves the emergency loads. Manufacturer is Kohler. Model No. Power System 60. The generator is at least 20 years old and appears to be in poor condition. There seems to be significant rusting on the generator housing.

**13. Fire Alarm**

- A. The existing fire alarm control panel and fire alarm devices are approximately 8 years old. The existing system is comprised of horn strobes, pullstations and smoke detectors. Fire alarm devices provide code compliant fire alarm coverage thru-out the facility.

**14. Lighting**

- A. Interior lighting fixtures are comprised of 2x4, 1x4, exit lights and recessed lighting fixtures. Exterior lighting fixtures are comprised of outdoor wall packs. According to Firehouse officials most of the lighting fixture lamps have been replaced recently with hi efficiency lamps. There is adequate lighting coverage thru-out the facility. Light switches are installed thru-out the facility for lighting controls.

**15. Receptacles**

- A. All receptacles are in good condition. There is adequate receptacle coverage thru-out the facility.

**Deficiency Repair Recommendations and Estimated Cost Opinion**

- 1. The following repairs are required based on Netta Architects’ evaluation of the existing building’s condition;

<u>Work Item</u>	<u>Estimated Cost Opinion</u>
A. <u>Site</u>	
i. Replace concrete curb along street at the truck entrances	\$9,500
ii. Repair the cracks in the asphalt parking lot	\$10,500
iii. Repair crack in concrete sidewalk along Hubert Ave	\$1,200
B. <u>Facades</u>	
i. Repair the weather stripping on the overhead door.	\$500
ii. Reseal the perimeter of the aluminum fixed and awing	



windows	\$5,500
iii. Reseal around the exterior ductwork penetration through the exterior wall	\$600
iv. Replace the hollow metal personnel door and frame	\$3,000
v. Reseal the building expansion joint	\$750
vi. Repair the previous patch in the ground face concrete masonry unit	\$500
C. <u>Roofs</u>	
<u>N/A</u>	
D. <u>Interior Accessibility of Station (*)</u>	
i. Provide access to second floor access	\$35,000
ii. Provide barrier free bathrooms on the second floor	\$20,000
E. <u>Building Shortfalls (*)</u>	
i. Provide a barrier free access to the second floor.	\$Incl Above
ii. Provide barrier free bathrooms on the second floor	\$Incl Above
F. <u>HVAC</u>	
i. Replace the unit heaters	\$15,000
ii. Replace the SCBA air compressor unit	\$12,000
iii. Replace the exhaust fans	\$8,000
iv. Replace four air conditioning units in a phased manner	\$35,000
v. Replace two older split system condensing units	\$12,000
vi. Option 1-provide low water consuming fixtures & Automatic flushometers	\$4,500
G. <u>Electric</u>	
i. Replace the generator	\$50,000
ii. Relocate the existing electrical equipment & incoming service to a dedicated electrical room	\$20,000
Sub-Total Cost Opinion	\$243,550
Contingency (20%)	\$48,710
<b>Total Cost Opinion</b>	<b>\$292,260</b>
<b>Say</b>	<b>\$293,000</b>

(\*) The Building Shortfalls and Interior Barrier Free Accessibility renovation estimate costs are not based on a design for these items and therefore the costs are only a suggested budget cost and will certainly vary in cost based on actual design drawings.

Hamilton Township Fire Dist. 4  
Fire Engine #14  
1085 East State Street, Hamilton, NJ 08609

# Appendix A

Field Photographical Report

Hamilton Township Fire Dist. 4  
Fire Engine #14  
1085 East State Street, Hamilton, NJ 08609



EXTERIOR CONDITIONS

# Fire Engine #14 – Hamilton Township



VISIBLE CRACK IN THE SIDEWALK



VISIBLE CRACKS IN THE PARKING LOT



VISIBLE CRACK IN THE SIDEWALK



BROKEN GARAGE DOOR SEAL



VISIBLE REPAIRS TO PREVIOUS MASONRY CRACKS

# Fire Engine #14 – Hamilton Township



VISIBLE CRACK IN THE SIDEWALK

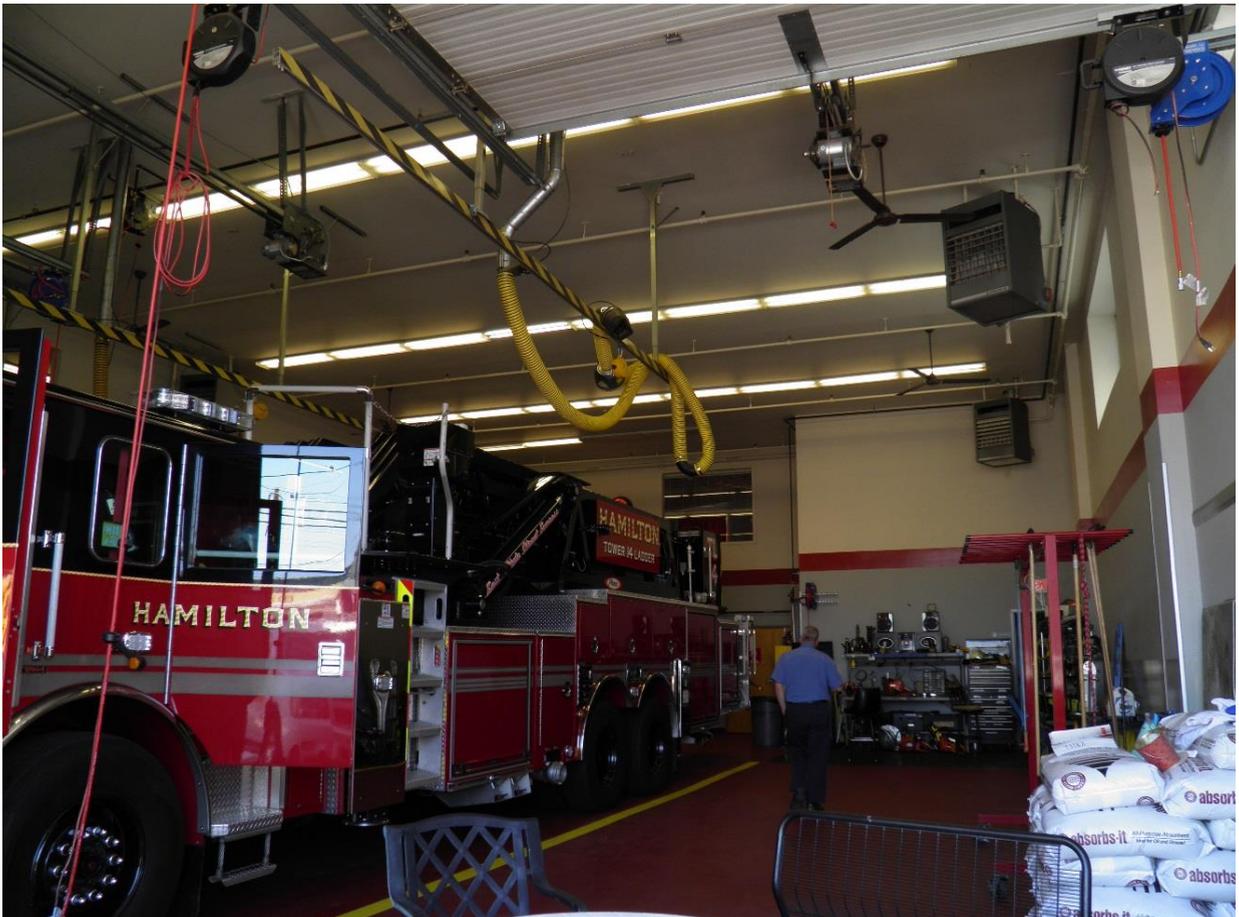


UNEVEN SIDEWALK



GENERATOR ENCLOSURE SHOWING SIGNS OF RUST

Hamilton Township Fire Dist. 4  
Fire Engine #14  
1085 East State Street, Hamilton, NJ 08609



## INTERIOR CONDITIONS

INTERIORS ARE IN GOOD CONDITION.  
NO MAJOR ISSUES OBSERVED

Hamilton Township Fire Dist. 4  
Fire Engine #14  
1085 East State Street, Hamilton, NJ 08609



ROOF

STANDING SEAM METAL ROOF IS IN GOOD CONDITION.  
NO MAJOR ISSUES OBSERVED