

**APPENDIX A**  
**HARWICH FIRE DEPT**  
**STATION 2 STUDY COMMITTEE**  
**STRUCTURAL REVIEW and PRELIMINARY OBSERVATIONS**



**January 2016**

## **General Description**

5376 sq ft Masonry construction built in 1976. Over the years that this facility has been in operation, the operational use and occupant load has increased dramatically. To meet the demands drawn by these increases, some minor adjustments have been made to the facility. The most significant changes occurred in 1994/95 with the renovation of the bathrooms, new leach pit, overhead door, handicap ramp and repairs to the roof.

In my opinion the overall structural integrity of this facility is in excellent condition. Throughout the years there have been numerous alterations to the original structure to meet the current requirements. Most of the changes resulted in abandoned service supplies ranging from wires to piping. These should be removed to prevent confusion in the future.

However, it is also my opinion that the operation has outgrown the size of the building. The living quarters are not isolated and leaves no room for privacy. The apparatus bays are so tight with equipment that it is difficult to get around quickly in the case of an emergency. The area used for walk in triage offers no privacy and is actually the main entrance for the general public. I believe at a minimum these items need to be addressed as the operations continue to increase at this station.

## **Building Exterior**

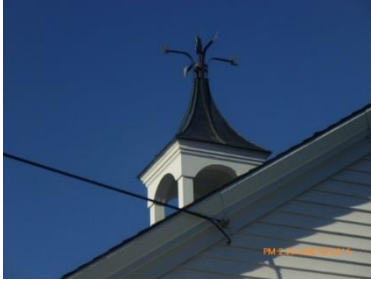
The exterior of the building is a mix of block, brick and wood with vinyl siding and aluminum soffits.

The majority of the material is in very good condition and only in need of minor repairs and routine maintenance.

The soffit trim and fascia board were all covered with aluminum about eight years ago and has held up well to weathering.

The brick work is still in excellent condition. However, there are many joints within the CMU block that are in need of some clean-up and repointing. The Hose tower that is no longer in use is a good example of the mortar deterioration. From the looks of the ceiling tiles in the room below, I believe rain water is penetrating these joints. Attention to this should be a priority before further damage occurs. Because it is no longer required it would be my recommendation to remove it and seal the roof.





The Cupola is showing signs of deterioration at the base and some weather damage. For cosmetic reasons it should be removed from the roof for repair and restoration.

### **Building Envelope**

There are few areas for air and moisture intrusion and or conditioned air to escape. The type, thickness and grade of insulation for the exterior walls is unknown. The walls in most rooms are constructed of wood / metal frame with a sheetrock interior finish.

### **Roof Construction**

The Roof is an asphalt shingle design with little to no sign of deterioration. It is in overall excellent condition but is well into the life expectancy. Because of its age I would expect the need for new shingles in the next ten years.

### **Living Quarters**

The living quarters do not offer any privacy. An open bay design with lockers to separate the sleeping area. This area is the main passageway from the front to the rear of the building. If walls were to be recommended to separate the spaces then the HVAC system would need to be addressed.



### **Work/office Space**

The Office space was constructed within the apparatus bay. It does not have any HVAC for exchange of air and there is no source for outside air. The door is not fire resistant and should be changed to meet building code.



### **Apparatus Area**

With the addition of new equipment the space is getting tight and passageways are getting smaller. The garage doors are all in workable condition and are operating well considering their age and the use they get on a daily basis. The Plymovent system for the vehicle exhaust is showing signs of age and has been placed on the Capital Plan for FY 18.

## Utilities

The utilities and equipment for the facility are also in good to excellent condition with some of the major components having been recently upgraded.



**Boiler** – High efficiency Buderous Gas fired boiler is only four years old.

**Power service** – 200 amp service. With a generator capable of handling the entire load requirement in case of emergency. The automatic switch gear for the generator was upgraded to solid state electronic controls less than a year ago.

**HVAC delivery-** Currently the only zoning for heat is within the apparatus area. The heating system is not zoned within the living and work space. This is not only inefficient but also affects comfort levels and creates hot and cold spots throughout the kitchen, lounge, office and sleeping quarters. Because the cooling system is not centralized, there is no air exchange or fresh air intake. This is only accomplished through opening doors and windows. The air conditioner is over twenty years old and has met its life expectancy.

### ***General observations and opinions***

This building structure is in very good condition given its age of forty years. Cosmetically it could use some work to improve the appearance. This includes everything from top to bottom (Ceiling, walls, base board and flooring). In my opinion, space requirements seem to be the biggest issue. According to the Town Engineer the foundation was built to support an additional floor if desired. There is also enough land to support an expansion of the apparatus bay.