

REHOBOTH BEACH CITY HALL



MEP Systems Evaluation



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General

The facility has undergone numerous renovations.

- 1964: Original building for the City Hall, Police Station and Convention Center. Further alterations have occurred over the years (including 1994), where documentation has not been located, including: the main entry meeting room; and the Police Department reorganizing and expanding into what was the library.
- 1992: Meeting / Dressing rooms, Shipping / Receiving, two private toilet rooms and corridors connecting these areas to the convention center.
- 1993: Meeting Rooms, and private toilet room, adjacent to the kitchen. This addition originally pre-dates the 1992 addition, where there was also an expansion of the kitchen, and was renovated in 1993.
- 1996: Conference Center, Kitchenette, two private toilet rooms, storage room and corridor to connect these areas to the Convention Center.

There is no building automation system for any of the facility. All of the equipment is operated via local controls.

It appears that none of the existing equipment can support an expansion, and the majority is at or nearing the end of their useful life expectancy.

The majority of the heating, hot water, piping dates back to the original building, and therefore is almost fifty years old. The piping is well beyond its useful life expectancy, subject to failures, and should be replaced.

Only the Convention Center, and adjoining additions have a sprinkler system. The sprinkler main entrance is in a closet off of the basement women's locker room. The office building, containing City Hall and the Police Department, does not have a sprinkler system.

Plumbing fixtures should be replaced with low flow fixtures and sensor operated faucets and flush valves.

City Hall and Police Department

This part of the building is served by a roof top unit, several split system air-handling units with remote heat pump / condensing units, and some areas are served by window air conditioners.

- The majority of the basement spaces and interior first floor rooms are served by split systems, piped to grade mounted condensing units.
- The basement Commissioner's room is served by a dedicated air handling unit in the adjacent mechanical / electrical room. Minor modifications have been done to this system, with a rerouting of one of the supply ducts to accommodate a new electrical panel. The duct insulation needs to be tested

to confirm that it is not asbestos. Outside air is not provided to this unit. The remote heat pump condenser is grade mounted, across the access driveway, adjacent to another unit serving the other air-handling unit in this basement area.

- The first floor office space of City Hall is served by a rooftop unit, which is located above the link. The serial number indicates the unit was manufactured in 1996, is in fair condition, but is approaching the end of its useful life expectancy. The thermostat is within the open office area, furthest from any exterior exposure. A window air conditioning unit has been added to the rear corner office.
- Two window air conditioning units are installed above the front entry doors to the Police Department.
- The Courtroom is served by a floor-mounted console unit, with a remote grade mounted condensing unit.
- The basement Processing Room of the Police Department has a window air conditioning unit.
- Most of the split system equipment appears to have been replaced in 2004, and is half way through their useful life expectancy.

The main electrical service for the building is located in the basement mechanical / electrical room. This service consisting of two 800A 208V services one feeding the City Hall / Police Department and one feeding the Convention Center.

- The 800A service feeding the City Hall building comprised of a main fused disconnect which appears to be original to the building and two 800A Square D line distribution panelboards. The panelboards were most likely installed during the renovations which took place in 1994.
- The service for the Convention Center enters the City Hall building adjacent to the fused disconnect and then exits the building where it wraps around to the back of the Convention Center. This approach was to create one service entrance location, but this was not accomplished due to changes when department was relocated to the building.
- The third feed to the building feeds the Police Department and is located in the water riser closet adjacent to the men's locker room. This service appears to be a feed from the generator located in the Fire Department and provides the 911 center with power during a power outage. As this service is not marked and no indication of its existence is made in the mechanical / electrical room the City should mark both service locations per the National Electrical Code.
- Many of the panels throughout the City Hall building are original to the construction of the building and with years of modifications to the systems it is unclear how some panels are fed or the loads that they serve.
- The existing electrical panels appear to be in good working order and functioning as expected.
- It was noted that Romex had been used in the mechanical / electrical space and that it appeared to continue to above the drop tile ceiling in the adjacent

meeting room. The use of this wiring above the drop ceiling is not allowed per current code.

The lighting throughout the City Hall and Police Department was recently upgraded removing all of the T12 and incandescent lamps. All new fixtures use T8 or compact fluorescent lamps resulting in lower energy bills and more efficient operation. As these systems are new, it is expected that they will last for many years before requiring replacement.

It is believed that the water heater in the basement of City Hall serves the basement toilet rooms of the Police Department, and possibly the toilet rooms in the link; but this needs to be confirmed. It is an A.O. Smith Permaglas 40 gallon electric water heater, manufactured in March 1985. It is in poor condition and is past its useful life expectancy.

The basement of the Police Department is only ADA accessible via a chair lift on the stair adjacent to the basement Commissioner's room.

The first floor office area of City Hall is not ADA accessible, and therefore, neither is the pantry within that area.

Link (between City Hall and Convention Center)

The link currently serves as the main entry to the convention center, with the public toilets.

The toilet rooms have been partially renovated for ADA.

- Floor mounted water closets with flush valves.
- Wall mounted urinals with flush valves.
- Lavatory sinks are counter mounted with single lever faucets. Piping below the counter is not insulated, and therefore does not meet ADA requirements.

This area is served by the roof top unit that also serves the Conference Center (see separate section below, for unit description). The lobby and vestibule have hot water convectors, and the toilet rooms and coat / vending area have hot water radiation.

There are two roof mounted exhaust fans that serve the toilet rooms and coat / vending area. These fans / systems need to be verified for proper operation, and to confirm that they are providing code required exhaust.

It appears that the masonry wall between the Convention Center and link was intended to be a fire separation wall between the sprinkled convention center and non-sprinkled link. However the doors do not appear to have fire rated glass and

there is no listing visible on the doorframe. Further more the doors are held open by manual stops preventing them from closing automatically.

According to existing drawings, the sprinkler system was capped at the separation wall, for future extension into the link and the front portion of the facility.

Convention Center

The main area of the convention center is served by an air-handling unit located in the penthouse mechanical room; which was replaced in 2011, due to the age, condition and inadequate cooling capacity of the original unit. The new unit was provided with an additional ten tons of cooling capacity. The scope of work did not include any modifications to the existing ductwork, diffusers, or grilles. A controller was installed at the air-handling unit as no centralized DDC system is in place. No work was done to the existing ductwork, diffusers, or grilles. The unit has a DX coil with roof mounted condensing unit and a hot water coil piped from the boiler in the basement.

The boiler and pump that serves the air-handling unit heating coil, and terminal devices in the Link, was installed in 2011. The existing boiler was oversized as the result of much of the equipment being removed from the hot water system, especially when the additions were built along the sides of the center.

The convention center is served by an 800A service located in the rear of the stage. This panel provides service to several panels located on the stage and also panels located in the shop and the kitchen. The electrical panels appear to be accurately identified and in good working order. There are several disconnects located on the stage used for show power as these are for temporary events, and there are openings on the bottom of the equipment enclosures which could allow accidental access to live electrical components.

A mix of recessed incandescent and surface mounted fluorescent fixtures illuminates the convention center. The incandescent fixture provides dimmable lighting while the surface mounted 2'x4' fluorescent fixture is used when high lighting levels are required.

Convention Center - Kitchen

The kitchen hood appears as though it may be original to the building. It does have an ansl fire protection system, with remote control panel. With the canopy being added over the exterior receiving area, the wall-mounted hood exhaust fan now discharges into this semi-confined area, which is not code compliant. The age / operation of the kitchen hood exhaust fan could not be determined, and if original to the building, would be well past its useful life expectancy. Make-up air is provided from roof top units that appear to provide un-tempered air; and appear to be in

good condition. An electric unit heater, suspended in the kitchen, also serves this area.

The dishwasher has a 12 KW booster heater, and the hood is ducted to a roof mounted exhaust fan. The pre-rinse sink has a garbage disposal.

The kitchen is served by a water heater within the space. It is a Bradford White 98 gallon model, which is LP gas fired, and was manufactured in May 1999. In its current location it protrudes into the kitchen circulation area, which has been damaged from carts and other items, and is in poor condition.

The three-compartment sink and other items in the kitchen require indirect drainage. They are currently hard piped and do not meet code requirements. A grease interceptor was not found, which is also required. The center counter sort of has an indirect waste, but it does not occur at the floor (and is at the bottom shelf).

Currently the kitchen does not have ground fault circuit interruption protection (GFCI) for the general use 15 and 20 ampere outlets. As renters of the convention hall use this kitchen it is recommended that GFCI protection be added to the outlets.

During the walk through the lighting in the dish wash area would not work. We were told that the maintenance staff was aware of the situation and trying to work to fix the problem.

Convention Center - Additions

Meeting / Dressing rooms, toilet rooms and interconnecting corridors (of the 1992 addition) are served by a nominal 2.5 ton split system heat pump; which appears to have been replaced in 2004, and is half way through its useful life expectancy.

The Shipping / Receiving area is heated and ventilated, with electric unit heaters, wall mounted exhaust fan and intake louver. All of this equipment is controlled by wall mounted thermostats.

Meeting rooms in the 1993 addition are served by PTAC's. The larger room (in the Southeast corner) required a recent replacement of the PTAC's to a split system, and this room does not have any provision for system level outside air.

The Facility office (located in the rear Northeast corner) is served by a split system. There is a toilet room, within this space, that is not ADA compliant.

The Conference Center, and adjoining areas of the 1996 addition, are served by a dedicated rooftop unit. The serial number of this unit indicates it is original to 1996, which is in poor condition, and at the end of its useful life expectancy.

There are several individual toilet rooms, which are partially ADA compliant, each containing the following items:

- Floor mounted water closets, where some are tank-type and some have a flush valve.
- Wall mounted urinals with flush valves.
- Lavatory sinks are wall mounted with wrist blade faucets. Piping below the sinks is not insulated, and therefore does not meet ADA requirements.
- Ceiling exhaust fan interlocked with light switch.

A large mop service basin is within the Shipping / Receiving area, but has a storage rack installed in it, making it difficult to use.

This addition is illuminated using 2'x4' fluorescent fixtures which use T12 lamps. It is recommended that these fixtures be replaced with T8 lamps during renovations.

Convention Center - Basement

This area is only below the 1993 addition, and is not ADA accessible.

There is a very prominent humidity issue in the basement. It appears that there have been water leaks or substantial infiltration, and that is the reason for the removed carpeting.

The air-handling unit is located within the crawl space, and piped to a roof mounted condensing unit; which appears to have been replaced in 2004, and is half way through its useful life expectancy. It did not appear that this unit had any outside air capability.

There are several wall fans and a ceiling fan in the common area, to circulate air between the spaces; that are controlled by wall switches, that do not appear to be operated on a routine basis.

The toilet rooms are not ADA accessible, partially due to the following issues:

- There is a recessed sewage ejector right below lavatory, with inlet and vent piping hindering access.
- There are two separate toilets installed in narrow rooms with individual light / fan combinations, controlled by common light switch.

The two electrical panels within the basement space are not identified and at this time it is unclear where they receive their power. One a Culter Hammer 8 space panel is located in the lavatory where access is difficult and appears to be the original panel serving this space. A new Square D panel has been installed at the entry to the space, but it is unclear if this panel is used to feed the existing panel located in the lavatory or what additional loads it feeds which are not part of the basement.



Office Area Rooftop Unit installed on the roof of the link.



Condensing Units Across Driveway
These two units serve the air-handling units in the basement of City Hall.



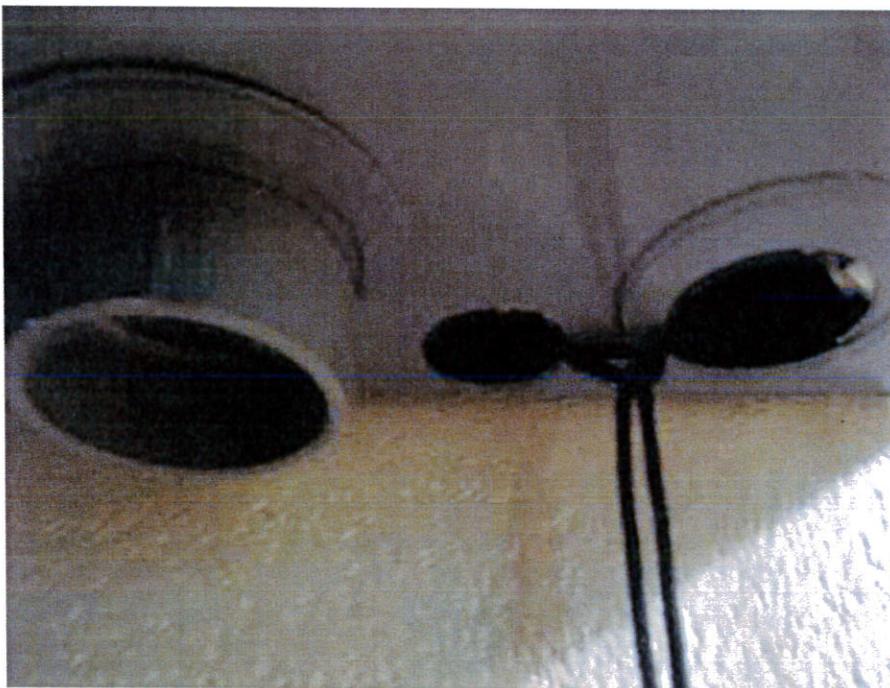
Supply Duct for Commissioner's Room
Code violation as it is above electrical panels and insulation is subject.
Romex cable going to above drop ceiling.



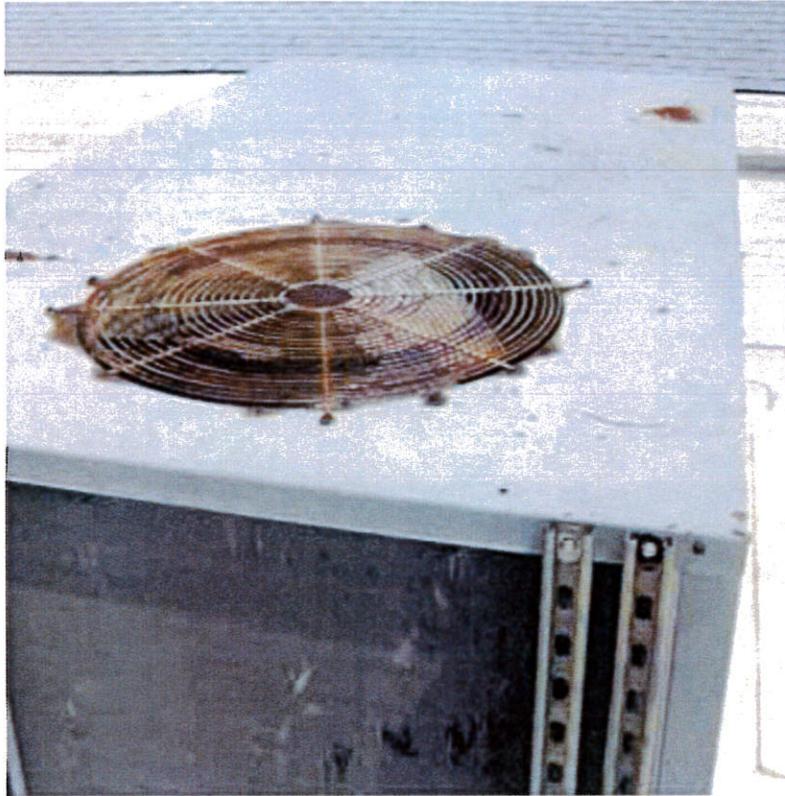
Basement Exhaust Fan – Police Department
Fan is literally installed on grade with landscaping in the fan housing.



Existing Thru-wall Packaged Unit
Unit is apparently leaking as observed by the added pans. Some of these units have already failed and been replaced by split systems.



Open Knockouts Tour Drops



Conference Center Rooftop Unit
Unit appears to date to the 1996 addition and is in poor condition.



Kitchen Roof
Make-up air units appear to provide un-tempered air.



Three-compartment sink, not provided with code required indirect waste.
Kitchen believed to not have a code required grease interceptor.



Kitchen Island Counter
Indirect waste just above bottom shelf of counter, and not at floor.



Kitchen Water Heater
Poor condition due to being located in circulation area.



Individual Toilet Room

Piping below sink must be insulated to meet ADA requirements.



Common Toilet Room in Link

Piping below counter must be insulated to meet ADA requirements.



Convention Center Basement Locker Area
Sewage ejector right below the only lavatory for this area.