MIACOMET GOLF CLUB

12 W. MIACOMET RD. NANTUCKET ISLAND 02554

MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION EXISTING CONDITIONS SURVEY

ISSUED BY: CONSULTING ENGINEERING SERVICES
128 CARNEGIE ROW SUITE 204
NORWOOD, MASS. 02062

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MIACOMET GOLF CLUB

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Existing Mechanical, Electrical, Plumbing and Fire Protection Systems SurNey

Miacomet Golf Club

CES #: 2015410.00

Nantucket, Massachusetts

Prepared For:

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Section G - Preface

General

This study was prepared for Brown Lindquist Fenuccio & Raber Architects Inc. Consulting Engineering Services, LLC visited the site on December 17, 2015 to survey the site and document equipment and devices.

This study documents the existing mechanical, electrical, plumbing, fire detection/notification, and fire sprinkler (MEP) systems of the Miacomet Golf Club located on Nantucket Island.

Each of the Sections described hereafter is numbered to correspond with the following scheme:

Section 1: Club House
Section 2: Administration Building
Section 3: Golf Club Storage Area
Section 4: Golf Cart Storage Area
The sections are further divided into their respective systems within.

Executive Summary

CES recommends that the existing MEP systems at the Club House not be reused except as noted. CES recommends that if the building is retained, all new systems and equipment be installed. If the existing Clubhouse building is demolished, all new equipment and systems will be installed in the new building.

CES recommends that if the existing Clubhouse building is enlarged or relocated, all MEP systems will be integrated into larger systems or reconnected and recommissioned.

Mechanical Overview

The existing golf club building is heated by an oil fired boiler and baseboard radiation. There is no air conditioning in this building. The Administration Building is served by propane gas furnaces and split system air conditioning.

Electrical Overview

The site is served by underground electrical services from the utility company. The power emanates from multiple pad mounted transformers located next to Miacomet Road. There is a pad-mounted transformer located at the front of the club house and a pad-mounted transformer located at the front of the Golf Cart Storage area. There a several buildings that have a nested power supply. The Club House feeds the Club Storage area which in turn feeds the Snack Hut. Due to the age, deterioration, and maintenance requirements of the electrical distribution system, a full upgrade is suggested to improve the distribution, reliability, and safety of the equipment. Regardless of whether a decision to build a new building or to

renovate the existing building is made, a new electrical room will be required.

Plumbing Overview

The existing Golf Club is equipped with a propane fired water heater and associated storage tank and heat exchanger. The hot water is sent to the terminal use points via a recirculating system. The kitchen effluent from sinks is sent to a grease effluent tank outside of the building.

Fire Detection/Notification Overview

Currently the Administration building is the only building equipped with notification devices and a control panel. The Club House has smoke detectors placed throughout the main level. The Club House is not connected to the existing Fire Alarm Control Panel located in the Administration Building. It is recommended that the Fire Alarm Control Panel is replaced, relocated, and expanded to cover all occupied buildings.

Fire Sprinkler Overview

None of the buildings surveyed have a sprinkler system. CES believes that due to the potential renovation cost "code trigger" of a renovated Clubhouse, or the size and use of a potential new Clubhouse, a sprinkler system will be required for the building.

Summary Overview

The occupied spaces are in poor condition and have substantial work required with regards to MEP systems. The existing conditions are described in further detail in each section.

Section 1 - Club House

General

The Club House is the main building which visitors, patrons, and golfers use. This building does not have a dedicated mechanical or electrical room. The Club House consists of Kitchen, Bar, Dining Room, Function Room and Storage areas.

Mechanical Conditions

The club house has no air conditioning for any parts of the facility except for the women's toilet room. The women's toilet is equipped with a wall mounted split system cooling/heat pump unit. The unit has a capacity of 9,000 btu/hr. This unit is set outside the building in an area that presents a very difficult service opportunity. The site is also enclosed to a point that the availability of air for condensing unit heat rejection is not in good design practice. The lack of air conditioning has proven to be a comfort problem in the summer months when restaurant activity is at its highest.

The heating of the building is provided by an oil fired boiler in the basement area. The boiler is a Weil McClain WG0-4 Series 3 with a net output capacity of 126,000 btu/hr. A quick calculation of the required heating for a building of this size, age and setting would indicate a heat requirement in the range of 120,000 to 150,000 btu/hr. The inspection of the heating system layout as well as discussions with the staff leads CES to believe that the system is deficient with regard to its ability to provide comfort at the level required.
The existing baseboard heaters serving the spaces generally run from wall to wall with finned tube inside the enclosure. If the entire enclosure was equipped with finned radiation, which is never the case, the length of active element would be at most, approximately 150 feet. That would mean that to release 126,000 btu/hr of heat, the element would need a capacity of 840 btu per foot. The usual capacity for residential heating element of this style is approximately 600 to 650 btu per foot. This is a clear indication that the element that is installed is not enough to distribute the required heat.

The problem with any attempt to upgrade the heating at this building is the fact that there is no room to install any additional radiation element. This is because the walls are covered from one end to the other. There are also areas of the building that are unheated such as the entrance vestibule. The lack of heat at this point, coupled with the frequency of the front door openings no doubt produces an inrush of cold air that would prove difficult to deal with. This appears to be confirmed by the fact that a direct fired propane heater has been installed at the outside wall near the front entrance. This unit is a Rinnai heater with a capacity of 16,000 btu/hr input.

An inspection of the hot water piping system reveals that there are a total of three (3) heating zones that serve the space. There are three zone circulator pumps that start and stop as commanded by a wall thermostat. All of the existing piping that is installed in the basement as well

as the crawl space under the building is uninsulated. The look of the piping also indicates that there have been extensions from the main lines over the years that were made as a result of cold spots being addressed. The piping is insufficiently supported and the supports are poorly installed. At one area adjacent to the fuel oil tank, there is a water line installed directly over an electric panel which is a code violation.

It is the opinion of CES that the lengths of piping are arranged in a manner that directs the water supply from one radiator to the next. This would insure that as the radiators pass the heating water from one section to the next, the incoming temperature is successively lower. It is CES's belief that this is another reason for the poor performance of the building heating system.

The boiler is located in the basement area of the building behind a door that is not fire rated. The "room" that housed the boiler, once you are past the door, is in actuality the remainder of the basement. In other words there is no boiler room for the boiler. The boiler vent is a single wall sheet metal connector and flue that is directed to the outdoors. This flue is equipped with a power exhaust that extracts flue gasses from the boiler and discharges them outdoors. This fan is mounted on the outside wall near the ground. The flue near the connection point to the fan shows severe rust and a high degree of deterioration. The location of the fan near the ground appears to allow melted snow to re-enter the fan housing. This water, when mixed with the acid fumes of the flue gas is the likely cause of the damage. This issue should be considered serious as it may be allowing combustion gases into the building. The location of the combustion relief fan is also too close to an operable window outside and this is a code violation.

The boiler itself is in fair to good condition with a current tag showing a recent cleaning. There are also no leaks evident at the body of the boiler or at the base. Another issue at the boiler is the area surrounding it. This area is packed with combustible stored materials such as paints and stains. This area is not conducive to good maintenance of the boiler and the associated piping systems. The boiler is fed from a 275 gallon storage tank in the basement. The tank is in good condition. It is vented to the out of doors. The tank is fitted with a firematic valve, and shut off valve. The tank does not have a containment dike around the base to contain any leakage or spill.

A major problem with the operation of the clubhouse as a dining venue is the ventilation of the kitchen. An inspection of the kitchen hood intake and ventilation system shows that there is no heated make up air stream. We are told that because of this, the supply air fans used to provide make up air for the kitchen hood are shut off on cold days. This is due to the "cooling off' it does to the hot food waiting to be served, as well as creating a very uncomfortable work environment. The hood exhaust system is not up to what is considered good design practice. The dishwasher is not vented and it is presumed that this unit displaces the steam condensate into the kitchen.

The main problem this causes is the intake of air from the adjacent space to act as make up air for the hood exhaust. Where that air comes from in turn, is from the outdoors. The replacement air is pulled into the kitchen from the dining area which is drawn into the building from the outdoors,

especially when the front door opens. This is why the building will not heat properly during the cold weather.

Electrical Conditions

This space is served by a dedicated 240/120 volt, 1-phase, 200 amp service (photo). The electrical service is fed underground from a 50KVA transformer located in front of the Club House. Several electrical meters are located on the outside wall of the Club House. Upon further investigation with personnel from National Grid, the transformer was found to be rated for 50KVA. During the peak months of April through November however, the transformer sees a peak demand of over 100KVA. These values represent an overloading of the transformer.

There is no main switchgear for the Club House. All panels found throughout the club house are not named and will be referred to herein as the following:

- MDP-1: 200A Single Phase Panel located in the Women's Bathroom
- PP-1: 100A Single Phase Panel Located in the Women's Bathroom
- PP-2: 100A Single Phase Panel Located in the Women's Bathroom
- PP-3: 100A Single Phase Panel Located in the Kitchen
- PP-4: 100A Single Phase Panel Located in the Kitchen
- PP-5: 100A Single Phase Panel Located in the Cellar

According to the panel schedule, existing panel MDP-1 has a single 40A double pole breaker for the Kitchen Sub Panels. PP-3 and PP-4 are both main lug panels as they do not have a local disconnect except for the breaker in MDP-1. It is unknown if PP-3 and PP-4 are both fed form the same 40A breaker in MDP-1.

PP-1 and PP-2 are mounted adjacent to MDP-1. Both panels have a 100A 2-pole Main Circuit Breaker. There is no identification if these panels are directly fed from MDP-1 or if there is a dedicated feed from the transformer located in front of the building. Both panels have calcium buildup on breakers. The panel schedules for both panels have been edited several times and they have become unreadable.

PP-5 located in the cellar of the clubhouse has a 2-pole 100A Main Circuit Breaker. This panel has a 2-pole 50A breaker which feeds a panel located in the golf club storage area.

Code violations are apparent throughout the Club house: There appears to be multiple services to the main building, services running through other buildings, and disconnects missing from panelboards. The panelboard breakers are becoming corroded and the panel board casing is rusty. Additionally, the utility meters are rusted. Furthermore, there is no service disconnect for the

existing panels, nor sub panels.

There is no backup power located on the site.

Plumbing Conditions

The plumbing fixtures in the men's toilet consist of two sinks with one at the correct ADA height, two urinals with one at handicapped height and a single toilet. The men's room toilet is set in a handicapped sized stall and the stall is fitted with grab bars.

The hot water needs of the toilets and other areas are served by a propane gas fired water heater installed in 2008. The heater is a Weil McClain Model GV with an input capacity of 175,000 btu/hr. This heater was installed in the newer toilet addition in a location that is under the floor of the men's toilet. The heater is set in a concrete enclosed area that is accessed thru a floor panel. This heater provides hot water for the kitchen, the bar area, the men's and women's toilet and a section of baseboard heat in the men's toilet. The heater is fitted with a PVC intake pipe for combustion air and a stainless steel positive pressure relief vent to the outdoors.

The Weil McClain heater is fitted with a circulator pump that is pipes hot water to a Vaughn Model S65C, single storage tank with a capacity of 65 gallons. This tank is fitted with a coil heat exchanger. The water in this tank then heats water from an associated storage tank, and a circulator sends it back to the water storage tank. That tank is a Vaughn Model S65C storage tank. The water storage tank is set adjacent to the exchanger tank. A circulating pump sends water from the storage tank to the kitchen, bar and sinks in the toilets.
There is a floor drain in the original section of the men's toilet as well as a floor drain in the expanded section of the toilet room. There is also a hose connection at the wall for washdown of the room.

The plumbing fixtures in the women's toilet consist of two sinks set in a countertop cabinet enclosure. These sinks are not ADA compliant as the height is incorrect. There is one toilet in a small private stall and another adjacent toilet set in what appears to be a handicapped compliant stall that is fitted with grab bars. The height of the toilet appears to be non compliant as it is too tall. There is a floor drain in this toilet but there is no washdown faucet.

The main kitchen is equipped with multiple wash and prep sinks as well as a utility sink. The main sink is a three unit wash sink with a pot filler style faucet. Adjacent to this sink is a small enclosed dishwasher with booster heater. Adjacent to this dishwasher is a small prewash sink equipped with a gooseneck faucet and a hose spray unit. Hot and cold water is fed from below and drains from these sinks collect and pass thru the floor to the crawlspace below. It is presumed that this sink is directed to the outdoor grease trap. Vent piping from the kitchen equipment is located in the attic space above. There is also an ice machine that takes water from the domestic line and is drained to the waste system.

The water service entering the building has been upgraded from the initial installation. The original line was 1". That line was cut and a new line enters the building at a 1-1/2" diameter line.

Fire Detection/Notification/ Emergency Lighting Conditions

The clubhouse does not have any notification devices such as Strobes, Horn Strobes, or Speaker Strobes. This building does have numerous smoke detectors located throughout the main floor. The clubhouse has several dual head emergency wall packs located along egress routes. All exit doors have unlit Green Exit Placards located above the doors.
The Kitchen is equipped with a manual fire extinguisher at the rear exit door. There is also a panic button at that location to initiate a self contained Ansul system that is installed in the main cooking hood. There is no evidence of heat detectors at the water heater and at the oil fired boiler.

Recommendations

General

The following recommendations are made in the event that the existing clubhouse building is retained.

Mechanical Recommendations

It is the opinion of CES that there is nothing to salvage with regard to the existing mechanical systems. The existing hot water piping system is of little effect and is in too difficult a physical arrangement to be reworked.

To provide a working heating system we recommend that the boiler piping be rerouted to hot water heating coils contained in air handling units. These coils would be installed as part of an air handler or multiple air handling unit. These units would have to be installed in the attic space above the main rooms due to the lack of space within the existing building. The main advantage of this approach is the fact that the units could then be equipped with DX cooling coils. These coils would in turn be piped to condensing units set on a concrete pad at grade outside. Installation of water heating coils in the air handlers would allow the continued use of the existing boiler as well as eliminate the introduction of fuel fired equipment within the wood construction in the Attic.

The main disadvantage of this approach is that there would be water lines piped to the unheated attic. To protect against freezing, it would be a requirement to provide glycol to the water system to raise the freezing point. This would protect the water lines but it would also lower the amount of heating capacity that the boiler could provide. The potential result of that along with a need to provide additional heating to the space would be a larger or at least an additional boiler. This would require that the boilers be sited in a dedicated room that was constructed in a fire resistant

method.
Additional flue work at the existing as well as the new boiler would be required. It may also mean that a larger or additional oil tank be installed to serve the added boiler. As an alternate to that possibility, the added boiler could be specified as a propane fired boiler.
The existing radiation at the perimeter of the walls would be removed in the main rooms. Some radiation such as in the toilets may be retained depending on the design. It would be our recommendation to remove the direct fired propane heater installed in the Dining Room and reinstall it into the entry Vestibule.

Air conditioning would be provided for the main Dining Room and Bar Area by a single or multiple air conditioning air handlers in the Attic as mentioned previously. These units would be set in the attic on the floor. The number of unit would depend on the available room in the space above. New electrical service to the air handlers would be required. The attic would receive all new sheet metal ductwork that would be externally insulated. The air would be distributed to the spaces thru ceiling diffusers.
This would include the Men's and Women's Toilet. The existing split system currently serving the Women's toilet would be removed and reinstalled to serve the Kitchen this would provide some small measure of comfort to that area.

All of the new systems as well as the reused boiler would be fitted with a new energy management system. This would allow the boiler to produce a lower water temperature when the outdoor air temperature is warmer. It would also allow scheduling of the air conditioning units and also allow night setback temperatures to save energy.

The ventilation of the Kitchen still stands as the biggest obstacle to the proper overall operation the clubhouse. The unheated air supply to the hood would need to be remedied. To do that there would need to be a new oil or propane fired make up air unit installed outside on the ground. It is the estimate of CES that this unit would be sized at approximately 2,800 to 3,000 CFM. It is estimated that the unit would be approximately 10 to 12 feet long x 3 feet wide and would be required to have a concrete pad for support and clearance all around for service and maintenance. This is the only way to eliminate the present condition of the poor performance of the heating system at the Dining and Function areas. The supply ductwork would be directed into the kitchen or be reconnected into the existing supply ductwork in the Attic. This installation would require a significant aesthetic intrusion of the existing building but is the most cost effective solution for an HVAC equipment cost.

The above recommendations represent the most practical design solution to provide a level of comfort and safety commensurate with a good level of quality. Should there be a desire to take a far more budgetary approach, that could be accomplished as well but the result would be little more than what is now visible in the existing Women's Toilet room.
That system would involve the introduction of multiple wall mounted cooling units in the Dining, Bar and Function Room areas. These units would be manually started and stopped and cool the space. The main advantage of this approach is the lower first cost. The main disadvantage of this system

would be the cold air drafts as well as the associated noise of the fan along with its on-off operation.

Under this system the heating could possibly remain as presently configured if the air conditioning units were specified as "heat pumps" That type of unit would operate as a heater in the winter months. That would mean that to provide heating in the winter, the boiler would be operating as well as all of the other wall mounted electric units operating as heaters.

Electrical Recommendations

The existing Electrical distribution system of the clubhouse needs to be upgraded. Due to the age of the panel boards, it is likely that there will be a critical failure of infrastructure. A new distribution system will allow for a single main distribution board to service the property. Currently, there is no main distribution panel or switchgear with all loads attached to it. Given that space is a luxury at this location, it is highly recommended that space is created for a dedicated electrical room to house a main switchgear for the complex.

A load calculation shall be performed to properly size the transformer and the recommended main switchgear.

Additionally, the transformer and main service is at critical capacity and it is recommended that it be upgraded to satisfy the demand of the entire property.

Plumbing Recommendations

CES recommends that the women's toilet be upgraded to insure that it is fully compliant with ADA requirements. That would include confirmation of the turning radius at the stall as well as correct toilet height. It would also include a new set of ADA correct height wash sink and faucets as well as a standard height sink. While the Kitchen appears tight, it does appear that the room does function. The main recommendation with regard to the kitchen would be to investigate any need for a more efficient layout. That would mean a major disruption to the plumbing distribution however as there is no space below the room to install new lines.

Fire Detection/Notification/ Emergency Lighting Conditions

Although a Fire Alarm system is not required, it is recommended that an addressable Fire Alarm Control Panel and devices are installed throughout the clubhouse. The addressable system will allow for higher accuracy for emergency personnel in the case of fire. The location of the Fire Alarm Control panel shall be in the main Entry Vestibule to insure that Fire Fighters have easy access to the panel. It is recommended that the exit placards be replaced with Red or Green LED lights. This will be similar to existing conditions in the Administration building.
It is recommended that emergency dual head lights be installed in bathrooms and the kitchen area.

A new sprinkler system would also be required if the use group and occupancy remains unchanged and the financial cost of any renovations to the building were to trigger a code required upgrade. Should a new building be constructed the Building Code will require a new sprinkler system if the building is above 5,000 square feet or an occupancy of 50 or above.

Summary

It appears that any rework of the systems that serve this building, while able to be accomplished, would require a major investment in time and money as well as downtime to the building.

Due to the cost of the remedies to the MEP systems outlined above, the overall recommendation of CES is to support the proposed construction of a new facility and installation of new modern energy efficient equipment and systems.

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El.2 - Kitchen Electrical Panels

El.3 - Panel with water pipe routed above

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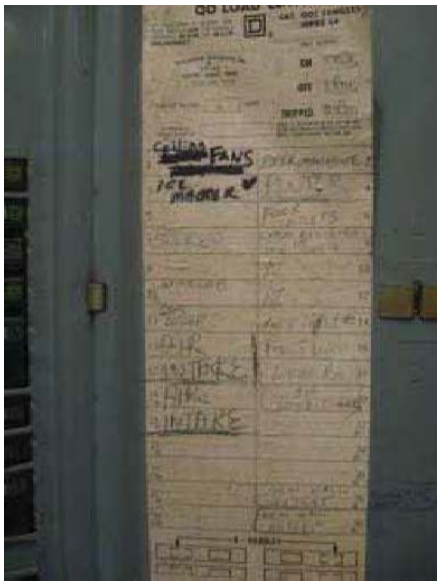

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Section 2 - Administration Building Existing Conditions

General

The Administration Building is located next to the clubhouse. This building does not have a dedicated mechanical or electrical room. The Administration Building consists of Offices on the second floor, storage for Kitchen food and the Pro Shop with a Manager's Office on the first floor. There is a toilet at each floor.

Mechanical Conditions

The existing systems are comprised of split system heating and cooling equipment manufactured by the Trane Company. There are two air handling units that serve both the Administration and Pro Shop sides of the building. The units are both located in the access space. The units are piped to associated air cooled condensing units. These units are set outdoors adjacent to each other on concrete pads at the rear of the building. The equipment bears a manufacture date of 2006 for one condensing unit and 2007 for the other.
The model tag indicates that one of the units is a three (3) ton capacity and the other unit is a four (4) ton capacity.

The air handlers in the Attic space are arranged as horizontally configured units with a packaged gas fire air handler and an associated cooling coil at the discharge end of the unit. The air handler is equipped with a high efficiency propane fire heater. The heater is served by combustion intake and relief provided by PVC piping. These lines connect to an integral intake/relief head at the outside wall. There is a condensate pump that accepts discharge from the cooling coil and discharges the effluent to the waste system. The unit and the condensate pump are set in a secondary overflow pan to protect against a condensate pump failure. It does not appear that the secondary pan is drained away but there is a water detector at the side of the pan that should provide an audible alarm in the event of an overflow.

The supply air is distributed to the spaces via insulated sheet metal ductwork. It is unknown as to the existence of cold spots or drafts in any of the spaces but no issues such as this was brought to our attention during our visit. Return air is brought back to the unit using a single return grille in the ceiling. These grilles are fitted with a filter.

Electrical Conditions

This space is served by a dedicated 240/120 volt, 1-phase, 100 amp service (photo). The electrical service is fed underground from the transformer located in front of the Club House.
All panels found throughout the Administration building are not named and will be referred to herein as the following:

MDP-2: Main Panel for the Administration building

PP-6: 100A Single Phase Panel Located in the Pro Shop.

MDP-2 is located in the vestibule of the stairs landing. This panel is fed directly from the transformer located in front of the clubhouse. The panel does not have a main circuit breaker.

PP-6 is located in the Pro Shop and does not have a main circuit breaker. It is unknown if this panel is fed directly from the transformer. The panel schedule is unreadable due to smudges by ink and graphite. This is a typical comment throughout the premises.

If PP-6 is fed directly from the transformer, that would mean there are two utility services entering this building. Two services entering a building is typically a code violation; nor is it good engineering practice. Upgrading to a single service of proper size will alleviate this problem.

Plumbing Conditions

The plumbing system in the Administration building is a modern system operating in good condition. The water heater is a RUUD unit and is located in a separate room behind the Pro Shop Toilet. The heater is located in a separate area adjacent to the toilet room. It is in a difficult area to access but the equipment is serviceable. The water heater is an electrically heated unit at a 4500 watt capacity. The tank storage capacity is 50 gallons. The water entrance and the sanitary outflow main are also at this same location. The water heater provides hot water to the toilet at the Pro Shop as well as the toilet and shower upstairs in the second floor toilet. There is also a floor mounted slop sink in the room.

There is a toilet and sink in the Pro Shop toilet and both of these items are not ADA compliant. There are no grab bars and the room does not appear to provide the required turnaround radius for wheelchair accommodation.

There is a second floor toilet that is fitted with a utility sink, a toilet and a shower. The utility sink also acts as the hand wash sink. This toilet room is also not ADA compliant but with a stairway to this floor the only means of access, there would appear to be no need for ADA compliance.
The first floor on the Administration side of the building houses a washer and a dryer. There are no other plumbing fixtures in the building other than an outdoor faucet at the entrance side of the Administration Building and one at the rear near the condensing units.

Fire Detection/Notification/ Emergency Lighting Conditions

The administration building has fire alarm horn strobes located throughout the building. CES is unable to verify the candela rating of the strobes. The Administration building has a dedicated Fire Alarm Control Panel located on the 2nd floor in one of the offices. The Fire Alarm Control Panel is not addressable and was installed in 1993.The current location of the Fire Alarm Control Panel in the Administration building is undesirable.

Similar to the Pro Shop; the Exit doors have Red LED exit lights located above them. The egress paths have dual head emergency wall packs. There were no emergency lights located in the bathroom in the Pro Shop.

Summary

The overall installation appears to be very sound and of good quality. Other than the recommendations noted below there are no other major issues related to this building should it remain in place.

Recommendations

General

For the Administration Building there are few remedies needed for the MEP systems. The overall recommendation of CES is to support the possible integration of this building into an expanded Clubhouse or a relocation of this building to make way for a new clubhouse facility.

The following recommendations are made in the event that the existing Administration Building is relocated or remains at its present location.

Mechanical Recommendations

The existing mechanical systems appear to be functioning properly. There is no CES recommendation as to the need for major equipment upgrade at this time. The equipment appears to heat and cool the space without problem and should continue to operate efficiently with regular inspection and preventative maintenance. With regard to the installation CES recommends the following after a review of the installation manual of the existing furnace.
The internal heat exchanger condensate trap appears not to have been relocated to the outside of the unit as is required in the installation manual. The drain from that trap is to be tied into the condensate drain leading from the cased cooling coil which in turn is connected to the condensate pump. This piping connection is not in view. The result could be a buildup of acidic condensate within the unit heat exchanger.

Secondly, the combustion relief vent from the furnace appears to be at a slight downward angle. This is not in keeping with the requirement of the installation manual. This installation should be corrected to prevent the accumulation of acidic condensate in the PVC discharge line.

Electrical Recommendations

The Pro Shop panel and MDP-2 are in good condition and can be considered existing to remain. It is recommended that a local disconnect is provided for the panels as there is no local disconnect for them. If the clubhouse recommendations are completed, then the main service for this building

shall be fed from the main switchgear located in the electrical room.

Plumbing Recommendations

The existing plumbing systems appear well installed and functioning properly. There is no CES recommendation as to the need for major upgrade at this time.
The only work that should be considered would be any code requirement to provide an ADA compliant toilet at the first floor should this building be integrated into a new expanded Clubhouse or if it is moved.

Fire Detection/Notification/ Emergency Lighting Recommendations

It is recommended that a single Fire Alarm Control Panel control all of the addressable devices in all occupied buildings. Only one Panel would be needed to oversee all devices. Due to the age of the existing Fire Alarm System, it is recommended that it be replaced, along with all notification and initiating devices.

Summary

Other than the recommendations above, this building is of sound construction and quality and will be easily supported whether it remains in place or integrated into a larger structure.

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M2.2 - Air Cooled Condensing Units

M2.3 – Typical Air Handling Unit and Cooling Coil

M2.4 – View of Pro Shop with Typical Diffuser

M2.5 - Typical Wall Thermostat

M2.6 - Typical Return Grille at Unit

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E2.2 – Panel PP-6 in Pro Shop

E2.3 - Typical Strobe

E2.4 - Fire Alarm Control Panel

E2.5 - Admininistration Building Utility Meter

Section 3 - Starter s Shed and Club Storage Existing Conditions

General

The starter s shed and club storage building is located next to the clubhouse. This building does not have a dedicated mechanical or electrical room. It contains one office with the rest of the space dedicated to storage.

Mechanical Conditions

There are no mechanical heating and cooling systems at this building.

Electrical Conditions

There is a single panel located in the building, referred to in this study as PP-7. The panel is fed directly from panel PP-5 in the Clubhouse. PP-7 is a single phase panel with no main circuit breaker. PP-7 also feeds the snack bar located up the road from this building. It was noted that this panel is not sized properly as it is prone to tripping.

Plumbing Conditions

There are no plumbing systems at this building.

Fire Detection/Notification/ Emergency Lighting Conditions

There were no notification devices, smoke detectors or emergency lights in this building.

Summary

This building is of sound construction and quality and can remain as purposed at this time.

Recommendations

General

Beyond the recommendations noted below this building can and should remain in service as designed.

Mechanical Recommendations

If desired, this area can be equipped with a propane or electric heater if work is to be conducted in this building or to protect the leather material at the golf bags.

Electrical Recommendations

It is recommended that a dedicated service feed from the recommended switchgear be used to power the Golf Club Storage area. Also, upgrade to a bigger service size to prevent tripping of the breakers.

Plumbing Recommendations

There are no plumbing recommendations to be made for this area.

Fire Detection/Notification/ Emergency Lighting Recommendations

It is recommended that notification and initiation devices be located in the Golf Club Storage area and tied directly to the recommended Fire Alarm Control Panel. It is recommended that emergency dual head LED lights are installed on both levels of the Golf Club Storage area.

Summary

This small building appears to function as it was designed to do and is not in need of any other major upgrade requirements.

Section 3 - Electrical Photos

E3.1 – Golf Club Storage

E3.2 - Local Panel

E3.3 - Club Storage

Section 4 - Golf Cart Storage Existing Conditions

General

There are two golf cart storage areas on this property. The structure discussed below is a newly constructed building with a dedicated transformer and distribution panel separate from the rest of the infrastructure. The second is an open air storage lot adjacent to the Administration Building.

Mechanical Conditions

There are no mechanical heating and cooling systems at this building.

Electrical Conditions

The new indoor golf cart storage facility has a single dedicated panel. This panel does not have a name and will be referred to as:

- MDP-3: 400A 240V single phase panel for golf cart charging and other loads

The transformer for MDP-3 is located in next to Miacomet Drive directly in front of the building.

The open air golf cart storage area is fed directly from the transformer located in front of the clubhouse. There is a 600A 240V single phase rated disconnect located on an outdoor pedestal. On the opposite side of the pedestal are three 200A panels. These panels do not have a nametag and therefore will be referred to as:

- PP-8: 200A 240V single phase panel for golf cart charging
- PP-9: 200A 240V single phase panel for golf cart charging
- PP-10: 200A 240V single phase panel for golf cart charging

All three panels have a 200A main circuit breaker. All three panels receive power directly from the main disconnect through independent LB connectors.
Adjacent to the 600A disconnect is the septic tank control. This panel includes a red strobe on top of the panel to signify a loss of power or normality within the system. This panel receives power directly from the main disconnect.

Plumbing Conditions

There are no plumbing systems at this building.

Fire Detection/Notification/ Emergency Lighting Conditions

There were no notification devices or smoke detectors located within this building. Red LED exit

signs were located above egress doors.

Summary

The existing outdoor cart storage area will need to be relocated if there is a program to enlarge the existing Administration building or if the Administration is relocated to allow the construction of a new Clubhouse.

Recommendations

General

This structure is already built and presumed to be in operation as desired. Any recommendations are offered as suggestions only.

Mechanical Recommendations

If desired, this area can be equipped with a propane or electric heater if work is to be conducted in this building or to protect the golf carts.

Electrical Recommendations

There are no Electrical recommendations to be made for this area.

Plumbing Recommendations

There are no plumbing recommendations to be made for this area.

Fire Detection/Notification/ Emergency Lighting Conditions

At the enclosed cart storage building there are lighted exit signs at the doors. It may be a good idea to install fire extinguishers at the exit doors as well. In addition, it may be wise to add some smoke detectors in the space with an external fire indicating light or horn combination attached to the building.

Summary

The new structure is well built and attractive and can and should remain in use as designed.

Section 4 - Electrical Photos

E4.1 - Electric Golf Cart Charging Panel

E4.2 - 200A Panel for Carts

E4.3 – Typical Cart Plugin

E4.4 - Septic Tank Panel

E4.5 – Electric Golf Cart Charging Panels

E4.6 – Transformer for Indoor Golf Cart Storage

E4.7 - Meter and service entrance