Pacific View Condos – Gearhart, Oregon

Electrical System - Building Assessment Report

December 2, 2022

pae-engineers.com

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1.0 Project Description

1.1 General Building Description

Pacific View Condo is a 3-story building of approximately 27,000 sq ft and build in the late 1960s. It consists of a single building with approximately 27 condo units of 1,000 sq ft each. The condo entry area consists of exterior covered entry corridors, stairs and a single elevator at the front area and condo unit decks on the rear of the building. Surface parking is located at the front of the building, with additional covered parking and utility rooms are located on the sub-grade level and under the building in the rear of the building. A separate pool building is located to the Northwest.

- Size: Approximately 27 condo units at 1,000 sq ft each
- Number of Floors: 3 + sub-grade level parking
- Function: Condominiums
- Year Built: Approximately late 1960s

1.2 Project Scope

The project site was visited on November 11, 2022. The goal of the investigation was to identify the condition of the existing electrical equipment and power distribution services and to provide analysis based on visual observations and make recommendations for system repair and upgrades.

Observations of electrical equipment were limited to readily visible items. Maintenance provided internal access to the main meter center and a typical condo load center for viewing. Operational testing of equipment was not performed.

2.0 Electrical

2.1 Service and Distribution

DESCRIPTION

Utility Electrical Service:

An underground Utility service is provided from Marion Street to a Utility pad mount transformer located at the SE corner of the building, electrical service is routed underground to the main electrical room on the sub-level of the building.

Building Main Electrical Panel:

A 1600amp, 120/208vac, 3 phase, 4 wire commercial meter center is located at the sub-level main electrical room. The meter center consists of four sections, the incoming service section, and three-meter sections. The incoming service section consists of three 600amp sub-feed breakers to sub-feed the 3 meter sections. The 3 meter sections consists of 10 meter sockets each, each meter has a output breaker to feed an individual condo unit panel.

GENERAL CONDITIONS

The meter center is original to the building (1960s), the Utility has replaced the meters with new electronic units. Some surface rust is present on the exterior of the equipment, the interior appears to be rust free, and only one breaker compartment was viewed. The unit is a Square-D brand, Power-Style Switchboard.

Per Square-D the unit is vintage equipment, and no long supported by Square-D. Parts and circuit breakers are no longer available. The equipment and individual breakers are past the 30 years service life for electrical equipment.

The individual circuit breakers may or may not have been cycled and internal breaker components may be fused together and prevent the circuit breaker from tripping during an over current event. This condition could be a potential fire hazard.

CODE ISSUES

No code issues were noted.

RECOMMENDATIONS AND OPTIONS

— Complete replacement of the equipment.
— Or options for the existing equipment:
  - Infrared testing of the wiring connections could identify some faulty wiring connection problems.
  - Provide visual inspection of the internal bussing for signs of corrosion, dust, dirt.
  - Manually exercising the breakers to check for proper operation.
  - Have an electrical contractor check if rebuilt replacement breakers are an option.
  - Remove breakers and bench test by a third-party testing agency for functionality, failing breakers would need to be replace with rebuilt units.

2.2 Distribution

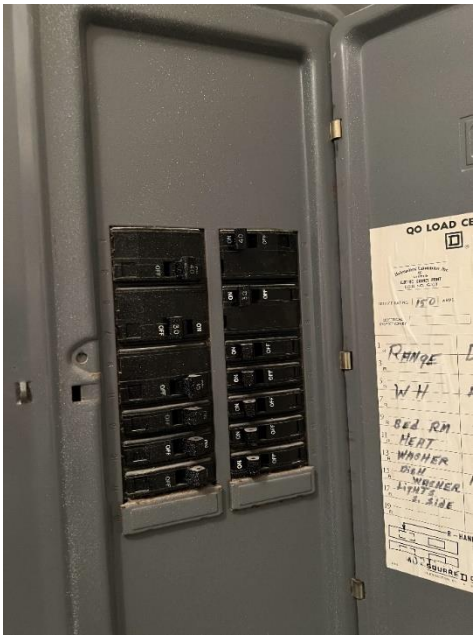
DESCRIPTION - MAIN BUILDING

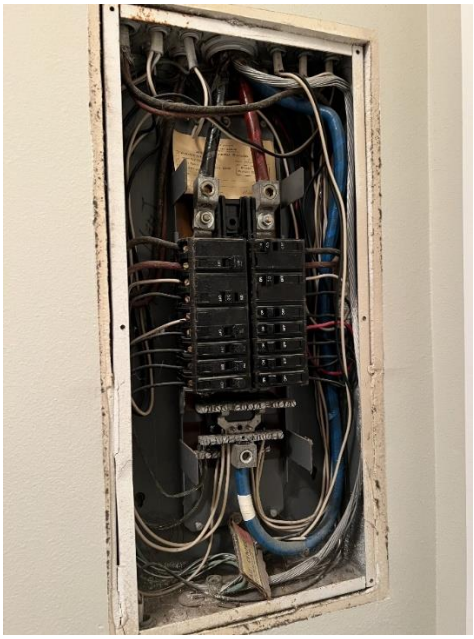
Condo Unit Feeder Conductors

The main conductors from the meter center to the condo unit load center panels are insulated aluminum conductors inside a cloth type overall wrap. These are original to the building. Routing is open air and partially inside raceway. Open routing areas are fastened to the building framing with two hole straps.

Condo Unit Load Centers

Condo Unit load centers are 208vac, 1 phase, 150amp. The typical unit viewed was a Square-D QO load center.





POOL BUILDING AND MAINTENANCE SHOP PANELBOARDS

Branch panels were also surveyed in the pool building and the maintenance shop. Both are in new condition and no issues were noted.

GENERAL CONDITIONS

- Feeder Conductors:
  - No issues were noted for the aluminum conductors, and no corrosion was noted at the terminations viewed. Conductor terminals are mechanical set screw type.
- Condo Unit Load Centers:
  - The load center was in good condition, the QO panels are still serviceable, and new breakers are readily available for this panel type. Some corrosion was noted on a couple of the copper wires at the connection point to the breakers. Wires were a mix of copper and aluminum type conductors.

CODE ISSUES

No code issues were noted.

RECOMMENDATIONS

Feeder Conductors

- Check torque setting on the mechanical conductor terminations.
- Provide infrared testing to check for loose connections or potential connection issues.

Condo Unit Load Centers

— Check wiring connections.
— Check for corrosion issues.

2.3 Grounding

DESCRIPTION

The service ground is not visible at the main meter center. Part of the grounding system was visible in the sub-level main electrical room, where a ground conductor was connected to a water pipe.

Equipment ground conductors are routing with the main feeder to the condo load centers.

Equipment ground conductors are provided with the branch circuit wiring.

Receptacles noted were of the grounded type.

GENERAL CONDITIONS

No issues were observed on grounding system.

CODE ISSUES

No code issues were noted.

RECOMMENDATIONS

— Ground electrode testing at the main service grounding point to verify a adequate system connection to ground is maintained.
— Open the main meter center panel and preform a visual check of connections. Verify that corrosion issues are not present on the grounding system.

2.4 Branch Circuits

DESCRIPTION

— Condo Unit Wiring:
  - The branch conductor used in the condos are residential grade (Romex Type NM) and routed without conduit and concealed within the structure. The branch conductors are mostly aluminum, with some copper conductors used for the larger loads (range, water heater).

GENERAL CONDITIONS

Branch conductors appear to in reasonable condition.

CODE ISSUES

No code issues were noted.

RECOMMENDATIONS

— Building Maintenance has indicated the aluminum branch wiring has had copper pigtails added at the device and lighting j-boxes.

— Check for corrosion issues inside the condo unit load center panels.

3.0 Lighting

3.1 Exterior Lighting

DESCRIPTION

There is very limited exterior lighting. No parking lot lighting was noted. There are bollard style lighting in the landscaping in the front parking. There is building mounted fluorescent lighting at the building rear parking area. Exit signs were noted at the stair landing at each level. Exterior wall mounted entry lights are at the entry to each condo unit.

GENERAL CONDITIONS

The fixtures appear to be in fair condition, some pitting and corrosion was noted. It is unknown if the fixture are all operational.

CODE ISSUES

No code issues were noted.

RECOMMENDATIONS

Replace incandescent and fluorescent lighting with LED type.

4.0 Telecommunications

4.1 Telephone/Data

DESCRIPTION

A new data rack and equipment (patch panels, switch) has been installed recently and is located in the main electrical room. CAT cable has been routed from the rack to each condo unit and fiber from the utility is routed into the rack.

A older telephone truck line and termination board are also located in the main electrical room and appear to be functional still. Phone lines are routed to condo unit with a land line that is still in operation.

GENERAL CONDITIONS

The data rack is in new condition, no issues were observed.

CODE ISSUES

No code issues were noted.

RECOMMENDATIONS

No recommendations.

5.0 Fire Alarm Systems

DESCRIPTION

A newer fire alarm system was installed in 2015. The main control panel is located at the maintenance shop at the sub-grade level. Code required fire alarm devices are located at the elevator (detectors, communication modules, etc.). Manual pull stations and horn/strobes are located at each level of the condo entry breezeways. The remote annunciator is located at the building 1st floor breezeway front entry point. Heat detectors are located within each condo, as well as standalone smoke detectors.

GENERAL CONDITIONS

The fire alarm system is a recent installation and in good condition.

CODE ISSUES

No code issues were noted.

RECOMMENDATIONS

No recommendations.