Meurlott Consulting

VINCE MEURLOTT P.E.
ENGINEERING AND INSPECTIONS
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907.378.4663, vmeurlott@gmail.com, meurlott.com

Dates of Initial Inspection: November 12 & 13, 2022
Job: 3702 Cameron Commercial Restaurant November 2022

To: Doyon Foundation
C/O: Selling Licensee: Marjorie Merry, Pruhs Real Estate Group
Listing Licensee: Kelly Paschall, RE/MAX
Seller: Estate of William Nault

I inspected the building for construction deficiencies to determine if the structure was acceptable for your remodel to house an educational occupancy. I reviewed the construction plans and found them to be excellent. Meurlott Consulting has employed the same engineers with success for design and consultation. The construction is good quality.

Items Reviewed:
Arctic Engineering (Tim Henry) report dated December 4, 2021
Structural plans by ThotPro Engineering (Dan Holmgren) S-1 through S-6 dated 8-16-09
Architectural plans A1.0, 1.1, 1.2, 2.0, & 3.0 by Janet Smith dated 8-28-09
Mechanical plans M1.1, 1.2, 2.1, 2.2, 3.1, & 3.2 by Helena Reuter dated 8-31-09
Electrical plans E1 through E-5 by Roberts-Kaneko (Evan Roberts) dated 8-31-09
Beckley Mechanical Invoice dated 3/29/22 to address corrections specified by Henry.

General and Miscellaneous:
1. Install seismic bracing on the suspended ceiling grid up to the structure above.
2. Remove visible mildew noted on bottom of wall near electrical panels where materials were stacked against the wall.

Electrical:
3. Replace bulbs or make corrections to ensure that all lights work properly. Boiler room.
4. Bring emergency lighting to working condition. Replacement is usually best.
5. Replace 30 amp circuit breaker with a 20 amp for circuit 39/41 protecting 12 AWG conductors.
6. Install cover on electrical gutter above panel.
7. Replace exterior gfci receptacle under the service panel so it trips properly.

Plumbing:
8. Bring all toilets in the men's and women's restrooms to working order.
9. Install nail plates to protect the pipes less than 1.25" from the face of stud or plate. Gypsum board is already installed. I noted plates were missing on a couple of locations

where gypsum board was removed to repair plumbing pipes. Use caution when screwing additional items on existing walls where plumbing may be located.

Mechanical:

10. Have the heating technician ensure there is a proper level of glycol and that the fluid in the hydronic system has the proper composition yearly. This is important with radiant heat where the hydronic piping may be exposed to cold temperatures such as in the "arctic" entry. Have the boiler technician check the glycol, evaluate the PH level and determine if it needs an anti-corrosion additive. A 30% solution is acceptable to me.
11. Clean filters in overhead unit heater in the south (main) entry.

Additional information and/or suggestions for future reference follow:

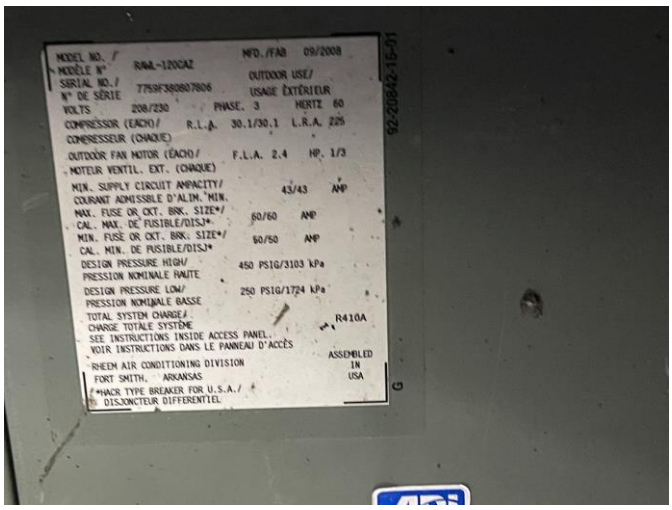
a. Have a mechanical contractor make corrections to controls for the modulating aquastat and or the boiler temperature gauges. The outdoor temperature was + 28 F and the boiler temperature gauges showed temperatures of 190 and 210 F which I believe is too high such that the modulating aquastat is not working properly to save energy.
b. IR photos show a good uniform heat distribution of radiant piping in the slab.
c. The oil lines to the boilers have a "Tiger Loop Combi" (Combination deaerator with filter which eliminates air in the line and allows a clear visual observation of the oil and filter.
d. The roof framing consists of premanufactured energy heel style trusses. They should be sufficient for our snow load without the need to shovel it under normal conditions.
e. Attic ventilation appears to be acceptable with baffles to maintain the eave ventilation at the soffits for a "cold" roof as desired in Fairbanks.
f. There appeared to be about 16" of blown in fiberglass in the attic where I measured. Each inch of insulation is worth about an (R-3). Energy consultants in Fairbanks recommend a total R-value of 60 for energy efficiency. I recommend adding another 5" of insulation.
g. Baffles were in place to maintain ventilation over the attic insulation to ensure a "cold" roof above the exterior wall line where I viewed them in the attic.
h. Adjust the indirect fired hot water heater limit potable water temperature to 120F.
i. Clean and maintain the gutters. Replace missing downspout tailpieces/extensions to ensure that all water is directed away from the sidewalks. Consider installation of drywells for roof runoff to prevent a slip hazard in freezing temperatures.
j. The cement board siding is improperly installed. Fasteners near the corner of bottom flanges caused cracking due to thermal expansion. The siding still provides some weather protection but additional cracks may occur.
k. Remove trees adjacent to the north wall/roof.
l. Ensure all filters for air handling equipment are cleaned.
m. Snow covered shingles. I noted proper step flashing at gable end wall on the west end.
n. In general, the three phase electrical panels and wiring appeared to be per the NEC.

The inspection was limited to the portions of the building readily accessible. The comments are based on what could be observed at the time of inspection. This report may not address every concern that you or another engineer deem applicable. It does not typically address detached buildings, mildew, mold, radon, wells, septic systems, fuel tanks, leaked fuel, soils, environmental hazards (such as lead in paint or piping, asbestos) or right of way/zoning violations. Leaks or condensation may not be identified if not readily visible. I encourage the client to retain other professionals such as mechanical technicians or environmental testing specialists to evaluate concerns or areas not addressed by an engineering report. Please notify me immediately if you believe that I did not address your concerns.

November 13, 2022 is the date for this stamp.
Thanks for the opportunity to serve you.
Please email vmeurlott@gmail.com,
or call me at (907) 378-4663 if you need clarification
Sincerely, Vince Meurlott, P.E.



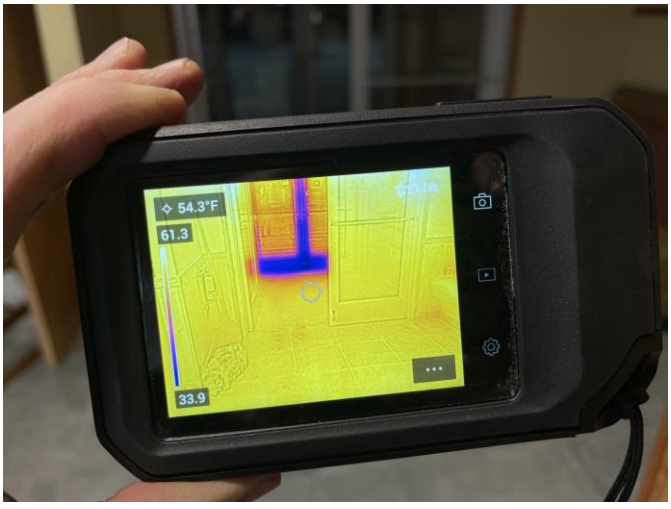

Electrical service equipment now secured. Oil tank and propane tank adjacent to service

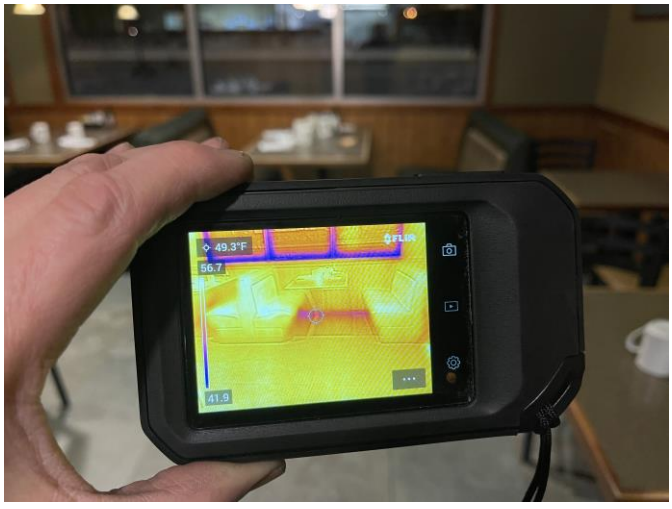



Sono tube form for column per plan. Some stone veneer caps are broken off.

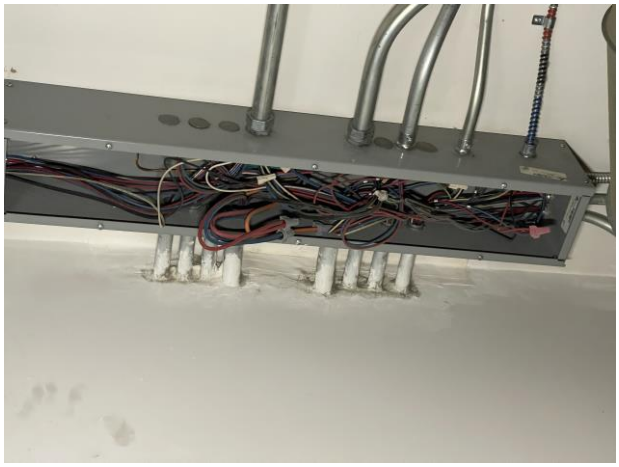

EXIT


EXIT

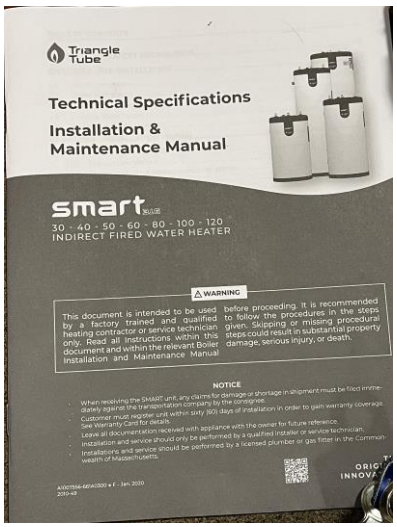

54.3°F
61.3
33.9


49.3°F
56.7
41.9

Ensure that the pump for the two line water service remains running. Above right.



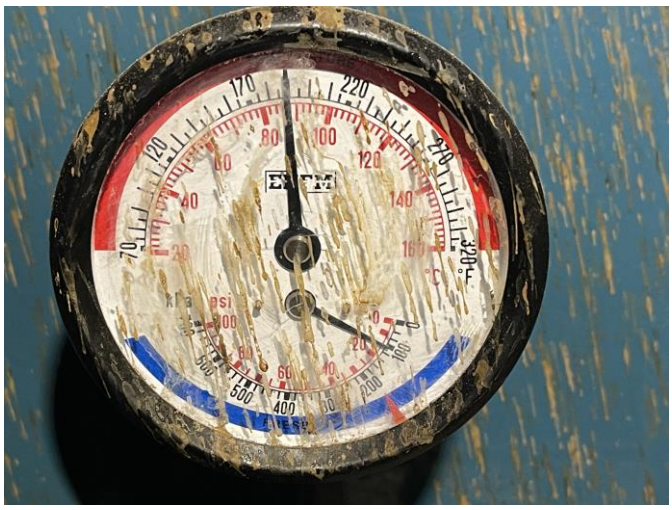
Mildew shown above left. No nail plates installed to protect drain lines shown below.

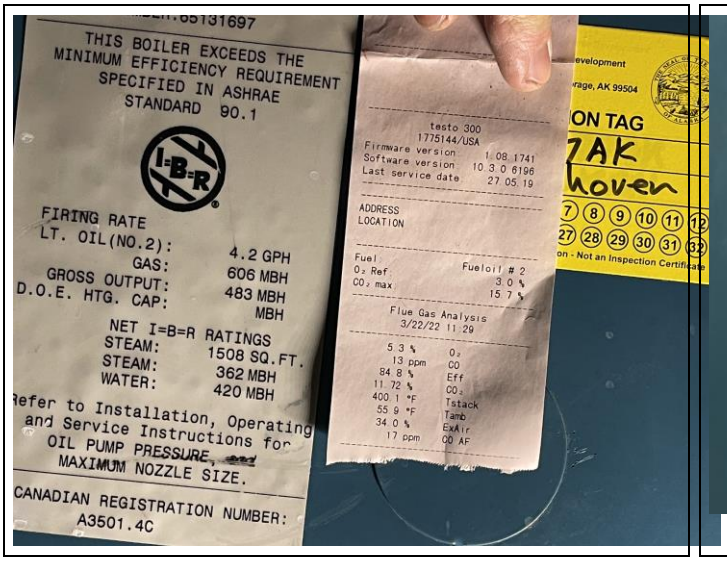


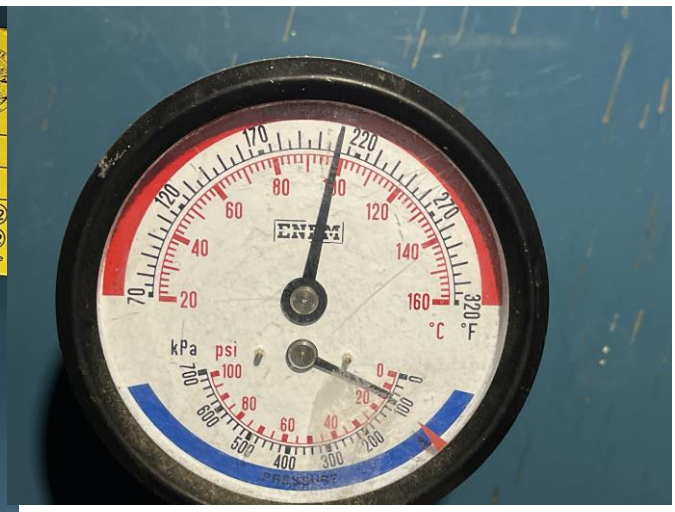
No seismic bracing for ceiling grid. Instructions for new hot water maker left on site.


AXIOM
VALVE POSITION
RUN
MIX
MODEL MF200 SYSTEM FEEDER
RATED 24 VDC 1.2 A
MAX PRESSURE 25 PSI
AXIOM INDUSTRIES LTD.
SASKATOON, SK CANADA
09-18105


LOW PRESSURE BOILER
MODEL NUMBER: V904A
SERIAL NUMBER:65131701
03/2009
THIS BOILER EXCEEDS THE MINIMUM EFFICIENCY REQUIREMENT SPECIFIED IN ASHRAE STANDARD 90.1
I=B=R
FIRING RATE
LT. OIL(NO.2): 4.2 GPH
GAS: 606 MBH
GROSS OUTPUT: 483 MBH
D.O.E. HTG. CAP: MBH
NET I=B=R RATINGS
STEAM: 1508 SQ.FT.
STEAM: 362 MBH
WATER: 420 MBH
Refer to Installation, Operating and Service Instructions for OIL PUMP PRESSURE, and MAXIMUM NOZZLE SIZE.
CANADIAN REGISTRATION NUMBER:
A3501.4C
STATE OF ALASKA
Department of Labor and Workforce Development
Mechanical Inspection Section
INSPECTION TAG
State ID No. 113278 AK
Inspector Name Vanhoven
Do NOT detach or deface Identification - Not an Inspection Certificate
Flue Gas Analysis
3/22/22 11:37


kPa
psi
°C
°F


65131697
THIS BOILER EXCEEDS THE MINIMUM EFFICIENCY REQUIREMENT SPECIFIED IN ASHRAE STANDARD 90.1
I=B=R
FIRING RATE
LT. OIL(NO.2): 4.2 GPH
GAS: 606 MBH
GROSS OUTPUT: 483 MBH
D.O.E. HTG. CAP: MBH
NET I=B=R RATINGS
STEAM: 1508 SQ.FT.
STEAM: 362 MBH
WATER: 420 MBH
Refer to Installation, Operating and Service Instructions for OIL PUMP PRESSURE, and MAXIMUM NOZZLE SIZE.
CANADIAN REGISTRATION NUMBER:
A3501.4C
testo 300
1775144/USA
Firmware version 1.08.1741
Software version 10.3.0.6196
Last service date 27.05.19
ADDRESS
LOCATION
Fuel Fueloil # 2
O2 Ref 3.0 %
CO2 max 15.7 %
Flue Gas Analysis
3/22/22 11:29
5.3 % O2
13 ppm CO
84.8 % Eff
11.72 % CO2
400.1 °F Tstack
55.9 °F Tamb
34.0 % ExAir
17 ppm CO AF
ON TAG
ZAK
hoven
Not an Inspection Certificate


kPa
psi
°C
°F

Tekmar Outdoor reset shown above left. Tiger loop shown above right.

Cardboard baffles installed to maintain eave ventilation. Attic insulation is adequate but could be improved to save energy as fuel prices have risen. Trusses bracing acceptable.