



# Commercial Air, Inc.

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Rich Margerum  
Building Planning Oversight Committee  
Unitarian Universalist Church of Eugene

October 7, 2009

RE: Mechanical (HVAC) System Overview at Scottish Rites Association Lodge

Dear Rich,

The following is a general overview of the equipment in the Heating / Air Conditioning system.

The equipment appears to be the original equipment which was installed according to the Blue-prints around 1957. It has been maintained and for its age is in overall good condition. There are some needed repairs to get the system fully running as per the design.

#### Trane Water Cooled Condensing Unit:

This is the main compressor system for the building air conditioning.

1. It is water cooled by using City water going to the sewer drain. This type of system is out of date and is not to today's code standard. It needs to be upgraded using a cooling tower for the condenser water.
2. The compressor seems to be in general running condition.
3. The compressor is low on refrigerant, with apparent leaks at the TXV's, however time would need to be spent to do a complete leak check. Once the leaks in the system have been repaired the compressor could be charged with refrigerant and more completely checked out.
4. This is a noisy system and you may want to take that into consideration as to its future operation.

**Budget Repair Costs.....\$30,000.00**

#### Pace Air Handling Units:

There are three (3) supply fans and two (2) return fans serving the building.

1. West Supply Fan #1
  - a. Supply duct insulation needs to be replaced in some areas of the ducting
  - b. Refrigerant leaks at TXV
  - c. Evaporator coil needs cleaning
  - d. Refrigerant line insulation needs replacing in some areas

**Budget Repair Costs.....\$3,000.00**

2. Central Supply Fan #2
  - a. Supply duct insulation needs to be replaced in some areas of the ducting
  - b. Refrigerant line insulation needs replacing in some areas
  - c. Evaporator coil needs cleaning

**Budget Repair Costs.....\$3,000.00**

- 3. East Supply Fan #3
  - a. Supply duct insulation needs to be replaced in some areas of the ducting
  - b. Refrigerant leaks at TXV
  - c. Evaporator coil needs cleaning
  - d. OSA damper not wiring correctly
  - e. Refrigerant line insulation needs replacing in some areas

**Budget Repair Costs.....\$3,600.00**

- 4. Central Return Fan#2
  - a. Motor in not operational, needs to be replaced
  - b. Supply duct insulation needs to be replaced in some areas of the ducting
  - c. Outside grille painted over, needs to be cleaned or replaced

**Budget Repair Costs.....\$4,000.00**

- 5. East Return Fan #3
  - a. Motor in not operational, needs to be replaced
  - b. Supply duct insulation needs to be replaced in some areas of the ducting
  - c. Outside grille painted over, needs to be cleaned or replaced

**Budget Repair Costs.....\$4,000.00**

Control System:

The control system is original and parts of it have been disconnected and/or are non-operational. It would be highly recommended to replace it.

**Budget Repair Costs.....\$20,000.00**

Boiler System:

We were not able to fire-off the boiler the days of the inspection due to the high ambient temperature. The overall condition seems to be good and the burner has been upgraded with-in the past few years to natural gas from oil. We were not able to check-out the controls operation, refer to Control System note.

Recap:

When the mechanical system was first installed in 1957 it was a first class system. It seems to have been decently maintained over the years and is in good condition for its age. However as the above notes show it is in need of some repairs and a couple of major upgrades to give it a few more years of faithful operation.

If you have any questions, please give me a call.

**THANK YOU!!**

**Dave Bragg  
HVAC Sales Engineer**