

HVAC ASSESSMENT

Curtis School

BOILER ROOM:

- ?? The boiler room is provided with a single US radiator cast iron sectional boiler which appears original condition to the building well in excess of 50 years of age. The boiler generates low-pressure low temperature heating hot water through a single fuel natural gas burner. The boiler was noted to have extensive surface contamination on the jacket of the boiler itself however considering it's age remarkably the boiler appears to be operating and in very good condition. The boiler is also provided with all operating aquastats and low water cut offs and the installation does appear code compliant. The piping system around the boiler is a combination of black steel and copper un-insulated, and it was noted that there were no dielectric connections at the two dissimilar metal connection points. This condition should be improved upon. Based on the overall age and general condition of the boiler consideration should be given to a complete replacement at this time.
- ?? Breeching is of the single wall galvanized steel un-insulated type. The breeching system was not provided with a barometric damper nor was it provided with a clean out. The breeching ties into a masonry chimney, which appears to be of adequate height and size to maintain proper combustion and it was noted that there was a clean out in the base of the masonry chimney. It does not appear that there is a chimney liner in this chimney and this condition is non-code compliant. Based purely on age consideration should be given to an overall upgrade at this time.
- ?? The heating hot water system is provided with a single air elimination type expansion tank located at the ceiling of the boiler room. This expansion tank was not insulated and appears to be in very good condition and functioning as intended.
- ?? Combustion air for this boiler room is through a single wall louver located at the floor line in an exterior wall. This louver also appears to be blanked off. The louver was not provided with any means of automatic shut off and as the building code presently exists two louvers of equal size are required one high and one low in the room both provided with motor operated dampers. This installation is very poor as well as dangerous and consideration should be given to upgrading at this time.
- ?? Two inline hot water circulators are provided on the return side of the boiler and feeds out to the individual heating apparatus throughout the building. There are no back up circulators provided and the circulators were noted to be in relatively poor condition however do function. Consideration should be given to a complete upgrade at this time.
- ?? There was no central automatic temperature control system provided for the entire building.

LOWER LEVEL OFFICE AREAS:

- ?? The lower level occupied areas were heated through a combination of residential and light commercial quality fin tube radiation located along the exterior wall. The fin tube cover was generally damaged and missing end caps in many installations. The condition of the fin tube radiation was noted to be very dirty and contaminated and generally in need of replacement. The fin tube radiation was controlled through a line voltage electric thermostat which appears to control one of the two inline circulators located at the power plant. There was no evidence of zone valves located anywhere throughout the building. The entire installation is extremely poor and consideration should be given to an overall upgrade at this time.
- ?? Ventilation for the lower level spaces is through the use of operable windows located within the exterior occupied areas. There was no central exhaust systems located throughout any of these spaces. It was also noted that there were numerous internal spaces that were not provided with any means of either natural or mechanical ventilation and this condition is considered non-code compliant and should be improved upon.
- ?? It was noted that there were various window type wall mounted air conditioning units provided in the rooms. These window air conditioning units were noted to be slightly dirty and slightly contaminated however as we understand it does operate. It was brought to our attention by building personnel that when the units do operate they are very drafty and very noisy; however, as we understand, it does maintain reasonable space temperature control. Consideration should be given to providing a complete central air conditioning system.

STAIRWAYS:

- ?? The individual stairways throughout the building were provided with lengths of fin tube radiation many of which did not have any decorative cover or protective cover over them. The fin tube radiation was of a light commercial quality and generally was exposed within the space. The fin tube radiation was noted to be contaminated and slightly dirty however it does appear to operate. There were no automatic temperature controls provided with any of this fin tube radiation and the system does tend to run wild. Consideration should be given to a complete upgrade at this time.
- ?? It was noted that many lengths of this light commercial fin tube radiation did have a protective grille located on the fin tube for general occupant protection. This grille cover was noted to be slightly damaged and contaminated and in many instances very dirty and in need of cleaning. Based purely on age and overall condition consideration should be given to a complete upgrade at this time.

UPPER LEVEL OFFICE AREA:

- ?? The superintendent's area was provided with light commercial fin tube radiation with a decorative grille applied directly to the fin tube. The fin tube radiation and cover was noted to be slightly dirty and contaminated however as we understand it does maintain reasonable space temperature control. It was noted that there were no automatic temperature controls installed in this system however one central thermostat appears to control one of the circulators located within the boiler room. Based purely on age and overall condition consideration should be given to a generalized upgrade at this time.
- ?? It was noted that there were no mechanical ventilation systems located throughout any of these office areas. All ventilation is through the use of operable windows and all spaces do appear to have exterior walls and windows for natural ventilation. This condition is code compliant; however, consideration should be given to upgrading and providing mechanical ventilation for all spaces.
- ?? It was noted that there was an internal area adjacent to the superintendent's space that was provided with an overhead exhaust system which consists of a galvanized sheet metal exhaust system with two ceiling registers which discharges to a wall mounted louver through an inline exhaust fan. It was noted that these exhaust registers were very dirty and contaminated and it was not possible to determine if the system operates. There was no further information on the system available to us at the time of this visit; however it does appear that the system is extremely antiquated and generally should be replaced at this time.
- ?? The superintendent's office area is also provided with various window mounted air conditioning units. These units were noted to be slightly dirty and slightly contaminated; however, they do operate and maintain reasonable space temperature control. It was brought to our attention that the units were slightly noisy when they operate; however, they do function adequately. Consideration should be given to a complete upgrade to provide mechanical ventilation and air conditioning at this time.

TOILET AREAS:

- ?? The men's toilet area was provided with a single combination light/exhaust fan located at the ceiling. It was noted that the room was severely contaminated with odors and the fan must be operated at all times. The fan was noted to be severely contaminated and very dirty and generally in need of replacement however it was operating at the time of our visit and not maintaining air quality control to any extent. Consideration should be given to a complete upgrade at this time.
- ?? There is no make-up air provided for these toilet spaces other than the use of operable windows. This condition is extremely antiquated and generally should be upgraded at the time.

- ?? The ladies room was not provided with any means of exhaust ventilation and the only ventilation within the space is an operable window which is extremely antiquated and maintains very poor ventilation control. Consideration should be given to a complete upgrade at this time to provide mechanical exhaust and make-up air ventilation.
- ?? Both toilet areas were provided with fin tube radiation located along the exterior wall which was covered with a decorative grille located directly on top of the fin tube radiation. This grille was noted to be extremely contaminated however as we understand it the fin tube does maintain reasonable space temperature control. There was no automatic controls associated with the fin tube radiation and the spaces do tend to run wild when they do heat. Based purely on age and overall condition consideration should be given to completely replacing the heating system in all toilet spaces.

GENERAL OFFICE AREAS:

- ?? The general office areas were provided with the continuous length of fin tube radiation located along the exterior wall. This fin tube radiation was provided with a decorative grille applied directly to the fin tube radiation and it was noted that this grille was extremely dirty and contaminated and generally in poor condition. It was noted that there were various wall mounted electric line voltage thermostats which appear to control zone valves located on this fin tube radiation however, at the time of our visit it was not possible to identify a location of these zone valves. As we understand it reasonable space temperatures are maintained however based purely on age and the overall condition of all systems consideration should be given to an overall upgrade at this time.
- ?? Window mounted air conditioning units were also provided and do appear to operate and maintain reasonable space temperature control. It was brought to our attention that these window air conditioning units are slightly noisy when they do operate however they appear to be in good condition and operating satisfactorily. Consideration should be given to providing a complete central air conditioning system at this time.
- ?? It was noted that there were no central ventilation systems installed and that all ventilation of the space is through the use of operable windows located within the exterior walls. Although this condition is code compliant consideration should be given to providing a complete central ventilation system at this time.