

Case Study

Broken Pipe Found

BACKGROUND:

A high-rise residential building was facing recurring issues of boiler failure, frequent Heating Hot Water (HHW) and Domestic Hot Water (DHW) system breakdowns, and significant water loss, leading to high energy consumption and ongoing system damage. Water testing in the heating pipes found a large amount of sludge and other debris in both systems, and the HHW corrosion inhibitor level was extremely low.

PROBLEM IDENTIFICATION:

To investigate and address the issue, a WATERSHIELD FLOWIE-O was installed on the HHW make-up meter system, along with a side-stream filter. The newly installed filter quickly became clogged with dirt and debris, which signaled substantial corrosion in the pipes and/or boilers. Bi-monthly water chemistry tests and water loss records were initiated. These records showed that the system was losing an alarming amount of water. At a rate of 1,140 liters per day (~50 liters per hour), it became evident that the heating system had a significant leak. This water, heated to 180°F (82°C), was being continuously lost, compounding both water and energy waste issues.

SOLUTION:

The WATERSHIELD and LEaC Shield Programs were implemented immediately. A Plumbing contractor was assigned to find this leak immediately. The leak was found in a heating pipe buried under a concrete floor; this pipe was supplying heating water to the main building entrance foyer hot water radiator and adjacent Lounge hot water radiator. The HHW supply and return piping was completely shut off and the leak was stopped. LEaC Shield was critical in eliminating corrosion throughout the DHW piping.

CONCLUSION:

Water losses of up to 50 liters per hour from the Heating system was stopped by disconnecting the broken pipe from the Heating system. In addition, the ongoing cost to heat the cold water up to 180 DegF from 50 DegF (10 DegC) and ongoing damage to the heating hot water pipes due to corrosion, have also been stopped. The calculated heat loss from the hot water amounts to ~12,000 BTU of energy per hour. The loss of heat was continuous throughout the year, as the heating system operates to heat up the domestic hot water in addition to space heating. Lost energy cost is calculated to be approximately \$2,000.00 per year.



📞 1-855-946-1783

✉ info@water-shield.ca

🌐 www.water-shield.ca