

Building Maintenance Prior to and Following Decommission

by Bill Bliss

Buildings occasionally may be shut down or furloughed for an undetermined period of time. This recently has occurred extensively across the nation due to the coronavirus pandemic, with shelter-in-place orders. Examples of other reasons buildings may be closed for extended periods include seasonal vacation destinations and businesses, or change of ownership of a building.

Ideally, if a building will be unused for any substantial period of time, care must be taken to ensure that the sanitary system in the building is cleaned prior to closing. The drain, waste, and vent (DWV) system can be cleaned by running a significant amount of water through the system to expel any idle contents, or the system can also be water-jetted. However, if the building's plumbing system was not cleaned prior to its closure, these steps must be taken to ensure the health of the building prior to occupancy.

According to a Cast Iron Soil Pipe Institute (CISPI) white paper on DWV maintenance, "Many factors outside of the DWV system itself can have

“ Many issues and procedures need to be considered and implemented when plumbing systems go unused. ”

long-term effects on the system's performance and functionality. Slope, system design, fixtures, frequency of use, chemicals and cleaners, maintenance, materials, and water levels and quality are just some of

the factors that can affect a DWV system.”¹ Thus, facility managers will need to properly assess the DWV system maintenance program for their respective building.

Besides design and performance factors, another issue to considered is hydrogen sulfide gas and the condensate that comes from that gas, as they are detrimental to any type of piping material. The largest contributor of hydrogen sulfide gas is the city's sewer system. Utility system officials have long been concerned about the infiltration of rainwater into the sewer system. They do not want their treatment plants to be overtaxed with the burden of cleaning rainwater, and because of this issue, they have closed off most entry points in the system that would allow rainwater to enter. This practice, however, also stops the infiltration of fresh, clean air into the sewer system.

The sewer system is now being vented through the buildings that are attached to the sewer system. This allows much more hydrogen sulfide gas to back up into the drainage system. The introduction of this gas is more detrimental in a building that has been shut down because no water is flushing through the system to wash out the condensed hydrogen sulfide.

Care should also be taken in decommissioned buildings to ensure that the trap seals in the plumbing fixtures do not evaporate and allow sewer gas to infiltrate the building. One of the easiest ways to do this is to make a solution of propylene glycol and pour the solution in the fixtures to replenish the trap seal. This method will also protect the trap seal from freezing. A small amount of vegetable oil may also be poured into the trap to alleviate the evaporation of the trap seal.

When recommissioning the building it should again be cleaned thoroughly by rotting or jetting the system. It would also be helpful to run a camera system through the piping to inspect for breaks or stoppages of any kind. A substantial amount of fresh water should be run through the system to ensure that any material is again washed out of the system. Running this water also has the benefit of flushing stale water out of the portable water system.

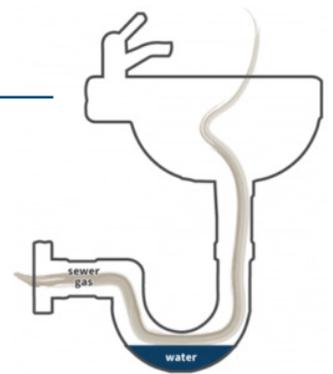
Plumbers' health and safety are paramount during these unprecedented times when dealing with the coronavirus pandemic. The Occupational Safety and Health Administration (OSHA) provides standards for worker protection.² Since the virus can potentially spread through sanitary drain and vent systems, extensive precautions must be taken.

In the United Association's "Guidelines to Protect Workers Related to Coronavirus," "According to the CDC, the virus can survive in human feces. How long it will survive and how contagious it remains is unclear. The Chinese government identified an outbreak in a sanitary drain and vent system in Hong Kong. The Hong Kong outbreak took place in a 30-story high-rise building. The sanitary drain and vent systems were 'altered,' which resulted in open vent connections within the building. . . . Therefore, for as long as the pandemic is still active, it should be assumed by anyone working on a sanitary drainage system that the virus is present."³

In summary, to keep a commercial plumbing system performing well and to prevent more damaging problems from developing, a comprehensive maintenance plan that takes these issues into consideration is essential—regardless of type of pipe in the building.

Citations

1. "The Importance of Maintaining Your DWV System," Victor Hatcher, McWane Plumbing Group, and Brian Connor, Charlotte Pipe, 2020.
2. In the United States, the Occupational Safety and Health Administration (OSHA) provides standards for worker protection. OSHA Standard 29 CFR 1926, Safety and Health Regulations for Construction provides the requirements for construction worker safety, including plumbers who work on sanitary drains, vent systems, and sewers. The standards are available for free at [osha.gov/laws-regs/regulations/standardnumber/1926](https://www.osha.gov/laws-regs/regulations/standardnumber/1926).
3. "Guidelines to Protect Workers Related to Coronavirus (COVID-19) and Other Potential Infectious Materials (OPIM) in Plumbing and HVAC Systems," United Association, March 25, 2020: [ua.org/media/183743/GuidelinesWorkerHealthPlumbingHVACSystemsCOVID-19_1.pdf](https://www.ua.org/media/183743/GuidelinesWorkerHealthPlumbingHVACSystemsCOVID-19_1.pdf).



Sewer gases can infiltrate a building when trap seals in plumbing fixtures contain stagnant water.

About the Author

Bill Bliss has been in the industry for more than 40 years and has held a Master Plumber license in the state of Oklahoma. Currently, Bill is a Technical Consultant for McWane Plumbing Group. He is a veteran of the U.S. Army, having served in Vietnam after being drafted into service in 1968. Following his time in military service, Bill worked at Oklahoma State University for 17 years, where he taught plumbing, pipe fitting, and welding in their School of Technology. Following his teaching career, he was hired by Tyler Pipe in Tyler, Texas, and through the years he has served as a Regional Sales Manager, National Sales Manager in both the Utility Division and Soil Pipe Divisions, VP of Sales and Marketing at Tyler Pipe, and most recently VP of the McWane Plumbing Group. Bill has been a member of the Cast Iron Soil Pipe Institute (CISPI) Technical Committee since 1987 and served as President for a term. In addition, Bill has applied his vast experience by serving on various codes and standards committees and task groups and code development groups including IPC, UMC, IMC, UPC, and ASTM, ASME, CSA, and AWWA. He has been a member of the ASTM committee since 1987 as and has held several roles including Committee Chairman and most recently Membership Chairman. Bill is actively involved with the CSA B70 and B602 Committees, ASTM E05 Committee on Fire Standards, and A04 Iron Castings and is a member of ASTM C24 on Building Seals and Sealants, ASME B16 Committee for valves, flanges, fittings, and gaskets, and the AWWA committee for waterworks fittings. Bill is proud to have held a Master Plumber license in state of Oklahoma.