Plumbers,
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Considerations for empty buildings

When buildings are left empty, the lack of use of these buildings will have some unintended consequences on the plumbing system within the buildings. These unintended consequences may cause issues for occupants as they return, many of which are a H&S concern.

Issues can include:

- Evaporation of trap seals – allowing for foul air from the plumbing waste system to enter buildings
- Stagnant water in unused water pipes – allowing for the potential growth of waterborne pathogens, including legionella bacteria.
- Hot water systems with the power turned off – allowing for the potential growth of waterborne pathogens, also known as "Opportunistic Plumbing Pathogens" (OPP's), which include legionella bacteria
- Scale to build in pipework – potentially coming off when pipes are run and blocking aerators or getting into drinking water
- Speeding up corrosion of plumbing pipe systems and components.
- Leaching of lead and other metals into the drinking water.

The Board recommends that practitioners advise their customers have the following done before empty buildings are reoccupied:

1. Flush cold and hot water at all water points of use (taps, showers, toilets, drinking fountains, and water using devices such as dishwashers and refrigerators/ice makers etc) to replace the water that has been standing in the pipes.

2. Flushing involves opening taps and letting the water run to remove water that has been standing in the interior pipes and/or outlets. the exact time the water needs to run to flush a pipe will vary depending on the volume of water in the pipeline, pipe size and length needs to be considered – This will flush the stagnant water out of the pipes and replenish the trap seals.

As a rule of thumb for many domestic installations running the water from each outlet for a minimum of 5 minutes, after the water is delivered at the normal hot or cold temperatures will suffice. Commercial and industrial installations will vary depending on the volume of water within the pipelines.

- It is important to flush the service line that runs from the water main to the building before flushing the rest of the building's plumbing system
- Special consideration should also be given to hot water circulatory systems (ring mains) and onsite water storage to ensure these are adequately flushed and maintained
- Water-using appliances may require additional cleaning steps in addition to flushing (e.g., discarding ice). Consult also the device manufacturer's maintenance instructions
- Ensure all storage hot water heaters are heating the water to a minimum of 60˚ Celsius and has reached this temperature before hot water is used – This will kill the legionella bacteria that may be in the hot water system. (some hot water plant may require different approaches depending on size and actual layout).

For multistorey buildings, flushing may need to occur in segments (by floor or room) based on the building's plumbing design and water pressure. Begin nearest to where water enters the building and move toward the farthest tap.

Consider checking water quality parameters, such as temperature, pH, and disinfectant levels, in the water entering the building and at points of use after flushing to verify that fresh water is being flushed through the entire plumbing system.

Achieving stable temperature, pH, or disinfectant levels can be a good indicator that the system has been adequately flushed.

Please note:
When flushing the water, a mask should be worn to prevent possible inhalation of pathogens and organisms such as legionella bacteria.

Aerators, point-of-use filters and other fittings may need to be removed to prevent scale getting caught when flushing, these are also a potential breeding ground for pathogens.

Checks and disinfection/flushing regimes that are needed will vary for many buildings depending on the specific plumbing/hydraulic systems in them.

It maybe advisable to take water samples at selected tap outlets to check for the presence of any 'OPP'

If there are any positive results, then a disinfection plan will likely need to be implemented for the water system. The Board recommends that Plumbers consult with experts prior to instigating the disinfection process.

The advice in this document serves as a guide only, not all building plumbing/hydraulic systems are created equal.

Version management

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