How to prevent liquid damage

Liquid damage, from leaking pipes and equipment, insufficient drainage capacity of the building envelope, under designed sewage capacity of the facility or any other loss of containment, is more than twice as likely to do damage to a business than fire, and more than 50% likelier to do damage than a natural hazard. For commercial buildings, fluid where it doesn't belong is the most frequent source of property damage.

The impact can be anywhere at your facility. Just consider networks and servers going down or critical data and systems destroyed. What if elevators are out of service or a transformer is shorted out. Power outage could result in critical equipment lying idle for weeks. An office could be closed for months for refurbishment. Damaged cultural treasures, finished interiors ruined, mould growth, employee and client displacement, business disruption, customers turned away, lost revenue and degradation of reputation. Clean up and debris removal is time consuming and costly.

Leak sources include domestic water piping, sprinkler systems, air conditioning piping, chilled water, and sewer systems and rainwater drainage pipework. The volume of liquid involved depends on the size of the pipework, pressure within the pipework and the size and duration of the leak. Small leakages over a period of time could penetrate concrete structures and result in corrosion.

Causes for leakages include installation or construction / renovation mistakes, improper materials, corrosion and freeze-ups. The latter can occur in even warmer climates subjected to low temperature without adequate insulation or heat.

Early detection is critical

Liquid damage (most often from water) regularly crosses the seven digit mark when the leak is hidden behind a wall or above a ceiling and goes unnoticed, or if a significant leak persists over even a short period of time without being detected and addressed.

Heavier industries such as manufacturing or process related facilities are generally proficient at catching even slow leaks quickly, since pipes are exposed and staff pass by them regularly. Lighter occupancies with liquid lines behind finished interiors, like for example in office buildings, apartments, hospitals, hotels, retailers and universities, account for nearly nine out of 10 liquid damage claims based on insurance loss statistics. Private homes fall into this category as well. If your home has a basement, a regular walkthrough is a great way to catch issues early.

Leaks in multistory buildings are especially problematic. Escaped liquid will find even the smallest openings like stairwells, cable passages or other vertical penetrations, to reach the floors below.

Worse case scenarios are possible if small leaks aren't stopped fast. Hence, the best measure is to detect leaks early and know ahead of time how to reduce the damage by closing the necessary supply valves.

Preventative actions

What should be included in a preventative plan to reduce or eliminate liquid damage at your facility:

- Regularly check all areas for signs of leaks.
- Open and close supply valves periodically to ensure their function.
- Provide catch pans or retention for pipes running over critical equipment. Especially air conditioning drainage in server rooms or electrical rooms are known for liquid damage.
- Install leak detection systems in catch pans, under piping and on floors adjacent to potential leak sources throughout the building. Remote areas or ones with large amounts of piping should be the priority. Wireless units make installation simple.
- Ensure detection systems, including smart sensors and video, provide an alarm to a manned response station.
- Reroute pipes that cross over critical equipment or move the equipment from under the pipes.
- Use sump pumps (a primary and backup) for below ground areas like basements and connect them to emergency power. Equip them with high water level alarms and check the alarm transmission.
- Make an emergency plan and practice it.
- Brief staff on common leak sources like sinks, bathrooms and water coolers. Train key people to find and close valves to prepare for emergencies.
- Identify valves that should rarely, if ever, be closed, such as those on pipes supplying boilers or specialized equipment.
- Ensure automatic sprinkler pressurization alarm systems are functional. The same system that uses alarms and smartphone notifications to signal sprinkler activation can catch any potential leak from sprinkler piping.
- Have the sprinkler system periodically checked by a sprinkler contractor including for microbiologically induced corrosion (MIC) when applicable for your area.

After the loss

If liquid damage is noted, the wet areas need to be thoroughly dried, damaged materials removed and the affected spaces should be completely refinished. For some occupancies like clean rooms or server rooms the recovery period could take weeks or even months. Preparation for such an event upfront is key to a quick recovery.

Similar pipes, areas or situations at a facility should be assessed and upgraded or protected from the source of damage.

Insurance is important, too, especially to help recover from larger events. In many situations though, the damage is below the amount of the deductible, and the event is a time consuming and mildly expensive annoyance. Preventing the loss is therefore always better and risk assessment the starting point. Inspired Solutions can support your organization with risk assessment, setting prevention measures based on a sound cost-benefit analysis, provide preventative action checklists, set up a business continuity plan and help mitigate future incidents by close cooperation following a loss.