



## EXECUTIVE SUMMARY

Water damage caused by frozen and broken pipes in public buildings is CIRMA's leading loss driver of property claims. Since 2002, CIRMA has received 1,112 water damage claims with costs reaching over \$22.8 M. Freezing winter temperatures combined with unheated or under-heated areas in buildings, which causes water pipes to freeze and fail, are the root cause of most of these water damage incidents. Most of these claims can be prevented with easy, cost-effective solutions.

## SCENARIO

At about 7:30 AM, the fire department received a water-flow alarm from the sprinkler system in a local school. When they arrived, there was no fire. Instead, they found water escaping from a burst sprinkler system in a vestibule area. Although they were quickly able to shut off the valve, most of the estimated 800 gallons of water had found its way to the gym, where it caused over \$120,000 in damages to the hardwood floor.

## CAUSES OF LOSS

There were several contributing causes for the loss. The fire sprinkler pipes had frozen because the area was not effectively heated and insulated. The heating system for this area was not adequate nor was it readily accessible for preventative maintenance. In an effort to save on energy and heating costs, even during the extremely cold winter weather, the school maintenance staff had lowered the building temperature below 55°. Even though the building maintenance staff cleared the standing water on the gym floor, they did not remove the water that permeated the joints and had become trapped beneath the polyurethane top coat. On bad advice from the floor's manufacturer, the maintenance staff tried heating the gymnasium area in an effort to remove moisture; however, this only worsened the humidity conditions, and the wood floor began to expand and cup. The school did not notify CIRMA of the loss until several days had past and damage became irreversible. More than half of the entire gym floor required complete replacement and the facility was closed to school sports events for several months.

## LESSONS LEARNED

**Design and Build Phase.** Throughout the entire design and build process, ensure that effective heating and insulation will be provided to areas located above suspended ceilings, near the roof, exterior walls and doors. This is often overlooked and much more costly to deal with after construction and occupancy.

**Water Flow Alarms.** Whether it is a fire or a pipe burst, inexpensive water flow alarms will ensure a quick response of the fire department. In this case, the local volunteer fire department knew how to shut the system down, thereby greatly reducing the damage. Without the alarm, the damage would have been much greater.

**Post the Location of Shut-off Valves.** Ensure all appropriate people know the location of utility shut-off valves in all of your buildings. Use appropriate signage and make sure shut-off valves are accessible and working properly before cold weather sets in.

**Inspect Pipes.** Pipes and the areas around them should be inspected on a regular basis. Pay special attention to vulnerable locations such as vestibules, against outside walls, and suspended ceilings. Ensure that there is adequate heat and that the pipes are insulated.

**Maintain Adequate Temperatures in Buildings at all Times.** Shutting off or lowering the heat too much can spell disaster. Building and room thermostats should never be set lower than 55°. Keep thermostats above 65° when the outside temperatures may dip below 0° or when the facility is unoccupied for a weekend or longer.

**If It's a Problem Today, It Will Be a Problem Tomorrow.** The maintenance staff knew there was a problem keeping this particular area heated. In the past, pipes had ruptured and "leaked" but never to this extent. This situation was treated as a nuisance, without thought that more significant damage would occur.

**Report Losses to CIRMA Immediately.** CIRMA uses a broad network of building recovery specialists who are able to mitigate all types of property losses. They will respond within hours with the most advanced resources available to get your building back in service as quickly as possible.

## CIRMA RESOURCES:

- *Property Conservation Best Practices Guide*
- *Cold Weather Property Maintenance Training Program*
- *Tail Gate Topics*

The Best Practice Guides listed above are available through the Vector Solutions portal. For more information, please contact your CIRMA Risk Management Consultant.