

# Water damage.

**Construction sites need to address water damage risk as costs and delays increase. The consequences of water escaping from building services on a construction site can be catastrophic, resulting in major property damage both on and off site, as well as long delays. However, adherence to best practices and greater use of water management devices could significantly reduce the impact.**

With modern construction methods and increasing property values, water damage has become one of the biggest causes of construction insurance claims in recent years. It is now the second largest cause of loss in the QBE construction portfolio, marginally behind fire.

Escaping water is not a new problem, but the cost of water damage claims has been increasing. In fact, the construction insurance industry recently experienced some of the largest ever water damage claims - water escaping from a failed joint at a high rise block in London recently generated a £25m loss for insurers, for example.

## Causes of loss

Damage from escaped water is the largest cause of water related loss on building sites, far greater than river and ground water flooding or weather. The severity of water damage losses has been steadily increasing with the increased value of property per square foot and the growing prevalence of high rise buildings. However, these claims are also a reflection of current standards of risk management, workmanship, product quality and testing regimes.

Analysis of construction claims data by QBE reveals that most large losses are associated with hospitals and multi-storey buildings - typically between one and six storeys are impacted by water damage. Large losses are also more likely to occur when construction sites are closed - two in three large losses occur out-of-hours - while permanent systems are far more likely to feature in a large loss than temporary.

Claims data also shows that most large losses are due to the failure of mechanical joints, due in large part to changes in construction methods that are making their use more wide-spread. Mechanical joints such as pressed fittings and compression joints bring an increased risk of defect related losses as it can be difficult to identify problems with installation, while mechanical joints are more likely to suffer catastrophic failure than traditional soldered joints.

With as many as 1,500 mechanical joints typically found in just one floor of a high rise building, a defect or failed joint can cause a large loss if not quickly discovered. In fact, joint failures are the main cause of large water damage losses, followed by pipes and outlets having been accidentally left open. Together, these two causes account for 75% of QBE water damage losses.

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### Claims

QBE has handled a number of large claims that illustrate the problem, and how simple measures could prevent expensive damage and long delays. Both cases highlighted here included substantial uninsured losses, in particular liquidated damages and costs for changes to resource allocation, that could have been avoided or mitigated by adherence to best practices and the installation of water management devices.

A large escape of water during testing caused extensive damage and delay during the construction of a multi-storey state of the art hospital block, just days before the project was due to be handed over to the client. An obstructed shower waste caused water to overflow undetected for 10 hours, resulting in significant damage to the building and operating theatres and a six-month delay in completion.

In another large claim, significant damage occurred after a ball-valve compression joint failed in a top floor plant room of a four-storey office block, just a few weeks from handover to the client. The incident, which occurred one week after the mains water was connected but several months after the valve had been tested and put into service, caused damage and a five-month delay to project completion.

### Increased scrutiny

The growing severity of large water damage losses should be seen against the backdrop of a changing insurance market. Having suffered one of its worst ever periods of large losses, the construction insurance market has moved to address underperforming risks.

As a source of frequent and large losses, underwriters are therefore looking to promote higher standards of loss prevention for water damage. QBE Risk Solutions team, for example, has stepped up its work in this area and has been engaging more frequently with clients to provide risk management advice and feedback on our claims experience.

Faced with an increased exposure, a number of construction insurers have reviewed policy terms and conditions, and some will now exclude or restrict cover for damage from escape of water. QBE, for example, is drawing attention to the issue by applying minimum water damage deductibles of £25K, rising to £100,000 or above for high risk or high value projects.

### Loss prevention

In a bid to contain water damage losses, construction insurers are promoting best practices, most notably the Construction Insurance Risk Engineers Group (CIREG) Best Practice Guidance: The Avoidance of Water Damage on Construction Sites (available at <http://cireg.org/library.htm>). QBE, for example, now has a higher expectation of adoption of some or all of the CIREG best practices, including the fitting of water management devices and leak detection systems.

Water damage risks should take a prominent place in the project risk register, with the principal contractor taking overall responsibility for the management of water damage risk. In particular, the CIREG best practices call for a formal Water Management Plan to address the management, prevention and mitigation of risks associated with permanent and temporary water systems, as well as those dealing with rain, storm, flood and groundwater.

CIREG best practices are not as widely used in the construction industry as perhaps they might be. In a recent online poll, only half of respondents had heard of the best practices and just a quarter were using it. However, the guidance has recently been updated and is now easier to use - it includes a template Water Management Plan, for example.

The revised CIREG best practices also place greater emphasis on water management and leak detection devices, which have improved greatly since the guidance was last revised. These devices monitor and shut down the water supply in certain circumstances, such as when small water flows are detected out of hours or when flow rates exceed usual parameters. The guidance also recommends installing leak detection systems with audible alarms and/or linked to remote monitoring when the building is left unattended.

### Loss mitigation tips

QBE has identified the key elements of mitigation for escape of water risk and developed an easy-to-use checklist.

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### Construction site escape of water damage prevention checklist

Every year, there are numerous floods on construction sites and in buildings undergoing refurbishment due to water escaping from building services. Many have serious consequences: buildings, plant and equipment are heavily damaged; work delayed, and completion dates missed.

This checklist has been prepared for use alongside (but not instead of) the CIREG Best Practice Guidance, Managing Escape of Water Risk on Construction Sites. It emphasises the loss prevention and mitigation measures that QBE has identified as being particularly effective for mitigating last losses based on an analysis of historic claims. The checklist does not, however, negate the need to prepare a Water Management Plan.

#### Appendix 1 Water management plan template

		Notes
Has a project-specific Water Management Plan meeting the requirements of the CIREG Best Practice Guidance been prepared?	Yes	.....
<b>6.2, 6.4 Mitigation</b>		
> Will water supplies be isolated and will pumps be de-energised outside working hours, both on temporary and permanent systems, in order to minimise the volume of water that can escape?	Yes	.....
> Is there a formal recorded procedure to control the isolations? Reliable isolation can be best-achieved by the use of actuated valves controlled by time clocks and timer settings on pump controls.	Yes	.....
<b>5.1 Testing and commissioning standards</b>		
> Does the Inspection and Test Plan include a requirement for an initial air test immediately prior to filling in order to identify open pipework and faulty fittings?	Yes	.....
<b>6 Mitigation</b>		
> Will a water management device be installed to detect water that is flowing when it should not be and to rapidly shut down the system when it goes 'live'?	Yes	.....
> Will the water management device will remain in operation post-handover in order to control the risk of latent defects?	Yes	.....
<b>7.2 Emergency response</b>		
> Has a method statement for the isolation of water been produced and has it been tested with the personnel involved, including out-of-hours staff, so that people on hand will know what to do and be able to turn off the water quickly?	Yes	.....

**Note:** numbering in this checklist corresponds to that used in the CIREG Best Practice Guidance.

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