

WATER DAMAGE DURING CONSTRUCTION AND RENOVATIONS PREPAREDNESS PLANNING



Fire is the major cause of damage to buildings under construction, with water damage coming a close second. Water damage is one of the most frequent causes of loss during construction projects. This can be a slow leak, a burst water pipe or a flash flood. The cause could be any number of factors, including climate change, human error and issues with local infrastructure and more.

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Construction delays caused by water damage can result in loss of revenue, especially when they occur near the end of a project. This is the result of the costs associated with clean-up operations, material replacement, equipment repair and project delays.

The Allied World risk engineering approach at all stages of a project is to take proactive measures to avoid water damage in the first place, and to be prepared to take immediate action in the event of water ingress.

The below guide offers you advice and some checklists of items to think about before, during and after construction to reduce your risk exposure to water damage.

What Could Cause Water Damage?

Before construction it is important to consider what water damage risk you face. Water damage can be caused by external and internal sources as listed below:

External water sources:

- Neighbouring properties
- External (city water supply) supplies
- Groundwater
- Rain - roofs and roof drains
- Doors and window openings / roof openings
- Faulty waterproofing systems

Internal water sources:

- Plumbing (piping, drains, pumps etc)
- Fire sprinkler systems (piping, sprinkler heads etc)
- Wet areas such as showers, baths and toilets
- Mechanical systems (heaters, air handlers, evaporators chillers, tanks, boilers, refrigerant piping etc)



Some common causes of water damage during construction include:

- Improper installation of weatherproofing systems
- Poorly glued connections on plastic pipes or improperly sweated copper pipe connections
- Overnight pressure tests

How can you Reduce the Risk of Water Damage?



One way of reducing water damage is to develop a Water Damage Prevention Plan as part of the regular suite of management documents that are now routinely required by project owners.

Like all project documentation, this should be in place prior to the project starting and should be regularly reviewed and updated if a water incident occurs to prevent recurrence.

The below checklist highlights typical areas that documentation should cover.

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Water Damage Prevention Checklist

DOCUMENTATION CHECKLIST:

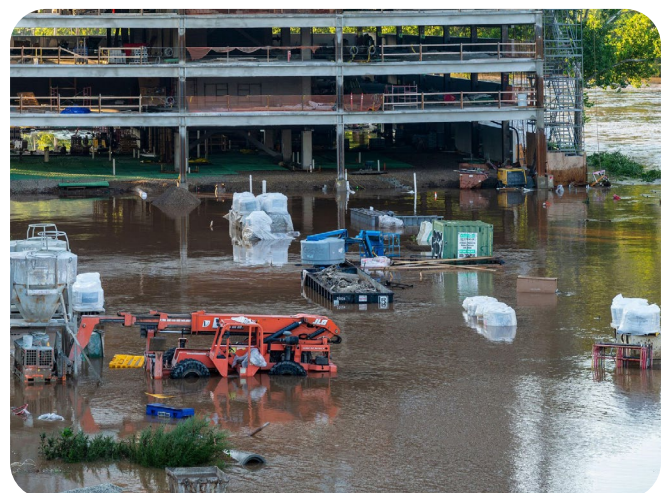
- Preplanning stage** – divert any known surface water (rivers, drainage channels etc) away from the site
- Job responsibilities** – clearly defined roles for supervisors, employees and sub-contractors. Identified individuals responsible for monitoring weather forecasts and securing the site
- Deliveries and storage** – the susceptibility of construction materials varies, and certain materials should only be received when the correct storage is available. This process involves a collaboration between the construction supervisors and the purchasing personnel to determine the optimal delivery schedule
- Inspections and surveillance** – the documentation should identify personnel to monitor the site during the shift and to ensure that the building is weather tight at the end of each shift. The document should also address how the monitoring will be performed at night and over weekends

WORKSITE INSPECTIONS CHECKLIST SHOULD ENSURE:

- All door and window openings are covered at the end of each shift and prior to inclement weather
- Sprinkler or plumbing lines that are pressure tested with water are immediately drained following the test
- Incoming water pipes have valves that are closed (during construction)
- Roof drains and down pipes are not blocked with debris
- Any temporary drains are connected to the permanent drainage system
- Storage areas are dry, well ventilated and materials raised off the floor on pallets

BEST PRACTICE CHECKLIST:

- Ensure there is a secondary power source such as a generator for pumps
- Where practical, test the plumbing systems with air pressure to identify system leaks before charging with water
- Seal leading edges of roof materials at the end of each day to prevent storm water from getting under incomplete roofing
- Training reinforced by regular toolbox talks
- Formal reporting system – 24/7 emergency contact numbers, prompt clean up and investigation into all water ingress incidents
- Adoption of a 'wet works permit' (WWP). Like a hot works permit, the wet works permit outlines a procedure to be followed when people are working with water inside a building
- Leak detection – There are many leak detection systems available to prevent water damage. Many are non-intrusive and do not require any pipe cutting to install
- Passive leak detection - monitoring of water flow and sound an alarm (local or centrally monitored) when water flows out of hours
- Active leak – not only generate an alarm but prevent water leakage by automatically shutting off the water supply



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CONTACT US

HONG KONG

22/F, One Island East
Taikoo Place
18 Westlands Road
Quarry Bay
Hong Kong

T: +852 2968 3000

E: hkhotline@awac.com

SINGAPORE

8th Floor
60 Anson Road #08-01
Mapletree Anson
Singapore
079914

T: +65.6423.0888

E: sg.customerservice@awac.com

MALAYSIA

Suite 9-02, 9th Floor
Menara Hap Seng
Letter Box 77
Jalan P. Ramlee, 50250
Kuala Lumpur
Malaysia

T: +603 2078 3188

E: info.malaysia@awac.com

SYDNEY

Level 21
Australia Square
264 George Street
Sydney, NSW 2000

T: +612.8015.2500

E: info.australia@awac.com



alliedworldinsurance.com

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