

TYPHOON/CYCLONE PREPAREDNESS PLANNING FOR CONSTRUCTION SITES



The only difference between a typhoon, cyclone and hurricane is storm location. If you're in the Northwest Pacific, it's known as a typhoon. If you're in the South Pacific and Indian Ocean, it's a cyclone. And if you're in the Atlantic and Northeast Pacific, it's a hurricane.

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While typhoon/cyclone can occur at any time of the year, the typhoon/cyclone season in Asia generally occurs from June to November, with a peak between August and October.

When these storms hit, they can lead to other devastating natural catastrophes that damage infrastructure, particularly buildings that are still under construction.

As typhoon/cyclone can't be prevented, it's important to be proactive and not wait to react until the last minute. Being underprepared can lead to significant delays in project completion, while taking simple actions in advance can help minimise any disruption.

This document highlights some major issues you can address in regards to typhoon/cyclone preparedness.

What happens in a typhoon/cyclone

When a typhoon/cyclone hits, you can expect high winds, lots of rain, increased wave heights, storm surges, floods and even landslides. Much of the damage to property results from water and flying projectiles rather than actual wind force. However, buildings under construction are more vulnerable to strong winds as they are not yet structurally sound or fully supported.

Being prepared before typhoon/cyclone season arrives

Simplistically, a typhoon/cyclone preparedness plan can be split into three sections:

- **Before typhoon/cyclone season** approaches
- 36 hours to 24 hours **before the typhoon/cyclone hits**, and
- **After the typhoon/cyclone**

First, you should assemble a Typhoon/Cyclone Preparedness Team (TPT) made up of senior individuals and led by a project manager. Each member of the team should:

- Be allocated very specific tasks to perform
- Be given the authority to implement these tasks
- Help identify flood-prone areas at various stages of the construction
- Help procure all necessary materials to minimise damage



Being prepared 36 to 24 hours before

At this point, you should be aware if a typhoon/cyclone is likely. Each member of the team should:

- Head to the pre-determined 'control centre'
- Activate their plan
- Document, photograph and video the site to support any insurance claims

After the typhoon/cyclone

The team should work together to:

- Repair
- De-water
- Reconnect

Before Typhoon/Cyclone Season

After assembling a TPT of senior individuals, allocate responsibilities to each team member so everyone is clear on their role when a typhoon is imminent.

Allocate an individual to monitor typhoon/cyclone direction and speed

This individual should:

- Monitor potential typhoon/cyclone using one of numerous sources on the web
- Alert the TPT when a typhoon/cyclone is forming
- Call a meeting of the TPT 48 hours in advance of any potential storm
- Lash down moveable objects
- Clear drains and gutters
- Disconnect non-essential power and gas

Allocate an individual to adequately stock equipment before each typhoon/cyclone season

This individual should procure:

- Sandbags to prevent site flooding
- Strapping, ropes and banding to secure moveable objects
- Anchors to secure moveable objects to immovable objects, e.g. concrete blocks and screws
- Brace materials for incomplete structures, e.g. steel H columns to support walls
- Wood, tarpaulins and netting to cover vulnerable plants and equipment
- Diesel generators and water pumps (with enough fuel to last)

Allocate an individual to identify flood-prone areas such as foundations and basements as well as decide how to evacuate the water, e.g. by building temporary coffer dams in coastal areas

There may be other tasks unique to your construction site that you can add to this checklist.



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36 to 24 Hours Before the Typhoon/Cyclone Hits

- Arrange a meeting for the TPT to check through the plan
- Relocate moveable objects to a safe indoor area, where possible
- Secure moveable objects, e.g.
 - Strap or anchor fences, trailers, mobile toilets, sign posts, temp huts, etc.
 - Cut any weak tree branches and secure vulnerable trees
 - Fortify cranes by anchoring and removing hoisted loads
(*check your manufacturer's recommended procedures*)
- Check all vulnerable areas, repair and secure roof flashing, and establish good general building condition
- Clear all drains and gutters. If appropriate, create storm drains to channel water away from the site
- Redesign site drainage to prevent increased water loading
- Protect vulnerable equipment with waterproof covering
- Board up and close windows, doors and any unfinished or open parts of the construction
- Elevate goods and equipment on ground floors/basements that are vulnerable to flooding
- Disconnect all non-essential services such as gas, electricity and water, where possible
- Cap/cover pipe ends to avoid water ingress
- Secure openings against flooding, especially underground works
- Refill diesel generator and charge all communications equipment
- Remove scaffolding, if possible, or secure against walls
- Document, photograph and video the site pre-typhoon to support any insurance claims



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After the Typhoon/Cyclone

- Ensure increased focus on safety as building structure may be weakened
- Repair access roads
- Use pumps to immediately remove any water from foundation/basements and prevent problems with stability
- Engage specialised contractors to check all utilities for damage and/or leaks before reconnecting the electricity and gas
- Document, photograph and video the site post-typhoon to support any insurance claims
- Check all fire protection systems to ensure they are in good working order
- Re-clear all drains, gutters and storm drains



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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

A-33A-10

Menara UOA Bangsar

No.5, Jalan Bangsar Utama 1

59000 Kuala Lumpur

Malaysia

T: +603 2710 0940

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