

Tropical cyclone **and**
typhoon action plan

Tropical cyclone and typhoon action plan

Organisations and individuals are likely to face natural and manmade catastrophe at some stage. It is therefore crucial to have a plan well in advance of emergencies, in order to protect you, your employees and your customers from personal injury and your business from damage and protracted downtime.

This action plan is intended as a guide to help business owners and managers prepare in advance their business, premises and employees for a tropical cyclone or typhoon to minimise the risk of personal injury and damage to property, and to reduce business interruption.

An effective [Tropical cyclone and typhoon action plan](#) should include the following:

- Full support of senior management;
- A well-stocked [Tropical cyclone and typhoon emergency kit](#) (as discussed below);
- Readily available emergency contact numbers, *both in the kit and backed up offsite*;
- Copies of all employee, supplier and client contact information backed up offsite;
- Copies of vital records, including business and customer records, blueprints, structural records and utility service plans backed up offsite;
- Preparations to make and precautions

to be taken before, during and after a tropical cyclone or typhoon (as discussed below);

- A designated onsite [Emergency Action Team](#);
- The appointment of an [Action Plan Leader](#) for the [Emergency Action Team](#) responsible for ensuring the preparations are carried out and precautions are taken, and for maintaining the [Tropical cyclone and typhoon emergency kit](#); and
- The appointment of a second person responsible for monitoring the weather conditions (the [Weather Monitor](#)) and keeping the [Action Plan Leader](#) up to date before during and after the cyclone/typhoon.

Action Plan Leader

Appoint an [Action Plan Leader](#) with sufficient authority to lead the [Emergency Action Team](#) and take responsibility for implementing and overseeing the action plan. The [Action Plan Leader](#) should have a thorough understanding of the operations, critical processes, special hazards and protection systems of the business.

The [Action Plan Leader](#) should have access to and be responsible for maintaining the [Tropical cyclone and typhoon emergency kit](#).



Tropical cyclone and typhoon emergency kit

A well-stocked [Tropical cyclone and typhoon emergency kit](#) forms part of the essential advance planning for tropical cyclone or typhoon events. The [Action plan leader](#) is responsible for maintaining the kit, which should contain the following:

- A copy of the [Tropical cyclone and typhoon emergency kit checklist](#)
- Contact details for police, fire and emergency services; [Action Plan Leader](#); [Emergency Action Team](#) members, including a [Weather Monitor](#); plumber; electrician; heating/ventilation/air conditioning (HVAC) contractor; building owner; senior management; suppliers; and your insurance broker
- A copy of this document ([Tropical cyclone and typhoon action plan](#)) for reference
- Instructions for the safe shut down of vulnerable and/or critical processes
- Emergency supplies, as detailed in the [Tropical cyclone and typhoon emergency kit checklist](#).

Pre-tropical cyclone/typhoon procedure

Secure supplies and information

Appoint an [Action Plan Leader](#) and [Weather Monitor](#).

Establish and maintain a well-stocked [Tropical cyclone and typhoon emergency kit](#) (using the [LIU kit checklist](#) as a guide) throughout the tropical cyclone or typhoon season.

Contact local authorities to plan and coordinate activities before an emergency situation, to ensure that both parties are prepared.

Arrange an offsite emergency communications control centre, such as a hotel meeting room beyond the cyclone/typhoon area, in case it becomes too dangerous to remain on site.

Review your business continuity plan and update it as necessary, to include current employee contact details. If you do not have a current Business Continuity Plan, consider using the [LIU Disaster recovery and business continuity plan](#) guide to help you develop one.

Remind personnel of the key elements of the business continuity plan, including post-event communications procedures and work/payroll procedures, and ensure that all employees have a hard copy of the plan.

Identify priority and backup personnel or rotation personnel for critical operations and/or processes. Be aware that employees may also have personal emergencies and may not be able to return to work promptly.

Determine which company records are vital and make plans to protect or relocate them.

Maintain an offsite inventory of all equipment and assets in case of structural damage.

Identify vulnerable and/or critical equipment and processes. Provide instructions for the safe shut down of these processes and data processing equipment, and ensure the instructions are in the [Tropical cyclone and typhoon emergency kit](#). Consider disconnecting and relocating critical equipment to a higher elevation.

Identify a *hot site* (an offsite data processing location for immediate business resumption) or a *cold site* (an offsite location ready for setup of your own data processing equipment). Also, consider an offsite business recovery facility where general business operations can be resumed.

Evaluate the interdependency of your facilities and develop a contingency plan.

Maintain ongoing agreements with contractors for supplies and repairs that will be needed after the storm. If possible, use contractors who are based outside the potential hurricane area, since local contractors may themselves be hampered by storm damage or the needs of local authorities may be of higher priority.

Arrange for post-storm site security.

Prepare messages for the website, telephone recording and employee intranet ready to be customised when the need arises.

Inspection and fortification of the facility

Inspect all fire protection and safety equipment.

Identify action to be taken in case of live electrical wires, leaking gas, flammable liquids, corrosive or toxic materials or damage to foundations or underground piping.

Identify any chemicals that could react violently with each other and be prepared to isolate or relocate them.

Provide an emergency generator (diesel or petrol) on site. (In a crisis, high demand may make it difficult to obtain a generator.)

Identify key equipment and stock that will need protection with tarpaulins or waterproof covers.

Prepare straps or other means to secure, brace and anchor items stored in the yard, signs, cranes or roof-mounted equipment such as HVAC units or exhaust vents.

Inspect and repair roof flashing, coverings, drains, gutters and edge strips. Remove debris and loose material from roofs.

Inspect and maintain signs, stacks and tower supports, guy wires and anchor points.

Repair or replace loose or worn door and window latches, hardware and seals.

Provide pre-fitted storm shutters and/or plywood for windows and doorways and install them in advance of the storm season where practicable.

Prepare for flooding with sandbags and an ample supply of buckets, brooms, mops, squeegees and other absorbents to help remove the water.

Trim or remove any large trees that could fall and damage buildings or impair fire protection or electrical power and communication lines.

Keep storm drains, catch basins and culverts flowing freely and free of debris.

Identify and prepare a space for the inside storage of loose and portable yard equipment or stock.

Install manually operated valves on sewage disposal lines and drainage lines to prevent reverse flow from entering the facility.

Evaluate approaches to your facility for low bridges or other potential impediments to emergency access, and determine safe routes for employees returning to work.

Impending tropical cyclone/typhoon procedure

Secure supplies and information

Tune to your local radio/TV station to monitor and map the tropical cyclone or typhoon and to keep current on its progress. (Refer to the LIU [Tropical storms - Background information](#) document.)

Access the [Tropical cyclone and typhoon emergency kit](#) and, using the LIU kit [checklist](#) as a guide, ensure it is well stocked and available for the onsite [Emergency Action Team](#).

Obtain cash for post-storm needs, such as buying food and supplies or paying employees and contractors. Credit cards may not work during a power failure.

Protect and/or relocate or backup offsite vital records, including business and customer records, blueprints, structural records and utility service plans.

Customise previously prepared messages for the website, telephone recording and employee intranet to notify customers, suppliers and partners of office/facility closure and contingency plans during closure. Consider redirecting phone calls to a mobile phone or answering service if evacuation is necessary.

Inspection and fortification of the facility

Shut down all noncritical and nonessential electrical equipment and operations that depend on outside power sources in an orderly manner following established procedures.

Verify that all fire protection equipment is in service.

Relocate water-sensitive equipment and materials to safe areas off the floor and away from exterior doors and windows.

Prepare for flooding with sandbags and an ample supply of buckets, brooms, mops, squeegees and other absorbents to help remove the water.

Unplug and cover computers, machinery and stock with tarpaulins and waterproof covers.

Check and clear floor drains, storm drains, culverts and catch basins if necessary.

Isolate or remove any chemicals that could react violently with each other. Shut down any gas-fired equipment and shut off main gas valves.

Disconnect the main electrical feeds to the facility, if possible.

Check and maintain all necessary backup equipment, such as emergency generators and communication systems.

Fill the fuel tanks of generators, fire pumps, and all company-owned vehicles. Fill all aboveground and underground tanks with product or water.

Inspect guy wires on aerials, stacks and towers.

Secure roof-mounted equipment such as HVAC units and exhaust vents.

Remove TV and radio aerials and satellite dishes from the roof.

Close and latch windows, exterior doors, roof hatches and skylights.

Install storm shutters/plywood over windows and exterior doors, roof hatches and skylights or close pre-fitted, customised storm shutters. If shutters cannot be installed, tape both sides of the glass to minimise damage from wind-driven rain and flying debris.

Inspection and fortification of the facility

Conduct a yard inspection for loose material and equipment as follows:

- Remove loose yard debris.
- Relocate nonessential yard equipment (such as portable signs, furniture, planters, dustbins) to a safe interior location.
- Relocate indoors any raw or finished goods stored in the yard.
- Secure drums of flammable liquids or relocate them to a safe area away from important buildings.
- Anchor all portable buildings and trailers to the ground.
- Secure scaffolding to the building and secure cranes.
- Fasten rail crane chassis to the track with bolts and clamps.
- Brace outdoor signage.

Evacuate the facility, *allowing sufficient time for employees to prepare their families and homes.*

Emergency personnel (the [Action Plan Leader](#) and [Emergency Action Team](#)) should remain at the site *only if it is safe to do so.*

Procedures during a tropical cyclone/typhoon

Immediate actions

Comply with the instructions provided by local authorities. Notify them if personnel are staying onsite, and be prepared to provide details (names).

Ensure that the [Tropical cyclone and typhoon emergency kit](#) is close at hand.

Designate times for key staff members to call into conference calls for situation overviews.

Turn off electrical switches during power failure, to prevent any equipment powering up before the necessary safety checks have been completed.

Ongoing actions

Keep the website, telephone recording and employee intranet updated with the current status of the facility.

Patrol the facility continuously *when safe to do so*. Watch for roof leaks, pipe breakages, fire or structural damage.

Monitor continuously any critical equipment such as boilers that must remain online.

Use individual, heavy-duty outdoor-rated electrical cords to plug in other appliances.

Post-tropical cyclone/typhoon procedures

Immediate actions

The damage left in the wake of a tropical cyclone or typhoon depends on its location, the population density, and the size of the storm. In the immediate aftermath, it is important to make a quick and calm assessment of the situation.

Contact emergency services if necessary, but avoid making unnecessary phone calls.

If you evacuated earlier, do not return until advised to do so, and then use a recommended route and do not rush.

Do not move seriously injured individuals.

Beware of falling debris from high-rise buildings which may make open areas more dangerous than remaining indoors.

Watch out for fallen power lines and broken gas lines.

Once outside, stay away from power lines, buildings, and any object that may fall.

Check for open busbars, conductors and exposed insulators before powering up electrical systems.

Provide search and rescue services with the last known location of any missing people.

Secure the site and provide a security watch if necessary.

Recovery actions

Survey the facility for damage. If damage has occurred, contact your broker as soon as possible, and they will liaise with LIU on your behalf. Take photographs of the damage.

Look for safety hazards, such as live electrical wires, leaking gas, flammable liquids, corrosive or toxic materials, and damage to foundations or underground piping.

Restore impaired automatic sprinkler protection and/or water supplies as soon as possible and conduct main drain and alarm tests to verify water supply. (Refer to the LIU [Fire protection impairment programme](#) guide.)

Contact your insurance broker, who will liaise with LIU on your behalf, to keep them abreast of the fire protection impairment and repair status.

Contact key personnel and notify contractors to begin repairs.

Maintain fire safe procedures at all times, control smoking and use hot work permits where applicable. (Refer to the LIU [Minimising hot work fire risks](#) guide and [Hot work permit](#).)

Recovery actions continue

Begin salvage operations as soon as possible to prevent further damage as follows:

- Cover broken windows and torn roof coverings.
- Separate damaged goods.
- Clean gutters and remove debris from roofs.
- Check refrigerators/refrigerated areas after a power failure and discard spoiled items.
- Limit access to freezers and refrigerated areas during periods of interrupted power to maintain temperatures as long as possible.

Notify key customers, suppliers and partners of the office/facility reopening and any property or operational changes resulting from storm damage.

Update the message on the website, telephone recording and employee intranet with the current status of the facility.

Debrief key personnel on the successes and shortcomings of the emergency action plan, compile a log of actions to be taken, and incorporate improvements for next time.
