In 2019 the Pearl Delta Region did not record any significant typhoon events for the year. However, the devastation caused by Super Typhoons Hato (2017) and Mangkhut (2018) is still fresh in the memory of most business owners within the region and is still impacting related insurance coverage. In this context, the following information is intended to serve as a timely reminder to our valued clients within the region, to review and update their typhoon preparation and loss mitigation measures, as well as giving due consideration to current workplace pandemic controls, as meteorological forecasters predict multiple typhoon related events approaching the region during the coming 2020 season.

Recent Tropical Storm Activity and Forecast Summary

Tropical storm activity within the region during 2019 was relatively mild compared to previous years, with the Hong Kong Observatory recording five tropical storm events, all below typhoon strength, for the year. However, in 2017/2018 the situation was vastly different, with two super typhoons being recorded in consecutive years.

A summary of relevant storm information from these super typhoons is contained in the following table:

<table>
<thead>
<tr>
<th>Name</th>
<th>Hato</th>
<th>Mangkhut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>23/8/17</td>
<td>16/09/18</td>
</tr>
<tr>
<td>Category</td>
<td>Super Typhoon</td>
<td>Super Typhoon</td>
</tr>
<tr>
<td>Max Wind @ Centre</td>
<td>185 km/hr</td>
<td>185 km/hr</td>
</tr>
<tr>
<td>Injuries / Fatalities</td>
<td>HK 129 / 0</td>
<td>Macau 240 / 10</td>
</tr>
<tr>
<td>Approx. Estimate Losses (USD)</td>
<td>HK 1.02b (Economic)</td>
<td>Macau 1.42b (Economic)</td>
</tr>
</tbody>
</table>

2020 Forecast Summary: As a result of climate change, extreme precipitation events have been more frequent and the hourly rainfall record has been broken several times in recent decades (Hong Kong Observatory). Already, on 20 May 2020, cyclone Amphan struck Eastern India and Bangladesh causing over 100 fatalities and over US$13b in damages. In this context, both the Hong Kong Observatory and the Macao Meteorological and Geophysical Bureau (SMG) predict between four and seven tropical storm events for the region this year.
Building and Landscape Damage Mitigation Measures

Pre-typhoon planning

When considering the leasing or construction of new facilities, avoiding high-wind and flood-prone locations, as well as assessing typhoon-resistant construction, are key considerations in reducing typhoon related property damage and business interruption exposures.

For existing facilities, a review of the most recent typhoon emergency response plans is essential at the start of every typhoon season. Key elements of the plan should include:

- An update of contact information for key personnel, business partners, suppliers and emergency services
- Identification of a typhoon crisis management team who will perform specific tasks before, during and after the event
- Pre-event inspection and reinforcement (if required) of the building envelope to ensure wind and water resistance integrity
- Identification of all business critical areas and evaluation of exposures from windstorm and water ingress
- Clear-off or strap-down loose items/equipment at yard or for roof-mounted equipment (refer to Figure 3)

Figure 3. Roof BMU anchor and strap down

- Provide pre-fitted windstorm shutters and/or plywood for windows and doorways where practical
- Identify key equipment and stock that must be relocated or protected from wind or water damage
- Identify data processing continuity needs, including the establishment of a permanent off-site data processing location for the uninterrupted continuation of data-driven business (hot site) or identification of a back-up location where data processing systems can quickly be re-established (cold site)
- Identify and consider thinning, temporary removal or bracing of large trees (refer following photo) adjacent to buildings or power and communication lines
- Prepare windstorm/flood related equipment e.g. flood gates, sandbags, brooms, mobile sump pumps, etc. (refer to Figure 4)

Figure 4. Flood gates setup at water ingress prone areas

- Ensure in situ protection or relocation of critical company records, inventories, supplies, plant and equipment
- Establish emergency team roster and ensure attendance of critical personnel on all shifts with appropriate knowledge and authorization to implement pre-event shut down, security and safety procedures
- Ensure availability and testing of backup communications, such as two-way radios or cellular phones, including chargers, spare batteries and a diesel-driven emergency generator on site
- Where applicable, identify an off-site crisis control centre for activation in the event that an evacuation of the facility is required
- Conduct pre-event review of business critical supplies. Maintain a buffer stock during typhoon season, where applicable
- Establish a priority-ordering agreement with critical suppliers and repair contractors to ensure expedited delivery post-event

Figure 5. Landscape bracing
As the typhoon approaches

1. Begin implementing typhoon emergency response plans based on pre-determined trigger levels.
2. Inspect, clean and/or repair drains, gutters etc.
3. Check functionality and fuel supply for all necessary backup equipment, including emergency generators, communication devices and data center systems.
4. Activate emergency team rosters, ensure essential onsite team members have appropriate PPE, supplies and equipment (drinkable water, non-perishable food, medical supplies, flashlights, walkie-talkies).
5. Temporarily elevate critical goods and supplies in low-lying areas, if they cannot be relocated.
6. Consider temporarily closing non-critical gas supplies, ignition sources and electrical equipment to minimize the risk of fire during severe typhoons.

During the typhoon

1. If safe to do so, patrol the property at regular intervals, seeking out roof/window leaks, structural damage, water ingress.
2. Constantly monitor critical equipment that must remain online during the storm.
3. In the event of power failure, turn off electrical switches to prevent reactivation before re-start checks are completed.

After the typhoon

1. Ensure the integrity of security and life safety systems.
2. Conduct a property damage/life safety assessment survey.
3. Clean roof drains and remove debris to prevent drainage problems.
4. Begin salvage, restoration and recovery measures as soon as it is safe to do so, in order to prevent further damage.
5. Expedite contact and arrival of key personnel and contractors to start repairs/recovery.

Employee Safety Considerations

From a safety perspective, S.T. Hato caused a significant number of injuries and fatalities in Macau (240 injuries / 10 fatalities). However, just twelve months later the number of injuries was much higher in Hong Kong (458 injuries) than Macau (40 injuries), resulting from S.T. Mangkhut. Subsequently, workplace health and safety regulators in both territories revised their guidance on employee safety during severe weather conditions, particularly in relation to:

- Obligations and guidelines for reporting or not reporting for work during typhoons
- The provision of temporary shelter at work in extreme weather conditions
- Shuttle transport for employees during T8 typhoons and above
- Employee accidents whilst travel to/from work during severe typhoons
- The responsibility of employers to provide a safe place of work during adverse weather conditions
- The provision of PPE and other safety precautions for employees required to work during typhoon conditions

Hong Kong Labour Department (LD): In June 2019, The LD issued a revised Code of Practice in times of Typhoons and Rainstorms. The CoP provides guidelines to employers and employees on work arrangements and the resumption of work in the event that the HK government announce a new ‘extreme conditions’ warning. The extreme conditions warning, if required, will be made before the T3 signal is replaced by the T8 signal. When it is announced, all employees, apart from employees engaged in essential services during typhoons, are advised to stay at the place they are currently in until two hours after cancellation of the T8 warning, instead of heading for work immediately. The government may extend the extreme conditions warning period if required. However, once it is lowered, employees are advised to follow the work arrangements that have previously been agreed with their employers. Please access the revised CoP at this link.

Macau Labour Affairs Bureau (DSAL): Following the devastation of S.T. Hato, the DSAL issued enhanced notes to employers and employees which in part reinforces employers’ responsibilities to provide employees with a safe workplace, including the provision of food and water, as well as reducing the risk to employees, as reasonably as practicable, to a level low level. This includes instructing employees to stay away from dangerous areas and providing them with suitable PPE, where appropriate. Please refer to this link for access to the DSAL notes to employers and employees in times of typhoon, rainstorm, thunderstorm and storm surge warnings.
Of the ten fatalities that occurred in Macau during S.T. Hato, at least four fatalities occurred when people attempted to retrieve their vehicles or other belongings in flooded basement carparks. As a result, it is recommended that typhoon response procedures be enhanced, where required, to include:

- The provision of flood mitigation measures in basements and other low lying areas
- The removal of vehicles prior to the T8 warning being raised
- The prevention of employers entering basement carparks or other low lying areas during heavy rainstorms, typhoons, storm surges or any combination of these events

**COVIDSafe Measures Whilst Sheltering at Work:** As indicated, during severe typhoon conditions, employers’ duties include the provision of a safe place of work if any of their employees are required to be onsite during the typhoon event. In this situation, and given the existing precautions being implemented to reduce the impact of the current COVID-19 outbreak, employers will need to ensure that the provision of a safe place of work during a typhoon, also continues to include COVIDSafe measures, including:

- Continuation of social distancing measures for those remaining at the worksite during typhoon events
- Provision of pandemic related PPE
- Continuation of personal hygiene and sanitation measures
- Environmental hygiene/cleaning practices
- Detection measures, including temperature checking and symptoms monitoring
- Symptoms reporting and notification measures
- Contact tracing for any suspect cases arising whilst sheltering in situ at the workplace

**Claims Considerations**

For post-typhoon loss or damage, it is a duty of the insured to take all reasonable steps to reduce the effects of the loss and prevent any further damage as far as possible. Under the general conditions of property insurance policies, the insured is required to report any claim to their insurer as soon as practicable. In addition, the insured party has an obligation to cooperate with the insurance company and their appointed loss adjusters to process related claims. To facilitate the claims process, the insured party should adopt the following:

- Conduct a thorough inspection of the property to identify any damage/loss.
- Photograph the damaged property at the location.
- Make a complete record of the extent of damage.
- Give every opportunity to the insurance company / loss adjuster to inspect the damaged property before removal and/or repair.
- Seek consent from the insurance company / loss adjuster to proceed with repair / replacement works.
- If any emergency work needs to be done before the insurance company / loss adjuster reaches the site, keep a detailed photographic record.
- Retain damaged property for inspection by the insurance company / loss adjuster.
- Prepare a detailed schedule of the remedial works together with an estimated cost breakdown.
- Record a log of overtime worked on repairs.
- Implement a system of separately recording and describing the remedial works and the resources used in the repairs.
- Gather all quotations, invoices and receipts for the repairs and keep all documentations to substantiate the formulated claim on completion.

**Impact of COVID-19 on Insurance Coverage**

The COVID-19 pandemic presents a rapidly developing situation for insurers. With the world heading towards recession, the length of which could range anywhere between six months and three years, with falling payroll, GDP, global trade and travel, it has never been more important for insurers to perform a strategic assessment of their portfolios. Expected falls in premium income opportunities, combined with changing risk profiles, will challenge any insurer’s pre-COVID-19 business plans. We see strategic portfolio management as a major area of focus to achieve adequate returns, and indeed profitable growth, over the next three years.

In the face of COVID-19 and despite 2019’s benign Typhoon season we are seeing a concerted push to improve terms, namely:

- Rate increases ranging from 15% - 30% and beyond, even for clean renewals, especially where the expiring rate is deemed to be below standard.
- Client retentions are being uplifted considerably, especially for Nat Cat related risks such as
Typhoon Season Preparation and Loss Mitigation

Typhoon and Flood, percentage of loss deductibles (ranging from 10%-15% of loss) for these perils are now becoming the norm.

- Underwriting capacity is likely to reduce meaning clients may no longer be able to insure up to their current limit of cover for Typhoon and Flood.
- Treaty renewals will likely be some of the hardest in decades with further restrictions on Typhoon and Flood coverage a distinct possibility

Clients need to demonstrate they have fully considered and adequately prepared for catastrophic loss scenarios such as Typhoon and Flood to stand the best chance of minimising the effects of the rising tide they are facing.

**Nat Cat Tools and Technologies**

**Global Peril Diagnostic (GPD)**

The Global Peril Diagnostic tool is capable of evaluating multi-property portfolios to assess exposure to 12 natural catastrophe perils, terrorism and pandemics. GPD is designed for all clients with assets in any number of locations anywhere in the world. It is suited for clients with diverse property portfolios within the region or on multiple continents.

![Figure 6. GPD Screenshot: – Nat Cat Peril Data](image)

GPD’s detailed evaluation of comprehensive catastrophe risk provides:

- A concise global view of natural perils, the foundation for an intelligent analytic approach to catastrophe risk
- Interactive mapping to clearly identify the location and peril scores for each client property (refer above)
- Insight into property terrorism risk exposures, with quarterly intelligence updates
- Tracking global COVID-19 confirmed cases alongside property locations worldwide

- Risk-adjusted benchmarking that compares your property portfolio with the universe of WTW clients

**Property Quantified (PQ)**

Property Quantified is a digitally-enabled platform that models both natural catastrophe perils and other loss types (e.g. fire) and is capable of performing an insurance strategy evaluation based on a relatively small number of primary inputs. PQ is a global tool supporting all geographies and is designed for regional clients and those with diverse multinational property portfolios.

![Figure 7. PQ Screenshot: - Impact of Insurance](image)

Key benefits of the PQ tool include:

- Explicit analysis of both catastrophic and non-catastrophic risks in a single platform
- Comprehensive decision support for your risk transfer strategy
- Direct connection to trusted industry vendor and WTW’s propriety algorithmic modelling
- Facilitates live interaction through the direct adjustment of inputs or risk transfer structures and visual representation of immediately updated results (refer impact of insurance screenshot above)

Typhoons are one of the most destructive severe weather events within the region. However, with use of appropriate technologies, advanced warning and pre-planning, effective prevention and control measures can be implemented to mitigate the severity of typhoon losses.

June 2020
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