

## **Basic Disaster and Earthquake Preparedness Advise for Hotels and other Tourism Businesses**

By Alexander Kesper - Plan B Solutions/Crisis Ready Hotels

The terrible earthquake in Nepal once again highlighted the need for disaster preparedness. The tourism and especially the hotel industry have a special duty of care as they deal with large numbers of people who are often not familiar with their environment and the risks of their surroundings.

There is no excuse for tourism businesses not to be as well prepared as possible. As earthquakes are listed as 'medium probability high impact events', preparedness, especially in developing and third world countries is often neglected. In many cases building codes are not implemented and local staff may have a risk perception that differs from international standards and common practice and so hinders optimal preparedness and response.

At the end of the day disaster preparedness needs to be enforced by management and become part of the daily agenda. Preparedness is a circular and continuous process that never ends. It includes physical and procedural preparedness.

Unfortunately preparedness is often neglected because it has not yet been identified as a profit centre by many operators. However, businesses that take care of their customers and employees and 'bounce back' quickly after an incident definitely hold an advantage over unprepared businesses. A well and visibly prepared business also holds a marketing advantage.

Preparedness is not rocket science but common sense.

Preparedness requires a good understanding of the local risk environment as well as a good network and contacts to first responders and disaster management agencies. There is no preparedness without pro-activeness!

Tourism and especially hotel operators should strive to become an asset in disaster response, not a liability. There are many opportunities for public – private partnerships in disaster risk reduction and emergency response preparedness.

### **Better be Ready – General Disaster Preparedness**

Disasters occur worldwide. The most common disasters are floods and storms. Often hazards turn into disasters because of unpreparedness.

#### **Know the Risk!**

The management of any business should be familiar with the characteristics of the natural hazards most likely to occur in its area. These characteristics are:

- Type of Disaster
- Cause of Disaster
- Frequency
- Effects
- Terminology
- Severity and intensifying factors
- Associated phenomena [e.g. landslide or tsunami risk after earthquakes]
- History
- Own vulnerability

Knowledge about early warning and information services as well as their limitations are also crucial.

## The Basics

Management needs to be able to translate early warning information and ad hoc events such as earthquakes into targeted and effective decisions and actions protecting the safety of guests and staff as well as physical infrastructure and business.

Essential preparedness measures are:

- Risk assessments and vulnerability evaluations
- Disaster prevention: structural and non-structural measures
- Disaster preparedness: Emergency Action Plans [EAP's], Emergency Response Teams [ERT's] including emergency planning, evacuation planning, communication plans, data security measures, business continuity planning, etc.
- Regular trainings, drills and awareness campaigns
- Full compliance with building codes and zoning laws
- Contingency planning and back-ups

As a rule of thumb, businesses and especially hotels should be able to independently take care of their guests and themselves for at least 3 x 24 hours as it may take that long before help arrives. It is crucial to also consider the needs and possible demands of the neighbouring community at risk.

## ***The ABCs of Earthquakes***

Many regions around the world are prone to earthquakes. Earthquakes cannot be predicted and they can happen without warning at any given time unlike storms or floods. They can cause cataclysmic destruction landslides and tsunamis. It is important to be prepared for earthquakes. Very often simple measures can make a huge difference.

Most earthquakes occur along plate boundaries. The most active earthquake zone is the 'Pacific Ring of Fire' which stretches from the Aleutian Islands through Japan, the Philippines, Indonesia and the South Pacific to the south of New Zealand. However 'interplate' earthquakes can be just as severe; they just occur less frequently. Amongst others the Himalayas are a very earthquake prone area as well as Japan, the European Alps and the Mediterranean. That an earthquake didn't happen during a lifetime does not mean that they cannot happen at all!

Many earthquake areas are popular tourist destinations. Over 40% of cities with more than five million inhabitants are located in seismically active zones. Although large earthquakes cause severe damage and make for spectacular news coverage, the overall risk from earthquakes remains relatively small compared to those from other sources.

The 'size' of an earthquake, the energy released, is measured as magnitude on the Richter scale. This is a logarithmic scale, which means that with every increase in magnitude the ground shakes 10 times more as compared with the previous magnitude.

The effects of an earthquake are described on the modified Mercalli scale. The severity of shaking depends on the earthquake's strength but also on the location of the epicentre and its depth, as well as the composition of rock and soils.

With proper planning and precautions, the earthquake threat can usually be reduced to acceptable levels.

## ***Information Sources***

Earthquakes cannot be reliably predicted. Rather than trying to predict individual earthquakes seismologists now aim to determine earthquake hazard, which is the likelihood of shaking of a given severity at a given place, taking account of the distribution of earthquakes and local ground conditions.

Providers of earthquake maps are national geological surveys as well as international organizations such as the UN or companies like Munich Rueck Insurance. Follow the link for an example of an earthquake hazard map for Indonesia: <http://earthquake.usgs.gov/hazards/products/images/WIndoSH.pdf>

The US Geological Survey [USGS]<sup>1</sup> or Geofon<sup>2</sup> provide speedy and reliable information services on earthquakes that have occurred, together with tsunami early warning info. Another very useful service on all kinds of hazards is GDACS [Global Disaster Alert and Coordination System] which also provides rapid impact assessments<sup>3</sup>. AHA Centre<sup>4</sup> provides disaster information for Southeast Asia.

## ***Risk Assessment***

### ***In order to reduce risk it has to be assessed first.***

The before mentioned hazard maps as well as historical data provide a good starting point.

Note that risk can also be created by inadequately constructed buildings and inadequate preparedness. Many countries have formulated earthquake building codes but often they are not enforced. This is especially the case in developing or third world countries. Only a certified structural engineer can assess the real earthquake resistance of an already existing building.

Proximity to dangerous sites such as chemical or nuclear plants should also be taken into consideration. Buildings on soil that is prone to liquefaction [for example on flood plains and swamplands] as well as locations on steep slopes or on tsunami prone coastlines have to consider these secondary risks.

Search and rescue as well as recovery services are likely to be limited after a disaster. Do not rely on them if you can avoid it. Become independent and as self-reliant as possible.

Beside structural damage to buildings, earthquakes are likely to trigger a breakdown of conventional modes of communications - travel and road infrastructure can be severely damaged.

A breakdown of the rule of law is another risk often occurring after disasters.

Do not underestimate the human factor. Severe earthquakes are traumatic experiences so keep your preparedness as simple and robust as possible to avoid human error. Unrealistic Emergency Response Plans and Preparedness are risks in itself as they will add to the chaos and waste valuable resources.

## **Disaster Prevention**

***Living in an earthquake area doesn't necessarily mean that ground shaking creates disaster. It is very much up to the individual to prevent catastrophe by implementing structural and non-structural measures.***

### ***Structural Measures***

Earthquake resistant buildings are usually of simple form and symmetric; walls are well braced. Open lower stories for parking or ventilation should be avoided.

Seismic retrofitting is a good way to strengthen a building, also in order to make it more storm and flood-resistant.

Earthquake building codes must be strictly enforced. National building codes are compiled by the International Association for Earthquake Engineering.<sup>5</sup>

Hotels in earthquake zones should be periodically inspected by a competent earthquake engineer.

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<sup>1</sup><http://earthquake.usgs.gov>

<sup>2</sup><http://geofon.gfz-potsdam.de>

<sup>3</sup> <http://www.gdacs.org>

<sup>4</sup> [www.ahacentre.org](http://www.ahacentre.org)

<sup>5</sup><http://www.iaee.or.jp/>

### ***Non-Structural Measures***

Non-structural measures should ensure that nobody can be injured by falling objects within the building or on its grounds. Preventative measures include the securing of interior fittings and heavy objects such as furniture, boilers, air-conditioning units, hanging lamps, ornaments, etc.

Connectors should be flexible to avoid gas and water leaks. Fuel, gas and chemical storages must be secure.

### ***No Happy Ending without Preparedness***

Every hotel in an earthquake prone zone needs to have prepared, communicated, implemented and tested plans and SOPs focused on the immediate safety of guests, employees and assets.

Information on how to behave during the event of an earthquake needs to be available in every guest room [Duck – Cover – and hold on! Where is the assembly point, announcements etc.]. All staff needs to be informed and trained about how to behave during ground shaking, a safe earthquake assembly point needs to be identified and prepared – safe evacuation routes and procedures defined.

It cannot be said often enough that training on how to cope with earthquakes is essential.

It is important to avoid panic and prevent people from running out of buildings during or immediately after a quake where they could be hit by falling debris. Instead one should seek shelter in a safe spot within the building.

In the event of a quake oil and gas should be shut off immediately until the systems safety is established and elevators moved to a ground floor position.

Note that a business with proper general security and safety measures in place is a business that copes with and reacts to any unforeseen event more efficiently. Emergency and especially fire fighting and rescue equipment should be prominently available and staff trained in its use.

Evacuation and contingency plans need to be created and tested should the building have lost its structural integrity.

Liaise with local emergency responders such as fire service, police, and civil protection etc. before disaster strikes. Find out how to get in touch with these organizations after the loss of telephone and Internet based services.

Show leadership! In stressful and confusing situations people are looking for guidance. Equip your evacuation and guest care team with signal vests and pre-prepared instructions. Be visible!

To avoid panic communication is key. Guests should be informed about what happened and what to do next right after the quake. Consider that there might be no power so regular notification systems are not functioning. Have alternatives such as a sufficient number of (charged) megaphones at the ready. Emergency lighting is also essential as many disasters happen at night!

Instructions should be kept simple, as in challenging situations humans often do not act rational and thoughtful. Provide laminated bullet point style instruction cards to first responders and Emergency Response Teams before disaster strikes. Some hotels attach these cards to the signal vests of their ERT members. Department close down procedures should be pinned to department walls and regularly trained.

### **Networking makes you more resilient!**

You are always stronger in a group than on your own. Try to identify and pool resources before disaster strikes, create response alliances and networks. Connect to your neighbouring businesses and raise the question of disaster preparedness and response during business association meetings.

Example: In Bali the Bali Hotels Association<sup>6</sup> [BHA] created a 'Disaster Response Inventory'. The inventory lists all items and services available at its member hotels that might be relevant during crisis. The inventory lists medical supplies but also water reserves, medically trained personnel, radio communications infrastructure, satellite phones and salvage equipment such as chainsaws, excavators etc. After an earthquake or tsunami the association's members will be able to support each other and coordinate with responders efficiently, aiming at being a recovery asset, not a liability.

This article only touched on the surface of disaster and earthquake preparedness. A great resource to start to get your business earthquake ready is: <http://www.earthquakecountry.org/>.

Start getting prepared now and remember the old saying: 'It is too late to learn how to dance when you arrive at the party!'

For further advice and information you may also contact PATA's Crisis Team member Alexander Kesper: [alex.kesper@gmail.com](mailto:alex.kesper@gmail.com).

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<sup>6</sup> [www.balihotelsassociation.com](http://www.balihotelsassociation.com)