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Standards on Disaster Risk Management for Hotels and Resorts

In partnership with:

risklayer
analysing and managing catastrophe risk

BU
Bournemouth University

Griffith UNIVERSITY

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
UQ BUSINESS SCHOOL

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Content

Disclaimer:

The disaster risk management standards for hotels and resorts included in this report do not serve as an internationally recognized standard but can serve as an orientation for government agencies (e.g. Ministry of Tourism, Disaster Risk Management Agency) and/or hotel associations to develop national standards following a thorough evaluation and validation of the standards in a particular country context. Where the standards and national requirements conflict, national requirements apply.

The standards have been written for large hotels with 50+ bedrooms and significant staff numbers. The standards are still highly relevant for smaller hotels.

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Acknowledgements

Introduction

The United Nations Global Assessment Report 2013 (GAR13) has identified tourism as one of the fastest growing but also most risk exposed sectors due to the location of many destinations in hazard prone areas such as mountain areas, along rivers and coastlines. Tourism has contributed significantly to the development of many countries in Asia and plays an essential role in local, national and global economies. With the growing importance of tourism worldwide, any disruption to arrivals can seriously undermine business competitiveness and sustainable development. Even a single disaster event has the potential to cause widespread damage and economic disruption, affecting private and public investments in tourism destinations and the country's image and reputation, while posing a threat to the lives of tourists, workers and surrounding communities.

Many hotels do not have the systems and processes in place to assess and reduce their risk to disasters, or to become prepared if and when they occur. These are important to increase resilience and enable business continuity and viability. To improve disaster risk management capacities and to strengthen resilience in hotels and at tourist destinations, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH within the framework of the Global Initiative on Disaster Risk Management (GIDRM) is collaborating with the United Nations Office for Disaster Risk Reduction Asia and Pacific (UNISDR) and the Pacific Asia Travel Association (PATA) through the Hotel Resilient Initiative.

The Hotel Resilient Initiative is not only the first coordinated effort to improve disaster risk management for tourism businesses, but it also takes a wider destination perspective in that it explicitly recognises the critical role that hotels can play in the aftermath of a disaster. Hotels are 'islands of resilience', equipped with live saving equipment, food and water, linked into communication channels, and supported by a range of 'soft skills', such as dealing with people in stressful situations (Becken & Hughey, 2013[1]). Especially in developing

countries, hotels can function as a key agent in response and recovery, benefitting the community directly (through immediate support) and indirectly (through swift recovery of some level of economic activity).

The Hotel Resilient Initiative has several aims:

1. To develop internationally recognized standards for hotels and resorts that will help businesses to reduce risk from natural and technological hazards to their operation and visitors.
2. To demonstrate a high level of preparedness and safety of the business to multiple stakeholders, including visitors, wholesalers, insurers and financers.
3. To explore the potential for certification based on an implementable standard for risk and resilience.

Building on strong partnerships with the respective governmental agencies for tourism and disaster risk management, tourism and hotel associations, hotels and resorts, the Hotel Resilient Initiative in close cooperation with the Karlsruhe Institute of Technology (KIT) and its partners (Bournemouth University, University of Queensland, Griffith University, Risklayer GmbH and TwoEco Inc.) has developed *Standards on Disaster Risk Management for Hotels and Resorts* to create standardized approaches and improve risk management practices in the tourism sector. The Standards will assist hotels and resorts in reducing business risk and the risk of tourists to natural and technological hazards, while demonstrating preparedness and safety of their premises to potential clients, wholesalers, tour operators, insurers and financiers.

Development of the Standards

The tourism industry already uses standards in a wide range of areas (e.g. building standards), but to date there is no standard specifically dedicated to DRR or resilience. ISO (2015) define a standard as:

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[1] Becken S. and Hughey, K. (2013). Linking tourism into emergency management structures to enhance disaster risk reduction. Tourism Management, 36, 77-85.

A standard is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose.

A standard needs to meet specific requirements to be robust, namely it has to demonstrate i) Principles (fundamental statements; desired outcome), ii) Criteria (conditions to be met to achieve principles), iii) Indicators (measurable states allowing assessment) and iv) Verifiers (information/observation to demonstrate the required indicator state is being met). Standards can then be used as a basis for certification. Certification entails the involvement of a third party or independent body that provides written assurance that a particular product or service meets the requirements of the standard in question. Certification in tourism is typically related to environmental performance, and some certification programs also include social indicators as part of their standard (e.g. EarthCheck, Ecotourism Australia, Green Leaf). A certifying body can then issue formal accreditation as a form of (visible) recognition.

The basic assumption of this initiative is that hotels need to prepare for multiple hazards. Thus, a tool or standard is only useful if it covers all potential hazards relevant to a particular location and building type. The tool also needs to allow for a rapid assessment of key features that affect the resilience of the particular hotel or resort. To this end, several modules are required that can quantify the risk associated with a given property (e.g. to natural hazards that can lead to catastrophic losses) and the resilience of the building system and the people that operate within it to resist, absorb, accommodate and recover from such an event.

The *Standards on Disaster Risk Management for Hotels and Resorts* have been developed in several phases. The initial phase was establishing the resilience context for hotels by reviewing existing standards, frameworks and certification procedures from the hospitality sector (e.g. TsunamiReady, Ready, Set, Go! By EarthCheck, Siemens Fire Safety, HORTEC Hotel Fire Safety, Perry Johanson Hurricane Preparedness, Qualmark NZ, Safeplace Accreditation, Cristal Standards,

Global Infrastructure Basel SuRe, HACCP, LEED, GBI, etc.).

Several generic international standards exist and have informed the development of the *Standards* discussed here. These are: disaster risk management ISO 31000, business continuity management (ISO22310), and emergency management (ISO22320). The team reviewed these standards amongst others, to build on these existing initiatives in developing the standards. The goal in establishing the resilience context for hotels and resorts was to (1) address how disaster resilience can be defined in the hotel sector context, (2) what key criteria determine disaster resilience for the hotel sector and (3) what is the evidence and "good practice" in hotels addressing these key criteria.

The output of the desk review was to define and test a draft framework for the standards which was presented at an initial workshop on February 26, 2016 in Cebu, Philippines. A series of in-depth interviews and consultation workshops in the following two weeks with 15 hotels and resorts in Bohol and Cebu following the workshop provided context and information for revising and adjusting the draft framework.

From March to July 2017 the draft framework was developed, revised and presented in a series of round table workshops and in-depth interviews, and site visits in Manila Cebu City, Bohol and Bantayan. A final survey in a feedback workshop with 33 main stakeholders in Cebu City and an international expert team provided input on which standards and requirements are 1) achievable or not in terms of implementation, 2) relevant or not and 3) potentially confusing. Using the input provided in the Feedback Workshop the Draft Standards were adjusted.

The *Standards on Disaster Risk Management for Hotels and Resorts* provide a framework for auditing the risk and resilience of hotels taking on a multi-hazard approach including structural, non-structural and organizational measures for hotels and resorts. The case study also included survey and documentations of necessary capacity development measures that will enable hotels and resorts to implement the guidelines and standards. For the standards to be globally applicable they need to be tested and implemented in different environments and in

real-word conditions. The Hotel Resilient Initiative, in partnership with global experts, is actively exploring partner countries that seek to implement the standard in a trial format. Countries that have a high-risk profile and a thriving tourism sector are best suited to test, and refine, the draft standard.

While development of a well-designed international certification system is a long-term objective of the Hotel Resilient Initiative, the *Standards on Disaster Risk Management for Hotels and Resorts* in its current form can be tested for implementation in pilot destinations and adapted by government agencies (e.g. Department of Tourism) or hotel associations as a national standard following a thorough evaluation and validation of the standards in these countries.

Methodology

The framework methodology for the draft hotel resilient standards were designed with two key objectives in mind.

- First to provide hoteliers with a simple but systematic multi-hazard risk-based approach for evaluating the hotel building and grounds which can be carried out as a self-assessment.
- Second to describe in a non-exhaustive manner, key requirements and "good practices" which contribute to the emergency and critical systems as well as crisis and disaster management protocols, plans and processes for making hotels and resorts more resilient.

The *Standards on Disaster Risk Management for Hotels and Resorts* summarize hotel

disaster resilience into three basic components—Building, System and Management—which can easily be understood and applied, where Building and Systems Component provides the physical system for a resilient hotel, and the Management Component is the organizational processes and protocols for a holistic disaster resilience strategy for hotels (c.f. *figure 1*).

The *Building Component* provides information for screening potentially how vulnerable a hotel or resort is to multiple natural hazards it is exposed to, this component does not impose any requirements for complying with the criteria of a "Resilient Hotel". The vulnerability screening points to key weaknesses in the site, grounds, design, structural and architectural elements which should be examined by specialists. The Systems and Management Component on the other hand impose requirements along each of the criteria defined for complying as a "Resilient Hotel".

The *Systems Component* deals with the physical design and implementation of hotel equipment, infrastructure and other systems which may be incorporated within it to provide safety against natural hazards, fire and other crises.

The *Management Component* deals with various aspects of a comprehensive disaster and crisis management plan. However well a hotel building is designed and constructed, or however good the safety systems installed, unless there is effective disaster and crisis management protocols and processes within the hotel there is a very serious risk that the building and systems could be compromised in natural hazards or other crises. Good disaster and crisis management is a fundamental part of the resilience strategy for hotels.

BUILDINGS		**S**YSTEMS		**M**ANAGEMENT	
B1	General information	S1	Fire Protection	M1	Roles and Responsibilities
B2	Site	S2	Hazard Protection	M2	Training and Drills
B3	Grounds	S3	Critical Infrastructure	M3	Disaster Prep & Response Plan
B4	Design	S4	Evacuation	M4	Evacuation Plan
B5	Structure	S5	Information & Communication	M5	Communication Plan
B6	Architectural Elements	S6	Emergency Supply	M6	Business Continuity Plan

Figure 1: Components of the Standards on Disaster Risk Management for Hotels and Resorts

Component B – Buildings

B1 General Information

Intent	Ensuring that the built characteristics both inside and outside a building or set of buildings respond robustly and are as safe as possible pre-disaster is a pre-requisite for reducing vulnerability. The vulnerability via the built environment should be reduced as much as possible with respect to life safety, loss and business operation continuity.

Elements	Description	Vulnerability Rating
Building Use – Life Safety	The potential for casualty and injury is – independently from the level of risk and the structural and non-structural integrity of a building – higher in high occupancy and/or multi-story buildings than in low occupancy and/or single-story buildings.	1. The building is a single-unit occupancy OR is being used exclusively as service facility (restaurant, business/conference, etc.). 2. The building is a low-rise, multi-unit occupancy structure. 3. The building is a high-rise, multi-unit occupancy structure.
Building Use - Business Operations Continuity	The potential for disruptions in the operation of the hotel is higher if buildings used to house critical equipment (e.g. backup power generators, water treatment tanks, etc.) are damaged. Furthermore, high consequential losses can occur if buildings used to store hazardous materials are damaged.	1. The building is not critical to the operations of the hotel. 2. The building houses critical engineering facilities (back-up power, water treatment, etc.) critical to operations of the hotel OR the building is used for storage of hazardous materials. 3. The building houses critical engineering facilities critical to the operations of the hotel AND the building is used for storage of hazardous materials.
Building Damage History	In cases where previous disasters have impacted a building, vulnerability of the building can be increased.	1. The structure has never been damaged or was damaged but repaired to a better than pre-disaster state. 2. The structure has been damaged but was repaired to a pre-disaster state. 3. The structure has been damaged and was not repaired to a pre-disaster state.

B2 Site

Intent	The site on which the building is located often determines the inherent vulnerability to natural hazards.

Elements	Description	Vulnerability Rating
Site	Specific site conditions impact the overall vulnerability of the hotel and	1. The site has none of the following characteristics:

Condition	this information should be used to complement existing probabilistic hazard maps.	2. The site has one of the following characteristics: 3. The site has two or more of the following characteristics: ☐ Near creeks, rivers or bodies of water ☐ In coastal areas prone to storm surges ☐ Prone to bushfire ☐ Build on top or in proximity to known fault lines (less than 500m) ☐ Build on clay soils ☐ Build on ground with sinkholes ☐ Build on reclaimed land
Distance to other Buildings	The building location plays a role in the vulnerability for example with regard to evacuation, structural damage etc.	1. No buildings are within close enough distance to make impact with a building on the property if it collapses (e.g. height of buildings vs. distance away) 2. A building is close enough to a building on the property to make contact if collapsed. 3. Adjacent building(s) are very close or structurally connected.
External Accessibility	The accessibility of the premise impacts amongst others the timeliness of arrival of emergency vehicles.	1. The premise has a direct connection to roads which are accessible to emergency vehicles and at least two entry roads. 2. The premise has no direct connection to roads which are accessible to emergency vehicles and only one entry road. 3. The premise is not connected to any roads which are accessible to emergency vehicles and is surrounded by narrow and blocked streets.

B3 Ground

Intent	The surroundings of the buildings often pose dangers towards life safety and/or the vulnerability of the buildings themselves.

Elements	**Description**	**Vulnerability Rating**
Trees / Objects	The location of tall trees (>8m high or crown span >5m), utility posts, power lines, free standing walls, billboards and similar objects can affect the vulnerability of hotel occupants.	1. No tree or other objects with potential to damage the building are within falling distance from the building. 2. Some trees or other objects with potential to damage the building are within falling distance from the building. 3. Many trees or other objects with potential to damage the building are within falling distance from the building.
Drainage	Draining systems are important to	1. Draining for flood protection of hotel

System	remove water from the hotel premise to prevent flooding, pooling and backflow.	building and grounds is available and is free of debris.
		2. Drainage for flood protection is available for vital hotel facilities and is free of debris.
		3. No drainage is available OR the drainage is filled with debris.

B4 Design

Intent	The design of a structure against disaster impacts should be to building standards, should not create additional vulnerability in the case of irregularities of the structure and provide a safe environment.

Elements	Description	Vulnerability Rating
Horizontal Irregularity	Horizontal irregularities lead to concentration of forces (wind, earthquake etc.) at certain locations in a building leading to greater chance of damage and collapse. In addition, irregularities often make it more difficult in the case of a disaster to escape.	1. Regular footprint (Circular or rectangular) OR Building has structural features to support that any horizontal irregularity is disaster resistant 2. Symmetric, simple building footprint (e.g. L-shaped, H-shaped, see figure below) 3. Asymmetric, complex building footprint
Vertical Irregularity	Vertical irregularities lead to concentration of forces (wind, earthquake etc.) at certain locations in a building leading to greater chance of damage and collapse.	1. No irregularity OR building has structural features to support that any vertical irregularity is disaster resistant 2. Minor irregularities OR smooth change in footprint 3. Strong irregularity OR uneven storey height distribution
Building Envelope	The building envelope describes the general shape of the building structure in regard to enclosing wall segments on one or more sides of the building. Buildings without enclosing walls are generally much more vulnerable.	1. No open sides. 2. ¼ to half of sides open. 3. More than half of sides open.

B5 Structure

Intent	The structural components themselves are designed to protect the residents as well as provide stability in the case of a disaster.

Elements	Description	Vulnerability Rating
Foundation	A good foundation is the first element of a safe structure. Weak foundation	1. Foundations were designed to resist the dominant hazard(s).

Safety	structures are more prone to damage from soil softening, e.g. liquefaction, but may also suffer additional damage from ground shaking due to a lack of structural stiffness. Similarly for flood and wind, a robust, hard material is required with few gaps in order to provide a stable footing which is reasonably water resistant to intrusion.	2. Foundations were partly designed to resist the dominant hazard(s). 3. Foundations were not designed to resist the dominant hazard(s).
Foundation Condition	The condition of the foundation has an impact on the vulnerability of the building, independently of whether the foundation was designed to resist the dominant hazard(s).	1. No damage to the foundation. 2. Slight damage to the foundation. 3. Foundation is damaged.
Supporting Structure		1. The supporting structure was designed to resist the dominant hazard(s). 2. The supporting structure was partly designed to resist the dominant hazard(s). 3. The supporting structure was not designed to resist the dominant hazard(s).
Building Construction	A building that has been constructed by a civil engineer adhering to local building codes and disaster resistant guidelines and codes and has been audited to the engineers' satisfaction will be less vulnerable than buildings that have been constructed differently.	1. There is proof that the building was built by a licensed civil structural engineer according to an approved building plan. 2. There is proof that the building was built by a licensed civil structural engineer. 3. There is no proof that the building was built by a licensed civil structural engineer.
Building Condition	The overall condition of the building (e.g. cracks) influences the vulnerability of a building with regard to natural hazards.	1. Good/new condition with none or insignificant visible cracks or deformations. 2. Moderate condition with minor visible cracks or other structural issues. 3. Poor/deteriorated condition with major visible cracks or other structural issues.
Roof Condition	The condition of the roof influences the abilities of the roof to protect occupants from various weather events.	1. The roof is in good condition, without visible deterioration. 2. The roof is in moderate condition, with minor deteriorations visible. 3. The roof is in poor condition with significant deterioration visible.
Roof Connections	The roof needs to be strongly connected to the structure using hurricane clips and ties or strong bolts.	1. Roof is strongly connected to remaining structure. 2. Roof is weakly connected to remaining structure. 3. Roof is not connected to remaining structure ("gravity roof").
Structural	Mitigation of the structure towards	1. Retrofitting and structural improvement for

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| Hazard Mitigation | local hazards is necessary to provide a safe building for guests. Mitigation measures should be implemented for each separate hazard.

Documentation of structural mitigation for each hazard type should be provided. | all dominant hazards has been carried out.
2. Retrofitting and structural improvement for some hazards has been carried out.
3. No retrofitting and structural improvement has been carried out. |

B6 Architectural Elements

| *Intent* | Architectural and non-structural elements can cause much damage in the event of a disaster. In addition, many of the fatalities that occur in disasters are often the result of non-structural element collapse rather than structural elements. |

Elements	Description	Vulnerability Rating
Conditions of Windows and Shutters	Windows need to withstand strong winds and earthquake shaking, and often double as an escape route. The conditions of the windows have therefore an effect on the overall vulnerability of a building.	1. Windows, framing system and/or shutters are designed to adequately protect against wind, rain and storm-driven projectiles 2. Windows, framing system and/or shutters are designed to somewhat protect against wind, rain and storm-driven projectiles 3. Windows, framing system and/or shutters do not adequately protect against wind, rain and storm-driven projectiles
Internal Walls and Partitions	Internal walls and partitions pose a threat of collapse in the case of an earthquake.	1. No partition walls. 2. All partition walls are braced. 3. Partition walls are not braced.
Exterior Elements	Exterior elements such as parapets (overhanging features or free-standing walls on top of houses) are very dangerous in wind and earthquake situations. These elements often cause deaths, and thus need to be adequately braced or designed via disaster resistant guidelines.	1. No exterior elements exist (e.g. balcony, chimney, etc.) OR all exterior elements have been designed by an engineer to connect into the main structure. 2. Exterior elements are braced and connected to the main structure. 3. Exterior elements are not braced OR free-standing.
Internal Accessibility	In cases of emergency, wide corridors and easy to access buildings allow for faster evacuation.	1. Wide corridors, wheelchair accessible 2. Wide corridors, some barriers for disabled guests 3. Narrow corridors OR many barriers for guests with disabilities
Suspended Ceilings	Suspended ceilings pose a major threat to people sleeping or being inside a room in a storm or an earthquake.	1. No suspended ceilings 2. Suspended ceilings are braced and tightly connected with the main structure.

		3. Suspended ceilings are not braced or reinforced.
Non-Structural Hazard Mitigation	Non-structural measures are measures not involving physical construction which use knowledge, practice or agreement to reduce disaster risks and impacts, in particular through policies and laws, public awareness raising, training and education.	1. Non-structural mitigation activities have been implemented for all dominant hazards. 2. Non-structural mitigation activities have been implemented for some hazards. 3. No non-structural mitigation activities have been implemented.

Vulnerability Classification

Vulnerability Index	Vulnerability Classification	Recommendation
25 – 37	Low	Based on the information provided the hotel building and grounds is likely to withstand most natural hazards.
38 – 62	Moderate	Intervention measures are needed to address key weaknesses in the building and grounds of the hotel.
63 – 75	High	Urgent intervention measures are needed to reduce the vulnerability of the building against natural hazards. The hotel is likely to be severely affected by a disaster event.

Component S – Systems

S1 Fire Protection Systems

Intent	Fire Protection Systems are designed to improve the level of safety and reduce damage caused by fires. A Fire Protection System includes the detection of fire and smoke, followed by alarming and triggering adequate response actions.

Standards	Description	Requirements
Fire and Smoke Detection System	An approved fire and smoke detection system which is in accordance with local fire code and requirements, and which is able to detect fire & smoke and report it to a central station to sound an alarm to enable evacuation and response in adequate time is in place.	1. Automatic and/or manual fire and smoke detection system is installed 2. Detection system is connected with a detection control panel for automatic response mechanisms OR for manual response done by trained staff 24/7
Fire Control System	A fire control system that is able to effectively extinguish fire and exhaust smoke while guarding important building structures and keeping escape and evacuation routes accessible and safe is in place.	1. A fire control system with self-sufficient backup power and resource supply is installed. 2. Endangered hotel areas are specially surveilled and protected with dedicated extinguishing systems. 3. Utility systems are shut down automatically or can be shut down manually if needed. 4. Manual firefighting equipment for first responders is available and adequately signed. 5. All systems and equipment is regularly checked on function and maintained.

S2 Warning Systems

Intent	Warning and alarm systems provide timely information on impending hazards before as well as provide visible and audible warning during an event to facilitate safe and efficient evacuation of hotel guests and staff.

Standards	Description	Requirements
Emergency Alarm System	An approved and reliable warning system which is clear and comprehensible and reaches all areas is in place.	1. Combination of visible and audible warning systems are installed across the property 2. Warning systems has reliable backup power 3. Alarm, detection and response systems are interconnected and centrally

			monitored.
		4.	Redundancy of warning systems is ensured.

Early Warning System	A system to monitor early warnings through access to identified sources is in place.	1.	Access to information on weather and hazards from various sources is ensured, also in times of power outage.
		2.	Clear Standard Operation Procedures (SOP´s) for interpretation of warning messages and decision making are in place and communicated.
		3.	Contact numbers of local authorities and experts for information exchange are available.

S3 Evacuation System

Intent	Evacuation systems to establish and facilitate safe and efficient evacuation of hotel guests, visitors and staff. It complies with the standards and procedures of the Emergency Warning System described in S1.

Standards	Description	Requirements	
Escape and Evacuation Routes	Safe, accessible, signed and visible escape and evacuation routes that accommodate people with special needs are in place.	1.	Escape and evacuation routes including guidance signs, emergency lighting, and emergency exits for multiple disasters and types of emergencies are available
		2.	Approved electric emergency lights are installed according to the layout of the properties and fully backed-up by alternative power sources
		3.	Criteria for the operation of escape and evacuation routes including the use of elevators are established
		4.	Information material for guests is available
Evacuation equipment	Evacuation equipment is available, visible, and easily accessible within hotel grounds.	1.	Mobile evacuation kits are available and easy to access
		2.	Flashlights are distributed in all guest rooms and other key areas
		3.	Equipment supporting the mobility of persons with disabilities and injured persons is available and signed
		4.	Periodically maintenance of all evacuation equipment is ensured

S4 Critical Infrastructure Systems

Intent	Some infrastructure is providing vital components for the hotel's operation. These lifeline elements need to be especially protected and backed-up in order to keep critical functions operating.

Standards	Description	Requirements
Water & Wastewater Systems	The hotel is capable of providing water for vital hotel functions during an emergency and also providing a limited functioning wastewater disposal system if external services are not immediately available.	1. A sufficient water reserve for at least 72 hours is available on-site. 2. Important water and wastewater treatment system components are backed-up by emergency backup power and portable water pumps. 3. Automatic and manual cut-off functions are available.
Electricity Supply	The hotel's electrical system is protected and backed up by alternate energy sources to provide vital hotel & security functions until external electricity can be supplied.	1. Backup power for at least 72 hours is available. 2. Backup power is installed according to local hazard threats and with special protection against fire. 3. Automatic and manual cut-off functions are available. 4. Emergency systems and other vital systems are fully backed up by a backup power system.
Heating, Ventilation and Air Cooling (HVAC)	The hotel's HVAC system is protected and backed up by alternate power sources to keep the climate within the building stable in order to protect health and safety.	1. Oil and gas systems can be centrally shut off. 2. Oil and gas tanks are installed according to existing rules and regulations taking into account all relevant threats. 3. HVAC system is protected by permanently installed safety systems. 4. Backup power is ensured and limited functionality is ensured during power cuts.
Infrastructure Maintenance	All infrastructure systems and equipment important for safety during an emergency are regularly maintained and important parts can be rapidly repaired in case of damages to remain in function.	1. Critical systems and equipment are regularly inspected, tested and maintained. 2. Hotel staff is trained to carry out minor repairs. 3. Service agreements for major repairs and/or damage are in place.

S5 Information and Communication System

Intent	Information and communication systems should be set up to facilitate receiving and

disseminating information to and between guests, staff, local authorities and emergency personnel before, during and post-event. Information and Communication Technology is also indispensable to continuity of business operations and has to be protected.

Standards	Description	Requirements
Communication Systems	The hotel is able to communicate with the hotel personnel, relevant public services and authorities, and the hotel guests in any situation.	1. Multiple methods of internal and external communication such as intercom, walkie-talkies, battery radio and megaphones are available. 2. Methods for gathering, compiling, coordinating and disseminating information are available.
Information Technology Systems	Data and Systems which are indispensable for the business need to be protected and backed up so that they remain functional in any incident.	1. Key information technology system components are supported by emergency backup power. 2. Technology recovery strategies are developed and updated. 3. Crucial business data is available at all times and backed up in different ways.

S6 Emergency Supply System

Intent	In order to respond and cope with disasters and their follow-on effects emergency equipment and supplies are required on hotel premises.

Standards	Description	Requirements
First Aid Equipment	Sufficient medical supplies and first aid equipment that meet special demands after a disaster event has to be in place.	1. Basic first aid kits and medical supplies are available. 2. First aid kits and medical equipment is regularly checked and updated. 3. Personnel is trained in first aid and known.
Food, Water, Sanitation & Hygiene	Basic sanitation and hygiene needs for all guests and staff can be provided at all times.	1. Food and drinking water is provided for at least 72 hours. 2. Appropriate sanitation facilities for basic hygiene practices are provided including the necessary hygienic equipment.
Emergency Transportation	Transportation solutions for transportation and logistics are ensured during emergencies.	1. Functional vehicles are available at all times on-site.
First Responder Equipment	Essential equipment for on-site first responders is in place to save vital time during the initial critical stages	1. First responder equipment needed to carry out basic search and rescue functions is safely stored and available under any scenario.

	of rescue operations.	2. A "Getaway Kit" is assembled in advance, safely stored, maintained and ready to be rolled out in case of evacuation.
Temporary Shelter	For cases when the hotel building cannot be used, alternative shelter has to be provided for the hotel guests and personnel outside of existing facilities.	1. Shelter on open grounds can be provided at a reachable safe place to guests and employees including their families for at least 72 hours 2. Shelter is equipped for emergency.

Component M – Management

M1 Disaster and Crisis Management

Intent	Disaster and crisis management is at the core of a resilient hotel. The assessment of risks and the identification of adequate preparedness, response and recovery actions including the development of various crisis and disaster management plans is a pre-requisite for resilient hotels.

Standards	Description	Requirements
Disaster and Crisis Management Plan	The Disaster and Crisis Management Plan identifies management arrangements and describes required preparedness, response and recovery actions to be taken for all possible hazards that may affect the area.	1. A disaster preparedness and risk reduction plan (see M2) is available 2. An evacuation plan (see M3) is available 3. A crisis communication (see M4) is available 4. A business continuity plan (see M5) is available 5. A training program for hotel staff is being implemented (see M6)
Disaster and Crisis Management Structure	The hotel has an organizational structure for disaster and crisis management that assigns clear roles and responsibilities to teams and individual staff members involved in preparing and responding to a disaster event.	1. A senior permanent staff member has been identified as the person in charge of managing the overall preparedness, response and recovery if a disaster arises and/or an evacuation is needed. 2. Teams are formed and trained according to the key tasks during an emergency. 3. All teams and critical roles for both day and night shifts have redundancies in case of absence of staff.
Disaster and Crisis Management Exercise	Exercises and drills are regularly conducted in order to ensure that the Disaster and Crisis Management Plan is clear, well-thought, updated and accepted by hotel staff.	1. Table-top exercises and drills on likely hazard events are conducted at least twice a year internally and once a year with external partners. 2. Responsibility for the implementation of the exercises and updating the disaster and crisis management plan has been assigned.
Disaster and Crisis Management Documentation	Records of essential documents and disaster and crisis management plans, protocols and processes are safeguarded under any scenario.	1. All critical information related to disaster and crisis management is collected, documented and stored to ensure 24/7 access by key personnel.

M2 Disaster Preparedness

Intent	Prepare for a disaster event by identifying and assessing potential risks, planning for and establishing strategic preparedness activities and carrying out priority risk reduction activities with respect to potential threats.

Standards	Description	Requirements
Disaster Preparedness Plan	The Disaster Preparedness and Risk Reduction Plan identifies management arrangements and describes required preparedness, response and recovery actions to be taken for all possible hazards that may affect area.	1. A disaster preparedness plan including protocols, procedures, checklists and budget plans for all identified hazards has been developed. 2. Trigger points?
Roles and Responsibilities	There is a team responsible for disaster preparedness led by a senior member of the hotel staff with responsibility for managing risk reduction measures and triggering preparedness activities for an oncoming disaster.	1. A senior permanent staff member has been identified as the person in charge of preparedness and risk reduction measures. 2. Staff has been assigned to support the implementation of the Disaster Preparedness Plan.
Risk Assessment	A risk assessment identifies hazards and their likelihoods of occurring, analyses the risk associated with that hazard, evaluates the impact of the risk on the safety of the guests and recovery of the business and determines appropriate ways to eliminate or reduce the risk.	1. Levels of risks for all hazards that may cause harm to people, property and assets have been documented. 2. Vulnerability and capacity of the hotel building (Component B) and Systems (Component S) have been assessed. 3. Risk reduction measures have been identified and implemented.

M3 Evacuation and Rescue

Intent	Ensure adequate evacuation and rescue in the case of an emergency event by developing an evacuation and rescue plan for the hotel that comprehensively covers all aspects of rescue and evacuation including information, signage, transportation supplies and shelter has been devised.

Standards	Description	Requirements
Evacuation and Rescue Plan	The evacuation and rescue plan forms part of the overall evacuation guidelines including a plan for rescue and aid of people in need.	1. The plan specified the evacuation and rescue action chains for all site-specific hazard scenarios, including day and night conditions. 2. Internal communication has been established. 3. The evacuation and rescue plan has been shared and coordinated with appropriate

		external agencies.
		4. Emergency guest shelter is available for different hazards either on or close to the premise.
Roles and Responsibilities	There is a team responsible for evacuation and rescue led by a senior member of the hotel staff with responsibility for triggering and coordinating evacuation.	1. A senior permanent staff member has been identified as the person in charge of managing evacuation and rescue. 2. All staff has been trained in evacuation. 3. Some staff members have been trained in basic search & rescue.
Evacuation Map	The evacuation map should identify evacuation and escape routes and safe assembly areas for different hazard events (such as earthquakes, floods, storms, tsunami).	1. The evacuation map shows evacuation routes and safe areas for all relevant kind of hazards. 2. Evacuation routes are safe from collapsing structures and falling objects. 3. Evacuation routes are adequately signed. 4. The assembly areas provide safe refuge from various hazards and falling objects.

M4 Crisis Communication

Intent	Improve communication to disseminate warnings and hazard information pre-event and communicate with guests, staff, and emergency personnel post-event.

Standards	Description	Requirements
Crisis Communication Plan	A crisis communication plan for the hotel has been designed and tested.	Plans and protocols for the following situations need to be in place 1. Dissemination of weather and emergency warnings to hotel guests 2. Communication with guests before, during and after a disaster event 3. Requesting assistance from external emergency personnel 4. Communication with external emergency personnel 5. Cooperation with media
Roles and Responsibilities	There is a team responsible for crisis communication with responsibility for interpretation of weather updates and emergency warnings, communication with guests, external emergency personnel and media.	1. Communication team has been trained in understanding and interpreting local weather updates and emergency warnings. 2. Communication team has been trained to communicate with guests, including those with special needs. 3. Communication team has been trained for contacting and communicating with emergency personnel and other organizations in the case of an

		4. A designated person for communication with media has been identified and trained.
Early Warning	It is ensured that hotel staff stays informed and receives local weather updates and emergency warnings at all times.	1. Responsibility for regular monitoring of weather and news updates has been assigned to designated staff members. 2. Reliable external information sources on weather updates, early warning and information on emergencies and disasters has been identified. 3. Protocols for receiving and distributing updates on emergency situations and warnings are in place.
Back-up Communication	The communication plan has multiple redundancies in case of technological failure and backup personnel for key positions.	1. Training and drills for the crisis communication plan are conducted annually. 2. Back-up communication procedures are established and tested (e.g. human messengers).

M5 Business Continuity

Intent	Planning for business continuity allows hotels to maintain critical business functions or quickly resume them in the event of a major disruption.

Standards	Description	Requirements
Business Continuity Plan	The hotel's business continuity and recovery activities have been planned and protocolled following the ISO22301 Business Continuity Management Standard System.	1. A Business Continuity Plan Framework addressing purpose, scope and leader has been established. 2. A Business Impact Analysis has been conducted (see Business Impact Analysis). 3. Mitigation measures and business continuity strategies for protecting and/or ensuring early resumption of key internal and external resources that support prioritized business activities have been identified (see Risk Mitigation and Business Continuity Strategies). 4. The financial impact, including recovery costs and the resources needed to remain operational have been identified (see Finance and Resources). 5. The PDCA cycle is being utilized to ensure continuous improvement and enhancement of the BCP.

Roles and Responsibilities	There is a team responsible for managing all activities that affect the operation of the hotel before or after a disaster led by senior manager who is in charge of hotel-wide BCP activities.	1. A senior manager in charge of BCP activities has been assigned. 2. A BCP team has been established and roles and responsibilities have been assigned.
Business Impact Analysis	A Business Impact Analysis has been carried out and the results have been recorded.	1. The essential services of the hotel have been identified. 2. Recovery objectives have been set. 3. Post-incident resources have been identified.
Risk Mitigation and Business Continuity Strategies	Risk mitigation and business continuity strategies have been identified and implemented.	1. A risk assessment has been conducted including the identification of specific risk treatment options. 2. Protection and mitigation activities have been identified and implemented. 3. Incident response measures have been identified and plans and protocols have been established. 4. Continuity and recovery options have been identified and plans and protocols have been established.
Finance and Resources	Access to finance after a disaster event is ensured and a budget for BCP is available.	1. The financial impact of unexpected events has been assessed. 2. A cash flow budget for coping with unexpected events and emergencies has been prepared. 3. Adequate insurance coverage has been secured.

M6 Training and Drills

Intent	Practical trainings and conducting regular drills for hotel personnel responsible for responding to a disaster increases staff awareness and preparedness of the crisis management plan and is an essential component of a disaster resilient hotel.

Standards	Description	Requirements
Core Training	Core training and drills are obligatory for all Staff, including night staff and part-time staff. Responsibility is allocated to the management team and incorporated into the disaster and crisis management plan. It is required to establish budgetary resources to hold regular trainings	All staff is trained at least once a year in: 1. First Aid 2. Fire Prevention 3. Emergency Alarms and Procedures 4. Fire Extinguishing 5. Evacuation for Fire 6. Evacuation for Disasters Some staff is trained at least once a year in:

	and review them via exercises and drills. It is suggested that core training be given at least once every 12 months, though more frequent trainings are encouraged. All staff should be given appropriate information, instructions, training and drills which is appropriate to their duties and responsibilities in case of an emergency.	7. Water Safety 8. Vulnerability, Capacity & Risk Assessment 9. Risk Mitigation 10. Disaster Preparedness 11. Weather Forecast & Early Warning 12. Internal Communication 13. External Communication 14. Business Impact Analysis 15. PDNA & Recovery Action Planning 16. Finance and Resource Management 17. Psychological First Aid / Guest Care 18. Basic Search and Rescue 19. On-site Shelter Support
Advanced Training	Training needs to be expanded to enable respective employees of their special management roles providing them with hazard expertise, leadership and entrepreneurial resilience soft skills to meet objectives and strengthen hotel resilience. Budgetary resources need to be expanded for including training of emergency and disaster management as well as innovative soft skills of staff into permanent staff and career development schemes. Training and drills in form of simulations can be impromptu be conducted as part of the fire and disaster evacuation drills at least once a year, though more frequent trainings and wider sets of exercises and scenarios are encouraged.	1. Training on Disaster Risk Management is attended by senior management staff. 2. Training on Crisis Communication is attended by senior management staff. 3. Training on Business Continuity Planning is attended by senior management staff.

Hotel Resilient Initiative

The Hotel Resilient Initiative has been initiated in 2013 by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the United Nations Office for Disaster Risk Reduction (UNISDR) and the Pacific Asia Travel Association (PATA) within the framework of the Global Initiative on Disaster Risk Management (GIDRM).

From 2013 to 2016, GIDRM, UNISDR and PATA worked closely with a variety of stakeholders from the private as well as the public sector to develop standard guiding principles to improve climate and disaster risk management capacities and to strengthen resilience in hotels and at tourist destinations. An initial scoping study published in 2015 highlighted the importance of minimum standards to support improved risk management practices in hotels and resorts.