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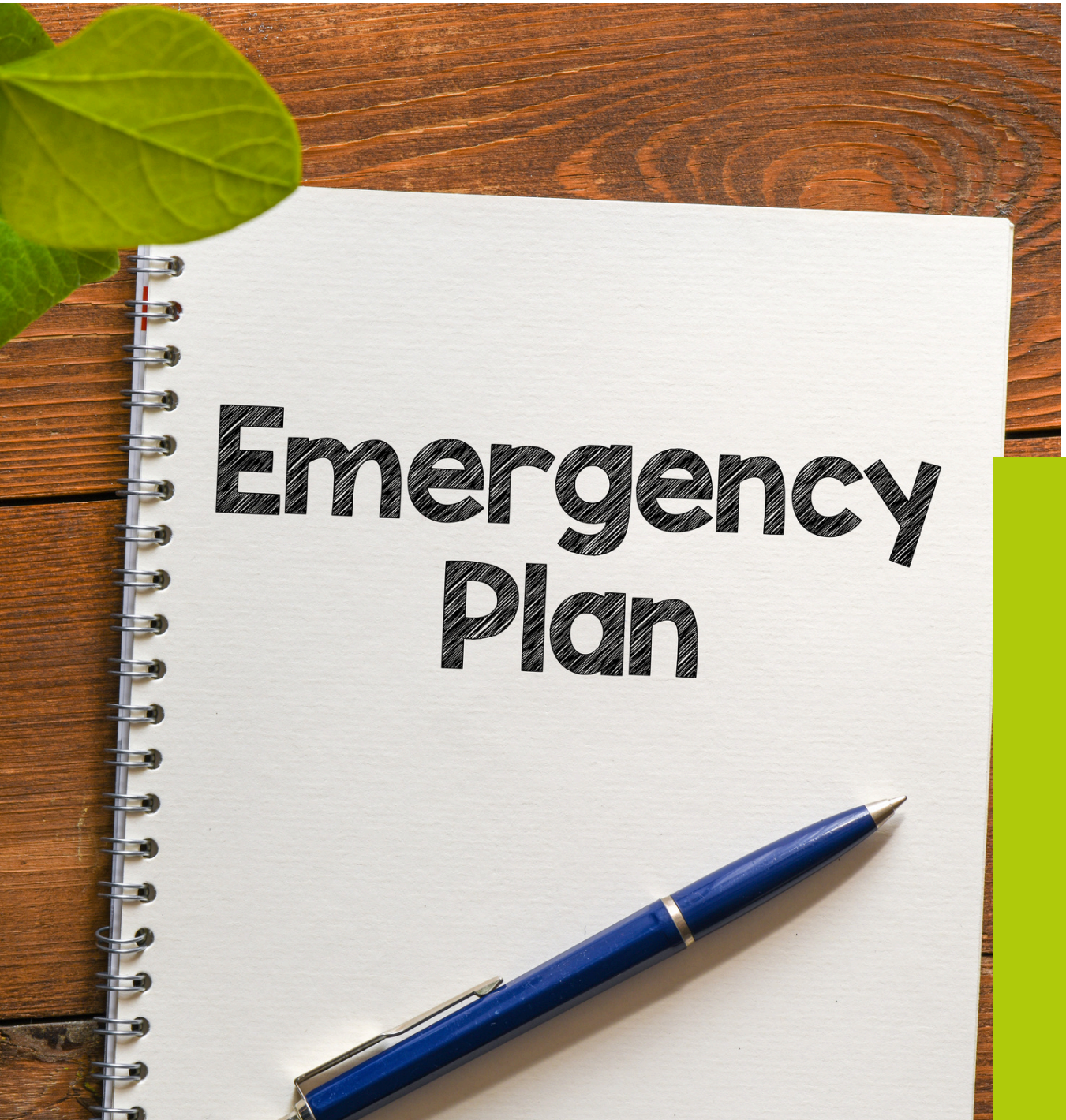
Development and Green Building

WHITE PAPER

HOW RECREATIONAL BUSINESSES ENSURE THE SAFETY OF OCCUPANTS DURING EMERGENCIES



Executive Summary

Recreational businesses such as hotels, resorts, theme parks, and wellness centers are increasingly vulnerable to a broad range of emergencies, including natural disasters, public health crises, fires, and security threats. That is why ensuring occupant safety is no longer optional; it is a core pillar of responsible and resilient tourism operations. This white paper explores how leading environmental, health, and safety certifications help recreational businesses anticipate, prepare for, and manage emergency situations while highlighting existing gaps and limitations.

The paper analyses the emergency preparedness frameworks provided by internationally recognized certifications including LEED, WELL, BREEAM, EarthCheck, Safehotels Alliance Certification, EDGE, and Biosphere Certification. Each contributes to a different dimension of risk mitigation. From resilient infrastructure and fire protection to indoor air quality, sanitation protocols, and crisis communications.

Biosphere Certification, in particular, integrates a wide scope of emergency preparedness actions across social, environmental, economic, and governance dimensions, making it uniquely aligned with the United Nations Sustainable Development Goals (SDGs). It emphasizes a continuous improvement model that enhances risk mitigation strategies over time.

While these certifications provide strong preventive and design focused safeguards, they often fall short in addressing real-time emergency response, staff training, cybersecurity, and medical incident readiness. To ensure comprehensive protection, recreational businesses must integrate these certification frameworks with on-the-ground emergency response plans, business continuity strategies, and regular crisis simulations.

The white paper concludes with a strategic recommendation: hospitality businesses should adopt a layered certification approach, combining building resilience (LEED, EDGE), health and hygiene (WELL), tourism crisis readiness (EarthCheck, Biosphere), and physical safety (Safehotels) to create truly safe and future-ready environments for guests and staff.

Key findings

- **LEED, BREEAM, and EDGE support disaster-resilient building design, passive survivability, and backup systems critical during power outages and climate-driven events.**
- **WELL ensures robust health and sanitation protocols during pandemics and indoor contamination threats.**
- **EarthCheck and Biosphere provide tourism focused emergency and sustainability management systems that include hygiene, crisis planning, and climate risk adaptation.**
- **Safehotels offers specialized guidance on physical security, fire preparedness, and terrorism response for the hospitality sector.**

Natural Disasters and Climate Change Risks

Natural disasters, such as floods, hurricanes, wildfires, extreme heat, and droughts, pose serious and growing threats to businesses in the tourism and hospitality sectors. These businesses are often located in climate sensitive environments (e.g., coastal resorts, mountain lodges, desert camps, or tropical islands), making them particularly vulnerable to extreme weather events. Importantly, the frequency and severity of these disasters are being amplified by climate change, which is accelerating sea level rise, increasing global temperatures, and intensifying storm systems. The impacts can be devastating: structural damage to buildings, power outages, water shortages, evacuation of guests, business closures, and long-term reputational harm. As climate change transforms risk from a rare occurrence into a regular business challenge, recreational facilities must shift from reactive emergency management to proactive resilience planning.

Green building certifications like LEED, BREEAM, and EDGE play a pivotal role in helping recreational businesses prepare for climate-related disasters through climate-resilient design and planning. These certifications guide project teams to anticipate future climate conditions, identify environmental vulnerabilities, and integrate passive design strategies that reduce dependency on fragile utility infrastructure. LEED, for instance, rewards site selection that avoids flood zones and promotes stormwater management, resilient materials, and backup energy systems. BREEAM encourages in-depth climate risk assessments, thermal comfort strategies during heatwaves, and long term adaptation planning. EDGE, which targets resource efficient design in emerging markets, focuses on reducing energy and water demand, which is essential in regions facing climate induced resource stress. Together, these certifications help recreational facilities build durability and adaptability into the very foundation of their operations, turning climate risk into a design opportunity.

Unlike general purpose certifications, EarthCheck is tailored to the tourism industry and places climate resilience and disaster preparedness at the heart of its framework. Recognizing that climate change is not only an environmental issue but also a tourism disruptor, EarthCheck requires businesses to complete climate risk assessments based on local environmental trends and historical data. Certified properties must develop and maintain a comprehensive Crisis and Emergency Management Plan, which includes evacuation protocols, guest communication strategies, and staff training for climate related events such as wildfires, cyclones, or extreme heat. EarthCheck also emphasizes long term operational resilience through self sufficiency in energy and water, biodiversity protection, and carbon management. As climate change continues to reshape travel behavior and destination viability, EarthCheck helps tourism operators not only survive emergencies but build credibility as climate conscious and safety-forward destinations.

Similarly, Biosphere Certification, aligned with the UN Sustainable Development Goals, requires hotels and tourism businesses to develop comprehensive risk management and sustainability plans, with a strong emphasis on climate action (SDG 13). It encourages long term resilience by integrating climate adaptation, social inclusion, guest health, and community engagement into operational policies. Biosphere certified properties are evaluated not just on environmental practices, but also on their capacity to respond ethically and effectively to natural and societal emergencies. Additionally, Biosphere supports continual improvement through its dynamic action plan model, reinforcing proactive, year-over-year climate risk adaptation.

Fire, Structural Hazards, and Life Safety

Fire outbreaks, structural failures, and hazardous materials present serious threats to recreational facilities such as hotels, resorts, and entertainment venues, particularly those with high occupancy or complex infrastructure. Ensuring life safety in such spaces requires a holistic approach that integrates safe design, rigorous building standards, and operational readiness. Certifications like LEED, BREEAM, and EDGE offer foundational guidance by encouraging the use of fire-resistant materials, non-toxic finishes, and code-compliant structural systems. LEED, for example, awards credits for the use of low emitting materials and enhanced commissioning, which ensures critical systems—like HVAC and smoke control—are tested and verified for emergency reliability. BREEAM goes further by requiring fire risk assessments, durability planning, and material safety analysis as part of its Health & Wellbeing category.

Tourism focused certifications like EarthCheck and Safehotels Alliance Certification add an essential operational dimension. EarthCheck includes criteria for structural integrity, fire management strategies, and emergency lighting, while Safehotels specializes in fire and life safety audits, evacuation procedures, and staff training. It evaluates properties on compliance with international safety standards, availability of extinguishers and alarms, and the presence of clear emergency signage which is crucial in preventing injury and panic during crises. Moreover, WELL, which is not a tourism focused certification, complements this by requiring well-lit egress paths, accessible evacuation routes, and regular maintenance of life safety systems, enhancing guest confidence and readiness.

Biosphere Certification also includes criteria under its Health and Safety dimension that address fire safety, structural risk prevention, and operational integrity. Properties are encouraged to evaluate emergency scenarios not only technically but socially, ensuring that staff and guests of all demographics (including vulnerable populations) are accounted for in fire drills, emergency signage design, and risk communication. This inclusive, systems-based approach adds depth to physical safety planning.

Pandemics and Public Health Safety

Public health threats, including pandemics, airborne illnesses, secondhand smoke, foodborne contamination, and pollution, pose growing challenges for recreational businesses. The COVID-19 pandemic revealed deep vulnerabilities in hospitality environments, especially where high guest turnover, enclosed communal spaces, and shared amenities converge. Beyond infectious disease, long term exposure to indoor air pollutants, poor water quality, and unsafe food handling practices can harm occupant health and trigger operational liabilities. In a sector driven by trust, well-being, and guest experience, recreational businesses must now treat public health preparedness as a foundational pillar, not just a compliance requirement, but a competitive differentiator.

The WELL Building Standard offers the most comprehensive and health-centered certification system available, directly targeting multiple public health risks. It addresses airborne disease transmission through its AIR concept, which mandates enhanced ventilation rates, high-performance air filtration (MERV 13 or higher), and continuous monitoring of pollutants like PM2.5, VOCs, and CO_2. WELL's T01: Tobacco Smoke Control prohibits indoor smoking and establishes buffer zones around entrances and operable windows to prevent secondhand exposure. Its Water and Nourishment concepts further safeguard guests by requiring access to clean, contaminant free drinking water and nutrition policies that reduce health risks related to processed food and allergens. In response to COVID-19, WELL introduced the Health-Safety Rating, a standalone program focusing on cleaning protocols, emergency planning, air quality management, and sick leave policies, making it an ideal tool for hospitality operations seeking to rebuild trust post pandemic.

While LEED and BREEAM are primarily environmental certifications, both contribute significantly to public health through their focus on indoor environmental quality, non-toxic materials, and air circulation. In LEED v4/v4.1, credits such as EQc1: Enhanced Indoor Air Quality Strategies and EQc5: Indoor Chemical and Pollutant Source Control promote the use of low-emitting materials, CO_2 monitoring, and ventilation designs that minimize occupant exposure to indoor pollutants. LEED also enforces tobacco smoke control through its prerequisite banning indoor smoking and requiring designated outdoor smoking areas away from entry points. BREEAM evaluates health risks under its Health & Wellbeing category, covering natural ventilation, access to daylight, thermal comfort, and Legionella prevention measures. Though neither framework was designed specifically for pandemics, they help reduce overall environmental stressors that can compound health risks, supporting a healthier indoor environment during both normal operations and public health emergencies.

Tourism-specific certifications like EarthCheck and Biosphere Certification focus heavily on health risk management in operational practices, an area where design-based certifications tend to fall short. EarthCheck addresses public health through hygiene standards for housekeeping, potable water testing, food safety protocols, and environmental risk management. It requires documented response plans for infectious disease outbreaks and regular audits to track compliance.

Biosphere Certification on the other hand, aligned with the UN Sustainable Development Goals, goes a step further by integrating public health (SDG 3), clean water and sanitation (SDG 6), and sustainable communities (SDG 11) into its assessment. It evaluates how properties protect guest health through indoor air policies, smoking prevention, wellness programming, and transparent communication with guests about health and hygiene practices. By requiring operators to develop long-term commitments to wellness and resilience, Biosphere Certification reinforces a culture of proactive health management embedded in daily operations.

Operational and Logistical Disruptions

Recreational businesses, particularly hotels, resorts, and large hospitality complexes, rely on uninterrupted operations and logistical precision to maintain service delivery and guest satisfaction. Emergencies such as cyberattacks, supply chain failures, energy outages, or extreme weather events can disrupt operations significantly.

Certifications such as EDGE, BREEAM, and LEED encourage businesses to implement resource-efficient technologies and design redundancies that improve resilience to energy and water supply disruptions. WELL enhances operational continuity through its requirements for maintenance, air filtration, and sanitary standards that reduce unplanned downtime.

Biosphere Certification also contributes significantly by requiring contingency planning across multiple operational domains, including water and energy access, transportation, and stakeholder communication. Its commitment to continuous improvement pushes certified businesses to revisit and refine these plans annually, ensuring their relevance over time. The certification encourages collaboration with local authorities, emergency services, and suppliers, thus supporting resilient supply chains and cross-sector coordination, an often overlooked but critical component of emergency management.

Cybersecurity and Data Integrity

The digitization of guest services, from mobile check-ins to smart room controls and online payment systems, has made the tourism sector increasingly vulnerable to cyber threats. A cybersecurity incident can result in data breaches, financial losses, and severe reputational damage. Currently, most environmental certifications such as LEED and EDGE do not address digital security. However, operational certifications like Safehotels and EarthCheck are beginning to integrate basic cybersecurity risk management.

Biosphere Certification distinguishes itself by promoting digital ethics, data privacy, and technological resilience as part of its broader focus on governance and innovation (SDGs 9 and 16). While not a technical cybersecurity standard, Biosphere requires businesses to adopt measures that safeguard customer data and digital infrastructure, ensuring that digital continuity is included in broader emergency preparedness planning.

Social Equity and Community Resilience

Emergencies impact not only business operations but also the surrounding communities especially in regions heavily dependent on tourism. Certifications that embed social responsibility strengthen community relations and expand the reach of emergency resilience.

BREEAM and LEED incorporate community consultation and inclusiveness into planning phases. EarthCheck emphasizes local hiring, cultural preservation, and environmental stewardship.

Biosphere Certification goes further by embedding social equity into its core framework. It directly addresses gender equality, decent work, inclusive economic growth, and strong institutions (SDGs 5, 8, 10, 11, 16). Certified properties must demonstrate how they partner with local communities in emergency education, employment, and response efforts, ensuring that crisis management is equitable and regionally relevant. This makes Biosphere a strong ally in building not only organizational, but also destination wide resilience.

Conclusion

As tourism faces increasing volatility from climate threats, pandemics, cyber risks, and supply chain instability, certifications are evolving from sustainability labels to risk management tools. Each system offers strengths, LEED and BREEAM in building design, WELL in health preparedness, Safehotels in physical safety, EarthCheck in tourism-specific crisis frameworks, but Biosphere stands out in its integration of these dimensions through the lens of sustainable development.

Biosphere Certification is more than a sustainability badge. It is a management framework rooted in resilience, continuous improvement, and ethical governance. It aligns operational, environmental, and community preparedness with the global SDG agenda.

Tourism businesses that adopt Biosphere as a foundational layer complemented by sector specific certifications, position themselves as not only responsible, but also future ready. By embracing Biosphere's holistic and forward-thinking approach, they can lead the transition toward a safer, more resilient, and sustainable tourism industry.

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