How Museums are Undertaking Preservation Tactics in the Face of Climate Change

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Museums and historical sites play a critical role in communities by preserving their legacies and histories which often hold strong cultural significances. However, the constant threat of climate change has had an impact on not only communities but museums, continuing to threaten their very existence and thereby threating local culture and heritage across the world. Consequently, museums and historical sites must ensure adaptation measures and plans that will preserve the legacies and history of communities, states, and nations in the face of climate change. Several of these institutions in different countries have created disaster risk plans, resiliency plans and projects that focus on restoration, sustainability, and community resiliency.

When looking at the North American continent, several museums and historical sites are at the risk of being overrun as a consequence of rapidly rising sea levels and flooding , especially in the Northeastern region of the United States. (Mercray et al.). One example of this is the USS North Carolina, located along the Cape Fear River in Wilmington North Carolina. The USS North Carolina was considered one of the "greatest sea weapons in the world", during its commission in the Pacific theater of World War II. (Stinson) After World War II, citizens of North Carolina raised $345,000 to purchase the ship from the United States government, and permanently dock it in Wilmington, North Carolina. (Stinson). The ship serves as a piece of North Carolina's history, commemorating North Carolinians who died in World War II(Stinson). However, rising sea levels pose a threat to the battleship as well as the surrounding community that continuous to face the threat of flooding and erosion. (Battleship North Carolina Living with Water).

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In the region, tidal flooding increased 770% from 2011 to 2020, and is still projected to increase (Battleship North Carolina Living with Water). Due to these threats, the museum convened a team of scientists, engineers, and educators (representing the public, private, academic, and non-profit sectors) to accomplish the Living with Water project. In 2018, Moffatt Nichol (supported by Waggonner & Ball and Swift Creek Group) was contracted to lead concept planning, landscape design, stormwater engineering, permitting , and construction management. (Battleship North Carolina Living with Water) specifically a climate adaptation and resilience project, dedicated to the restoration of the local estuarine ecosystem, as well as the USS North Carolina itself. The project has 4 objectives: 1) Restore 800 linear feet of hardened berth with a living shoreline, 2) Create 2 tidal wetlands in existing parking area, 3) Rehabilitate remaining parking lot with improved design and stormwater management, and 4) Provide a Center of Education that models coastal resiliency practices (Battleship North Carolina Living with Water). The battleship itself will benefit from these resiliency efforts, but the plans do not currently show any surrounding community resilience or updates to infrastructure even though they also face the challenges of rising sea levels.

On the opposite end of flooding and erosion, museums, and historical sites in Africa face another climate risk: fires. In Africa, climate change has continued to exacerbate the presence of wildfires due to drought, relatively low humidity,

stronger winds which have subsequently resulted in volatility in local eco-systems and worsening social inequity (Rukikaire). African nations such as Benin and Uganda have been facing challenges to protect their lands, their culture and history from destruction due to climate change.

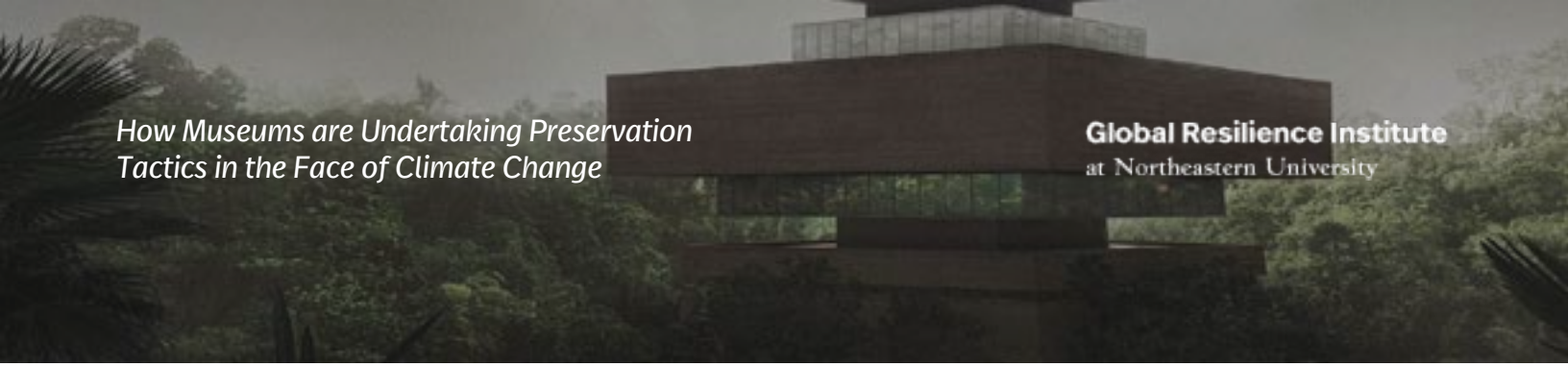
In Uganda, massive fires that occurred in 2010 as well as 2020, have impacted the sacred Tombs of Buganda Kings. (UNESCO World heritage convention). As drought also plagues this community, several historians and local communities have been seeking ways on how to remain resilient during these times. Along with the UNESCO's World Heritage, they have begun to utilize their disaster risk management plan as a form of resilience. Uganda plans to highlight the work of local police and fire departments in tangent to working with and educating community leaders to conserve this heritage site as well as multiple others in Uganda (UNESCO World heritage convention).

Continual fires in 2015 and 2017 have put the Royal Palaces of Abomey at risk of being destroyed (Promoting the Application of the Historic Urban Landscape (HUL) to Safeguard Heritage in the Urban Context in Africa: Tombs of Buganda Kings at Kasubi (Uganda) and Royal Palaces of Abomey (Benin)). The Royal Palaces of Abomey are cultural landmarks in Benin especially for the descendants of the Dahomey Kingdom (Promoting the Application of the Historic Urban Landscape (HUL) to Safeguard Heritage in the Urban Context in Africa: Tombs of Buganda Kings at Kasubi (Uganda) and Royal Palaces of Abomey (Benin)). The site remains a testament not only to Benin's history and culture , but also its tenacity and fortitude, which is why several leaders and partners have fought to protect the palaces from climate destruction (Kawanda).

Benin in partnership with UNESCO has developed several objective goals to not only protect the Royal Palaces of Abomey, but also maintain sustainable practices in the community at large. Some of these objectives currently include: "Developing regulations and guidelines to harmonize urban develop and planning process and development around or within the properties, promoting sustainable tourism and entrepreneurship in favor of income-generating activities"(Promoting the Application of the Historic Urban Landscape (HUL) to Safeguard Heritage in the Urban Context in Africa: Tombs of Buganda Kings at Kasubi (Uganda) and Royal Palaces of Abomey (Benin).

Royal Palaces of Abomey, https://whc.unesco.org/en/list/323/gallery/&maxrows=33

As culture and legacies are made by generations before, during and after, it is crucial to rethink of how communities, states, and nations create these museums and historical sites with ideas on sustainability, climate change, and community in the forefront. One museum in Southern Mexico called Xinatli is reimagining the way history cannot only be made but be preserved in harmony with environment. Xinaltli is built on a modern research concept of using soil and earth as the building material as opposed to using concrete from the past, which contributes to environmental damage (Garcia). By using earth as the building material, both the earth and the physical museum are in harmony with the local ecosyst.em, reducing carbon emissions, and maintains a unique sustainable practice. The land on which Xinatli will be built on is currently in the process of being reforested. Once completed, the museum will be cared for solely by local communities stewarding the forests as well as environmental representatives who share the idea the museums should a work of collaboration with the environment and all peoples rather than a display of colossal power (Garcia).



In conclusion, climate resilience measures are a principal factor in ensuring that the lives of people, especially in underserved and marginalized communities are protected. As museums and historical sites serve as a preservation of communities, traditions, culture, and history, it's imperative that climate adaption and resilience plans are at the forefront of conversations around preservation and museum infrastructure. By developing resilience strategies that focus on sustainability, eco-friendly tourism not just with the museum itself, but in tangent with the community, culture and legacies can not only be preserved but created in harmony with the land they're built on.

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