



Future Proofing the Past





Predicting and preparing for future impacts may be the greenest approach to preservation we've seen.

BY KIM A. O'CONNELL

THE HISTORIC SEASIDE TOWN OF MANTOLOKING, LOCATED ON THE scenic Barnegat Peninsula, has long been a gem of coastal New Jersey. A province of charming shingle-style cottages, the town boasts two districts that have been named eligible for the National Register of Historic Places, which include homes designed by Stanford White of McKim, Mead, and White.

When Hurricane Sandy tore through the town in October 2012, however, more than 90 percent of Mantoloking's buildings were damaged or destroyed.

Could this kind of wholesale devastation have been predicted or prevented? And could historic buildings and their immediate contexts have been protected? These are the central questions surrounding a relatively new way of thinking about preservation and sustainability called "future proofing." The term is similar to the hot-button concept of resiliency in that it is an attempt to understand the threats and changes that are facing our existing building stock, not just now but well into the future, and to minimize their negative impacts.

For historic buildings, future proofing means preparing for those changes in a way that protects a building's historic character while extending its lifespan and conserving resources. So far, however, there has been no widely accepted rubric for applying concepts of future proofing or resilience to historic preservation and heritage conservation. Brian Rich, AIA, principal at Seattle's Richhaven Sustainable Preservation Architecture, is hoping to change that. He is among a growing number of architects working on resilience issues, but with a particular emphasis on historic resources.

"Sustainability is still a valuable term and concept, though waning in popularity," Rich says. "I believe it is coming to be understood as a very important aspect of resiliency and future proofing. I selected the term 'future proofing' because I wanted to make the point that there is potentially a wider definition of resiliency which can be understood, and that it varies depending on the subject under discussion."

Rich is developing a set of principles that would bring the concepts of future proofing and resiliency into recognized preservation standards. These include preventing decay, incorporating flexibility and adaptability, fortifying buildings against climate change and shortages of materials and energy, increasing durability and redundancy, using local materials, and rejecting planned obsolescence. None of this is really new, but Rich hopes to codify the concepts so that they are considered equally alongside established rubrics such as the Secretary of the Interior's Standards for Rehabilitation.

What this means in practice is that future proofing may require a more flexible approach to dealing with historic materials, context,

and character. In one scenario, a historic building might need to be moved to a new site to be truly resilient, taking it out of its historic context. In another, a historic site might have to be shored up with more durable materials that are different from the original fabric.

"The Secretary of the Interior's standards are likely not able to keep up with the evolving understanding of heritage conservation," Rich says. "The key issue here is that because of the thousands of jurisdictions that have adopted the [Interior] Secretary's standards, most have only adopted the [department's] Rehabilitation standards and have done so not by referencing them, but rather by writing them into the codes that are passed by local legislative bodies. This makes it nearly impossible to change them all." Rich is hoping to encourage historic landmark commissions to adopt the principles of future proofing, or to have them be the basis of a new cultural heritage document like the 1964 Venice Charter, an influential guideline governing the protection of cultural monuments worldwide.

Broader Applications

Finding a balance between future proofing and preservation is something the National Trust for Historic Preservation is grappling with at the Farnsworth House, the iconic house that Ludwig Mies van der Rohe designed for the Chicago nephrologist Edith Farnsworth, which was completed in 1951 and purchased by the Trust in 2003. The house is notoriously prone to flooding, particularly in 2008 when Hurricane Ike tore through the Midwest, causing extensive damage and costly repairs to the structure, its systems, and its furnishings.

"We preservationists will have to expand our comfort zone—in particular the concept of site integrity," says Ashley R. Wilson, AIA, Graham Gund Architect for the National Trust for Historic Preservation and a member of the AIA Historic Resources Committee (HRC) Advisory Group. "If a site constantly floods, it becomes impossible to maintain the historic resource. It loses its historic fabric rapidly, and it's less and less available to the public."

Preservationists have faced similarly tough decisions before. In 1968, the Abu Simbel temples in Egypt—part of a UNESCO World Heritage Site—were relocated to avoid being submerged during the creation of Lake Nasser. Closer to home, North Carolina's Cape Hatteras Lighthouse, a national historic landmark, was moved farther inland, to Buxton, N.C., in 1999 to avoid succumbing to the eroding shoreline. Each decision involved weighing future access to the sites against the classic preservation goals of maintaining the original historic context and site.

"We are currently developing solutions, but each of them uncomfortably bumps up against integrity of fabric and location

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issues,” Wilson says. “Something has to change to protect the building. And, as we all know, some preservationists and change don’t mix well. Our approach is to vet potential solutions publicly and thoughtfully to create a national dialogue and a precedent for future projects.” At press time, members of the National Trust’s Farnsworth House Flood Mitigation Project are continuing to collect comments at their website (farnsworthproject.org) related to three proposed solutions: Elevate the house permanently, relocate the house to higher ground, or employ a hydraulic system to elevate the house only in times of flooding.

One Part Prophecy, Two Parts Planning

In addition to influencing practice, Rich believes that architecture schools should emphasize the technical issues surrounding building and design—something that certainly exists now, but not to the extent that is necessary to truly future proof cities. “There ought to be a respected subdiscipline of architecture which carefully teaches the ins and outs of how a building is put together,” Rich says. “This course of study should focus on the nature of building materials, their origins, strengths, weaknesses, modes of failure and deterioration, and their repair.” The idea is to teach students to consider repair rather than demolition.

This emphasis on repair would help avoid scenarios in which high-quality building materials are undermined by bad design or, in the case of historic preservation, unsustainable interventions. “Some projects employ highly durable materials such as stone and brick and stainless steel, and then have gaps filled with sealant or thin sheet metal to protect the materials behind,” Rich says. “Materials on a building must be consistently high quality or be designed for easy disassembly and replacement.”

The questions of durability, sustainability, and history are all being pondered in Mantoloking. Once a symbol of nature’s devastating power, the New Jersey town is now a buzzing construction zone, with bigger, stronger houses being built up on stilts, ready to withstand the rising sea levels that climate change analysts predict. Yet with so many historic houses washed away or subsequently torn down, the very meaning of historic preservation in that area has changed, as Preservation New Jersey recognized when it included Mantoloking and other towns damaged by Sandy on its annual endangered historic places list. In this town and others, reconstructing historic character may have to take precedence over preserving original fabric.

Going forward, the biggest issue with future proofing, says Karl Stumpf, AIA, a senior vice president at RTKL and member of the HRC Advisory Group, lies in the difficulty of trying to accurately predict the future in a rapidly changing world. “When considering protection beyond minimum code, what level of event are you trying to protect against? A tropical storm or a Category 5 hurricane?” he asks rhetorically. “The level of protection is really a choice you have to make with each building.”

Stumpf agrees, however, with the notion that preservation and future proofing (or resiliency, which has ever-broader acceptance and support these days) have the same core goals. “In the broadest context, with historic preservation the number one goal is to preserve a resource and, from the practical point of view, maintain that structure for the long term,” he says. “Resilience is going toward the same core goal of historic preservation—to protect that asset.” **AIA**

AIA COLLABORATION

PREPARING FOR THE INEVITABLE

A NEW AIA PILOT PROGRAM LOOKS TO ASSIST COMMUNITIES FACING RESILIENCY ISSUES



TO PREPARE FOR ELEVATED SEA LEVELS THAT ARE PROJECTED TO flood their historic downtown over the next 50 years, officials from Bath, Maine, met with the AIA’s new Design and Resiliency Team (DART) to discuss strategic responses for this potentially grim future.

The DART pilot program was created to assist smaller city governments in addressing resiliency issues via strategy sessions with both national and local interdisciplinary experts. In partnership with the New England Municipal Sustainability Network, it is aimed at communities in New England that displayed a commitment to conflict resolution and a need to address their problems in a timely fashion.

“We want to highlight the importance of developing strategies for small jurisdictions,” says Joel Mills, director of the AIA’s Center for Communities by Design and lead on the DART program. “Smaller cities without as many resources create even more urgency to have effective plans in place. They can’t afford to wait; they can’t respond in an instant. They need to be planning earlier.”

All major businesses and industrial areas in Bath are located on the banks of the Kennebec River, which provides the city with its primary source of revenue but will eventually threaten its very existence. After an intensive research project with the Maine Coastal Program and Maine Geological Survey, it was determined that much of the downtown area would be vulnerable to flooding if levels were to rise by two or more feet. It was also estimated that such an increase will occur by the year 2064.

Because of Bath’s size and limited resources, the city sought outside assistance to plan for the now-expected surge. After being rejected in an attempt to secure federal funding, Bath representatives suggested a partnership with the AIA, which named Bath DART’s pilot project, which will minimize future damage to new and existing structures better equipped to handle flooding.

The plans that were subsequently developed for Bath may be too specific to replicate elsewhere, since the city’s problems are unique to its geographical situation. But other cities in the area will suffer from issues related to rising sea levels, and the ultimate purpose of the DART program is to demonstrate how urban design can assist vulnerable populations in need.

“Our goals are to promote the value of design in conversations about resiliency,” says Mills, “and promote the value of architects as resources to figure out these strategies.” —Steve Cimino **AIA**

➔ For more information on DART, an initiative of the AIA’s Sustainable Design Assessment Teams program, visit www.aia.org/liv_sdat.