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The Resilience DART (Disaster Awareness Report) from WSP | Parsons Brinckerhoff summarizes key recent developments related to resilience from around the world, and is presented for your information and use. The firm is currently participating in a range of projects aimed at mitigating the effects of extreme weather and building resilience.

State of Affairs

Washington, DC / National / International

- The Google Crisis Response team helps provide communities with key geographic data such as shelter locations and evacuation zones that might not be easily accessible otherwise during disasters (link below).

<http://www.directionsmag.com/entry/from-haiti-to-nepal-google-team-helps-users-find-critical-geographic-d/445789>

- According to U.S. Secretary of the Interior Sally Jewell, sea-level rise is putting more than \$40 billion of national park infrastructure and historic and cultural resources at risk. Climate change could also affect park visitation (links below).

<http://www.doi.gov/news/pressreleases/interior-department-releases-report-detailing-40-billion-of-national-park-assets-at-risk-from-sea-level-rise.cfm>

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0128226>

<http://www.pbs.org/newshour/rundown/climate-change-attendance-americas-national-parks/>

- Pope Francis' lengthy encyclical "Laudato Si: On Care for Our Common Home" is a moral and religious call to address the impacts of climate change and examine our relationship to the natural environment (links below).

<http://mashable.com/2015/06/18/pope-francis-climate-encyclical-passages/>

http://w2.vatican.va/content/dam/francesco/pdf/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si_en.pdf

<http://mashable.com/2015/06/18/pope-francis-climate-encyclical/>

- FEMA's Mitigation Best Practices Portfolio allows people to share tips and lessons learned to reduce or prevent damage from disasters (link below).

<http://www.fema.gov/mitigation-best-practices-portfolio>

- FEMA has launched a National Flood Insurance Program call-center pilot program to assist policyholders with the servicing of their claims (link below).

<http://www.fema.gov/news-release/2015/06/15/national-flood-insurance-program-call-center-opens-policyholders-and-0>

- A pilot mitigation program called MyStrongHome, using seed funding from the Rockefeller Foundation and Prudential Financial, helps homeowners work with contractors and insurance companies to make their homes more resilient (links below).

<http://www.myrtlebeachonline.com/news/business/real-estate-news/article25572529.html>

<http://www.mystronghome.net/our-approach>

- Rebuild by Design is collaborating with the city of San Francisco and Bay Area stakeholders on a program modeled after the post-Sandy initiative in the Northeast to address sea-level adaptation, earthquakes and climate-related events (link below).

<http://us10.campaignarchive1.com/?u=edb8f5540abe67b919bc1e15f&id=84ec63056a&e=50511f8993>

- The National Oceanic and Atmospheric Administration is upgrading its “Coyote” drones, piloted by scientists in nearby planes, to measure storm activity and allow forecasters to disseminate vital information (link below).

<http://gcn.com/articles/2015/06/18/noaa-hurricane-drones.aspx>

- The U.S. Army Corps of Engineers is facing challenges to its plan to move or condemn a number of properties through eminent domain as part of a large-scale hurricane protection plan for southwest Louisiana (link below).

http://www.nola.com/environment/index.ssf/2015/06/state_local_governments_object.html

- While a below-average hurricane season is predicted for this year, a significant number of homes are at risk of damage from storm surges given the density of the population in coastal areas (link below).

http://gsnmagazine.com/node/44668?c=disaster_preparedness_emergency_response

- With powerful storms still taking down power lines, there is continuing interest in the development of microgrids that can operate independently of a centralized electric grid, and various parties are vying for control (link below).

<http://www.edf.org/blog/2015/06/11/microgrid-power-struggle-tests-century-old-monopolies>

- A new scientific study addressing the impact of global warming proposes that it increased the intensity of storms such as Superstorm Sandy in the U.S. and Typhoon Haiyan in the Philippines (link below).

<http://mashable.com/2015/06/22/extreme-weather-tied-to-warming-study/>

Regional (NY / NJ / CT / MA)

- The Brooklyn-based organization Rebuilding Together NYC has received state funding for a pilot program in Southern Brooklyn and Staten Island to provide storm recovery training for low-income workers, which will improve resilience and help meet employment needs (link below).

http://www.silive.com/news/index.ssf/2015/06/program_to_train_low-income_wo.html

- The winning designs in the *Boston Living with Water* competition focus on three sites judged especially vulnerable to rising sea levels: the Prince Building, Fort Point Channel and Morrissey Boulevard (link below):

<http://nextcity.org/daily/entry/design-look-boston-living-with-water-winners>

- Federal funds have been made available to help New Jersey's fishing-related businesses—from commercial outfits to bait-and-tackle shops and boat operators—recover from the impacts of Sandy (link below).

<http://www.newsworks.org/index.php/local/down-the-shore/82915-fishing-related-businesses-sharing-over-2-million-in-post-sandy-recovery-grants>

- A Sandy relief grant from FEMA has been issued to the Jersey City Municipal Utilities Authority to help with repairs and protection of critical infrastructure after Sandy (link below).

<http://hudsoncountyview.com/senators-booker-menendez-announce-1-3m-for-jersey-citys-sandy-recovery/>

Feature Article

Facility Condition Assessments: Anticipating and Mitigating the Impact of Extreme Weather

As extreme weather becomes ever more relevant in the context of insurance coverage and long-term planning, property owners and public agencies are searching for the best ways to prepare for the worst scenarios. Their fears are well grounded: the National Oceanic and Atmospheric Administration (NOAA) reports that in 2014 there were eight weather-related disasters with losses of more than \$1 billion each across the U.S. One solution that is growing in popularity, particularly for public agencies interested in resilience planning, is the use of Facility Condition Assessments (FCAs).

FCAs are physical property surveys that collect and collate information regarding a structure's age, functionality and condition, in addition to documenting potential health or safety concerns. While these reports are typically used for capital planning and as lobbying tools for funding requests, they can also be helpful from the perspective of insurance, funding requests and life-cycle costing. The documentation presents a recorded (often public) statement on the real value of assets from an impartial, third-party perspective.

Agencies such as the New York City Housing Authority (NYCHA) and the New York School Construction Authority (NYSCA) had their FCA reports available to assist with the complex task of assessing damage to their property after Superstorm Sandy struck in 2012. These reports will become more and more valuable as weather trends escalate and storms become more frequent or more intense.

Hoping for the Best, Preparing for the Worst

Having defensible property information gives owners and operators a strong awareness of the state of their physical assets. This can aid in disaster planning and support insurance claims after an event. In performing an FCA, architects and engineers create a document addressing a structure's major physical systems (architectural, electrical, mechanical, etc.). A professional level of expertise ensures that the information is systematically gathered and thoroughly checked.

During the planning process, FCAs can support an informed conversation with owners and operators to fully understand their asset inventory and performance. Useful details like the system condition rating, life-cycle projections, deficiency location, quantities of measure and purpose of action all assist the client in making informed decisions for routine capital investments.

After disaster strikes, getting reimbursed for damage, regardless of the scale of property, can be an exhaustive process that relies on proper submission of claims. FCAs provide necessary information all in one place, avoiding weeks, months or years of back-and-forth between owners, operators and insuring bodies to find evidence of pre-existing conditions. The relevant

FCA data can be easily extracted for insurers or government funding agencies to clarify what is and is not covered by plans even before paperwork is signed. Negotiations start on the right foot with owner or operators presenting their property's full condition for risk analysis. Further, they give funding parties an independent document that confirms components while simultaneously creating a backlog of existing conditions that can be referenced later.

The benefits of FCAs don't apply only in coastal areas. Statistics from the National Flood Insurance Program indicate that over the past few years, all 50 states have experienced floods or flash floods, leading to substantial flood insurance claims.

The availability of thoroughly reviewed, quality information from trained professionals instills confidence in FCAs. The information can be distributed to a range of internal and external stakeholders in a consistent way, allowing for smarter, more comprehensive planning and faster recovery from disasters.

Design & Construction, Operations & Maintenance, and FCAs

FCAs can be used for more than the process of establishing and collecting reimbursement claims. Design, construction, operations and maintenance activities all benefit from condition assessments because they give real insight from building professionals on thousands of physical components. Using their training and experience, inspectors know not only what data to collect but what aspects may be important to a wide group of interested parties.

For asset holders, FCAs help in asset planning and future work scope by looking at life-cycle costing and current damage, all with a backlog that shows important context. The strength of that backlog, however, depends on two factors: data accuracy and a professional, independent perspective. Also, a successful quality assurance process relies on both technology (such as sophisticated data mining, logical queries, systems analysis, etc.) and key staff experience to review reports. The assessment process mandates that individuals entering data must fully understand their work's multi-faceted impact and be regularly informed about emerging solutions for physical environments. The shared comprehension of what the deficiencies are and how they impact future efforts (e.g., the benefits of repairing versus replacing equipment) makes the assessment method highly effective.

The value of FCAs lies not only in the collection of information on existing conditions that is both detailed and accessible, but also in the potential to support preparation and recovery efforts. Given the threat of increasingly devastating storms, FCAs are a pivotal tool in planning for the unforeseeable.

Note: WSP | Parsons Brinckerhoff staff have been providing FCAs for more than 20 years. For more information on best practices, please contact Margaret McCormick at McCormickMa@pbworld.com.

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About WSP | Parsons Brinckerhoff

WSP and Parsons Brinckerhoff have combined strengths and formed one of the world's leading engineering and professional services consulting firms. This global organization provides services designed to transform the built environment and restore the natural one. The firm's expertise ranges from environmental remediation and urban planning, to engineering iconic buildings and designing sustainable transport networks, to developing the energy sources of the future and enabling new ways of extracting essential resources. Approximately 32,000 employees, including engineers, technicians, scientists, architects, planners, surveyors, program and construction management professionals, as well as various environmental experts, work for this dynamic organization in more than 500 offices across 39 countries worldwide.