ESSAY

Rebuild by Design

Redesigning the Design Competition

When Hurricane Sandy hit the Northeast of the United States in 2012, it wreaked widespread havoc across the region. Instead of merely focusing on disaster recovery work, the US government saw an urgent need to think of future uncertainties and used Sandy as a springboard for innovation. It launched Rebuild by Design, a design competition that brought designers, researchers, government officials and local communities together in search of solutions to make flood-prone regions more resilient to future threats.

Urgency and Complexity

The 2016 World Economic Forum Global Risks Report puts the impact of water crises as the number one global risk of the next decade. According to the United Nations, 90% of the world's disasters are water-related; by 2050, two billion people will be devastated by floods if we continue with our current practices. Over the next 30 to 50 years the costs of climate disasters is estimated to rise from US$130 billion dollars yearly to almost US$1.7 trillion yearly.

It is through water that we feel the impact of climate change the most. Water is key for our food and energy production; it is an asset if managed right, a severe risk if not. By 2050, 75% of the world's population will be urban, so cities will be at severe risk if they are not planned and developed to be resilient.

Solving the water issue calls for an inclusive and comprehensive approach, where water serves as the convening power and the catalyst for innovative and sustainable development of our resilient communities. Mankind might be the only species that not only messes up but is capable of dealing with this complexity, moreover exploiting it for the better.

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The Big-U, one of the six Rebuild by Design projects to be implemented, is a 10-mile (16-kilometre) protective system surrounding Manhattan that will provide vibrant public spaces while shielding against floods and stormwater.

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Hurricane Sandy

In the autumn of 2012, Hurricane Sandy hit the Northeast of the United States, the biggest metropolitan region in the U.S. and a great economic power. The storm claimed more than 150 lives, destroyed and damaged more than 650,000 homes and hundreds of thousands of businesses across 24 states. More than 8.5 million people lost power and heat, while many lost their jobs. Altogether, Sandy caused an estimated US$65.7 billion in damages and economic loss.

The hurricane revealed the true physical and social vulnerabilities that all coastal cities face from extreme weather events continually exacerbated by climate change. Sandy showed how our physical challenges are tied to our social and cultural needs: the socially vulnerable lived in the most vulnerable places, where they were hit hardest by the storm and were fully dependent on others to get back on their feet.

For the Obama administration, it was clear that repairing the damage was not enough. To prepare the region for future uncertainties, all vulnerabilities needed to be addressed. We wanted to use the impact of Hurricane Sandy to leapfrog towards a state of resilience. On this premise, I developed in 2013, for President Obama's Hurricane Sandy Rebuilding Task Force, an inclusive and collaborative process called Rebuild by Design.

Part policy process, part rebuilding programme, and part design competition, it brought all levels of government, stakeholders and residents together to design and develop new standards of regional resilience innovatively. Rebuild by Design was positioned to answer climate change, sea-level rise and future economic, environmental and cultural demands.

Rebuild by Design

Rebuild by Design challenged interdisciplinary design teams to create innovative, implementable solutions for regional resiliency. Ten teams of architects, urbanists, engineers, scientists and activists from all over the world were selected out of 148 submissions. The teams engaged with more than 500 community organisations, held dozens of public workshops, toured hundreds of cities and neighbourhoods, and met with almost 200 government agencies. In 2014, the federal government examined 41 design opportunities and 10 final proposals, and awarded US$930 million to state and local governments to implement the final six winning designs.

This process of interaction—the research by design and the collaboration across all disciplines in the region—delivered a true understanding of the region's complexity, its vulnerabilities and interdependencies. It provided insights into the region's opportunities for viable responses for intervention. Supported by cross-governmental coalitions—partners like New York University's Institute for Public Knowledge, the Regional Plan Association, the Van Alen Institute and the Municipal Art Society, as well as a group of dedicated funders such as the Rockefeller Foundation and the JPB Foundation—Rebuild by Design evolved into a movement for resilience, dedicated to change the prevailing culture of how things had always been done.

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01 The New Meadowlands combines a restored marshland containing a series of berms and mixed-used developments at the edge to provide flood protection while creating new economic opportunities and recreational options.

02 For Hoboken, a comprehensive urban water strategy "Resist, Delay, Store, Discharge" was proposed, which includes coastal defence strategies (resist) and rainwater management (delay runoff, store excess, discharge).

> **When rebuilding becomes a ‘copy and paste’ of what was, or at best a re-imagining of what was destroyed, we fail to exploit our disasters.**

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Learning from Rebuild by Design

While Rebuild by Design is not a blueprint for worldwide success, its key insights can benefit and influence the sustainable development of other vulnerable regions. Hence, the Organisation for Economic Co-operation and Development (OECD) has embraced Rebuild by Design as an inspiration for public-private partnership and the UN presented it as an example of good institutional arrangements set up to support a nation's adaptation efforts to the ongoing and future impacts of climate change.

There are six aspects of the programme that stand out:

1. Long-term planning coupled with short-term innovative projects

It is important to gain a better understanding of risks, uncertainties and strengths of our future challenges. Hence a regional and comprehensive research is necessary to understand the complexity of the issues at stake. Long-term comprehensive planning is vital for defining the right response and the way forward to deal with this complexity. But these need to be coupled with short-term innovative interventions that will withstand next year's elections. These projects will inspire and kick-start replication across the region. The connection between planning and implementation is critical: one without the other would fail as plans are left alone on the shelves and projects become incidents.

2. Public-private funding

Public-private partnerships, built on trust and mutual gains, need to be embedded in a process of transparency and accountability. Only then can we get to new ways of financing, matching public and private funds and funding. For this, we need better cost-benefit analyses (CBAs). The needed comprehensive long-term approaches must be addressed in evaluations and analyses to increase transparency and attract donors. Currently, both public and private stakeholders' CBAs do not take these long-term benefits into account. For Rebuild by Design, we developed a special CBA model as there wasn't one in place at the federal government level. Two Dutch organisations helped us with it because they had previously worked on the CBA model for the Dutch Delta Programme and the Dutch Olympic Strategy for the games in 2028.

01 The Living Breakwaters project, when completed, will surround Staten Island's south shore with "reef-streets"—micro-pockets of habitat complexity to host marine life that effectively act as a living protective infrastructure.

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3. Coalition building and inclusive collaboration

Rebuild by Design was grounded in the understanding that the real change needed was a cultural one, and thus it had to start with the hearts and minds of the people of the region. We did this by matching up global talent with local talent: partners of all backgrounds with the best professional skills, specific regional ties and personal convictions. This resulted in a cross-cutting collaborative process that engaged over 500 organisations across the region and more than 3,500 people from governments, academia, businesses, investors, communities, activists and more. The process, which was open and built on trust, inclusiveness and participation, aimed at innovation and inclusive cultural change.

4. Programmatic approach

The programmatic approach is the "engine" that ensures the lasting connection between short- and medium-term interventions and the strategy (regional, comprehensive, long-term). It connects decision-making across political cycles with the implementation of the projects and ensures accountability and transparency with clear CBAs as well as instruments of monitoring and evaluation to create an enabling environment for new public-private partnerships to emerge.

5. Building institutional capacity

A strengthened institutional capacity is the inevitable result of such an open and inclusive process. Rebuild by Design built this capacity both across and within all layers of government and community organisations, support groups and institutions like the Regional Plan Association, New York University and the Municipal Art Society. Because all phases were guided and supported by a multitude of stakeholders, and because monitoring, evaluation and adaptation were part of the process, we learned by doing and incorporated the learning in the adaptation of the process as well as in the institutions' response and collaboration. At the same time we managed to "institutionalise" the built-up knowledge. For instance, the research guided the allocation of the second tranche of the federal government's disaster recovery funding allocation. This had nothing to do with Rebuild by Design but the knowledge from our research was so valuable that the federal government immediately implemented it as a way to guide the funding allocation and forced grantees to set it in their proposals.

6. Design

At the heart of the approach stands design, which identifies opportunities and transforms them into innovative examples. Design can connect the regional interdependencies with local needs; it can connect people and places and make tactile what was envisioned, practical what was ambitious. Design is key for showing the added value of investments in a

comprehensive way. Design is essential for the collaborative and inclusive process, building the alliance needed for critical change. Not by a trade-off of interests, but by bridging gaps. Design bridges the gap between quality and safety, between local needs and political capacity, between regional interdependencies and community assets, between economy, society and the environment. Design in that sense is both the "cultural" process as well as the "economic" outcome.

Change the World

The slowness of climate change has led to a slow response, not preparedness. But we have a choice to make! We can choose to leapfrog and be transformative in our approach, collective actions, and collaborations.

When a disaster hits, our first response comes from fear and hatred. We have just lost our homes, our businesses, perhaps family and friends. That is a hard time to ask for innovation, to look ahead and be bold. When a disaster strikes, we tend to look back and restore what was lost. When rebuilding becomes a "copy and paste" of what was, or at best a re-imagining of what was destroyed, we fail to exploit our disasters. We need true resilience to infuse our thinking, and we need courage and new knowledge to rethink the rebuilding effort from tomorrow's perspective. All the more since we know that tomorrow will be different. Scientific reports highlight climate change, sea level rise, demographic and economic change, and cultural challenges as the big and certain challenges of our time. Embracing change as a way towards greater resilience opens up an inspiring range of opportunities.

We have to start by acknowledging that complexity needs to be embraced to get a better sense on how to deal with the challenges, and that design, research and collaboration go hand in hand with politics, policy development and investment strategies. We should aim for innovation and implementation to go hand in hand with inclusive collaborations across all sectors, from government to activists and vulnerable communities as well as private and public institutions. Too good to be true? No, it can be done!

Through Rebuild by Design, we were able to create alliances for change, push for research by design and connect with real projects, linking design to politics and advocating reform with new perspectives, through real cultural change.

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01 Community collaboration on Lower East Side New York.

02 Community engagement on Staten Island.

Designing the Process of Rebuild by Design

The Task Force, with a core group of advisors and staff, created a unique structure for the competition. A successive and connected set of stages was established to orient the design process around in-depth research, cross-sector, cross-professional collaboration, and iterative design development. The design process incorporated a variety of inputs to ensure that each stage's deliverables were based on the best knowledge and talent, and that the final proposals would be replicable, regional and implementable.

Making room for a collaborative and innovative approach was a sidestep away from the institutional world. A detour around negotiations, the process aimed to build understanding and trust.

2 RESEARCH

Objective Establish the broadest possible understanding of the region's vulnerabilities to future risks and uncertainties, to enhance resilience.

Process Rebuild by Design's local partner organisations create an intensive, three-month programme of field research to introduce teams to a variety of local stakeholders, providing a comprehensive view of the storm's effects—the damage it created as well as the longstanding problems it uncovered or exacerbated.

A Research Advisory Board leads the teams through the region to learn from a variety of perspectives, and teams conduct additional research to supplement this on-the-ground work. Research is collaborative across teams and focuses on typologies as well as locations.

Result A public presentation from each team that includes three to five "design opportunities" describing conceptual approaches for interventions and an overall compilation of research submitted by all teams.

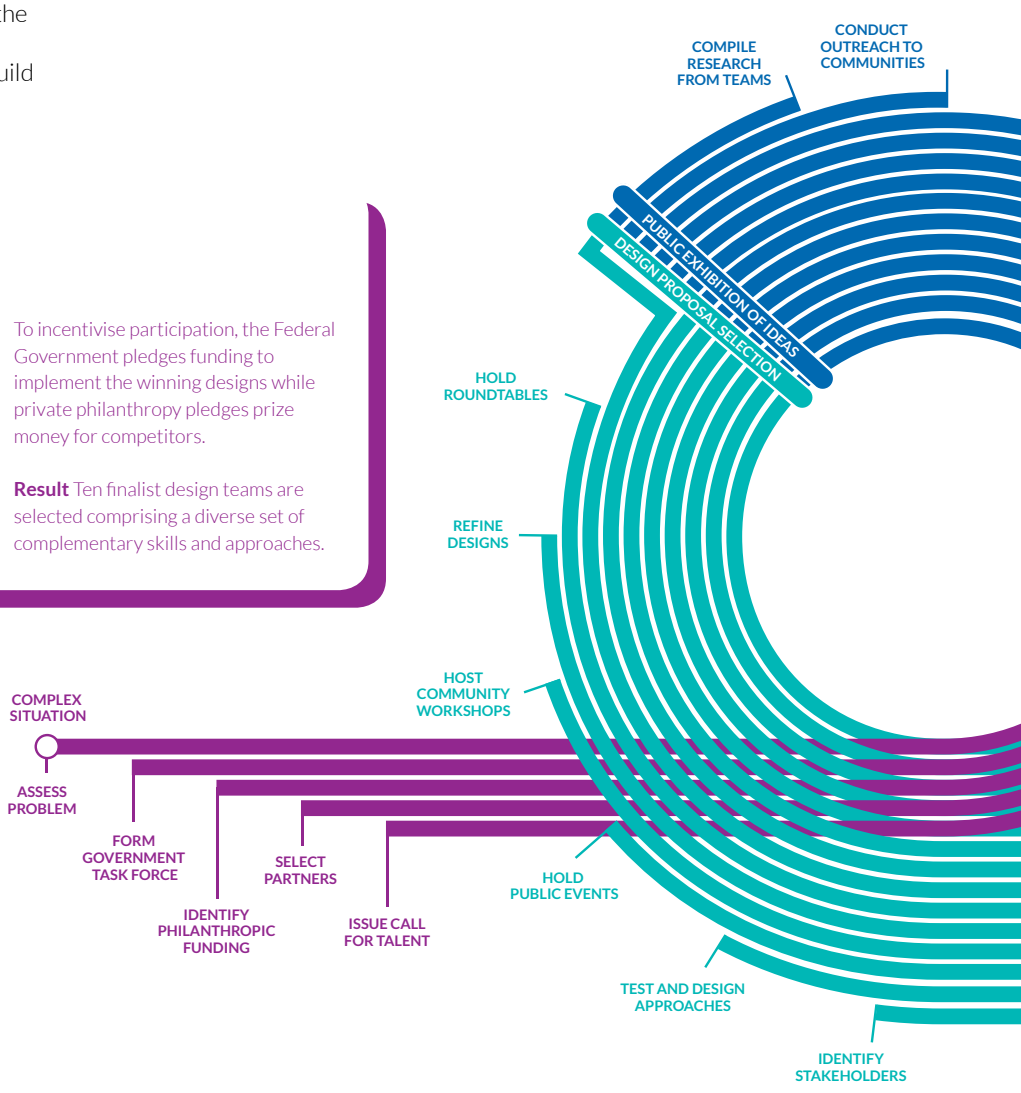
1 TALENT

Objective Gather the talent of the world to work with the talent of the Sandy-affected region.

Process Task Force issues a Request for Qualifications and Approaches calling for teams to assemble themselves in interdisciplinary partnerships to tackle the region's physical and social vulnerabilities.

To incentivise participation, the Federal Government pledges funding to implement the winning designs while private philanthropy pledges prize money for competitors.

Result Ten finalist design teams are selected comprising a diverse set of complementary skills and approaches.



3 DESIGN

Objective Develop implementable solutions that have support from local communities and governments.

Process Housing and Urban Development (HUD) Secretary Shaun Donovan selects, on average, one design opportunity for each team to develop. Teams then gather diverse local stakeholders into community coalitions, with whom they begin a four-month process of co-designing the final interventions. Using meetings, colloquia, charrettes, and non-traditional events to gain the broadest perspectives, they create solutions that not only address disaster scenarios, but also enrich the daily life of community members.

Result Ten fully developed, implementable resilience proposals champion communities' visions for future development and have support from the local governments.

4 IMPLEMENTATION

Objective Governments and community stakeholders work together to build the projects.

Process A jury evaluates the projects. Housing and Urban Development (HUD) Secretary Shaun Donovan designates which are eligible to receive federal funds. HUD allocates disaster recovery funds to city and state governments for the implementation of the projects' first stages. HUD sets strong guidelines for community involvement to ensure that the coalitions formed during the competition continue to be involved through implementation. Teams are poised to work with government and communities to refine the interventions.

Result A more resilient region achieved through collaboration and design.