

# **Rebuild by Design Five Years Later: Reflections from the Designers**

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## Executive summary

On June 20, 2013, in response to the hurricane, the Rebuild by Design (RBD) Hurricane Sandy Design Competition was launched by the U.S. Department of Housing and Urban Development (HUD) and President Obama's Hurricane Sandy Rebuilding Task Force. Five years later, the goal of this study was to understand the impacts of participating in the competition on the careers of the designers who participated. In May and June 2018, 33 designers were interviewed across 30 separate interviews.

The key findings are as follows:

### *Building a Community of Resilience Practitioners*

- 94 percent (31/33) of respondents have worked on resilience projects since the end of the competition.
- 73 percent (24/33) said that their experience in the design competition has led to them doing more resilience-related work and placing greater emphasis on resilience in their work overall.

- Many respondents reported a broader or deeper perspective on resilience in their professional practice.
- Many respondents reported increased reputation and visibility as resilience practitioners.

#### *Intensifying and Expanding Professional Networks*

- Every one of the 33 respondents described having their professional network expanded or deepened through their involvement in the Hurricane Sandy Design Competition.
- 70 percent (23/33) of respondents reported making new contacts in both their own fields and across disciplines during the competition.
- Several respondents cited new or strengthened relationships to local community leaders and stakeholders.
- Some respondents noted that the network of people who recognize their work expanded as a result of the competition.
- Many of the connections made during the competition resulted in subsequent collaboration between designers.
- The strongest professional networking effects were experienced among American designers working in the United States, alongside a more modest expansion of international relationships between American and international designers.

#### *Collaborating with Communities*

- 94% (31/33) of respondents identify community engagement as crucial to the their work during the design competition.
- 82% (27/33) identify their experience with community engagement during the design competition as having impacted their subsequent community engagement work.
- Many participants described gaining greater understanding into the community engagement process through their involvement in the competition.
- Several respondents report more heavily incorporating community engagement into projects since participating in the design competition.

- Several designers reported that their work in the design competition reaffirmed their engagement practices or increased their emphasis on it.

### *Mobilizing Knowledge*

- 73 percent (24/33) of respondents reported having expanded their way of thinking on the basis of their interdisciplinary interactions during the Hurricane Sandy Design Competition.
- Many reported their involvement in the design competition as having encouraged them to pursue more interdisciplinary collaboration.
- Some respondents identified the design competition as having sparked a larger conversation in academia, spurring other institutions to follow the lead of those involved with the design competition.
- Respondents also reported that the design competition started a conversation among others in their respective professions about innovation and resilience more broadly across disciplines.

### *Learning Lessons for the Future*

- While answers to the questions on impact were largely positive, 30 percent (10/33) of respondents were critical of the implementation process after the design competition ended, and respondents frequently offered criticisms which fell outside the specific focus of the study. These ten respondents had overall critical tones during their interviews.
- Nine of those ten most critical respondents were not involved with implementation of projects after the conclusion of the design competition. Of those nine, two were respondents from teams not awarded funding, with the remaining seven from winning teams awarded funding for their projects at the end of the competition.
- The most common object of criticism was the transition between the end of the competition and implementation phase, during which many respondents argued that community engagement and the cross-disciplinary vision for the competition and their designs suffered when taken over by new teams not composed of the original designers, sometimes with differing priorities. These criticisms focused on a lack of holistic thinking, as well as straying from the

original integrity of the projects on behalf of those chosen to lead implementation of some of the projects.

- More than a quarter (9/33) of respondents have also been involved in the Bay Area Resilient by Design competition, which is arguably a surprisingly high number. But half (12/24) of the respondents who have not been involved with the Bay Area competition reported choosing not to pursue involvement in it at least in part because of their experiences with the Hurricane Sandy competition implementation transition.



# 1. Introduction

Hurricane Sandy hit the East Coast of the United States on October 29, 2012, and left lasting damages in its aftermath. The impact was particularly hard on the New York and New Jersey region; fatalities from the storm exceeded 100 in New York and New Jersey, and damages in the United States were estimated at \$65 billion, of which \$50 billion was in New York and New Jersey.

On June 20, 2013, in response to the hurricane, the Hurricane Sandy Design Competition, Rebuild by Design (RBD), was launched by the U.S. Department of Housing and Urban Development (HUD) and President Obama's Hurricane Sandy Rebuilding Task Force. The Rebuild by Design initiative's objectives were to connect leading researchers across disciplines to address community and policy-based redevelopment following the hurricane in a regionally scalable but locally contextual fashion, and ultimately to implement a set of projects through a combination of public and private funding. It asked multi-disciplinary teams of architects, planners, designers, engineers, and academics to work with the Sandy Region to develop innovative solutions to the challenges of post-disaster rebuilding.

During the first stage of the design competition, ten finalist teams were selected to follow the Rebuild by Design process. The second stage consisted of outreach to learn from communities most impacted by the storm, along with research and knowledge sharing among and between the various teams and members. The last stage of the design competition focused on community engagement, outreach, and participation. At the conclusion of the third stage, each team's project was evaluated by jurors appointed by the HUD Secretary to inform HUD's final decision as to the winning teams. (A previous round of evaluation, conducted by a large set of actors including the Hurricane Sandy Task Force and local governments across the region, occurred at the conclusion of the second stage.) Ultimately, seven of the ten finalist projects were awarded funding. (See the table on p. 11, below.)

Five years after the launch of Rebuild by Design, the designers involved in the original design competition were asked to look back and answer: *What has been the impact of participating in the Hurricane Sandy Design Competition on your professional practice?*

The findings of this report are derived from 30 interviews conducted by McGill University's School of Urban Planning with 33 Design Team members of Rebuild by Design's Hurricane Sandy Design Competition. Members of all ten teams were interviewed, and the designers span a range of disciplines including architecture and urban design, water management and engineering, and urban planning. Results from the interviews fall into five main themes: resilience practice, professional networking, community engagement, knowledge mobilization, and lessons for the future.





## 2. Methodology

The goal of this study was to understand the impacts of participating in the Hurricane Sandy Design Competition on the careers of the designers who participated. The design competition was an enormous undertaking, involving two hundred professional architects, engineers, academics and other participants spread across ten design teams, as well as many more community members, elected officials and civil society representatives who contributed to the process in a variety of forms. For the designers<sup>1</sup> themselves, participating in a design competition of such scale could plausibly have been expected to have changed their subsequent professional practice in a number of ways both positive and negative and now that five years have passed since the beginning of the design competition, the opportunity exists to document these changes and learn from them.

The focus of the research was thus deliberately narrow: the impact of the design competition on the designers and their subsequent work, *as understood by the designers*

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<sup>1</sup> Throughout the report we use the word “designer” generically to refer to all members of the design teams, most of whom would use other words to describe their professional role, as documented below.

*themselves*, and takeaways from the competition that applied in other areas of their work. In other words, we were concerned with what the designers believe about their own participation in the design competition; we did not attempt to externally validate the claims made by the designers about their participation. Likewise, while we use the word “impact” to describe the study’s objective, we mean this only in the everyday sense of the word, since we did not undertake a formal “impact assessment”, which would have implied studying a separate group of designers who did not participate in the design competition to use as a control for the designers we did interview. Instead, we made an effort to hear from the designers in their own words and understand their own opinions about their participation in the design competition. Finally, the research was not an assessment of the design competition itself, nor an assessment of the subsequent trajectory of the rebuilding projects after the conclusion of the design competition. (For an in-depth assessment of the competition, see the Urban Institute’s [2014] formal evaluation, commissioned by the Rockefeller Foundation.)

Rebuild by Design staff members conducted pilot interviews in March 2018 with five designers who had participated in the Hurricane Sandy Design Competition. Subsequently, all 239 members of the original ten finalist design teams were invited to participate in an interview with researchers from McGill University. Ultimately, 33 designers were interviewed across 30 separate interviews in May and June 2018. In combination with the pilot interviews, therefore, 36 respondents were interviewed across 35 sessions.

Interviews were approximately one hour long and semi-structured. Respondents were asked a series of eleven questions about their experiences in the Hurricane Sandy design competition and the impacts their participation in the competition had on their subsequent career, with follow-up questions specific to each individual interviewed. Based on the findings from the five pilot interviews, the specific foci of the interviews were: professional network development, interactions with academia, community engagement, overall impact on the designers’ careers, and subsequent involvement in resilience projects. (The interview script is provided in the Appendix.)

Nearly all of the respondents consented to having their comments publicly linked to their names and organizational affiliations, but in this report we refer to all respondents anonymously in order to maintain a stronger focus on respondents’ experiences as opposed to their specific identities. We refer to respondents through a

combination of their discipline and the team of which they were a member e.g. “an architect from the Sasaki/Rutgers/Arup team”.

Efforts were made to ensure representation across all of the ten design teams seven of which had their designs funded at the conclusion of the design competition, and three of which did not as well as across the disciplines from which team members came. Respondents were distributed across teams and disciplines as follows:

Team	Team’s design funded?	# of respondents
BIG TEAM	Yes	7
HR&A with Cooper Robertson and Partners	No	1
Interboro Team	Yes	1
MIT CAU + ZUS + URBANISTEN	Yes	2
OMA	Yes	5
PennDesign/OLIN	Yes	2
Sasaki/Rutgers/Arup	No	3
Scape	Yes	6
WB unabridged	Yes	3
WXY / West 8	No	3

Role	Number of respondents
Academic (including ecology, real estate, and planning)	6
Architecture, urban planning and urban design	7
Engineering and water management	6
Landscape architecture	10
Other	4



### **3. Building a Community of Resilience Practitioners**

Cities are increasingly understood to exist in a two-way relationship with climate change and other dimensions of global environmental crisis, serving simultaneously as an important contributor to many of the most pressing environmental problems and as a key site of solutions to these same problems (Bulkeley 2013; Wachsmuth et al. 2016). As this understanding increases, the demand for urban design and engineering projects to address problems of urban resilience and environmental sustainability within cities should be expected to increase as well. During the interview process, designers were asked to expand on their prior and subsequent experience with resilience-related design projects in their respective fields. Nearly all respondents have worked on resilience projects subsequently, while three quarters said that their experience in the design competition has led to them doing more resilience work than they otherwise would have done. Many respondents reported a broader or deeper perspective on resilience in their professional practice following their participation in the design competition, while other respondents report increased reputation as resilience practitioners.

Both groups – those who had worked on resilience projects prior to the competition, and those who had not – reported that the experience has made them more effective and more frequent resilience practitioners. Nearly every respondent (31/33, 94%) has worked on resilience projects since the conclusion of the design competition. These include projects specifically centered on environmental sustainability, projects with other primary focuses but within which resilience issues were considered, and other resilience-related competitions and academic work.

An architect who was a member of the OMA design team described a broadening of how his work has engaged with questions of resilience after participating in the Hurricane Sandy Design Competition, even for projects that are superficially unrelated:

Resilience has shown up in projects that aren't necessarily 'resilience projects' for example, master planning or residential development where clients aren't being informed about what decision making should take place in order to be resilient. So I think that has been, by far, the greatest application of the knowledge.

A number of respondents also suggested that their experience with the Sandy Design Competition has increased their reputation and professional visibility in the field of resilience planning and design. For many, the competition, whether it introduced them to resilience work or not, gave them an entrance as “experts into the field” and the ability to reference a large-scale, renowned project in their work history. Such was the case with one landscape architect from the WB unabridged team:

[After the Sandy design competition] we were able to go to our state government and say “We [the designers] know how to do this, we have the expertise.” It was a pivot where we really begin to talk about resilience as the way to think. I think the timing was really formative. To be able to see such a clear sort of difference between how we were talking and working after Katrina and how we were talking and working after Sandy.... Because of our work with Rebuild by Design and our work within the state [of Mississippi] with the National Disaster Resilience Competition, we are seen on the Gulf Coast of Mississippi and in the state in general as being a leading organization around resilience.

Likewise, another architect from the WB unabridged team said: “We have a national recognition now for resilience work, which may well turn into projects in the future.” These thoughts were echoed by other designers who note that participation in the competition gave them greater authority on the topic of resilience, increased their recognition professionally and, in the words of an urban designer from the Scape team, “gave us life experience and led to more work in that area”. Several respondents described using their work with Rebuild by Design as references for other proposals and projects.

While nearly all respondents have worked on resilience projects since the end of the design competition, a strong majority of respondents (24/33, 73%) also said that their experience with the design competition has led directly to them doing more resilience-related work, and to resilience taking on a greater emphasis in their professional practice. This sentiment was expressed by designers across fields, from engineering to landscape architecture to academia. For some this included direct links to subsequent projects, while for others it meant forming the necessary connections, knowledge, and recognition to move forward in the field of resilience. “[Rebuild] is something that is one piece of my work history now that helps me think through difficult projects, just with a slightly different lens” noted one respondent from the PennDesign/OLIN team who works in urban planning. One BIG Team member said, “I think it has helped redefine the scope of what we do as a firm, and the projects which we are considered for.”

Many of the designers further reported that participating in the Hurricane Sandy Design Competition led to a deeper understanding of resilience in their subsequent work. Designers cited greater understandings of project phasing, flood management, holistic approaches to planning and design processes, and social resilience as just a few of their takeaways on resilience. One architect from the BIG Team said,

It certainly has opened up an entire field a field that was always driven by engineers. I think it’s a very good thing that architects, urbanists, and people who think of the public realm are also incorporated.

Some of the projects designers have worked on since the end of the design competition include:

- East Harlem Resilience Project
- Resettlement of the Isle de Jean Charles Community
- Rebuilding of the Rockaway Boardwalk
- Coney Island Creek Resilience Study
- The Global Cultural District Network
- National Disaster Resilience Competition
- Restoration of Jamaica Bay

Throughout the 33 interviews conducted, resilience emerged repeatedly as a theme that continued in the careers of the design competition's designers. While some of the designers who participated in the Hurricane Sandy Design Competition had previously worked on resilience projects, for many others this was their first experience. Participants frequently cited the competition as a catalyst in their involvement in resilience work, increasing their capacity in this field, broadening their perspective on resilience, or increasing their reputation as resilience practitioners.



## 4. Intensifying and Expanding Professional Networks

Local resilience planning is never truly local—practitioners and policymakers are connected through formal and informal networks along which policies, expertise, and relationships circulate and evolve (Acuto 2013; Betsill and Bulkeley 2004; Goh forthcoming; Lee 2014). The Hurricane Sandy Design Competition brought together hundreds of designers from a range of cities and countries, and thus provides an important case to examine how designers’ professional networks were changed through their participation in the design competition.

Respondents overwhelmingly responded that involvement in the competition had an impact on their networks through connections made or strengthened during the competition. In fact, every one of the 33 respondents describes having their professional network expanded or deepened through their involvement in the Hurricane Sandy Design Competition, and in general these networks continue to thrive.



While many respondents reported that existing professional relationships were strengthened through participation in the competition, the most common form of professional network development reported by respondents was making brand new connections, which in many cases have persisted into the present. Seventy percent of respondents (23/33) described meeting contacts during the design competition with whom they have had a subsequent professional relationship. A landscape architect from the PennDesign/OLIN team, described this as “quite a Rolodex”:

I think that what Rebuild accomplished was really exciting in terms of the level of academic and professional reach. It created quite a Rolodex, and we all have a shared family tree where we look to meet and collaborate with each other.

This network of new contacts and professional relationships also extended beyond one particular group or discipline. Several participants mentioned making connections to professionals in fields and sectors different from their own. A BIG Team architect described the professional network he developed as:

a huge academic network, a huge professional network, and a whole range of clients and stakeholder networks that developed.... It has doubled my contact list.

Some respondents placed less emphasis on new contacts made during the design competition, and more on the fact that existing relationships were strengthened by shared participation in the competition. An urban planner from the Sasaki/Rutgers/Arup team described this process:

It strengthened some of the networks with our team and partners on our team, people that we had worked with a little bit in the past. But then we were kind of thrust into Rebuild by Design together.

Some participants specifically referred to strengthening loose international relationships they had prior to the competition through exposure and working together during the design competition. This applied particularly to Dutch firms who had prior contact with North American designers, and vice versa. A Holland-based urban designer from the MIT CAU + ZUS + URBANISTEN team commented:

We were already present in America, doing some work for the Guggenheim, some for civic use, storefronts. We already had some connection but we made stronger connections by working with so many people.

Most respondents who discussed their expanded or deepened networks described contacts with other design professionals. But several respondents who work in the area of community engagement likewise reported that their connections with local community leaders and stakeholders were deepened through participation in the design competition in a way that has yielded ongoing professional benefits. This applied especially to participants who had other experiences within those communities, whether having working on prior projects there or having been members of the communities themselves. As one urban designer from the Scape/Landscape Architecture team described connecting with the local community: “Lasting relationships were forged with the Borough President Office, with the Boaters Association, the Trailer association, with the Park Directors in the park that’s there.”

One community organizer from the Interboro team also noted that these connections extended to his academic students:

Some of my students actually ended up doing some work with the partners [I met through Rebuild]. I think that was a successful link, a very tangible one.

Another participant said that her involvement with the design competition spurred her to become more involved in her own New York community through her neighborhood building association.

One consideration raised by several respondents was that the intensity of the design competition experience – what one urban designer from the OMA team described as “spending many hours together working through the workshops, going to site visits, pondering the same issues, and bemoaning the struggles after the fact” – facilitated deeper relationships than would be typical for a project. Respondents referred to the volume of time spent together, the intensity of the process during the competition, and the necessity for collaborative communication and thinking as contributing to this sense of a professional resilience community. An ecologist from the BIG Team put it as follows: “The network connections that developed were more intense than, say,

relationships that you typically would develop on any RFP with a landscape architect and an engineer, because we just spent so much more time together.”

The result is an international community of resilience thinkers who collaborate on projects, communicate new ideas, and push forward a conversation around resilience based on a shared experience and toolkit from their participation in the design competition.

While most respondents discussed their expanded professional networks in terms of new colleagues they have developed, a number of respondents also identified participation in the design competition as having expanded the network of people who recognize their work. Other organizations and entities outside of their usual regions of work now view them as resilience experts and leaders in an international conversation. As one landscape architect from the BIG Team stated: “The fact that we did Rebuild by Design, people now see us as a more international player.” A hydraulic engineer from the OMA team described a similar outcome:

In your records of reference projects, this really stands out. This is an iconic project that you’ve done on your CV, so I’m very proud of it. It helps to make your professional network stronger.

Additionally, many of the professional connections made and expanded during the Hurricane Sandy Design Competition have not only been long-lasting and resulted in subsequent projects, but have also continued as a community of practitioners to this day. According to one architect from the WB unabridged team: “In the last three weeks, I have referred people or recommended that we gather a group of people for a talk, luncheon, discussion, or project proposal, probably with five different people I met during Rebuild by Design.”

Given that the Hurricane Sandy Design Competition was based in the United States with all ten teams featured varying levels of participation from international designers, the extent to which expanded or intensified professional networks would have led to new work outcomes could plausibly be expected to vary by geography. In particular, did the relatively large number of Europe-based designers develop new professional opportunities in the United States? This question is confounded by a large number of the designers interviewed indicated that they already engaged in extensive

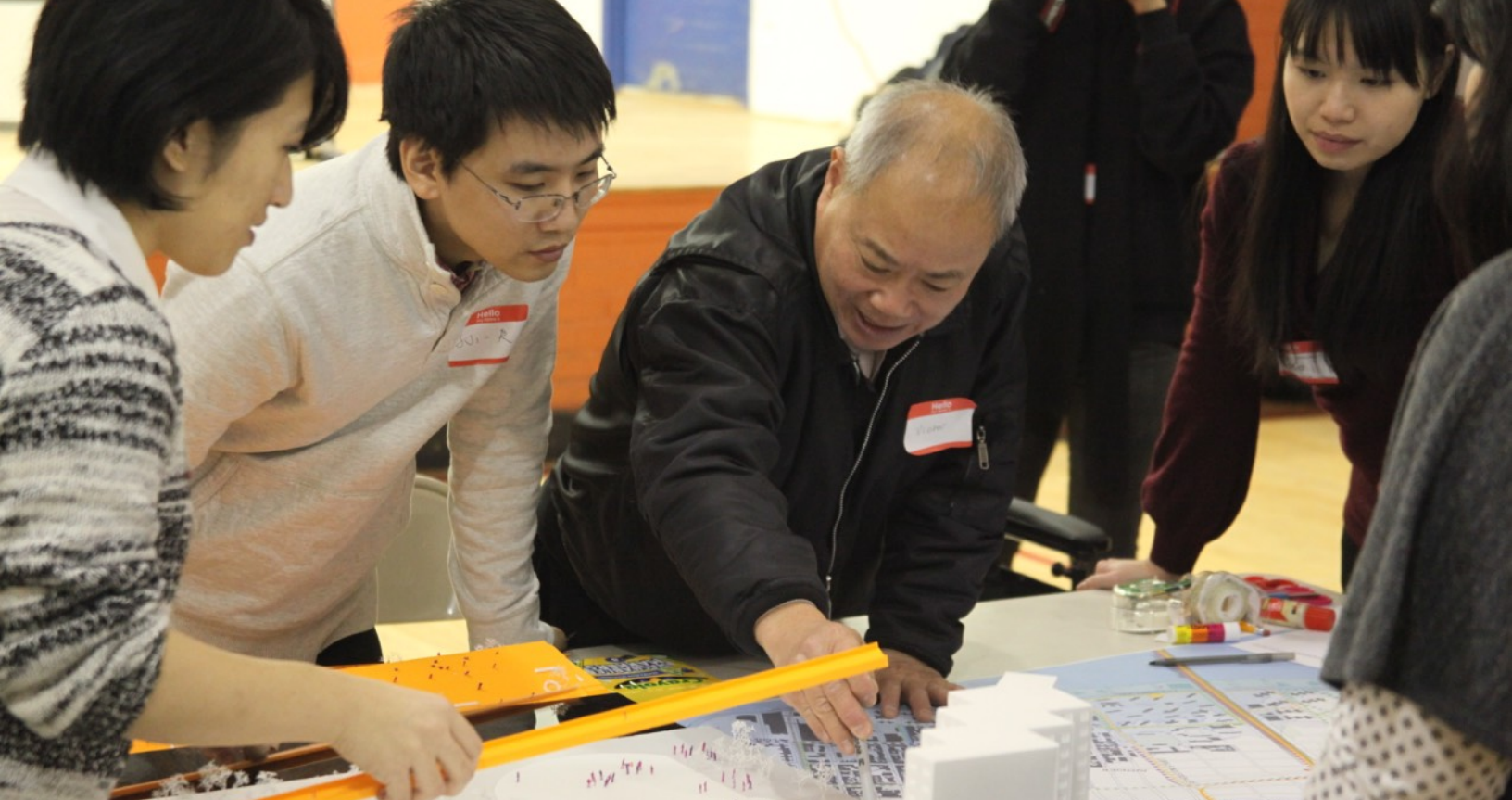
international work. Two of the six European designers interviewed described significantly expanding their US operations as a result of their work on Sandy. One of these, an international urban planner who was on the BIG Team, described a dramatic increase in his firm's US business, such that they have opened a new office in New York:

It has been a drastic change and my practice has become two practices, one still back in Amsterdam but a new practice in New York that is in a way becoming like one of the specialties on this topic in the world. It's been really drastic for me.

By contrast, another respondent – an international landscape designer who worked with the MIT CAU + ZUS + URBANISTEN team – reported making many professional contacts in the United States through his participation in the Sandy design competition, but experiencing a subsequent difficulty in leveraging these contacts for new US-based projects, because of the small size of his firm:

In terms of the engineering firms and consultants we met, the spinoff was quite limited. Because I think it's still a difficulty to get a European firm on board [in the United States]. That's our misfortune that we are not yet big enough to have a full presence in America. But, in order to really make connections and to get collaborations going, you have to be there more often.

The Hurricane Sandy Design Competition gave the designers involved an opportunity to both strengthen existing professional relationships and develop new ones. Everyone interviewed cited an expanded professional network as an outcome of their participation in the competition. Several have worked on subsequent projects with people they met during Rebuild, and many remain in contact with both other professionals, as well as the communities they engaged with. Others reported an increased network of people who recognize them for resilience work since participating in the design competition. Finally, while more interviews would be required to establish the point definitively, it appears that the strongest professional networking effects were experienced among American designers working in the United States, alongside a more modest expansion of international relationships. This is a predictable consequence of the fact that a preponderance of the design team members were American, and thus would have experienced more locally-relevant networking opportunities.



## 5. Collaborating with Communities

The history of modern urban planning and design is littered with examples of top-down developments and redevelopments imposed on communities who were barely informed about, let alone consulted on, dramatic transformations of their built and social environments (e.g. Gans 1965; Zipp 2010). Nowadays “best practices” have evolved to acknowledge the importance of consultations and ideally collaborations with local communities during planning processes (Healey 1998), even if in practice community involvement in planning continues to be both sporadic and stratified along lines of privilege (Angotti 2008).

One of the distinctive goals of the Hurricane Sandy Design Competition was to integrate community participation early and often in the design process. And indeed, regardless of team and role on the team, nearly all respondents (31/33, 94%) identified community engagement as a distinctive and important aspect of the Hurricane Sandy Design Competition. A large majority (27/33, 82%) furthermore identified lessons they learned from community engagement as having had an impact on their subsequent practice. In fact, when asked the question “What impact do you think RBD on your career?” many respondents’ first answer related to takeaways from community

engagement and participation. One planning consultant from the BIG Team went so far as to describe Rebuild by Design as “a community engagement project as much as a typical competition.”

Those designers who identified community engagement as important to the projects’ success frequently singled out the depth of interaction with members of the community, as well as the perspective gained from a participatory approach, as being integral to the engagement process. These same points were mentioned by respondents who reported that their experience with community engagement during the design competition had an impact on their subsequent work. Some of these latter respondents discussed incorporating a greater focus on the engagement process in general; for example, a planner from the HR&A team noted, “my mood changed from the idea of community outreach to community engagement.” Others reported similarly overarching takeaways, such as one landscape architect from MIT CAU + ZUS + URBANISTEN who described community engagement as:

something that we use now in every project. Our attitude towards planning with the community is always very open, very informal, very inviting. We have those field trips and all sort of fun events, bike tours and stuff like that. And I think we took that from Rebuild.

Several respondents mentioned that the community engagement process opened their eyes to new ways of engaging not only the community, but their own team members and clients. A designer from the BIG Team described one such example:

Usually [our emphasis on community engagement] is in opposition to our clients. Our clients’ inclination, no matter who it is, is to keep things closer to the vest, but our experience in Rebuild really showed us that the more open you are, the less problems you have down the road.

A BIG Team architect described how, “because of the positive experience [during the Hurricane Sandy Design Competition], we’ve doubled down on community engagement in other projects, and I think it’s going to be more intensive.”

In addition to gaining general understanding and exposure to the community engagement process through the design competition, several respondents mentioned

applying specific engagement practices learned during Rebuild in their subsequent work. For example, a BIG Team planning consultant described incorporating different engagement methods:

You've got a classic teaching thing: different people learn in different ways. So, yes, one person might respond well to your PowerPoint and one person might respond well to your ten-minute speech.... I think it did open our eyes to how you engage different people around complex questions.

A few respondents also mentioned integrating models and other visual methods during community meetings and activities, such as 3D models and simulations of interventions and using post-its to visually communicate ideas between community members. An engineer from the WB unabridged team described the success of this approach:

I think it's why we have such a great relationship with the community in Bridgeport. Because of how we've made things didactic, how we've engaged them in this process, how we've really been visual in everything that we're doing.

Several participants reported learning ways of adapting to local politics which have been helpful after the conclusion of the design competition. These included methods for approaching members of the community as well as leaders of organizations and members of the local government. For example, an architect from the BIG Team said:

I learned how to find enough elbow room. Enough opportunity to get the community engaged around this issue but also recognizing being supportive of the more long-term interaction between community groups and the city government.

In addition to the numerous designers who cited incorporating new approaches from the Hurricane Sandy Design Competition into their own practice, several reported that their subsequent work reaffirmed their community engagement practices or increased their emphasis on it. "It's not that we weren't engaged in the community before," said a landscape architect from PennDesign/OLIN. "But there's a greater sense [now] of the instrumentality of it."

While a large majority of participants cited the importance of community engagement as a major takeaway from their experience during the design competition, a few respondents argued that the design competition overemphasized or misdirected community and public engagement. A landscape designer from the Scape team cautioned that the community engagement process needed some additional reflection in order to get more local residents involved and aware of some of the political and economic considerations which constrained what the design teams were going to be able to propose or accomplish. A planner from the WXY / West 8 team echoed these thoughts:

I have a certain skepticism about the value of community participation.... There are winners and losers, and I would hope through democratic processes we will be well-informed to determine who the winners are and who the losers are. And if there are losers, there should be mechanisms in place by which we subsidize or support them, particularly for vulnerable and disadvantaged populations.

In sum, however, respondents overwhelmingly (94%) cited community engagement as a crucial component to the projects. A strong majority (82%) further reported incorporating things learned during community engagement in the design competition into their subsequent work, both in terms of general takeaways and specific methods and practices. Some respondents reported learning ways of navigating political dynamics in political engagement, and others said that their participation in the design competition reaffirmed engagement practices they had already employed, causing them to place greater emphasis on the process since the competition.





## 6. Mobilizing Knowledge

The Hurricane Sandy Design Competition was deeply interdisciplinary and involved professionals from different fields and disciplines in substantive roles both on the individual design teams and through Rebuild by Design's Research Advisory Group. The evidence suggests that this interdisciplinary approach had a lasting effect on design competition participants; almost three quarters (24/33, 73%) of respondents report having expanded their way of thinking on the basis of interactions between both different disciplines, as well as between professionals and academics during the design competition.

These impacts were identified by people in all sectors – in academia and outside of it – and included broader benefits of engaging in an interdisciplinary setting, as well as specific ways in which this has influenced respondents' careers since the design competition. An ecologist from the BIG Team was one of many respondents who identified the general importance and impact of having worked in interdisciplinary teams: "It definitely strengthened my view that interdisciplinary teams are essential to working on design projects, and that the sooner everybody gets together, the better;

and that it's great to go to a site together as a unit." Similarly, a WB unabridged engineer explains:

[The design competition] encouraged me to have to reach out to folks of other disciplines. We needed to engage structural engineers, cost engineers, people of certain technical disciplines.

Other participants identified more specific ways in which their work or approach has been influenced by interdisciplinary knowledge exchange during Rebuild by Design. A landscape architect from the MIT CAU + ZUS + URBANISTEN team was one of several respondents who identified enduring benefits to having worked with academics during the design competition: "They helped us a lot being critical about our approach. It was useful, for sure."

Several respondents who themselves work as academics or professional researchers also identified positive impacts of the design competition on their own work or on the broader field in which they work. One respondent, a university professor, stated that as a result of his involvement with the design competition, he has become much more involved with the public and applied aspects of ecology. In his lecturing, he has shifted from what he described as "straight and nerdy ecology" to incorporating more design examples. He continued to say that these new examples have taken on a greater role in both his lecturing and the hands-on studio courses he teaches.

These impacts are seen with both designers and academics. An architect from the BIG Team also commented that, since participating in the design competition, he has incorporated "climate and ecology as protagonists in the story". "[Rebuild by Design] was an education unto itself," he continued. "Not just in the traditional roles of planning, but a completely new ways of looking at things. It made going back to school unnecessary." This was echoed by an architect from the WB unabridged team who described the creation of "a curriculum for architects based on resilience, which draws very heavily on my experience through RBD".

Another respondent, a university professor from the WXY / West 8 team, argues that the involvement of researchers in the design competition has had a broader impact on academia in the United States: "I think when universities around the country saw

Columbia, Yale, Rutgers, Stevens Institute, and Penn really mobilizing a group of faculty, I think it was a bit of a wake up call that everybody else better catch up.”

Additionally, several of the designers suggested that Rebuild by Design had sparked a much needed conversation around innovation in their respective disciplines. As one urban designer from the Scape team put it:

I think it gave all of us (firms, people) involved a reason to talk more for all of us involved. It gave all the rebuild designers a voice, which is something the designers don't always have. [It started] a conversation around infrastructure, planning and design ... in an industry and in a world that desperately needs it.

Positive experiences about knowledge mobilization were not universal, however. Several respondents argued that, despite an exciting level of interdisciplinary collaboration during the design competition, the impact of that collaboration subsequently has been somewhat muted, because of a lack of follow-through and institutionalization of the knowledge exchanged and the momentum gained throughout the competition. One respondent, a planner from the WXY / West 8 team stated: “I would say that probably not enough was done to really institutionalize the learning that happened, commensurate with the experimentation that was happening programmatically in terms of design.”

In sum, the majority of respondents described the design competition as an interdisciplinary process with opportunity for co-working and design across sectors and fields, in particular between the professional and academic worlds. Three quarters of the respondents reported that this impacted their thinking subsequently in their career, in particular gaining insight from other disciplines and applying it to their future work. Some also mentioned the conversation taking place at Rebuild by Design as sparking a larger conversation in academia, and more broadly across disciplines.



## 7. Learning Lessons for the Future

By and large the feedback from respondents was positive. However, nearly every respondent volunteered criticisms on different aspects of the competition, and nearly one in three (10/33) respondents had an overall critical view of the competition. In particular, interview respondents mentioned difficulties concerning the transition from the end of the design competition into the implementation of the winning projects. One third of respondents (11/33) have been involved in post-competition implementation of the projects, while two thirds have not, but both groups raised concerns related to the transition to implementation. This transition coincided with the transfer of project authority from the design competition to the city and state governments tasked with implementation, so it is predictable that there would be hiccups. But it is notable that designers specifically discussed transition problems related to the things that proved transformative for the designers in their own practice.

In particular respondents identify community engagement and the cross-disciplinary vision for the competition and their designs as having suffered during the transition into implementation. One designer observed of their own project's transition:

It switched from the people who were holding the vision and the design and really interested in the project to engineer-led teams selected in a public procurement process. While these large engineering firms were vital to implementing large infrastructure projects, I really think that a landscape architect or an architect would have been a better lead for the project.

An engineer from the OMA team also described a disconnect in the subsequent engagement process, with the companies awarded the implementation contract being “not that keen on facilitating this process in community and stakeholders.”

Respondents also noted that there needed to be future exploration of how the holistic, interdisciplinary approach from the competition could continue during local government implementation, and how expectations are communicated for the post-competition period, particularly concerning questions of post-competition government procurement and clarity as to whether the teams involved in the competition would also be involved in implementation. On this latter point, some respondents mentioned feeling misled during the competition as to the outcomes and implementation phase. For example, one urban designer from the MIT CAU + ZUS + URBANISTEN team said:

Where I'm most critical is the promise and suggestion always made about the process after the competition, that [Rebuild by Design] would do their very, very best to get us on board of our own project. As far as I'm concerned, they have not done their best to do that. Of course there has been some pushing here and there to get us on the project, but if they do this again, they have to just go with a guarantee or something that we will still have a critical role in the process.

Along similar lines, a WB unabridged team architect stated:

The character of the work changed pretty dramatically. We anticipated a fairly seamless process; that was completely wrong.

Evidence for the importance of these concerns can be found from the mixed response among respondents to the Bay Area Resilient by Design competition. On the one hand, given the expensive, time-consuming, and by many accounts exhausting nature of the Hurricane Sandy Design Competition, it would not have been surprising if few of the design teams had been interested in replicating their experience in another

similar competition. And yet nine of the 33 respondents have also been involved with the Bay Area competition, which is arguably a surprisingly high amount. (Seven of the nine have also been involved in the implementation of Hurricane Sandy projects, meaning that they have remained closely connected with the overall Rebuild by Design effort.) On the other hand, of the remaining respondents who have not been involved with the Bay Area Resilient by Design competition, 50% (12/24) volunteered that they chose not to pursue involvement in the Bay Area competition at least in part because of their experiences with the Hurricane Sandy competition implementation transition. In most cases, these comments coincided with overall strongly positive assessments of the Hurricane Sandy Design Competition, underscoring the importance of concerns about post-competition implementation to the viability of future design competitions modeled on Rebuild by Design.

The overall positivity or negativity of an individual respondent's assessment of the design competition has a fairly strong relationship with whether or not the individual was involved with implementation following the design competition or not. While two thirds of all respondents were not involved with implementing any of the final ten projects, this group supplied a disproportionate number of conversations (nine out of the ten) with overall critical tones, relative to the other interviews. Two of those nine were respondents from finalist teams whose projects were not selected for funding, while the remaining seven were from teams whose projects were awarded funding at the end of the competition.

Finally, it is important to note that, while the responses to the specific questions asked regarding Rebuild's impact on the designers' careers were overwhelmingly positive, the questions themselves focused on aspects of the competition's impact that inherently invited more positive comments. The interview questions centered on the impact of participating in the design competition on the subsequent work and careers of the designers involved, and at the same time as most respondents had strongly positive comments in response to these questions, they also frequently offered criticism related to the design competition itself which fell outside of the scope of the specific questions of the study.



## 8. Conclusions

Overwhelmingly, respondents identified major positive outcomes and impacts on their career from their involvement with RBD. Interestingly, this is true even in some cases where respondent involvement in the process ended sooner than they would have liked, because their team's design did not progress or because their firm ceased participating in project implementation. The following paragraphs briefly summarize the key themes on resilience practice, professional networking, community engagement, knowledge mobilization, and lessons for the future which emerged from the interviews.

Throughout the 33 interviews conducted, resilience emerged repeatedly as a theme that has continued in the careers of the design competition's designers. Nearly all respondents have worked on resilience projects since their time in the design competition, while three quarters said that their experience in the design competition has led to them doing more resilience work than they otherwise would have done. Many respondents reported a broader or deeper perspective on resilience in their professional practice following their participation in the design competition, while other respondents report increased reputation as resilience practitioners.

The Hurricane Sandy Design Competition additionally gave participating designers an opportunity to both strengthen existing professional relationships and develop new ones. Everyone interviewed cited an expanded professional network as an outcome of their participation in the competition. Several have worked on subsequent projects with people they met during Rebuild, and many remain in contact with other professionals and the communities they engaged with. Others reported an increased network of people who recognize them for their expertise in the field of resilience since their participation in the design competition. Finally, the strongest professional networking effects seem to have been experienced among American designers working in the United States, alongside a more modest expansion of international relationships.

Community engagement was overwhelmingly recognized by respondents as important to the design competition. 94 percent cited it as a crucial component to the projects, and 82 percent further reported incorporating things learned during community engagement in the design competition into their subsequent work, both in terms of general takeaways and specific practices. Some respondents reported learning ways of navigating political dynamics in political engagement, and others said that their participation in the design competition reaffirmed engagement practices they had already employed, causing them to place greater emphasis on the process since the competition.

The majority of respondents also described the design competition as an interdisciplinary process with opportunity for working and designing together across sectors and fields, in particular between the professional and academic worlds. Three quarters of the respondents reported that this impacted their thinking subsequently in their career, in particular gaining insight from other disciplines and applying it to their future work. Some also mentioned the conversation taking place at Rebuild by Design as having sparked a larger conversation in academia, and more broadly across disciplines.

While response during the interviews was largely positive, 30 percent of respondents were critical of the design competition, and respondents frequently offered criticisms which fell outside the specific focus of the study. The most common object of criticism was the transition between the end of the competition and implementation, during



which many respondents argued that community engagement and the cross-disciplinary vision for the competition and their designs suffered as local government took over the responsibility for implementation. Nearly all of the respondents who were the most critical during their interviews have not been involved with implementation of the projects after the conclusion of the design competition.

These findings represent specific observations and views from the respondents' respective experiences during the competition and since, including largely insight gained, as well as some areas for improvement. Alongside these specific findings, some respondents summed up the larger positive impacts of participating in the design competition more holistically. For example, a graphic designer from the Scape team commented: "I think, in the largest possible way, Rebuild By Design fostered the main reason that myself and two or three of the other people I work with do design." A landscape architect from the MIT CAU + ZUS + URBANISTEN team described a lasting impact of the design competition on his firm's process:

The competition basically challenged us to kind of think about the enormous scale in a real and urgent way.... The first things we did for RBD, more or less became our working process now.

A landscape architect from the WB unabridged team described the design competition as a "pivot, where we really begin to talk about resilience as being the way to think". He continued:

So clearly Rebuild by Design for me personally, and for our program here, I think the timing was really formative to be able to see such a clear difference between how we were talking and working after Katrina and how we were talking and working after Sandy.

Finally, at the conclusion of the interview, when asked if she wished to add anything else to the conversation, a hydraulic engineer from WB unabridged replied:

Just really making a plug for how great the Rebuild by Design process was and how really having a mission to drive innovation and design in a community post-disaster has created this community of engineers, designers, architects, planners, scientists, researchers, you name it. I almost feel like it's a family that has come out of Rebuild by Design.

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# Appendix: Semi-structured interview guide

## *Intro/background*

1. How were you involved with the Hurricane Sandy competition?
  - a. What was your role in the process, and for how long were you involved?
2. What were your expectations for the design competition before it began, based on the RFQ? How closely did the outcomes match your initial expectations?
  - a. Was the competition similar to other design processes you'd been involved in before?

## *Experience during the design competition, and impacts on subsequent career*

3. Did working on the competition change your approach to the design process? In what ways?
  - a. Prompt for more specificity: Can you give me an example from your subsequent work that illustrates this?
  - b. *Optional prompts:*
    1. *Community engagement, participation, and connection*
    2. *Employing an analytical and research-oriented approach in design*
    3. *Multi-sectoral engagement and partnerships*
4. What kind of professional network did you develop through the competition?
  - a. Have you worked on subsequent projects with people from your own team?
  - b. Firms from other teams?
  - c. Did you meet those firms as a result of RBD?
  - d. *Optional prompts:*
    1. *Cross-disciplinary partnerships and connections*
    2. *Having access to a large, international network*
    3. *Were those connections relatively temporary, or have they been long-lasting?*

5. What was your experience working with academia (IPK, research advisory group) through the competition? Did that have an impact on your work?
  - a. Prompt for more specificity: Can you give me an example from your subsequent work that illustrates this?
  - b. For people who do teaching: Has the process of RBD influenced your teaching? In what ways?
  - c. *Optional prompts:*
    1. *Connecting professional and academic worlds*
    2. *Using tools and resources available in academic settings*
    3. *Considering new project ideas and questions outside of usual professional practice*
6. Were you involved in any community engagement during the design competition?
  - a. If so, how did you incorporate the feedback from communities into your work?
  - b. If you had previous experience doing community engagement, did your engagement methods change as a result of the design competition?
    1. If yes: can you think of any examples from your subsequent work that illustrates that change?

*Work after the design competition*

7. Have you been involved in any of Rebuild's work since the end of the competition?
  - a. If so, how have the projects you've worked on changed since the competition ended?
  - b. Has it been difficult to reconcile different priorities (political, environmental, community, etc.)?
8. Have you been involved in the Bay Area RBD competition? If so, how would you compare it to the Hurricane Sandy competition?

9. Did your RBD experience lead to you working on other resilience projects? If so, what is a resilient project that you've worked on since 2013 that you are most proud of, or would like to highlight?

a. *Optional prompt:*

1. *Best guess for the number of resilience projects you've worked on since 2013*

*Wrap up*

10. To wrap up, what impact do you think RBD had on your career?

11. Is there anything else we haven't discussed today that you think we should have, or that you'd like to add?

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