

# Learning from Disaster: Lessons from Community Based Design in Haiti

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## THE SITUATION

This paper will chronicle a unique disaster assistance/learning abroad program that emerged in the wake of the catastrophic 2010 earthquake in Haiti, and the pedagogical lessons that were gleaned from this extraordinary situation.

The program began in the early spring of 2010 with two “fact-finding” visits to Haiti by five faculty members from the School of Architecture at our University of Minnesota in collaboration with two international NGO’s providing relief and reconstruction services in Haiti. Following the site visits to Haiti and subsequent strategic planning sessions, a group of faculty, administrators, and research fellows at the University of Minnesota combined the efforts of several emerging partnerships between the College of Design (CDes), the Center for Sustainable Building Research (CSBR), the American Refugee Committee (ARC), and Architecture for Humanity (AFH) into a coordinated, long-term plan to develop a curricular model focused on public interest design and disaster assistance.

Due to the structural and pedagogical changes recently implemented (2008) in our 3-year graduate (M.Arch) degree program, our spring term has been transformed from the traditional fifteen-week schedule into two seven-week, half terms that straddle a one-week “catalyst” course before spring break. This unique curricular structure was originally implemented in response to the disruptive innovations transforming the field of architecture, and a commitment on the part of our faculty to meet the demands of our students and future practitioners by creating

a curriculum that upholds our responsibility to the discipline while maintaining our ability to respond to the rapid pace of change. As a consequence, our adaptable spring-term curriculum established a flexible platform to implement the type of coordinated efforts necessary for an integrated approach to public interest design and learning abroad in disaster response situations such as Haiti.

## The Seminar: January – March 2011

Recognizing the extremely complex and challenging circumstances of working in a community recovering from a major disaster, we used the first half of the spring term (prior to the field work in Haiti) to pilot a seven-week, graduate-level seminar that was organized to build capacity among the group of students and faculty preparing for the program in Haiti. From the outset, there were several objectives and directives charged to the development of this new research seminar (led by John Comazzi, one of the authors of this paper). First, the seminar was intended to pilot a unique form of *community engaged scholarship* that would match the University’s collective knowledge and areas of expertise with those of our partnering NGOs (ARC and AFH) in building long-term partnerships for future disaster relief, recovery and redevelopment efforts in Haiti and beyond. In addition to this long-term goal of nurturing professional partnerships, the course also connected with a range of local scholars and practitioners from a variety of disciplines in order to extend our collaborative networks while also increasing the direct impact that the research produced during the seminar would have on the field work in Haiti (see below “Lesson 3” for a list of guest presenter qualifications).

Given the short time frame of the seminar (seven weeks), the research and work produced by the students focused mainly on identifying, collecting, and organizing the most critical information and best practices necessary for the work to be produced in Haiti. The first three weeks of the seminar were spent contextualizing the larger historical, cultural, social, and natural systems in Haiti through the assembly of a group *Research Manual* and course website that became an online repository for the research and analysis created by the students: <http://design4haiti.tumblr.com/>.

Following the production of the *Research Manual* and website, the focus of the seminar shifted for the final four weeks to the production of a *Field Guide* that concentrated more directly on the critical information and data most important for supporting the human-centered, community-based design work by those students and faculty traveling to Haiti. To give structure to the research, the students were divided into five groups, each of which was responsible for producing one chapter of the 277-page *Field Guide*. Following the completion of the seven week seminar, the students in the course also participated in a one-week “catalyst” workshop exploring the role of social media in disaster relief (led by Renee Cheng, Head of the School of Architecture and Aaron Westre, Adjunct Faculty) and, therefore, a sixth chapter (Social Media) was added to this final *Field Guide* [Figure 01]. Below is the final table of contents of the *Field Guide*:

1. **Nature:** Design for a tropical climate
2. **Infrastructure:** Design guidelines for infrastructure in Haiti
3. **Site:** Design guidelines for urban and rural site configurations in Haiti
4. **Building:** Designs guidelines for a school in Haiti
5. **Materials:** Guidelines for materials and methods of construction for a school in Haiti
6. **Social Media:** Guidelines for harnessing social media in Haiti

#### ON-SITE PROGRAM: 3 LESSONS FROM 7 WEEKS IN HAITI

The on-site portion of the program consisted of a seven-week studio and seminar. The studio (led by



Figure 1. Students created a 277-page online and hard copy versions of the *Field Guide* for use while working in Haiti.

Jim Lutz, one of the authors of this paper) was operated out of space provided in the Rebuilding Center, the office run by Architecture for Humanity in Pétionville, a neighborhood in Port-au-Prince that was spared much of the damage from the quake. A range of projects was identified in advance by AFH with students working both individually and in teams depending on the complexity and schedule associated with each task. Students participated in the weekly update sessions, presenting their work for critique from the AFH Design Fellows, volunteers, guests, and visitors.

Two major projects were assigned to two teams comprised of three students each. The first was the development of a master plan for Santo, a new community for 500 families located near Léogâne, the epicenter of the quake. The second was LaConcorde, an orphanage school in the Carrefour area of Port-au Prince. Other work included the mapping of economic corridors, a model and O&M manual for a large composting toilet building planned for a school in Cite du Soleil, and classroom and sustainability “menus” used for fundraising purposes by AFH. Reviewers for the final presentation included Eric Cesal, AFH country director, Kate Stohr, co-founder of Architecture for Humanity, and Yves Francois, a Haitian-American architect.

The seminar component was led by AFH Design Fellows with Haitian and visiting professionals. Topics included local building techniques, sustainability issues, structural practices, the Haitian economy, and community engagement strategies. The pre-

sentations were accompanied by discussions, readings, and site visits.

All of the program participants lived in the communal residence operated by AFH and housed the Design Fellows, volunteers, and visitors.

By conceiving of this community-based, distance learning opportunity as a comprehensive program we, as faculty, were forced to rethink and rework the traditional models of design pedagogy and curriculum. Upon reflection, the experience has provided numerous lessons, architectural and otherwise, about the future of design education which places a greater emphasis on participatory, community engaged scholarship. Foremost among them are the following three lessons:

### **Lesson 1: The Inverse-square Law – The Closer You are to the Problem, the Better the Solution.**

*Though well-intentioned, most design studios conducted a thousand miles away from the problem at hand are largely abstract intellectual exercises and can't substitute for being on site.*

With several key partnerships in place (the American Refugee Committee, Architecture for Humanity, and SODADE, a Haitian Planning and Architecture firm), and the curricular flexibility afforded by our graduate program, we set out to establish an innovative program abroad in Haiti that would directly address the challenges that often complicate many well-intentioned programs working with communities recovering from natural disaster. Due to the structure of most traditional academic calendars, it is often logistically difficult to organize programs that allow for a sustained and direct engagement with communities beyond the occasional short visit or charrette among a select group of community representatives. With this physical distance often comes a host of other challenges that lead to misunderstandings, miscommunications, and misaligned expectations between the community members and the outside organizations attempting to lend assistance.

In order to confront this challenge directly, we began a partnership with Architecture for Humanity well in advance of the scheduled studio abroad portion of our program so as to create a working relationship with an organization that had established



Figure 2. Students presented their design ideas to the staff and orphans at LaConcorde orphanage in the Carrefour area of Port au Prince.

trust and confidence with numerous communities throughout Haiti. And because we have built a rather flexible curricular structure within our spring semesters of our graduate program, we were able to create an opportunity for the participating students and faculty to commit to a longer-term presence working on site in Haiti for seven weeks (March – May 2011). [Figure 02] With the opportunity to work and live with the staff and design fellows of Architecture for Humanity, and to engage directly with their partnering communities, our students were able to overcome the shortcomings of trying to design from a distance for communities about which they know very little, on sites that they cannot fully visualize or understand from afar.

Below we have excerpted some entries from the student's blog postings that clearly articulate the unique opportunity afforded by this experience and the importance of being able to work directly with communities of need over an extended time frame:

*We arrived at the orphanage around 12:30 in the afternoon, just as the children were finishing lunch... After their initial 'walk-thru', we began further explanation of each space and how we understood it to function and relate to the whole. After a short explanation we would pause and wait for Jimmy to translate... We were working through multiple language barriers, both spoken word and representation of space. Frantz (the Director) was jazzed by the aerial perspectives, rotating the pages and tilting his head as he glanced from the pictures to the floor plan in front of him. He stated that the 3D images helped him to understand the design much better. This will*

*inform how we proceed through subsequent design phases, as we find a visual language to adequately communicate our ideas. (April 6: Abby)*

*We learned from our last meeting with Frantz that a strong visual representation of our design was crucial in order for him to understand our design intentions... We made a quick cardboard massing model of our schematic design so we could clearly point out how the design proposal was laid out on the site... He moved it around, peering into the spaces and pointed out on the model suggestions that could be changed... It has made me realize that not everyone thinks and lives in a designer's mindset spatially. However, Frantz has taught me that it is our job as designers to provide the client with the necessary tools in order to completely understand our ultimate motives for the designed space... After our meeting with Frantz, he took the physical model and perspectives over to the children... Frantz showed and explained to the children the key points of the design, pointing out where the new housing and classrooms were going to be. (April 15: Katie)*

## **Lesson 2: What's a "latrine"? – Traditional Architectural Education Ill-equips Students for Work in Disaster Response Situations.**

*How do you design in a country with no infrastructure? How does an education in the industrialized world prepare students for situations in developing nations?*

Because every disaster scenario entails a combination of challenges specific to the contingencies of that particular place, we found it necessary to rethink the means by which we teach and learn architecture when approaching this type of community engagement. As mentioned in the introduction, our unique curricular structure gave us the opportunity to plan and organize an integrated program consisting of several different learning experiences both home and abroad (research seminar, workshop on social media, studio and seminar abroad, and internships for students following the study abroad component) that together constitute a model for a distinct type of *public interest design* that we intend to replicate in the future. Furthermore, by partnering with several NGOs and private firms working within specific communities of need, we were able to rethink the traditional delivery of a design studio and research seminar in a manner that directly engaged students in a unique approach to *community engaged scholarship* and *human-centered design*. This instructional model places the partnering communities at the center of the academic program and gives students direct

responsibility for the construction of their knowledge and the development of their own education. [Figure 03]



Figure 3. Community members reviewing the master plan for Santo, a new community for 500 families located near Léogâne.

Below are two student reflections elaborating on the importance of their participation in the development of their own education:

*Today opened my eyes to the hardships of the nearby areas of Haiti that did not fare as well during the earthquake as Pétionville. I realized how sheltered we are from the worst of the destruction. The impact of seeing the true devastation of the January 12th earthquake first hand is a world apart from reading about it from my computer in Minneapolis. (April 07: Emerson)*

*I remember seeing fires in the trash as we drove, and I asked what was going on. Abby told me they were burning the trash to get rid of it, since there is simply just no place to put it. It was at that moment that the immensity of the situation in Haiti became real, and very overwhelming. I just kept on thinking, where in the world does one even begin to think about changing these conditions? The problem is just so widespread. It is easier to focus on one project, such as the orphanage, and make an improvement in several Haitians lives than trying to tackle the greater picture. Trying to wrap your brain around the extremity of the situation is hard enough, that I just can't imagine trying to put an action plan into place... (April 07: Katie)*

## **Lesson 3: It takes a Village to Make a Village – The Necessity of a Community-based Design Process.**

*The importance of working directly with community members and established partners like Archi-*

ecture for Humanity and the American Refugee Committee (and the guest presenters in the seminar) to meaningfully involve all stakeholders in the rebuilding effort.



Figure 4. Students presented their research and design ideas to the group of fellows at the Architecture for Humanity headquarters in Pétienville.

As mentioned in the introduction to this paper, a key contribution to the successes of this integrated program came from the broad network of partnering organizations and collaborators during the initial research seminar, as well as, the onsite work in Haiti. One of our main objectives for this program was to instill in the students the importance of creating a strong network of collaborators to ensure the effectiveness of the group efforts and to avoid the potential pitfalls of entering into a complex situation without a deep knowledge of the circumstances in which they will be working. The American Refugee Committee and Architecture for Humanity offered early support to host several faculty members from the School of Architecture on site in Haiti as part of our initial planning efforts. These trips helped to establish connections and relationships with these and other NGOs working in Haiti to ensure the viability of logistically managing and facilitating the program abroad. Additionally, we tapped the expertise of local scholars and practitioners to help sharpen the *Research Manual* and *Field Guide* produced in the preparatory seminar in advance of the program abroad. The following list demonstrates the range of disciplinary perspectives from the guest presenters who contributed to the seminar throughout the first half of the term (names have been omitted to maintain anonymity for the peer review process of this paper):

Loren Abraham, *Adjunct Assistant Professor of Architecture, University of Minnesota; founding member of the US Green Building Council; past chairman of the Sustainable Buildings Industries Council*

Beudelaine Pierre, *Hubert H. Humphrey International Fellow – 2010; editor of ANAYIZZ Review, an international woman's magazine focusing on challenges faced by Haitian women.*

Poul Bertelsen, *Executive Director and Principal Architect, MSAADA Architects and Adjunct Instructor of Architecture, University of Minnesota*

Andrew Blaisdell, *Design Director for Furi School Project, Ethiopia*

Maggie Breslin, *Senior Designer/ Researcher, Mayo Clinic Center for Innovation*

John Carmody, *Director, Center for Sustainable Building Research*

Tom Fisher, *Dean and Professor, College of Design, University of Minnesota*

Catherin French, *Ph.D., Professor, Department of Civil Engineering, University of Minnesota*

Anne Hake, *Research Fellow, Center for Sustainable Building Research (CSBR) on site in Haiti 2010*

Kathleen Harder, *Ph.D., Director, Center for Design in Health, University of Minnesota*

Jim Lutz, *Lecturer and Co-director of the MS in Sustainable Design, University of Minnesota*

Virajita Singh, *Senior Research Fellow - Center for Sustainable Building Research (CSBR) and Adjunct Assistant Professor, School of Architecture, University of Minnesota*

Aaron Squadroni, *Adjunct Instructor, School of Architecture, University of Minnesota*

Corine A. Wegener, *Associate Curator Decorative Arts, Textiles, and Sculpture, Minneapolis Institute of Arts, Retired major in the United States Army Reserve; served in Iraq as an Arts, Monuments and Archives Officer, 2003–4*

Daniel Wordsworth, *President and CEO, American Refugee Committee*

Tom Westbook, *Lecturer in Architecture, Lead Designer for the Clean Hub Project*

These presenters helped to focus and direct much of the research and production in the seminar that was charged with the most immediate imperative to support the field work that would be undertaken by the six graduate students and faculty member (one of the authors of this paper) working in partnership with Architecture for Humanity. Below are two student reflections elaborating on the importance of their collaborative efforts with experts and community members as part of their distance learning experience:

*On Monday Emerson and I were able to travel to Léogâne with a structural engineer, Rick, from Architecture for Humanity, who was meeting with a potential client for a new school in rural Léogâne... The school, which served grades K-6, experienced structural damage due to the earthquake. The building pretty much sunk a few feet on one side, leaving classrooms unsafe for the children to inhabit. The school is currently building a new structure, but unfortunately it is being built with the same unsafe construction techniques that were used prior to the earthquake. A new structure with classrooms for K-12, may be proposed... Along the way we stopped at several places and talked with the local people, who were eager to learn what we were doing in their community. (April 20: Katie)*

*After our formal presentations were complete, we were also asked to share our individual impressions on our experience working with Architecture for Humanity. Many of us expressed the notion that by working down here in Haiti we now fully recognize the real future of architecture—or really what architecture should be in the upcoming decades—designing for those who need it the most. We now fully recognize the importance and role that organizations such as AFH have in arriving in disaster-stricken areas to successfully achieve programs for capacity building... Knowing you are making such a profound impact on someone's life makes this type of work so rewarding...and quite frankly, intoxicating. (May 08: Katie)*

## SUMMARY AND CONCLUSIONS

By fully embracing the charge of our new graduate curriculum, to “uphold our responsibility to the discipline of architecture while maintaining our ability to respond to the rapid pace of change,” this semester-long program required a re-conceptualization of how we approach the education of future designers to intelligently respond the complexity of challenges they will undoubtedly confront. The traditional fifteen-week, studio-centric model of education was simply inadequate for the type of program being developed for our work in Haiti.



Figure 5. Students worked with local metal fabricators and builders to gain a better understanding of the building practices and construction techniques

Therefore, we found it necessary to rethink our curricular framework through the development of four new courses – two seminars, a studio, and a one-week “catalyst” workshop on social media in disaster relief – in order to deliver an innovative model of community-based design education.

The success of these efforts can be gauged in several ways: At the end of the scheduled academic program, AFH was so impressed by the work produced by our students in Haiti that they invited all of the students to extend their involvement and covered the cost of their living expenses and re-scheduled flights. Five of the six students stayed on as volunteers for an additional 2-3 weeks and continued to work on the projects they had managed throughout their academic program. Two remained in Haiti through the entire summer having accepted internship offers from SODADE, the Haitian planning firm working on a variety of redevelopment projects throughout Port-au-Prince. And for two students who returned home at the end of the program, their experiences in public interest design played a direct role in procuring summer internships with firms with projects in Haiti and other developing nations. Work continues to progress on all of the projects developed by or projects (the official groundbreaking for the Santo project took place on September 15<sup>th</sup>), and preliminary planning is underway to offer this integrated program in Haiti during the spring 2012 semester.

### Five Take-aways on Which to Build – Pedagogical Lessons Learned:

**1. The need to develop specialized programs in “humanitarian/public interest/disaster response design” in schools of architecture.** These need to be inter-disciplinary programs including engineering, public health, economics, etc., including partnerships with NGOs and governmental agencies, with design schools taking an active leadership role in the development of sustainable communities.

**2. There is a strong ethos of service in this generation of emerging professionals.** Architecture schools need to recognize this or risk becoming irrelevant to a growing number of their students who desire outlets for their work beyond the realm of the academy and see community engagement as a critical part of their education.

**3. Disaster response is, unfortunately, a niche in the profession that will experience steady “growth” in the coming years.** The effects of climate change (drought, famine, population migration, etc.), increasing “natural” disasters, civil unrest precipitated by political/economic instability, etc., will require a growing numbers of specially-educated design professionals. Training the next generation of humanitarian designers needs to be a high priority.

**4. Architects have a major role in capacity building: The future of \_\_\_\_\_ is the responsibility of \_\_\_\_\_-ians.** Architects need to be able to build intellectual capacity as well as buildings; teach *and* build. Citizens in countries recovering from disaster need to be empowered to shape their own destiny. How you do this in countries (like Haiti) where generations have known nothing but political instability and corruption will require equipping designers with new skill sets.

**5. The time is right.** As the architecture profession re-defines itself in this time of imposed reflection, becoming a less elitist, more egalitarian discipline is essential (and long overdue).

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- Inter Agency Standing Committee for the Haiti Shelter Cluster. [www.shelterhaiti.org](http://www.shelterhaiti.org)
- Kings College. Humanitarian Futures Project. See various reports at: <http://www.humanitarianfutures.org/main/hfpubs/futures>
- USAID – Haiti Website. <http://www.usaid.gov/haiti/>
- OneResponse, Interagency Haiti Coordination Website. <http://haiti.humanitarianresponse.info/Default.aspx?tabid=61&language=fr-FR>
- OneResponse, Interagency Disaster Coordination Website. <http://onerresponse.info/Pages/default.aspx>
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- IDEO Human Centered Design Toolkit for NGOs and Social Enterprises. <http://www.ideo.com/work/item/human-centered-design-toolkit/>
- NYTimes Responder Updates on Haiti's Earthquake: <http://thelede.blogs.nytimes.com/2010/01/12/gleaning-information-from-haiti-online/>

## ONLINE RESOURCES

Haiti Rewired: An Ongoing Conversation About Technology, Infrastructure and the Future of Haiti <http://haitirewired.wired.com/>



Wolfram Alpha – Computational Knowledge Engine.  
<http://www.wolframalpha.com/>

“Observations on Ongoing Efforts to Address the Haitian Housing Crisis,” By Craig Cole, S.E., 02/13/10. <http://haiti.ce.nd.edu/PDF/HaitiHousingIssuesomeobservations.pdf>

Kleiwerts International: Haiti projects and resource page. <http://www.kleiwerts.org/tag/haiti/>

Massive Change: Bruce Mau and the Institute Without Boundaries. <http://www.massivechange.com/index.php>

Institute Without Boundaries. <http://www.institutewithoutboundaries.com/>

University of Notre Dame, Committed to Haiti Program, Resource Web. <http://haiti.ce.nd.edu/>

Global and Population Statistical Data. <http://geohive.com/>

## AUDIO/VIDEO RESOURCES

(under development)

“The Quake,” A Frontline Documentary, originally aired March 30, 2010. [http://www.pbs.org/wgbh/pages/frontline/haiti/view/?utm\\_campaign=viewpage&utm\\_medium=grid&utm\\_source=grid](http://www.pbs.org/wgbh/pages/frontline/haiti/view/?utm_campaign=viewpage&utm_medium=grid&utm_source=grid)

“Battle for Haiti,” A Frontline Documentary, originally aired January 11, 2011. [http://www.pbs.org/wgbh/pages/frontline/battle-for-haiti/?utm\\_campaign=viewpage&utm\\_medium=grid&utm\\_source=grid](http://www.pbs.org/wgbh/pages/frontline/battle-for-haiti/?utm_campaign=viewpage&utm_medium=grid&utm_source=grid)

“Update on Haiti,” Charlie Rose with Deborah Sontag and Irwin Redlener, aired July 13, 2010. <http://www.charlierose.com/view/interview/11118>

“Actor Sean Penn on his work in Haiti,” Charlie Rose with Sean Penn, aired July 19, 2010. <http://www.charlierose.com/view/interview/11127>

“Island Time,” This American Life, episode 408: Originally aired May 21, 2010. <http://www.thisamericanlife.org/radio-archives/episode/408/island-time>

“Why Societies Collapse,” Jared Diamond at UCSB, Feb 17, 2005. <http://www.youtube.com/watch?v=bc4bXIg8JDk>

American Red Cross President and CEO Gail McGovern speaks live at the National Press Club in Washington D.C. about the progress made and the challenges remaining in Haiti one year after a devastating earthquake. <http://minnesota.publicradio.org/display/web/2011/01/12/midday2/>

“Why Societies Collapse,” Jared Diamond on TED Talks Conference, Feb 2003. [http://www.ted.com/talks/lang/eng/jared\\_diamond\\_on\\_why\\_societies\\_collapse.html](http://www.ted.com/talks/lang/eng/jared_diamond_on_why_societies_collapse.html)

“Open-source architecture,” Cameron Sinclair on TED Talks Conference, Feb 2006. [http://www.ted.com/talks/cameron\\_sinclair\\_on\\_open\\_source\\_architecture.html](http://www.ted.com/talks/cameron_sinclair_on_open_source_architecture.html)