

Activating Agency: Assessing Impacts of Global Collaborative Practices

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90% of what we [designers] create is not physical.
- Sergio Palleroni, Co-founder and Director of the BaSiC Initiative and a Professor and Fellow of the new Center for Sustainable Solutions at Portland State University

ASSESSING IMPACTS OF GLOBAL COLLABORATIVE PRACTICES

Since 2008, I have been engaged with a humanitarian design project that was initiated by a local non-profit (Village Life Outreach Project), brought to me for preliminary design, engaged by our school of Architecture for design development, led by a student intern on-site, and has now spanned across our university and our city, incorporated local and international architecture and engineering firms, and included participants and consultants from across the world. The built project is a small health center in an unknown rural village in East Africa, but the impacts are radiating across the globe.

The initial goal of this project was to provide a permanent health care facility in a region where most people have no access to health care. However, as with any global academic humanitarian design project, there are unexpected complexities. This project type usually has very little budget, tremendous need, unexpected complexities, language and cultural challenges and the balanced engagement and input of students, faculty, practitioners and multiple communities. But implementation of this project type is growing because of the recognized benefits of addressing global poverty and humanitarianism within the design studio. Though there were initial concerns from our institution and our partners, they have come to realize the unrealized pedagogical and

social potential of humanitarian design projects. This project has impacted the lives of thousands, most of whom have never been to the health center.

I began this project having never been to Africa, never worked on earthen construction, never worked in health care and never having done any design work for impoverished or developing areas. I immediately began cataloging the types of research that had to occur and assembling a team that would help define how to approach this project, how to communicate and integrate the community in Africa and how to successfully explore design problems once they were identified.

Our initial research addressed cultural, social, historical, and architectural aspects of rural East Africa as well as existing construction materials and techniques. Being at a Research One Institution, I was able to reach out to many departments for input. Some of these faculty members had never heard from someone in the School of Architecture and I found the range of issues that needed to be addressed growing rapidly.

I soon realized that issues of colonialism and "Aid to Africa" had to be studied before engaging this project any further. I absorbed the literature on these issues and found that our city held several faculty and community members who had important perspectives on these issues. Younger faculty kept referring me to William Easterly, Dambisa Moyo, Paul Polak and others, while faculty who have been engaged with the community and participatory design movements often led me to Amos Rappoport and others.

The question that anyone engaging global collaborative practice faces is whether the impacts of their work are more positive than negative. At one presentation I gave early in the process, a Brazilian woman asked me if I spoke the local language. I stated that I did not and she proclaimed that I had no right to design something for a community if I didn't speak their language.

I have come to realize that there are unquestionable contradictions when an educated American in a Midwestern university is leading the design of a health center in rural Tanzania – a region with fundamentally different cultural practices, languages, climate, construction and context. But, I have also come to accept that if we recognize this challenge and assume that we are going to make mistakes along the way, we can still create something that is going to have positive impacts for communities around the world.

THE PROJECT

Roche Village is in northern Tanzania, in an extremely rural and impoverished area. This village has no infrastructure for power, sanitation or water and a post-colonial construction technique that is unsafe and unsustainable. Since 2008 we have been working with the community and an ever-growing international team to develop a proposal for seismically-resistant masonry construction that can be a model for rural healthcare in the region, yet be replicated by anyone in the community. The project developed slowly and the first building opened on April 1, 2011.



Figure 1. The Roche Health Center site in 2008

Project Goals

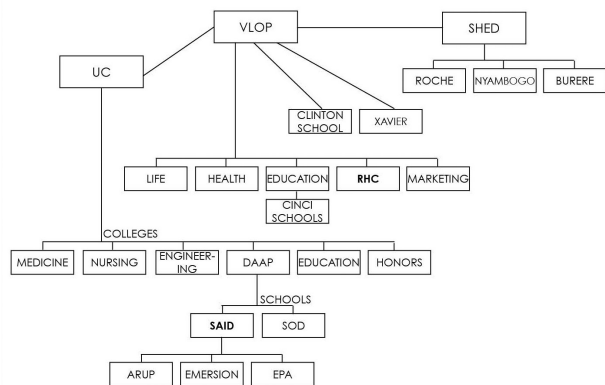
Through our interactions with the local village community, our non-profit partners and our collaborations with architecture and engineering firms, we developed six clear goals for the Health Center:

1. DESIGN FOR ALL by providing a Health Center that addresses the needs of all members of the community
2. DESIGN FOR EDUCATION by incorporating teaching and learning into every area of the health center
3. DESIGN FOR REPRODUCIBILITY by creating buildings using locally available materials and construction techniques
4. DESIGN FOR SUSTAINABILITY by minimizing energy usage, natural resources and material usage
5. DESIGN FOR PERMANENCE by producing safe, durable, repairable buildings
6. DESIGN FOR THE FUTURE by incorporating flexibility and adaptability

Successfully achieving these goals has required on-going collaboration and integration of academia, practice and our non-profit. We have had to continually increase our sphere of participation in an effort to keep up with the constant stream of new questions that arise.

COLLABORATIONS

There have been over 200 people who have worked directly on the Roche Health Center project over the last three years. None of those people have worked on the project in the traditional style of the sole-author designer. Every single person has played a part in a very complex composition.



While I was in practice, I was involved in several buildings that were over 100,000sf which were designed with minimal input from consultants or even engineers. This 2000sf health center has required input from many individuals and organizations.

On-going participants on this project have included the non-profit Village Life Outreach Project (VLOP), our partner in Tanzania – the Shirati Health, Education and Development (SHED) Foundation and the University of Cincinnati. UC participants have included graduate architecture students, independent study students in architecture, graphic design, industrial design and engineering and faculty in architecture, design and engineering. ARUP Engineers have donated time from their Chicago, San Francisco and Los Angeles offices. And the Cincinnati-based architecture firm, Emersion Design, has also provided on-going input.

Collaborators from academia have included: Faculty from African studies, African Architectural history, African languages, geography, sociology, cultural anthropology, education, family medicine, global medicine, nursing, public health, soils engineering, civil engineering, structural engineering, thermo-dynamics engineering, electrical engineering, renewable energy engineering, architecture, interior design, landscape architecture, industrial design, graphic design and planning.

Practitioners and **consultants** have included: doctors, surgeons, nurses and other medical practitioners, civil engineers, structural engineers, energy engineers, electrical engineers, renewable energy engineers, architects, landscape architects, graphic designers, industrial designers, contractors and others.

Additional participation has included ongoing meetings with the Roche Village and a Roche Health Center Committees in Tanzania and Cincinnati. The Rorya, Tanzania District Government has had ongoing input and our partner NGO, the Shirati Health, Education and Development (SHED) Foundation have played a significant role throughout the design and construction process.

My role has been to manage all of these participants, verify that we are addressing relevant critical issues, create appropriate learning opportunities for all students involved and oversee the design process



Figure 2. Studio review with members of non-profit VLOP and Tanzanian NGO entitled SHED

to be certain that the final product is a successful health center for the Roche community.

IMPACTS

Design Studio

As The Boyer Report¹ pointed out, there are concerns that architecture education is not preparing architects to serve society and communities in need. The Roche Health Center project, and others like it, provide an ideal opportunity for students of architecture to engage the challenges that face billions of people who live in poverty without the infrastructure, education, health or economic support that we in the western world rely on. When faced with the challenge of addressing the basic needs of a community in East Africa, students become extremely sensitive to the cultural, historical, social and political aspects of design that are rarely addressed in studios. They learn to embrace the collaborative nature of problem solving necessary in contemporary practice. In the three graduate architecture elective studios that I have taught, students have studied the cultural, societal and political issues as well as constructive and material limitations that must be integrated into a successful design proposal.

In these studios, there is a constant dialogue about the role of limits in the design process. Initially, some students are daunted by the extensive economic, material and technological limits prevalent in this project. But once they are fully engaged, they find that there are aspects of the design process to

be found in the subtleties of a small-scale project with minimal material options. Many of these students do their best work within these limitations.

Interdisciplinary Seminar

Based on lessons learned at the health center, I created an undergraduate Honors seminar called Humanitarian Design that was open to all disciplines. We addressed the fields of Humanitarianism and Design Thinking and the students collaboratively developed projects that aligned their own skills and education with the Mission of the non-profit. Students from accounting, architecture, biomedical engineering, graphic design, industrial design, interior design, philosophy, and international relations worked together to develop projects that could benefit the goals of the community. These students then traveled with me to East Africa in June 2011 and, through research and interviews, they began developing these projects.

Projects included:

- Designing a non-profit Accounting system
- Improving the traditional pit latrine
- Post-occupancy Evaluation of the Health Center
- Micro-finance proposals for crafts with the Women's groups
- Potential Agricultural Improvements
- A Photo-pal project for children in the US and East Africa
- Signage for the Health Center

Internship



Figure 3. Student intern working with the Roche Health Center construction crew, 2010

One entrepreneurial student from the Fall 2009 studio became our on-site director architect intern in Tanzania. In this role she was required to coordinate contracts, permitting, develop and manage the budget, manage all finances as well as managing construction. This included all materials acquisition, coordination with a Tanzanian architecture firm, interviewing lead contractors and leading the construction education for villagers. She will enter practice prepared to face any challenge. We intend to make this a regular intern position within the non-profit. That student also completed her thesis on this subject and has now begun teaching. She plans on returning to Tanzania.

University

When this project was initiated, I spoke with someone in our upper administration about engaging this in my research and teaching. I was warned that the University was hesitant to be connected with something that could hold them liable for so many problems in the future. They eventually realized that this project aligns directly with our university agenda for collaboration and community outreach. We were able to utilize resources from the university, the non-profit and the design firms to address the project goals and pedagogical goals of the studios. It is ironic that the new Provost has chosen this as one of just a few projects from the whole university to highlight in his Youtube series on University Research. The video is part of a series on Interdisciplinary Education and is entitled "Global Impact – Tanzania" (<http://www.youtube.com/watch?v=N1FJyJeEV20>).

While working on this project, my connections to faculty across the university grew exponentially. I made connections with faculty, students and administration that have been positive for me individually as well as for my academic unit. Students from several different departments have begun taking courses within our college as a result of their interest in this project.

College of DAAP

There is a huge interest in humanitarian design found amongst our student body. This culminated following the earthquake in Haiti in January 2010. A very determined group of architecture students engaged me, and others, to urge our college to

become actively involved in the situation in Haiti. They contacted several faculty and administrators, including the Dean of Research in our College. Their interests aligned with my own and collectively, we created a new Initiative within the College. The DAAP Cares Initiative has the following Mission:



Figure 4. The kick-off event for the DAAP CARES Initiative

The DAAP CARES Initiative is a collective of faculty, students and organizations committed to the pursuit of theoretical and applied research directly benefiting communities in need. This group recognizes the academic design institution as a resource for innovation and development at all scales. The mission of the DAAP CARES Initiative is to positively impact communities in need by pairing humanitarian causes with design, architecture, art, and planning resources while furthering education and research in these fields.

There was a kickoff event for this initiative in April 2011 and nineteen student and faculty projects were presented. The Dean attended and proclaimed that this was a huge success and that we would be doing this in a much larger venue next year.

Architectural Practice

I left architectural practice in 2004 because I did not feel that our projects fully engaged the communities in which they were located. I felt that I could offer much more to society than what I was offering in that context. Of course, many others in firms share that feeling and, as a result, they are excited for a chance to get involved with projects such as this.

The success of this project is in part due to on-going collaborations with ARUP Engineers and Emersion

Design. While in practice, I had worked with ARUP Engineers in San Francisco and was extremely impressed with their knowledge and their process. I contacted the Chicago office in 2008 and learned that they have an Initiative called the ARUP Cause which requires all ARUP employees to spend 1% of their time on Public Interest projects.



Figure 5. ARUP Chicago office with students and ARUP Engineers, 2008

ARUP Engineers played a significant role in our Fall 2008 studio by phone and e-mail and then on November 14, 2008, all 14 graduate architecture students, a professor of engineering and I traveled to Chicago for an all-day workshop at their Chicago office. We presented our proposals and received feedback on the design at all scales. We then met in small groups with engineers comprising a structural team, a thermal team, a water team and a civil engineering team. This workshop was instrumental in the development of the master plan and the initial building designs.

In Fall 2009 and 2011, we worked with ARUP's Los Angeles and San Francisco offices. We had 3-way video-conferences throughout the fall studios. During this discussion we received input that our interlocking stabilized soil block (ISSB) design was not sufficient given the seismic forces in the region in which we are working. They introduced us to the 'confined masonry' system that became the basis for the model that we developed for the health center.

A Cincinnati-based architecture firm, Emersion Design, has also played a significant role in our design and construction management process. They were interested in working with us on this project because of the opportunity to engage a project that had such clearly positive humanitarian aspects within an academic setting. The firm is firmly com-

mitted to sustainability and they resonated with the goals of the project. Architects from their firm have attended reviews throughout all three studios.

Emersion Design also led directed workshops in our studio and within their office. The content of these workshops has included an extensive evaluation of our proposed block and concrete frame construction, an assessment of material sourcing and constructability, and workshops on detailing. One student did an independent study in collaboration with me and designers from Emersion in which she addressed infrastructure and master plan development. Together we worked through infrastructural issues of energy, water, sanitation, drainage as well as refining the conceptual clarity of the master plan and the translation of that concept into working drawings.

Throughout our interactions, the designers from the local firm have challenged assumptions about the legalities of property ownership, liabilities while under construction, material sourcing and construction management as well as fundraising. They have continuously provided direction and professional perspectives on critical architectural issues.

The Clinton School of Public Service

Our non-profit had the incredible fortune to have made a connection with the University of Arkansas Clinton School of Public Service in Little Rock. Students at the Clinton School are required to find an international non-profit and spend two months doing an assessment of their work. In summer 2011, two students from the Clinton School stayed in Tanzania and led assessments of four Village Life Outreach projects through interviews and other means. These third party assessments provide invaluable input about the successes and areas for improvement for all VLOP projects.

The Roche Village Community

One of the Clinton School students did an assessment of the Roche Health Center and his results were illuminating. The student found that previous to the health center opening, patients were walking over two hours for health care. Now, they walk less than 16 minutes. He quoted one villagers proclaiming, *"This building is not only IN our community; it IS PART of our community!"* From all of his inter-

views, he found that the community feels ownership over the health center as well as intense pride. The success of the health center has drawn people from much greater distances than was expected, but it is still predominantly serving the Roche Village. They are anxious to begin the next phase of construction, when we intend to build housing for a doctor and nurse to live on-site.

UNEXPECTED IMPACTS

When we describe this project, one assumes that the main beneficiaries are the villagers in Tanzania. While our primary goal is to provide positive benefits for the communities in Tanzania, we are also having enormous direct and indirect impacts on our students and collaborators. I have had several students radically change their course of study as a result of this project. I spoke at an Architecture firm in Portland, Oregon in 2010 and as a result a woman in that firm joined our June 2011 trip and worked on-site, rebuilding our gutter with a local carpenter named Sakkai. She found this experience to be much more meaningful than traditional practice and is now reconsidering how she will practice Architecture in the future.

I have appeared on television for local news interviews several times over the last few years to discuss the Roche Health Center project. It is not uncommon for someone to recognize me and tell me how they have gotten involved in Village Life or one of the many other non-profits doing similar work.

I was asked to participate in an International Forum on Global Citizenship for high school students. After presenting, each speaker was asked to meet with groups of students to discuss our projects. These students are some of the hundreds in Cincinnati who have gotten involved with Village Life. There is now a Village Life club in one of the high schools.

We have given many presentations in elementary schools in Cincinnati and they have become on-going participants in the organization. Students and teachers at these schools have created fundraisers for our projects, including bike races to raise money to purchase bikes for the villagers, selling Tanzanian coffee, "nets for nets" (shooting basketball to raise money for mosquito nets) and other events. The June 2011 trip included a high school student who had become so involved with Village Life that he had

worked with his science teacher to learn about water quality assessment. His research was published in a national journal and he led on-site research into water filtration during his June trip.

CONCLUSION

I write this because I think that there are significant impacts to every global collaborative project. There are countless examples of negative impacts that can



Figure 6. Students, faculty and villagers at the Roche Health Center in June 2011

only be avoided (or reduced) with careful attention and humility. A university setting is ideal for this type of work because we have the time and educational resources to explore these issues. If properly led, these explorations translate into remarkable pedagogical and social opportunities for all involved.

There are countless unexpected impacts that expand through the many communities that global collaborative practices engage. I have paid close attention to those impacts on this project and it has been illuminating and inspirational. Given the challenges facing societies today, we need to address global issues within our educational institutions. The projects are complex, but the results inspire social agents through knowledge and experience that is essential for addressing global issues.

ENDNOTE

1 Boyer, Ernest L., Mitgang, Lee D., Building Community: A New Future for Architecture Education and Practice, California Princeton Fulfillment Services, New Jersey, 1996.