International Design-Build: Education/Profession Comparisons

This paper will examine a university led Design-Build project in Guatemala as an education program, and a professional service contract in Rwanda. The overarching goal is to explore similarities in the framework of a university program and a professional firm. The paper will also examine appropriate context, cultural and political, and discern lessons about program selection, expectations, design results, dangers and management issues.

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With over 25 years of educational experience in a Design-Build program, a recent Design-Build exploration has been in the arena of international programs. These international opportunities challenged educational assumptions, material differences, and the implication of integrated approaches required in both educational and professional settings.

Increasingly, the world is responding to both catastrophic events, climate induced disruptions and human induced environmental stresses caused by wars and civil strife.

As the profession took a significant lead in initial exploration of Design-Build as a project delivery method, the most visionary thinkers in the professional have responded to the opportunities and dangers of expanding Design-Build in traumatic situations. A good example of visionary thinking by a professional is the recent Pritzker Prize winner Shigeru Ban. The next question for educational Design-Build programs is to ask parallel questions about Design-Build possibilities in other countries.

The framework of this paper will be to compare and contrast the needs for integration of knowledge, communications, project delivery implications, and the problems with international design and construction. The paper will also examine appropriate context, cultural and political, and discern lessons about expectations, design results, dangers and management issues.

Chaotic and traumatic events have created damaged and uninhabitable environments due to cataclysmic physical events such as earthquakes and tsunamis. Civil strife has also produced unique challenges to relieve traumatized environments. It could be argued that civil induced strife generating uninhabitable environments has its own subtext of political and cultural hurtles to address in reconstruction, design and planning efforts.

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PRECEDENT WORK: SHIGERU BAN

From 1998-1999, the professional office of Shigeru Ban, the 2014 Pritzker Prize designee, designed and manufactured paper tube temporary shelters In Rwanda. According to Ban's website, they reported that the United Nations High Commissioner for Refugees (UNCHR) agreed to test a paper tube system for temporary housing.

This experimental housing proposal by his office for the Byumba Refugee Camp was an example of architecture's venture into the crisis produced by civil strife.

Since that early experiment, Mr. Ban has responded to numerous disasters around the globe.

This paper housing design and manufacturing experiment provoked the idea of a professional response to disasters. It, however, also implied a potential arena of work within architectural education. The Design-Build activity of many architecture educational programs seemed a natural place to question the role of global disaster response and the learning-service potential for architecture students.

The changed role of Tulane University in New Orleans provides an example of an institutional response to a traumatic event in a community.

However, work in disaster from civil strife present both unique opportunities and unique dangers for educational programs and professional design offices.

This paper is an attempt to compare and contrast the opportunities and dangers of international disaster work, with a particular focus on traumatic communities due to civil strife.

Civil strife presents a slippery slope for the advancement of Design-Build student work as well as professional design services.

TWO COUNTRIES

Guatemala and Rwanda both represent examples of civil strife that require understanding of cultural demographics, particular community needs, and the resultant massive migration. Educational efforts tend to be small and limited and the professional efforts tend to be large and ambitious. While the scale of effort is different from academia and the profession, they both endeavored to relieve a physical

Figure 1: Byumb Refugee Camp

Figure 2: KCMP, Oz Architecture

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environment that was highly traumatized and required short and long-term actions. It is easy to understand some of the implications of civil strife that tears apart the societal fabric and natural disasters that may tend to unite societal units.

In these two examples of professional and educational work in traumatized society, several comparisons and questions can be examined for lessons in practice and educational endeavors.

On the practical managerial level, the implications of government collaboration, reimbursement, and expectations.

On the level of professional office and educational procedures, concerns, and infrastructure problems can also be compared in delivering services.

In a perceptional sense, there clearly are useful comparisons between local, professional, educational and governmental expectations of the professional usefulness derived from the delivery of architectural services.

RWANDA

In August 2014, an interview was conducted with Steve Brooks of OZ Architecture, a Denver based firm. The principal in charge of portions of the Rwanda project, Mr. Brooks, had previous experiences living and working in Guatemala, Uganda, Afghanistan and Rwanda. The horrors of the 1994 Rwanda genocide and civil war are well known. Oz Architecture made a commitment to assist, in some way, the country.

Government Collaboration and Cooperation

Within their corporate structure, Carl Worthington and Cathie Leslie had contacts with the President of Rwanda, Paul Kagame. Mr. Kagame visited Denver in 1993 and again in 2004. Discussions led to the possibilities of planning and hospital work, which were critical needs in the aftermath of the genocide and mass movements of people away from areas of conflict. Initial work consisted of renovation of a hospital and master plan work for a 300,000 community in the rapidly urbanizing capital of Kigali.

Following the civil conflict and civil war, it could be argued that a reliable central government presence was need to foster efforts at rebuilding trust and a central infrastructure.

Figure 3: UC Denver Guatemalan Study Abroad

Given the conditions of a previous central government that promoted genocide, local populations required a new central government with a mandate for reconciliation, administration of justice, and reconstruction. In this type of situation, a reliable central government provided a workable environment for professional office involvement in a large ambitious effort.

Given the commitment from central government officials, the design work was primarily directed from the top. As such, obtaining the point of view of the real clients, local citizens of Rwanda, it took special efforts to convince government officials of the need for local and indigenous involvement. Mr. Brooks cited an incidence where the team needed permission to enter the temporary settlements in order to interview residents. He reported that the Mayor of Kigali told him not to involve the team in a dangerous situation stating, “You are (like) the doctor to prescribe a cure for our children.” He and the team responded stating, ”(Yes), but we must first ask the child where it hurts.” Speaking in local metaphors proved to be crucial to communication.

The subject of reimbursement became a central theme of the interview. While transfers of monetary compensation did not seem to be an issue, given the state of the new government, reimbursement had extensive time delays. Delays in payments caused the company to imbed the project within other consistently paying projects. Otherwise, Oz could not sustain a service response to the design problems.

Procedures and In-house Support

The international work undertaken clearly had significant consequences to the operation of a professional office. The primary infrastructure was a committed to multiple project types for each principal and team. It became part of the business mind-set to insure higher profitable projects with slower paying international work. Balanced work assignments, team memberships, and contracts seemed to become a key element of the operation in order to provide support from the professional office.

Potential team members were obviously recruited for language, cultural, and empathic skills. Mr. Brooks pointed out that those professionals that required a structured environment to practice did not work well in international projects for developing countries. Those who understood contracts, SD, DD, CD and CA as a definitive process were less likely to adapt to work in a fluid environment. Team members had to have the ability to work with uncertainty in project identification as well as time constraints.

Aside from the obvious understanding of difference in culture, it seems that Mr. Brooks implied that team members had to be open to unexpected learning as well as unexpected teaching. An additional skill required of team members was an ability to teach client communities by fostering capacities in the community to continue the design and planning work. This capacity is less teaching in a traditional sense but an ability to transfer particular design and analysis skills. It appears that type of skill transfer is similar to our skill transfer in a traditional educational studio.

Perceptual Contexts

In traditional societies, respect of elders and tribal respect of order and wisdom. In the case of Rwanda, that tradition was used to validate the genocide. The new government was, therefore, important to one clan but distrusted in the other clan.

The top down nature of the professional contracts made it important to reach beyond the official contacts to understand the whole of the client community.

Perhaps the biggest disconnect came from top officials that expected visions of new

gleaming cities portrayed in the US. Glass towers and paved roads belied the bottom up analysis required to accomplish important design work.

Mr. Brooks indicated that after some analysis and design work had been completed, his epiphany was that the children of the next generation were his real clients.

Perhaps, the most profound implication is the perceptual view of this kind of international work in both the client community and the professionals. The previous reference to capacity building is the first indication of staffing viewpoints, attitude, and perception of the work. Staffing had to be specially recruited, culled and mentored to understand the difference between high-ranking government officials and voiced requests from across the spectrum of local communities

Mr. Brooks indicated that the qualities required for his team were an ability to deal with ambiguity, see connections that were below the surface, and an ability to find possibilities in the mountain of impossibilities. These qualities he describes as an ability to find hope in the mass of uncertainty and despair.

While these are qualities one might describe as more spiritual than practical, he seem to imply that the quality of ability to provide vision drives the remainder of the work product. An ability to see the seams that are possible becomes crucial to the success of professional work.

The skill of identifying the proper role of appropriate technologies with an ability to search for new technologies is crucial. The team asked questions about how and why new technologies could be employed.

Mr. Brooks defined their work as helping to obtain a sustainable capitalism with significant welfare for societal needs in the context of tradition.

GUATEMALA

The central government of Guatemala had a very long-standing policy of integration of various Maya communities into the national fabric. Experiments where communities were re-located and non-indigenous communities of Ladinos were inserted to break apart the homogenous nature of the tribes. As a result, conflict and civil war arose.

The insurgency between the indigenous Maya population and the government resulted in large-scale killings of the local population.

In the winter of 2011 and 2012, a Design-Build project was undertaken in San Juan Comalapa Guatemala, more commonly known as Comalapa. Associate Professor Phillip Gallegos, the originator of the University's Design-Build Certificate Program, led the project. In two intense semesters, two groups of students were recruited. The first group designed and built a staff security entrance employing sack adobe in a dome construction. The second group that visited employed bamboo construction of a teacher's residence.

Government Collaboration and Cooperation

Within the University system, the Office of International Education had contact with a group of Peace Corps Volunteers working on educational infrastructure for Comalapa. Other study abroad efforts had been directed to tours for the Peace Movement led by the Nobel Peace Prize winner, Rigoberta Menchu when contact was made with the American Peace Corps volunteers in Comalapa.

Initial work consisted of construction of a massive tire reinforced retaining wall on the site.

The local population has become very distrustful of the role of central government,

given the widespread death toll among indigenous people. This situation proved to be a better environment for local, diffused, and low scale efforts and was, in fact, well suited for an educational effort.

Governmental officials did not hamper students and the Design-Build team in any way since building permitting was virtually non-existent. However, there was also no significant assistance from official sources. And while official permission to visit neighborhood districts was not an issue, the cohesiveness of the community made it very apparent that the students were outsiders. Respect from the community was evident, a traditional Latin American quality. However, the students were observed with wariness.

While technically, the students paid for the experience and transfers of money was not significant, we discovered the sponsoring entity, Long Way Home, had taken great pains to insure clear financial lines. Never the less, while working on the project, the Director asked if we could cover an activity though our University as staff had limited access to funds.

As with the professional office example, movement of financial resources required great care and effort. The financial infrastructure for either effort is an important requirement.

Procedures and In-house Support

International work in a structured University curriculum is less problematic to work in a traumatized community. Educational study abroad support exists at all institutions. Study abroad departments have the ability to establish contacts, provide language support, cultural support, and financial guidelines.

The mission of most study abroad programs is to provide cultural and physical context for learning and exploring. However a Design-Build program in a developing country requires an ability to adapt to new materials, new methods and new working conditions. While the design process and construction process, per se, did not change significantly, the fluidity of materials and local engagement presented challenges.

While in an educational curriculum, students are judged by the ability to significantly address both theoretical and practical objectives. Materials are frequently an afterthought.

In the case of a Design-Build project, the materials are a primary driver particularly in another country. History lessons become more significant in terms of practical applications. Brunelleschi's dome template, which was an academic exercise considered in a past class became a tool for layout and development of a construction process. Templates were drawn on concrete surfaces and saved, since digital media was limited, at best.

Students did not always appreciate the concept of learning local methods and then trying to provide additional capacity in process. The dome template students were directed to experiment with was not transferred to the local workers due to language difficulties. Reflective discussions after the completion of the project resonated with students over adaptive means.

Those with extensive construction experience and high tech process in the United States seem to struggle more than others that came without experience. The first of the two groups of students responded well to alternative means of construction and adapted to the concept of learning from the client community first. The second group, however, felt that they had worked out definitive design and construction

decisions prior to arrival on the site. Because they felt they had more appropriate answers, they asked the instructor to intervene on their behalf with the on site American and Guatemalan workers. The second group did not want to consider alternative means and materials.

Perceptual Contexts

The structural infrastructure of the University and nature of education places a validation on traditional society as a great learning experience. Advising students to respect the tradition of elders and contextualizing the idea of outsiders in a community that distrusted outsiders was easy to clarify and get students to learn by observation.

The community accepted but did not embrace the students, however.

Student wok was generally suspect by the community since it did not fit into the framework of the community's existing environment. While it could be argued that the employment of a dome construction was innovative, residents largely ignored it.

The site was isolated and the prior history of helpful American Peace Corps volunteers, acceptance of student work was not a big issue.

Adobe was employed, but in a sack form and not as block with the first group. Bamboo, employed by the second group, was also a traditional material. The student work used traditional American framing methods. Local workers on the site primarily employed known technologies such as lime plaster on waddle and adobe brick. There was not significant discussion between students and local crafts, due to the time constraints.

In general, the job of creating local acceptance was out of our hands. Long Way Home, the on site provider, established a program for introduction of innovative construction means. It became an educational tool for mentoring innovation in the local community.

The students could well have used a lesson in gaining local acceptance and modifying their work to reflect more traditional means and materials.

COMPARISONS

Government Collaboration

Institutional connections, procurement, and networking play a significant role in initial contact. Connections ultimate result in acquisition of professional and educational projects.

Government and on site mangers expectations were initially very limited. It did take time to foster common understandings of capabilities thorough cultural barriers, which led to broader responsibilities. This is not an uncommon path for work and engagement of any contract for services.

For the professional office, it involved governmental connections at a national level.

For the educational enterprise, it involved local connections with local efforts not supported by a central government. Following the end of the Guatemalan civil war where the local population no longer trusted any central authority, it was clear that local connections were critical.

Given the unique professional office infrastructural requirements and the local conditions, national governmental collaboration was important to achieve prior to seeking local discussion.

Locally driven efforts should be cognizant of the political history of the location due to civil strife. The need for special permission to engage people is crucial in either a

formal or informal format, dependant on the state of the civil strife. An understanding of the source of strife should inform service work contemplated and educational programs. It will establish the contractual underpinnings of activities.

In the aftermath of the September eleventh tragedy, international work in educational and professional offices has become difficult to achieve.

Procedures and In-house Support

Clearly, a commitment to international work, either professional or educational, requires an institutional commitment. In the case of a professional office, a commitment to a balanced business model is essential. In some ways, it can be argued that a modification of pro-bono work fits well into the category of assistance in the developing world. Partial or late compensation drives a strategy of critical financial oversight.

Adaptability becomes essential for professional offices and educational experiences. Adaptability here is seen as both an ability to learn and teach by students and professionals. It is seems that professionals have a better understanding of discerning the client community. Educational experiences, however, are not always clear on the role of learning and the type of teaching.

Mentoring as a process means that after achieving mutually developed design or methods, it then requires consideration of processes for community implementation. That is a different form of teaching, which is really mutually respectful mentoring.

While professionals seem to understand this capacity building as teaching, students do not necessarily grasp this concept. Prior design training, it can be argues, has led to a more autocratic attitude towards clients. That is, teaching is seen as a means to impart knowledge down to the client community.

The educational enterprise seems to be in a distinct disadvantage to professions who understand the fine line between teaching and mentoring.

Perceptual Concepts

Professional contracts and learning endeavors clearly have different problems in obtaining local acceptance.

What is clear that top down contract efforts are not enough. Professionals must find means to address analysis and empathy with the mass of society.

Student efforts must find ways to engage local building design and build traditions in a short period. That is the biggest shortfall of the student programs.

The most important conclusion for this article is the obvious need to develop means of capacity building in international communities and development work. It can be argued that civil strife creates a vacuum of capabilities that were there prior to the conflict. Conflicts seem to erode the capacity to re-generate.

The real work of both professional and educational experiences is to find means, in the construction or in the design, to leave with greater local capacity for innovation while employing traditional means.

This skill requires constant upgrade of empathy in students and professionals.

University programs can play a big role in the development of capacity building through programs and the professional community can benefit with services that employ students who seek to make significant changes in the world.

ENDNOTES

1. Shigeru Ban Link: http://www.shigerubanarchitects.com/works/1999_paper-emergency-shelter/index.html.
2. Phillip Gallegos

Original Photos

3. Oz Architecture

KCMP Participatory 1.ppt