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BEYOND ECO-EFFICIENCY IN THE BUILT ENVIRONMENT

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Abstract
Sustainability, in the fields of architecture, is often understood as eco-efficiency but this paper explores how an international service learning course can promote a broader definition of sustainability that includes cultural, humane and political aspects. To do this, it will integrate a literature review with the author's experience teaching an international design build studio. The intention of the paper is to encourage discussion on how we can move beyond mere eco-efficiency in design education towards a broader definition that also consider our responsibilities as global citizens.

Keywords: International Service Learning, Global Citizenship, Sustainability

1. Introduction

Service Learning in the Global Community (SLGC) is a month-long course offered by the Faculty of Architecture, University of Manitoba, Canada. True to service learning pedagogy, the curriculum combines hands-on experience with opportunities for reflection, analysis and evaluation. Working with members of rural communities, SLGC participants have built small buildings in Turkey, Uganda, Ghana and Sri Lanka. Each project responds to a need for greater access to education, the eradication of poverty and/or the preservation of culture. By focusing on depth of educational experience beyond rote learning, the course is uniquely positioned to provide lessons on systemic relationships informing the building environment. The formidable connections between global citizenship and sustainable design make courses like SLGC worth considering as opportunities to enhance curriculum concerned with sustainable design.

SLGC adheres to the following definition of socially responsible design: "design that moves beyond economic and consumerist considerations to embrace ethical, emotional, and humanitarian values" (Davey *et al,* 2002). In a related manner Lance Hosey's article, "Towards a Humane Environment: Sustainable Design and Social Justice", expands on the notion of socially and sustainably responsible design by outlining the following characteristics: 1. People come first; 2. Now comes before later; 3. More for more (people); 4. The triple bottom line is from the bottom up; 5. Nature has no borders (2008). Certainly, this understanding of 'good design' surpasses often-cited definitions of sustainability that tend to focus on the local solutions for future generations.

Building on these points, and others drawn from the literature review, this paper explores the connections between social responsibility and sustainability as observed in SLGC projects and reported in participant's journals. More specifically, the paper argues that sustainability must take into account the needs of a global society, particularly those who live in extreme poverty, by offering the following points to consider in an expanded definition of sustainable design.

2. Literature Review, Results and Analysis

2.1 All people come first

Many students come to the SLGC program with a solid understanding of the current accepted principles in sustainable design. The design-build pedagogy of SLGC puts theory into the practice through hands-on experience in a new social, economic and climatic context. There are at least two principles that appear of paramount concern to the students while working on a site: 1. Building and construction efficiency, and; 2. Planning for future generations. Few SLGC students have considered a global perspective in their views on achieving sustainability until they find themselves surrounded by the plight of the poor. This particular point

raises two aspects observed in SLGC student journals: 1. There is a relationship between apathy and proximity; and 2. A global perspective can be easy to overlook.

In the words of Paul Polak, "Ending Poverty is probably the most important step to restore nature's balance on the planet" (Pg 172, 2009). In his book, "Out of Poverty: What Works When Traditional Approaches Fail," he argues that there are four strong relationships between poverty in developing countries and the condition of planet. First, high populations and carbon emissions: referring to families that need to produce at least three sons, therefore about eight babies, to work on small farms. Next, he discusses loss of biodiversity in areas where people are too hungry to respect the goals of environmentalists and natural reserves. Thirdly, he refers to global pandemics such as HIV/AIDS, malaria and TB to remind us that poverty is the single greatest contributor to poor health. Finally, Polak notes that access to education—a key factor in development and sustainability—can be greatly affected by the demands of subsistence agriculture.

The dependency of the poor on the environment for their livelihoods and well-being is also the focus of a global UN program called the Poverty-Environment Initiative (PEI). According to the PEI website, "To fight poverty, to promote security and to preserve the ecosystems that poor people rely on for their livelihoods, we must place pro-poor economic growth and environmental sustainability at the heart of our economic policies, planning systems and institutions" (http://www.endpoverty2015.org/, 2012). This brings us to a point that has been observed in almost every SLGC student journal: addressing the needs of people who exist on the planet today is crucial in the development of a sustainable future.

2. 2 Practical solutions work

In his book "Design Futuring: Sustainability, Ethics and New Practice", Tony Fry (2009) explains that technology is only as good as the use and the rationale behind it. Green design practices are often based in the notion that products and rating systems can correct, or limit, the environmental destruction we cause. One observation that can be found in many SLGC student journals is that practical ideas, such as building more sustainable solutions in the first place, can be more effective than the use of technology or addition of specialized products. In working within everyday challenges of a rural village SLGC participants have grown to understand how the methods, skills, and knowledge are specifically adapted to local situations that are often informed by economics rather than rating systems or reward. Side-by-side contact with local builders is particularly illuminating in this regard; their familiarity with the challenge of designing without site services and utilities tend to be well-developed, as is their knowledge of low-cost construction and climatic factors. Likewise, SLGC participants have been largely impressed with the reduction of waste on construction sites through careful planning in design and specifications. For example in Ghana, few materials arrive onsite in packaging thereby minimizing the need for dumpsters or waste management procedures. All excess materials, from construction or packaging were repurposed, including the cement bags that were immediately transformed into hats to protect builders from the hot afternoon sun. Students were also impressed by the preference for local materials as a way to reduce transportation costs while supporting local businesses and trades people. These 'sustainable' approaches did not have to be taught or rewarded, but were simple and effective ways of doing things in a low-income village. Equally important, students learned how theory can be empowered and extended by practice as long as designers remain open to new—and sometimes old—ways of doing things.

2.3 Listen to what people have to say

SLGC participants work and live with community leaders, builders and residents while serving as apprentices on a job site. Displacement intensifies the learning experience by encouraging participants to look beyond their own social realities while making connections between design, culture, climate, economics, and construction. These disparities serve as a reminder that designers are rarely 'experts' in a new situation therefore must suspend their assumptions to become effective in a community project. Students are encouraged to keep this in mind when considering how buildings will be built, used and maintained. It is possible that nobody can make this point more succinctly than Paul Polak when he says, "Talk to the people who have the problem and listen to what they say" (pp 13, 2009).

This lesson became apparent when a group traveled to a rural village in Sri Lanka to work on a community centre and Buddhist shrine. According to tradition, the community consulted a learned astrologer to determine auspicious moments for laying the first brick, the first rafter, the placement of the Buddha statue and the opening of the community centre. At first, some of the North Americans felt that the auspicious moments were inconvenient or disrespectful to the builders and designers. Consequently, participants saw that the auspicious moments motivated collaboration and celebration at the various stages of construction. Above all, the auspicious moments contributed to a high level of support for a building, as they are believed to insure a safe construction process as well as the completion of a building that will bring health, prosperity and good fortune to a community.

SLGC students are encouraged to respect the social structure and goals of the community. A key concept observed by students is that communities are systems that existed, and will continue to exist, before and after a construction project. Efforts are made to reduce the risk of disrupting existing networks, creating loss of employment or provoking conflict between neighbours. Participants learn about the complex interdependence of global economic, political and cultural forces affecting the built environment through a collaborative design and construction process. Finally, the success of a sustainable project relies on building understanding, mutual goals, and relationships with community members.

Figure 1: SLGC partners working in Ghana. L. Hill

2.4 Not all humanitarian design is bad

In a highly skeptical account of the humanitarian design movement, Tony Fry (2009) draws our attention to several important concerns. He begins with a claim that humanitarian design can sometimes be "feel-good, apolitical and naïve". Fry specifically draws our attention to ill-conceived solutions that have been driven by charity or architecture competitions, undermining the local culture and coping mechanisms of a community. Fry's concern over poor examples of international practice has been duly noted by the author — in fact this point was the catalyst for developing the SLGC program.

SLGC embraces a community development model that is consistent with many of the recommendations made by Stoecker & Beckham's article 'Making Higher Education Civic Engagement Matter in the Community' (2009). The model views engagement as an opportunity to strengthen the global community rather than provide charity. In contrast to traditional studio assignments, SLGC projects are identified by community members and not by the professor. To that end, decisions are made onsite in collaboration with community members, professors and students. As a result, students begin to consider design as a multifaceted and inclusive process that extends far beyond the artistic expression or desires of an individual. Although creative work is part of the SLGC process, the course places emphasis on the interdisciplinary, social and technical aspects of the production of the built environment through community-designer partnerships.

Dr. Paul Polak demonstrates the potential of community-designer partnerships to make an incredible contribution towards the eradication of poverty. Over the past 25 years, he has worked with thousands of farmers to move 17 million people out of poverty through the design of products that people actually need. Polak believes in the farmers he has met, in their capacity to make a difference, now it is time for designers to do their part by shifting the focus away from improving eco-efficiency and towards addressing the roots of the problem – namely poverty (2009).

3. Conclusion

An underlying theme of Service Learning in the Global Community (SLGC) is a commitment to addressing social and environmental issues by moving beyond myopic considerations in design. The following points have been offered as framework to broadening the definition of sustainable design to include the global population: 1. All people come first; 2. Practical solutions work; 3. Listen to what people have to say; and 4. Not all humanitarian design is bad. By promoting a broader definition of sustainable design — one that considers the needs of a global society — designers can further enhance their mission to improve the

environment. In summary, creating a sustainable building is about more than bricks and calculations—it is about building relationships in a global society that is reflective of, and perpetuated by, the diverse skills and needs of its participant communities.

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