A New Trend of Architectural Practice and Education：

Community-Based Design/Build Programs

Assignment 3

ARCH 5106 INTERNATIONAL SUSTAINABLE DEVELOPMENT

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INTRODUCTION

As environmentalists and economists have put a great deal of attention on sustainable development at a global or regional level, many non-profit organizations have sprung up to address poverty and other social problems facing marginalized communities.

Community-based organizations have found new partners in universities over the past two decades in their work with marginalized communities. Some architectural schools have created design/build programs to address the challenges and urgent physical needs of marginalized communities around the globe. These programs use a multidisciplinary fieldwork approach to educating university students.[1] Students in various disciplines work both regionally and internationally to complete community-based projects. They incorporate sustainable building strategies to build affordable, self-sufficient shelters and other vital structures for the communities they visit. The projects are usually built by students in collaboration with local residents and organizations. Collaborative projects between universities are undertaken as well. The central component of collaborative projects is achieving cross-continental dialogue on sustainable development.[2]

In 1992 there were eight to ten design-build programs in universities, while today there are about thirty to forty[3]. The programs that are representative of the design/build approach, and perhaps the most well known ones, include: Jersey Devil and the Neighborhood Design/build Studio (directed by Steve Badanes and his cooperators), the BaSiC Initiative (directed by Sergio Paleroni and his colleagues) and Samuel Mockbee's Rural Studio. Their efforts have gained world wide recognition in recent years and received numerous honors. The BaSiC Initiative "combines field wok with research and teaching on sustainability and economics of development". In 1997, it won an AIA/ACSA National Education Award. This was the first time a design/build program was recognized.[4]

Community-based design/build programs have proved to be an efficient way to practice sustainable development strategies in underprivileged areas and have brought social and educational benefits to both the impacted communities and students. They also contribute to the research of sustainable technologies through built projects in various physical and cultural contexts. They advocate innovative architectural training and make architectural education relevant to social problems. These programs have inspired critiques to conventional architectural practice and have served as models for new trends of architectural practice and education.

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1 *" Sergio Palleroni, Worldwide Leader in Community Empowered, Sustainable Projects, to Give Public Talk at U.Va."*

2 See: http://www.sustainabletaiwan.com/

3 "*Samuel Mockbee: A Life's Work，AIA Gold Medal Winner"*

4 *"History*", Source : http://www.basicinitiative.org/About/History.htm

BACKGROUND

Design/build programs have emerged in the context of global political economy characterized by high rates of poverty and social problems in marginalized communities. They are also a response to sustainable community development taking place at the grassroots level.

A global increase in squatter communities, urban slums and poor rural communities calls for assistance

In recent years, increased poverty is accompanying urbanization and the economic marginalization. New slums continue to grow around the world, especially in South American, Asia and Africa.[5] Squatter communities, as one "spin-off of urban migration", are growing rapidly on the fringes of cities. These communities are informal settlements built on unclaimed land or even on dumpsites. Simultaneously, the living conditions of poor rural communities are degrading in many regions in recent years.

Marginalized Communities confront intertwined physical, economic and social problems and usually lack basic facilities, services and infrastructures. As their internal resources are inadequate to address these problems, they need to reach outside their boundaries for assistance.[6] However developments in extremely poor communities are often shunned by private developers and banks. Insufficient support and limited involvement from the public sector create a situation where most assistance to these communities is provided at the grass-roots level.

Community-based design/build programs have provided substantial assistance to poor communities around the globe. For example, BaSiC Initiative projects cover marginalized communities in Mexico, India, Cuba, North American and Asia. In the past two decades, 45 projects were completed including shelters, schools, libraries, clinics and other vital structures in poor communities.[7] The Design/Build Mexico program has been renowned for its work in squatter colonials in Cuernavaca, Mexico.

Figure 1 Biblioteca Juana de Asbaje y Ramirez-
A library built in a squatter community, Colonia Joya de Aqua, Juitepec, Morelos, Mexico, 20019 (by the Basic Initiative)

Source:http://www.basicinitiative.org/programs/global_communities/Bilioteca_Puiblica_Municipal.htm

[5] *Planet of Slums,.pp..17-18*
[6] *Urban problems and community development*, pp.139
[7] *"History"*

Design/build programs are pioneers in exploring affordable and modular houses for poor people. The Rural Studio designed a 1,000-square-foot, modular house which was conceived as a possible replacement for the region's dominant housing form.[8] Sergio Palleroni's work on straw-bale houses has gained support from the government: the U.S. Department of Housing and Urban Development "has approved straw-bale as potential shelter for 300,000 homeless Native Americans on reservations".[9]

Figure 2 **Fast Wolf House** Pine Ridge, SD 2000 straw bare house (by the Basic Initiative)
Source:http://www.basicinitiative.org/programs/housing/Fast_Wolf_House.htm

Recent community development activities provide fertile ground for community-based projects which anticipate multidisciplinary corporations

In an effort to provide social justice through sustainable development, more work has been put into the (re)vitalization of low-income communities in recent years. Community-based development involves neighborhood-based efforts to improve an area's physical and economic condition.[10] Community Development Organizations (CDOs) have long play an important role in this activity by promoting local development, particularly affordable housing.[11] CDOs work through supports from foundations, corporations and governments (especially at local level), but they face many challenges. While they are non-profit organizations, they need to pay staffs who understand finance, construction, design, zoning and other technical matters to make sure that development projects meet basic standards.[12]

The involvement of design/build programs in community development can provide substantial support to CDOs. Through interdisciplinary work, university teachers and students offer design and planning services to the communities they visit, providing long-term solutions. Design/build programs emphasize "building the capacity of these communities to become self-sufficient".[13]

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[8] *"Samuel Mockbee: A Life's Work，AIA Gold Medal Winner"*
[9] "Sergio Palleroni, Architecture- S.Sterling Munroe Public Service Teaching Award", by Steven Goldsmith
[10] *"Power, Money, and Politics in Community Development" by Margaret Weir. pp.179*
[11] *"Community Development Corporations: Mission, Strategy, and Accomplishment" by Sara E.Stoutland .pp.202*
[12] *"Power, Money, and Politics in Community Development" , pp.179*
[13] *"History"*

Working closely with CDOs is one of the principles that lead to the success of a design/build program. CDOs which usually have good connections to local resources and networks can motivate and organize community-empowered projects and help universities access these resources and networks. The BaSiC Initiative's international projects began with a partnership with CED, an organization contributing to sustainable development in rural communities in central Mexico[14]. At some universities, their design/build programs are based on working with local community organizations. For example, each year students from Neighborhood Design/Build Studio are asked to complete small community projects for nonprofit groups in the greater Seattle area.[15] The following examples are projects completed by different design/build programs in collaboration with CDOs.

Figure 3 Casa de Salud Malitizin, Tejalpa, Morelos, Mexico, 1998-1999, a woman's medical clinic, by the Basic Initiative in collaboration with women's health and welfare group in Tejalpa, Promotoras Ambientales

Source: http://www.basicinitiative.org/programs/global_communities/Casa_de_Salud_Malitizin.htm

Figure 4 Bus shelter (by the Neighborhood Design/Build Studio, part of a large rehabilitation/repair program for an apartment complex, in cooperation with non-profit Mt. Baker Housing Association)

Figure 5 Accessible Gardens (by the Neighborhood Design/Build Studio, in cooperation with Interim Community Development Association , a community based nonprofit organization dedicated to the stabilization and revitalization of Seattle's International District neighborhood without displacement and gentrification.)

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Source:http://online.caup.washington.edu/courses/hswdesignbuild/projects.html

[14] *"History"*
[15] *"Howard S.Wright Design/Build Studio , Course Syllabus"*

ADVANTAGES AND BENEFITS OF DESIGN/BUILD PROGRAMS

There are a number of significant advantages and benefits of design/build programs. They provide opportunities in experiential learning and community-based research. They also contribute to the development of the host community's assets.

Students gain experience with real clients, public agencies, and hands-on construction

Fieldwork studios are a typical form of a design/build programs in which students go out "from the academic classroom" into "the classroom of community".[16] Students gain communication skills and knowledge on social issues through service learning, public service internships and community-partnership projects. Also, technology becomes more meaningful for students when it is integrated into the context of a real project.[17] Hands-on construction let students gain familiarity with structure, detailing issues, and construction strategy.

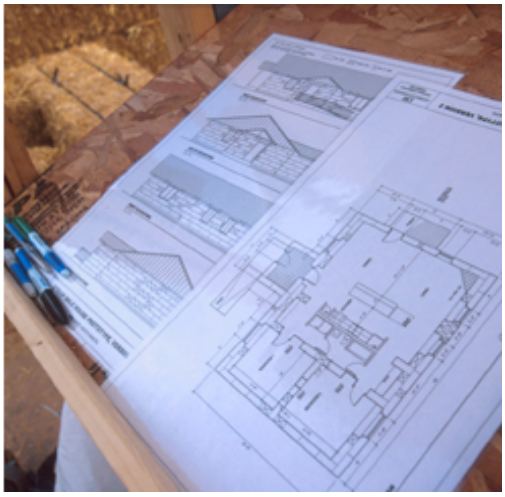

Figure 6 Fieldwork Studio

Source:http://www.basicinitiative.org/programs/housing/Fast_Wolf_House.htm

Marginalized communities sometimes serve as free labs

Squatter communities are usually "tolerated but not allotted services by local government".[18] The lack of bureaucracy in these communities has advantages. Construction is ignored by authorities, so "there is no red tape in submitting plans", which allows "projects to continue as in a kind of field laboratory".[19] Free labs provide the opportunity for students and teachers to fully use their design skills and knowledge of regional vocabulary and indigenous materials. Low-tech solutions to

16 "*Samuel Mockbee: A Life's Work，AIA Gold Medal Winner*"
17 *"Howard S.Wright Design/Build Studio , Course Syllabus"*
18 "Cultural Initiative"
19 "Cultural Initiative"

problems often proved to be creative and can be duplicated by local residents. In a free lab, designers have the potential to develop a new building system that could act as a low-cost example for communities in the region. Free labs also ensure a project is finished within a limited project time based on a schedule set by designers. Students in BaSiC Initiative studios typically complete a build project within ten weeks.

Community-based fieldwork provides opportunities for exploring sustainable technologies

In one of his interviews Sergio Palleroni describes technology as "culturally placed and localized constructed"[20] and "about a culture's understanding and use of its available tools and crafts." Palleroni further commented: "knowledge and understanding will come from many - sometimes unexpected sources, including the site and its physical and cultural context." These comments remind us that sustainable technologies are rooted in traditional and indigenous techniques.

While we have set standards for sustainable development in many fields, we are still in the process of finding methods and strategies to realize these standards. In many areas of the world indigenous populations lived in harmony with nature for generations (living in harmony with nature is objective of the contemporary concept of 'sustainability'.) Indigenous people in different regions have developed various techniques to realize "synergy with nature". But today many of these technologies are taken as out-dated and neglected by mainstream research. However, traditional and indigenous techniques can enrich our knowledge on sustainability. Design/build programs at a global level provide us with opportunities to access, recover and promote local technologies and translate these into contemporary designs. Sometimes a technique that is used in one place may not be applicable to another area with a different cultural, climatic, or geological context . These differences between regions and local technologies make design/build programs both challenging and interesting.

Design/build programs can significantly contribute to the development of a community's assets

The assets in community development take five basic forms[21]: physical capital (buildings, tools); intellectual and human capital (skills, knowledge, and confidence); social capital (norms, shared understandings, trust); financial capital (access to monetary resources) and political capital(the capacity to exert political influence).

Physical capital is the most obvious area where a design/build program can build on the host community's assets. The contributions of design/build programs to intellectual and human and capital assets are also significant. In a design/build project,

[20] "Green Dreamers, Sergio Palleroni, Community Builder"
[21] " Introduction" - Defining Community Development" . pp. 5

community members and students work side by side, gaining skills, knowledge, understanding and trust through mutual learning and collaboration. This is an exchange and education process both for students and local residents.[22] Usually when a project is finished, local people can apply the skills and knowledge they have learnt to build similar structures in the future.

Figure 7 **Esquela San Lucas** Tejalpa, Morelos, Mexico 1995-1997 The community produced concrete block, pre-stressed pre-cast concrete beams, and infill blocks to build the structure.(the BaSiC Initiative)
Source: http://www.basicinitiative.org/programs/global_communities/Escuela_San_Lucas.htm

Design/build programs positively influenced political capital in some cases. The improvements to the physical and social environment can help squatters get more established on the land and sometimes establish legitimacy for their community. This in turn can increase the power of vulnerable communities when confronted with urban renewal plans- Squatter communities are the most likely to be erased to make way for "main stream" development in urban renewal strategies.

A school project (completed by the BaSiC Initiative) in Escuela San Lucas in a Mexico squatter community has helped "establish legitimacy for the whole colonia".[23] At first, the local government resisted providing funding for the school, because "the government did not want to be obliged to provide further services" to a temporarily inhabited area (although the squatters had settled there for years). But when the school was built, "the local authorities had to accept the existence of the colonia as a legitimate entity."

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[22] BaSiC Initiative has an interesting description of one of its projects: -"During the construction of the Americas Pavilion students worked side by side with twenty-forty Indian laborers. The Indians often seemed amused or perplexed by the great lengths the students would go to find alternative solutions to construction and infrastructure challenges;"" As the project neared completion it was clear that the Indian workers' amusement had turned to curiosity and, they told us, admiration. We hope to see some of the low-tech solutions employed in the U.S. Pavilion in use in the local village when we someday return to Auroville."
Source: http://www.basicinitiative.org

[23] "Cultural Initiative"

Figure 8 Esquela San Lucas Tejalpa, Morelos, Mexico 1995-1997 (The addition of buttresses on the western courtyard façade interrupts the sun's hot rays and creates a shady loggia in front of the building. (the Basic Initiative) Source: http://www.basicinitiative.org/programs/global_communities/Escuela_San_Lucas.htm

THE SPIRITS OF DESIGN/BUILD PROGRAMS

The spirit of design/build programs can be summarized as vernacular, technically sustainable, and community-empowered. These qualities together form the soul of a design/build program, making it a pioneer in sustainable discourse. Such qualities and methods of teaching should play an important role in the future of architectural practice and education.

Vernacular Architecture

The principles of vernacular architecture include the following:[24]

- Based on a knowledge of traditional practices and techniques
- Usually self-built
- A high regard for craftsmanship and quality
- Made of predominantly local materials
- Ecologically apt, fit in well with local climate
- Never self-conscious, recede into the environment
- Human in scale

These characteristics are found extensively in the projects completed in design/build programs. An important approach for the programs to achieve vernacular architecture is "a keen understanding of local ecological and cultural phenomena"[25]. Living on construction sites and collaborating with communities make it possible for students to be fully immersed into the local culture. Designers, who also work as builders in these programs, make the maximum use of indigenous techniques and local materials (including salvaged and recycled ones). The structures they build are "culturally compatible and eco-friendly."

[24] "Sustainable Architecture: Vernacular Architecture"

[25] "Green Dreamers, Sergio Palleroni, Community Builder"

Figure 9 **U.S. Pavilion** Auroville, Tamil Nadu, India, 2002

Students are using local materials: mud and rammed earth to build the walls

Source: http://www.basicinitiative.org/programs/global_communities/US_Pavillion.htm

Although restricted by meager budgets and limited project timelines, designers do not neglect the details and aesthetical values of structures. These principles are embodied in the work of Jersey Devil and Samuel Mockbee's Rural Studio. Architectural examples from these studios show " a concern for craft and detail, an attention to the expressiveness of the construction materials."[26]

Figure 10 **Yancey Chapel,**

Sawyerville, Hale County, Ala., Rural Studio, 1995

Figure 11 Harris (Butterfly) House,

Rural Studio, 1997

Source: http://archrecord.construction.com/features/aiaAwards/04mockbee-1.asp

Technically sustainable

Sustainable building technologies are extensively and creatively used in design/build programs. They cover various aspects including shade, ventilation, earth shelter, thermal inertia, scale (footprint), and insulation. Energy-efficiency and self-sufficiency are the principles of sustainable design, thus on-site water collection, waste disposal, solar water heating panels, and recycling are components considered by design/build projects.

[26] See: http://www.jerseydevildesignbuild.com/about.htm

Figure 12 **U.S. Pavilion** Auroville, Tamil Nadu, India, 2002 A cistern and water tower to capture ,store and distribute the rainwater from the roof

Source: http://www.basicinitiative.org/programs/global_communities/US_Pavillion.htm

Figure 12 **U.S. Pavilion** Auroville, Tamil Nadu, India, 2002 A double-roof system that encourages natural ventilation and shedding

Source: http://www.basicinitiative.org/programs/global_communities/US_Pavillion.htm

Community-empowered

If assistance can help a community empower itself, it is more effective.[27] An improvement in community services and physical infrastructure combined with technology training, educating and social awareness can greatly empower a community. Design/build programs mobilize indigenous resources as well as social capital. Collaborating with CDOs, program participants take part in social activism. In addition, the provision of schools, clinics and libraries in poor communities are usually part of community-empowered projects. In 1999, BaSiC Initiative built a new women's clinic in a community in Tejalpa, Mexico.(See Figure 8) The project partner, Promotoras Ambientales, a non-profit organization offered traditional medical services from the clinic, "empowering women by raising their awareness of reproductive options and women's rights."[28]

[27] "Non-governmental Organizations on Development Issues"

[28] See: http://www.basicinitiative.org/programs/global_communities/Casa_de_Salud_Malitizin.htm

REVISIONING THE PROFESSION AND ARCHITECTURAL EDUCATION

"Architecture has always been a service profession, but it has too often served only those who can afford it."[29] The leaders of design/build programs share a similar philosophy on the promotion of architectural practice and education. They believed that "the profession needs reform and education was the place to start."[30] Design/build program leaders think "architects should lead in procuring social and environmental changes."[31] Design/build programs remind students, as future architects, of the profession's social responsibility. World wide community-based design/build programs will open the minds of architects to the potential of global, sustainable communities.

[29] said Jeffrey Ochsner, Chairman of the architecture apartment
See: http://depts.washington.edu/uweek/archives/awards2002)

[30] "*Samuel Mockbee: A Life's Work，AIA Gold Medal Winner"*

[31] "*Samuel Mockbee: A Life's Work，AIA Gold Medal Winner"*

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Source: http://www.architectureweek.com/2007/0103/environment_1-2.html

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