Responding to the Almost There: Evidence-Based Design in Design-Build Education

The success or failure of a Design-Build project within an underserved community often hinges upon the amount of community input during the design process. As a result, public interest designers have experimented with everything from adaptation of traditional models of the community design charrette to web-based open-source formats that allow participation from designers and stakeholders around the world, all in the interest of inclusivity. While these efforts are laudable and have resulted in meaningful work, there is a significant, if subtle, means of communication between the community and architect that is too often left out of the discussion; namely, the message of community desires as expressed through the evidence of minor physical adaptation. This evidence might be referred to as the "almost there" within a community; the physical manifestation of desire through behavior aimed at responding to the need of an individual or community.

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The "almost there" is so often overlooked because its identifiable features are nearly always architecturally intangible, informal and impermanent, so we are rarely even conscious of them. Additionally, when these indicators are noticed, they often appear at odds with the permanent elements present in a space. Yet the action by an individual or the community (perhaps unspoken or done without thinking, such as a woman moving a fruit-crate-turned-chair into the shade) is an important clue to some significant programmatic opportunities. These clues are essential for developing more interactive social spaces and providinge evidence of use and desire that don't always come out in interviews or charrettes but may respond to the greatest programmatic needs of a community. To use an example, left-over space being used as a momentary soccer pitch by passers-by may not simply indicate a desire for play, but perhaps suggest a need for central social spaces of exchange. In the absence of observable behavior of children playing, two sticks left upright in the ground with a specific relationship to one another and the surrounding area may offer similar evidence useful to a designer. Evaluating physical evidence is necessary because the presence of a design team will very likely alter the behavior of the citizens while they are present. Using these observations to respond to the way people actually live through built intervention offers a much greater likelihood of a successful project in a community. This paper will discuss these opportunities within the context of Design-Build education and illustrate efforts to put them into practice using specific

projects where architecture students used this method of responding to the "almost there" on Design-Build projects in Haiti.

DESIGN-BUILD + COMMUNITY ENGAGEMENT

The shift in architecture from modernism's approach of serving the abstract masses with mixed (often devastating) results to an approach that sought social engagement in communities with context specific work arose parallel to the progressive movements of the 1960s.[1] Charles Moore's Yale Building Project, begun in 1967, marked a shift in Design-Build education where the utility of construction was combined with a social agenda.[2] This still active program anticipated and informed academic programs to come, such as the Rural Studio and the BASIC Initiative. Design-Build education is increasingly popular with architecture students, and the community engagement aspect is a significant part of its popularity, as well as an essential element in public interest design, a growing field which emphasizes participatory design practices to serve underserved communities through work that is socially, economically and environmentally sustainable.

Engaging students in Design-Build projects in underserved communities works well on several different levels. It offers students insight into a culture or community to which they might not otherwise be exposed. The time-intensive manual labor required by the students is a much easier commitment to make when applied to a worthy cause. Students eager to see their design skills result in built work often find these client communities extremely receptive to their ideas and enthusiastic partners in their execution. Charles Schwartz, Laura Morthand and Shannon McDonald also make a convincing argument that the critical social awareness gained by students participating in community engaged Design-Build projects prepares students for professional practice in ways that are not otherwise covered by a conventional architecture education.[3] At their best, Design-Build projects create a true exchange and collaboration between the stakeholders of a community who host and inform students about their neighborhood, and students who provide a meaningful contribution to the community through a built work. However, this exchange can be difficult for many of the same reasons that make Design-Build projects desirable educational experiences.

Because a client/client community is receiving services for free, and specifics about the project deliverables are typically left somewhat open from the onset of the project for the sake of an unrestricted design process, the client/client communities often do not voice their true desires, concerns, or personal knowledge of the place, in spite of often exhaustive efforts to encourage them to do so. There may be cultural customs that exacerbate this problem, as with cultures that consider expressing a negative opinion rude and confrontational, for example. Furthermore, working with underserved populations often means working with people who have been historically disempowered and may have little experience discussing the issues of their family or community with architects or people of authority, let alone understanding the implications of those discussions. It is fairly easy to get a "yes" from client-communities when they are approached about being offered something in the place of nothing, but it is quite difficult to get the far more valuable "no." Harder still to garner from these groups is the answers to the questions that the students and faculty simply wouldn't know to ask. This is where there is an opportunity to instruct students to utilize their observational skills to learn things about a community that can help facilitate and enrich that dialogue.

THE SEARCH FOR CLUES

In the foreword of The Modern Library's Edition of The Death and Life of Great

American Cities, Jane Jacobs reflects on her investigation of the city as an "unexpected treasure hunt" of information.[4] She wrote, "I quickly found that the valuables in plain sight—streets and parks—were intimately mingled with clues and keys to other particularities of cities."[5] She concludes that this treasure hunt of streets and cities is what eventually led her to discovering the city as an ecosystem and providing the profound insights that she shared in her revolutionary book in 1961.[6] Crucially, these discoveries were not made solely by talking to residents in the areas she was studying, but required making personal observations of how city spaces were used or not used and determining the reason from information gathered from a wide variety of sources.

Similarly, looking closer not only at the city scale (but that too), but at the community and individual scale, there is evidence of the way people move, the way things work in a place. And like many of Jane Jacobs' observations of the city being admittedly well known and understood as intuited and empirical wisdom of life-long city dwellers, this concept of the almost there, evidence-based design, will be familiar to those who have led or participated in Design-Build projects. Observations of this sort often result in meaningful realizations that change the direction of a project in a positive way. However, if one is to be rigorous about creating an inclusive design process, s/he might benefit greatly from explicitly discussing this technique as a significant aspect of the pre-design stage—not in lieu of charrettes and interviews, but as a necessary addition to them.

This method currently seems to be most often approached through the creative use of inexpensive materials on a project, often through inspiration found on site and through makeshift uses by the community. These investigations lie somewhere between identifying an emerging vernacular and exploring opportunities for material reuse. This often makes great sense because if a project is erected from materials that are inexpensive and readily available in a community, then aspects of the project could be adopted in future construction in the area, or the project itself easily expanded or repaired.

While the thoughtful use of materials is an important and necessary investigation related to evidence of behavior, it is often part of asset mapping exercises identifying what is already present in a community. When doing site analysis, students are usually taught to thoughtfully look at what IS there—the vernacular, material possibilities, amenities, active organizations, social spaces, etc. This is a vital part of the process and necessary to create partnerships and build on assets already present in a community. It becomes clear and striking to students what ISN'T there: those amenities that students are used to seeing in their own and other communities, such as libraries, parks, street lighting, trash collection, etc. It is a natural inclination to want to choose from a list of perceived missing building programs and provide the community with a building/structure that has proven to be an asset in many communities around the world, but these are sometimes things that the community can live without, at least in lieu of other possibilities. The ALMOST there falls somewhere in between and can be more difficult to identify, but it speaks to efforts the community has already made to improve their surroundings.

Evidence of the almost there may not come from observing behavior, as residents may act very differently in the presence of outsiders with sketchbooks and cameras who may look very differently than them. A group of fourteen Americans in a remote village in Tanzania, for example, will not go unnoticed and allow students to observe business as usual. Nor would a woman in New Orleans who invites a group of relative strangers into her home necessarily act the same way as she would with a group

of close acquaintances. Conversations between students and client groups may be further hindered by language barriers and cultural misunderstandings. Looking for physical evidence of activity can add a meaningful dimension to these conversations and lead to a fuller picture of the desires of the community.

Most designers (and certainly urban planners) will be familiar with the concept of desire paths—informal paths created through continued use by foot, bike, or vehicle or traffic, indicating a preference for route due to factors such as safety, reduced distance, or preferable conditions. Desire paths are a common but important sight in communities where designers will be working. A lot can be determined about a place depending upon their size, location, endpoints, etc., beyond shortest distance. Stewart Brand discusses these paths in his book, How Buildings Learn, in support of delaying completion of a design in order to observe how a space is actually used.[7] Brand is also interested in identifying clues and gathering information that may not be available by conventional means in order to inform design.

This looking for clues is how conversations naturally happen, so it is not at all surprising that this action can prompt fruitful conversations between designer and client. Often the moment that a conversation turns from the quotidian to the interesting is when one person infers something about the other, such as openly noticing a few spots of different paint colors on the other's hand and a conversation begins about her life as an artist. Working in distressed communities there may be a tendency to focus the analysis and conversation on the area's easily observed troubles, but this is akin to initiating a conversation with someone about why they are crying. It is probably a very important discussion to have, but in isolation it would likely give a skewed and potentially unfair impression of someone. Observed evidence of the physical manifestation of behavior and/or desire can be understood as both something that communicates to a designer and something that can facilitate a conversation with a client for a more complete understanding of the context where Design-Build students will be working.

CASE STUDY

Students at the Center for Public Interest Design (CPID) at Portland State University (PSU) used this evidence-based approach during the Design-Build process in 2013 and 2014 for shading and play structure projects at the Montesinos Orphanage and Environmental School in Titanyen, Haiti. After a multi-year partnership between PSU and École Spéciale d'Architecture, which involved providing planning and architectural services for the orphanage and school, students from the CPID began the design process based on previous visits of some team members, photographs, and continued the development of the design on site.

The first project the students built was two shading structures, approximately 7' x 50' each, to be attached to the front of the two girls' dormitories, each housing about 25 children. The buildings face one another and the gravel-covered courtyard between the buildings is an open, dry space with no significant plant life. In order to find protection from the intense sun, torrential rains and winds, the children had to seek shelter indoors, which can be quite hot and crowded. In addition to speaking with the workers at the school and interacting with the children, the architecture students had observed several key facts about the girls at the orphanage by looking closely at elements on the site in their absence. A tire surrounded an upright twig for protection, clearly "planted" by a child with hopes of a tree miraculously growing in the tough ground. Chairs and small objects that could be used for sitting were dispersed around the site against mainly east-facing walls, but always alone—never in sets of two or three. Most notably, in a hidden area of the site, thin strings used

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for laundry lines had been tied together in a dozen places and hung from a rickety wood structure possibly intended to grow vines at one time. A small pillow rested at the bottom of the looped string, creating a swing.

Students used these clues and others to further the dialogue with the orphanage staff and children, and redirected their designs accordingly. Although it did not come out in initial conversations, the individual chairs led to discussions of a desire for privacy for children who have no real space of their own. The placement of the chairs

Figure 1: A place for shade, privacy, & security

Figure 2: A secret swing set

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Figure 3: One shading structure

Figure 4: A glider-swing for the swing-makers

Figure 5: Play structures

indicated a desire for security and vertical shading. The attempt to plant a tree was likewise for shading, but also arose out of a desire to beautify their surroundings. The swing, of course, was a desire for a place to play. As informal as it was, the swing was the closest thing to a piece of playground equipment anywhere in the area. Mentioning the "secret" swing set to the girls brought a mix of blushes before they began proudly showing off their work.

Over two trips taking place in December 2013 and February 2014, the students created two shading structures. The design takes materials commonly used and readily available in Haiti to create an expressive steel frame of triangulated columns, which support a galvanized metal roof. Each structure has a large wooden bench built within one of the structural bays, taking advantage of the angle of the columns to install a reclining back to the bench, which also creates some welcomed vertical shading and privacy. The roof gains much of its expression by folding in multiple places in order to increase the structure's strength and direct water to strategic points to be captured in a bioswale system below without the use of external gutters, which are difficult to find and maintain in the area. The bioswale will increase the likelihood of growing vines, plants, and trees in otherwise difficult soil. Although incorporating a full swing into the structure would have been problematic for a variety of safety and structural reasons, the students designed a low, swinging bench that is easily the most beloved part of the project, perhaps largely because the girls are aware that their own swing design led to the incorporation of the glider-swing into the project.

A second, and much shorter, Design-Build project was undertaken by the inaugural class of Student Fellows with the Center for Public Interest Design in September 2014. With just a few days to work, the five students wanted to address the desires of the children at the orphanage learned through previous trips. While students on the shading structures project certainly adapted their designs during the building process to respond to context, client desires, material limitations, and aesthetic or programmatic opportunities, the student fellows could also respond to how the children interacted with the previously built work. The vertical wood elements of the benches are a favorite climbing spot for the younger children, though this activity is discouraged by the housemother. Although previous Design-Build projects of the students from the École Spéciale d'Architecture were quite temporary in nature, the student fellows had seen that their beautiful, cocoon-like structures of bamboo and rice bags were truly appreciated by the children because they were child-sized and created interesting spaces that granted privacy for an individual or small group. What had also become clear is that everything at the school and orphanage was employed for multiple uses and eventually repurposed for the most pressing need. The children loved their new glider swing but expressed disappointment that their own makeshift swing set had since fallen down from overuse and instability when some of the wood material of the structure was taken by workers at the school to serve a need elsewhere on site.

With that in mind, the student fellows designed two steel structures that were intended for unprescribed play but that could accommodate uses ranging from hanging laundry to inviting vine growth. The triangular structures create enclosed, shaded spaces using banana-leaf mats and wood, and encourage play with sturdy nylon ropes for climbing up and around the structure. The pink and yellow of the structures were chosen (and painted!) by children at the orphanage.

The close observations and introduction of these discoveries into discussions with stakeholders at the orphanage resulted in more meaningful and successful projects

than they would have otherwise been. The gathering of evidence of desire through observing behaviors, just a few examples of which were mentioned here, happened at different stages of the design process in each project, even occurring during construction. The ability to field test ideas, make adjustments based on the reality of site and context, and learn from the materials during the building process is part of what makes Design-Build programs such a powerful teaching tool. Coleman Coker, a leader in Design-Build education, refers to the act of building as questioning, explaining that, "Thoughtful building never tells, but rather asks. It makes its own space through questioning—it makes an inquiry about the world."[8] For many students, this questioning opens up a new path to finding richness in architecture beyond formal considerations. Adding the search for evidence of the client community's behavior or desire is one more aspect that can be incorporated into a Design-Build process while students benefit from being on site, able to respond to their work as it is being built.

CONCLUSION

The example of students from the Center for Public Interest Design employing evidence-based design methods in Haiti serves to illustrate the potential for using this tool to support a more meaningful Design-Build process and project. Architectural education has seen a dramatic increase in Design-Build programs with the introduction of community engagement as a cornerstone of the work, but this engagement needs to be performed thoughtfully for the long-term success of the project and the experience of students. Teaching this evidence-based design method as a significant means of research and design in a Design-Build project can help ensure that crucial information is available to student designers that might otherwise be difficult to obtain when working with communities with different languages, culture, and values from the design team.

At their best, Design-Build projects in underserved communities can empower an historically voiceless community to actively participate in the design and envisioning of their neighborhood(s) and/or elements thereof. At their worst, Design-Build efforts have the ability to further disenfranchise those in the communities where designers are working. Searching for the almost there is one piece of a much more comprehensive system of engagement with a community that can contribute to a Design-Build project that engages and empowers the community with positive lasting consequences of the project, far exceeding the presence of a new building, pavilion, or playground.

ENDNOTES

1. Anthony W. Schuman "Community Engagement: Architecture's Evolving Social Vocation" in *Architecture School: Three Centuries of Educating Architects in North America,* ed. Joan Ockman (Cambridge: MIT Press, 2012), 252-253.

2. Richard Hayes, *The Yale Building Project: The First 40 Years* (New Haven: Yale School of Architecture, 2007). It is worth noting that the influential Yale Building Project itself arose from a bit of the "almost-there." Hayes points out that when Charles Moore formalized the project with its social mission, it was very much a response to a growing student desire for both community engagement and hands-on work. Moore noticed a Design-Build culture was already emerging in the mid-60's, beginning with students like David Sellers and Peter Gluck building commissioned work while still in school.

3. Chad Schwartz, Laura Morthland, and Shannon McDonald, "Building a Social Framework: Utilising Design-Build to Provide Social Learning Experience for Architecture Students," *Architectural Theory Review*, 19:1, 78.

4. Jane Jacobs, *The Death and Life of Great American Cities* (New York: Modern Library, 1993 ed.), xi.

5. Ibid.

6. Ibid.

7. Stewart Brand, *How Buildings Learn: What Happens After They're Built* (New York: Penguin Books, 1994), 187.

8. Coleman Coker, "The Constancy of Building" in *Centerline 6: buildingstudio-BUILDING*, ed. Coleman Coker and Kevin Alter (Austin: Center for American Architecture and Design, 2011), 118.