

Design Habitat: Putting the Pieces Together

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Students of architecture like many undergraduate students are challenged with "putting the pieces" of various courses together. The development of a new Architectural Engineering Technology course at the University of Hartford will help to address these concerns. Design Habitat attempts to cross over all phases of architectural services and includes a service learning component to undergraduate technology education. The new course promotes critical thinking, problem solving skills, and creativity. Student learning is improved by effective implementation of practice.

Issues in Architectural Education

The study of buildings has always included the blending of aesthetic issues with those of technology. Vitruvius' ancient ideals of Firmness, Commodity, and Delight have challenged architects and students of architecture for centuries. The education of an architect includes course work in "architectural 'basics' – architectural history, architectural theory, drawing, technical courses such as structures and environmental systems, and, above all, design"¹ Finding the balance and connections between these areas of study is the challenge that faces students of architecture each day.

In 1996, the late Ernest L. Boyer and Lee D. Mitgang completed a comprehensive report on the state of architectural education with goals for improvement. The Carnegie report on "*Building Community: A New Future for Architecture Education and Practice*" challenged the academic community to "A New Vision". Boyer and Mitgang were "especially inspired by the design studio, the distinctive holy of holies of architecture education where generations of bleary-eyed students have hunched over drafting tables until all hours working on balsa or cardboard creations amid old sofas and soda cans."² However, Boyer also noted, "many design studios seem not to be living up to their goals".³ "*Building Community*" also challenged the architectural community to provide "Service to the Nation". "Schools of architecture, in other words, should educate students for both competence and caring."⁴ The architecture profession demands service of its constituents and requires architectural interns provide community service through the Intern Development Program (IDP), a prerequisite to licensure throughout the United States.

In response to "*Building Community*", Hugh Hochberg of the Coxe Group, Inc. reported on "*The State of the Profession*". Hochberg also recognized the challenges presented to the architectural profession. He challenged the academy to "help students understand more about the real world in which they will be practicing (while also recognizing that with some of their skills they many help shape it differently)."

The goals set forth for the academy may sound daunting. However, if these goals can be met, not only will the profession benefit but also the academic experience for the architecture student will improve. Students of architecture have always raised concerns of "how do the pieces fit together?" Students in Architectural Engineering Technology programs rarely have the educational opportunity to see a studio project through each of these phases. The goal of Design Habitat is to help students see the "whole picture" and thereby improve their ability to learn.

Affordable Housing in the United States

The United States has struggled with issues of housing for all its citizens for many years. In the Northeast we are reminded of these struggles each winter. Newspapers and television accounts of individuals and families who are homeless in the cold remind us of the ongoing concerns.

Nora Richter Green in "The Creation of Shelter" looks at "Low Cost Housing Redefined." Green contents "homelessness is easy to describe - it simple means being without a home. It refers not only to those living on the streets but also to the hidden homeless - 'guest' of shelters for the homeless or people doubling up with friends or relatives."⁵

Nora Richter Green continues with noting, "describing housing as low-cost, low-income, or affordable can cause confusion. Generally such housing is occupied by persons of low or no income who more often than not receive a public subsidy to help cover housing costs. But the meaning of the term affordable housing is deceptive because in a wealthy community such housing is usually beyond the means of the poorer population."⁶ It follows that "regardless of income, a common thread binds all home owners and renters, and even the homeless themselves - the desire for a decent home in a decent community."⁷

Opportunities with Habitat for Humanity⁸

Habitat for Humanity International (HFHI) is a nonprofit, ecumenical Christian organization dedicated to eliminating substandard housing and homelessness worldwide and to making adequate, affordable shelter a matter of conscience and action. Habitat invites people of all backgrounds, races, and religions to build houses together in partnership with family in need. Habitat is founded on the conviction that every man, woman, and child should have a simple, decent, affordable place to live in dignity and safety. Through volunteer labor and donations of money and materials, Habitat builds and rehabilitates simple, decent houses with the help of the homeowner (partners) families. Habitat houses are sold to partner families at no profit, financed with affordable, no-interest loans. The homeowners' monthly mortgage payments are used to build still more Habitat houses.

Habitat is not a giveaway program. In addition to a down payment and the monthly mortgage payments, homeowners invest hundreds of hours of their own labor - "sweat equity" - into building their Habitat houses and the houses of others. The average Habitat house in the United States cost \$42,500.

The Hartford area chapter of Habitat for Humanity was founded in 1989 and has built over 57 homes in the region. Last year, a personal friend and member of the Hartford Habitat board

approached me with the idea of the University of Hartford students developing designs for potential homes in Hartford. The local chapter was beginning to identify the need to develop region specific housing designs for its Hartford program.

While I tried to get grant money to develop a new course, develop student interest, and persuade my dean this was a worthy cause, our local newspaper, "The Hartford Courant" ran an article addressing the concerns. Author Tom Condon noted, "Habitat's goal was basic, affordable housing, not architecturally compatible housing." A Hartford resident and artist, Ginny Seely reminded us that "there's a pride that comes in living in something that's nice. A building that's soundly constructed, aesthetically pleasing and compatible with the neighborhood isn't going to be boarded up in 10 years."⁹ The new executive director of Hartford's Habitat for Humanity, John Hartgering agrees in concept with contextual concerns. He has an open mind to alternative design schemes for Habitat and has embraced our students' efforts.

Basic Architectural Services

The five basic professional architectural services include schematic design, design development, construction documents, bidding or negotiation, and construction administration. AIA Document B141, Standard Form of Agreement Between Owner and Architect, defines each of these services.

I envisioned the Design Habitat course to enable students an opportunity to see a project through from schematic design through construction. Students would need to develop an understanding of the history of Hartford's residential buildings. By analyzing existing Habitat homes and Hartford's housing stock, solutions could be developed that would meet the needs of Habitat and the residents of the city. Students would develop design solutions and complete construction documents for their designs.

This may seem like a simple concept, however, it does not often happen in academic setting because the complexity of design projects and time limitation prohibits it. Once construction documents are completed students would have an opportunity to work in the field construction a Habitat home and have the opportunity to gain real world experience. These are the experiences students long for. "Putting the pieces together!"

Pilot Program

As luck would have it the "real" world moves faster than the academic world. The Grants Office at the University was supportive of my ideas for course development but it proved difficult to find a funder on the scale of which the University would support. That didn't stop me! When I got my schedule for the fall semester, I was scheduled to teach AET 371 Housing and Urban Design. I rallied some students to take the elective course and encouraged a couple to think about designing for Habitat. It worked and in the fall of 1999 I have had a couple of students working on the Habitat problem.

The students developed a project statement, worked with Hartford's Habitat Criteria, and developed a design vocabulary appropriate for residential projects in Hartford.

- Project Statement

The goal of the project is to design a prototype Habitat House that is unique to the Hartford, Connecticut area and create the construction documents needed to complete the building process.

- Habitat Design Criteria

1. The living space provided, not including stairwells (except to a basement) and exterior storage, should not be more than:

- 900 square feet for a 2-bedroom house

- 1150 square feet for a 4-bedroom house

2. The basic house should have only one bathroom.

3. Each family should have an opportunity to affect the design of their house as much as possible. A budget should be established with a predetermined limit (e.g. \$1000) to allow the family to personalize their home with such things as picture windows, fencing, half baths, etc.

4. Each house should have a covered primary entrance.

5. When feasible, at least one entrance to the home should be accessible to persons who have difficulty with mobility.

6. Homes should have no garages or carports.

- Design Issues Unique to the City of Hartford

- Multistory

- Steep pitched roof (35 - 40 degrees)

- Well defined entrance

- Possibility for later additions

Lessons Learned

The solutions developed by AET 371 students met the basic needs of Habitat. Design Habitat was a 7 week project within the context of the Housing and Urban Design Studio. Although the students and I were pleased with their work, we agreed the project was not as challenging as it could have been for third and fourth year architecture students. As we reviewed the results of their efforts I began to look at alternative approaches to implementing Design Habitat.

Each fall I also teach a freshman introduction drafting course. AET 110 – Architectural Drafting focuses on the development of construction documents for a single-family residence. Although the freshmen have limited design ability I am confident by introducing some basic design vocabulary in this course they will meet the challenges of Design Habitat. Students will be asked to research and develop housing solutions and follow through with completion of construction documents. Again, these architectural students will be encouraged (perhaps, required) to volunteer on site at a local Habitat site. If prepared and presented in an appropriate manner, I am confident this course will help students grasp the full role of an architect in the design and construction process. Students will better understand what opportunities await them and may develop career paths based on these experiences.

Closure

Innovative features of the Design Habitat course include introducing students to the five basic architectural services through one course; providing “Service Learning” opportunities in design and construction; and establishing a collaborative effort with university undergraduate students, local architects, “Habitat for Humanity” volunteers, and the local community. What often lacks in academic settings - the integration of knowledge – will be presented to freshmen architectural students. This knowledge will enable them the opportunity to “put the pieces together” at an early stage in their academic careers and help them develop career paths based on this knowledge.

¹ Ernest L. Boyer and Lee D. Mitgang, *Building Community: A New Future for Architecture Education and Practice*, The Carnegie Foundation, 1996, p. 68.

² *Building Community*, p. xvii.

³ *Building Community*.

⁴ *Building Community*.

⁵ Nora Richter Greer, *The Creation of Shelter*, American Institute of Architects Press, 1984, p. 123.

⁶ *The Creation of Shelter*.

⁷ *The Creation of Shelter*

⁸ www.habitatforhumanity.com

⁹ The Hartford Courant, Thursday, June 10, 1999.

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