

Design for Service: A Multi-cultural Education Practicum

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INTRODUCTION

In many schools of architecture, 'Materials and Methods' and 'Construction Technology' courses routinely engage students in hands-on experiences. These materials handling and rudimentary assembly exercises often serve to inform the student only in the most simplistic and superficial aspects of skills that are far more complex and demanding than the experience allows. In many cases, the activities employed in these courses are reminiscent of high school.



Fig. 1. Students completing sub-roofing on a Habitat for Humanity house.

TRADE-BASED CLASSES.

As a group, they too often lack clear educational objectives, provide a box to be checked on curricular check sheets and irritate design studio faculty. It is not that understanding the nature of materials and the complexity of construction activity is inherently irrelevant; it is often that the classroom experience that seeks to impart such knowledge is. The primary reasons for the inadequacy of these brief construction encounters is the myth that somehow stacking masonry or nailing 2x4's simulates the construction experience, when in fact it could not be more detached from the actual complexity of the construction context. By definition, a *practicum* is a blending of the intellectual with the experiential (in the field) under the tutelage of a teacher.

In 1916, Oscar Wilde wrote an essay recalling a time when John Ruskin, then teaching at Oxford, convinced students to build a worthwhile project with him:

Well, we were coming down the street - a troop of young men, some of them like myself only nineteen....when Ruskin going up to lecture in cap and gown met us. He seemed troubled and prayed us go back with him to his lecture, which a few of us did, and there he spoke to us not on art this time but on life. ...He thought, he said, that we should be working at something that would do good to other people, at something by which we might show that in all labour there was something noble. (1)

Ruskin's proposed project, to build a bridge over a swamp between two towns, was halfway finished when he left for Venice. His intent was noble, however, to involve the students in a project for the welfare of others, under the tutelage of a teacher.

This practicum, offered for academic credit, works with a number of different community programs that provide platforms for a richer, more encompassing construction-based experience with long-term positive effects, particularly when combined with a conceptual and theoretical component. By working on specific projects with these organizations, the students become engaged in a wider segment of society and diverse cultures (other than that of just the university or their own class), and are better able to link construction in society with design in the studio. When the opportunity is sited in international venues, the knowledge base and multi-cultural experience is further enriched and diversified.

A PEDAGOGICAL PREMISE

Within the definition of Profession, it is incumbent upon the discipline of architecture, and presumably the architect, to serve society. There are many ways for architects to serve society, but none as directly as providing shelter to those less fortunate, or unable to do so themselves. When this service possibility is made available to students in design studio, they experience a direct relationship between a human condition and the design process in the context of another

culture or custom. As opposed to traditional construction methods courses that are often exclusive repositories of facts, this is a framework for experience and knowledge to be gained in an inclusive societal context. The following quote summarizes this position:

He begins today by cutting "swallowtails" into the strips of wood that will form the boxes' sides. This is pleasant work; it busies his hands, but leaves his mind free to drift. He remembers his first efforts at making boxes- what an eager young man he was, full of questions. Why were the swallowtails necessary? Why cut them with a knife, not a saw? Why use maple for the sides but pine for the bottom? He recalls the patience of the aged Brother who taught him the answers that he, in turn, has passed on to young Brethren in recent years. The boxes he makes are as perfect as anything on earth can be-an honest product of his faith. (2)

The act of construction in this manner, where consequence matters, poses the possibility of a serious and thoughtful commitment by the student for the gain of others, as opposed to memorization of lecture-based data and evaluation by testing.

This opportunity for reflection about the relationships of individual capacities to social good, when undertaken in a holistic environmental context, can set the stage for a continual life of civic engagement, as opposed to a momentary classroom exercise.

A DIMENSION OF ETHICS

Ethics, as a theoretical discourse can be taught. However, ethics as professional engagement can only be acquired through a voluntary involvement. This is to distinguish between ethics as a purely intellectual pursuit and that of an active, lifelong set of behaviors that influence professional judgements daily. Ideally a student might receive both. Aristotle speaks of this in his *Nicomachean Ethics*:

Well: human Excellence is of two kinds, Intellectual and Moral: now the Intellectual springs originally, and is increased subsequently, from teaching (for the most part that is), and needs therefore experience and time; whereas the Moral comes from custom, and so the Greek term denoting it is but a slight deflection from the term denoting custom in that language.

From this fact it is plain that not one of the Moral Virtues comes to be in us merely by nature: because of such things as exist by nature, none can be changed by custom: a stone, for instance, by nature gravitating downwards, could never by custom be brought to ascend....The Virtues then come to be in us neither by nature, nor in despite of nature, but we are furnished by nature with a capacity for receiving them, and are perfected in them through custom. (3)

The students engaged in the *practicum* participate in design, seminar and on-site construction components. This

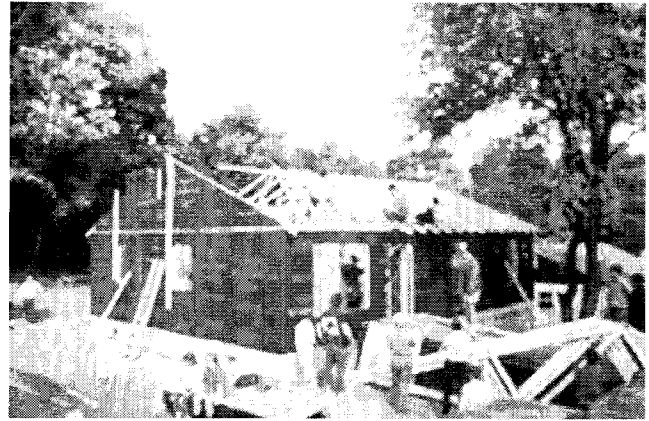


Fig. 2. Students raising roof trusses on a HH home.

provides an opportunity for many specific and general issues to be confronted by the student in at least three educational contexts. The design component varies with the need of the associated national or international coordinating program. For example, in the local Habitat for Humanity, International affiliate, there was a need to design five houses for low-income families. The students, working in groups, designed the houses, and met once a week for design review, discussions and to hear invited lectures. The students then were engaged to build one house immediately, with construction of the other designs to follow. The international experiences involved coordination with the nationally based organization called Peaceworks. Peaceworks operates in many countries, often working with the regional Habitat for Humanity affiliate or other in-country groups, either government -or grassroots-based, to build houses, schools or small industries. There is a significant advantage to working with established international programs for in-country coordination, leaving the College to provide the seminar and design components. It is also a great opportunity for a multi-cultural interchange. In one instance, there were American, Russian, native Indians and Mexicans, all working on the same construction site, struggling with, but enjoying, the communication dilemmas. These are further discussed in the Case Studies section. This *practicum* offers an opportunity to put both thought and ethics in action through construction. Sverre Fehn says of this:

A constructive thought is the nerve of an idea, but it is realized through its construction. It dictates a precise dimension and its structure, the selection of material. The nature of a constructive thought precedes the calculated reality, as the thought carries the totality of completion.(4)

FOUR CASE STUDIES

Thought and action are necessary components of knowing. Action can be said to be determined by what a man knows. ...it would seem to me to follow from this principle that action can be understood in terms of the

selective principle by which we use the knowledge available to us.(5)

Desire and energy alone will not make either a knowledgeable or physical contribution to the environment. Devoid of knowledge, desire and energy are admirable but unproductive traits. However, when activated with knowledge and focused intent, they can be highly productive. The practicum approach provides the student with necessary intellectual support as well as a forum for action. In combination, the student begins to know and understand service to society in a professional context. The following case studies, one regional and three international, demonstrate the multi-cultural interaction and benefits of infield experience in the service of others.



Fig. 3. Habitat for Humanity homeowner in front of the house designed by and being constructed by architecture students.

Case Study 1

"I can't thank the students, the College and Habitat enough. All I can do is work out here with them showing my appreciation." Those are the words of Karen Lewis, owner of the recently completed College of Architecture and Urban Studies funded Habitat for Humanity, International home. The practicum course was designed around the previously discussed pedagogical premises. The 25 student participants were divided into teams of five. Each team designed a house around the strict financial guidelines of Habitat for Humanity (HfH) International. The house could cost no more than \$35,000 in material. It needed to be constructed by volunteer labor and be no more than 1,100 square feet. Each team designed a house, built physical models, and produced computer generated 3d images, construction documents and cost estimates. A jury was composed of the executive director of the local Habitat affiliate, an architect volunteering his time to supervise and coordinate construction work and the President of the university student chapter of HfH. After the jury selected one of the five houses, the documents were

further scrutinized and adjusted, permits were procured and construction begun. All of the students then participated in the construction. The second semester was principally construction-based, but again, the class met once a week for discussion. The discussions took two forms, one focusing on construction techniques and the other on theoretical and ethical issues and questions related to the unfolding process in which the students were engaged. These discussions often included guest lecturers related to allied service organizations.

After two months, a second jury composed of student leaders and the faculty advisor for the University student chapter, selected another of the five designs for construction. This house was funded by the university student chapter and built by practicum students and other volunteer groups. The other volunteer groups included adolescents from group homes, church groups, community service program participants and specific service groups such as Kiwanis and Rotary. This societal mixture created a 'micro' multi-cultural experience since various groups, differed in age, education and discipline, worked on the site, side by side.

Case Study 2

A decidedly more obvious multi-cultural example is when students (and faculty) participate in design and construction experiences in other countries. The *practicum* works the same way, the students partake in discussions before traveling, while they are there, and when they return. The preparation and conclusion portions are critical to the success of the experience. The students make presentations, provide concise documentation and receive credit, as would be expected in other courses. A critical difference here is both the infield experience component and the exposure to other cultures in coordination and implementation of design and construction intents.

'Peaceworks' makes available organized volunteer projects in many countries. One in particular, and used in this case study, was in the Mezquital Valley, near Ixmiquilpan, Mexico. This is a high desert valley, 2.5 hours north of Mexico City. The new homes would replace indigeneous structures made from the leaves of the Mesquite plant. This



Fig. 4. Traditional dwelling of the Otomi Indians. Students worked to replace these with more substantial construction.

is a region devoid of significant wood resources and subject to frequent hurricanes and weather extremes. Peaceworks worked with the regional HfH affiliate and the organization, Servicio de Educacion de Adultos, in securing transportation, materials and lodging. The participants stayed in previously constructed HfH houses. Generally, the families buying the new homes retain their traditional structures as either storage, kitchens or guest houses. This particular Peaceworks volunteer group included two faculty, one in architecture and one in philosophy, students from our University and students from the Mexican University located at Aqua Calentas, and physicians, government managers, and technical supervisors from Russia. They worked with natives who only spoke the native language of "Nanu." The typical construction site vocabulary was a rich potpourri of English, Russian, Spanish and Nanu. The point of compromise was a general understanding of what needed to be done and extensive hand gesturing. The multi-cultural educational experience is obvious.

Discussions prior to departure focused on cultural differences and the nature of the construction effort. The first week in country included presentations on the politics and customs of the region and several days in Mexico City (during which time the architects visited many of Luis Barragan's works). This was then followed by 4 weeks of construction,



Fig. 5. Mexican, Russian and American workers cut formwork for the HfH house under construction behind them.

Upon return from Mexico, they then regrouped to review their documentation of the culture and construction.

Case Study 3

Many of the students who had worked on the local HfH/College of Architecture and Urban Studies house wanted to extend their efforts to support the hurricane relief effort in Honduras. Again working through Peaceworks as the "umbrella" organization, students from our College combined with other students and locals to construct two homes in four weeks.

The students stayed in local houses and quickly indoctrinated themselves to the culture. Only one spoke Spanish, but through quick learning and a general understanding of the

tasks required, completed the construction. These houses were also of concrete block but utilized wood roof supports with galvanized corrugated steel panels.

A typical day for participating students included a breakfast with the family they were staying with, a walk to the house site and about eight hours of construction, with lunch on the site. The evening might include a walk to the local village and dinner with the family. Some mornings included a market trip for food and necessary goods. Several of the students had been on a Europe Study Abroad program and quickly made comparisons between the central European markets and those of Central America.

Upon return, the students presented their slides, photographs and sketches. They also had several seminar discussions about contrasting cultures. The students gave their sketch books to local children and at least one parent for an hour or so, to allow them to record their thoughts visually. The students then talked with them about what they had



Fig. 6. Participants pausing upon completion of one house before moving onto build another in Honduras.

drawn and what the students had sketched. The dialogue quickly revealed fears, hopes and concerns felt by the local Hondurans. Clearly, this effort was successful from a construction knowledge, cultural exchange and human values standpoint.

Case Study 4

The three previous case studies involved College of Architecture and Urban Studies students in construction enterprises directly connected to a particular family, whether here or abroad. But just as valuable can be the experience of working on a project with completely different parameters. At the Brugg-Windisch Fachhochschule in Brugg, Switzerland, architecture faculty directed students in the design of emergency shelters for Kosovo refugees. These dwellings were intended to last at least a year through all four seasons. The effort was funded by the Swiss government with the intention that a design could be selected and mass-produced for distribution to Kosovo. Since this was done as a studio project, the involvement and parameters were different than the previous examples. However it still represents an ideal case study of a Multi-cultural *Practicum*.

The students, working in teams, designed and built six structures, two of which are shown here. These designs featured prototype support points that can adjust to various terrain and lift the dwelling off of the ground. The spaces were either kept open so as to be separated by simple means or were adjustable along structural lines. The students and faculty

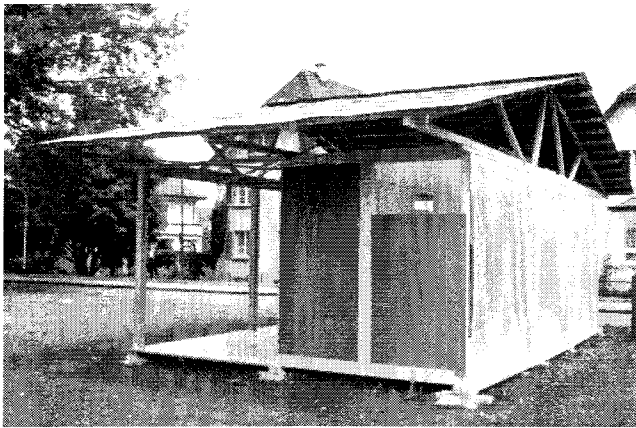


Fig. 7. One of the Kosovo refugee shelter prototypes constructed by Architecture students at the Brugg-Windisch Fachhochschule in Switzerland

decided on the spatial criteria and material selection, but were limited in what they could produce by cost.

The Swiss Federal Disaster Relief Agency and the International Health Service reviewed the projects. While Switzerland decided only to send food and medicine, civil volunteer groups were encouraged to ship these as kits. It is likely to be tried out in Turkey, following the earthquake. One consequence of this effort is that the Swiss Government is presently considering providing schools of architecture in that nation funding to do further disaster relief shelter designs.

CONCLUSION

Now, all principles by themselves are abstract. They become concrete only in the consequences which result from their application.”(6) The practicum approach is commonplace in the medical community. The only common architectural analogy is the internship, or externship as some schools refer to this opportunity for students to be employed during their studies. The *practicum* approach doesn’t require stopping education to gain experience and doesn’t simplify or trivialize construction skills and knowledge. This approach is predicated upon a symbiotic relationship between the theoretical and operational, with a solid cultural and ethical dimension. It brings together the academic and practice worlds, rather than the more conventional either/or. It should however, not be a mandatory class and student involvement should remain voluntary.

“Architects...have to balance economic concerns with the need to create architecture that ‘lifts the human spirit.’ And we must do all this in an environmentally

sensitive manner...It is an increasingly difficult task, requiring continual development of our ethics, knowledge, sensitivity, and problem-solving skills.” (7)



Fig. 8. The cultural interchange dimension for the Practicum student is both comprehensive and immediate. In the background are both the traditional and recently completed Habitat for Humanity, student constructed dwellings.

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