PEDAGOGY, TRANSFORMING SCHEMES

Examining the Rural Studio:
Community-centered Design/Build Studios and the Undercurrents of Architectural Education

David W. Hinson
Auburn University

Andrew Freear
Auburn University

INTRODUCTION

The profession of architecture stands at the edge of irrelevance in modern society, largely due to our failure to "prove our value or articulate our values" [1] to the marketplace and in civic life. While the profession searches for the tools to reclaim a leadership role in these arenas, architectural educators are reexamining the goals and methods of their curricula. The traditional design studio, despite its potential to act as an incredible laboratory of synthesis and integration, remains hidebound in a narrow view of the architect's role in society and a narrow definition of the skill set required to realize our ambitions of influence and impact. To change this system - to make it more responsive to the challenges of contemporary practice and the problems of modern society - will require innovative approaches to the curricula of our programs and a critical reexamination of the goals of the studio pedagogy.

This paper seeks to examine two persistent *undercurrents* in the profession of architecture and architectural education, the connection of architecture to its construction-based artisan roots and the "social vocation" of architecture; and to understand how these two traditions intersect in the context of a community-based design/build studio. Using the experience of three groups of thesis students at Auburn University's acclaimed Rural Studio program; the paper will examine the effect of this studio model and consider the implications of this "service learning" teaching approach for the broader challenges facing architectural education.

THE RISING INFLUENCE OF THE STUDIO MODEL

Design studios have been a feature of American architectural education since the first architecture programs appeared at MIT, Columbia and Cornell in the 1860's and 1870's. At first limited to the final years of these programs, the design studio has expanded to its current status as the backbone of architectural pedagogy. The centerpiece of each year of study in most programs, the traditional studio ideally functions as the crucible where practical skills and technical knowledge of construction and engineering meet the artistic and poetic aspirations of a design-centered professional culture.

The design studio as a model for professional education is lauded by many in the human sciences, most notably Donald Sch'n, as an ideal way to combine objective factual analysis with the real-world conditions of "complexity, uncertainty, uniqueness, and value-conflict." [2] However, the strengths of the studio model can also hide its Achilles heel. As with most any classroom environment, some aspects of the design process are emphasized and others downplayed. As Dana Cuff observes, in traditional studios students are most often exposed to "pure design" divorced from the dynamic context of practice.[3] The result, according to Cuff, is a skewed understanding of design, and a missed opportunity to teach students the "social arts" essential to effectiveness in intra- and interdisciplinary collaborations.

As noted by many critics of architectural education, including Cuff, Gutman, Woods and others, collaborative projects and interdisciplinary work "are generally marginalized in architecture schools today." [4] This is especially troubling in light of its effects on architecture students' abilities to work effectively in the professional settings they desire to enter. Christopher Barlow of the Graduate School of Business at IIT notes that in interdisciplinary settings "a new kind of complexity comes into play", in which the "truths" of different perspectives conflict with each other. In these contexts differences in cognitive style, cultural backgrounds, personality and values can destroy all hopes of collaboration. Barlow also notes that in our intensive efforts to teach students to understand a certain perspective, we generally only expose them to problems that can be solved in that perspective. The more success a student realizes in solving these "single domain" problems, the more likely they will encounter problems applying their knowledge in the complex and messy "multiple domain" context of the real world. [5]

While design studios have long been a feature of formal architectural education, the studio's influence on the would-be architect expanded significantly in the last half of the 20th Century. In *From Craft to Profession*, Mary Woods notes that from the formation of the

modern architectural profession in the 19th Century through the mid 1960's, "no other institution -- professional society, school, or the press – matched the office's influence" [6] and private practices remained the dominant source of innovation in the profession. Although increasing numbers of architects received their first professional training in universities, the most significant and influential part of their education came during their apprenticeships in professional offices and significant numbers of students left to join offices before finishing a degree.

University-based architecture programs grew in numbers and in influence after mid-century and the balance of influence between the academy and practitioners began to shift in the late 1960's and 1970's when university-based theorists (such as Venturi, Graves, Moore, et. al.) led a critical reappraisal of modernism. As Woods notes, "Venturi's prominence signaled the ascendancy of the university... the university, rather than the architectural office or studio, was the incubator for innovative ideas." [7]

The rise of the university-based academic/practitioner in the last thirty years has been accompanied by an increasing emphasis on "the purely abstract intellectual architectural project."[8] This trend towards abstraction has been influenced in part by the values of the university tenure and promotion process, which seem to reward a focus on architectural theory derived from literary, philosophical, and cultural studies.[9] While one might expect the effort to expand the focus of architecture to include influences from literature, and philosophy and other bodies of critical scholarship would bring a more interdisciplinary flavor to architectural education; this has not been the case. Architecture schools have become increasingly isolated within the university, staunchly defending "their own agendas, values and culture...(which) privileges design above all." [10]

The trend towards abstraction in the values and ethos of the architecture academy has helped to develop a widening gap between the focus of design studios and the skills needed to engage the challenges that lay ahead of architecture students today. Although the latest revolutions in technology of materials and construction techniques have dramatically reshaped the practice of architecture, many believe the future of the profession depends less on technological expertise and more on architect's abilities to collaborate across professional boundaries, communicate their vision and values clearly to lay audiences, and connect our discipline more directly to the issues and problems of society.

Faced with the challenge of broadening the focus of architectural education and the limits of traditional studio pedagogy, where do we turn? Perhaps we can we develop perspective on this challenge by a closer look at the history of architectural education.

While form making and connections to theory dominate the architectural studio in most professional schools today, from the beginning, several significant undercurrents have tempered the studio and have served to broaden its structure and focus. Significant among these undercurrents are the connection between design and the craft-based, artisan traditions of the master builders and the powerful connections between architecture and a social vocation ethic.

THE ARTISAN TRADITION IN ARCHITECTURAL EDUCATION

In 1867 AIA members endorsed the idea of a 'grand school of architecture,' an amalgamation of American and British mechanic's institutes, central European polytechnic institutes, and the Ecole des Beaux-Arts. [10]

Although the AIA's ideal of an all inclusive "grand school" for the construction industry was never realized, the earliest programs in architecture at American universities embraced the idea of a curriculum that combined the Ecole's emphasis on design as fine art with a liberal arts education and "lectures in structure, materials, design theory, and architectural history." [11] While most early schools of architecture limited their construction exposure to an understanding of the technical aspects of masonry and carpentry and enough knowledge of construction to review completed work; a small number of schools, led by the University of Illinois, went much further.

In 1873, N. Clifford Ricker, the head of the architecture program at Illinois devised a program patterned after the German model of the *Bauakademie*, which sought to synthesize architecture and engineering. "A former artisan himself, Ricker also believed manual training provided the basis for architectural learning". Patterned in part after the Russian imperial system of vocational training, students in the Illinois program "enrolled in workshops in carpentry and joinery, cabinetmaking, and scaled models" during their first year of study. [12] The most thorough example of the integration of manual crafts with and architectural education in this period was Tuskegee Institute, a private college for African Americans created in Alabama in 1881 by Booker T. Washington. Washington's belief that Tuskegee students should be able to "do everything we teach" influenced the shape of every course of study on the campus, including architecture.

With the exception of Illinois and Tuskegee few American schools incorporated hands-on experience with construction into their curricula. Through the mid-twentieth century, architectural education cultivated the idea that a professional architect should have knowledge of construction trades, albeit limited to technical "scientific" study rather than practical experience. The reasons for this distancing of architects from the construction trades had much to do with leading practitioners and educators efforts to elevate architects to a

position of authority on the construction site, and to higher status among the emergent professional class in American society. These conflicts between the artisanal roots of the profession and its desire for professional power were evident at beginning of the movement to professionalize architecture, and remain a source of conflict for the profession today.[13]

The integration of hands-on craft with artistic education was championed again in the early twentieth Century at the Bauhaus, founded in 1919 by Walter Gropius in Weimar Germany. Growing out of a merger between the Weimar School of Arts and Crafts and the Academy of Art, Gropius's new school promoted the view that there "should be no distinction, that the arts and crafts should be brought together in the production of architecture." [14] This set of values crossed the Atlantic with the scores of Bauhaus-trained architects and former Bauhaus faculty (including Gropius and Mies) who immigrated to the U.S. in the 1930's and 1940's. By the 1950's the influence this integration of "handicraft, technical, and artistic training" was widely felt in American architectural education, and wood and metal shops were "an integral part of all decent architecture schools." [15]

In the late 1980's and early 1990's a renewed interest in materials and a desire to cultivate an understanding of the connections between design and the construction process generated a resurgence of the craft-based pedagogy in the form of the *design/build* studio. Following the example of the of the earliest design/build studios at Yale and echoing the experience of Illinois and Tuskegee students a century earlier, faculty and students at a rapidly growing number of architectural schools began working on full-scale construction of small student-designed projects. [16] Fueled by this renewed interest in materials and tectonics, hands-on construction projects have become a common feature of most contemporary architecture programs.

In addition to the learning experience associated with planning and executing the construction of their own design work, these projects often incorporated a second significant pedagogical objective, the cultivation of a service ethic and an awareness of the connections between architecture and the social problems of our age.

THE ROOTS OF THE SOCIAL VOCATION IN ARCHITECTURAL EDUCATION

Henri Saint-Simon's ideal of the artist (and the architect) as visionary leader formed a powerful marriage with the formal theories of the modern movement in post-WWI Europe, and charged schools like the Bauhaus with a sweeping utopian vision and a commitment to an agenda of social change.[17] Although the socialist ideology of the Bauhaus did not survive its transplantation to post-war America, architecture schools nonetheless continued to champion Modernism and its attendant sense of social mission throughout the 1950's and 1960's.

Beginning in the mid-1960's growing populism in the U.S. spawned a strong advocacy planning/community design movement, which found an enthusiastic following among architecture students and young faculty. As Thomas Dutton observes in *Voices in Architectural Education*, " the late 1960's saw the "proliferation of community-design centers; the rise of advocacy planning and user participation in the decision-making process... (all of which) did much to challenge the prestige and credibility of the profession." [18]

The response of the profession to the challenges and opportunities of the 1960's was a "search for authenticity" that included a critical discrediting of modernism led, as noted earlier, by the architectural academies and the "academic/practitioners" who championed first postmodernism, followed closely by "the resurgence of aesthetic formalism. [19] In short order the focus of architectural education turned away from an ethic of social activism and toward an increasingly self-referential disengagement from the problems of society and "architecture as independent discourse." [20]

Although some of the 1960's era community design organizations, such as the Pratt Institute Center of Economic and Community Development in Brooklyn, survived the withdrawal of federal funding in the Regan era most of these organizations had folded their tents by the early 1980's and for the most part the advocates of a "social vocation" for architecture were pushed to the periphery of architectural education. From a high of over 70 centers in 1971, just 16 design centers remained active by 1987.

The decade of the 90's, however, saw a re-birth of the community design movement. The Association for Community Design reports that community design centers can be found in more than 45 communities across the U.S. today. [21] As in their first incarnation, many of these centers are associated with schools of architecture and are frequently staffed by faculty and involve students in community-oriented projects.

In addition to hosting community design centers, architecture schools have also begun to embrace the "service learning" model as a component of their curricula, often in the context of the design studio. Service learning is a teaching method which connects meaningful community service experiences with academic learning, and has been championed by some as a model for education reform at both the K-12 and higher education levels.[22] In his survey of architecture programs utilizing hands-on construction, Bill Carpenter notes that many of these schools marry the design/build studio to a community service ethic, often targeting communities under-served by the professional design community. [23]

When married to a community service context, the design build

studio presents a unique platform for addressing this challenge. In this context, students must meet both the challenge of organizing and executing complex collaborations within their teams, and must learn how to navigate the web of challenges associated with interactions with real clients.

THE RURAL STUDIO AS A CASE STUDY

The authors' experiences with the 2001 class of thesis students at the Rural Studio program of Auburn University's School of Architecture provide an illustration of the effect of the community centered design/build experience, and form the basis for an examination of the design/build studio and service learning as vehicles for the realization of an enriched and expanded mission for architectural education.

Established in 1992 by Professors Samuel Mockbee and D.K. Ruth, the Rural Studio has provided more than 500 students the opportunity to extend the study of architecture from the classroom of the university to the classroom of rural Hale County, one of the poorest counties in west Alabama's "black belt" region. Working with county and state agencies and NGO's, Rural Studio students have designed and constructed over fifty community-based projects, examples of which include play grounds, community classrooms, pavilions, repairs to mobile homes, and a children's advocacy center. As with the Yancey Chapel, built of recycled tires and salvaged barn timbers, many of the projects use recycled materials and innovative construction techniques.

There are three venues for students to participate in the Rural Studio. Each semester, fifteen to twenty second-year students, with the assistance of the Hale County Department of Human Resources, identify and work with a family in need of stable, secure housing and design a home in response to those needs. In addition to initiating construction of this home, these students complete construction of the home begun by the previous semester's students, modifying the design in response to continued interaction with the client family and to emerging construction conditions.

In parallel to the second year students, a group of selected students in the fifth, or "thesis", year of the program come to Hale County for the entire academic year. These students work in small teams and are responsible for finding their clients and the funding sources for their projects prior to beginning their design and construction process. In addition to these two groups, a "graduate" outreach program, geared towards students in all academic disciplines is in its first year of development.

The experiences of three of the aforementioned thesis student teams from the 2000/2001 academic year illuminate the ways in which this studio format can broaden and enrich the learning experience.[24]

Fig. 1: the Newbern Baseball Club Team

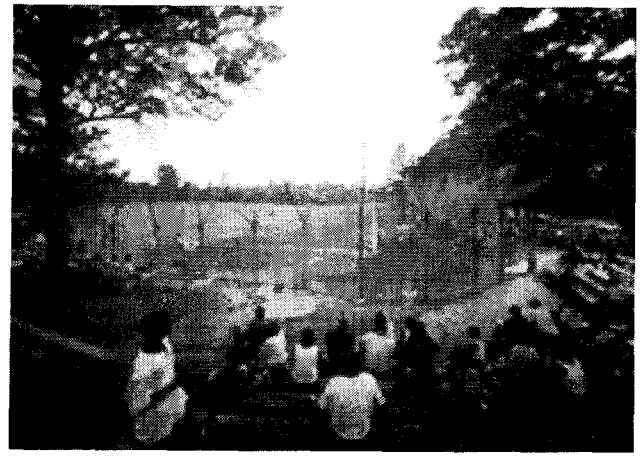

Fig. 2: The Newbern Baseball Club

The first of these teams (Figure 1) involved the renovation and rejuvenation of The Newbern Baseball Club, a 100 year-old Negro league baseball field in the small hamlet of Newbern, AL. The project in-

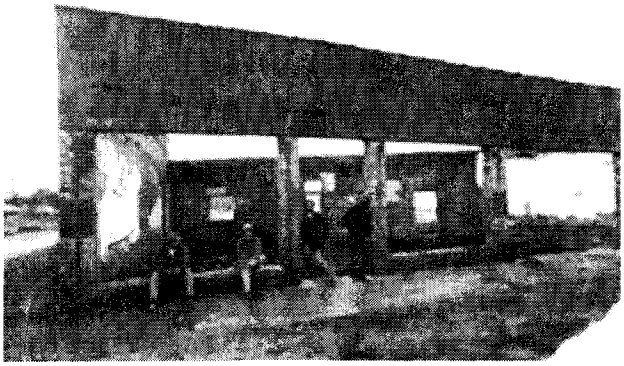

Fig. 3: The Akron Boys and Girls Club team

Fig. 4: The Akron Boys and Girls Club

cluded general field maintenance, pitching mound repairs, bleacher renovation and a new sculptural backstop and dugouts (Figure 2).

The second team (Figure 3) designed and built a Boys & Girls Club for the small town of Akron, West Alabama. The building was a 100-year-old brick market that served Akron and the surrounding communities. The students renovated the existing structure and doubled its square footage with a new steel structure donated by a local contractor. The Club is the most ambitious fully air-conditioned project of the Rural Studio and includes a large multi-purpose recreation room, a computer lab, reading room, office and handicapped toilet room (Figure 4).

The Third team (Figure 5) was able to complete both an experimental materials research project and a project within the Akron community. Experimenting with bales of waste wax-impregnated corrugated cardboard clippings, the students built a "student pod" (Figure 6) and a children's playground on the site of the Akron Boys and Girls Club. The 1000lb bales were used in both the foundation and wall systems of both projects.

Through observations of these teams over the course of the year and via end of the year interviews with the students, the influence of

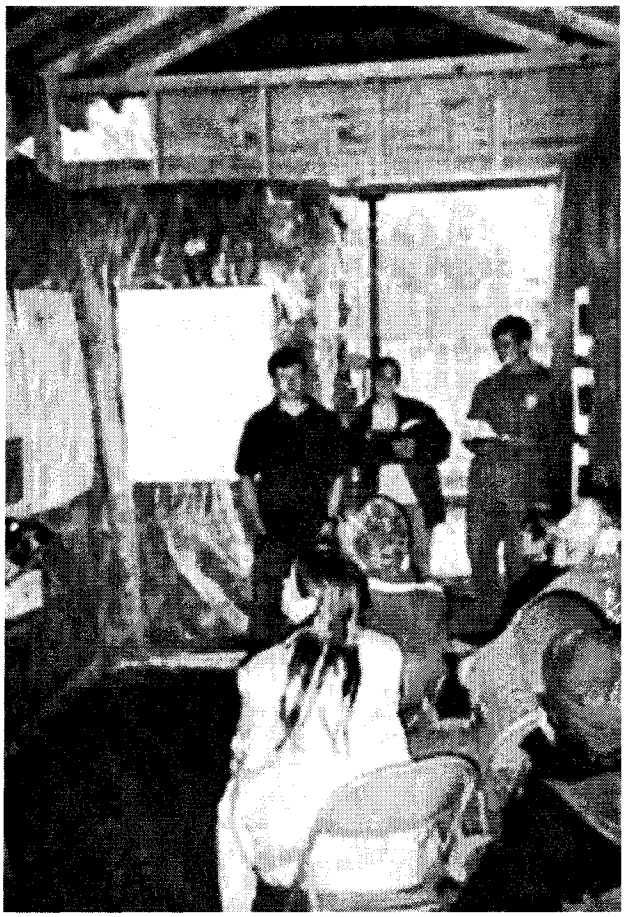

Fig. 5: The Corrugated Bale Team

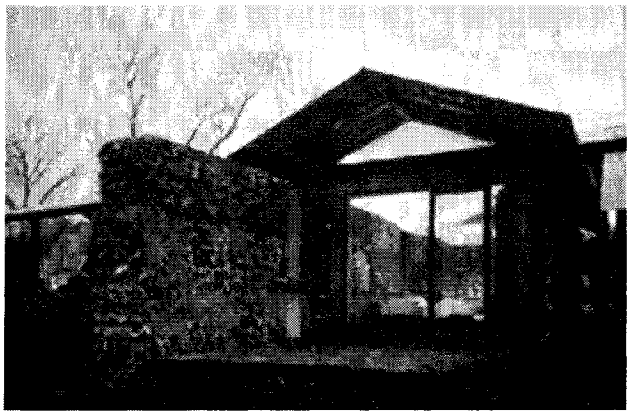

Fig. 6: Corrugated Bale "Pod", sleeping quarters for second-year students at the Rural Studio

direct contact with the craft of making and the sense of social mission imbodied in the Rural Studio ethos can be felt. A review of these insights offers a glimpse of the promise of this model, and an opportunity to reflect on its implications.

RE: THE ARTISAN TRADITION

As with most "hands-on" construction experiences, the students all noted that the pressure to realize the work themselves had the effect of forcing them to refine and clarify their designs in ways not present in their prior studio experiences. Based on observation of studio-based work by most of these students before their thesis year at the Rural Studio, it was surprising to hear them espouse ideas like "simplicity has its own beauty" and cautions to other students against "over designing."

Consistent with the observations of others involved in design/build studios; the students' relative lack of construction experience provides both advantages and limitations. [25] Both of these can often be illustrated by ingenious approaches to solving design/construction problems, many of which arise in the first place from a failure to anticipate the implications of earlier decisions. This phenomena highlights a key tension present in design/build formats between the struggle to design and the desire to build, representing one of the most challenging aspects of the faculty role in design/build studios.

The observation of one student that "looking right in drawings is not the same as looking right in the field" illustrates that the Rural Studio has its own ethos regarding the role of drawing as a tool of design exploration. This bias seems to accept the sketch detail as a means to an end, but rejects the presentation drawing. The students are able to indulge this bias against presentation drawings at the Rural Studio due in part to aggressive schedules, the "gift" nature of their work, and the separation between their "client" and the funding sources for the projects. Models seem to be the preferred tool of collaborative design and the primary tools for presentations to their instructors and to their clients.

While models remain the dominant vehicles of design representation, drawings as tools for design development have become an increasingly significant as the scope of the thesis projects increases. Due to the significant scope of work assigned to an off-site steel fabricator, the Akron Team prepared the most thorough set of (pre-construction) drawings seen to date at the Rural Studio. The experience provided much fodder for discussion and debate among the students regarding the role of drawings in the design/build process and influenced other teams to draw a bit more than they perhaps would have.

In addition to insight into conventional construction techniques the design/build format also offers both opportunities and frustrations relative to the subject of material exploration. As evidenced by the Corrugated Bale Team, the hands-on nature of a design/build format encourages students and faculty to explore the potential applications of new and untried materials. Early trials of the bales tested questions of structure, flammability, weathering and scale (Figure 7).

Fig. 7: Exploring finishing techniques for the corrugated bales

However, the pressure to "make architecture" ultimately cut these investigations short as the students turned their attention to the construction of the "student pod" and their focus to the aesthetics of the bales and their contrast to conventional construction surfaces. While a classic research methodology would may have led in a different direction, the finished work revealed the corrugated bales to be beautiful in their own right and generated new interest in the material among builders and designers around the country.

RE: ENGAGEMENT WITH THE COMMUNITY AND THE SOCIAL VOCATION ETHIC

There is a widely held understanding among Rural Studio students that interaction with a community-based client is perhaps the most significant factor distinguishing the "extraordinary" projects from the (merely) "good" ones. The students seem to believe that not just the involvement of community clients, but their immersion into these communities, is a significant catalyst in the design process itself.

One of the common ways that community engagement influences the projects is the transformation in the students' minds regarding who they are designing for. Looking back on the daunting

scale of one of their project, the Akron Team remarked that their sense of responsibility to their community client was a key motivator and "kept them going". This team took the immersion idea quite literally, living on site in a modified construction trailer. They were adopted by the Akron community and realized many a serendipitous good fortune just by their constant on-site presence.

Another significant insight developed as a result of the community engagement was the realization that in several instances "the building was not enough to *realize the idea* of the project" and that their roles would have to expand beyond swinging hammers. In response, some of the students became, in effect, community organizers and facilitators. The Akron team went to great lengths to make connections between their client community and the Boys & Girls Club organization, arraigning for the Club chapter in Tuskaloosa, AL, 45 miles away, to sponsor and help fund the new group in Akron. This experience of building social structure as well as physical ones helped these students address the ultimate sustainability of their impact on the communities they labored to serve.

RE: EXPERIENCE OF THE COLLABORATIVE PROCESS

The experience of collaboration seems to have had a profound effect on all the students. First among these lessons was insight into the role of communication between team members. Accustomed to the "solo" culture of the traditional studio, each team reported that the early months of their work together involved a sometimes rocky transition from "individuals competing for (the studio critic's) teachers attention" and "ridiculous arguments" to more meaningful collaboration. Their design process evolved from a series of individual design studies followed by struggles to have one team member's design "chosen", to "working on big sheets of butcher paper with everyone sketching".

In another contrast to the traditional studio, were all students are assigned the same role, each of the RS students gradually established their unique role in the team, based on their perceived strengths, and came to rely on their teammates to "compensate for our individual weaknesses." The students saw this adoption of clear roles and "learning to trust in the team" as important to their success. Each team developed their respective "spokes person", "construction problem solver", "AutoCAD & math person", etc. In some cases, these special roles required skills not displayed in traditional studio settings, allowing some "hidden" strengths to become apparent in ways critical to the team's success.

In another contrast to the traditional studio, where most decisions are made alone, the students became very conscious of the differences in how each team made key choices, reporting that one team seemed to always "review the options quickly, make a decision and get on with it", while another preferred to "talk through each option – endlessly!" Interestingly, the team that made their decisions most expeditiously was also the team that did the most drawing!

Fig. 8: Ribbon cutting ceremony at the Akron Boys and Girls Club

"We've learned how to present architecture to people who don't understand architecture."

In addition to learning about inter-team communication and collaboration, the students became very familiar with the challenges of communicating with their clients, and with the complex ethics associated with client collaboration. Denied the luxury of using the "metalanguage" of design they had learned in architecture schools, the students learned to "translate design goals into experiences." (Figure 8)

Acknowledging that "a lot of what we (plan) to do does not get presented to the community" the students balanced their aesthetic aspirations against a deeply felt "sense of accountability" to their client, trusting that their effort to "create beauty" would result in the "right" solution for all stakeholders.

"I started out thinking all these conversations with the community were really shallow, and wishing we would 'talk about architecture', but I gradually came to realize that this conversation was the truly meaningful one. The old way I used to 'talk about architecture' is what seems shallow now."

Interaction with their community clients has also had a profound impact on the student's view of the goals of architecture, and their perspective on the experiences that lay ahead of them as they enter practice. As illustrated by the quote above, many of the students leave the Rural Studio critical of the prevailing culture of architecture school and the narrow frame of concerns which dominate our typical discussions of design. They also seem to leave with an eagerness to

challenge the conventions of internship ("sitting in an office doesn't sound to fun anymore") and well armed with the confidence to do so. In reflecting on their experience at the end of the school year, each student reported having developed a "greater sense of who they were", a greater willingness to take risks, and to "engage the unknown", and greater confidence in their ability to "visualize the outcome" of their design proposals. In perhaps the most telling and succinct (and ironic) example of the effect of this experience on their self-confidence, when asked about the importance of affirmation, one student reported that "I don't need that any more".

The flip side of the freedom given to thesis students at the Rural Studio are the risks associated with holding students accountable for resolving the inevitable conflicts that arise on their projects. Of the of five thesis teams from the 2000/2001 year, two teams encountered obstacles that should be considered as well. Although these teams realized a degree of success in their projects, inappropriate team size (relative to project scope), unwillingness to respond creatively to shifting project conditions, personality conflicts, and discomfort with community engagement all served to undermine the potential of their projects. The 10-year history of the program offers many examples of how these "human factors" contribute to the outcome of the individual projects. Perhaps one of the most significant challenges encountered by the faculty of the Rural Studio is resisting the impulse to "fix" every problem the teams encounter. Naturally, this impulse grows stronger as the scale and complexity of the thesis projects grows and the consequence of not resolving the conflicts expands.

Many have noted that the remote and rural setting of the Rural Studio provides a context for this teaching method so different from the more common settings of architectural outreach (inner-cities for example) that the lessons it offers have limited application in the settings where most of the students will spend their professional lives. While it is true that an attempt to build structures out of corrugated bales would encounter enormous obstacles in an urban setting, the true lesson of the Rural Studio and its relevance as a model for expanding the studio pedagogy lies in the combination of the design/build format with an immersion in a community setting and its needs and concerns. This merging of the artisan tradition in architectural education and the cultivation of a service ethic, rather than the unusual setting, is the catalyst that generates the more universal skills and insights demonstrated by the cases studied here.

CONCLUSION

"...architectural education has an obligation to address the significant social, environmental, political, and economic problems that confront us...

To address these broader social and environmental problems will require skills beyond those offered by the traditional curriculum. Tomorrow's students will need to be adept at resource conservation, sustainable building practices and technology, community participation, and collaborative problem solving" [26]

As the observations and insights of the Rural Studio students reported in this paper attest, the community-based design/build studio offers a powerful venue to expand the focus of the studio to a broader discussion of how we make architecture and how our talents can be applied to the significant problems that confront our society. When properly structured, these studios present students with direct experience of the connections between design and the craft of making architecture. They offer the offer the opportunity to present community engagement in contexts where that engagement has meaningful consequences. And they offer the opportunity to teach students the value of collaboration as well as the skills to succeed at it.

If we are to expand the skills our students bring to the challenges of practice, and give hope to the mission of reinvigorating the role of architects in our society, then we need to understand the Rural Studio, and the many other successful examples like it, not as laudable anomalies, but as valuable clues to the future of architectural education. It is ironic, and comforting, that the clues to the future of our educational mission might lie in the undercurrents that have flowed through our past.

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The Baseball Team: Marnie Bettridge, James Kirkpatrick and Jay Sanders
The Akron Team: Patrick Ryan, Craig Peavy and Brad Shelton
The Corrugated Bale Team: Amy Holtz, Gabe Comstock and Andrew Olds

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