

2005 RETREAT "GREENER FOUNDATIONS" IN REVIEW

The presentations on Friday and Saturday can be divided into four categories.

1. Long-term studio project. These include a series of interconnected smaller projects that formed a whole (D. L. Smith, M. Guzowski, E. Dobson, V. Cartwright, I. Elzeyadi, G. Coates and M. DeKay, J. Theodorson and R. Mohr)
2. Pedagogical models and tools for ecological design and integration (M. Guzowski, A. Sharag-Eldin and D. Davis-Sikora, G. Coates and M. DeKay).
3. Programs with integration and technology (D. L. Smith, V. Cartwright, T. Messadi, B. Haglund and P. Mead)
4. Short-term project in ECS classes or studios. (E. Allen, J. Reynolds, T. Messadi, and some examples from I. Elzeyadi)

General commonalities:

- Recognition of general weakness in technology introduction at foundation levels.
- Need to bring other faculty, especially design faculty, into agreement with environmental goals. A collaborative effort is essential.
- Most projects shared are based on using senses and experiences.
- Many projects demonstrated the use of case studies.
- The use of "Magic Bullets" to introduce students to the topic, bringing early victory, confidence, and finally engaging them for life.
- A trend towards inductive, instead of deductive, approaches to sustainable/ecological design teaching.



photo: Bruce Haglund

Retreat participants were housed in SCAD's Pulaski House Residence on Pulaski Square.

SUMMARY OF THE PRESENTATIONS

Mary Guzowski from the University of Minnesota started first by presenting a model for teaching ecological design in which she described a new MS degree in Ecological Design at the University of Minnesota. The degree emphasizes process as well as content to resolve the ever-growing gap between knowledge and our ability to process such streams of information. The new program aims at bridging the information gap through a participatory model based on a transformation from instructional to learning paradigms. While the learning paradigm adheres to a holistic and student-focused perspective, it emphasizes interdependence and multidisciplinary outlook while fostering links to the domains from without. Eight ecological principles were identified as a framework for ecological learning and correlated directly to eight educational principles: these are interdependence, sustainability, ecological cycles, energy flow, partnership, flexibility, diversity, and coevolution. The learning process of each principle is outlined and linked to the course content and assessment methods. In a short exercise, the group was divided to list ways and means to develop students' activities to foster the eight values. Many of the groups' lists contained similar projects and exercises, indicating the interrelationship between the values and the possibility of application without tremendous effort from the program or individuals involved.



photo: Tisha Egashira

One team considers strategies for incorporating diversity in their teaching.

Elizabeth Dobson from Florida A&M University presented a series of projects representing foundation-level architecture and landscape architecture case study-based projects and other seminars. The emphasis in all projects was to engage students at all levels with experiential and sensory projects and explicit integration with other areas of learning. Examples for projects demonstrating the incorporation of historical research with ECS were shown. Some of the projects emphasized sketching light and shadows on buildings while others required the students to research specific building, architectural styles and architects. Another project dealt with unfolding a habitable cube for contemplation into the environment. The studio also shows students engagement through analysis and use of case studies of LEED-certified buildings. A lively debate ensued after the presentation and focused on the differences between structured and non-structured content delivery formats.

David Lee Smith from University of Cincinnati presented the technology-focused introduction to their foundation program. In this program, technology is introduced as a way of thinking instead of as a solution. Six ideas and pedagogical principles are set: 1) design labs instead of studios or process instead of product, 2) design using the positive impacts of everyday experiences, 3)

creativity as a product of connectivity, 4) technology as a critical component of design, 5) construction as a means to inform design, and 6) collaboration. To reach these objectives, the foundation program was delineated to achieve a deeper understanding of the familiar by seeding inquiry and disassembly. With an increased engagement comes understanding of the self, the human body, and its relationship to the built environment not only as an occupant, but also as a facsimile of the environment. Through several exercises sensory experiences are intended to transform disassembly, assembly into sequences of coevolving experiences.

Tahar Messadi of the University of Arkansas presented an integrative educational model of technology that avoids compartmentalization and encourages student engagement through course sequence modules and strong links between those modules and studio—all throughout the five-year program. To introduce technology in an implicit manner, specific projects use biomorphic exercises, for example, fish habitat. In order to sustain an environment suitable for the fish, students need to know about the species, its needs, and its natural environment. To accommodate this understanding a deeper research of appropriate materials and careful consideration of their physical and chemical impact on the species in question is pursued. The project “naturally” expands to include concerns about definition of the spatial edge, finishes, and wrapping, thus involving several aspects of technology without explicitly breaking into discreet, unconnected fields of specialization.

Virginia Cartwright presented projects from beginning architectural design at the University of Oregon entitled, “Rooms in the Gardens/Rooms in the City.” The course combines students from the architecture, interior architecture, and landscape architecture programs. A series of increasingly complex, individual projects is introduced embedding structure on site. Making explicit rituals of everyday experiences, the structures combine one’s own experiences (e.g., “what I did on a rainy day”) with intricate site-specific explorations. Increasingly engaging projects involve designing for the senses where the tangible meets the ritual, and one’s experiences become explicit statements explored through exquisite architectural forms.



Ginger Cartwright discusses teaching strategies with Ronda Mohr and Kathy Bevers.

Expanding on the ephemeral qualities of design, Ihab Elzeyadi presented a beginning design studio in which the students were “bombarded” with carefully articulated, sensory experiences. The Sensory and Sustainable Studio at the University of Oregon delineated technology as the juxtaposition of knowledge and craft engaged in a meaningful dialogue concluding by equating technology with design. Ihab presented several projects ranging from “Nothing” to a sensory cerography project, “Something–Nothing” to sensory analysis in the “Analysis of Nothing” project in which sensory experiences varied from total deprivation to gradual introductions of tectonic articulation of sound, light, sun, and place.

Bioclimatic dwelling design was then presented by Gary Coates (Kansas State University) and Mark DeKay (University of Tennessee). Gary’s segment included a demonstration of early (second year) incorporation of environmental control systems. The class is a design course with technical content. Four projects were presented starting from comfort, climate and site, passive heating and cooling, to lighting design. Students are challenged to achieve balanced qualitative and quantitative objectives and develop an appreciation of environmental design in their early stages of development. Throughout the design course, the students are exposed to holistic design thinking and principles. Gary shares many of these projects in a publication entitled, *Bioclimatic Dwelling Design Workbook* that functions as a studio complement to *Sun, Wind, and Light*.

Mark continued the presentation by demonstrating a computer interface to the *Workbook* that combines some of the strategies included in *Sun, Wind, and Light*. The interface outlines several options or paths once a design decision has been made, allowing the students to relate consequences with actions and experiment with options. The potential uses of such a system instigated the audience to recommend qualitative feedback associated with the decision-path construct of the interface.

In his presentation “Beginning Students are a lot smarter than you think” Ed Allen demonstrated some of his “magic bullets.” These MBs, as he described them, are small projects that bring subject matter to the students using knowledge they already possess and without lengthy introductions. These MBs serve to convince students that they are capable of tackling technical subjects using intuition, logical thinking, and some help. They also fulfill a need as the knowledge is immediately used to resolve issues at hand. The first bullet shown was a parapet detail. As the detail evolves through student participation, the particulars and the characteristics of the detail become understood as a logical and even natural result of a thinking process. A second bullet in which the students are asked to analyze the forces and design members of a bridge



David Lee Smith provides pre-dinner entertainment for Mark DeKay and Mary Guzowski.

demonstrated the extraordinary ability of “early

victory” concept in increasing the confidence of participants in understanding an otherwise complex phenomenon. Ed’s third example demonstrated a result-oriented bullet in which the students—using the *Studio Companion*—may be able to quickly derive spatial requirements, type, components, layout, and approximate size of the HVAC system for a high-rise building. Some commented on their preference for the first two bullets with their focus on process over the third result-oriented bullet.

John Reynolds (University of Oregon) showed a one-week exercise from a beginning design studio 30 years ago. The project aimed to “reach beyond drawings,” “explore the third- and fourth-dimensions,” “explore other senses,” and “experience architecture as a performing art.” The inspiration for the project came from an exercise John did while a student at MIT a long time ago. The problem: design a sequence in which fire travels along a predetermined path. As fire moves from one hurdle to another, sometimes performing seemingly impossible tasks (moving downwards), the viewer develops an emotional attachment to the events as they occur. A lesson that not only engages the designer, but also the spectator as these events unfold with light, color, heat, smell, sound, and sometimes a spectacular conclusion.



Retreat scholars enjoying the proceedings at the retreat dinner in the SCAD gallery.

Bruce Haglund and Philip Mead (University of Idaho) presented the school’s green curriculum. To succeed in their endeavor, three conditions have to be met. First, all faculty teach architectural design, thus eliminating the distinction among “design” and “tech” faculty. Second, it is essential to obtain consensus among all faculty about the importance and relevance of teaching sustainable design principles. Third, institutional support. However, the casual observer of the curriculum will not notice a radically different curriculum despite the abnormal number of graduate projects with a “green” objective/focus.

To explain the mystery, Philip presented a mini history/theory lecture in which he masterfully wove green into “traditional” concepts as an integral component for studying, evaluating, and understanding the built environment. In his presentation several concepts emerged: 1) use nature for beauty, 2) make nature interesting to students, 3) sustainable principles are components of building study. This presentation showed that “green” is a core value, not merely a label attached to classes and projects.



One team demonstrates a cooperation exercise.

From Washington State University–Spokane, Judy Theodorson and Ronda Mohr presented a new articulation of “green” pedagogy. Contrasting the traditional deductive approach to technology lectures and as a problem for various levels of significance in studio projects, Judy suggested an inductive approach to teaching. This approach encourages students to explore studied phenomena using hands, minds, and their own experiences. Demonstrating the strength and potentials of the approach, Ronda presented her experience as a student discovering light and lighting through models, image manipulation, and simulation. In pursuit of a personal medium to explore the emotive nature of light and to be able to present it, a combination of model photographs, computer manipulation, superimposed images, and sketches make an exceptionally strong palette for lighting presentation and, ultimately, design. As explorations led to process, Ronda’s work was a great example of one student’s journey of discovery.

Adil Sharag–Eldin and Diane Davis–Sikora (Kent State University) presented a method for assessing stated pedagogical objectives. This method is based on a modified Bloom’s Taxonomy in which student learning outcomes are derived from the intersection of three developmental learning outcome domains (Cognitive, Affective, and Psychomotor). A list of words is given to describe the learning outcome based on the developmental stage of the students. Similar to the Idaho model, each class is developed through the integration of environmental technologies in combination with predetermined areas suggested by the faculty. Based on the prioritization of the learning outcome for the course, the instructor develops an assessment method appropriate to the developmental stage as well as the level of the course (beginning, intermediate, or advanced). Following the statement of student learning outcomes, the assessment method is developed to evaluate student learning using the procedures and methods developed in the class to meet the stated objectives of the project or exercise, course, and the program.



Ed Allen, John Reynolds, and Adil Sharag–Eldin listen to teammate Alissa Ogen.

photos: Tisha Egashira