Translating Knowledge into Design: Collaborations Between Studio and Cultural Inquiry

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Abstract
"The role that bathing plays within a culture," Siegfried Gideon writes, "reveals the culture's attitude toward human relaxation. It is a measure of how far individual well-being is regarded as an indispensable part of community life." In many parts of the world today, and for many centuries, baths that rely on mineral springs, geysers, heated water, steam or dry heat were designed for the regeneration of local populations without a nod toward utopian dreams, or the exclusivity of private spas. Unlike the contemporary US, public thermal baths in Germany are central to the economy of "curing towns" and paid for by the national health insurance. Across Central and Eastern Europe, the Middle and Far East, women and men continue to rake the waters in ancient hammams, furos, saunas, and other communal environments that offer at least in part-the architectural landscape for the contemporary health culture we are seeking in the US.

Keywords
Industrial Design

Disciplines
Architectural History and Criticism | Architecture

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INTERSECTIONS
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Proceedings of the 22nd National Conference on the Beginning Design Student
Igor Marjanović and Clare Robinson, editors
IOWA STATE UNIVERSITY
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IOWA STATE UNIVERSITY
Offered through the Research Office for Novice Design Education, LSU, College of Art and Design, School of Architecture.

Intersections: Design Education and Other Fields of Inquiry
22nd National Conference on the Beginning Design Student
Iowa State University, Ames, IA
April 6-8, 2006

The Proceedings is published in conjunction with the 22nd National Conference on the Beginning Design Student, held at the Iowa State Memorial Union and College of Design, Iowa State University, Ames, IA, April 6-8, 2006. Abstracts were double-blind peer reviewed, and selected authors were invited to present full papers at the conference. Papers submitted by the publication deadline appear in this document, which does not include all those presented at the conference.

Conference co-chairs Igor Marjanovic and Clare Robinson extend special thanks to the following faculty, staff and students who helped organize and prepare the conference: Jeffrey Balmer, Tony Borich, Jean Jonas, Kevin Lair, Abbe Long, Michael Miller, Virgene Monthei, Jillian Noble, Heather Sauer and Derek Wallen (College of Design), Gregg Cameron (University Conference Services), Patricia Miller (University Lectures Program), and the American Institute of Architecture Students, Iowa State University Chapter; to all abstract reviewers, session moderators, paper presenters, panelists and keynote speakers; and to the College of Design administrators—Mark Engelbrecht, Calvin Lewis, Timothy Keller and Roger Baer—for their unflagging support throughout this project.

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Printed in the USA

Editors: Igor Marjanovic and Clare Robinson
Copy editor: Heather Sauer
Cover design: Derek Wallen and Jillian Noble
Cover photograph: Igor Marjanovic
Book design: Jillian Noble
Printer: Iowa State University Printing Services

ISBN 0-9777494-0-1
"The role that bathing plays within a culture," Siegfried Gideon writes, "reveals the culture’s attitude toward human relaxation. It is a measure of how far individual well-being is regarded as an indispensable part of community life." In many parts of the world today, and for many centuries, baths that rely on mineral springs, geysers, heated water, steam or dry heat were designed for the regeneration of local populations without a nod toward utopian dreams, or the exclusivity of private spas. Unlike the contemporary US, public thermal baths in Germany are central to the economy of “curing towns” and paid for by the national health insurance. Across Central and Eastern Europe, the Middle and Far East, women and men continue to take the waters in ancient hammams, furos, saunas, and other communal environments that offer—at least in part—the architectural landscape for the contemporary health culture we are seeking in the US.

Dipping around the globe to investigate the sites, structures and social dance of taking a soak or a shvitz has been the starting point for a three-year experimental collaboration between the first design studio and seminar on the built environment in our M.Arch program at Iowa State University. This paper introduces and reflects upon the value of beginning design education with a Thermal Bath Park in Ames, Iowa, or, what can legitimately be called a complex virtual intersection between local and distant social conventions, cultural and geographical contexts, and methods of design thinking (figure 1).

Until three years ago the first year of our professional Master of Architecture graduate program consisted of the conventional sequence of studio, architectural history/theory, social/cultural inquiry, and science and technology. In the spring of 2003, our new grad program director—Clare Cardinal-Pett—and graduate architecture faculty re-formed the curriculum to streamline and integrate course offerings for our incoming students.

As a first change we consolidated four courses into three, then took the radical step of giving equal weight to these three required first-year courses (design studio, cultural inquiry
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Design with Water:
Ecological, Cultural, and Urban Conditions

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To reinforce our integrated approach across the 5-5-5 courses, we initiated two rituals: one is a design-build project during the first two weeks of the semester, and the other is a weekly seminar attended by all three faculty, students, and invited guests/lecturers.

An overtone to the M.Arch curriculum, the design-build project engages all incoming students in designing and then constructing an intervention within our graduate studio suite of three adjacent studios. While the primary intention is to use the project as a group-building and bonding exercise, it also operates as a pedagogical model. Under the guidance of the studio instructor the design-build project requires all three faculty to demonstrate their respective areas of expertise in the context of hands-on design decision making. This intensive collective project seemed particularly important given the uncommonly diverse intellectual and cultural backgrounds in our program. Our beginning graduate class has included students with bachelor's degrees in geology, linguistics, graphic design, studio arts, economics, mathematics, atomic and civil engineering. Several bring advanced research and professional degrees to the table, including two MDs, a pastor, and a range of work experience as contractors, electricians and computer programmers arriving from the Midwestern and Southern US, as well as Germany, Iran, China, India and Serbia, among others.

Spending the first two weeks on design-build permits everyone to introduce themselves in the informal, yet structured mix and activity of place making. This overtone to studio culture also acts as an immersion course in social and human factors in architecture, particularly when student designers realize the differences in their height, their ease of mobility, or need for light, or when they encounter university construction rules, building code issues that need to be resolved, or the budget (Cal Lewis, chairman of our department, provides

fig. 1 semi-near, and sci-tech lecture/laboratory) in terms of time and credit hours. Aside from wanting to create an integrated, collaborative curriculum, we reasoned that this system of 5-5-5 credit hours would signal to students that the so-called "support courses" should be taken as seriously as studio. And we made the assumption that changing to a 5-5-5 curriculum would not eliminate architectural history and theory, but would integrate it into the context of precedents and case studies in all three courses.
$2,000 for these yearly improvements). All these instances introduce beginning designers to the elusive job of architects as change managers whose drawings not only represent different ideas, but also different interests as they are translated into material practice.

By inviting graduate students to make their own place, and fold their own experiences into the process, we begin the first year by modeling an attitude that non-architects (in this case, first-year design students!) know something about what they want their surroundings to be like, and want to be involved in the design decisions they will inhabit. As an added twist, and to not fill up the studios completely with design-build interventions, we require the incoming students to recycle the design-build project the graduating class created three years earlier.

Our other ritual is a weekly zero-credit-hour, required seminar for all graduate students and faculty teaching in the first year. The hour-long seminar is a supplement to the 5-5-5 curriculum, and offers a protected gathering time for guest lectures and discussions of readings that complement case studies and precedents used in any of the courses. The weekly seminar ensures that all three faculty can attend reviews, and it underscores our conviction that the 5-5-5 curriculum is not simply "academic." The seminars are also a showcase of multivalent thinking that informs/forms architecture, and demonstrate how such multidisciplinary approaches and knowledge bases provide the foundation of beginning design education.

In terms of the different pedagogy and goals of the individual studio and cultural inquiry seminars, in general the studio offers an introduction to a wide array of design tools and methods, starting from three-dimensional digital modeling and animation, via two-dimensional page-layout and pixel-based image processing to basic Web design and communication. Students also learn how to communicate their designs through physical models and drawings. Cultural inquiry meanwhile introduces students—in their first seminar about the built environment as a social and cultural landscape—to categories of spatial experience, and focuses on the role of circulation design in the life of buildings, campuses, cities and neighborhoods. For example, we read the classics like Jane Jacob's "Uses of Sidewalks" in *Death and Life of Great American Cities*, and we watch Whyte's *The Social Life of Small Urban Spaces*.

Regarding the implementation of these ideas, we first taught the three-course curriculum in the fall semester of 2003, and during the past three years we have also forged an experiment in teaching design methodology with a project that straddles two of the three courses. For a significant part of the first semester, the design studio and cultural inquiry seminar are mutually devoted to the research and design development of a Thermal Bath Park for Ames, Iowa. The remainder of this paper is devoted to examining the results of an experiment in folding form and content in such a way that our beginning design students can barely disentangle research from design, and cultural inquiry from modes of representation.

We have revised and refined the intersection of these two courses over the past three years, twice shifting the sites, the programmatic conditions, the research assignments and the graphic investigations designed to weave modes of inquiry and representation into an interdisciplinary design methodology.

In the first year of collaboration, we asked students to study a particular example of bathing architecture (they could select from a list or choose another) and develop it as a case study for presentation in PowerPoint. We emphasized a range of site conditions and cultural attitudes toward the body in water, over time, and around the world, from temporary "beach" installations in Paris along the Seine, to swimming pools added to a floating barge on the Spree river in Berlin, as well as the extraordinary but conventionally built complexes such as Peter Zumthor's expansion of the thermal bath in Vals, Switzerland, and Alvaro Siza's poetic incision into the coastline near Porto, Portugal. Students investigated hammams they had visited in Istanbul or seen in films, and uncovered Buddhist retreats built into mountain waterfalls in Japan. We asked the students to model the site and setting of their chosen precedents, to locate the bath in its cultural context, and research the geographic and geological conditions that determined its location. Many of these investigations proved that visual presentations offer an effective method to evaluate resources and archival data collections. They allow students to develop the logic of a presentation in which a site analysis as well as spatial, programmatic and architectural negotiations are opened up and synthesized for discussion.

While students seem to adopt the needed skills and work more quickly and effectively when they are uncovering materials they may use again in their design projects, precedent study in a traditional sense did not happen, and students did not tend to learn much from each other's case-study analysis. Few of the cases barely entered into the student design thinking about their studio projects. Sources for their presentations were often quite difficult to obtain, and quality control of some online resources is difficult to determine. Especially for lesser-known projects the information sources required quite a stretch.

To ameliorate some of these problems, we supplemented the student research with presentations by other faculty from architecture and landscape architecture about the evolution of Indian stepwells, the Greek and Roman baths, and the place of swimming pools in Modernist aesthetics, among others.
In the second year we expanded on the design resources by requiring students to ask their own questions about water/body interaction and bathing in health cultures, and then to answer these questions with their research in the form of a Web site for the class. Our students created an online catalogue about the issues they deemed important to know to design a Thermal Bath for Ames. They selected topics such as getting in and out of baths and pools for people with mobility impairments, the shape of pools with different programmatic requirements, and hydrological representations of the water cycle. A field trip to nearby Excelsior Springs in Missouri complemented their understanding of water/body issues.

We realized that Web designs are a much more effective way than PowerPoint presentations to share and network the researched information. Students could easily access each other’s work and integrate the catalogued knowledge into their own designs. However, the conventional opacity of Web browsing (one layer after another) requires careful design of the Web-site structure, and may be overwhelming to inexperienced students.

Now in its third iteration, we decided to combine both the first-year examples and second-year knowledge bases and asked students to transform their researched understanding about the culture of water directly into their design project. Rather than focus primarily on formal/functional readings of design we challenged the students to make their researched knowledge visible in their design work.

The first step in this process involves the representation of the student’s daily path between home and the university through a series of narrative and graphic collage/montage exercises that borrow their terminology initially from theater/movie language of subjective scene descriptions, graphic storyboards, and more objective observation and reflection in note form. Our idea was to introduce a component of familiarity (the student’s own path) and an issue of the unfamiliar (looking closely at what we think we know makes us realize how strange it is). We then asked students to identify a space of intervention in their story/path that requires the insertion of a “water element” into the path.

The objective is to draw from the earlier research (case studies and catalogues) in order to transform this knowledge into the design project.

As a representation and design method we borrowed Yves Brunier’s collages that occupy a fertile middle ground between concrete design proposals and imagination. Initially we had the students work in black and white only, in order to eliminate the complications of color. Once they felt comfortable with using Photoshop and printing out large images, we upped the

Pedagogically the use of collage in these early site-analysis exercises carried all the way through to the students’ final design of the Thermal Bath Park in Ames. Instead of insisting on an object building, our emphasis on circulation—reinforced in both studio and cultural inquiry—meant that the final representations created quite sophisticated designs that focused much more on the integration of site and building, as well as place making and larger programmatic integration of functions, than one could expect of first-year students in conventional programs. In one case the student’s design—located on a site on campus next to a lake and adjacent to a busy road—led to a quite simple but effective differentiation between the public front entrance (accessible by bus, car and bicycle) and the more low-key back entrance by the lake that would be used mostly by students, university staff and faculty. The student, a graphic design major, used the collage technique to effectively articulate the differences between these two approaches to her building, as well as express the use of the building at different times by creating day and nighttime views (figure 3).

Another student, working on a site squeezed between a row of commercial buildings and a busy railroad in downtown Ames, decided to bring into his research the work of the...
painter Edward Hopper, whose planar renditions of Midwestern light and hues the student recognized in the south-facing backs of the commercial buildings. The older student, with a background in economics and digital startup companies, used collage and innovative three-dimensional computer modeling to create an entry sequence/sun deck to his thermal bath park that allowed visitors to experience the proximity and excitement of the rumbling trains going by while also enjoying the painterly façades reflecting the strong light back into the mostly underground bath facilities (figure 4).

In retrospect we realized that as in any collaborative practice—especially during the first few iterations of implementing the proposed changes—much more organizational time is required than in conventionally-taught courses, with a subsequent hit on student productivity. However, by the third year we now see a marked improvement in the students' ability to integrate this new information into their design analysis, generation and practice.

We also found that the focus on circulation as a design method moves students away from understanding architecture as a practice of object making. And yet, for incoming students, especially those with no background in architecture, the desire for objects is often a major impetus to enter the architecture field. Our focus on the less tangible aspects of place making by privileging circulation led to some resistance in the students as they initially had a difficult time seeing the benefit of this approach. However, toward the end of the semester they are quite capable of integrating their research into their designs. By the end of the year they have also realized that the production of architecture is intimately bound to issues that are not visible through cursory observation but become apparent only after longer time spans and careful investigation of cultural practices that are made manifest in built form.

Notes