Triple Grounding

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The crucial point is not simply that concepts can only be grasped through their examples, but that the only proper philosophical concepts are those that take into account their own transmissibility, the only, the always transferential relations in which thought finds itself. -Rex Butler on the philosophy of Žižek

Introduction: Cross Training

A changing resource context in California brought a challenge by the administration to faculty to rethink an entire year of pedagogy, adjusting outcomes to best prepare entering freshmen in architecture and architectural engineering for continuing design in each discipline. Separate courses in visual communication, digital representation/modeling/publishing, and shop based skills, were combined into a three quarter studio sequence.

The new curriculum acknowledged that student entry understandings and capabilities had undergone a huge transition in the last years, with many freshman students beginning day one awash in a world of visual representations, with some capability in the representational software already. The transition also acknowledged an almost zero student exposure to shop-based making of any kind. One notion is that architecture, as a visual-spatial form of intelligence and inquiry, is increasingly entered by the freshman with privileging of one aspect of the linked pairing over the other. The challenge is, while building capability in representation may be more easily acquired, the harder task is an understanding of the profoundness of what is represented. Clearly, the challenge with freshmen, is when what is represented defaults to weak ‘building’ conventions vs. an ontological opening of the media of architecture in material, space, light, and time. As a result, representation, whether analog or digital, is now handled in short workshops, and immediately embedded within design projects. Shop based content is now threaded early and throughout the year, beginning with safety and requisite joinery and tool use in fall, then expanding into prototyping and full scale execution in winter and spring. From the beginning a goal was that an interrogation of the real be part of every quarter. Three significant team-based projects were developed across the academic year to take advantage of the emerging student capabilities, provide access to local settings in developing design, allowing students to explore the idea that design is never conceived in a vacuum, and that a careful critical reading of setting and context is part of any design.

Three Pedagogical Groundings Behind Three Grounded Projects

The pedagogy explores a number of grounds or understandings preliminary to fleshing out the design actions. The first principle is grounding of self. The experience of a starting point grounded in a reality must begin with acknowledging the engaged reality of the designer, not the remote sensing satellite or one distanced from event or setting via intermediary screen. An embodied grounding places the experience of the participant into play - the student must be re-sensitized after an education of typically ‘objective’ de-sensitization/ removal, to understand they have a full participant status, and that design learning is active learning. In grounding self, one must take care that one does
not seed the rise of ego or feed into the myth of the egocentric ‘genius’. Development of embodied self requires acknowledgement of others and an intersubjective dynamic collegiality that informs, supports and criticizes in a healthy manner. This early initial grounding places an ethic into play of appropriate relations between peers, and studio culture, but also forms identity within and of the group, important in a large cohort of 160, and program of 750 students within a university of 18,000. Design is also not exclusively problems with objective solutions, but can develop student shared/networked intuition, improvisation and invention, and these are not exclusive to ego and authorship, but possible as co-owned levers for new understandings.

The second principle is grounding in realization. Students enter with thinking of solutions in terms of buildings as outcomes, vs. as realizations from a process. The origins of some architectural concepts, such as formal ordering principles, are often mere impositions. When the student is critical of precedent in discerning what is real, but not necessarily conventional, design, order and materiality emerge through realization. Execution of skills apart from specific application is certainly possible, but when engaged directly into process and especially when linked with other skills of investigation in a design project, the need for multiple means and ways to parse and test become valued. The ability to comprehensively propose and test in representation and full scale links means and ends in process, anchoring and discerning the value of the skills as revelatory. Rather than merely showing ability to repeat or execute a given task or prototype, the act of realization is the validation of process.

The third principle is grounding in place making. To dwell fundamentally means to adapt a locale, to a way of being, allowing specific place to emerge. Place inhabited involves duration of participant with and in the natural flows of a locale. This first must be noticed as phenomena, some of which may need to be deemed as necessary to mitigate, other phenomena sought and enhanced, or brought to focus. In this case the realization in context is experienced over a longer time, with reflection-as-received and impact-as-change for the participant[s] as well and landscape. The lack of a blank page or screen is both a challenge and comfort; the project grounded as such is poised to reveal latent opportunities.

Fall: Pier: The Measure of Experience

The idea of this new project was to build upon vernacular precedent, and a visceral local history and ecology. The San Luis Obispo region, for thousands of years the sustainable world of the Chumash, gave way to Spanish Missionization and ecologically invasive ranching culture in the late 18th century. It became a wealthy locale due to oil, and coastal harbors were developed to service cargo ships. Port San Luis was developed in 1873 when John Harford built the first pier and was extended following construction of a massive stone jetty in 1893 to protect the south facing beach cove. The current pier is a mixed-use facility housing a small commercial and recreational fishing fleet, floating docks, several restaurants, a wholesale fish market, and coast guard and harbormaster offices. It is accessed through beautiful canyons with hot springs, a golf course and apple orchards. It is home to a resident population of harbor seals, and elephant seals, and otters; dolphins and sharks are also participants along with the starfish, mussels and barnacles that adorn the heavy timber structure. Cove faces rise over one hundred feet above a tidal beach and roadway; framing the Guadalupe Dunes twenty miles away and a scaleless sea horizon.

The key principle is using an approachable and experientially rich setting to enable sensitivity to all the local animate phenomena, from sounds to aroma to changing light and shade, tides, paths of people, boats, vehicles, sea birds, and evidence of weathering of the wooden pier itself. The project allows for the deployment of several
skills taught in short workshops: analog drafting, sketching, watercolors, journaling, and photography.

Phase one is an Essential problem: not just looking at the pier as an object that can be measured. In using multiple tools and modes of description—text, number, image, rubbings, memory—they were to find what the essences are that make up the pier as an experience. This also entails their producing a measured set of drawings for, and model of, the entire pier. In this setting, measure has relation to their body, vs. an abstraction from a drawn precedent. The work is accomplished within thirty teams of four to six students each, with each team assigned to a forty to sixty foot segment along the length of the pier. Students spend approximately four hours in the field.

![Fig. 1. Port San Luis Pier at low tide.](image)

The following phase, Re-membering, is gathering measurements with each member of the team contributing to the requisite set. This involves negotiation within the team, comparison with adjacent teams, and their first scaled drawings drafted by hand. Hand drafting allows confidence that they can quickly use this skill, and immediately understand aspects of what they are representing from their field experience. A study model is made and there are fittings to see how segments are aligned with adjacent groups and as a whole. This segues into the third phase of the project, Projecting, developing an oblique projection based on the plan, section or elevation executed by the students.

The fourth phase, Expanding, is an interlude amidst the highly abstract scaled drawings executed at the drawing board-revisiting texture rubbings collected from the site. The first action is digital-scanning and placing selected two-inch square rubbings in a nine square composition. The second part entails a ‘dirty day’ of blowing up the two-inch square rubbings by proportion into 36 inch by 36-inch freehand charcoal drawings. This is executed on the grounds of the building and reminds the students that the standing drawing position and size of work attempted changes the perception of the ideas within the work.

The final phases begin with an identification and selection of personal sub-sites as a part of the opportunities each segment suggests. Steven Holl’s Sectional Correlational Chart 4 is suggested as a template for the students to use in assessing the possibilities within and adjacent to their sites. This selection leads to a small intervention into the site housing actions noted in the commonplace use of the pier recorded in the initial site visit. Team members are asked to coordinate within the larger site for relationships to the pier and with each other, and this produces initial studies that range from teams interested in integrating the entire team as one composition, to electing a shared path network with individual studies.

![Fig. 2. The sixty foot, thirty team model in the Gallery](image)

One of the most powerful moments for students [and faculty] is when the group of 160 sees their work as a whole. The early study models are
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executed in cardboard and wire, materials familiar from earlier projects, and give the project a messy exuberance. Several iterations push the testing of individual event and group places forward. The final exhibit, at the end of the fall quarter, includes the basswood final version of the pier and personal spaces, the collected projections and measured drawings, field executed watercolors, and selected photographs. The scale of the final model in the gallery commands attention, and allows the group to see how each contributed success within the whole, and how they as a group they had ‘arrived’ on campus.

Winter: paraSITE: Realization

The winter quarter ends with a five-week site-based comprehensive look at site, idea, representation, development, full-scale prototyping and installation/realization. The paraSITE had been developed in previous labs. The current iteration assembles fifty groups of three students use sites within our own architecture facility, a 1970’s systems building/brutalist concrete hybrid. Sites assigned include hallway edges, stair landings, patio walls, work patios, covered exterior stairs and a massive covered stair court.

The sequence of assignments builds from an initial recognition of site qualities through a similar set as addressed the Port San Luis Pier, except now there is a digital phase via Bonsai software added to the set, and an expanded visual set of joiner images, loosely based on the work of Gordon Matta-Clark, David Hockney and others.

During the analysis process, students are asked not merely to document the site conditions, but create temporary (less than a studio session) full scale constructs on the site that reveal an aspect of their particular site that a casual observer might not know. The process of these assemblages in action is documented photographically, and the architecture building is briefly filled with lines and diagrams in tape, string vectors and impromptu windsocks. Establishing from the project’s inception that the site was to be directly engaged with and visited often, lead to student’s understanding and exploration of context and site throughout the project.

Work is established and intended to change site, but may not permanently alter sites. All attachments and anchors are required to be temporary. The idea of program is intentionally vague, but teams are asked to acknowledge the student as determinate of scale, as participant with the work, potentially addressing common use such as repose or seating (without being furniture), pause points for conversation (without being rooms), devices that measure changing site based phenomena (without being windows or shades), or articulating/extending the building formal logic or spatial qualities. The synthesis drawings become the opportunity to transcribe the analysis in two dimensions into an initial study in Bonsai, leading to full-scale mock-ups. The work is constantly field tested and reinstalled, and again, groups are asked to consider adjacent new work being prepared.

The overt instrumentality of the project programmatic intentions is a natural extension of the work done during the analysis phase and sets forward an understanding of the potential for the project to act as mediating element between an individual parasite’s audience/observer and the environment.

The continued development of the scheme via sketch, Bonsai, analog model and initial mock-ups includes a tally of materials and quantities, and at a point materials and details are identified and constitute their own set of development through drawings and mock-ups. The leap from thinking of materiality to actual manifestation of materiality is the key challenge. Dimensional importance of the body, as the Pier project established, is now joined by particular dimension as important within the nature of materials, details and assemblages. Gage,
actual dimensions of dimensional lumber, and surface characteristics of wood and metals become crucial topics of criticism and care. The idea that detail may have a radically pragmatic origin, aid in assembling smaller components or modules, or be a highlight in terms of physical operation, all come into play during this realization.

While initial mock-ups are executed in the studio, it is requisite due to project scale and need for tools that design efforts move to our wood and metal shop. Workshops in welding are offered, and the faculty and shop director are heavily engaged in smoothing the process of discovery. Several weeks of development lead to a final iteration that will be installed for the last week of winter classes.

The night of installation is treated as a group event. Faculty grille for the students. Lights, ladders and rope emerge all over the structure, and assemblages are brought together. The best-laid plans are sometimes compromised, and the final, stress-filled last second improvisations and tunings of the work are as refreshing to see as the completely executed plan. This is another night that brings the whole cohort together in identity, and adds to the respect accorded them by the upper classmen. The success rate is high, but there is also the possibility of epic meltdown from teamwork, material failure or design. Faculty act as final building inspectors and some projects need major revision.

The anecdotal feedback from the freshmen of 2009-10 indicated the felt this was the most intense time of the year, and the most rewarding project in terms of their understanding opportunity and design. While aspects of sustainability/waste, compromise of the building life safety exit access systems, and student exposure to accident are problems requiring constant vigilance and are of continuing concern, the sense of achievement discerned in the students greatly outweighs the downside.

Spring: Design Village: Constructive Inhabitation

The College of Architecture and Environmental Design has long sponsored a student club that conducts a three-day design-build weekend, Design Village, in Poly Canyon adjacent to the main campus. The canyon is considered by Cal Poly students as a quiet oasis; it is the end of a two mile dirt road along a coastal oak lined creek in narrows between ridgelines back to a place where the hillsides open up into a series of broader spaces and lower sloped pasture lands likely to feature horses and cattle grazing. Joggers, students on horseback, hikers and farmhands all share the road and enjoy the place. The College established it’s ‘Learn by Doing identity with actual structures in a portion of the canyon in the 1970’s, and it continues to be a site for full scale experimentation. Design Village is an open competition for student teams, typically drawing three hundred plus students in thirty to forty teams a year, primarily from
California Community Colleges. The teams drop off their components at the throat of the canyon access on a Friday morning and must hike, roll, drag or cart their work back the two miles to the designated Village site. They erect their three day/two night dwellings with only the tools they walk in with- the canyon has no lighting and no power for the contestants. Judges evaluate the structures on Saturday morning, and given out awards on Sunday morning. The event coincides with Cal Poly’s Open House weekend and hundreds of additional visitors attend the event.

Many of the teams on a semester system have many weeks to develop their work, but the Beginners in the first iteration of this new project had only three. The work starts with a hike to the canyon and students getting a sense of the slopes, ground strength, grassland, and winds, which regularly reach 25 mph. Students must consider rain, along with heavy fog as well as the Mediterranean sun. The initial phase asks students to reflect on what dwelling means- comfort, bounds, safety, etc. The first phase is individual student ideation, asking them to project themselves and site as one. While previous work had acknowledged the body, the Village assignment requires understanding of the awake and sleeping person, accounting of being on the ground or suspended above grade, and distribution of over one hundred pounds of live load from the students, and wind loads.

The next phase asks teams of five to six students to again get into team design mode, and the designs this time stress re-use of materials from paraSITE, along with considerations for ease of assembly, weight, and transport. The challenges of weight vs. strength, accommodating several students and their chosen Village culture, and the group weight are critical. The typical projects attack weight via frame, membrane and fabric, with ingenious use of use of landscape fabric, recycled clothes, plastic bags, and rope.

The beginners transported and erected their work in 2010 on a Saturday. The processional from the architecture building to canyon was a huge success, with the Open House guests cheering the students on. While some failures of anticipated techniques did occur, for the most part the set-up was accomplished by sunset and well-deserved dinner in the field. The evening is a welcomed festival-like atmosphere with bands and dancing. By Sunday afternoon the work is knocked down, sites cleaned, and materials largely sent to our shop for reuse/recycling.

Fig. 5. Dwelling with/ among/ in.

Notes


2 The converse aspect is addressed in a separate paper in these Proceedings: The Write Stuff: Stealth Theory for Beginners.

3 The underpinnings of the pedagogy are phenomenological, specifically with respect to applications of Hussert’s ideas of époche [intuitive access to phenomena hidden beneath the conventional naming of things], as well as Heidegger’s concepts of thrownness [challenging cultural givens of situation] and Žižek’s intentional pairings of opposites to open categories for interrogation.


5 paraSITE is discussed in depth in a separate paper in these Proceedings: Power[tools]: paraSITE’s Progress.

6 The 2011 Design Village web site, accessed February 14, 2011, is http://designvillage.calpoly.edu/