

Unorthodox Pedagogy: The American School Approach

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At the University of Oklahoma (OU) under the leadership of Bruce Goff, a new approach to teaching and practicing architecture, known as the American School, developed in the mid-twentieth century. While other schools followed curricula inspired by European modernism, the American School taught students to imagine novel, experimental, and organic forms. Students were challenged to use ordinary and found materials from wood shingles and feathers to ashtrays and sewer pipes. They were taught to respond to the characteristics of a site, climate, program, and client. Most importantly, the American School approach sought to produce the architectural equivalent of chefs: students known for combining ingredients and forms in inventive ways, rather than line cooks who dutifully followed the recipes of their instructors. This approach stood in contrast to the predominant approach of the day as international modernism evolved into an orthodox dogma in schools across the U.S. At a moment when student work in architecture schools increasingly looked the same—marked by flat roofs, ribbon windows, glass, steel and concrete—the American School work was alarmingly different. While students elsewhere learned to imitate the styles promoted by their professors, the American School taught students to develop their own identity as designers. Today, as the idea of a school producing disciples is becoming retrograde, reconsidering the American School approach is long overdue. An examination of this unorthodox pedagogical approach helps us understand how educators can coach students to cultivate creativity. This paper asks what we can learn from outliers of the American School, the so-called renegades? An examination of assignments and student work reveals how innovation was, and still can be, taught.

“Some of the teachers would give their class a ‘clue’ as to what they wanted by referring their students to pages so and so in one of the current architectural magazines. Then the class made a rush for the library to see what the teacher liked so they could please him and get a good grade. This practice existed in almost all the schools then. No one seemed to be concerned about the

student being a creative individual with a potential for growth dedicated to the art of architecture!”¹ —Bruce Goff

In distinct contrast to the imitative design approach Bruce Goff observed at other architecture schools in the postwar period, he and his colleagues at the University of Oklahoma (OU) developed a curriculum that prized originality and innovation. This approach to teaching design and the work that emerged from it became known as the American School of Architecture because it differed from the Bauhaus and Beaux Arts inspired curricula elsewhere. Goff, who led the architecture school from 1947-56, believed the role of the teacher was not to mold the student into a disciple or follower, but rather to help them develop their own approach to design. In an era in which schools were closely linked to their leaders and students work often looked like replicas of their professors’ projects, the American School approach was heretical. Yet, today, it offers us one response to the question posed by the ACSA Annual Meeting theme, “Disrupters on the Edge” which asks, “What can outliers and the traditionally marginalized teach us about breaking away from customary approaches?” This paper reconsiders how the American School curriculum and culture, long marginalized in the histories of design pedagogy, fostered originality and innovation through an examination of Goff’s Architecture 273 course, an American School seminar at Auburn University, and student work.²

Developing a curriculum through a sequence of assignments intended to elicit fearlessly imaginative responses from students is no easy task. And there were few models to draw from in the postwar moment; both the Beaux Arts and the Bauhaus-inspired curricula adopted in the postwar American context tended to produce disciples trained in a predictable style. To understand what the American School sought to do it is helpful to compare architecture school to culinary school. Students typically enroll in culinary school not to learn to follow the recipes of their instructors but rather to develop their own recipes, showcasing new ways of using existing ingredients, new and unique combinations of flavors and textures. The culinary training for a chef is different from the training for a line cook, who is expected to follow a defined recipe and perhaps scale it up or down and perhaps substitute an ingredient when needed. Goff and his OU faculty colleagues were determined to develop



Figure 1. Takenobu Mohri, *Orchestration of Materials*, c.1951. American School Archive, OU Libraries.

a curriculum that did more than train students to follow their recipes; they sought to develop a sequence of assignments that challenged students to innovate and produce new forms, designs, and visions. The assignments developed by Goff in his Architecture 273 course were a focal point of this development for it was here that students learned the basics of architectural composition. One OU graduate, Robert “Bob” L. Faust, later carried on this approach to teaching and adapted many of the 273 assignments in his American School course at Auburn University where he taught for 40 years. In what follows we will examine assignments and student work from both OU under Goff and Auburn under Faust to understand how architecture curricula can educate chefs rather than train line cooks.

The Escoffier School of Culinary Arts Flavor Wheel visualizes key elements that shape our perceptions of food.³ The wheel is divided into three broad categories of taste, mouthfeel, and aroma. Within each area are more nuanced characteristics of flavor such as sweet, salty, bitter, herby, texture, moisture, and spice. For a chef, understanding and even visualizing the components of flavor would be key to learning to manipulate them to elicit a desired effect. The flavor wheel is, in effect, one visualization of the tool kit of the chef, the characteristics of food that go into defining flavor. Similarly, architects must understand their own tool kit, the intersecting elements within their control that may be formed, organized, or managed. Francis D. K. Ching defined and illustrated the architect’s tool kit at the most basic level as “Properties of Form” in his classic text *Form, Space, and Order*.⁴ Ching’s properties of form include: shape, size, color, texture, position, orientation, and visual inertia. His text goes on to further define the many ways through which these properties of form can be organized and manipulated to elicit desired effects including for example, circulation, proportion and scale, principles and more. To develop a student’s capacity to innovate in architectural design, one would need exercises that push them to engage with their tool kit—size, shape, color, etc.—and experiment with organizing principles, material palettes and more. The assignments of Architecture 273 do just this: students had one

week to develop an architectural composition in response to an assignment prompt.

One of Goff’s key assignments in Architecture 273, which Faust carried on in his courses at Auburn, was the *Orchestration of Materials*. The assignment is, in some ways, the architectural equivalent of the popular cooking show *Chopped* in which chef contestants get a basket of mystery ingredients and have a short amount of time to create an innovative and flavorful dish that showcases the ingredients. The basket often includes common foods like strawberries or zucchini as well as less common foods like kumquats, duck breast, and rhubarb. In the *Orchestration of Materials* assignment, students had one week to develop an architectural design and composition board typically using three materials or ingredients. Takenobu Mohri’s *Orchestration of Materials* assignments showcase how the same building on the same site is designed and rendered differently when the material palette changes [Figure 1]. In the first example, using aluminum, copper, and glass, Mohri designs a faceted structure composed of triangular and diamond shape forms folded in a wrapping of the building pavilion. The whole composition is rendered in warm orange and brown tones signifying fall and highlighting the copper color palette. In the second example, Mohri adapts the same building design on the same site to a new palette: concrete and glass. The orientation, scale, position, size and general shape of the building have not changed. But the angular folded wrapping forms of the first composition have been replaced by crisp white sculptural planes of concrete. We now see the landscape rendered in cool tones—the blues and greens of springtime.

Bob Faust’s own *Orchestration of Materials* assignment completed when he was a student at OU utilized an ordinary material palette: wood, wood shingles, and stone. It was like the *Chopped* version of what can you make with the relatively ordinary and traditional ingredients in your own pantry? Faust’s vision, however, is anything but ordinary [Figure 2]. The building form rendered seems at once inextricably connected to the natural landscape and yet unlike anything we’ve ever seen before. It is

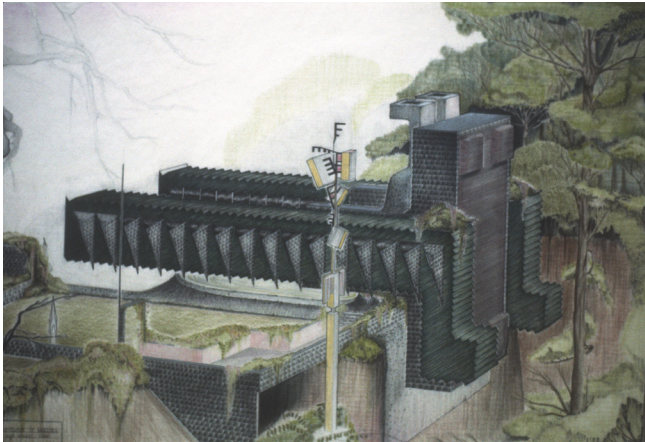


Figure 2. Robert L. Faust, *Orchestration of Materials*, 1954. Robert L. Faust collection, AS Archive, OU Libraries.

both archaic in its weight and monumentality, appearing almost like an Aztec ruin, and at the same time futuristic and space age in the spirit of brutalist architecture. If Goff's intent was to foster originality, to train architects to innovate and envision architectural forms that are majestic and memorable, Faust's project indicates dramatic success.

In his own American School seminar at Auburn, Faust drew on some of Goff assignments directly and adapted others. Auburn student Bob Whitten's *Orchestration of Materials* from 1974 used steel, glass and concrete to imagine a space age house with a plug-in kitchen, bath and mechanical system. Whitten incorporated a giant copper bowl hung from the ceiling to serve as the bedroom. The dramatic design formed by a glass dome, a sculptural steel tower on an organically formed concrete base dug into a hillside, indeed looks like something from the future, even when viewed today. This and other assignments reveal that in Faust's classrooms, Auburn University too was educating chefs not training line cooks.

Other Architecture 273 assignments would consist of what Ching might consider principles of design or, alternately, concepts drawn from musical composition, a key source of inspiration for Goff.⁵ A series of three assignments completed by Takenobu Mohri in Architecture 273 is instructive here [Figure 3]. The first assignment entitled "Regular Rhythm" depicts a long horizontal bar of a building articulated with four repeating fin elements dividing the composition into bays. The projecting fins are counterbalanced by horizontal balconies set behind them. Planters punctuate the composition where the fins meet the ground. The second assignment entitled "Irregular Rhythm" also has planters at ground level, balconies, and other repeating elements such as patches of darker pink stone and irregularly shaped glass planes. Yet the elements themselves do not repeat in predictable or consistent ways; they change shape and size and the spaces between them change creating an irregular rhythm indeed. The final assignment "Regular and Irregular Rhythm" creates a

harmonious blend of the first two compositions almost in the way we might expect a melody and harmony to complement one another in a musical composition. Bringing together the regular and irregular in an architectural composition creates the sense of balance and complexity achieved by adding the tartness of citrus to a sweet dessert. Indeed, Mohri's *Irregular and Regular Rhythm* composition has some elements repeating in regular predictable rhythms balanced by some singular more iconic elements such as the giant triangular entry and the beacon tower. The singular notes become more powerful in the context of some limited repetition. If the goal here was to teach students to develop compositional skills through deliberate practice using their architect's tool kit of shape, size, color, and texture, then Mohri's assignments demonstrate the mastery of architectural composition; moreover, they demonstrate learning composition without simple imitation.

An Architecture 273 assignment by James Gardner shows a response to a prompt drawing on principles of architectural composition. Entitled "Symmetrical Forms in an Asymmetrical Arrangement," the rendering depicts five golden cone shaped forms varied in size spread out across a natural site. The smallest cone marks the entry to the building complex and is connected to the rest by a long bridge over a natural ravine. The other four are clustered together and differ in height and elevation. The composition balances the sameness of the cone-shaped form with distinctions in size and treatment or ornament.

Another Architecture 273 assignment that drew on principles of materials was "Transparency, Translucency, and Opacity." Ernest Burden's response to this assignment depicts a futuristic wonderland in which the built and natural worlds are seamlessly integrated. Opaque sculptural forms—perhaps concrete—wrap around dome like shapes of varying transparency and translucency within. In the lower realms of the composition the sculptural forms support landscapes of plants and earth or rock formations. While the assignment here may have been one given year after year, the result is wholly original and unlike any world we've ever known.

At Auburn, Bob Faust challenged his students to respond to the same prompt. His student Bob Whitten's 1974 assignment "Transparency, Translucency, Opacity" is more than a building; it depicts a megastructure, a world unto itself anchored on the land but stretching out over a body of water [Figure 4]. The whole structure is supported by a series of red steel vertical structural elements, which sometimes support bowls and spheres from below and sometimes act more like construction cranes suspending elements from above. Towards the top of the composition, cables suspend an entire garden landscape (transparency). Moving downwards we see translucent domes and spheres offering hints of what they protect inside. Towards the bottom and right of the composition more opacity comes into play, hiding what is behind.



Figure 3. Takenobu Mohri, Regular Rhythm, Irregular Rhythm, and Regular and Irregular Rhythm, c.1951. American School Archive, OU Libraries.

Although the American School pedagogy lived on in the seminars of Bob Faust at Auburn University, this was an exception rather than the rule in the second half of the twentieth century. Most architecture schools during these decades adapted a Bauhaus inspired curriculum to the American context. While the Bauhaus in its original incarnation was experimental and innovative, in the postwar period, it was transformed into a more fixed and dogmatic pedagogy. In the U.S. it was adapted to suit the needs of a postwar economic boom and corporate capitalism. The student work from U.S. schools in the postwar period is dominated by flat roofs, ribbon windows, pilotis, and box forms stacked up to form towers, boxes carpeted across landscapes, or boxes placed as singular objects in a landscape with few exceptions.⁶ In some cases, students were lauded for appropriating or simply scaling up the recipes of their teachers. A graduate student design for a community center published as exemplary student work from the Illinois Institute of Technology, for example, looks like little more than an adaptation of Mies van der Rohe's Farnsworth House [Figure 5]. It is as if Mies van der Rohe limited his students to only his preferred ingredients and prized recipes: flat roofs, structure pushed to the edge and rendered white, pilotis, and walls of glass. It is as if a culinary school instructor shared his recipe and invited a student to make it for 200 people instead of 2; the ingredients and outcome are largely the same, only the scale has changed.

Today, architectural educators continue to face the dilemma of whether to produce disciplined line cooks with consistent

and rigorous output in each studio or whether to risk trying to educate chefs. In many ways the line cook option is much safer, especially for a tenure track faculty. When evaluating the work emerging from design studios, we often prize consistency, and uniformly contemporary aesthetics. We appreciate if all the students have developed an aesthetic approach that echoes that of their instructor whether it be the computational design driven complexity of one moment or the neo-modernism of another. We sometimes even see entire schools of architecture with their own aesthetic brands whether it be blobitecture of the West Coast or the still Miesian modernism of IIT. Thus, a studio instructor who limits students' creativity, who teaches a style, who point students in the direction of their preferred aesthetic will likely get a level of consistency and quality at the end of the semester. The projects will all look suitably architectonic, the section drawings will be elegant, the graphic styles will have a contemporary style and uniformity. But this is the easy way out. Training line cooks is a much safer route for a tenure-track studio faculty, but it teaches the student far less. It is easy to teach a bunch of amateur cooks to follow one recipe and be successful. They can all cook eggplant parmesan or beef wellington to perfection if given a recipe, guidance, and time to practice. But could we aspire to do more? What might it look like to educate chefs today? At the end of the semester, the work should be wildly different from one student to the next, the material palettes, graphic styles, and formal experimentation should demonstrate the range of human creativity not strict boundaries in the form of preordained recipes. Often, the work may not seem as "strong"

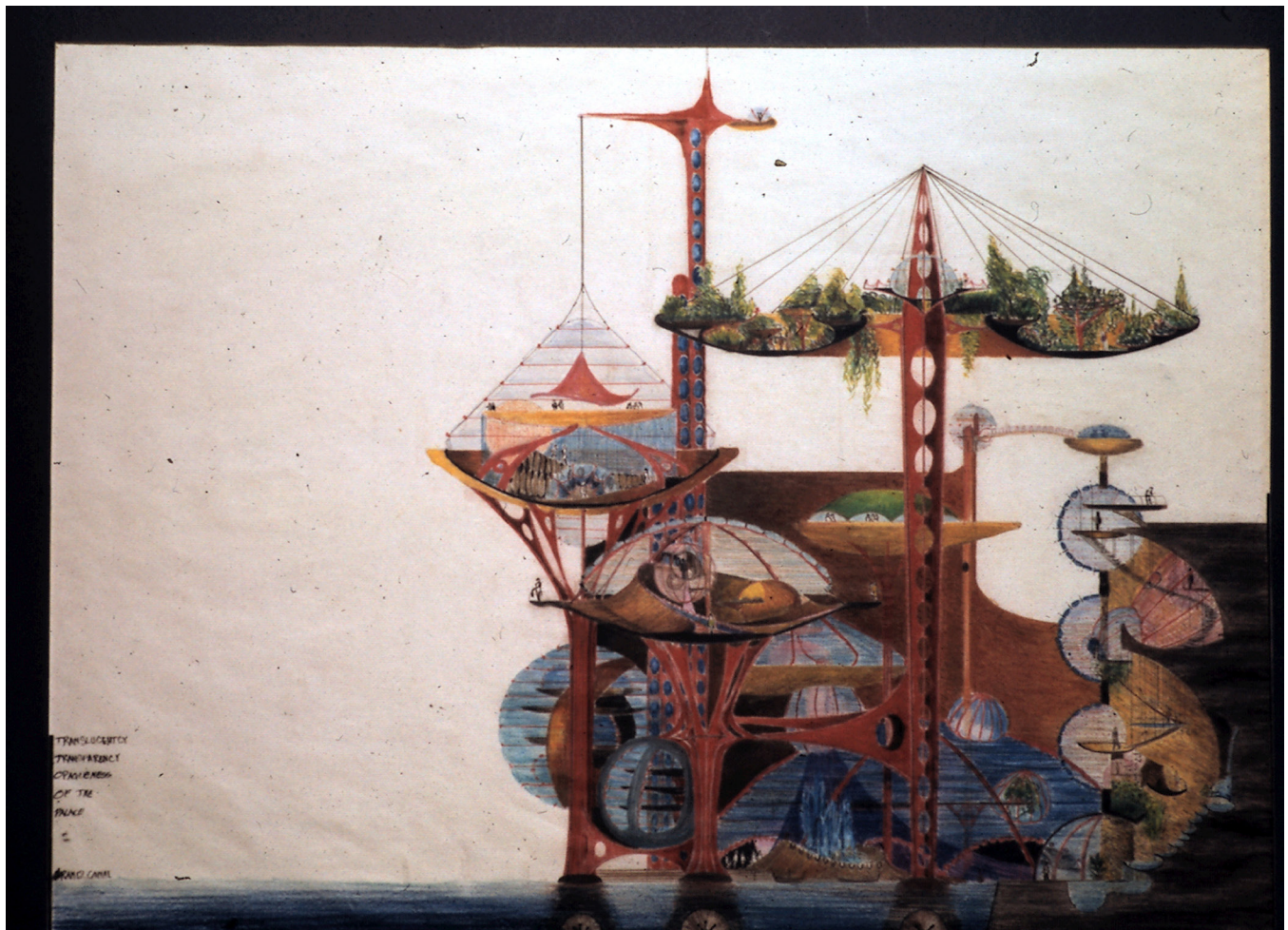


Figure 4. Robert Whitten, Transparency, Translucency, Opacity, 1974. Completed while a student of Bob Faust at Auburn University. American School Archive, OU Libraries.

architecturally because experimenting with new recipes leads to more failures than successes in the early years.

The American School pedagogy reminds us that we can do more than train line cooks, that we in fact, have an obligation to our students and communities to do more. We can develop curricula designed to challenge our students to genuinely innovate with materials, form, color, site and more. Instead of giving them our own worn-out recipe collection or favorite precedents, we can give our students the freedom to experiment, sometimes fail but always learn, and develop their own original ideas. Architecture schools in the U.S. have been restricting the creativity of their students to pre-ordained answers for too long and our built environment reflects the results. When we look around at the built landscape in the U.S. today and we see so much sameness and banality, so little originality, we must recognize we, as architectural educators, share some blame here. If we value cultivating creativity, can we learn from the disruptions of the American School approach and take a risk?

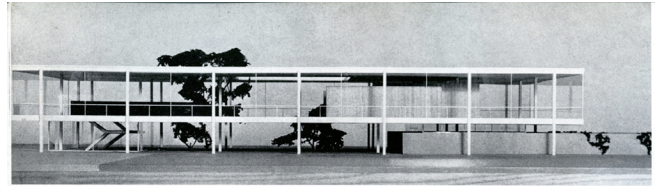


Figure 5. Community Center project by a graduate student at the Illinois Institute of Technology, ca. 1950s. The Richard Nickel Archive, School of the Art Institute of Chicago.

ENDNOTES

1. Bruce Goff, "The School of Architecture at the University of Oklahoma, 1947-56," *Architecture and Urbanism*, no. 11134 (1981): 13..
2. The best sources on Goff and his pedagogy are: David G. De Long, *Bruce Goff: Toward Absolute Architecture*, 1st ed edition (New York, N.Y. : Cambridge, Mass: The MIT Press, 1988); Arn Henderson, *Bruce Goff: Architecture of Discipline in Freedom* (Norman: University of Oklahoma Press, 2017). On the American School see Luca Guido, Stephanie Pilat, and Angela Person, eds., *Renegades: Bruce Goff and the American School of Architecture* (Norman: University of Oklahoma Press, 2020).
3. On the Escoffier Wheel of Flavor see: <https://www.escoffieronline.com/the-essence-of-food-understanding-the-flavor-wheel-infographic/>
4. Francis D. K. Ching, *Architecture: Form, Space, and Order*, 4th edition (New Jersey: Wiley, 2014).
5. Goff was himself a composer and had a collection of over 5,000 records, which he shared with students in informal listening sessions held at the school. For more on Goff and music see Benjamin R. Levy, "Material Connections: Bruce Goff, Music, and Modernism Across the Arts," *Music Theory Online* 27, no. 3 (2021), <https://doi.org/10.30535/mt0.27.3.7>.
6. The best comparison of the work of American architecture schools is in the *National Association of Students of Architecture Publication*, which show-cases student work. See *National Association of Students of Architecture and American Institute of Architects, Annual Publication*, 1957.