

# Add/React: Exercises in Pragmatic Bricolage

In academia and professional practice we are set up to train designers, not makers. We ask them to build, but rarely to build the *right way*. The results of which are often challenging forms and blatant material misuse hiding a lack of expertise behind innovative formal and material gymnastics. Such unawareness is not necessarily a liability if harnessed to inform a critical practice of pragmatic bricolage.

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Some say architects make buildings; others emphatically state that they produce only representations. The argument surrounding these two positions is polarizing, but regardless of which philosophy defines the product of our professional output, what a designer must ultimately make are decisions. Design is a decision making process, no matter what the final aim may be. We develop rules and codes that either operate within existing systems and constraints or defy and subvert them. Other than the personal context of the architect, we all inevitably approach design through the armature of previous constructions: an existing framework of processes, skills, theories and history whose influence cannot be escaped or ignored. The designer is neither a definitive nor linear thinker but an exploratory one who precariously juggles concepts too pragmatic to be art yet too subjective to be engineering. When Claude Levi-Strauss makes a distinction between the definitive mind of the engineer and the untamed savage mind, he could very well be describing the dilemma of the young designer who struggles to balance the quantitative with the qualitative to intentionally and confidently make reasonable decisions. The most difficult issue when teaching design is overcoming fear, and more precisely, the fear of making the wrong decision. In the context of this argument, the decisions in question are those that arise when making. A pedagogical framework that sets up a process of bricolage, or ad-hoc making, combined with the notion of a material cannibalism or misuse can perhaps facilitate projects that are purely about the criteria for decision-making, and these decisions can have basis in tangible criteria with immediate physical feedback.

## **JUST PRACTICING**

Making is not something that can be learned from a given collection of written knowledge. It is an act that must be taught by example and learned from practice. What then are possible pedagogical approaches and projects that create scenarios for exploratory practice in making? In studio, students engage in exercises involving fabricated programs and develop possible architecture all in the hopes that such



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training will benefit them when the time comes to apply it. While one could argue that the typical curriculum at an accredited architecture school covers too much, there is clearly an increase in the popularity and demand for Design-Build related education. Such begs the question of whether our purpose is to train students to design, to make, or perform some hybrid of the two. The projects described in this essay propose a process of directed bricolage as a way to bridge the gap between contemplative design thinking and thinking while doing. While the distinction between maker and designer is clear, the consequences of making are often mysterious, prompting the academy to provide venues for such trials and the opportunity to practice thinking on one's feet while running, with peril in close pursuit.

#### **BRICOLAGE: PREVIOUS CONSTRUCTION AS A READY-MADE LIMITATION**

The traditional architectural project requires a certain level of conceptual thinking to define and outline options for creative exploration followed by methodical focus. The forced acceptance of previous constructions sets limits eliminating<sup>2</sup> countless possibilities. Focus is the aim from the beginning, and the result is a relatively limited number of convergence points that allow for immediate action. The possibilities are then explored through making but only with what is at hand. Part of this process is a game: a series of either predetermined rules or revisions to the rule book when, and if, it suits the purpose. Things that are immovable set the rest: budget, time or a concept seemingly written in stone. Before the student can begin this process, they must except and embrace the limitations; not as a negative obstruction to creativity but as a vehicle to focus the creative act for a deeper exploration of the specific rather than a general exploration of the broader possibilities. One of the quickest ways to begin is to borrow, re-contextualize and then possibly subvert.

“The bricoleur uses what is at hand because that is all that he has. His materials bear no relation to his task because they are themselves the result of previous constructions”<sup>1</sup>

Within a broad view of cultural production, designers often act out of habit without

Figure 1: Ad-hoc interdisciplinary installation,  
*University of Tennessee College of Architecture  
Beaux Arts Ball 2012*

a critical basis for decision-making. They assume they have a choice, when really they do not, as limits are inherently set by the culture that they take part in and perpetuate. As a culture we relentlessly add to the anthropocene, and in the future others are forced to react to our previous constructions in both built form and environmental and cultural impact. The critical designer must step outside of culture by acting as a collector. In constant inventory of possibility. Within the given limits of culture, regulation, economy, client need and concept, they find ways to make do. As Jencks and Silver described in their seminal work *Adhocism*, there is a strong case for improvisation and to immediately fulfill a task by “cutting through the usual delays caused by specialization, bureaucracy and hierarchical organization <sup>2</sup>.” What better way could one describe Design-Build? Before engaging in such, are students trained as craftsman? Do they spend time on a construction site learning the trades? The answer is almost always no. They are thrown into the task to sink or swim undertaking the burden of realizing their own drawings without the experience or training to do so properly. They often misuse tools and ignore established notions of means and methods. This is sometimes done intentionally, but most certainly it can also occur out of ignorance. In academia and professional practice we are set up to train designers, not makers. We ask them to build, but rarely to build the right way. The results of which are often challenging forms and blatant material misuse hiding a lack of expertise behind innovative formal and material gymnastics. Such unawareness is not necessarily a liability if harnessed to inform a critical practice of pragmatic bricolage. Through an intentional disregard for proper technique combined with inherent naiveté the student might approach the material or method through innocent eyes and hands with no fear of being wrong, because they have no knowledge of what is right. If one is not afraid to make mistakes they best be prepared to not make anything at all. The Bricoleur is neither concerned with the avoidance of the mistake nor the correction of the inevitable ones. Mistakes are part of the game, and the artifacts of which become part and parcel of the final work.

#### **OPPORTUNISTIC IMPROVISATION**

In Shelia Kennedy’s essay “Material Presence,” she makes a distinction between primary, secondary and even tertiary methods of production based on resultant materials as artifacts from the processing of others. Such practices are common in industry wherein the waste produced becomes product in some other industrial process, or “materials within materials <sup>3</sup>.” The ready-made unit of the standardized material also results in drop, dross and slivers that collect at the site of construction to be hauled off as rubbish. Rather than work with virgin material or even the intentional waste of industry, the scraps of making can be reconstituted or cannibalized with their own inherent traces of measure and benefits of their standardized DNA. Re-conceptualized with available tectonics, tools and contextual circumstances, one can produce something from nothing and potentially divert what was waste into something of value. This practice is akin to the concept *Super Use*, which proposes we recycle materials not by breaking them down to be reconstituted into new, virgin pieces with no trace of their origins, but by reusing them in their current state with all of their embodied capital, energy and history <sup>4</sup>. This ready-made approach to building demands the designer to invent a way of adapting objects of previous use as a new standard, taking advantage of the properties, capacities, and repetition of the material in its given form. This enforces a methodical and intentional re-standardization of whatever happens to be available.

While one can imagine the resultant work having an aesthetic aim, bricolage does not inherently suggest an aesthetic a-priori. It is not assemblage or a jumble of the disparate. For the purpose of this essay, it serves to divorce the term from notions of

the dilettante collage. It is a process, or practice, that breaks from the tedium of self inflicted contemplation, complication and over intellectualized notions of design. It suggests that we make do by embracing the obvious, the blunt and the pragmatic first steps as instigators for innovation, or simply get the job done. It proposes that design is more about combination than composition.

Bricolage suggests availability. This can be interpreted in many ways beyond the material. There are available skills, time, finances and levels of engagement with a given project. Traditional notions of Design-Build are focused and specific, often following the normative timeline for the construction of an architectural project within allowable means and methods. Realizing a Design-Build project can take semesters and sometimes even years as students turnover quickly and funding can be sporadic. Engaging in rapid acts of ad-hoc Design-Build with strict limitations allows for opportunistic acts that take advantage of givens in an effort to make Design-Build accessible in smaller doses within a curriculum. With such a short timeline the students who conceptualized the project have the opportunity to see it realized.

### APPLICATION

Through precisely limited scenarios, students can engage in short Design-Build projects to exercise quick decision-making on the most primal level. The following projects embody these ideas in various ways, coupling critical positions of making with existing materials, methods and philosophical dilemmas. They are examples of rapid-prototyping Design-Build predicated on thinking through making rather than a predetermined plan. The common thread between these projects is the notion of previous constructions as a given set of constraints and a series of resultant rules based on what is possible within these existing limitations. The rules are then broken through either chance circumstance or external forces that change the objective of the game in progress.

### PROJECT 1: SHIM WALL

Shimwall is an opportunistic act of material cannibalism. It is a material move coupled with minimal budgets and abbreviated schedules that satisfied two distinct programs and conflicting notions of workmanship. The first application of this method was for the interior the Flower Pot Florist in downtown Knoxville as a semester-long project in an elective seminar. The second was a commissioned design piece for the interior of The University of Tennessee College of Architecture and Design's main office. Both projects had a miniscule budget as well as demanding client and time constraints

### THE FLOWER POT

A florist occupied the interior of a small building in an urban environment. She was in need of a new interior that better facilitated her workflow. The space was first stripped and a simple hardwood veneer floor was laid. The rest was up to the students tasked with building a workspace for floral arrangements, displays for greeting cards and an entire wall of storage for vases, ribbon and the tools of the trade. Given the fact that we had no real budget, we strived to find a way to make something from nothing. The ultimate driver for the project was the material we could obtain in great quantities for little or no cost. This predicated every design decision. We simply developed rules or performance specifications for how it was to be assembled rather than a predetermined set of construction documents. It also had to be removable from the space in order to be classified as furniture, which avoided the bureaucracy of obtaining a building permit.

To begin, we cataloged the waste products available in our area. A map was prepared that located recycling facilities, dumps, light industry, fabrication shops and

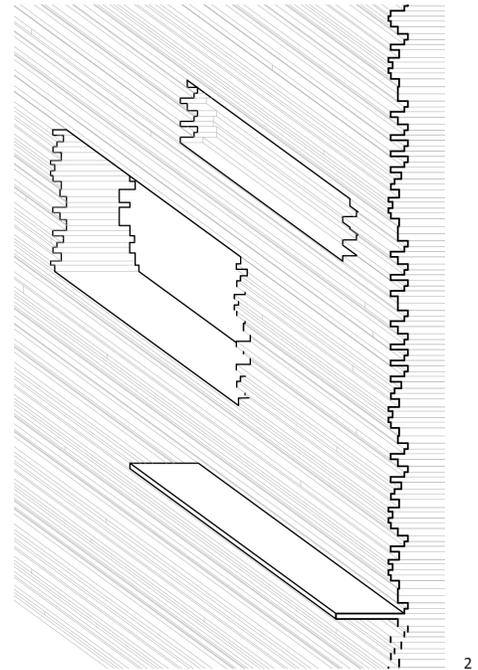


Figure 2: *shim-wall*: material move for drop slivers and dross from cabinetry fabrication



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any smaller establishments that might have surplus in the form of packaging, crates, pallets or other material that could be obtained in great quantities. Most of what we found was not suited for cannibalism, as it was either too close to a refined and specific form or did not fit the archetype of a program that demanded considerable amounts of flat horizontal planes. This forced us to concentrate on sheet goods, and we located a cabinetry shop that offered us as much drop  $\frac{3}{4}$ " laminated particleboard as we were willing to haul off. We then had an almost endless supply of the material in eight to ten foot strips ranging from ten to fourteen inches wide. Once we secured this material we could conceptualize how it could be used to drive the design.

The goal was to develop one move that could be repeated and assembled by unskilled labor with minimal instruction. Students had to come and go with various degrees of connections to the project with the ability to advance it without lengthy explanation and complex details. After many experiments that attempted to use the material in the proper planar way, we realized that it depended too much on precise connections. Since we had such a wide variety of material widths, the planning would be complex and time consuming. We needed a detail for connection that was almost detail-less; one that required no precision and little work to align. This led to a method we dubbed *shim-wall* which used the material in an aggregated fashion, stacked and interlocked in layers to produce a massive expression. It was such a simple technique that we could begin immediately. This method only required cutting the long strips to several predetermined widths that would work in coursing like a masonry product. It could slip and project as needed or cantilever past the edges to produce shelving or display areas. It was the result of a performance specification that encompassed multiple levels of dimensional refinement based on how much time we were willing to spend cutting and assembling. For this project, we opted for the lowest level of refinement with the absolute fastest erecting time.

Nothing could be simpler than piling up material with wood glue and a pneumatic staple gun. We pre-fabricated the critical parts as we would only have one weekend to install on site. The predetermined components consisted of edges, corners and other unique conditions that could then be infilled, avoiding the tedium of precise measurement and drawings. This framed the unpredictability of the system within tight constraints, or at least limited our margin for error. The rough kit of parts had to adapt during installation through a constant revision of our rules. One split decision was an opening through the wall that was exposed during demolition. We had

Figure 3: Completed Flower Pot Florist Interior

Figure 4: *Tipping our hats to Lewerentz*, Window at the Flower Pot Florist

neither the means to infill with brick, nor did we have a proper window accounted for in our non-existent budget. Similar to Sigurd Lewerentz's Flower Kiosk at the Eastern Cemetery in Malmo, we simply attached the glass to the face of the exterior masonry. The detail was borrowed and re-contextualized in ad-hoc fashion with a strange mix of precedent based authenticity and frank execution, as we had no quicker or more economical choice. It was an immediate solution that set in motion other surprising opportunities for the project such as the pixelation of light on the rear wall where the system overlaps the opening on the interior.

There were many lessons to be learned, the first of which was that such a process would challenge the notion of composition and aesthetics. Precise workmanship was not valued, nor was it feasible in the given timeframe. If anything, the installation was compelling in its roughness and relentless repetition to the point that details and joints were nonexistent, promoting a dialog about a general system rather than specific instances of difference and variation.

The project expressed haste in low-resolution detailing, a composition realized through the combination of the most rational material choice with the most obvious method of assembly. The second project utilizing this system took advantage of the leftovers and existing material tactic but deployed them in the opposite fashion with a tighter performance specification for a more regulated and intentional method and result. It would be a test of the system's ability to be refined.

#### **COLLEGE OF ARCHITECTURE AND DESIGN SCREEN WALL AND RECEPTION DESK**

The office of the college required a new reception desk and enclosure for the supply, mail and copy room. These utilitarian programmatic elements were coupled with a client request to express a statement about design, as this small installation would become the physical face of the college. Like the Flower pot, the budget was minimal, and the time we had from commission to realization was less than four weeks. We acted decisively, cannibalizing both the materials and the methods of shim-wall as structure because it could be started immediately. We expended our budget on plywood to make up the difference and rough-cut 1"x 2" material for the skin. We immediately began building the shim-wall as a fixture for the other more specialized parts. The 1 x 2" pieces served as the only vertical element, and the plywood for the structure and surface of the desk assembled in stacked fashion like the other parts of the structure.

For this iteration of the system, our methods had to be dramatically adjusted to allow tighter joints and more predetermined details. Regardless of how we planned, opportunities presented themselves during construction that allowed us to subvert our own previous system by taking the massive stacking move of the horizontal structure and surface and flipping it on edge to create a vertical diaphanous screen. This combination allowed for a quick and utilitarian massive framework that could be sheathed in a veil of precision. Given that this project had a schedule that was one quarter the time we had for the Flower Pot, the demand for more refined methods made our ability to act didactically even more of a crisis. Decisions were based on the pure criteria of the existing moves and our painstaking assembly would, upon completion, express weight and the absurd labors it took to construct every individual expressed piece. In the environment of the architectural interior always in a state of constant change, our installation of what must have been fifty times more material than was required made an immediate impression of permanence. The process of realizing such a thing posed questions that the students had not considered, such as their willingness to surrender aesthetic desire and the ability to adapt to the unforeseen. The project was the epitome of the fact that one cannot draw



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Figure 5/6: Reception wall and desk showing plywood, laminated particle board and 1"x2" strips aggregated to form surface, structure and skin

the quality of workmanship.

## PROJECT 2: ADD/REACT

The previous two projects served as the genesis for a shorter and more accessible project within the context of the materials and methods curriculum at The Auburn University School of Architecture, Planning and Landscape Architecture. It had similar goals promoting acts of pragmatic bricolage, but had no physical context or programmatic function. This was a precisely dictated exercise in reacting to previous constructions without knowledge of the final aim. Rather than site the exercise in context like the previous projects, this work of bricolage had aims to simply get materials in students' hands with limitations regarding how far the materials could be pushed. Within the materials and methods curriculum, students are generally tasked with learning the properties of materials coupled with their capacity for expressive potential. Through an exercise in bricolage, the student would learn how to select materials and methods based on clear performative criteria and find ways to accomplish tasks that they had not fully conceptualized before hand. In essence, they were given a diagram and asked to be the contractor by operating on first assumptions and jumping in to construct faster than the mind could grasp the consequences. Just as the designer must deal with the previous constructions of the culture they operate in, students were given a new addition to their "completed project" each week with dimensional and performative criteria inevitably forcing them to demolish, or refine.

All students began with a concrete masonry unit as a base for construction for vertical and horizontal structure as well as skins and screens. As the project moved from a massive base to a tectonic frame, the students struggled with tolerance issues and the rude awakening that precision could have a dramatic bearing on performance as mistakes were compiled to the point of problematic confrontation. Composition was not a part of this assignment, nor was any a-priori notion of fine craftsmanship. The students were specifically instructed to fulfill the diagram in built from using the most immediate and available techniques. They were to truly test how poorly something could be built before failure, which made issues of precision and the forces of structure more prevalent than those of composition or aesthetics. To add complication, the projects were required to align in concert requiring intense collaboration.

The process was entitled "Add/React" and sought to give students the same experiences we encountered during the shim-wall projects in condensed form with standardized materials as the pallet rather than a cannibalization of the existing. The modular and standard methods of construction were the kit of parts. They along with the strict yet simultaneously vague criteria served as the previous constructions to react to. The students did not have to be told to challenge the material as their innocence allowed for unintentional mis-use in a context of no fear and no grim consequences.

Given Auburn's Design-Build pedigree, the first experience most students have on site is the Rural Studio. This project is intended to be a workout in solving design and construction problems in process. It provides an opportunity to explore standardized materials, fasteners, common tools and connection methods as a Design-Build primer. Just as we design virtual buildings before the actual, we must also train students to practice with details before they are asked to construct useable prototypes in context. Many students were confronted with tools they had never used, and they developed tactics for solving the problem at hand through trial and error. Regardless of the path students take in their career, the ability to adapt to unpredictable circumstances, techniques and tools is of great value but is often at odds with



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Figure 7: Add/React project at framing stage showing aggregation of individual student projects forming whole

our discipline's predisposition to following a precisely orchestrated plan. All well laid plans meet with some scale of disaster. The key question is how it is dealt with.

## CONCLUSION

"The bricoleur is someone who works with his hands, using devious means. His universe of instruments is closed and the rules of his game are always to make do with 'whatever is at hand'"<sup>5</sup>

Levi-Strauss's mention of "devious making" hints at a framework for intentional subversion rather than discovery by happenstance. In the act of making by a novice, it is not so much about doing it the right way but simply finding any way following the path of least resistance to accomplish the task at hand. This breeds a pragmatic acceptance of the simplistic and the immediate and most blunt methods to overcome the Design-Build problem. Rather than accept accidental success, the devious maker has rude intent to intentionally mis-use, harnessing their freedom from established practice to either innovate through ignorance or purposely subvert in a pragmatic or polemical fashion.

These ideas are, as this essay suggests derived from existing thoughts and theories. One could call them *hacked* to borrow the current and popular term used to describe any blatant subversion of an existing process or system. It is no longer acceptable to teach the traditional ways without a critical understanding of how they can be hijacked for better or for worse. Like the projects previously outlined, the processes that these pedagogical experiments are based on are previous conceptual frameworks revisited later through new eyes and hands of the current generation. These students are the product of their own unique constructive environments, allowing for old ideas to be re-contextualized just as the old or discarded materials were. In the academy as well as practice, blind innovation is rewarded and often demanded. To step back momentarily to unearth or refine a previous dialog facilitates new ways of learning and making. As educator bricoleurs, we can begin to get past the potential of endless newness moving on to the more immediate issues of enforcing the real rather than the surreal and the fantastic out of necessity rather than desire.

## ENDNOTES

1. Scalbert's essays sets up a concise historical and theoretical frame work for the architect as a bricoleur dealing with cotemporary crises of authenticity in an unpredictably evolving culture. Irénée Scalbert, "Architect as Brocoleur" *Candide Journal for Architectural Knowledge* No. 4, 07/2011
2. Ad-hoc and the D.I.Y. practice has permeated popular culture to the point that the creative act is no longer limited to the trained or self proclaimed artist or designer. The tools are changing and changing hands. Jencks and Silver predicted this over forty years ago. Charles Jencks and Nathan Silver, *Adhocism* (MIT Press, Cambridge, 2013)
3. Kennedy's work with exploiting and subverting standardized materials suggest that their codified properties and cultural associations do not limit us as architects. The ready-made pallet of normative parts is ripe for innovation. Sheila Kennedy, "Material Presence" *KVA: Material Misuse* (AA publications, London, 2001)
4. The concept of *Superuse* provides a process-based framework for trashbuilding lending theoretical weight to the glut of projects that creatively recycle existing components. To recycle is good, but to *Superuse* is better as it takes advantage of the discarded object's existing form to generate new possibilities. Ed Van Hinte, Cesare Peeren, Jan Jongert, *Superuse: Constructing Architecture by Shortcutting Material Flows* (NAI 010 Publishers, Rotterdam, 2013)
5. Claude Levi-Strauss, *The Savage Mind* (The University of Chicago Press, Chicago, 1966)