Keeping the Discipline in Play: Ludic and Participatory Constructions in the Undergraduate Thesis Studio

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This paper describes a pedagogical approach in an undergraduate thesis design studio in which each student's independent thesis is bookended with two assigned projects that encourage the students to examine their particular thesis propositions through frameworks of openness, participation, and play. In addition to offering useful critical perspectives from which to interrogate their independent research and design work, these frameworks also ask students to consider how the affordance to individuals of the ability to play with a designed work grants those individuals a degree of agency that must be reconciled with the agency of the designer. This encourages these undergraduate thesis students to understand architecture's position within and value to society as one that must be continually negotiated.

The fifth year of the undergraduate architecture curriculum at California Polytechnic State University is structured around a year-long design studio in which students pursue an independently conducted architectural thesis, comprised of both a written and design component. The written component includes the stipulation of a thesis argument or conjecture, the critical examination of relevant architectural theory and analysis of relevant architectural precedents, and the articulation and defense of a proposed architectural response. The design component, meanwhile, is intended to demonstrate the architectural implications and value of that response.

Although students propose and pursue an independent thesis, with a high degree of authority to determine their specific area of research and to develop their own unique argument or hypothesis, each thesis design studio provides a unique intellectual and discursive context intended to help inform this otherwise independent work. Students in the author's thesis design studio are asked to consider their particular thesis propositions through frameworks of openness, participation, and play. Consequently, their year-long thesis is bookended with two assigned projects—the individual design and construction of a *ludic object*, and the collective design and construction of a *participatory exhibition*—that provide intellectual frameworks intended to assist them with the development of their own research, argumentation, and design work.

LUDIC OBJECTS

The design and construction of the ludic object is assigned during the first two months of the year-long thesis studio as one of the students' initial thesis design experiments. The construction of these objects—many of which are executed as furniture, but some of which also include objects ranging from toys to small spatial installations—requires the students to negotiate the economic, material, and detailing constraints associated with translating their evolving thesis design concepts into physical form. Furthermore, the completed objects are exhibited each year in a public venue as part of an annual furniture design competition. This allows the students to observe the manner and degree of the visitors' actual engagement with their work.

In examining these engaging objects through the paradigm of "play," the subject of the work is transformed from a "user" who ostensibly fulfils a prescribed program, to a "player" who has expanded agency in determining their own actions, experience, and subjectivity. Whereas design typically designates a preferred reality, within which an individual's actions and experiences are anticipated and supposedly ensured through the formality of architectural space, the design of an object for play must recognize that playing requires the player to participate in the definition of his or her reality—and to employ their own imagination and creativity in the process. As German philosopher Eugen Fink observed, play is inherently a creative act that results in the player's production of a world, and therefore constitutes an "eminent manifestation of human freedom."[1] This means that the designer of an object or space for play must cede some creative authority to the player. Consequently, in an architecture of play, that category of actions that fall outside of the prescribed use—and which is typically classified as "misuse"—is recharacterized as a manifold potential for the player to participate in an empowered co-creation of his or her reality. Furthermore, this creative and imaginative worldmaking by the player also means that the result of play is not entirely predictable. As Roger Caillois observed, "an outcome known in advance, with no possibility of error or surprise, clearly leading to an inescapable result, is incompatible with the nature of play."[2]

In order to catalyze the creative participation of the player, therefore, the students must design their ludic objects such that their use or engagement is open to some degree of interpretation, and so that the experiences resulting from such engagement are suggested but not entirely predictable. In addition, to the extent that these objects possess functional and/or ergonomic qualities (given the fact that many of them are furniture objects), the students are asked to avoid the logics of formal and material legibility and efficiency that are

typically associated with functional objects. Accordingly, the students are asked to consider four design principles that are intended to catalyze creative play: the incorporation of *multiple affordances and performances*, the intentional *interference of affordances and performances*, the design of *excessive performative capacity*, and the fostering of *performative uncertainty*.

The criterion of incorporating *multiple affordances and performances* asks students to consider the manner in which their ludic objects might suggest multiple possibilities of use or engagement. Such an approach contradicts the typical legibility of function associated with designed objects, and instead cultivates a degree of doubt about the object's proper use or engagement by suggesting multiple, equally-weighted possibilities. This requires the individual to weigh these multiple possibilities in advance, and to make a conscious decision about the manner in which they engage the object. In the case where these objects are designed as furniture, students are asked to consider the possibility of incorporating multiple functional performances, such as the various seating and side table modalities of the *Furnicube* by Jeff Hammerquist (Fig. 1, top), or multiple ergonomic affordances, as demonstrated by Kealani Jensen's *M100* (Fig. 1, center left), Grace Choy's *Möbi* (Fig. 1, center right), and Shaler Campbell's *Revolve* (Fig. 1, bottom).

The intentional *interference of affordances and performances* considers how the object's various uses and engagements can be entangled such that the individual's experience of any single modality is disturbed by the presence of forms or materials associated with the object's other possible uses or engagements. This results in the intentionally imperfect fulfillment of any particular function or ergonomic position, and thus prevents any individual functional or ergonomic mode from becoming perceived as the object's dominant modality. In many cases it also suggests that the forms and materials associated with particular functional or ergonomic modes are reappropriated for other uses in other modes. The resulting uncertainty keeps the object in play—and encourages the individual's continual exploration of other possible uses and engagements. Greg Schaal's *Sling Chair* (Fig. 2, top), for example, conceives of a chair as a simple fabric seat slung between points on a bent tubular steel frame, wherein the irregularity of the frame affords a multiplicity of ergonomic positions. However, this irregular frame also provides an intentionally unorthodox support for the individual's arms and back, and its simultaneous capacity to support either is intended to cultivate both a doubt about its proper role and a consequent desire on the part of the individual to continually seek new ergonomic engagements. David Hupp's *The Twinns* (Fig. 2, center) extends this affordance of new ergonomic engagements to the possibility of culturally unfamiliar forms of seating. Comprised of an undulating tubular steel frame intermittently spanned by welded wire seats, the chair is designed such that most of the seating areas require the individual to creatively interpret the manner in which their arms and legs should be positioned—often suggesting that the individual thread their limbs through the chair's tangled steel frame and welded wire seats, and thus calling into question the supposed categorical role of these elements as "frame" and "seats." Finally, Marki Becker's *The Strangers* (Fig. 2, bottom) is a set of three lights set within rotund and minimally perforated enclosures. These enclosures are designed so that the openings in their surfaces simultaneously afford the possibility of grasping, of providing points of stability for these rotund objects to be placed on flat surfaces, and of emitting light. In order to present all three affordances as equally plausible, the openings are sized and positioned so that they are adequate, but not perfect, for each use. This encourages the individual to continually reposition these lights so that the openings oscillate between their various performances, and results in an inability to categorically equate any particular opening with a singular function.

The incorporation of *excessive performative capacity* implies that the object is designed so that it has extra formal, material, or performative conditions that must be negotiated with respect to its various potential uses or engagements. This excess eliminates the one-to-one correlation between a form, material, or performative feature and its functional or ergonomic engagement, and instead requires the individual to creatively interpret how this excessive capacity could or should be managed. Michael Charter's *Extenze Hyper-Sectional* sofa (Fig. 3, top), for example, features zippered seams between each seating section that, when unzipped, reveal an excess quantity of upholstery that enables each section to be repositioned. This allows for the creative transformation of the sofa's overall form which, in turn, enables the individual to determine its social configuration—which can range from sociofugal to sociopetal. Meanwhile, *Strata*, by Kyle Kithas (Fig. 3, center), is a chair wherein the seat and back are comprised of multiple thin layers of upholstered foam that can be manipulated like pages of a book. By draping more or fewer of these upholstered layers over a steel frame that supports the sitter's back, and by rolling or folding some or all of the layers that form the seat, the individual can adjust the overall form of the chair across a spectrum ranging from a lounge chair to a reclined chaise lounge, and can also fine tune the chair's seating angle and lumbar support. Finally *Swing Fling*, by Allie Freund (Fig. 3, bottom), is a portable swing that features an integral motion sensor and programmable LED light in its base. As the individual swings, the light emitted from its base changes color depending on the direction the swing is moving—painting a composition in colored light upon the ground below. This extra capacity encourages the individual to consider the consequences of swinging in a particular direction, and invites them to creatively modify their behavior in order to produce a visual performance.

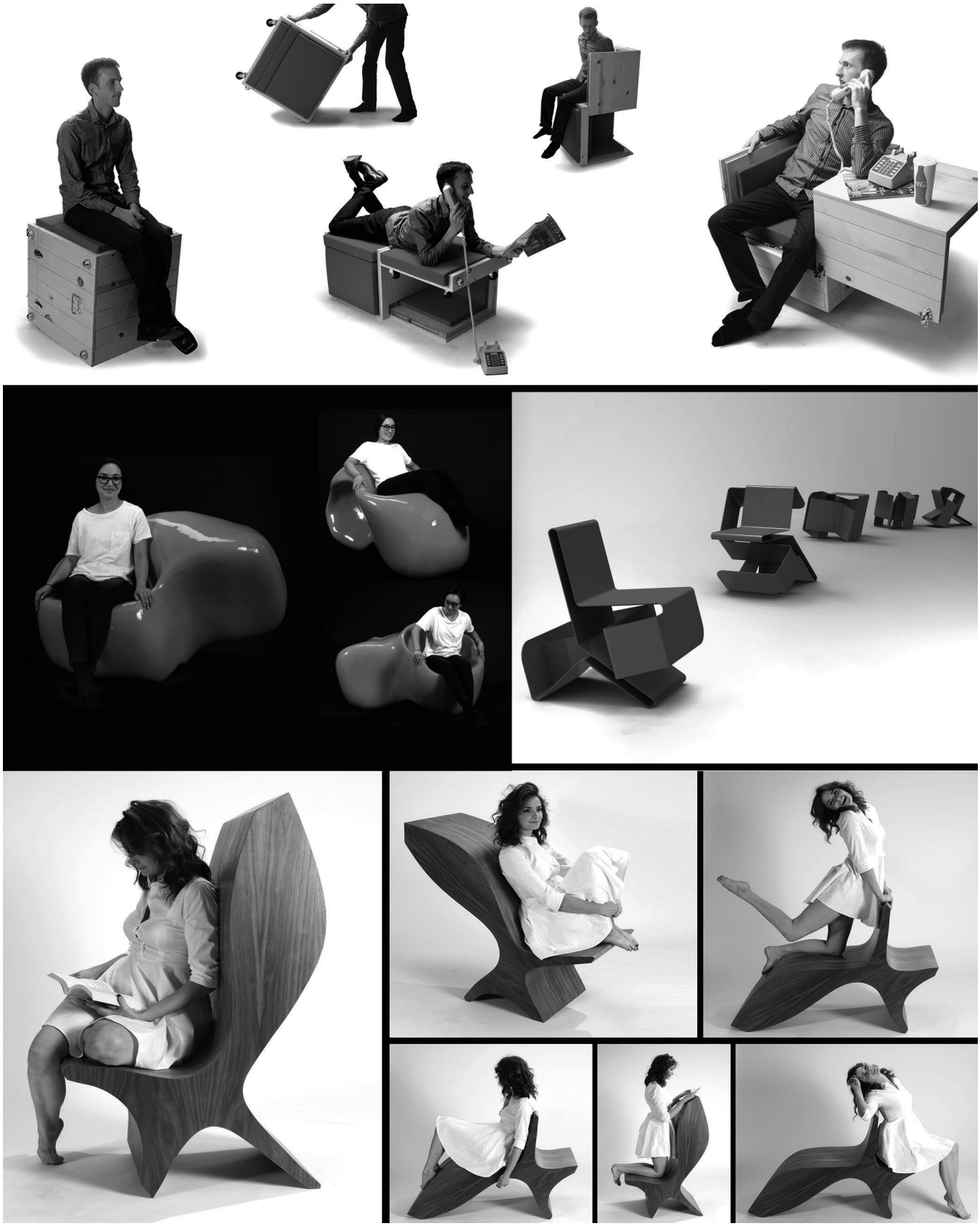

Figure 1: Ludic objects featuring multiple affordances and performances. Top: “Furnicube,” by Jeff Hammerquist. Center left: “M100,” by Kealani Jensen. Center right: “Möbi,” by Grace Choy. Bottom: “Revolve,” by Shaler Campbell.

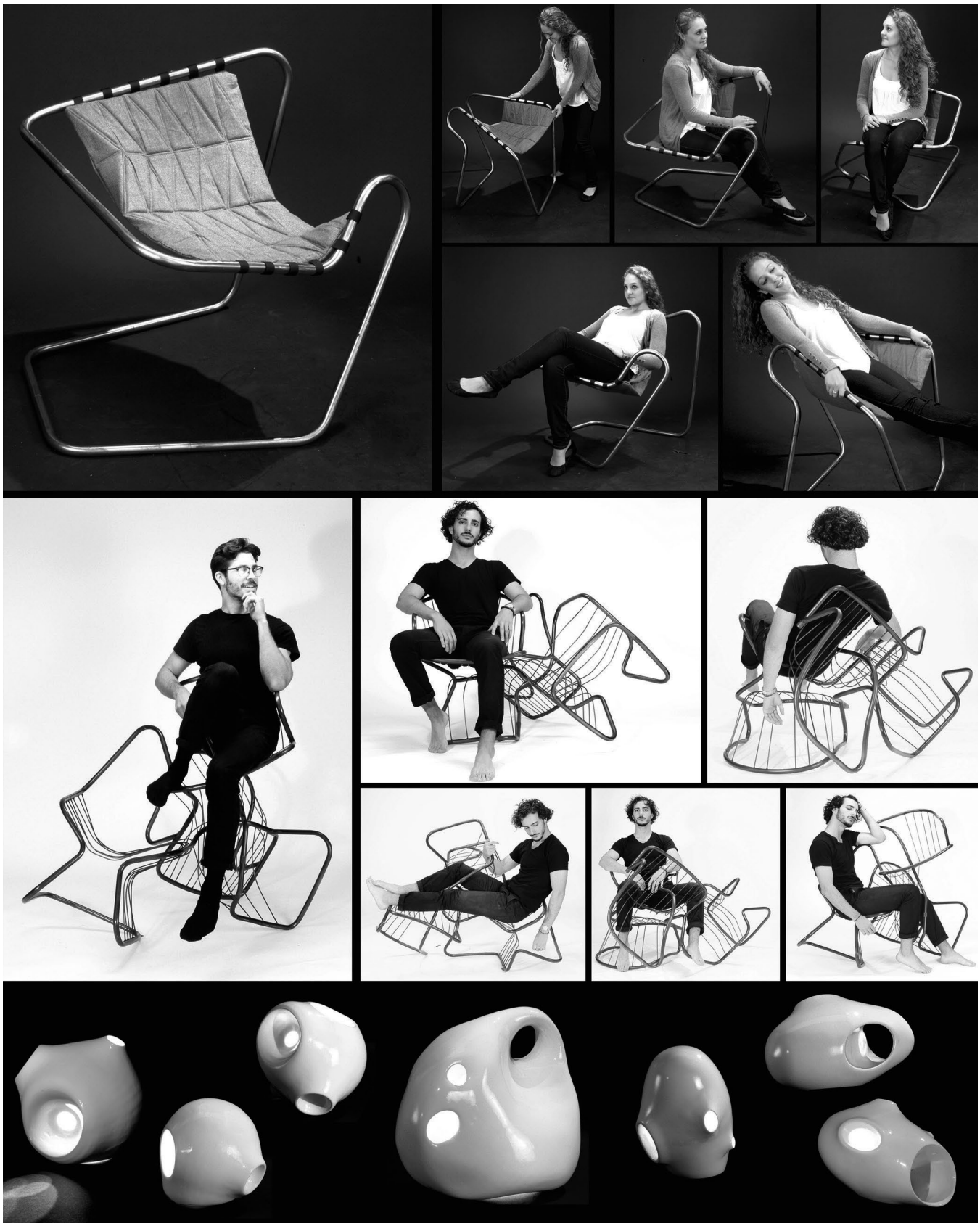

Figure 2: Ludic objects featuring the intentional interference of affordances and performances. Top: “Sling Chair,” by Greg Schaal. Center: “The Twinns,” by David Hupp. Bottom: “The Strangers,” by Marki Becker.

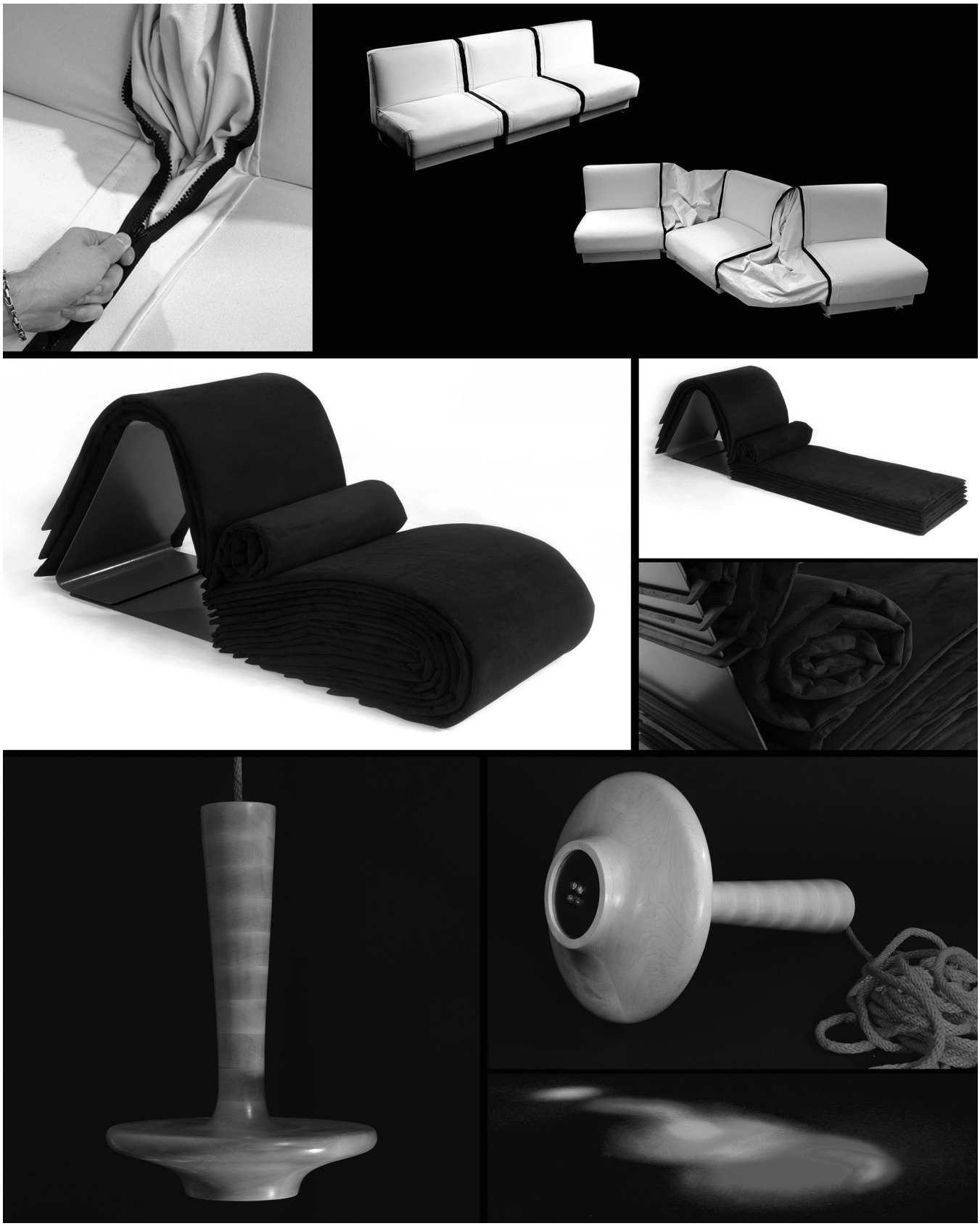

Figure 3: Ludic objects featuring excessive performative capacity. Top: “Extenze Hyper-Sectional,” by Michael Charters. Center: “Strata,” by Kyle Kithas. Bottom: “Swing Fling,” by Allie Fruend.

Finally, students were asked to consider the incorporation of *performative uncertainty* in their ludic objects, wherein the performances of the object cannot be fully predicted in advance. This approach requires the individual to heuristically engage the object in order to explore its performative potential. In some cases this is achieved through objects that can be reconfigured by the individual, but where the resulting reconfigurations are not immediately obvious. John Vierra's *Tsunami* (Fig. 4, top), for example, is a bench that has been serially sectioned into a linear array of repeated seating profiles, each of which can be rotated about a central axis to afford three unique seating types—ranging from upright sitting to lounging. However, each section is connected to its neighboring section with a slotted link. Consequently, a rotational movement imparted by the individual at any point along the bench will ramify throughout the remainder of the bench like a wave, resulting in an unpredictable overall form. Thomas Fagan's *Blizzocks* (Fig. 4, center), meanwhile, offers a reconfigurable array of furniture building blocks, in which the idiosyncratic and interlocking forms of the blocks resist an immediate conception of the furniture compositions that might result. Other projects, such as *Pebble*, by Stephany Phung (Fig. 4, bottom left), posit a furniture object with a tenuous stability, and which requires the individual to imaginatively adjust their posture and center of gravity in order to achieve unique forms of temporary stability. Finally, other projects, such as Stephen Zecher's *Augmented Vision* (Fig. 4, bottom right), prompt a similar degree of heuristic exploration by creating new experiences that defamiliarize the habits and routines of daily life. In this case, the ludic object is a helmet that replaces the individual's subjective perspective with an objective one—achieved through a camera mounted on an arm attached to the helmet that sends a real-time video feed to a screen inside. Wearing the helmet thus requires the individual to retrain their body to perform routine tasks, such as walking, or picking up objects. This defamiliarization of everyday activities, coupled with the individual's ability to observe their own body in their revised performance of these activities, encourages the imaginative creation of new performances of daily life.

PARTICIPATORY EXHIBITIONS

The concept of play is also re-examined at the conclusion of the thesis year through the collaborative design and construction of an interactive exhibition of the studio's work, which is installed in a University gallery space. Not only is this exhibition project an opportunity to offer the students a collaborative design experience as a useful complement to their year-long independently-authored thesis, it is also an opportunity to use their collective creativity to address the challenge of enticing visitors to the exhibition to explore the full scope of work produced by each of the 20 students in the studio—which includes a year's worth of research, writing, design experimentation, and a fully-designed architectural demonstration project. The students are therefore asked to consider forms of presentation that maximize the public's engagement in the work by affording individuals a degree of creative freedom in their navigation of the exhibition's content, and by making that navigation pleasurable.

These exhibitions typically include 2-dimesnional and 3-dimensional content—such as text, drawings, renderings, diagrams, animations, and physical models. However, the format of this content ranges from analog prints and models to digital projections and augmented reality overlays. In the case of the exhibition from 2014, titled *Everything* (Fig. 5, top left), the students' concept was to display a variety of content across all of these formats that included not only their individual thesis work, but also pamphlets, magazines, and videos related to discursive affinities and debates within the studio that informed the studio's work through the year. The transparent walls served as both display surfaces and containers, and their ambiguous materiality afforded multiple readings—as an infrastructure for both defining the territories of individual projects as well as for blurring those lines of division.

Some exhibitions have made more extensive use of digital projection, and have focused on means by which to make that projected content more playful and interactive. In the case of the 2016 exhibition, titled *Lucid* (Fig. 5, top right), the students produced interactive websites using Adobe Muse with very simple trackpad interfaces. However, they scripted yellow pop-up windows that revealed meta-content—such as related areas of research, or important texts or precedents—that were shared with adjacent presentations. This was designed to reveal discursive continuities and differences among the students' work, and to encourage visitors to surf between projects in order to discover them.

Other exhibitions that have employed digital projections have involved the appropriation and modification of gaming interfaces in order to afford individuals a full-body form of playful interaction. In the case of the exhibition from 2013, titled *Probe* (Fig. 5, center), the students hacked Xbox Kinect motion sensors to allow visitors to the show to click on and manipulate the projected content of each student's thesis work. This exhibition also made use of an augmented reality application installed in tablets running in kiosk mode—which allowed for AR overlays triggered by both the projected content as well as the physical models. In some cases, as in this exhibition, the students elected to extend the idea of playful engagement to the serving of food. Here, the students gamified the food by requiring visitors to first make their selections on an interactive interface according to enigmatic instructions, and with unpredictable results. The food came in four varieties of green goo that appeared identical, but which were actually variously sweet, salty, sour, and bitter—resulting in a degree of risk associated with the increased agency afforded to the individual.

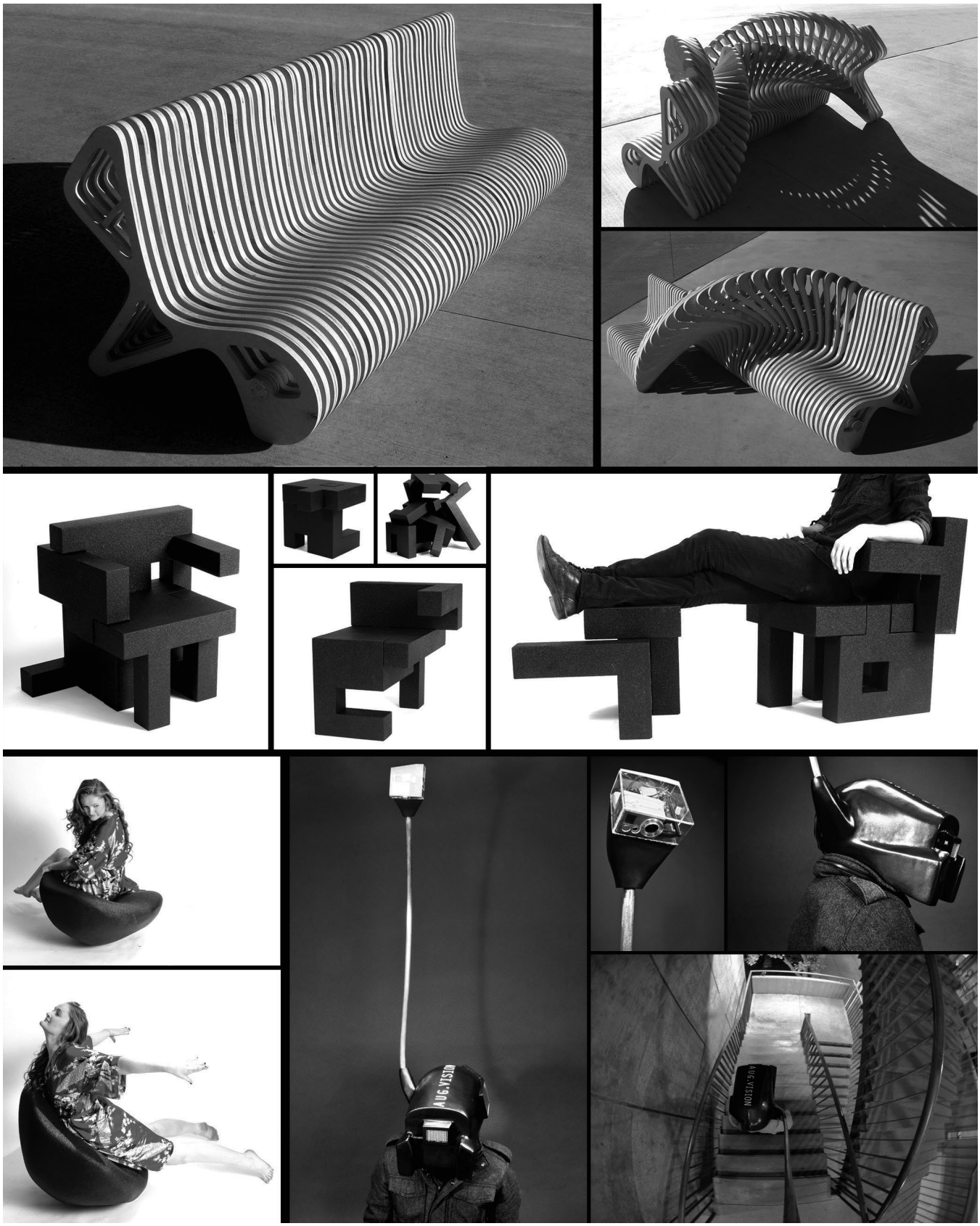

Figure 4: Ludic objects featuring performative uncertainty. Top: “Tsunami,” by John Vierra. Center: “Blizzocks,” by Thomas Fagan. Bottom left: “Pebble,” by Stephany Phung. Bottom right: “Augmented Vision,” by Stephen Zecher.

Figure 5: Participatory exhibitions of the students' thesis projects. Top, left: "Everything" (2014). Top, right: "Lucid" (2016). Center: "Probe" (2013). Bottom: "Striptease" (2015).

The exhibition from 2015, titled *Striptease* (Fig. 5, bottom), meanwhile, imagined that visitors could play with the content by allowing them to select it from a slow-moving content stream. Similar to a conveyor belt sushi restaurant, each student's thesis project content was arrayed as a series of frames in a linear sequence within a projected image crawl that slowly, but continually, moved across a pair of projection strips that bounded the gallery space. Once images were selected they presented expanded content, which in some cases included buttons to trigger additional content windows. The students used Leap Motion controllers, and scripted the interface to allow visitors to select and manipulate the frames as desired—including moving and resizing them, and also ejecting them at the top of the strip when finished. Part of the intrigue of the Leap Motion controllers is that the player does not touch the device. As a consequence, the manipulation of images according to normal trackpad logic, but without touching either them or a device, is at once familiar and strange. This strange, yet engaging, quality of nearness and distance was an important aspect of the students' concept for the exhibition. In fact, the name of the show, *Striptease*, was meant not only to refer to the strips of projection, but also to invoke the protocols of a literal striptease—wherein one is not allowed to touch, in order to preserve the nature of the tease as a form of virtuality, or play.

PLAY AS A FRAMEWORK

These playful constructions—both the ludic objects and the participatory exhibitions—provide opportunities for students to engage certain discourses that align with many of the interests that they have upon entering their thesis year, and to consequently be better equipped to situate and develop their own areas of research within or between one or more of these discursive spaces.

With respect to the participatory exhibitions, such discursive contexts include issues of atmosphere, of architecture as a form of curation, of architecture through expanded or multiple media, of architecture's catalyzation of social encounter and exchange, and of the idea of bottom-up participation and "open source" or "open content" architecture. The ludic objects, meanwhile, also engage some of these social and participatory concerns. However, in addition, they ask students to contend with aspects of discourses concerning programmatic and formal estrangement and otherness, and to carefully interrogate the power of programmatic or formal operations to catalyze new realities, events, experiences, and behaviors.

For example, for students who ascribe to the belief that the simple juxtaposition of programs will result in some kind of emergent social phenomenon or event, the ludic object assignment requires them to realistically contend with the techniques by which the object's ostensible programmatic performance(s) can be put into play. Meanwhile, for those students who are interested in manipulating form to reconstitute reality as an estranged, and therefore open, condition, the ludic object assignment requires them to consider techniques by which the distance, or resistance to normative apprehension, that such estrangement typically requires can be manifested in the context of actual engagement or use. Consequently, the question of form becomes not simply one of re-coding it to produce new readings, but rather recalibrating its perceived affordances in order to elicit new behaviors and experiences.

Finally, in recharacterizing the contemporary individual as a "player" rather than simply a spectator or user, both the participatory exhibition and ludic object assignments ask these undergraduate thesis students to grapple with the very politics of design—insofar as granting authority to a player to play with architecture necessarily represents a corresponding reduction in the architect's authority to determine an individual's spatial reality. Consequently, as designers of open and participatory constructs, these students must contend with the need to determine the actual value that architectural design can afford—how a carefully crafted, if limited, degree of openness can actually be more powerful, meaningful, engaging, and ultimately valuable than a non-designed yet completely open condition. This requires them to make a fundamental case for the value of architectural design, with all of the limitations that implies, rather than assume that value as a given. In so doing, these undergraduate architecture students are acquainted, in many cases for the first time, with the reality that architecture does not occupy a privileged or stable position within society, but instead is a discipline and practice whose role and value must be continually reevaluated and renegotiated within a constantly evolving social, cultural, and technological milieu.

CONCLUSION: KEEPING THE DISCIPLINE IN PLAY

As a result of this interrogation of the discipline, and the recognition of the continual need to define its role and defend its value, these young designers are confronted with fundamental truth about architecture that our discipline takes such pains to obscure: that the nature and value of architecture is neither absolute, nor absolutely verifiable. Rather, the truth about architecture is that it is both a *kind of play*, and also continually *in play*—concerned with the continual positing of worlds, whose virtues and values are debatable and ultimately unstable.

As philosopher Eugen Fink observed, play is not on the same ontological footing as the other aspects of human existence—such as work—to which is often opposed. Rather, play encompasses all aspects of life, which are each equally able to be represented and reformulated within the context of play.[3] This characteristic of play is one of the reasons why it maps so compellingly onto the discipline of architecture. Like play, architecture engages the manifold and evolving

aspects of reality—social, cultural, technological, political, and others—in order to reformulate those aspects into new representations of the world, which virtualize the possibility of new experiences and settings for the rich and varied unfolding of human life.

While Sanford Kwinter has noted that play is "worldmaking *in the absence of verification*,"[4] architecture's nature as a kind of play is masked by the construction of rhetoric that attempts to verify and validate the worlds that it posits—often by reframing the discipline's history through the lens of a specific contemporary argument. This rhetorical technique of fabricating a historical genealogy in support of a particular manifestation of architecture is a necessary aspect of the discipline's worldmaking, wherein it is enlisted to substantiate a particular reality by grounding it in a seemingly stable lineage. The importance attributed to this rhetorical positioning is clearly revealed in the widespread inclusion of the architectural thesis in undergraduate curricula, wherein such rhetorical activity is practiced and refined.

However, its nature as a constructed fiction is often not recognized nor clearly understood by students, especially at the undergraduate level. Thus, the seeming stability of a particular rhetorical stance risks masking the unstable and discursive nature of the discipline, and of its need for continual redefinition. Framing the pursuit of an undergraduate architecture thesis through the context of play, on the other hand, requires students to engage this unstable and discursive nature of the discipline directly. In so doing, they are confronted with what Reyner Banham described as the "black box" of architectural design—a process known only by its input and output, while its inner workings remain inscrutable and enigmatic. However, contrary to Banham's suggestion, this black box is neither a reliquary for secret disciplinary truths, nor is it a "mystery for its own sake."[5] Rather, while the black box at the heart of the discipline contains only space, it is not empty. In fact, the space that the black box contains is a precious and invaluable *discursive space*—within which the nature and value of architecture can be continually redefined, debated, and kept in play.

ENDNOTES

1. Eugen Fink, trans. Ute Saine, and Thomas Saine, "The Oasis of Happiness: Toward an Ontology of Play," *Yale French Studies, No. 41: Game, Play, Literature* (Yale University Press, 1968), 24-26.
2. Roger Caillois, trans. Meyer Barash, *Man, Play, and Games* (New York: The Free Press of Glencoe, 1961), 7.
3. Fink, 22.
4. Sanford Kwinter, "Playtime," in *Far From Equilibrium: Essays on Technology and Design Culture* (Barcelona: Actar, 2008), 137.
5. Reyner Banham, "A Black Box: The Secret Profession of Architecture," in Mary Banham ed., *A Critic Writes: Essays by Reyner Banham* (Berkeley, CA: University of California Press, 1996), 299.