Drift House

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The history of architectural ornament is rooted in experimentation. In *The Grammar of Ornament*, Owen Jones establishes a strategy based on repose, truth, and sincerity. However even this approach to ornament is primarily mimetic, using it as a "material expression of the wants, the faculties, and the sentiments, of the age in which it is created."[1] The Modernist movement abandons the concept of ornament, regarding it as a superfluous cosmetic application, which ultimately detracts from the more desirable functionality of architecture.

We propose interplay between performance and ornament, between utility and mimesis, to surreptitiously re-insert ourselves as professionals into the art of building. For us, ornament evolves as a manifestation of "site forces" and therefore works to infiltrate the poetic, compositional aspirations of a design. "Site", as a term, is currently rooted in static pedagogical definitions, evoking images of landscapes; at worst a two-dimensional schematic drawing or photo, at best a technologically abstract "model." Sanford Kwinter redefines the idea of site, and provides a theoretical foundation from which we build:

> " This analytical model- based on developmental pathways, dynamical interactions, singular points, and qualitative, movements in abstract, sometimes multidimensional space- arguably furnishes a far richer theory of "site" than most currently employed in orthodox aesthetic or architectural practice."[2]

Within this expanded definition of site, ornament propels itself beyond its semantic and decorative history as a merely decorative application to become an integrated, conscious system.

A primitive[3] instigates the system, acting as a constant geometric entity that is repetitively struck by various site forces. *Drift House*, a small, portable housing unit for the homeless in transition, is a prototype of this new approach to ornamental articulation. It cultivates both individual expression and communal exchange through the articulation of customizable environments within privacy gradients on various scales. The unit's surface patterning draws upon a speculative addressing system (based on universal geometry – squares, plus

signs, hexagons, circles – rather than English letters or numbers) as its primitive. The addressing system becomes an impetus for the informed execution of other surfaces in the project; the ornamental primitive is translated throughout, sublimation over application. Thus, ornament emerges as a versatile element, synthesizing poetics and performance as well as providing a new avenue of critical discourse regarding material quality, decoration, and the social potential of design.

1. INTRODUCTION: SITE, FABRICATION, AND GRADIENT

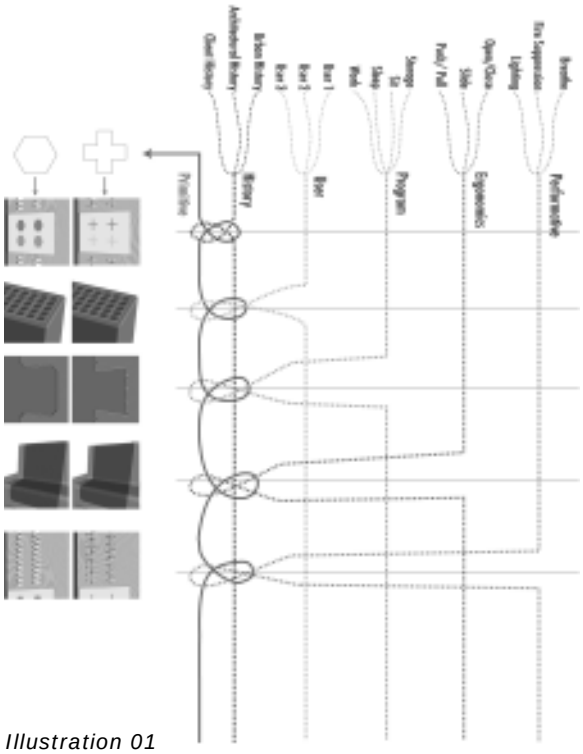

Illustration 01

Primary to the interplay between ornament and performance, as mentioned above, are particularities of *site* (in Sanford Kwinter's expanded definition of the term). In our system, every site instigates a new surface pattern. Variations in site prompt variations in pattern. By diagramming cross-sectional site fluctuation, we develop a pattern with reciprocal complexity and plurality. Flows of input from client, program, budget, ergonomics, materials, and scale, whether utilitarian or poetic, form the skeletal underpinnings of an ornamental system to come. **(Illustration 01)** *Digital fabrication*, then, imprints these otherwise invisible site forces onto the materials of a project. In our work, it facilitates an intricate dialogue between the diagrammatic and the material. Once established, our pattern changes smoothly, along a *gradient,* from one shape to another, not abruptly. This gradual morphological change, an emergence in and out of states of useful-ness and useless-ness, generates a heterogeneous pattern with an underlying logic. If one examines an isolated piece of the pattern, one gleans some understanding of how and why it looks the way it does **(Illustration 02)**, but the overall effect is an ornament of unfamiliarity and otherness.

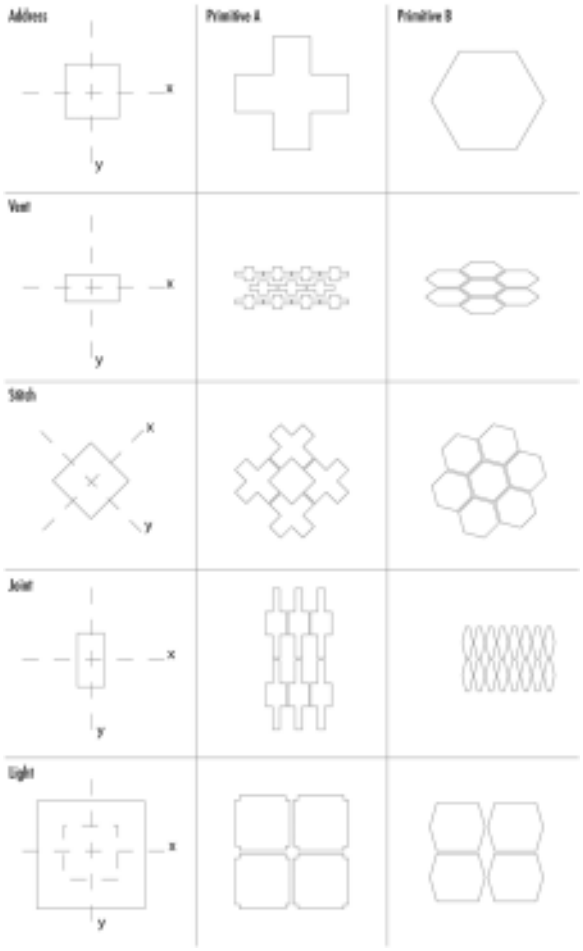

Illustration 02

In the following discussion, we will detail how these three topics - *site*, *fabrication*, and *gradient* - play a role in the development of ornament. Specifically, *Drift House*, a mass-producible, portable

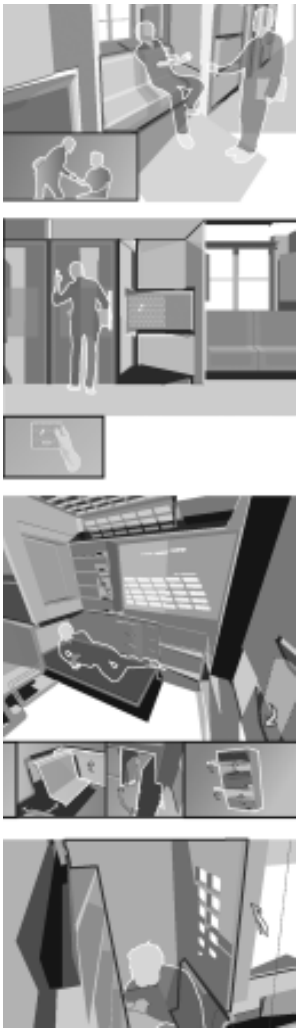

Illustration 03

housing unit for the homeless in transition, will serve as a vehicle for illustrating our proposition.

Under the heading *site*, we advocate research, analysis, and diagramming as means for understanding a typical "day-in-the-life" of a unit inhabitant. **(Illustration 03)** This information leads us to the development of a "primitive," or the most basic unit in an evolutionary system, which serves as a pattern template. We develop this template into the project's ornamental system.

Where one might imagine *fabrication* as just another sub-category of *site* - one in a long list of site forces - we place higher value on it. In *Drift House*, where we explore pattern shifts over long

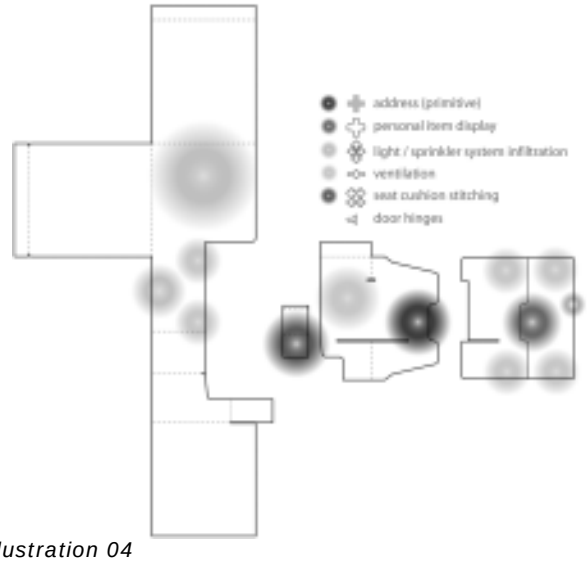

Illustration 04

expanses of surface, the nature of incremental shape adjustment necessitates a digital engagement with the project. Digital fabrication, then, is an extension, not far removed, of the lines we draw. Ornament is as much influenced by the limits of the digital / material interface as it is by programmatic site requirements.

Finally, *gradient,* as we will illustrate through *Drift House*, describes how we apply pattern. At first seeming repetitive and homogenous, pattern is actually in constant, slow flux. This allows *Drift House* to be familiar and useful, on one hand, while simultaneously novel and other-worldly, on the other. One region of pattern may be indicative of address, while a few feet away, a related but slightly different pattern allows for air circulation or accommodates door hinges. Different in size and shape, but of the same geometric family, the patterns are connected by a gradually shifting hybrid pattern. While this in-between condition serves no "purpose" in itself, it provides consistency and continuity, maintaining the status of geometry as somehow beyond utilitarian, but not just decorative. Gradient promotes this purposeful confusion.

We will conclude with relevant questions about *Drift House*. These center around issues of our investigation's appropriateness (considering the project's program - a homeless housing unit), mapping and diagramming as processes related to ornamental expression, the role of research and analysis in the development of ornament, and the role of history (the tradition of ornament) in an

exercise that, up to now, has been rooted in the historical trajectory of ornament only in spirit.

2. SITE

In *Drift House,* ornament is grown from site rather than imposed onto it. By uncovering a geometric system to account for the project's complex program, we can apply it like a translucent veil to the housing units as both a poetic ordering system and a directional, informational system.

The physical site for *Drift House* is the *Andrews House*, a partially occupied lodging house located at 197 Bowery in Manhattan, New York. This existing building, which was renovated by Oaklander Coogan Vitto, P.C., has common bathrooms and showers on each of its nine floors. The charge by the sponsors of the project, *First Step Housing*, *Common Ground Community*, and *The Architectural League of New York* is to design, detail, and provide technical specifications and accurate cost estimates for 146 new housing units within this existing building. The units are to be 60 – 88 square feet with a minimum of 19 units per floor. The brief asks us to consider the units as glorified pieces of furniture; brought to the site in a nearly complete stage and set in place. Other programmatic and technical requirements include:

- Minimum of (1) bed @ 6'-6" x 2'-6" with air circulation allowed underneath, (1) closet / storage space, (1) desk, (1) chair as part of the design.
- Cost of each unit not to exceed $5000.
- Each unit must be private and secure.
- Units are modular and easily replicable through prefabrication and/or a kit of parts approach.
- Units offer the possibility of individualization by the end user.
- Allow air flow through each unit.
- Account for light infiltration from overhead existing fixtures and natural light from existing windows.
- Consider the role of the corridor.
- Use durable materials that require little maintenance.
- Maximize possibilities for storage and shelving for clothes, radios, televisions, clocks, fans, small box refrigerators.

We begin by examining, researching, and analyzing the above project requirements, both physical and non-physical, in order to maximize our understanding of *site flows*. In doing so, we reveal the patterns, shapes, and geometries dormant in the site. Sanford Kwinter explains most clearly the distinction between pattern *growth* and pattern *application* in his description of snowflake formation based on fluctuating site conditions:

> "What is interesting is that despite (a snow crystal's) partially fixed matrix no two results are ever alike. Each is different because the crystal maintains its sensitivity both to time and to its complex milieu. Its morphogenetic principle is active and always incomplete (i.e., evolving)—the snowflake interacts with other processes, across both space and time; it belongs to a dynamical fluvial world. As the snow crystal falls it absorbs, captures, or incarnates all the chance events, all the fluctuating conditions (magnetic, gravitational, barometric, electrical, thermal, humidity, speed) and builds them, or rather uses them, to assemble itself, to form its structure or edifice. The snow crystal creates itself in the middle of, and by means of the convergences of, flux."[4]

A snowflake (or in our case, pattern), according to Kwinter, is "evolved" from "fluctuating conditions" (site flows) "across both space and time" (within and around a site's physical boundaries, over its daily, weekly, monthly, and yearly cycle). It "assembles itself" based on the forces around it. These dynamic forces, according to Kwinter, form a "far richer theory of 'site' than most currently employed in orthodox aesthetic or architectural practice."

The word *drift* communicates how we interpret site flows and develop them into ornamental pattern throughout the project:

drift[5]

n 1: a force that moves something along

2: the gradual departure from an intended course due to external influences

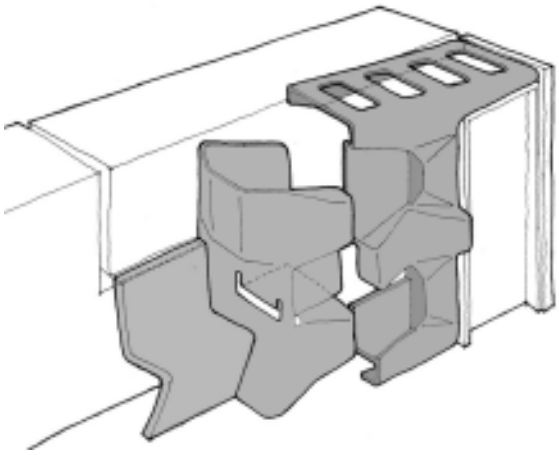

Illustration 05

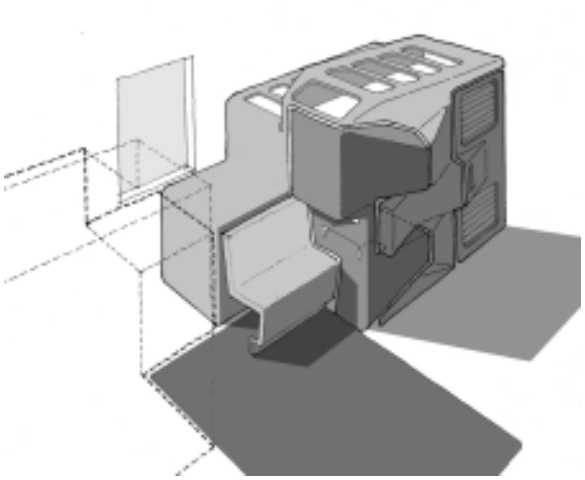

Illustration 07

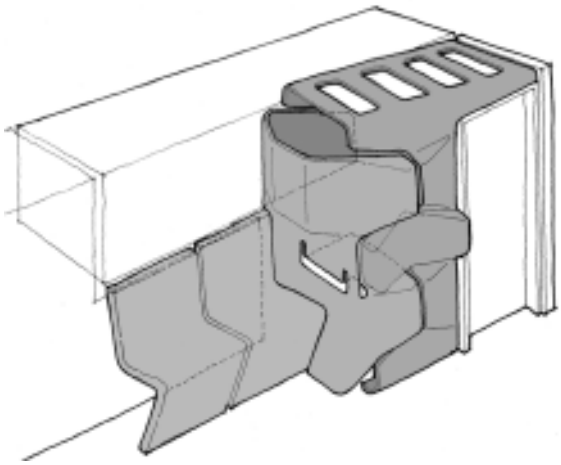

Illustration 06

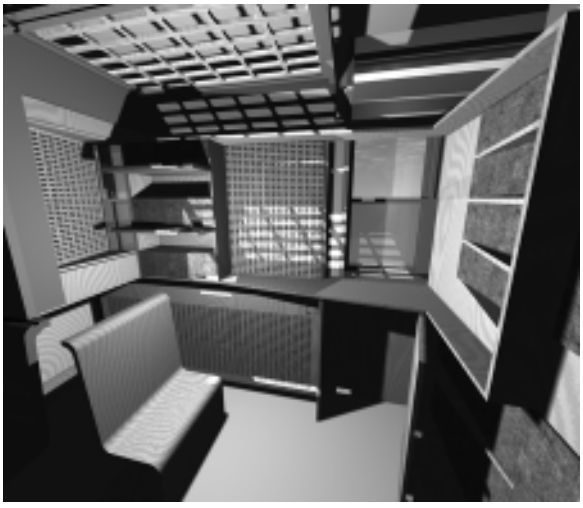

Illustration 08

3: something heaped up by the wind or current

4: general meaning or tenor: “caught the drift of the conversation”

v 1: be in motion due to some air current

2: wander from a direct course or at random

4: be driven or carried along

2.01 site *condition A: flexibility*

Drift House is an environment that grows, shrinks, shifts, and adapts according to the living requirements of its inhabitants. A series of incremental changes in size and shape allow it to gradually fluctuate, or “drift”, from one state to another (open to closed, public to private, light to dark).

The unit’s primary drifting component is a large sliding fiberglass shell along its front elevation. When slid “open”, the interior volume of the unit expands. A work surface slides over a built-in seat to create a private reading and writing area. **(Illustration 04)** In the “closed” position, the interior space of the unit collapses, shifting its volume outside the unit to a public “porch” space. The unit slides back across its built-in seat, transforming it from task chair to porch bench. **(Illustration 05)**

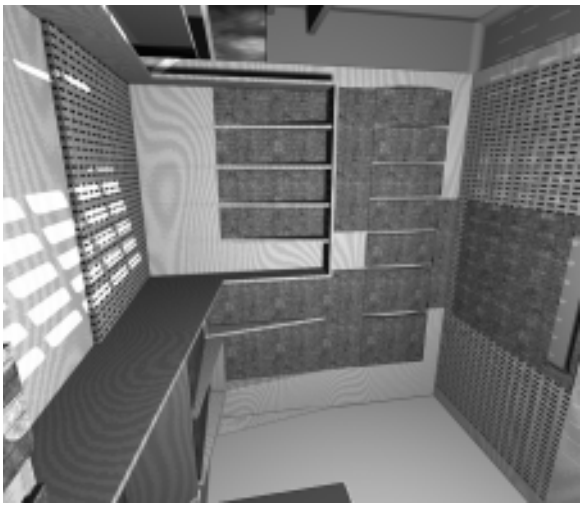

Illustration 09

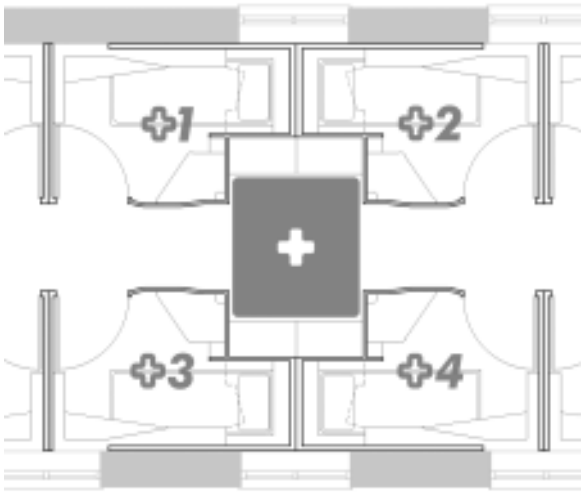

Illustration 10

Four units share each porch space, encouraging chance encounters and neighborly conversation. We locate the porches adjacent to existing windows to create brightly lit intermittent vestibules down the length of the public corridor. **(Illustration 06)**

Ornament emerges from this condition as a hand pull for manually sliding the fiberglass shell. As with all pattern in the project, this hand pull derives its shape from the primitive of its particular unit. This primitive emerges from the development of a universal addressing system. We apply one, two, three, or four primary geometric shapes to each of four units in a pod to identify them to residents who may be illiterate or not fluent in English. On each floor of nineteen units, we establish five distinct primitive shapes (square, circle, triangle, diamond, and plus sign). So, the hand pull of each unit is familial with its originating primitive, but responsive to the ergonomic requirement of the task at hand.

Minor drifting components inside the unit allow residents to finely tune their environments. Generally, there is a day and a night condition. In the daytime, the bed is folded into a wall recess, accommodating an accessible 5' turning radius. A large perforated sunshade is open and a moveable bent plywood chair is slid out into the room for watching TV, reading, or visiting with a guest. **(Illustration 07)** At night, the bed frame folds down, the sunshade is closed, and the moveable chair is stored away. **(Illustration 08)**

Ornament plays an important role in these minor drifting elements as well. For example, the plywood bed platform requires ventilation holes to achieve a specific 'percentage opening,' as specified in the project brief. We similarly perforate the operable sun shade, but with a significantly smaller 'percentage opening.' Again, pattern accommodates different performative requirements through variations on the same primitive shape.

2.02 site *condition B: porosity*

"Drift" also refers to the unit's porous condition. We envision *Drift House* as a series of porous skins that allow light and air to freely flow in and out of the unit. For example, large openings in the ceiling allow light, conditioned air, and, in an emergency, sprinkler water to infiltrate the unit from above. Openings towards the rear wall accommodate natural lighting from existing windows, while along the front wall, we shape them to maximize air circulation.

With front, rear, and top surfaces of the unit each accommodating markedly different site conditions, the side surfaces of the unit evolve into transitional zones. This strategy provides us with an underlying logic for pattern 'growth' across the entire project: a site force diagram yields a surface pattern diagram.

2.03 site *condition C: exchange*

Finally, “drift”, for us, suggests informal, flowing exchange. By this we mean exchange between residents, exchange between residents and their units, and exchange of old life styles for new ones.

We envision *Drift House* as an open, accommodating living environment, not prescriptive. To this end, it incorporates large open horizontal surfaces, small shelves, concealed storage, and soft storage pockets. We imagine a flexible system that allows for any number of programmatic scenarios. It is important that *Drift House* welcomes multiple interpretations and lifestyles. One resident may just want a spot to throw a few boxes and a place to sleep at night, while another may want to unpack and arrange her possessions, spending more time, socially and privately, in and around her unit.

Ornament facilitates this unit personalization. In the unit door of, for example, pattern grows into large framed openings for the display of personal items. Residents can customize their units with personal memorabilia, favorite colors, or meaningful photographs. Inside, we apply a stitched pattern to industrial felt wall pockets. This material, again, accommodates the display of personal items in its pockets and provides a pin-up surface for larger items. **(Illustration 09)** Ornament, in both cases, fades to the periphery, promoting its use over its appearance. Simultaneously, however, the pattern carries through, unbroken, as a quiet, continuous presence.

To facilitate exchange between residents, pods of four units form public spaces defined by proximity, light, pattern, and color. We mirror the four units about a center point, marked on the corridor floor with a primitive ‘super-graphic’ defining ‘neighborhood.’ **(Illustration 10)** Each unit’s seat cushion color matches its neighborhood floor color; cushion stitching pattern matches the corridor ‘super-graphic.’ As one walks the length of the corridor, one encounters distinct public porches, brought together and given identity through shape and pattern.

Many First Step Housing residents may be unaccustomed to a regimented, scheduled lifestyle. Drift House acknowledges the transitional nature of its resident’s lives. It endeavors to ease their approaching lifestyle changes by drifting, rather than abruptly switching, them into a new living condition. We envision ornament as a trigger for warm and familiar memories, like a soft quilt with its mosaic of colors and textures. At the scale of the hand, ornament is open to personalization and adaptation. As a wide-sweeping texture, it is organizing and systemic, in service of the larger community.

3. FABRICATION

Fabrication, particularly digital fabrication, serves as a lens, through which we will view *Drift House* ornament from three distinct perspectives: that of the machine, that of the resident, and that of craft.

3.01 machine

Digital fabrication is fundamental to the determination of pattern geometry. For example, one machine we use - a computerized numerically controlled, or ‘CNC,’ router - places strict technical rules on materials, which have enormous compositional implications. For the wood components in *Drift House* we could specify medium density fiber board (MDF), finish grade plywood, rough plywood, particle board, or oriented strand board (OSD). Each of these materials responds differently to router cutting. In descending order, each is less and less conducive to intricate cutting and more and more likely to chip. Fabrication in combination with material choice, then, is directly related to geometric flexibility. Also important, a router can only cut radiused inside corners (without additional, costly steps involving hand cutting). This again sets up specific do’s and don’ts for pattern geometry. A circle is possible, a square is not, but we can produce a square with eased corners.

In contrast, we can produce squared-off corners in fiberglass. We can also generate shapes that impress only part way into the material (MDF can also do this, but not plywood). This means that the patterns we inscribe in fiberglass can be markedly different than those in wood, simply as a result of material-specific fabrication idiosyncrasies.

Industrial felt, the third primary material in *Drift House*, has unique constraints, as well. It is typically die-cut when punctured with a pattern, which makes it cost prohibitive to perforate in the same manner as with wood and fiberglass. However, we can make linear, straight cuts easily, and digital

stitching machines can apply a sewn or quilted pattern to the material. This generates a third fabrication scenario.

All three materials then, have their own particular languages, or more precisely, dialects, which each act as filters (in addition to the *site* filters mentioned earlier) impacting pattern geometry. More compelling for us, however, is that if we diagram fields of *site* pattern in combination with *fabrication* pattern, there are misalignments, gaps, and overlaps. The result is a rich tapestry of patterns with a variety of influences, which, when seen in relation to one another, are difficult to trace, but produce a consistently varied yet familial and poetic ornamental system.

3.02 resident

We hope that *Drift House* encourages the improvisational, mischievous reinterpretation of its ornament by residents. Only because of the possibilities digital fabrication opens are large swaths of 'useless' ornament feasible in such a strictly pragmatic project. These areas of un-programmed pattern, occurring between functional nodes, encourage playful, creative, and unpredictable interpretations. Do particular perforations work well for tying off a clothes line, or supporting a picture frame hook, or storing and organizing letters? It's up to the resident. Digital fabrication is indulgent in its distribution of treatment (unique, variable pattern is as effortless as repetitive pattern, extensive pattern no different than limited) freeing us to explore surface inscriptions otherwise considered frivolous. We are intrigued that *Drift House* residents can invent uses for useless ornament; ornament that is only technically and economically feasible, only appropriate in a homeless housing unit, specifically because of digital fabrication.

3.03 craft

Finally, digital fabrication allows us to retake control of craft, a tradition rich in the history of ornamental production. Since the relationship between drawing and making is so close in digital fabrication, fit and precision are dependent on our drawing accuracy and the depth of our technical knowledge. This is again why we place such importance on it. As evidence that craft can be more than just the hand-fitting of wood joinery, consider the following passage from Mitchell Schwartzer:

> "Given its recent hibernation, craft needs far-reaching provocations against complacency. Today the most panoramic act may be to reach into the experiences of the past to forge new destinations. To this end, the mixed messages discussed in this essay argue against considering craft (and the crafts) alien either to machines of electronic networks. Craft is the chiseling of the handtool as well as the downloading of software, the detective of nature forming."[6]

Precise, incremental pattern changes are the site of a new, redistributed craft. We confront the task of uncovering, deciphering, and making legible the complex geometric language of our patterns with the same care and attention to detail as that of a wood smith, carefully chiseling dovetail joints into a board. Also, and perhaps more pertinent to Schwartzer's definition, the playful, dancing spirit of our ornament, its attitude towards what one typically considers 'useful,' and its critique of how we house our disadvantaged populations, are all part of what we consider the craft of ornament (craft has roots in the word critique). In this sense, the breadth and depth of our exploration serves as a mode of critical inquiry, a questioning disposition made possible through digital fabrication.

4. GRADIENT

> …the cosmetic is not just another member of the family of decorative architectural appurtenances collectively known as ornamentation….Ornaments attach as discreet entities to the body like jewelry, reinforcing the structure and integrity of the body as such. Cosmetics are indiscreet, with no relation to the body other than to take it for granted….Where ornaments retain their identity as entities, cosmetics work as fields, as blush or shadow or highlight, as aura or air. Thinness, adherence, and diffuse extent are crucial to the cosmetic effect, which is more visceral than intellectual, more atmospheric than aesthetic. Virtuosity at ornamentation requires balance, proportion, precision; virtuosity at cosmetics requires something else,

> something menacing: paranoid control, control gone out of control, schizo-control."[7]

In this light, one might categorize the patterns of *Drift House* as cosmetic rather than ornamental. Our goal is to develop site, material, and program (the performative) into something poetic, novel, and slightly alien (the visceral). By drawing on streams of information flows, overlapping systems, and catalogues of material prosperities, we endeavor to stretch pattern to its limit; to a condition where it can no longer be traced back to its origin. Consider the following passage from Kolatan/McDonald:

> "The chimerical differs in crucial ways from other forms of hybrid systems, such as collage, montage, or the prosthetic. While the latter are also systems in which the diverse parts operate together, these parts never lose their individual identities….The idea of irreversible, irreducible hybridity, both as concept and product, would not have been thinkable within the paradigm of mechanics to which the technique of collage and montage are linked. In a chimera, the relationship between the constituent parts is not one of interconnection or adjacency. At least, not simply. The limits of the parts, the exact delineations of the thresholds between parts, are not clearly identifiable. Rather, like the result of a successful graft, the border disappears."[8]

We deploy gradient to blur the "thresholds between parts" of our patterns. Gradient allows both *site* and *fabrication* forces to be 'grafted' into the surface of *Drift House.* The performative requirements of the project are assimilated into its surface terrain through a pliable net of pattern. Like a rope net that flexes and strains, but never breaks, softening the fall of a diving stunt double, our pattern stretches, through gradient changes, to accommodate the programmatic forces dropped into its expanse. **(Illustration 11)**

Consider the analogy of pattern to a pool of water. The initial repetitive field of pattern is like a liquid surface, and site, program, and materials are drops of liquid landing on that surface. As the drops land

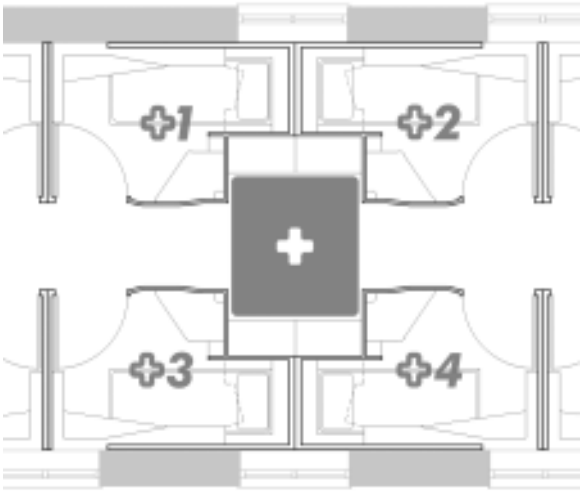

Illustration 11

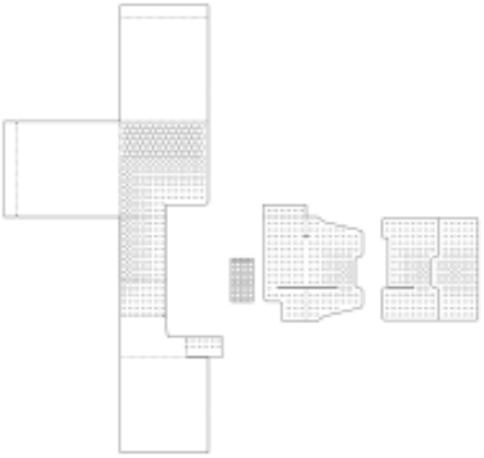

Illustration 12

in the pool, they are assimilated into that pool, and eventually disappear. But if those drops are compositionally different than the pool, their impact on the pool remains, even after the circular waves fade. Think of drops of food coloring on the surface of water. These colored drops remain distinct for some time, especially near the center point of the drop, but will begin to fade and blend with the water at their edges. Like a 'graft,' border disappears. The performative requirements of *Drift House* are similarly blended into poetic fields of surface ornament, through gradient, so that the resultant whole is a "chimera": an unrecognizable, untraceable hybrid of its constituent parts; "a (mythological) fire-breathing she-monster."[9] **(Illustration 12, 13, 14, 15)**

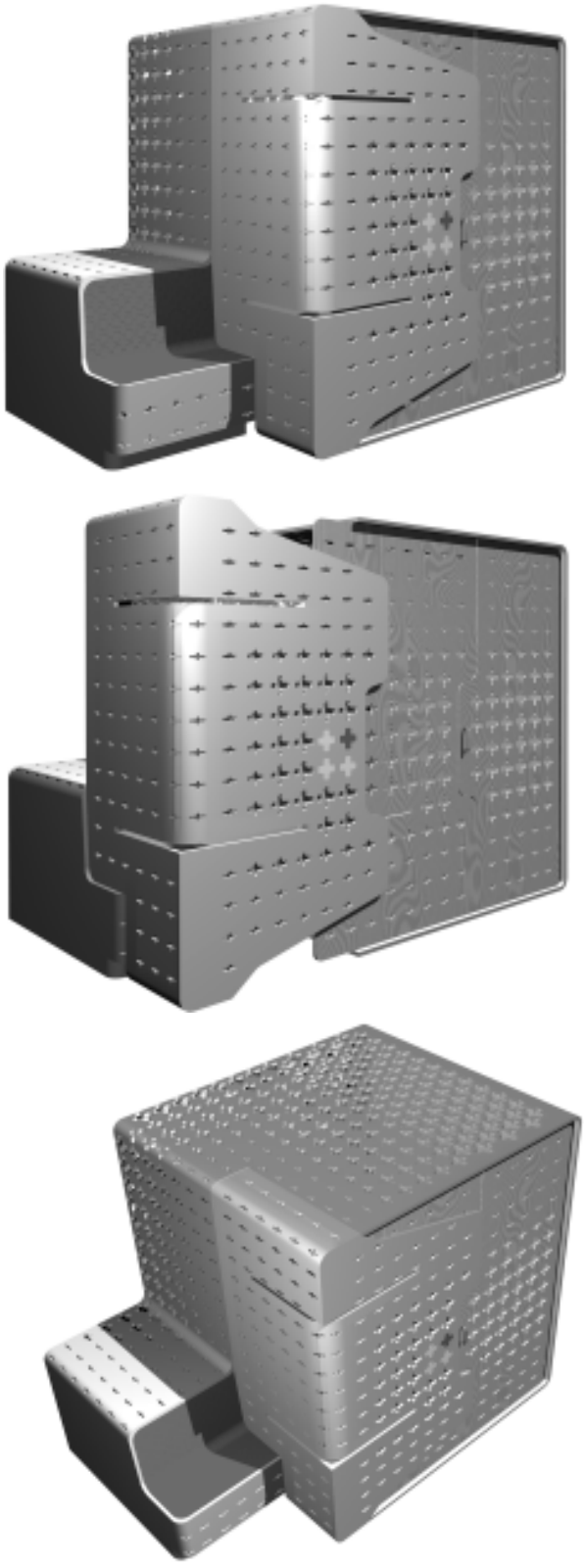

Illustration 13,14,15

5. CONCLUSION

We consider *Drift House* an open-ended exploration of the potential relationships between performance and ornament. It is a vehicle for asking questions and instigating discussion. Clearly, the correlation between "form and function," the poetic and programmatic is nothing new. Nor is the idea that architectural form can be grown out of site forces. With computational dynamics modeling, we can input quantities into mathematical formulas and then set those formulas into motion in order to generate form. Greg Lynn's "Embriological House" is an example of this system. However, where we hope we are covering new ground is in the generation of "grown" form at the local scale of pattern and treatment, while maintaining global form as regular and restrained. With this strategy in mind, one question we pose is slightly subversive in nature: can ornament be a more palatable site of formal exploration than entire buildings? Can ornament allow these experiments to fly under the radar, so that a project can maintain an illusion of normalcy while something more sinister, something alien is quietly at play? On one hand, our project says "traditionalists take heart; ornament is back as a valid source of poetic expression in architecture." On the other hand, however, quietly, *Drift House* is a fundamentally modern proposition. As mentioned, it is really a play on the modernist mantra 'form follows function.'

Throughout this discussion, we have described our process as inextricably tied to drawing. Drawing, for us, is a research and analytical tool, deployed to hold responses at bay for as long as possible in deference to questions. Might intensive forays into surface treatment extend the arm of research further into the design process? Can the continued discovery of increasingly nuanced site forces change ornamental strategy long after major design decisions have been made? We hope that our process can reinvigorate drawing as an inquisitive tool, such that site diagrams and architectural drawings merge closer together.

Additionally, *Drift House* opens questions around the issues of appropriateness. For example, does an exploration into cosmetic, decorative, or ornamental issues have any place whatsoever in a homeless shelter, where there are clearly other very serious issues to consider? Is the ratio of effort to benefit sufficiently tilted to legitimize the explora-

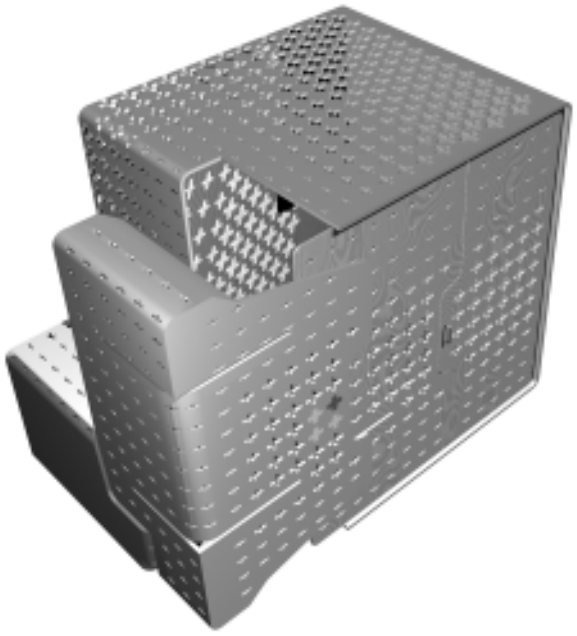

Illustration 16

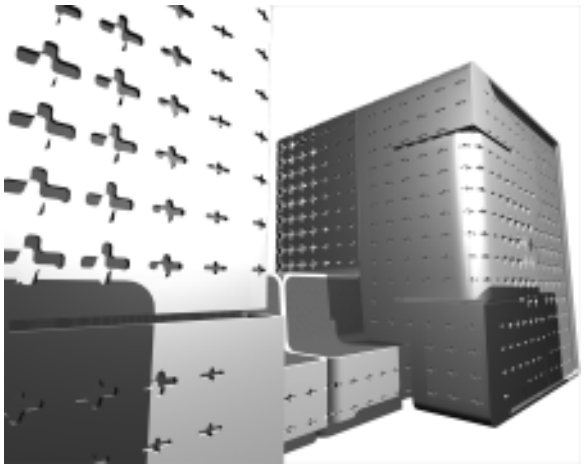

Illustration 17

tion? In general, what might the benefits be of performative ornament to its inhabitants? Does the feedback loop between surface and site continue after a project is completed, where the dialogue is between surface and user? Since performative ornament is driven by site specific, client specific, and project specific forces, we hope it is more likely to accurately address germane issues. We consider it fundamentally an exercise in uncovering and deploying appropriate responses.

Finally, in any project invested in morphological evolution, in a system where shape is grown from initial inputs and allowed to self-generate, where does the compositional eye of the designer come into play? How does an architect insert his or her hand into the process? Perhaps more appropriately, when does this occur? These are questions without answers, which is exactly why, as an intellectual exercise, ornament is so compelling for us. With *Drift House*, we develop a patterning system for one primitive, refine that system, then drop four other primitives into it, allowing them to be pulled through with little redesign. We are very interested in the role of architects as "strategists," pivotal at the beginning of the design process in establishing the rules of engagement, establishing appropriate systemic strategies, and then stepping away so that project systems can evolve. This can occur at different scales and with different project components. With *Drift House* we endeavor to tread lightly. The project's engagement with the concepts of evolutionary growth promotes the participation of architects with a perhaps undervalued component of architectural production: that of the long-forgotten ornamental detail.

NOTES

1 Jones, Owen. *The Grammar of Ornament*. Dorling Kindersley Press. New York. 2001.p 23.

2 Kwinter, Sanford. *Architectures of Time*. MIT Press. London. 2001. p 28.

3 Lynn, Greg. Lecture. University of Cincinnati. April 21, 2004.

4 Kwinter, Sanford. *Architectures of Time*. MIT Press. London. 2001. p 27-28.

5 *WordNet ® 2.0, © 2003 Princeton University*

6 Schwartzer, Mitchell. "Craft Noir".

7 Jeffrey Kipnis, "The Cunning of Cosmetics: A Personal Reflection on the Architecture of Herzog and De Meuron" from *El Croquis* 84. *The Light Construction Reader.* The Monicelli Press. New York. 2002. p431.

8 "William McDonald and Sulan Kolatan: Recent Work," Columbia Documents of Architecture and Theory, vol. 6. 1997. p 123.

9 *Index Architecture*, The MIT Press. Cambridge. 2003. p 14.