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Michael Aaron Stone

University of Tennessee, Knoxville, mstone28@vols.utk.edu

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I am submitting herewith a thesis written by Michael Aaron Stone entitled "MODELING PRACTICE Immersive Design Methodologies." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Architecture, with a major in Architecture.

Tricia A. Stuth, Major Professor

We have read this thesis and recommend its acceptance:

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MODELING PRACTICE

Immersive Design Methodologies

*A Thesis Presented for the
Master of Architecture
Degree*

The University of Tennessee, Knoxville

*Michael Aaron Stone
August 2017*

Abstract

Modeling Practice is centered around an immersive methodology that connects the architect to the process of making. The value of reflection and a consciousness of methodology are intrinsic layers of thought throughout. The act of building influences the process of design. The experience of creating is as important as the final result.

The practice of creating architecture comes with a range of limitations, notably a disconnection from the building process, and in many cases an insubstantial amount of time to interact with the site and surroundings in which the project is located. Throughout many years of working in the profession, the awareness of these particular hindrances to practicing architecture in a fully engaged and fulfilling manner have become prevalent. Prior to the pursuit of an advanced education in architecture, the commencement of a separate, slower endeavor to build a home sparked ideas that lead to the alternative methods of operating that this study investigates. *Modeling Practice* sets up an immersive methodology that connects the architect to the process of making and building while utilizing a unique studio environment and a site that has been explored, transformed, and reflected upon by the architect over the last seven years.

Practice in this manner can be described as unmediated, as there are no time limits of construction, no clients to contend with, and no outside contractors; each decision is made by the architect, and each act of the process is either performed by the architect or directly under the architect's supervision. The role of the architect is rewritten. The architect investigates, designs, and constructs. The architect is immersed in the site and in the process of creating architecture.

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Chapter 1: Synopsis and Background

Through years of working in practice, questions arose about the purpose of the architect and how the accepted norms of both the profession and the design process of the discipline could be challenged.¹ The standard approach to architectural production in the profession has many hindrances, including rushed schedules, merchant-driven motives, strict guidelines, and a variety of regulations that narrow the margins of professional architectural production.²

Modeling Practice exhibits an alternative approach to creating architecture that will engage the territory between the profession and the discipline. The aim is the architect's attainment of a greater degree of freedom and a more generous time frame with which to create. This proposal does not seek to redefine practice universally, but to explore a mode of working that values reflection and building as part of the process.

Full engagement defines the position of the architect in this model. Where does authority get handed to others and where does the hand of the architect touch the project the strongest? The current separate positions of architect, developer, and builder are problematic.³ This proposal seeks to unite these three roles under the responsibility of the architect. Much is left to be determined, as each of these positions have multiple tasks and roles beneath them. Does the architect produce the construction documents, collect bids, then touch his boots to the ground at the jobsite until the project is finished? Does the individual architect bind the prints, scour the legal documents, and lay every single brick? With each category of 'hat' that the architect wears,

1 "What is the role that architects have in the built environment? Are architects the service professionals on the periphery of the building industry? Are architects struggling artists that seek creative ways to sneak good design into the relentlessly cost-based model for development?"

Kostrominova, Anastasia. "State of Ruins." Saarinen Swanson Essay Competition Entry, A. Alfred Taubman College of Architecture+Urban Planning, May 6, 2013.

2 "In architecture, the rules are numerous, daunting, and often overwhelming. They are political (codes, licenses, regulations, laws), economic (costs, finances, real estate), technical (labor, skill, craft, technique), cultural (precedents, conventions of use, desires), formal (typologies, proportional systems, geometries), and material (gravity, raw resources, ecology), to name only a few."

Lewis, Paul, Marc Tsurumaki, and David J. Lewis. *Opportunistic Architecture*. Princeton Architectural, 2008. Print. (Digital Edition). Pg 10.

3 The client-architect-contractor relationship is dysfunctional. Deamer, Peggy. "Introduction." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg19.

there lies beneath several layers of subcategories of labor and monotonous tasks, each varying with the scope and scale of the project.

The role of the architect has transformed greatly over the past two millenniums and even more so in the past century.⁴ Hindrances of time, complexity, and a division of labor have become more prevalent. Many architects have overcome or stepped around these hindrances in innovative ways. The premise of this thesis is introduced as a background of my experience in practice, paralleled by the personal endeavor to build my own home.

An instigator of this thought process was set in motion seven years ago, less by intellectual curiosity than the desire to build a place of my own as time and finances allowed. The endeavor to build a home paralleled years of professional work and arose as a means of fulfillment to desires left untouched in the commissions of practice where budget and schedules prevailed.⁵ With this project I could have built whatever I wanted given the limitations. However a lack of design ability and influences left the means of generating ideas far out of reach. Through these limitations and the decision to refocus on education in architecture, the value of designing and building slowly has developed as an alternative pathway of production. This alternate means of creating is driven by a desire to invest in and construct ideas that will become defined through the process of making.⁶

Through constructing as a means of design, the architect becomes engaged more closely to the ideas envisioned and

4 "The most significant, yet troubling, legacy of modernism has been the specialization of the various elements of building once directed and harmonized by the master builder." Kieran, Stephen, and James Timberlake. *Refabricating ARCHITECTURE: How Manufacturing Methodologies Are Poised to Transform Building Construction*. New York, NY: McGraw-Hill, 2004. Pg xii.

5 "Buildings, as part of that exchange system, are thus reduced to objects of capital, and at a stroke supposedly divested of any social role. It was in the eighties that architects finally relinquished their political responsibility and capitulated to the insatiable demands of the marketplace." Till, Jeremy and Sarah Wigglesworth, "Strong Margins". *Samuel Mockbee and the Rural Studio*. Birmingham, Alabama: Birmingham Museum of Art, 2003, 66-68. Pg 1.

6 "We seek to bring all projects to a point of realization where their impact within the world can be made legible, either through material fabrication and construction or through careful development in drawings, models, and hybrid forms of architectural representation." Lewis, Paul, Marc Tsurumaki, and David J. Lewis. *Opportunistic Architecture*. Princeton Architectural, 2008. Print. (Digital Edition). Pg 10.

the architecture that is being created. The project is the vehicle to better develop those ideas and empower the builder.⁷ The architect becomes more fully engaged in each phase of the project. A collapsing of design, building, and experimentation into the design process of the architect will be pursued to then lend lessons to a greater result.⁸ The 'final' designs conceived at the culmination of this study will exist exclusively as a post-cursor to the necessities of the aforementioned processes; for they shall prevail only through particular methods employed.

The scope of the project is crucial. A smaller scope opens possibilities and allows a focus that is inconceivable on larger projects.⁹ More responsibility for the architect influences the scope to be more compact, otherwise timescale and responsibilities become infinitely unmanageable. The time to focus on detail and to think critically and analytically about each phase is a virtue of this thesis and an increasingly feasible objective with a project of manageable breadth.

The explorations of this thesis project are a small but crucial part of a much larger journey.

7 "...ordinary people perceived building as a path to empowerment." Referencing John Turner. Ross, Andrew. "Forward." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010.

8 "Where luck, or random trial and error, do enter into successful creativity, they enter in as an aid to purposeful searching and not a substitute for it. Jencks, Charles, and Nathan Silver. *Adhocism: The Case for Improvisation*. Garden City, NY: Doubleday & Company, 1972. Pg18.

9 "The scale opens up possibilities, which would not arise for large projects. The whole can be developed without the problems of repetition such as beginning and ending, and can be an entity in itself. Construction using a single material is easier. It is also easier to take risks. Simpler technical requirements are made of small buildings in comparison to large ones." Musso, Florian. "Simply Good". *In Detail: Building Simply*. Birkhauser, Boston, 2005. Pg17.



Figure 1: Fire at "The Land".

The Uncertainties of Practice

The questions that this thesis project prompts began years ago as I was sitting behind a desk working as architectural designer. Years of practice, prior to a formal education in architecture, lead to questions surrounding the purpose of the architect.

During my time in the profession I effectively produced legible, coherent sets of drawings that clearly spelled out every component and assembly, and were often meticulously executed [Figure 2]. The buildings that I became involved with designing were structurally sound, code compliant, thoroughly detailed, and capable of keeping the 'occupants' safe and dry. An intangible ingredient however was missing. I was serving the clients with what was expected and doing what was required, but yearned to provide a result that delivered a creative edge, a pursuit that neither time nor budget seemed to allow.

As much as 90 to 95% of projects come to completion without the direction or involvement of an architect.¹⁰ And when architects are sought out, they are often expected to merely draft others' ideas into documents that can be bid out, approved, and built. Undoubtedly this is not always the case, albeit artistic creativity is less often sought out by the commissioning clients, unless you find the 'perfect client'. This scenario is difficult to escape when one intends to make a living solely through practicing architecture.

While working in practice, an outlet to this perpetual cycle and to questions about the architect's purpose remained a burden as I pondered a separate endeavor, a side project that began to serve as a release for greater creativity and hands-on involvement, transforming into an unintended, intellectually intense journey that arrived to influence and sculpt a new personal methodology for creating architecture.

¹⁰ Ross, Andrew. "Forward." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010.

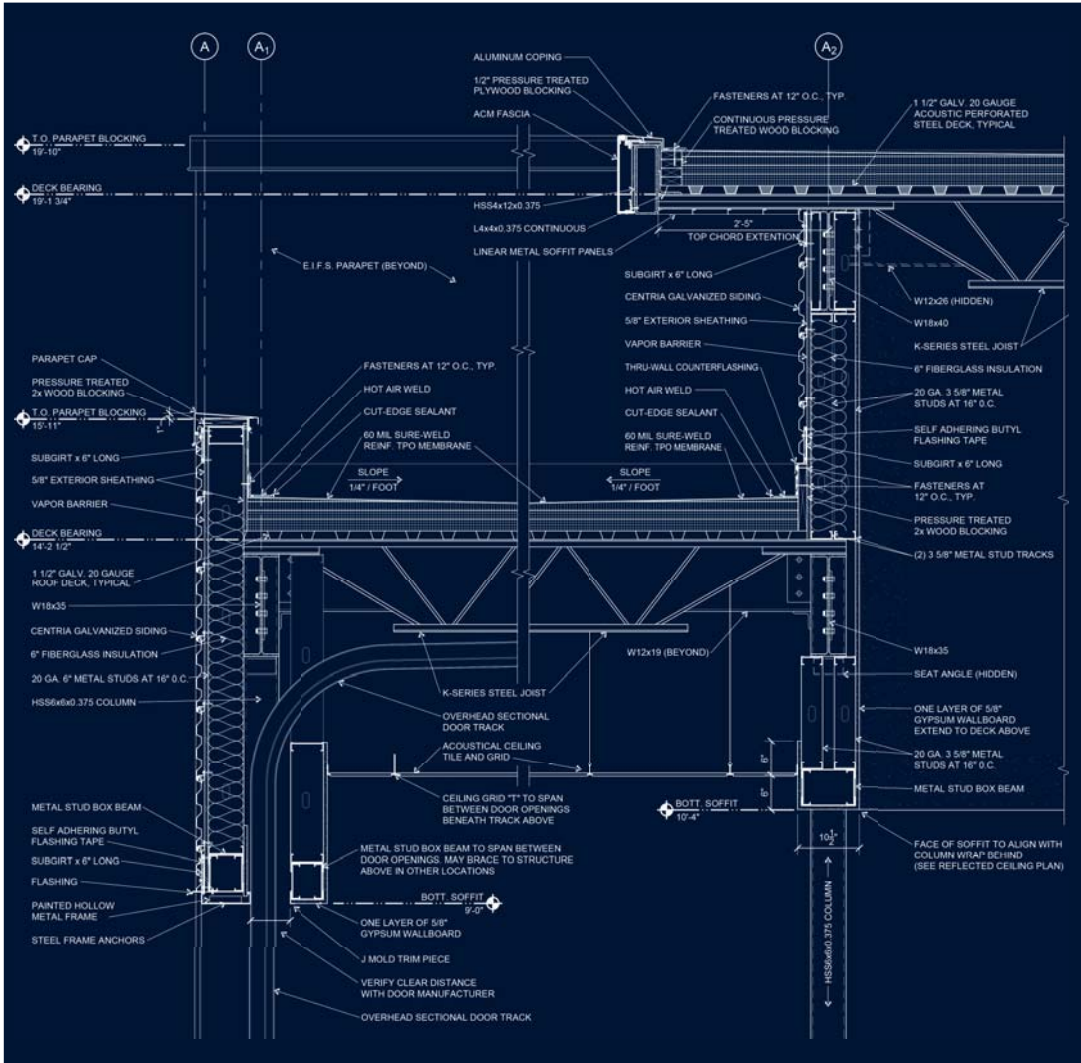


Figure 2: Wall Section Detail. Project is undisclosed.

The Land. The Home.



Figure 3: Dense Growth.



Figure 4: Into the Woods.

With this new project I was the leader, the designer, and the builder. I had a new type of freedom and time to think more creatively and openly without schedules and defined holistic budgets. This project became my second life as an architectural designer. It became my escape and my passion, and defined a freedom that fulfilled desires that could not be achieved elsewhere.

Having just graduated from college with a Bachelors in Construction Engineering, and, spending every penny that I had to my name, I purchased a three-acre wooded lot in Blountville, TN. This place became known as “*the land*”. The money I had earned from simultaneously working full-time, running a lawn mowing business, cutting and selling firewood, and designing residential projects on the side, amounted to just over \$30,000. Though there was nothing here but trees, vines, rocks, dirt, and wildlife, this was my new home [Figure 3]. Each day after working 8 to 10 hours in the office, I came out to “*the land*” to clear brush, cut small trees, and ponder each step of the process.

Pathways soon formed through the woods as I marked a number of trees that I would vow to keep in place [Figure 4]. I discovered rocks protruding from the landscape, nuances within the lay of the land, and areas where certain types of plants seemed to thrive. Carving a road (without heavy equipment) into the land, I headed in the direction of where I would one day build. I slowly cleared a path deeper into the woods. I worked every night until it was too dark to see, and spread gravel by hand to put it exactly where I wanted. Many times I spent the night in the forest.



Figure 5: A Day of Work.

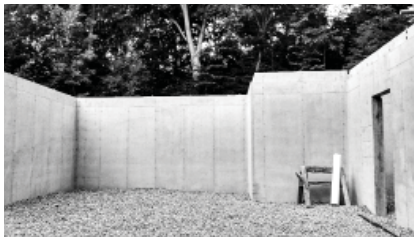


Figure 6: The Walls.

Each evening just before dark I considered what the house might look like, how it would fit into the forest, and who might one day enjoy it with me. After a few years, I had staked out the approximate site for the house, and continued clearing out the brush and trees in that immediate area. The woods became more transparent in the winter, and acted as a thick privacy blanket in the summer. Everyday I got to know the place better, and would camp out, invite friends over, and spend time not just working, but enjoying what I had shaped so far. Progress was always satisfying. *Each move influenced the next*. Each move also situated a period of healthy reflective thought.

By 2013 I was ready to build; enough money had been saved up, and I began work on the mass-grading and foundations [Figure 5]. I came close to having the funds to continue building the shell of the house, but a moment of intuition and reflection lead me elsewhere. Instead of continuing construction on the house, those funds bought my first two years of architectural education, an experience that has equipped me to design something far greater than the initial design. Today concrete and gravel exist in the woods in a state of minimal elegance. Too pure to be altered, but too many possibilities to pass up [Figure 6].

A poetic tranquility exists in this intermittent stage of existence. Distinct qualities stood out in the many moments of reflection that took place over these years, and the value of introspective reflection itself. *I was building slowly, carefully sculpting*, while realizing the potential and nuances of each act that was undertaken.



Figure 7: Discovery. 2010: Fully engulfed with vegetated growth and barely navigable, I carefully carve into the forest.



Figure 8: Pathways. 2011: Forging a slow intrusion into the forest, evidence of my work is left upon the ground.



Figure 9: Clearing. 2012: Selectively opening up the woods, hard work clears the mind for another type of productivity.



Figure 10: Interruption. 2013: A complete anomaly to the natural surroundings, the concrete frames a new mode of inhabitation.

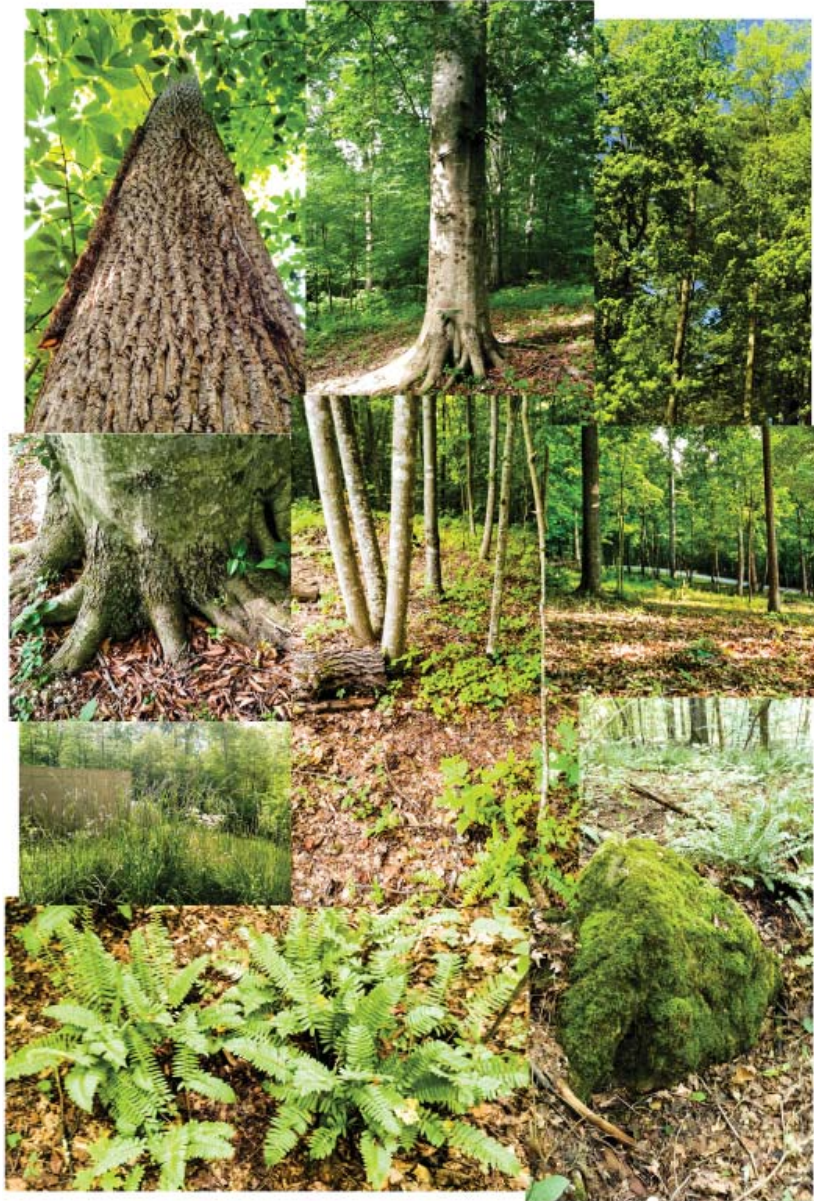


Figure 11: Depth. The foliage encompasses the one living within it. Trees surround and flora carpets the ground.

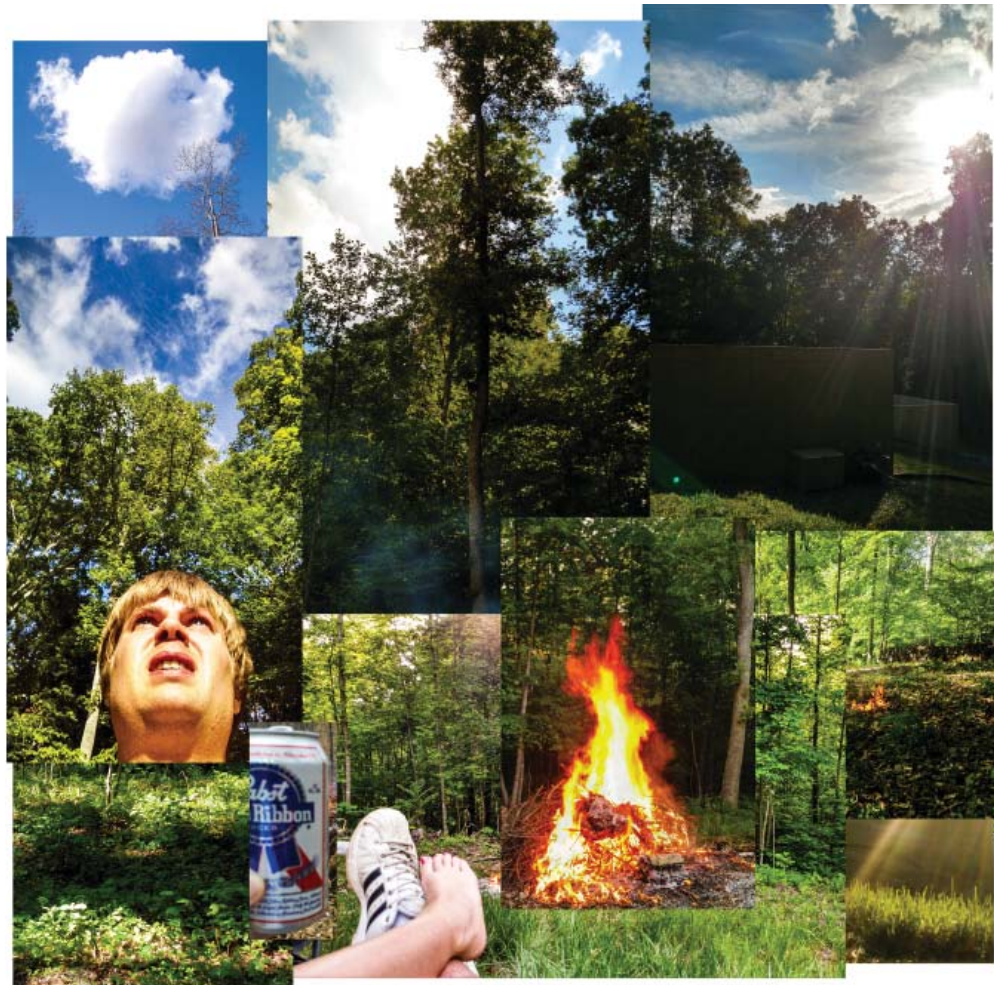


Figure 12: Tranquility. A setting to escape anxiety, and relax the mind. The forest forms a buffer from the outside world.



Figure 13: Night. Darkness mystifies the forest. The fire becomes the nucleus of life in gathering or in solitude.

A Moment of Reflection

This place of solace is in proximity to the civilized world, but ostensibly far away. The patterned concrete walls subsist with the forest as a questionable intervention upon nature. The sharp edges of the concrete form a pure, unobstructed viewport to the sky, softened by the surrounding trees that frame the deep blue sky of a summer afternoon. The leafy beech and maple trees are vivid with color outside of the textured concrete walls. The sounds of the woods leap over the solid walls that I choose to contain me for this hour. For a moment time does not matter; the surroundings seem to transcend time itself.

I believe in the power of reflecting upon one's work, and that stories such as these are worth sharing. This process is entrenched in deep thought and long quiet evenings. Reflection upon the past and a speculation upon the future situate the inhabitant within a lapse of time that is paused.

The act of creating influences and enriches the design process. Moments of reflection open the mind to new ideas and a greater purpose.

My dream is to continually transform this place as long as I am able. This project frames a period of work that initiates a reevaluation of the discipline of architecture, and provokes the fruits of this process to flow into lives that have not had the experience of living within a slow paced realm of consciousness. Transformation is not condensed to a series of rapid, planned interventions, but a gradual series of additions, subtractions, and adjustments that are thoughtfully and intricately executed. There is no finished product, but moments of time in which to savor the beauty of the forest and the architecture created within it. These moments hold immeasurable value and fuel the desire to harmoniously reside within and perpetually re-sculpt the places in which we inhabit.

This is the unplanned inhabitation of unfinished work, engagement in that which was not fore-planned nor intended to be. The architect stumbles upon his own creation, and questions the purpose and approach of design [Figure 14].



Figure 14: A Moment of Reflection.

“In ruins, where the intended use of the building has departed, it is often unclear whether the structure is landscape or architecture. Conditions are reversed and a missing roof allows sunlight and vegetation inside and the building becomes a garden. These places, in their reductive, earthbound condition, are very satisfying, as if they offer us a primitiveness that we need, one not found in our transplanted formal models.”¹¹ – W.G. Clark

¹¹ Jensen, Richard. *Clark and Menefee*. New York, NY: Princeton Architectural Press, 2000. Pg16.

Present State

Fortunately, construction was put on hold in 2013, and the pure concrete foundations have stood in a paused state since 2013. Figures 15 and 16 show the state of “the land” in 2017.



Figure 15: Existing State.



Figure 16: Aerial with Property Boundaries. The dashed line represents the transforming model.

Chapter 2: The Role of the Architect

“What is the role that architects have in the built environment? Are architects the service professionals on the periphery of the building industry? Are architects struggling artists that seek creative ways to sneak good design into the relentlessly cost-based model for development?”¹²

The deliverables of the labors of architects are unquestionably assumed to be the production of drawings and guidance that takes design ideas and translates them into a language that specifies the construction process. Architects produce advice, while contractors assemble the product.¹³ An inversion of these presuppositions can inject the architect into a pivotal part of the construction process, one that values building as a method of design.¹⁴ This dividing line firmly separates the labor of architects from the production of contractors.

Should the architect simply flow with the direction of the market and industry? To become proficient in the many working portions of the profession takes dedication, passion, and endless years of training and experimentation. The competent design professional however rarely does possess the opportunity to extend his or her hand to have a higher level of freedom over the output of his or her profession as it becomes manifest in the built environment. The figure of the architect has mysteriously and slowly been confined to a short time frame of production while receiving a greater amount of expectations that are forced into the early stages of a project's life.

This section begins with a brief history of various notable architects and the roles they assumed, leading to an inquiry into issues that have influenced the transforming the role of the architect. An understanding of the premise will better empower the individual architect to successfully surpass its hindrances.

¹² Kostrominova, Anastasia. "State of Ruins." Saanen Swanson Essay Competition Entry, A. Alfred Taubman College of Architecture+Urban Planning, May 6, 2013.

¹³ Tombesi, Paulo. "On the Cultural Separation of Design Labor." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg120.

¹⁴ Tombesi, Paulo. "On the Cultural Separation of Design Labor." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg122.

What Happened to the Master Builder?

“The most significant, yet troubling, legacy of modernism has been the specialization of the various elements of building once directed and harmonized by the master builder.”¹⁵

Where are the master builders of present? Was the foothold at the forefront of architectural creation lost in time and capitalistic pressures? A quick glance at the trajectory of the architect of power and influence can help put into perspective the factors that have influenced the role that the architect assumes in current times.

This project has no intentions to universally reinstate the architect as the master builder, but to learn from transitions of the past, while pinpointing instances of control that relate to a present-day context and a future potential for an methodology of practice.

To regain control the architect must wear more than the hat of the architect. He must learn to specialize, or at least generalize in an infinite amount of areas and continually reorient while seaming everything together. Pressure from clients, engineers, budgets, and manufactured products pull the architect's train of thought in an explosion of opposing directions almost as soon as the idea of a new building is conceived.

The task of the architect of the present built environment involves orchestrating an array of fragmented ideas, materials, and methodologies, putting them on paper, then handing them over to a non-architect to execute precisely what was specified. The harmony is easily lost by the range of differing interests that control each portion of the project's life. The following will examine architects that worked harmoniously prior to these intensity of these issues, and speculate some of the hindrances that present day architects must accept.

¹⁵ Kieran, Stephen, and James Timberlake. *Refabricating ARCHITECTURE: How Manufacturing Methodologies Are Poised to Transform Building Construction*. New York, NY: McGraw-Hill, 2004. Pg xii.

A Selective History

Marcus Vitruvius Pollio specified the role of the architect and was one of the first to suggest the wide range of topics that the architect should possess a working knowledge of. The broad knowledge that any architect should have was then established and continues to expand in particular areas of expertise for new trades.

Filippo Brunelleschi invented systems and machines to accomplish the construction of the Dome of the Cathedral of Santa Maria del Fiore. As chief architect he had the ability and authority to design, engineer, and work through complex technical problems while keeping the artistic integrity intact. The design of methods of implementation was part of Brunelleschi's success with the project.

Antonio Gaudi devoted over forty years of his life to one project. He passionately worked as master architect. "When asked why the project was taking so long, the pious Gaudí was fond of saying, "My client is not in a hurry." He was talking about God."¹⁶ His creation relied not upon pleasing a client but being involved in a mere part of a building that's construction lasted much longer than his life.

Charles Rennie Mackintosh was an artist and an architect, best known in the architectural community for his total design approach and the detail and continuity imbued into designs such as the Glasgow School of Art. Many other influential architects of this time period, such as *Frank Lloyd Wright*, *Peter Behrens*, *Hendrik Berlage*, *Henry van de Velde*, etc. Incorporated many unique, personally detailed elements into their architecture.

Adolf Loos, while best known for his theories on ornament and his minimalist architecture, is lesser known to have a particular way of overseeing the constructions he envisioned. Loos was rumored to have avoided the dimensioning of his drawings, and instead directing the execution of the work first-hand.¹⁷ While we certainly cannot avoid dimen-

¹⁶ Berlin, Jeremy. "133 Years Later, Gaudí's Cathedral Nears Completion." *News.nationalgeographic.com*. November 5, 2015. Accessed October 14, 2016. <http://news.nationalgeographic.com/2015/11/151105-gaudi-sagrada-familia-barcelona-final-stage-construction/>.

¹⁷ Deamer, Peggy. "Detail Deliberations." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg82.

sioning, in most cases for approval and pricing purposes, certain levels of specification could be relaxed to allow the craftsmen to execute their work more creatively.

Louis Kahn while known for many notorious works, experimented with concrete during the construction phase at the Salk Institute. He intended to improve the design of concrete as it was being implemented, to create a system that currently did not exist at that time.¹⁸ Where and how could experimentation such as this find time to be examined in a current day project? Experimentation was and still is crucial.

At a point in time architects bowed to the pressures of the finance-based marketplace.¹⁹ To survive, a majority of the profession must at times flow with the demands and needs of the entity that it intends to serve.

Formed in 1857 as a way of defining and regulating the practice with the interest of protecting architects through licensing procedure and legal guidance, the American Institute of Architects slowly became the authority on defining the architect in the United States.²⁰ *The AIA Guidelines* loosely represent the limited form of practice that the majority of architects operate. The architect exclusively designs as a hired mechanism of the client, then produces drawings that are made public for bidding and constructing.

A popular alternative, *design-build* is set up to allow one contract to cover the design and construction of the project, although the two still operate as separate yet slightly more functional entities. This process can be architect-led or contractor-led, each of which have entirely different motives and potential outcomes. How can design-build be expanded yet another degree to allow more control and freedom of time for the architect?

¹⁸ Leslie, Thomas. Chapter 4, "Salk Institute for Biological Studies," *Louis I Kahn: Building Art Building Science*. New York: George Braziller, 2005. Pg164 and 169.

¹⁹ Till, Jeremy and Sarah Wigglesworth, "Strong Margins". *Samuel Mockbee and the Rural Studio*. Birmingham, Alabama: Birmingham Museum of Art, 2003, 66-68.

²⁰ "History." AIA.org. Accessed October 2, 2016. <https://www.aia.org/history>.

Expectations and Hindrances

Budget-Driven Design

Through the system in which they are imagined and constructed, buildings become translated into a purely financial object²¹, void of the rich meaning, culture, and symbols that they can become. Architects must be able to exist and be sustained financially without the sole objective of making an immediate profit.

Instant Gratification

The average American has expectations of instant gratification embedded in most every area of daily life. Fast food, on-line shopping, and instantaneous digital music downloads orient generations of consumers to expect more and expect it to immediately fall in their presence. Is quality still of importance? Certainly, but who is willing to wait for it, or worse, pay for it? This alternative model must tediously expand the timescale while continuing to fit within the societal demands.

Quickened Schedules

Time allotments for design, detail, and experimentation all get narrowed when a project schedule is condensed. Stress becomes induced on all players, and creativity loses its foothold. Longer schedules are assumed by most in the industry to directly relate to additional cost; we should question whether this is really true.

An alternative model of practice may hold potential to position the Architect to take it upon himself to assume a part of the risk by speculatively creating at least a portion of the building, what would be equivalent to a shell space, allowing for the client to begin from a point where the structure, site work and building shell already exist. This process is already happening in many aspects of sprawl development, but the controlling mechanism is the merchant developer, very rarely the architect. If the architect can take on the developer's risk, and self-perform the design and much of the initial oversight, many overhead costs, and unnecessary paperwork can be dismissed, freeing the duration of design and construction to be cautiously extended.



Figure 17: The Monadnock Building, Chicago, IL.



Figure 18: Counterfeit Brick.

²¹ Till, Jeremy and Sarah Wigglesworth, "Strong Margins". *Samuel Mockbee and the Rural Studio*. Birmingham, Alabama: Birmingham Museum of Art, 2003, 66-68.

Rules

“In architecture, the rules are numerous, daunting, and often overwhelming. They are political (codes, licenses, regulations, laws), economic (costs, finances, real estate), technical (labor, skill, craft, technique), cultural (precedents, conventions of use, desires), formal (typologies, proportional systems, geometries), and material (gravity, raw resources, ecology), to name only a few.”²²

Guidelines of Process

Guidelines such as the AIA Documents protect the architect from the unpredictable assault of lawsuits and financial complications while providing a multitude of forms to use as contracts. These guidelines however additionally set forth several predetermined modes of business that the architect and clients will abide to.

Working Around Hurdles

How can the multitude of hindrances that have been largely simplified in this section become understood and worked around? The next section will outline architects that have found their place within the margins of the profession.

²² Lewis, Paul, Marc Tsurumaki, and David J. Lewis. *Opportunistic Architecture*. Princeton Architectural, 2008. Print. (Digital Edition). Pg 10.

Specification Inhibits Craft

Bound to presumptions and legalities that urge output to comprehensively address every detail and specification at an early stage, the profession leaves little room for variation outside of the bound and sealed documents meticulously produced in a controlled environment. Craft is presently less thought of as a permanent part of a building and more aligned with the making of independent objects: furniture, artwork, etcetera.

Craft involves skills and traditions applied to the production of an object or part.²³ Unique qualities shine through the detail, of which exhibits a degree of improvisation coupled with an intense knowledge of the material. [Figure 19]

Craft is challenging to specify. The degree of improvisation involved and the high level of knowledge required to execute the work can hardly be understood by one that is disconnected from act. Additionally how would one even begin to establish a standard of quality or scope.

The disconnect between design and craft in architecture come with the division of labor between the architect and the contractor. Craft is about making, while design is somewhere between planning and making.²⁴ Craft simply cannot be planned in a specific way by an outside profession. The freedom of the artist comes from the lack of specificity, which opens opportunity for the craftsman to express skill and detail.²⁵ Despite the value of the outcome, Anderson and Anderson argue that to design for a handcrafted result is typically financially unreasonable²⁶; they instead opt to prefabricate custom parts in a controlled environment, to then be shipped to the jobsite.

23 Kieran, Stephen, and James Timberlake. *Manual, The Architecture of Kieran Timberlake*. Princeton Architectural Press, New York, NY 2002. Pg10.

24 Frampton, Kenneth. "Intention, Craft, and Rationality." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg30.

25 Rotheroe, Kevin. "Exclusive Dexterity." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg77-78.

26 Anderson, Mark and Peter Anderson. *Prefab Prototypes: Site Specific Design for Offsite Construction*. New York, NY: Princeton Architectural Press, 2007. Pg7.



Figure 19: Craft and Detail. Cranbrook Academy of Art.

“Architecture made out of a greater number of mass-produced parts also changed the relationship between the architect and the builder by largely reducing the role of the latter’s knowledge of traditional ways of building and relying upon construction procedures almost entirely prescribed by the architect. Independent of the architect’s instructions for assembly, construction could not proceed. Insufficient instruction by the architect, and poor workmanship by the builder, were among the principal causes of material deterioration in buildings.”²⁷

²⁷ Mostafavi, Mohsen and David Leatherbarrow. “On Weathering: The Life of Buildings in Time.” MIT Press, Cambridge, MA, 1993. Pg21-23.

Precedents of Practice

The selected precedents highlight architects, firms, and projects that have successfully operated outside the standard realm of the architectural practice. These examples have expanded their roles as architects, tapped into different energies and resources, and challenged their businesses to include much more than just architectural design. They have found individual ways of sidestepping the many hurdles and foundational problems previously outlined and have devised unique methods of dealing with these issues in a way that helps each one create their own unique identity and path to success.

A continuous quest through each of these studies is to highlight the qualities and methods that can be utilized to practice a slower, more deliberate, hands-on form of practice in which the architect is at the forefront of the effort.

Jonathon Segal Architect



Figure 20: Mr. Robinson Housing Development.
San Diego, CA.

“The most entrepreneurial architect-led design-build firms do away with clients altogether and act as their own developers. Such is the business model for San Diego-based architect Jonathon Segal, who has designed, built, and developed 20 projects since founding his firm 25 years ago.”²⁸

Jonathon Segal, FAIA is a developer-architect that operates out of San-Diego, CA. He is a front-runner and inspirational figure for architects who wish to take more control over their entrepreneurial success. His approach avoids what he has labeled as the “bad triangle”²⁹: the relationship between the architect, developer, and contractor acting as separate entities. His philosophy is “No more clients: The client is not the secret to your success.”³⁰.

In a video on *architectasdeveloper.com*, he asserts that “you don’t want to make the income; the income is a taxable event. What you want to make is rental income. The rental income is offset by the depreciation of the building.”³¹ This is an inverse approach to profit from the typical design fee models used by the industry. His business model is about taking control over a design, and gaining more benefits from its completion than simply a fee for his work. He has implemented these risk-taking measures to step around the issues of lack of control, and they have evidently paid off.

The expanded control that Jonathon Segal has obtained by morphing his role into development and construction is inspirational and a foundational concept to be carried into this thesis. The entrepreneurial success that he has established allows the freedom for him to design more freely. His firm additionally oversees construction, working directly over the sub-contractors, eliminating the middle man and the overhead associated with traditional contractors.

²⁸ Gonchar, Joanne. “The New Master Builders.” *Architectural Record*, May 2014, 149-54. (Digitally Retrieved)

²⁹ Stott, Rory. “How Jonathon Segal Finds Creative Freedom Through an “Architect as Developer” Model.” *Archdaily.com*. February 17, 2016. Accessed June 22, 2016. <http://www.archdaily.com/782280/how-jonathan-segal-finds-creative-freedom-through-an-architect-as-developer-model>.

³⁰ “Architect as Developer Trailer.” *ArchitectasDeveloper.com*. Accessed September 14, 2016. <https://www.architectasdeveloper.com/home>.

³¹ *ibid.*

Jersey Devil Design-Build



Figure 21: Constructing the Airplane House



Figure 22: The Football House

This group of Princeton architecture graduates devoted their time to more than simply designing. They built and inspired others to build as well. The group worked on only one project a time and often lived on the job-site.³² Living on site is also noted as forming a stronger connection with the site and experiencing it in ways that traditional practice cannot address.³³ This reflective and immersive process transforms the act of building into an experience that in return generates a new level of meaning for the project.

The two graduates learned how to build on their own, basically by doing it themselves through trial and error, and reading how-to books for many of the specialty trades.³⁴ Learning how to execute each portion of the building project gives the designer a mechanism to truly understand the project and engage the process in personal way.

“For Jersey Devil architecture is realised through the processes of designing and building rather than the provision of information and services for others to build.”³⁵

This thesis project encourages the architect to become hands-on and to turn designing and building into a more coherent activity. This firm designed by doing and not merely detailing the plans digitally, on paper, or through scale models. They designed *as they built*, and in the process not only learned how to do things but formulated a unique method of designing and creating. The immersive and personal attention that each project is given reflects a higher level of care and meaning.

³² Sisson, Patrick. “How ‘70s Firm Jersey Devil Helped Spread the Gospel of Design/Build.” *Curbed.com*. N.p., 2 Mar. 2016. Web. 22 Oct. 2016.

³³ “Jersey Devil.” *Spatialagency.net*. Accessed November 14, 2016. <http://www.spatialagency.net/database/jersey.devil>.

³⁴ Sisson, Patrick. “How ‘70s Firm Jersey Devil Helped Spread the Gospel of Design/Build.” *Curbed.com*. N.p., 2 Mar. 2016. Web. 22 Oct. 2016.

³⁵ “Jersey Devil.” *Spatialagency.net*. Accessed November 14, 2016. <http://www.spatialagency.net/database/jersey.devil>.

Hufft Projects and Others



Figure 23: Hufft Metal Shop.



Figure 24: Hufft Wood Shop.

This design firm is an example of a present day firm that is expanding the role of the architect into craft and production. The architecture studio is only a small portion of their operation. This company additionally comprises of a metal shop [Figure 23], wood shop [Figure 24], and digital fabrication facility.³⁶ These ancillary facilities and their accompanying teams enable this design firm to create highly unique details and objects without being hindered by what can be purchased, or the high price tag that is typically associated with unique designs.

Other similar companies include, but are not limited to:

- *GLUCK+*, New York, NY - An architect-led-design-build firm <<http://gluckplus.com/>>
- *Onion Flats*, Philadelphia, PA - This firm has architecture, construction, and development teams. <<http://www.onionflats.com/divisions.php>>
- *Buchanan Yonushewski Group*, Denver, CO - Brad Buchanan, FAIA, believes design and building are part of the same process.³⁷
- *El dorado Inc.*, Kansas City, MO - Architecture and Fabrication, along with periods of gallery and artwork. They treated the development of their business like a design project.³⁸
- *SHOP Architects*, New York, NY - "Years ago we set out to prove that intelligent, evocative architecture can be made with real-world constraints."³⁹
- *Anderson and Anderson Architecture*, San Francisco, CA This firm focuses on prefabricated, site specific design.

The idea of combining the fabrication process with the design firm give the architect control over many aspects of detail and experimentation in architecture. Fabrication can be an additional means of sustaining the firm financially. This ingenious approach is not new to the industry, but is atypical of standard practice.

³⁶ Hufft.com. Accessed October 7, 2016. <http://hufft.com/about/>.

³⁷ Solomon, Nancy B. "The Hopes and Fears of Design-Build." *Architectural Record*, November 1, 2005. (Digitally Retrieved)

³⁸ "1999." Eldo.us. Accessed October 22, 2016. <http://www.eldo.us/history/1999-2/>.

³⁹ Shoparc.com. Accessed October 22, 2016. <http://www.shoparc.com/about/>.

Vigário House – AND-RÉ



Figure 25: Amongst Ruins.



Figure 26: Stone Ruins.

Built over the course of seven years, this intervention is an intertwining of modern construction inserted into massive, timeless stone ruins. The ruins serve a reformed purpose as the intervention gives new life and meaning to what was once here. “The new organism adapts itself to the old stone walls, filling the existing interstitial spaces, unifying the mass and providing a contrast backdrop against the rough stone surfaces – the main characters in the narrative – in a close dialog between the old and the new.”⁴⁰ The ruinous stone elements were the focus and the generator of the rest of the project.⁴¹ [Figures 25 and 26]

The construction was executed with great care. The first phase dealt with restoring the ruins, as the stone was meticulously cleaned according to ancient traditions resulting in a very laborious and time-consuming process.⁴²

The value of the ruin, the character, and the timeless nature that it holds is a virtue that exemplifies this project. This study not only embraces influence from past ruins, but looks at potential for what we create to also become as such. This project values the historical remains, but does so in a contracting nature. This project was approached in a slow, deliberate manner as the existing remains were treated with great respect and care as the pristine intervention was imposed.

⁴⁰ “Vigário House.” [Http://and-re.pt/](http://and-re.pt/). Accessed September 18, 2016. <http://and-re.pt/portfolio/vigario-house/>.

⁴¹ *ibid*

⁴² “Vigário House / AND-RÉ.” Archdaily.com. July 27, 2016. Accessed September 18, 2016. <http://www.archdaily.com/792069/vigario-house-and-re>.

Variables of Practice

The following section investigates variables that influence the design and construction process, speculating ways to manipulate and approach these variables, including time and roles beyond that of the architect. Craft, production, fabrication, and customization intertwine closely with the topics of this thesis as their impacts are studied. The value of manipulating time to the architect's advantages opens up room for overlapping roles and a greater degree of control, freedom, and importance for the architect.

Quality, Scope, Cost, and Time

$$\begin{array}{c} \text{Quality x Scope} = \text{Cost x Time} \\ \begin{array}{ccc} \triangle & \triangle & \triangle \\ \text{+++} & \text{+} & \text{-} \\ \triangle & \triangle & \triangle \\ \text{---} & & \end{array} \\ \text{Quality x Scope} > \text{Cost x Time} \end{array}$$

Figure 27: Kieran Timberlake's Formula. Manipulation of their original equation from *Refabricating Architecture*, pg 10 and 11.

$$\begin{array}{c} \text{Quality x Scope} = \text{Cost x Time} \\ \begin{array}{ccc} \triangle & \triangle & \triangle \\ \text{+++} & \text{-} & \text{-} \\ \triangle & \triangle & \triangle \\ \text{+++} & & \end{array} \\ \text{Quality x Scope} = \text{Cost x Time} \end{array}$$

Figure 28: Altered Formula. Additional time and quality is injected into the equation.

“Quality x Scope = Cost x Time. THE FORMULA OF ARCHITECTURE PRODUCTION. The current paradigm in architecture is that quality and scope are directly proportional to the cost and time to execute”⁴³

This theoretical equation of production positions the pressing variables that architects and builders must manage into an ostensibly simple relationship [Figure 27]. Kieran Timberlake makes the case that by fabrication and mass customization of architectural components, cost and time associated with a project can be drastically reduced and that architecture can be produced much like aircraft and automobiles. This thought process is intriguing and could offer the architect a different foothold into the world of design processes and the construction of a new era of buildings. A lingering question remains: How can character and timeless qualities be imbued into a mass produced, mass-customized architecture, and why would anyone even desire these qualities? Will applying principles of manufacturing to architecture encourage people to treat buildings as dispensable objects such as an automobile, only to be traded in every five years?

This exploration manipulates the factor of time [Figure 28] in a different way to allow for hands-on participation from the architect while optimistically reducing overhead to reduce cost and increase the quality, detail, and value of the project. Kieran Timberlake's model above is an admirable approach, but with this thesis, factors such as timelessness, detail, weight/solidity, are addressed as equally important qualities that architecture should contain. What will this alteration of process mean to the profession and to the consumer?

⁴³ Kieran, Stephen, and James Timberlake. *Refabricating Architecture: How Manufacturing Methodologies Are Poised to Transform Building Construction*. New York, NY: McGraw-Hill, 2004. Pg 8.

Architect + Developer + Builder

By taking on the responsibility of the developer and the builder, the architect takes control but also multiplies the liability and responsibilities that will be undertaken. This super-architect takes on risks that were once non-existent to the previously limited role, and climbs out of the protective walls of the AIA guidelines and loosely worded 'CYA' notes to assume a greater responsibility and purpose. The litigious nature of the business means that to take on these additional roles, experience and expertise are necessary in more than just design. This thesis investigates the implications of an architect of heightened responsibility and involvement.

For one person of a particular area of expertise to expand into two other related but very different professions takes time, patience, and expertise. The payoff can come in many forms. A synergy exists by having all three entities under one figure: the thought process is more continuous under one individual; the developer does not have to hire an architect or pay for the overhead and profit of a contractor; the architect can have more freedom to take the needed time to develop the design, while remaining completely involved as the process takes shape. A collapsing of roles can reduce certain costs and allow liberty for the expanded timescale that is sought out in this project.

To what effect will the increasing instances of the consolidation of these traditionally separate trades hold for the profession and for society? Will the AIA initiate a new credential above that of architect? Not likely, but with the popularity of design-build, the next level of practice can be challenged and doors can be opened for the willing.

I am the Architect.

I am the Builder.

Practice is unmediated.

Time | Timeless



Figure 29: Burg Bensberg. Gottfried Böhm. Germany.



Figure 30: The Fisher Building. Albert Kahn Detroit, MI.

Time is the highly sought after, non-static basis of existence that all travel through but have no power to control. In some way everyone desires to have more time to perform, rest, or reflect.⁴⁴

Whereas the perceived passage of time varies greatly, the professional world operates under the regulation of an hourly wage, project fee, or a yearly salary. The amount that one can produce in a specified amount of time often determines a person's value. Managing time effectively does not equate to managing it efficiently. Time for relaxation is necessary, but not efficient. Breaks from work are not efficient, but essential for health and well-being. Time for reflection and evaluation rarely happens, as the productive architect is always expected to quickly refocus to the next drill. Electronic technology has allowed the architectural profession to accomplish an exponential increase in the produced amount of work compared to the days prior to its existence and mastery, but has also established the ease of replicating less-than-thought out designs and details.

Time is a mystical ingredient that when its provision is granted to areas typically lacking, change will happen. That change could mean more money is spent on someones' wages, but it can also be a blessing to allow a much more in-depth analysis of one's output. It can allow an individual to explore new boundaries, or simply give more time to expend on social media. The distribution of time must be improved with experimentation, and questioned on all accounts.

⁴⁴ Brien, Brian T. O. "Slow Architecture: Linger, Savor, Touch." *Solearth.com*. N.p., n.d. Web. 2 Oct. 2016.

“Lack of time during the ‘creative phase’ of design and building harms not just the architecture but also impoverishes the ‘experience time’ of the user. If the building has not been built up slowly, layered in thought and craft, it lacks weight and denies the ability to mark time, to deepen experience.”⁴⁵

Immersion

The site investigation process should entail much more than simply showing up to the potential site, taking pictures, and then designing a building on a site plan? What if the site investigation happened over a period of years, not days, and lead the designer to an emotional attachment and true respect for the site in which will be forever changed by the architect’s intervention? Building slowly involves studying the land or place for an extensive period of time, getting to know the terrain, trees, rocks, wildlife, and surroundings in an intimate way that cannot be siphoned from a survey or a Google search. “If there is one hallmark that unites their work, however, it is a slow, deliberate, and methodical investigation into the context of a building’s site, circumstances, and purpose.”⁴⁶

Design Time

Design takes time, iteration, experimentation, and reflection. Rushing this process is detrimental to the satisfaction of all involved in the creative process. Design expertise should carry value and patience for the expertise and suggestions of the architect. By preparing drawings in a hastened manner, generic details, typically stored digitally, tend to become used over and over without need for innovation.⁴⁷

Self-Perform

Building slowly allows the time to self-perform. The job site becomes an collision of the classroom and laboratory, pro-

⁴⁵ Brien, Brian T. O. “Slow Architecture: Linger, Savor, Touch.” *Solearth.com*. N.p., n.d. Web. 2 Oct. 2016.

⁴⁶ In speaking of Atlanta firm Mack Scogin Merrill Elam Architects. Richards, William. “The Masters | Place, Character, and Craft.” *Architect*. 104:5. May 2015, 79.

⁴⁷ Mostafavi, Mohsen and David Leatherbarrow. “On Weathering: The Life of Buildings in Time.” MIT Press, Cambridge, MA, 1993. Pg23-25.

viding learning opportunity, exercise, and experimentation. A compressed time frame often results in a job site that is clustered and ineffective, thus multiplying overhead costs. As the architect plays a more hands on role, the crafted result can be a culmination of predetermined qualifications, and the explorations of materials and process that result as part of the execution. The consistency between design and construction is there in the form of the architect as its leader.

Reflect

Building slowly will inevitably result in special moments spent reflecting on the vibrancy of the place and its position in nature. Inspiration and new ideas often come as a result of reflecting upon the current state of the environment. Reflection is important, and allows for refinement or realignment, but the design process most often works by means of deduction instead.⁴⁸ Reflection allows the reductive presumptions to matter less and the overall objective to be re-evaluated and embellished.

Connect

Building slowly allows the time to find the right connections to assist with the process as well as the patience to wait for the perfect person for the job. A low bid price does not constitute a great relationship. Make friends with experts, then recruit them to your team. Advice from those with experience is invaluable, and when re-channeled through the mind of the architect, get re-appropriated as a new tool for design and creating.

Experiment

Building slowly allows the time to try new methods and learn to do new things. It also allows the accumulation of less expensive and easily obtained materials, along with the ability to test their potential without wrecking the schedule. Experimentation involves trial and error, a process that assists the creative design process, but does not replace it.⁴⁹

⁴⁸ Brien, Brian T. O. "Slow Architecture: Linger, Savor, Touch." *Solearth.com*. N.p., n.d. Web. 2 Oct. 2016.

⁴⁹ Jencks, Charles, and Nathan Silver. *Adhocism: The Case for Improvisation*. Garden City, NY: Doubleday & Company, 1972. Pg18.

Craft and Production



Figure 31: Fundamentals (Central Pavilion): Ceiling, 2014 Venice Biennale.

This paradoxical exhibit at the 2014 Venice Biennale provokes a disposition of the approach of the design of architecture/buildings [Figure 31]. Craft and production appear to be at odds here. Production infiltrates the crafted space. The acoustical ceiling hides the convoluted systems and represents fast, cheap, temporary, methods that are often reverted to, while being juxtaposed to and seemingly extending under this extensively detailed dome. This image shows the hidden complexities that have become a perceived necessity in building, polluting simplistic spaces with a complicated series of wires, tubes, and ducts, that 'must' be hidden from plain sight. This image depicts a large contrast in spatial conditions that hint at a historical shift in architectural design and implementation.

How can the qualities of long-lasting, permanent, detailed, architecture be brought seamlessly into this age, without eschewing the value that the effectiveness of production has to offer? Production provides means of which the architect can reconnect with the making process via the computer⁵⁰, but hands-on, site-specific building is not irrelevant.

Many equate craft to that which is produced by the hand. Craft involves expertise of a material or a system and not only stands for making things but experimenting in ways in which the end result is not entirely predictable.⁵¹ Craft is a tactile relationship; the texture, the smell, the skill, and the uniqueness that might accompany producing an object by hand but can be reached by digital means as well. The sole reliance on production alone can negate the need for the skill of a craftsman, transforming the skills of a crafts-person into routine procedure performed by a machine.⁵²

What value can be found in both production and an intimate means of making. This invitation to exploration will reach to methods of production as well as craft to mold a highly personal method of creating architecture.

50 Stern, Robert. "Preface." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg15.

51 Kolarevic, Branko. "Between Conception and Production." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg68.

52 Ross, Andrew. "Forward." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg11.

Does Prefabrication Have a Place?



Figure 32: Brick. One of the smallest prefabricated and modular building materials.

“A part of this understanding must include a recognition that not all of construction can happen in a factory, that there must always be a role for and an increasing respect for the most complicated part of the process—the attachment of the idea and the building to the ground.”⁵³

With a mentality of building slowly and valuing the architect’s hands-on input, prefabrication appears to be the polar opposite of what this study is attempting to accomplish. Prefabrication does have a place and holds value, *but* there are some established rules in regard to the deployment of this method.



Figure 33: Mobile Homes. These were likely built completely in a factory and delivered as one unit to the site.

1. The objective in deploying prefabrication must have a greater initiative than simply cost and time effectiveness.⁵⁴ Without more objective than finance and marketability, we get the standard spec homes and generic double-wides that populate Anywhere, USA.
2. The process of prefabrication must be developed as an iterative process led by the architect or creative head. Iteration and testing through investigation can lead to a better result than just mere structural efficiency. And the involvement of intention beyond standard mass production will press meaning into the result.
3. Room must be left for site specificity. Nothing comparable to finding the flattest spread of large piece of land, then sitting a trailer on blocks in the most convenient spot shall be pursued. Site context and emotional feeling must be conveyed in a way that connects the inhabitant to the space.



Figure 34: Eichler Home. One of a series of modern prefabricated homes.

A strength of mass customization is that, in the same vein as automobiles, it allows for a sea of seemingly infinite choices and variations.⁵⁵ Choices however are not equivalent to open-ended opportunity, which dies at the last iterative stage of the process, when the components are deemed worthy of mass-production.

⁵³ Anderson, Mark and Peter Anderson. *Prefab Prototypes: Site Specific Design for Offsite Construction*. New York, NY: Princeton Architectural Press, 2007. Pg18.

⁵⁴ *ibid* Pg18.

⁵⁵ *ibid* Pg15.

Chapter 3: Qualities of Value

This chapter is a modifier that names qualities of interest that were established prior to the beginning of the design studio portion of the project. These qualities attract and invigorate the conversation, and provide a topical starting point for creating the series of drawings and models that are a part of Chapter 4.

What makes architecture valuable and attractive? How can a building or space become desirable beyond control? Certain characteristics either intentionally employed or not, can imply worth beyond the physical manifestation and touch the emotions, engage the mind, create mystique, and radiate character, safety, and authenticity in a way that connects to the human psyche.



Figure 35: Bait Ur Rouf Mosque, Dhaka, Bangladesh, Marina Tabassum.

Character



Figure 36: The Paper Factory Hotel by DHD Architecture + Interior Design.

The creaking floor of a historic house, or the scarred, sun-bleached wood of a century old barn brings feelings of authenticity that cannot be replicated, yet we build new houses with silent floor systems and chemically treated wood that blatantly avoid such unintentional attributes.

Words such as rustic, industrial, or distressed are often used to describe or sell the implication of character that an object or place may possess. A quick Pinterest search for decor will quickly turn up many attempts to achieve forms of character and evidence that the object contains a history. Even attempts and instructions on how to paint distressed brick on a sheet rock, or make a picture frame look antique, quickly surface. Attraction is embedded in certain aged relics that communicate a form of value.



Figure 37: Edward Hopper Painting displays character of light.

Character takes time to accrue, and it is a signifier of enduring, authentic architecture.

This project will inject the presence of a character into the architecture and representation to achieve value that brings forth age, authenticity, place, and history. Collected relics alongside material studies of aged and new materials could lead to a better understanding of how valuable character can be intentionally pressed into a building's anatomy.

Detail and Material Authenticity



Figure 38: Column Base Detail. Yew Dell Botanical Gardens. DeLeon and Primmer Architectural Workshop

The detail imbued in the architecture reflects the values of the architect. It also influences the value of the built result.

Time permits the attention to such detail of value, detail that can be contemplated worked on and reiterated in numerous ways.

Detail takes craft, time, and often requires more expensive resources to create. Simplicity in building leaves room for unusual material uses.⁵⁶ Detail and authentic artifacts can quickly raise a alarm from those concerned with cost. Simple methods however can be used to achieve goals in a unique way. At the Yew Dell Botanical Gardens Visitor Center, De Leon & Primmer Workshop re-purposed an existing barn to act a structural cover for the new shop [Figure 38]. Creative reuse can take advantage of authentic materials for a fraction of cost, and provide a fresh opportunity to add simple, striking detail.



Figure 39: Brick Detail at the Robie House. Frank Lloyd Wright. Chicago, IL.

⁵⁶ Musso, Florian. Schittich, Christian, ed. "Simply Good." *In Detail: Building Simply*. Birkhauser, 2005. (Digital Edition) Pg19.

Enduring Qualities - Longevity



Figure 40: The Ruins of Sheldon Church.



Figure 41: Tea Seed Oil Plant. Imagine Architects.

Many attributes work toward an enduring architecture, an architecture that stands the test of time, an architecture that ages well and resists being reclaimed by the earth or destroyed by society.

Enduring qualities can be built in or acquired through time. Certain architectural qualities impress the notion of a long life into the DNA of a building. Materials of stability, such as masonry, concrete, steel, heavy timber, etcetera, contribute to the timeless qualities, but are not the only part to this phenomenon. The thickness of a wall or a structural member often contributes to this story. Wall thicknesses were intentionally created thick in the past to obtain the greater degree of durability,⁵⁷ but can still be used to express such stability. Ties to historical events, heroes, and political ideals project a sentimental value that may be difficult to capture in the physical construction itself. Can the time line of design, construction, and investigation additionally contribute to the value and perception of an established piece of architecture?

Longevity is a sustainable attribute. How much less are we disgracing the environment and the earth's resources by building the same building, with "x" amount of insulation and "x" amount of recycled materials, only to destroy and rebuild it every 30 years? Intended longevity should be a topic in the initial conversation for any building, not to mention gaining a prime position on the LEED checklist. Building lifespan however is hard to predict and quantify in a dynamic and ever-changing environment. Society changes, and needs develop and transform, effecting the role of even the most beautiful and substantially built architecture.

This project embraces an enduring nature of architecture and seeks to capture the appeal of ageless construction. A proponent of longevity may possibly be found in the expanded timescale that this set of ideals has formed around.

⁵⁷ Mostafavi, Mohsen and David Leatherbarrow. "On Weathering: The Life of Buildings in Time." MIT Press, Cambridge, MA, 1993. Pg64.

Attraction to Imperfection



Figure 42: El Papagayo Restaurant. Argentina. A juxtaposition of a new concrete wall and an aged brick wall. Both have permanence and character, but achieve it differently.



Figure 43: New, ripped jeans.

“The Japanese notion of tarnished beauty Wabi Sabi, the beauty of things imperfect, impermanent and even incomplete, may hint at how slowness and beauty can intertwine.”⁵⁸

The crumbling brick wall is often preferred over the new, smooth, and perfectly laid brick facade. Is this due to the character and mass typically owned by something that has stood the test of time? Is it the imperfection, the atmosphere created, or is this the wall retelling the stories of its long life and leading clues to its past?

Weathered materials can tell stories and leave clues. The pockets of long destroyed wooden girders, or the paint from what was once an advertisement pointing shoppers to the greatness of what was inside, are often retained as relics that glamorize the simplicity of past times. These clues intrigue the interested observer and provoke further interrogation of the place. The qualities might however repel the perfectionist or be brushed off as old and devoid of value, but this reaction is likely harder to find than the previous.

Nature additionally exhibits this imperfect beauty. No tree is the same, and no stream is a perfect geometric form, but the attractive pull is there. The idea of not knowing exactly what to expect, and the opportunity for endless study and contemplation are present.

The value in imperfection is often in the time it took for the scars to accumulate, or the graffiti to form something greater than its sum of broken lingo. Crumbling brick walls [Figure 42], ripped jeans [Figure 43], and nature all exhibit a magical connection with the human imagination that brings pleasure. Imperfection alone is not the formula, as it can be attributed to mistakes or lack of craft. The difference is the evidence of authenticity crossed with the passage of time.

⁵⁸ Brien, Brian T. O. "Slow Architecture: Linger, Savor, Touch." *Solearth.com*. N.p., n.d. Web. 2 Oct. 2016.

Chapter 4: Methods of Application

How can the ideas of the fully engaged architect become encompassed in and communicated through a design project? The methods employed to approach architectural production not only reflects and influences every aspect of the result, but contributes to the excitement and passion of the one who is creating. Building and drawing are my passion, but these valuable and meaningful activities can be less than enjoyable under the pressure to get everything just right and complete the deliverables under a strict and unforgiving time line.

Methodology can either initiate or suppress discovery, innovation, and the continual improvement of the skills wielded to create architecture and its forms of representation. Methodology can also inform and streamline the construction process, yet this happens on rare occasion.

Making, drawing, and reflection must exist in a delicate balance to effectively create and communicate ideas and means behind implementing the architectural ideas. Balance must be kept while continuous improvement and experimentation happen simultaneously.

The act of building influences design, and becomes a part of the design process. The architect becomes the builder, the one who creates. The experience and process of creating is as equally as important as the architecture that is created.

As a part of this thesis project I am staking four claims:

1. I am working in a physical, hands-on manner, investigating how the act of building influences design.
2. I am working in a unique studio space, perched atop a two story tower, open to all.
3. I am designing within a site context that I know very intimately.
4. I am defining the architectural qualities of a dwelling based on rituals and the essentials of living.

The Atelier

A unique facet of this thesis project is not only how I am working but where I am working. Essential to the immersive methodology of architectural production that I have been developing is the platform in which I am working on. A two story wooden tower with an open desk on top rises up in the center of the atrium of the Art + Architecture building. This small tower, built of rough, low-quality oak wood, was created as a part of a team effort for a research project in the prior semester. Having since been abandoned, I took unofficial ownership over this unused space and called it my Atelier. This place has become my home for productivity, and a part of my identity within the school of art and architecture. Situated directly in front of the college's wood shop, there is enough room to build most anything, and piles of scrap oak wood that are waiting to be re-utilized into something new and exciting.

Everything is in one place, out in the open [Figure 44]. I arrive each day to tinker with models, draw, and sculpt. This immersive way of creating is reminiscent of the time spent getting to know "the land". When working on the models, my mind is at "the land". The architect is engaged with the site, and with the means of creating. The smell of the wood, the creaking of the wooden floor boards, climbing the ship's ladder, and the rays of sunlight moving across the atrium throughout the day are a ritual that defines the type of environment in which I prosper.

Lifted up in the center of a very open building, my method of creating is very candid. Unexpected visitors often stop by to share curious thoughts, and get the opportunity to see architecture being created. A random student once walked by and told me, "You are the first architecture student in the history of the profession to have a two story desk." Another said "Wow this is cool! I should have been an Architect!"

Shortly before finishing this booklet, after the final review, I cleaned off the tower, removed my tools, and pushed my models and drawings away to the gallery to be displayed for the next month. With a heavy heart I walked away from the place that I had so briefly but intensely utilized to do what I love.

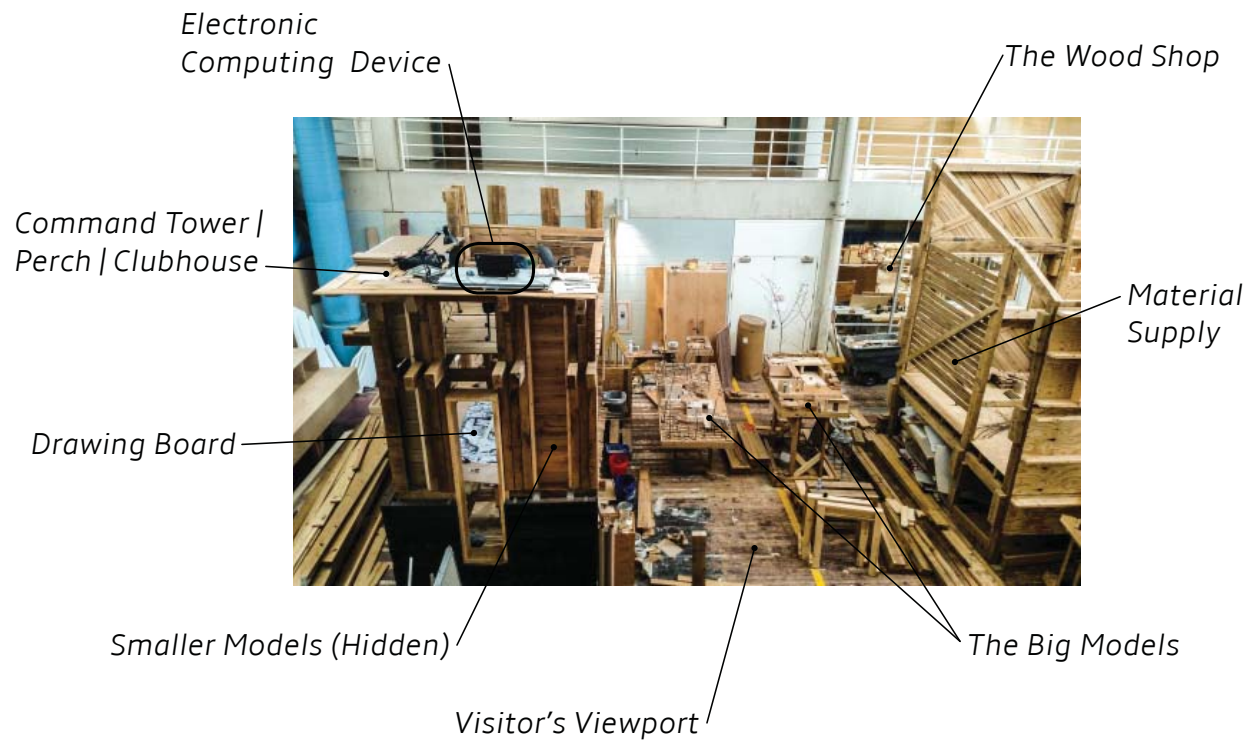


Figure 44: The Atelier.

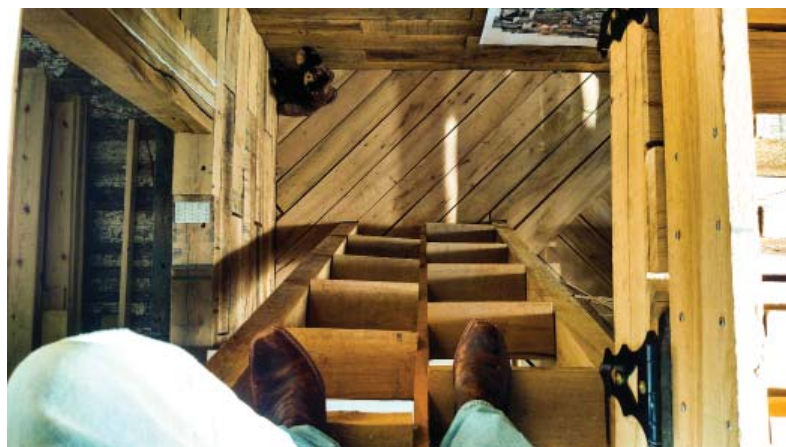


Figure 45: Coming Down the Ships Ladder.



Figure 46: Working atop the Platform.

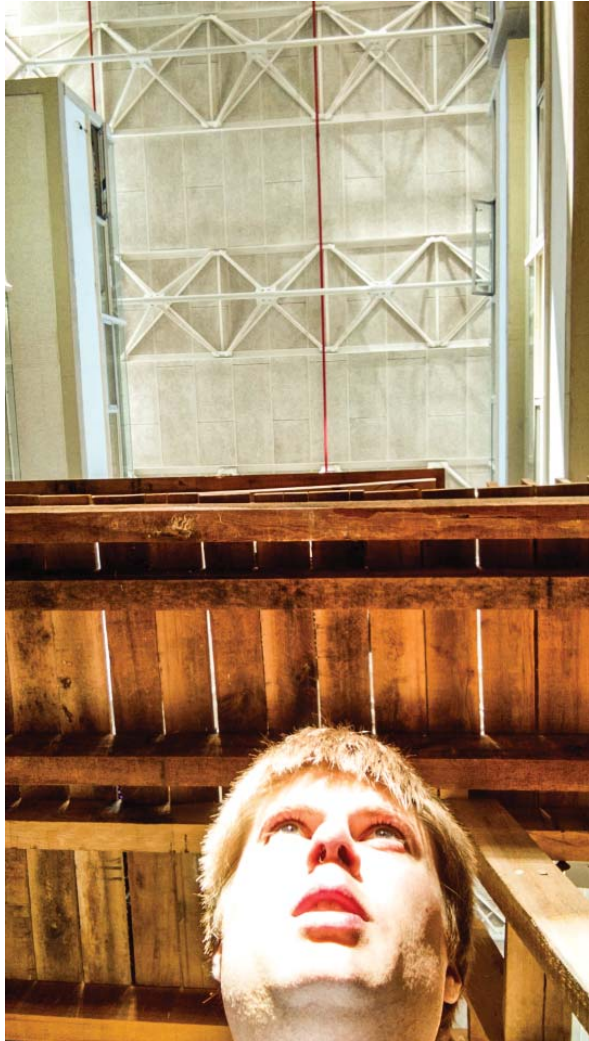


Figure 47: Deep in Thought Beneath the Perch.

The Transforming Model

The accepted order of operation in the industry is to design *then* build. The detailer is divorced from the fruits of the outcome. "...this detailer, sitting at his or her desk, pretends to assume the identity of the construction worker who will actually be, say, installing a window one year hence out in the field."⁵⁹ A blatant division of labor exists between the design and construction processes within the architectural profession.

When design and building converges into a focused effort that is executed by the architect, the division that exists between these two activities has potential to become more seamlessly integrated under the command of the architect. When the architect builds to create, familiarity with the materials is heightened. Many people find building as a means of empowerment.⁶⁰ Detail becomes unavoidable and the level of care and critique for craftsmanship is more easily an integrated part of the process.

My work in the studio reflects the gradual transformation that has took place at the site. *The Transforming Model* was carefully built up over the course of several weeks, and became the focus of iterative process of architectural design. Built almost entirely from scrap wood, it is far from a static representation, and exists as a medium that can be physically transformed to test design ideas and guide the architect's eye into the site.

This model represents the process as much as the result. 'What if' type questions can always be asked, without the need to revise every representation of the architecture that parallels this study each time a change is made. The act of constructing introduces a conversation with design that increases the merits and purpose of the overall objective to create valuable architecture.

59 Deamer, Peggy. "Detail Deliberations." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg84.

60 Ross, Andrew. "Forward." *Building (in) the Future: Recasting Labor in Architecture*. New York, NY: Princeton Architectural Press, 2010. Pg9.

Transforming Model Photos



Figure 48: Transforming Model (01).



Figure 49: Transforming Model (02).



Figure 50: Transforming Model (03).



Figure 51: Transforming Model (04).



Figure 52: Transforming Model (05).

Moments

The beauty of creating architecture is discovered and recorded throughout the journey. Similar to the immersive experiences recorded over the past seven years, these captured moments are part of the process to be revisited and appreciated.



Figure 53: Unfinished Moment.



Figure 54: Open Walls.



Figure 55: Interior Light Quality



Figure 56: Vehicle Shelter.



Figure 57: Light, Material, Composition.

The Responsive Drawing

The Responsive Drawing developed as a means of initiating a dialogue with the model. The process of creating architecture is overlaid with the experience of being at “the land”.

This drawing began as graphite sketches that were drawn and occasionally drafted over an aerial photograph of the model. Photos of important memories and experiences at the land were taped on the board to give a locational value to these immersive experiences in relation to “the land”. As the process developed, convention was slowly shed, moving away from the intricately detailed plan-like drawings in favor of a more intuitive approach. Value is found in thinking more like an artist creating than as an architect simply creating a building.

The building process influences the drawing process, and drawing feeds ideas back into the model and records a completely different rendition of the architecture being conceived. The drawing is presented in the exhibit just as it was created, evidence of the value of the process.



Figure 58: Responsive Drawing - Overlay



Figure 59: Responsive Drawing - Drafted Plan Overall



Figure 60: Responsive Drawing - Drafted Plan Detail

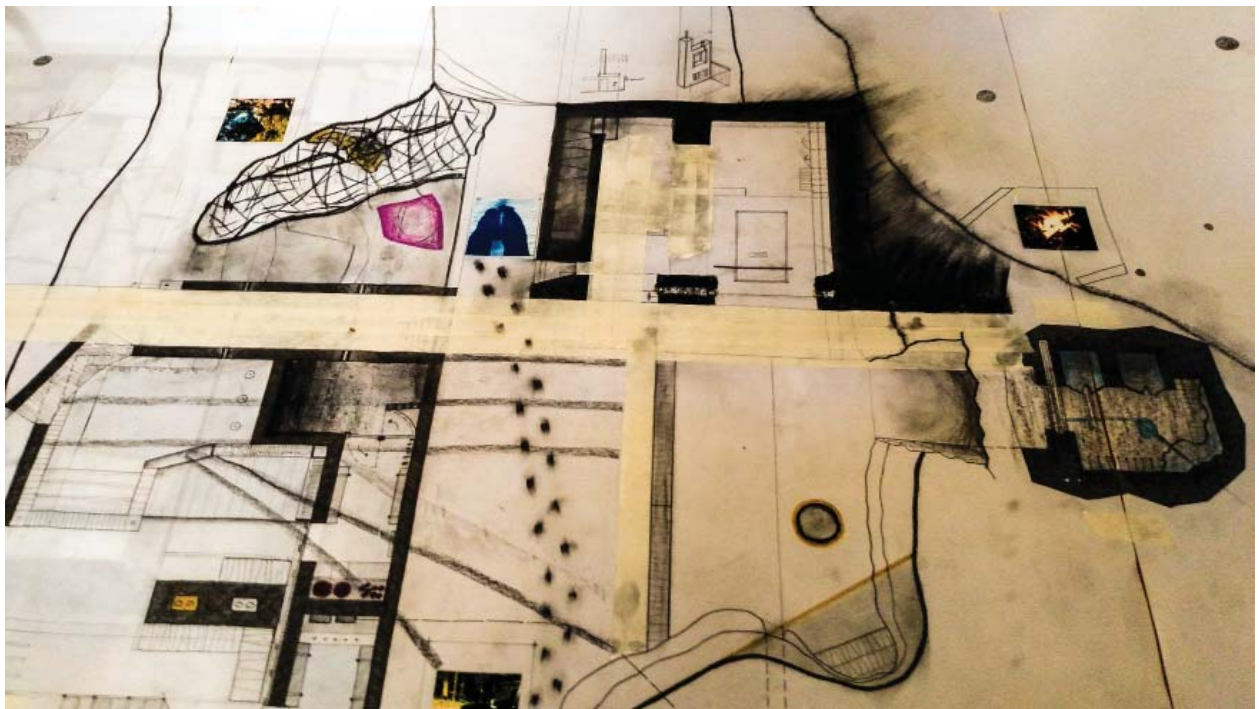


Figure 61: Responsive Drawing - Loosening Up



Figure 62: Responsive Drawing - Final

Experiments

Parallel to work on the transforming model and responsive drawing, time was invested into a series of experiments that question different modes of creating and how building can influence the design process.

01 Sculpt the Land



Figure 63: Sculpt the Land - Aerial

Using oil-based clay, and working at a small scale, I sculpted and reshaped the earth [Figures 63 and 64]. Rather than representation, this was a generative exercise to produce ideas of how the earth may be textured, form space, and become carved into. By employing such a small model, this study becomes more of a sculpture than a scale representation of the site. Sculpting at such a small scale seemed disconnected from the immersive process, but helpful in rethinking the way that the land can be manipulated.



Figure 64: Sculpt the Land - Overall

02a Layer Up



Figure 65: Charred Wood

Layered up one piece at a time using leftover charred wood from a previous research project, this experiment is about working in a manner that is similar to the way a master-builder or mason would build on site [Figures 65 and 66]. There are however no drawings or clear direction, just a focus on one element: the hearth. This experiment is about building without previously planned moves; intuition drives the decision making and each move influences the next.



Figure 66: Layered Up

02b Carve Away



Figure 67: Carve Away - Base

While focusing on the same element of the project, the hearth, this experiment is an inverse of experiment 02a. Instead of building up one layer at a time, the same basic form is created out of clay, then carefully carved away, manipulated, and added to [Figures 67, 68, and 69]. As one would never construct at full scale in this manner, this experiment represents a form of modeling/sculpture that is detached from the construction process, and more fully embraces a sculptural/artistic approach.



Figure 68: Carve Away - Final

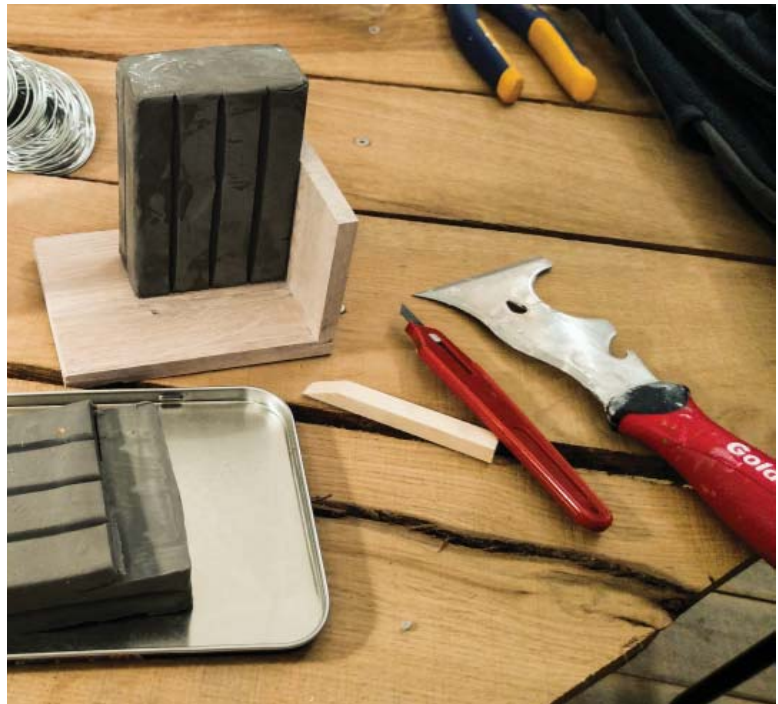


Figure 69: Carve Away - Tools

03 Repetition and Character



Figure 70: Repetition and Character - Parts

This is an exploration about using imperfect materials to create something that has character. Many small, but similar sized pieces were cut, then assembled in an ordered manner to attain a varied, but visually pleasing piece [Figures 70 and 71]. Imperfection in many ways attributes a different kind of beauty and shows a quality of craftsmanship that is unlikely with mass-produced parts.



Figure 71: Repetition and Character - End Detail

04 In Situ



Figure 72: In Situ - Wall Forms



Figure 73: In Situ - Wall

Using found materials and the luxury of actually being at “the land”, this model/sculpture, was built in place at “the land” over the course of one day. Bricks were used to form a scaled-down version of rammed earth [Figures 72 and 73], and found object such as rocks and twigs formed the piece, which heavily influenced the next round of modifications to the model [Figures 74, 75, and 76].



Figure 74: In Situ - Overall Arrangement



Figure 75: In Situ - Close Arrangement



Figure 76: In Situ - Perspective

05 Sculpt the Form



Figure 77: Clay Block

How does sculpted clay translate back into the transforming model? The act of sculpting clay to represent architecture most always insinuates a stereotomic construction. This exercise is a method of making space using mass, and then confronting the task of translating this representation into a different type of modeling which uses wood to represent the stereotomic mass [Figures 77, 78, and 79]. Translations among different forms of modeling can influence ways that the models may influence the full scale construction.

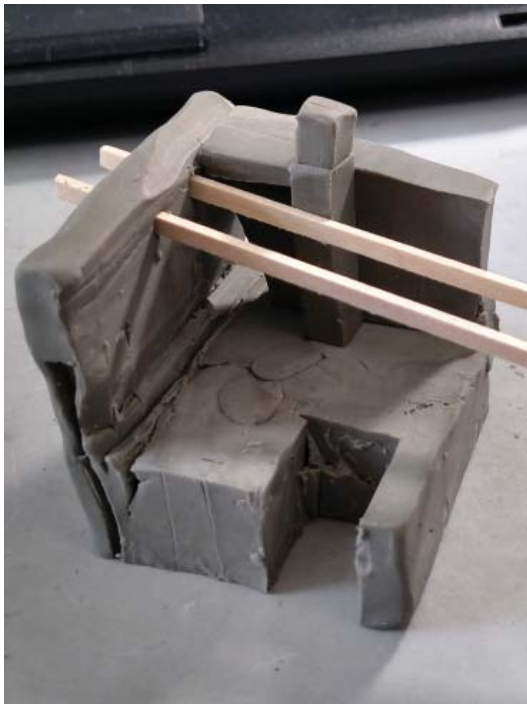


Figure 78: Sculpt the Form



Figure 79: Translated to Wood.

The Experiential Model

The Experiential Model articulates a finer grain of materiality, displays hidden details, and reveals areas of inhabitation that are not as prevalent in the transforming model. At $3/4" = 1'-0"$ this model is double the scale of the transforming model, which requires attention to new level of resolution. This model is elevated and requires the viewer to step up to gain a viewport into the space.



Figure 80: Experiential Model - Overall



Figure 81: Experiential Model - Shop Section



Figure 82: Experiential Model - Water Urn and Platform



Figure 83: Experiential Model - Stacked Materiality



Figure 84: Experiential Model - Peering Out.



Figure 85: Experiential Model - Looking Over the Perch



Figure 86: Experiential Model - The Perch Ladder



Figure 87: Experiential Model - Closer Overall View



Figure 88: Experiential Model - Stairs in Progress



Figure 89: Experiential Model - In Progress

Dwelling Qualities

The explorations of this thesis could infinitely continue, but a set of constraints form a criteria of design around a distinct ethos of living that is stripped down to the essential qualities of a dwelling. The way an architect lives reflects the way work is produced. An appreciation of the rituals that an architect forms in his work is mirrored in the consciousness of the necessities of life. "The land" is the location of my future dwelling and atelier. The basic program of a house is re-written and formed around the way an architect produces. Architecture has potential to convey value in ways that go beyond the needs of living.



Figure 90: Water. The foundation of life supports a longevity of stay at the land.



Figure 91: Warmth. The flames emanate a bright glow, radiate warmth, and encourage a closeness of living.



Figure 92: Shelter. Protection from the elements allows a new way to inhabit the woods.



Figure 93: Sustenance. An underground root cellar, paired with fire and water, establish a new ritual for eating.



Figure 94: Solace. Sit atop the forest, or become submerged into the ground, peering only at the sky and treetops.



Figure 95: Cleansing. The late evening sun angles into the shower.



Figure 96: Outdoors. Feel the wind, let the sun soak into the skin, and inhale the cool morning air.



Figure 97: Rest. A sliver of light enters the sleeping area early morning, remains, and finally fades away at dusk.



Figure 98: Ascent. Heavy walls frame a narrow glimpse of the forest before ascending the latter to the perch.

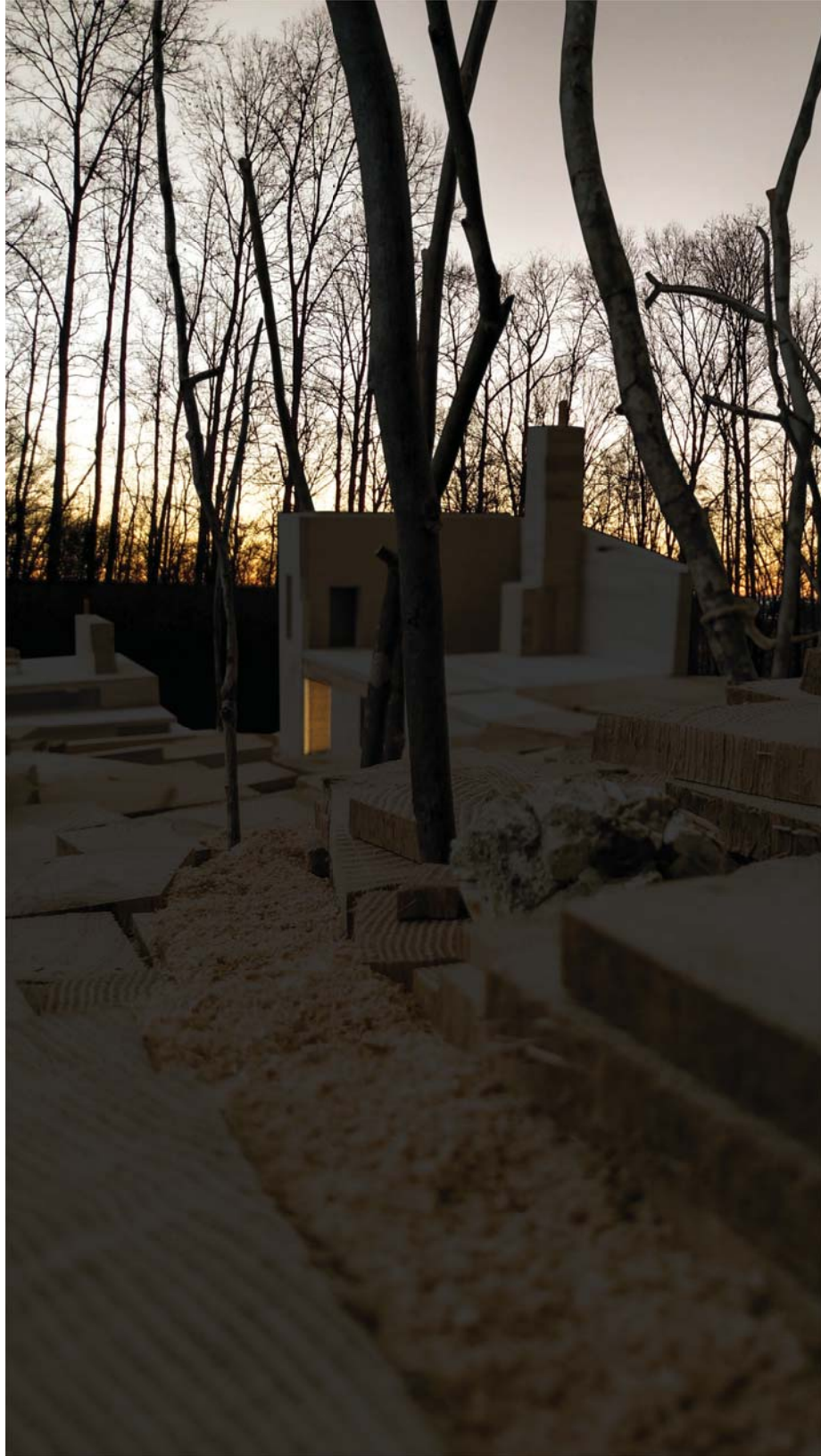


Figure 99: Arrival. A pathway leads up to the dwelling, encouraging a walk through the woods upon arrival.

Installation Photos



Figure 100: Exhibit - Entrance.



Figure 101: Exhibit - Models.



Figure 102: Exhibit - Essentials and Responsive Drawing.



Figure 103: Exhibit - Chair and Artifacts



Figure 104: Conversation Craig Dykers, Snohetta.

Chapter 5: Trajectory and Reflection

This project challenges accepted norms and lays out a set of ideals and motives for a future practice as an unconventional architect.

I envision a practice working as a hands-on Architect, Developer, and Contractor. The groundwork of this thesis establishes a need to continue pushing boundaries and contemplating ways to implement these ideas into a way to create a self-sustaining practice.

A multi-faceted practice does not narrow the architect to a cubicle or computer, but broadens the touch of the architect's influence to inspire the production of a valuable results and sustain a passion for one's work. From the desk to the fabrication shop to the jobsite, the architect will fully engage the work in every way.

This study brings forth a set of topics that affect the influence, practice, and life of the architect. I hope this inspires others to rethink how they are working and take the discipline and profession of architecture to new places.

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Mike Stone grew up in Bristol, TN, and worked as an architectural designer for eight years in Kingsport before deciding to pursue a formal training in architecture. This work experience, combined with a Bachelor's Degree in Construction Engineering and an Associates Degree in Drafting Design Technology, well covered the technical background of the building practice, but his creative desires found little place in practice. In 2010 he bought a plot of land with money saved from working full time, mowing yards, and doing side jobs. This turned into a passion, and a relief from the time and money-driven frustrations of practice. Upon undertaking this degree in Architecture, his love for making, drawing, and creating beautiful things was reinvigorated. Mike enjoys working outdoors, building Lego models, working with wood, playing guitar, and spending time with his best friend and girlfriend, Lori Townsend.