

Explorative Making

by

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis including any required final revisions, as accepted by my examiners.

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ABSTRACT

This thesis asserts the notion of play and intuition are valuable resources within architectural design. The thesis further proposes a conceptual model of making that harnesses and integrates play, intuition, and other visceral evaluations into architectural design as well as other creative endeavors.

This approach to making consists of four primary characteristics which influence each other throughout the development of a project. They are an artistic vehicle, iterative experimentation, visceral evaluations, and a playful mentality. An artistic vehicle is the variety of tools, materials, subject matter, techniques, mediums, and methods employed in the making of tactile forms. Iterative experimentation typically manifests itself as some form of trial and error where new iterations are somehow influenced by previous experimentation. Visceral evaluations are judgments rooted in feelings, instincts and other gut reactions. A playful mentality involves trusting these visceral evaluations, embracing mistakes as learning experiences, testing ideas just to see what will happen, being open to surprises and demonstrating a willingness to be unconventional.

All of these characteristics come together to form explorative making. This approach entails the shaping, changing, and combining of material for the purposes of exploration and discovery while integrating visceral evaluations and a playful mentality into creative activities.

Five galleries made up of case studies and my own speculative projects illustrate how explorative making can evolve and be adapted for the purpose of creating architectural form.

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PART I

Defining Explorative Making

1.0

Introduction

I was nine years old, and like every child my age forced to make their bed I was horribly bored. Sighing, I pulled the bed out from the corner of my room so I could walk around it and remove the sheets. After taking off the sheets and throwing them on the floor, I went to my closet and pulled down some new linen from the top shelf. Upon turning around I stopped and let my eyes wash over the bare mattress on the cot frame with sheets, pillows and clothes strewn about all over the floor.

I dropped the clean sheets on the floor and walked over to the bed. Acting on impulse I went over to the bed and flipped the mattress on its end lengthwise so that it was partially resting against the wall. This crude structure reminded me of some sort of camping tent. I then started enclosing the rest of the tent with pillows, bed sheets and clothes. The more I played, the further I sank into myself to the point where it felt like I was in a bubble. There was no real order to how I draped the sheets and clothes, I just sort of did what felt right at the time.

These feelings were just little urges I would act upon. If something felt right I would try it. Afterwards, I would stand back and see if I liked it. If I didn't I would just change it until I did like it, otherwise I would move on to positioning the next pillow or bit of clothing. The whole process felt like a gentle repeating rhythm, oscillating between building the fort and standing back and reacting to what I had made.

In this way the whole thing began to take shape. I used the bed sheets to make a sort of entrance into the hut while the rest of my belongings were used to finish off the enclosure so that the inside was almost completely dark. Inside the hut I did a little decorating setting up pillows, a sleeping bag and a flashlight. My masterpiece of ingenuity lasted all of a day before my mum forced me to tear it down.

What is significant about this crude fort is the significant role both my visceral judgments and playful mentality had in its construction. As such, it was one of my earliest experiences with explorative making. Within this approach, one's visceral evaluations and willingness to play guides the shaping, manipulating, and combining of material for the purposes of exploration and discovery.

Part One of this thesis goes about defining the primary attributes of explorative making by identifying and describing its primary characteristics and how, in very general terms, they relate to each other. Part Two consists of a series of my own speculative projects complemented by various case studies of other artists and architects. These galleries serve to illustrate how the concepts described in Part One apply in different types of creative endeavors. Specifically, the galleries reveal how this approach to making can be adapted in order to create architectural forms of varying complexity. Part Two concludes by establishing the underlying value of explorative making and suggests methods by which explorative making may be used in the generation of architectural form.

1.1

The Primary Characteristics

In my research I did not begin with a preconceived idea about explorative making, nor was there a preexisting theoretical structure that I set out to prove or demonstrate through my models. In fact, during the construction of my first model I had no idea what this thesis would be about. This allowed me to openly reflect on and interpret my actions, as opposed to tailoring them beforehand to simply demonstrate a preconceived ideology.

As I continued to construct models and speculative constructions I began to reflect on them in an attempt to unravel the controlled chaos that facilitated their making. Based on these reflections I naturally started to look for artists and architects whose process and approach was similar to my own. In turn, I stumbled upon Jackson Pollock, Henry Moore, J.B. Blunk, Alvar Aalto, and Frank Gehry.

I studied their approaches used to generate their work were studied through first-hand accounts as this was the only way to gain insight into the feelings, instincts and attitudes behind the developments of their projects. Admittedly, it is difficult to determine without a doubt if the artists were not somehow falsifying their accounts; however, several measures were taken to ensure that in a general sense they could be considered genuine. One of these measures involved studying as many personal accounts of a single artist as possible to ensure there was some sort of consistency in their reflections and comments. In addition, I complemented these

accounts with recent neuroscientific research on the role of emotions, intuition and other visceral reactions in decision making. Taken together these methods provide a reasonable assurance the personal statements of the luminaries within this thesis can be taken at face value.

I studied the case studies and my own experiences as though I was watching a film in slow motion in an attempt to extract mannerisms, actions, and comments that would typically go unnoticed. By studying explorative making in this manner I soon found it to be a very fluid process consisting of different characteristics which act in parallel, intertwine, overlap and influence each other in a non-hierarchical manner. As a result it is difficult to fully compartmentalize every action that occurs during explorative making. However, it is possible to discern four primary characteristics that are present in every form of explorative making. They are the artistic vehicle, iterative experimentation, visceral Evaluations, and a playful Mentality.

The following discussions will not only define each of the characteristics, but also their roles within explorative making. In the case of Visceral Evaluations and the Playful Mentality, further substantiation will be given as to why they are powerful resources within creative activities. Once all the characteristics have been defined the conceptual model for explorative making will be proposed that describes the relationship between each of the characteristics in very general terms.

1.2	Artistic Vehicle
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In order for ideas and visceral judgments to be expressed in the corporeal world there must be some vehicle that serves as a means of transmission into a physical reality. The artistic vehicle is the bridge that allows our immaterial feelings and instincts to be expressed in the corporeal realm of three dimensional forms. The term, 'vehicle' carries different meanings; in this context the artistic vehicle is all the tools, materials, subject matter, functional requirements of the final form, techniques, mediums and methods that constitute a means of transmission by which ideas and other intuitive judgments are expressed in physical reality. As such, the artistic vehicle operates in the tangible realm by dealing in the formal and practical aspects of making things.

Functional requirements are the practical and utilitarian considerations that must be satisfied in order for something to fulfill its intended use. In particular, buildings have numerous functional requirements related to program, context, occupant safety and comfort, cost and construction. In contrast, furniture has fewer functional requirements, for example a bed need only be suitable for sleeping, or a chair for sitting. Paintings and sculptures typically have no functional requirements.

While technique, medium, and method all generally refer to a way of doing something, they do so in varying degrees of specificity. In this context technique refers more specifically to the practical and formal aspects of artistic expression. It is the concert of movements between body, hand and tool involved in making something. As discussed in Gallery 2.2, Jackson Pollock developed his own unique technique for dripping paint onto a canvas rolled out on the floor using sticks and hardened brushes. A medium is similar to technique; however, it describes a means of artistic expression in more general terms. In respect to the aforementioned Jackson Pollock, his work was achieved through the medium of paint.

A method can be considered even more general than a medium as it is similar to a scheme, plan, blueprint, or series of steps laid out beforehand that are followed in sequence during the development of a project. Within this thesis, method is seen as a device for organizing technique and medium.

In my own work, the final model in Gallery 2.4 had its own distinct methodology. The project began with an intense research phase which involved collecting any and all information on the

pragmatic requirements within the project. This involved selecting and taking pictures of a site, gathering census information of the surrounding area, reading the building code to determine what could legally go on the site, doing several diagrammatic studies to determine possible layouts for apartments, and even constructing a massing model to understand the varying building heights and typologies in the immediate area.

All this information was studied until this knowledge became implicit. I then did a series of 1:50 models that dealt purely with form and articulation. These models, in turn, were used as the basis for a number of design drawings including plans, sections and elevations done both on the computer and by hand.

As a bridge between the immaterial and corporeal, it is crucial that an artistic vehicle allows one to comfortably and easily express one's epiphanies, feelings, and other visceral judgments in addition to accommodating any pragmatic dictates of the final form. Developing a suitable artistic vehicle can be difficult and subject to several iterations. Ultimately, the ideal relationship between a maker and his or her artistic vehicle can be visualized through Henry Moore's inspiration behind Locking Piece: "[T]he

maquette for this two-piece locking piece came about from two pebbles which I was playing with and which seemed to fit each other and lock together, and this gave me the idea of making a two piece sculpture - not that the forms weren't separate, but that they were knitted together."¹ The two interlocking pebbles can be interpreted as a metaphor of an artistic vehicle in synch with the needs, wants and feelings of the artist.

An example of an artistic vehicle in synch with the needs of an artist is clearly illustrated through the personal account of the author and activist, Barry Commoner:

I write with this pen [he removes a fountain pen from his breast pocket and holds it up]. And it's very clear to me that my ability to think and write at the same time depends on the flow of ink. The thing I enjoy most is the flow of my own ideas and getting them down on paper. I will not write with a ballpoint pen, because it really doesn't flow. That's why I use a fountain pen. And only a fountain pen that works very well.²

Jackson Pollock echos similar sentiments when he reflects on his technique for painting. He

reveals, "I prefer to tack the un-stretched canvas to the hard wall or the floor...On the floor I feel more at ease. I feel nearer, more a part of the painting, since this way I can walk around it, work from four sides and literally be in the painting."³

The artistic vehicle not only plays a significant role in artistic expression, but also affects what sensory information we gather while working. In detail, the tools and techniques we use can modulate what sensory information we gather through our hands. Hands, in particular, with their inherent sense of touch carry a wealth of sensory information to the brain.⁴ In turn, whether one selects a medium such as working on a computer or with sculpture makes a significant difference to sensory information one collects while working. This is because three-dimensional activities such as sculpture make full use of our hands and their sense of touch while mediums such as the computer restrict them to pushing buttons on a keyboard.

At its essence, the artistic vehicle consists of the various tools, materials, subject matter, functional requirements, techniques, mediums and methodologies that are used to translate our feelings and ideas into physical

reality; however, it also filters the information we gather through our senses as we work. Its primary role as a bridge means that the relationship between an individual and their artistic vehicle is extremely important factor within explorative making. As a result, people will often a means of expression that allows the work to simply flow out of them as is the case with Barry Commoner and Jackson Pollock.

NOTES:

1. Alan Wilkinson, ed., Henry Moore: Writings and Conversations (Los Angeles: University of California Press Berkeley), 215
2. Mihaly Csikszentmihalyi, Creativity (New York: Harper Collins, 1996), 119
3. Pepe Karmel and Kirk Varnedoe, Jackson Pollock (New York: Harry N. Abrams Inc., 1999), 94
4. Dietz, Steven. 2006. "Mapping the Homunculus." In Else /Where: Mapping Cartographies of Networks and Territories, 200-205. Edited by Janet Abrams and Peter Hall, (Minneapolis, MN: University of Minnesota Design Institute, 2006)
5. James P. Carse Finite and Infinite Games (New York: Random House Publishing Group, 1986), 9

1.3 Iterative Experimentation

While the artistic vehicle reveals the means to which the act of making is achieved, iterative experimentation by comparison pertains to the act of making itself. It is the process of repeatedly experimenting and exists as some form of trial and error where new experimentation is somehow informed by previous iterations. Although, what is produced through iterative experimentation varies depending on the situation it often involves the making of objects such as models, paintings, sketches and other type of drawings. Specifically, it encompasses the range of physical interactions between the individual and their work and includes the holding, looking, playing, touching, working, changing and molding of material. In the case of Henry Moore and the development of his sculptures, iterative experimentation is apparent in the development of numerous small maquettes. During this phase of his work, he will test a variety of ideas and forms and then start to refine the ones he likes while discarding the others until he arrives at one that he feels is suitable to make into a full-size sculpture.¹

Iterative experimentation is necessary for the simple reason that one has a limited capacity to fully visualize an entire project in their mind beforehand. This is especially the case with architects where it is simply too difficult to fully imagine a complex configurations of rooms and forms in complete detail. Thus making allows one to develop complex projects through a series of iterations.

The models, drawings and other material we create during iterative experimentation engages our senses and, in turn, provides a wealth of sensory information that is valuable in the development of future iterations. This form of learning not only occurs on a conscious level, but an unconscious level as well. In *How We Decide*, Jonah Lehrer describes how, "the [emotional] brain always learns the same way, accumulating wisdom through error."¹ In addition, "the reason these emotions are so intelligent is that they've managed to turn mistakes into educational events. You are constantly benefiting from experience, even if you're not consciously aware of the benefits."²

These comments reveal how all the mistakes we make during explorative making are actually extremely valuable resources for learning on both a conscious and unconscious level. More importantly, they reveal how emotions and feelings can literally become more knowledgeable through trial and error. Consider children who initially struggle to learn how to ride a bike. Through constant practice they learn from their mistakes until this skill becomes automatic. This same principle is elaborated on by Richard Sennett in *The Craftsman*, through the writings of Daniel Levitin.

Ten thousand hours is a common touchstone for how long it takes to become an expert. In studies of 'composers, basketball players, fiction

writers, ice skaters, ... and master criminals,' the psychologist Daniel Levitin remarks, 'this number comes up again and again.' This seemingly huge time span represents how long researchers estimate it takes for complex skills to become so deeply ingrained that these become readily available, tacit knowledge. ³

This same principle described by Levitin and Sennett applies to the ongoing practice we undertake during our creative endeavors. The vast reservoir of sensory information we acquire during this continual experimentation empowers the body and unconscious mind with a special type of non-verbal knowledge that informs the feelings and intuition that guide explorative making.

Another powerful outcome of iterative experimentation is the objects and models one makes can stimulate lateral thinking and trigger all sorts of domain shifts, associations, mental images, ideas, and other visceral judgments. For example, in the making of Project Three, as I started fixing together blocks of hardwood with screws I began to image them as cupboards and the screw heads as door knobs. In the case of Frank Gehry, it is well known how he sometimes imagines buildings within crumpled pieces of paper in his waste basket. ⁴

In summary, iterative experimentation is essentially a form of trial and error where a

current iteration will inform the development of successive iterations in some manner. As it is difficult to fully envision an entire object within the mind, iterative experimentation is necessary in order to make complex projects such as buildings. This method also has the added benefit of allowing one interact with their ideas as objects. This interaction facilitates learning and the acquisition of sensory information on both a conscious and unconscious level, all of which has effect of making our visceral judgments more knowledgeable and informed. Finally, in many circumstances, the simple interaction with a model, drawing or some other object can instantly trigger a variety of associations and ideas which can influence the development of a project.

NOTES:

1. Jonah Lehrer, *How We Decide* (New York: Mariner Books, 2010), 249
2. *Ibid.*, 249
3. Richard Sennett, *The Craftsman* (New Haven: Yale University Press, 2008), 172
4. Mark Rappolt and Robert Violette, ed. *Gehry Draws*, (Cambridge, Massachusetts: MIT Press: 2004), 250

1.4

Visceral Evaluations

Visceral evaluations are judgments rooted in any combination of mental images, ideas, feelings, hunches, instincts, impulses, intuitions, gut reactions, epiphanies, and inspirations that are arrived at through little or no premeditated rational analysis. They embody our subjective wants and needs, are based on our prior experiences, and can also vary in intensity. Visceral evaluations have a unique phenomenology where the feeling or judgment in question simply feels right, even though in many cases it is difficult to explain why it feels right. Through the scientific research of Jonah Lehrer and the psychological research of Mihaly Csikszentmihalyi, combined with the experiences described in the galleries, it becomes clear as to how visceral evaluations can be a valuable resource in creative undertakings.

In order to understand the phenomenology of intuitive judgments as well as shed insight on why they can be so effective, a scientific perspective needs to be adopted. Works such as *Descartes Error* by Antonio Damasio, *The Brain is (Almost) Perfect* by Read Montague, *The Emotional Brain: The Mysterious Underpinnings of Emotional Life* by Joseph LeDoux, and *The Second Brain* Michael D. Gershon examine visceral evaluations from a scientific perspective. Collectively, these works have begun to unravel the origins and reasons behind the effectiveness of these visceral judgments.

Jonah Lehrer's *How We Decide* is a text based on the research of many of the

mentioned authors, and sheds light on both the foundation and effectiveness of visceral evaluations. His research also includes personal accounts of people from different walks of life. Through this multi-modal approach to studying decision making, Lehrer arrives at a provocative conclusion, "The Human Mind doesn't know itself very well. The conscious brain is ignorant of its own underpinnings, blind to all that neural activity taking place outside the prefrontal cortex. This is why people have emotions: they are windows into the unconscious, visceral representations of all the information we process but don't perceive."¹ In this instance, the information we process but do not perceive partially consists of all the information derived from our sensory interactions with the world around us; thus, this knowledge of the body forms a significant part of the foundation upon which visceral judgments are based. This sensory information is translated into primitive feelings that are incorporated into our decision-making. Lehrer describes how this occurs in detail.

The orbitofrontal cortex (OFC)... is responsible for integrating visceral emotions into the decision making process. It connects the feelings generated by the "primitive" brain - areas like the brain stem and the amygdala, which is in the limbic system - to the stream of conscious thought. When a person is drawn to a specific receiver [during a football game], or a certain entrée on the menu, or a particular romantic prospect, the mind is trying

to tell him that he should choose that option. It has already assessed the alternatives - this analysis takes place outside of conscious awareness - and converted that assessment into a positive emotion. And when he sees a receiver who is tightly covered, or smells a food he does not like, or glimpses of an ex-girlfriend, it is the OFC that makes him to get away...The world is full of things, and it is our feelings that help us choose among them.²

Collectively, Lehrer's explanations reveal how it can be difficult to explain the reasons for a visceral evaluations: they originate from mental processing performed in our unconscious minds.

In his work Lehrer also goes on to reveal why visceral evaluations are so valuable. He asserts, "Feelings aren't simply reflections of hard-wired animal instincts... Every time you make a mistake or encounter something new, your brain cells are busy changing themselves."

³ This neural plasticity allows the unconscious mind to continually update itself according to one's experiences and represents a flexibility that makes our visceral evaluations adaptable and effective in a variety of situations.

This concept described by Lehrer can be readily applied to Alvar Aalto and Frank Gehry in the development of their buildings. In *The Trout and the Stream*, Aalto explains how he begins a project with an intense research phase by studying all the pragmatic requirements of a project until this knowledge has sunk into

his unconscious mind. He then forgets these challenges for awhile and starts sketching, guided simply by his instincts and feelings.⁵ As mentioned in the discussion on the artistic vehicle, my development of Project Eight followed a similar pattern. I studied a significant body of research into the pragmatic concerns surrounding the project until it became implicit knowledge. This knowledge was then used in the making of several 1:50 models guided by my feelings and other visceral judgments.

Lehrer also reveals, "The emotional brain is especially useful at helping us make hard decisions. Its massive computational power - its ability to process millions of bits of data in parallel - ensures that you can analyze all the relevant information when assessing alternatives. Mysteries are broken down into manageable chunks, which are translated into practical feelings."⁴ The hard decisions Lehrer refers to are the ones involving a multitude of factors and several competing goals.

Lehrer's research can be applied to the traditional five phase model of creativity. These five phases include preparation, incubation, insight, evaluation, and elaboration. As the creative process often deals with both the act of making and the use of intuition, it is worthwhile to include Lehrer's research within this discussion. In *Creativity*, Mihaly Csikszentmihalyi probes the role of the unconscious and visceral evaluations within the traditional five phase model for the creative process based on interviews with nearly a hundred creative professionals. After a preparation phase where information is collected

and studied about a problem one enters into an incubation phase when they take a break from the problem. During this incubation phase flashes of insight will then pop into their head with little or no premeditative reasoning. There are stories abound of people having epiphanies when they are in the shower, or walking to work. This "Aha"⁶ experience is the third stage of the creative process, and is known as the insight phase. The author goes on to distinguish between the linear style of thinking that occurs in our conscious minds and the parallel processing discussed by Lehrer, and then speculates how our novel flashes of insight emerge from this parallel processing.

In a serial system like that of an old-fashioned calculator, a complex numerical problem must be solved in a sequence, one step at a time. In a parallel system such as in advanced computer software, a problem is broken up into its component steps, the partial computations are carried out simultaneously, and then these are reconstituted into a single final solution.

Something similar to parallel processing may be taking place when the elements of the problem are said to be incubating. When we think consciously think about an issue, our previous training and effort to arrive at a solution push our ideas in a linear direction, usually along predictable or familiar

lines. But intentionality does not work in the subconscious. Free from rational direction, ideas can combine and pursue each other every which way. Because of this freedom, original connections that would be at first rejected by the rational mind have a chance to become established.⁷

The research of Csikszentmalyi and Lehrer, along the case studies in this thesis all correspond well with each other. Collectively, they illustrate how visceral evaluations can be a powerful resource in creative activities because they can grow and evolve from experience and arise from the powerful, free-flowing parallel processing of the unconscious mind.

NOTES:

1. Jonah Lehrer, *How We Decide* (New York: Mariner Books 2010), 248
2. *Ibid.*, 18
3. *Ibid.*, 41
4. *Ibid.*, 248
5. Aarno Ruusuvaori, ed. , Alvar Aalto, 1898 - 1976, (Helsinki: Yhteiskirjapaino Oy, 1978), 22, 25
6. Mihaly Csikszentmihalyi, *Creativity* (New York: Harper Collins, 1996), 104
7. Csikszentmihalyi, *Creativity*, 102

1.5

Playful Mentality

A playful mentality is a crucial part of explorative making and comes with its own unique phenomenology. While it manifests itself differently in each person it typically involves a special type of focus where the maker is free of inhibition. Within this mindset, the maker is not afraid of making mistakes or changes, demonstrates a willingness to be unconventional, and is open to surprises. In particular, this focus translates into one simply trusting his or her own intuition and feelings and acting on them just to see what will happen. This translates directly into a merging of thought and action and in phenomenological terms feels like the work is simply flowing out of you without having to think about it. By tracing this outlook back to its origins and elaborating further on some of its crucial aspects, one can then understand its pivotal role within explorative making.

The playful mentality is rooted in an innate passion to create and make new discoveries simply because one finds it enjoyable and fun as an end in itself. This concept can be partially traced back to the writings of Henri Bergson and Mihaly Csikszentmihalyi. Csikszentmihalyi proposes, "each of us is born with two contradictory sets of instructions: a conservative tendency, made up of instincts of self preservation, self-aggrandizement, and saving energy, and an expansive tendency made up of instincts for exploring, for enjoying novelty and risk the curiosity of creativity...." ¹

In a similar fashion, Bergson identifies this latter expansive tendency as the *elan vital*. According to Bergson, the *elan vital* is the impulse to continually create and diversify. It drives the making of works of art, music, and literature, and arises out of the intuition of the artist.² This notion of an expansive tendency or an *elan vital* is difficult to prove in quantitative terms; however, it is apparent the luminaries studied in this thesis and the individuals interviewed by Csikszentmihalyi carry an innate and entirely genuine passion that drives them to explore and create, regardless of financial gain.

The concept of fun is identified by Johan Huizinga in *Homo Ludens* as the essence of play³. Whether an activity is a serious or silly type of fun, it is performed because of the enjoyable experience one gets while doing it. In other words, it is undertaken as an end in itself.

It is from this underlying drive the aforementioned traits of a playful mentality bloom. Through the work of Mihaly Csikszentmihalyi one can gain a better understanding on the type of focus within a playful mentality through his description of the "flow"⁴ experience. Csikszentmihalyi filters all his interviews with creative professionals into a common phenomenology that outlines the typical feelings a person has when one is passionately engaged in creative activities. Specifically, the distractions of day to day life are excluded from consciousness, there is no fear of failure, and self-consciousness

disappears. Freedom from worrying about paying bills, making mistakes, or what other people might think allows a person to completely focus on what one is making. In turn, it frees one to embrace the opportunities that go along with making mistakes and changes, in addition to being unconventional and open to surprises. In relation to my own work, this focus was experienced as if I was inside a protective psychological bubble.

This idea of being open to surprise is echoed in *Finite and Infinite Games*, by John P. Carse. Carse describes the mentality of one who plays infinite games: games which are played for the sake of playing. The players of infinite games "play for the sake of surprise."⁵ They, "not only expect to be surprised, but to be transformed by it."⁶ In this respect one who engages in explorative making does so with the mentality of the infinite player. The artist, J.B. Blunk typifies this attitude in the development of his sculptures. He reveals, "Often, as I uncover more of the form, I encounter unexpected qualities, faults or voids in the wood which may change my intention, and sometimes the theme itself. This is a satisfying and exciting aspect of working on large pieces..."⁷

The merging of thought and action is another aspect of the playful mentality which can be extracted from Csikszentmihalyi's flow

experience and is illustrated through the personal account of the physicist Freeman Dyson:

I always find when I am writing, it is really the fingers that are doing it and not the brain. Somehow the writing takes charge. And the same thing happens of course with equations. You don't really think of what you are going to write. You just scribble, the equations lead the way, ...⁸

In many respects, the experience of Dyson was not unlike Jackson Pollock, who stated that when he was immersed in his painting he was unaware of what he was doing.⁹

Through her Broaden-and-Build Theory of Emotions¹⁰, Barbara L. Fredrickson establishes the connection between fun and the common traits of a playful mentality. By reviewing two decades worth of research into the effects of positive emotions Fredrickson noticed that people experiencing positive emotions such as joy and interest also typically experienced corresponding urges to play and explore. Fredrickson's findings align with the interviews in Csikszentmihalyi's research as well as the case studies in this thesis in so much as an innate passion and sense of fun generally correspond with the presence of traits associated with a playful mentality

This connection is vital in establishing the deep underlying role of a playful mentality. If one is having fun and is passionate about what they do, it changes a person's whole outlook on what he or she is doing. As a result, instead of worrying about other aspects of daily life they focus more on exploration, play, and taking chances. This, in turn, opens one up to a wealth of opportunity to make discoveries and stumble upon surprises which could transform a project. In short, passion and fun are not only happy by-products of creative endeavors, but serve an integral role in their outcome. As such, a playful mentality is the motivation that energizes explorative making.

Without a playful mentality, explorative making would succumb to inhibitions, cynicism and excessive conservatism. For instance, by succumbing to inhibitions and simply not trying something just because someone else might consider it to be too unconventional can preclude the possibility of making a valuable discovery. Furthermore, if an individual becomes so fixated on a single form or idea that one is unwilling to make changes to it, the opportunity to develop a project is lost and explorative making is restricted. A playful mentality prevents these situations from developing and is needed to get the most out of explorative making.

NOTES:

1. Mihaly Csikszentmihalyi, *Creativity* (New York: Harper Collins, 1996), 11
2. Henri Bergson, *Creative Evolution* trans. Arthur Mitchell (London: MacMillan and Co. Limited, 1911)
3. Johan Huizinga, *Homo Ludens* (London: Maurice Temple Smith Ltd., 1970), 21
4. Csikszentmihalyi, *Creativity*, 110
5. James P. Carse Finite and Infinite Games (New York: Random House Publishing Group, 1986), 22
6. *Ibid.*, 23
7. "Work and home: A Visit with J.B. Blunk," accessed March 05, 2011, <http://www.jbblunk.com/work>
8. Csikszentmihalyi, *Creativity*, 118-119
9. Pepe Karmel and Kirk Varnedoe, Jackson Pollock (New York: Harry N. Abrams Inc., 1999), 48
10. Barbara L. Fredrickson, "The Broaden-and-Build Theory of Emotions," *Philosophical Transactions: Biological Sciences*, Vol. 359, No.1449 (Sept. 2004): 1367-1377, <http://www.jstor.org/stable/4142140>, (Accessed: 25/06/2011)

1.6

The Conceptual Model

Thus far the thesis has only dealt with defining each of the primary characteristics. It is now possible to propose a very general conceptual model outlining how they work together during explorative making and to ground this model within a larger academic context.

To recap what has been established so far, visceral evaluations inject a valuable source of non-verbal knowledge into creative endeavors. The artistic vehicle is necessary as a means to express these immaterial visceral judgments as corporeal objects while also influencing what information we gather through our senses during creative activities. Iterative experimentation is the act of translating our immaterial feelings into a physical forms. This act is necessary because it is extremely difficult to fully visualize an entire project within one's mind; in addition, it provides one with the opportunity to engage ideas with the senses. This unbounded sensory knowledge is a valuable resource that later informs an individual's visceral evaluations. A playful mentality, with its inherent urges to play and explore, drives explorative making.

An innate passion and sense of play establishes a reciprocal relationship between visceral evaluations and iterative experimentation.

As elaborated on in the galleries and previous discussions the nature of this relationship entails the making of something and then standing back and simply reacting to it. All of the information gathered from the work informs one's intuitions, gut reactions, and other visceral judgments. These judgments, in turn, guide what is made in the next iteration. This cycle is facilitated or inhibited by an artistic vehicle. In essence, the more an artistic vehicle is in synch with an individual and their needs the more it will facilitate explorative making. While all of this is going on a playful mentality is propelling this speculative making forward like a sort of hunger needing to be satisfied.

This model intentionally does not define any limits in terms of duration. Sometimes the maturation of a project using this approach can take hours or years depending on a number of different circumstances. There have also been no limitations placed on the artistic vehicle, other than it must facilitate the actual making of something. Furthermore, the conceptual model presented above also does not specify the exact roles of mentors and colleagues who advise one during the course of a project. This adds another layer of complexity that can only be addressed according to the specific needs of a particular situation.

This conceptual framework is only a very simplified version of what actually occurs in reality. The nature of the interactions between these primary characteristics is typically much more complex and interwoven. In particular, I found the development of my artistic vehicles was influenced by all of the other primary characteristics. My means of working evolved as a result of my experimentation and gut reactions. In addition, part of my own playful mentality was to intentionally introduce new materials as part of my artistic vehicle just to see how they could influence a project. This small example provides a glimpse into some of the many possible relationships between the central characteristics of this approach. It is impossible to list every way in which these characteristics can interact with each other because their relationships are highly dependent on the person and situations within which they are used.

Grounding this model within a larger academic context is somewhat difficult because it borrows ideas rooted in different schools of thought; two of which being creativity and play.

As discussed earlier, reflect on the traditional five phase model of creativity is useful because it also deals with the role of intuition

in the act of creating. In many respects, the conceptual model for explorative making aligns with Csikszentmihalyi's critique of the traditional five phase model of creativity. This conceptual model, made up of preparation, incubation, insight, evaluation and elaboration essentially presents creativity as a linear, step by step, process. In his critique, the author recognizes this is not the case, "The creative process is less linear than recursive. How many iterations it goes through, how many loops are involved, how many insights are needed, depends on the depth and breadth of the issues dealt with. Sometimes incubation lasts for years; sometimes it takes a few hours. Sometimes the creative idea includes one deep insight and innumerable small ones."¹ This concept of a possibly endless recursive process is central to explorative making.

As it is a playful mentality which lies at the root of explorative making it is also worth interpreting this conceptual model as a form of play. According to Johan Huizinga, Play is made up of three central characteristics. The first characteristic is that all play is voluntary, in other words, one chooses to play for the sake of play and having fun². The second is that play is not ordinary, it involves, "stepping out of 'real' life into a temporary sphere of activity with a disposition all of its own."³ The third characteristic is all play

is self-contained in so much as it has boundaries, order, and even rules which govern it.⁴

Explorative making can be re-imagined to align with the central characteristics of play. Similar to the first characteristic, a key component of the playful mentality involves voluntarily choosing to engage in creative activity just because of the experience and fun one gets from simply doing it. Furthermore, inherent in this approach is the constant asking of questions such as, “what if?”. Answering these questions requires one to constantly enter into a world of make believe to various degrees and step out of 'real' life. This coupled with the intense focus inherent in a playful mentality creates an atmosphere quite distinct from real life. Finally, the primary characteristics along with all the particulars of an artistic vehicle serve to bound and restrain the play within speculative making much like the boundaries and rules described by Huizinga.

In the end, whether explorative making is actually a form of play or a model for creativity is not the issue. What is important is it includes characteristics from each and, as a result, eclipses both as a conceptual model for making. Specifically, it involves the shaping, changing,

and combining of material for the purposes of discovery and exploration. It is a means of unlocking the potential of visceral evaluations and a playful mentality and integrating them into creative endeavors.

As the conceptual structure for this approach to making has fully crystallized, it is now appropriate to seek a more refined knowledge by examining in more detail how it manifests itself within different types of artistic activities and projects.

NOTES:

1. Mihaly Csikszentmihalyi, *Creativity* (New York: Harper Collins, 1996), 80-81
2. Johan Huizinga, *Homo Ludens* (London: Maurice Temple Smith Ltd., 1970), 21
3. *Ibid.*, 26
4. *Ibid.*, 28

PART II

Applying Explorative Making

2.0

The Galleries

The following five galleries are a compilation of five case studies and eight of my own speculative projects. Each case study or project constitutes a distinct form of explorative making. The relationship between them is akin to the relationship between different members of a particular species. Specifically, if humankind is examined as a species it is clear there are shared characteristics between all people that justify their identification as one species. However, upon closer examination there are significant differences in regards to ethnicity, economic class, age group, and personal history, resulting in no two people being exactly alike. While the primary characteristics of explorative making are apparent in each project or case study, the circumstances in which they are employed varies in each case resulting in a series of distinct forms of explorative making.


The intentions behind these galleries are as follows:

- 1) To reveal where the conceptual framework in Part One originated from and to illustrate how it unfolds in a different contexts.
- 2) To ascertain how explorative making can evolve to be a fruitful creative approach for architectural design.

The first intention is achieved by reflecting upon each of the projects and case studies through an analytical lens made up of the primary characteristics.

In order to satisfy the second aim, case studies were selected and projects were undertaken according to the number and complexity of their functional requirements. As previously discussed, functional requirements are the practical and utilitarian considerations that must be satisfied in order for a building to fulfill its intended use. In turn, the galleries have also been arranged according to the number and complexity of the practical requirements in each project. A summary of the work and functional requirements addressed in each gallery is outlined in the Evolutionary Spectrum on the following page. The functional requirements for each case study and project are also highlighted in their corresponding texts within the galleries themselves.

The galleries conclude with a compilation of different observations, which outline how explorative making can be adapted for purpose of making architectural form.

GALLERY 2.1 PRIMORDIAL FORMS OF EXPLORATIVE MAKING	GALLERY 2.2 SIMPLE FORMS OF EXPLORATIVE MAKING	GALLERY 2.3 MODIFYING SIMPLE FORMS OF EXPLORATIVE MAKING	GALLERY 2.4 TOWARDS AN EVOLVED FORM OF EXPLORATIVE MAKING	GALLERY 2.5 EVOLVED FORMS OF EXPLORATIVE MAKING
 <p>Jackson Pollock</p> <p>Henry Moore</p> <p>Gallery 2.1 includes case studies of paintings and sculptures that do not address any functional requirements.</p>	 <p>James Blunk</p> <p>Project 1 Versions A+B</p> <p>Gallery 2.2 comprises of a case study incorporating very simple functional requirements within sculptural pieces of furniture. Both Project One and Two are single room, open air shelters, while only Model Two includes a very crude sense of program.</p>	 <p>Project 3</p> <p>Project 4</p> <p>Project 5</p> <p>Gallery 2.3 consists of Projects Three, Four, and Five. They are my attempts to accommodate a more complex program made up of interconnected rooms within my explorative making.</p>	 <p>Project 6</p> <p>Project 7</p> <p>Project 8</p> <p>The projects within this gallery address some of the requirements inherent in finished buildings to, at most, a very schematic level. Project Six successfully integrates a very basic part made up of a series of undefined rooms that open up onto a central circulation space. Project Seven does the same thing while also including the notion of structure and skin in several aspects of the model. Project Eight is a schematic proposal for a general layout of a mixed use scheme that meets building code regulations in regards to access and egress. It responds sympathetically to an actual site and incorporates structure and mechanical services on a very notional level.</p>	 <p>Frank Gehry</p> <p>Alvar Aalto</p> <p>Gallery 2.5 is made up of two case studies of architects with fully completed projects whose design process is an evolved form of explorative making. In these cases, the architects have successfully managed to accommodate all the functional requirements required to construct a real building including issues relating to site, program, occupant safety, construction, and cost.</p>

EVOLUTIONARY SPECTRUM

2.1

Primordial Forms of Explorative Making

Primordial forms of explorative making do not address any functional requirements or serve a utilitarian purpose of any kind. These forms of explorative making are evident in certain paintings by Jackson Pollock and the sculptures by Henry Moore.



Jackson Pollock Introduction

Jackson Pollock is revered for his technique of dripping paint using hardened brushes, sticks, trowels and knives onto a large canvas. After 1946, in a small drafty barn adjacent to his home in East Hampton, New York, (Fig. 1, Pg. 25), Pollock developed this technique until it became a dominant feature in his work.

By reflecting his paintings and the evolution of *Autumn Rhythm* filmed and photographed by Hans Namuth, one can unravel Pollock's work according to the four primary characteristics of explorative making. This investigation reveals Pollock employed a primordial form of explorative making tailored to suit the development of his paintings. As such, his is an explorative making that does not address any functional requirements. Collectively, Pollock's work demonstrates how explorative making was an effective approach for investigating the depths of his aesthetic interests, pushing Pollock to his non-representational drip paintings. This examination also goes on to reveal how the primary characteristics of explorative making can interact with each other during the maturation of a project.



Fig. 1 The floor of Pollock's studio in his barn adjacent to his home in East Hampton, New York



Artistic Vehicle

In Pollock's narration during the film about his work by Hans Namuth and Paul Falkenberg, Pollock elaborates on the intertwined relationship with his artistic vehicle by stating, "The [My] method of painting is the natural growth out of need. I want to express my feelings rather than illustrate them."¹ These comments establish the primary aim behind the development of his drip technique for painting.

Pollock goes on to briefly summarize his artistic vehicle in the first issue of *Possibilities*.

My painting does not come from the easel. I hardly ever stretch my canvas before painting. I prefer to tack the un-stretched canvas to the hard wall or the floor. I need the resistance of a hard surface. On the floor I feel more at ease. I feel nearer, more a part of the painting, since this way I can walk around it, work from four sides and literally be in the painting. This is akin to the method of the Indian sand painters of the West.

I continue to get further away from the usual painter's tools such as easel, palette, brushes, etc. I prefer sticks, trowels, knives and dripping fluid paint (Fig. 7, Pg. 36) or a heavy impasto with sand, broken glass and other foreign matter added.²

Pollock's comments weave together notions of visceral comfort with more pragmatic considerations. Specifically, he talks about feeling, "more at ease,"² and "more a part of the painting,"² when it is on the floor. At the same time this vehicle also satisfies specific pragmatic concerns by giving him the flexibility walk around all four sides of his painting.

Pollock's comments point to a layered relationship with his artistic vehicle that is elaborated on in an interview with William Wright, quoted by Francis V. O'Connor.

WRIGHT. Would it possible for you to explain the advantage of using a stick with paint - liquid paint rather than a brush on canvas?

POLLOCK. Well, I'm able to be more free and to have greater freedom and move about the canvas, with greater ease.

.

WRIGHT. I believe some of your canvases are of very unusual dimensions, isn't that true?

POLLOCK. Well, yes, they're an impractical size - 9 x 18 feet. But I enjoy working big whenever I have a chance, I do it whether it's practical or not.

WRIGHT. Can you explain why you enjoy working on a large canvas more than a small one?

POLLOCK. Well, not really. I'm just more at ease in a big area than I am on something 2 x 2; I feel more at home in a big area.³

Similar to his comments in *Possibilities* it is clear Pollock addresses both practical considerations and visceral comfort in the development of his artistic vehicle. Dripping paint using a stick allows Pollock, "to have greater freedom and move about the canvas with greater ease,"³. In contrast, he works on large canvases simply because he feels, "more at home in a big area."³

It is clear Pollock developed his artistic vehicle to be a comfortable outlet for his creative energies. In order to achieve this aim, his artistic vehicle is molded to suit his own visceral comforts in addition to other more practical considerations.



Iterative Experimentation

Hans Namuth, the German photographer, provides a first hand account of Pollock while he is engaged in his own form of iterative experimentation.

The Canvas, 9 by 17 feet, was laid out flat, occupying most of the floor of the studio and Pollock stood gazing at it for some time, puffing at a cigarette. After a while he took a can of black enamel ... and a stubby brush which he dipped into the paint and then began to move his arm rhythmically about, letting the paint fall in a variety of movements on the surface. At times he would crouch, holding the brush close to the canvas, and again he would stand and move around it or step on it to reach to the middle. Within a half hour the entire surface had taken on an activity of weaving rhythms. Pools of black, tiny streams and elongated forms seemed to become transformed and began to take on the appearance of an image. As he continued, still with black, going back over former areas, rhythms were intensified with counteracting movements. After some time, had decided to stop to consider what had been done.”⁴ (Fig. 2, Pg 29, Fig. 3-5, Pg. 30-31, Fig. 8, Pg. 37, Fig. 9, Pg. 39)

Fig. 2 (Opposite) Hans Namuth's photographs depicting the evolution of *Autumn Rhythm*



Pollock's own comments published in the first and only issue of *Possibilities*, edited by Robert Motherwell and Harold Rosenberg, complement Namuth's account. Pollock asserts, "I have no fears about making changes, destroying the image, etc., the painting has life of its own. I try to let it come through. It is only when I lose contact with the painting that the result is a mess. Otherwise there is pure harmony, an easy give and take, and the painting comes out well."⁵

Pollock's mention of, "an easy give and take" with his work and not being afraid to make changes complement Namuth's photographs and comments depicting an artist who oscillates between dripping paint and reflecting on his work. All of which allude to a simple, fast paced, form of trial and error performed via his technique of dripping paint on to a canvas and adding other foreign matter, such as sand and broken glass.

Fig. 3 - 5 Digital composites depicting the evolution of Autumn Rhythm

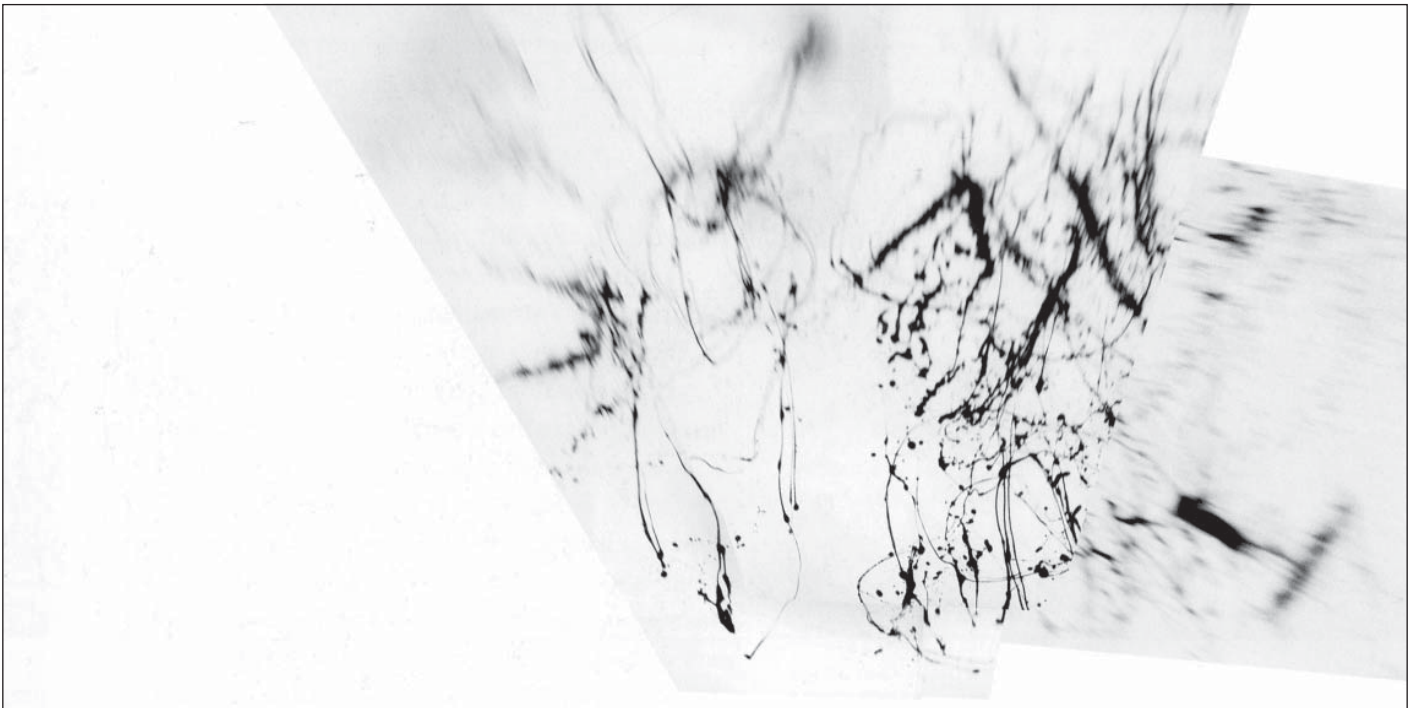


Fig. 3

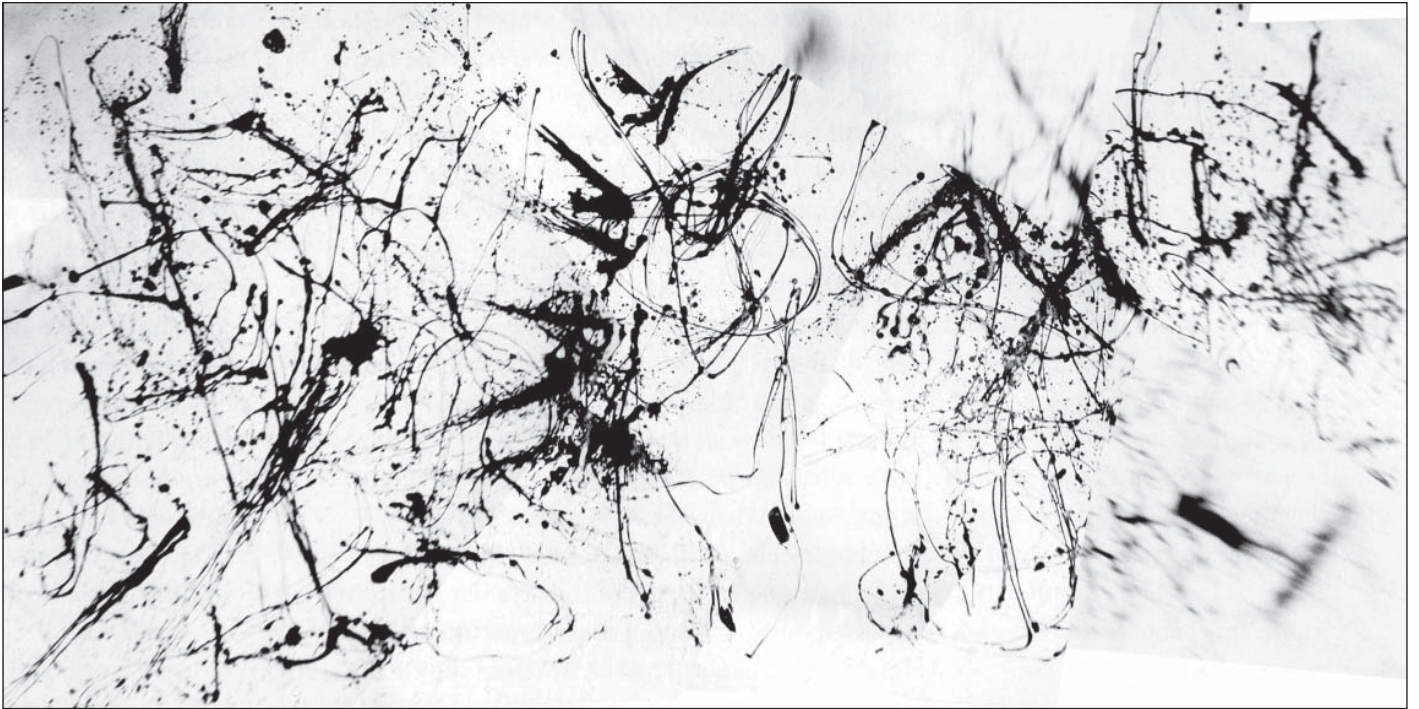


Fig. 4



Fig. 5



Fig. 6 *Autumn Rhythm : Number 30*, 1950





Visceral Evaluations

In *Possibilities*, Pollock asserts, "When I am in my painting, I'm not aware of what I'm doing." ⁶This perplexing comment provides a small window into the decision making that occurs during the development of his work. If one travels through his window and investigates Pollock's decision making it becomes clear these large canvases lavished with rhythmic drippings of paint are driven by visceral evaluations.

In *Pollock Paints a Picture*, Robert Goodnough reveals the role these visceral evaluations play in Pollock's work, "He [Pollock] feels his methods may be automatic at the start but that they quickly move beyond that, becoming concerned with deeper and more involved emotions which carry the painting on to completion according to their degree of strength and purity... Starting automatically, almost as a ritual dance might begin, the graceful rhythms of his movements seem to determine to a large extent the way the paint is applied." ⁷ These comments, taken from his conversations with Pollock illustrate how visceral evaluations impact the development of his work.

This presence is reinforced by Pollock's preoccupation with the unconscious as a driving force in his paintings: "The source of my painting is

the unconscious. I approach painting the same way I approach drawing. That is direct - with no preliminary studies. The drawings I do are relative to my painting but not for it." ⁸ The role of the unconscious is elaborated on within the journal, *Portfolio*, printed in 1951.

The conscious part of his mind, he says, plays no part in the creation of his work. It is relegated to the duties of the watchdog: when the unconscious sinfully produces a representational image, the conscience cries alarm and Pollock wrenches himself back to reality and obliterates the offending form. According to Pollock, he has no idea at all what the painting looks like while he is in the process of creating it.⁹

These comments, which synthesize a series of interviews with Jackson Pollock, seamlessly weave together with his earlier statements regarding the presence of visceral evaluations and his goal to express his feelings within his work. Collectively, they clearly demonstrate how the visceral evaluations evolving from his unconscious play a significant role in his painting.



Playful Mentality

In his earlier comments Pollock refers to having, “no fears about making changes, [or even] destroying the image, etc., because the painting has life of its own.”⁵ When these statements are combined with Hans Namuth’s photographs and Pollock’s other comments regarding how he implicitly trusts his visceral evaluations to guide his work, it is evident his explorative making is facilitated by a playful mentality.

Fig. 8 (Opposite) Pollock using his drip technique while painting *Autumn Rhythm*



Fig. 7 Pollock’s assortment of paints and hardened brushes, sticks and other tools





Jackson Pollock Concluding Remarks

By analyzing Pollock's creative process in respect to the primary characteristics of explorative making it is clear Pollock employs a primordial form of explorative making in the development of his "drip" paintings. These paintings that do not address any functional requirements commonly seen in buildings.

For Pollock the paintings themselves demonstrate how this approach was an effective means for exploring his artistic interests that focused on, "expressing his feelings rather than illustrating them." ¹ Specifically, his artistic vehicle pushed the act of painting into an event where his feelings were not only expressed with a paint brush, but through his entire body through an ensemble of rhythmic movements.

Through Pollock we can begin to understand how, in general terms, the primary characteristics interact with each other during explorative making. Through Jonah Lehrer and Pollock's comments it is revealed how visceral evaluations and iterative experimentation can nurture each other as a reciprocal relationship. Pollock's mention of a give and take with the canvas, and his swooping movements guided by visceral evaluations alludes to this relationship. In addition, the artistic vehicle, in synch with the preferences and needs of the artist, and the playful mentality, that includes a fearless attitude towards making changes, help lubricate explorative making. Together, they help to ensure a flowing and continuous give and take between the artist and their work.

NOTES

1. Barbara Rose, ed., *Pollock Painting*, (New York: Agrinde Publications Ltd. 1980), 93
2. Pepe Karmel and Kirk Varnedoe, *Jackson Pollock* (New York: Harry N. Abrams Inc., 1999), 48
3. Francis V. O'Connor, *Jackson Pollock* (U.S.A.: Plantin Press, 1967), 80-81
4. Pepe Karmel and Kirk Varnedoe, 94
5. *Ibid.*, 48
6. Karmel and Varnedoe, *Jackson Pollock*, 48
7. *Ibid.*, 94
8. O'Connor, *Jackson Pollock*, 81
9. Karmel and Varnedoe, *Jackson Pollock*, 92

Fig. 9 (Opposite) Pollock reflecting on his work during the development of *Autumn Rhythm*





Henry Moore Introduction

Henry Moore was an English sculptor who is renowned for his passion for direct carving and his later sculptures inspired by found objects in nature such as bones and pebbles. By examining the development of his work in regards to iterative experimentation, the artistic vehicle, visceral evaluations and a playful mentality his creative process is revealed to be a primordial form of explorative making. As a result his work does not delve into any functional requirements common in the design of buildings.

Through Moore's work, insight is gained as to how iterative experimentation, the artistic vehicle, visceral evaluations, and a playful mentality can interact during the course of explorative making.

Fig. 1 (Opposite) Moore at work in his studio





Artistic Vehicle

Throughout his career Moore's artistic vehicle evolved from direct carving in stone and wood, to working with plaster maquettes and then choosing one of these maquettes to refine into a full-size sculpture.

Whether it is carving or working with maquettes, a crucial part of Moore's working method is to look to found materials as sources of inspiration. Moore expands upon this notion in *A Monumental Vision: The Sculpture of Henry Moore*, by John Hedgecoe. Moore states, "I went to the stone quarries in Derbyshire and bought a lot of random blocks of Hopton Wood stone. I had room and space enough at Burcroft to let the stones stand around in the landscape, and seeing them daily gave me fresh ideas for sculpture"¹ In addition to these stones are the boxes of pebbles, bits of bone, and found objects he would play with at the start of a project in order to induce ideas for sculptures. (Fig. 8 - 11, Pg. 48-49)

In addition to found objects, Moore also looks to his subject matter as a means of facilitating his explorative making. Moore discusses this idea in detail within *Henry Moore* by John Russell.

I want to be quite free of having to find a 'reason' for doing the reclining figures, and freer still of having to find a meaning for them. The vital thing for an artist is to have a subject that allows [him] to try out all kinds of formal ideas - things that he doesn't yet know about for certain but wants to experiment with, as Cezanne did in his 'Bathers' series. In my case the reclining figure provides chances of that sort. The subject matter is a given. It's settled for you, and you know it and like I, so that within it, within the subject that you've done a dozen times before, you are free to invent a completely new form-idea.² (Fig. 5. Pg. 45)

Fig. 2 (Opposite) *Woman with upraised arms*, 1924-25, Hopton Wood Stone



Fig. 3 Moore carving



For Moore, the reclining figure was a vast conceptual landscape where, similar to a prospector, he could dig up and find any number of ideas for his work.

Moore's relationship with his artistic is not only about the generation of ideas but is also tied in with visceral comfort and ease of working. Moore even admits in the aforementioned interview with Donald Hall how, "carving can be very soothing, jogging-along occupation, like digging a garden."³ In *Henry Moore*, Moore also explains how he enjoyed having to, "overcome the resistance of the material through sheer determination and hard work."⁴

In his later years, Moore's love affair with carving gave way to using plaster maquettes in the development of his sculptures. By comparison, these maquettes provided many advantages over direct carving. Moore describes how he makes, "sketches in plaster - not much bigger than one's hand, certainly small enough to hold in one's hand, so that you can turn them around as you shape them have a complete grasp of their shape from all around the whole time. If the form, the idea that you're doing is much bigger than that, then to see what it's like on the other side, you have to get up, walk around it, and this restricts your imagining and grasping what it's like as you can when it's small."⁵

Another advantage with using maquettes is it allowed him to organize his explorative making in such a way that he could try a number of different options fairly quickly without having to go through the arduous process of testing each at idea at full size. (Fig. 1, Pg. 41)



Fig. 4 Reclining Figure, *Festival*, 1951

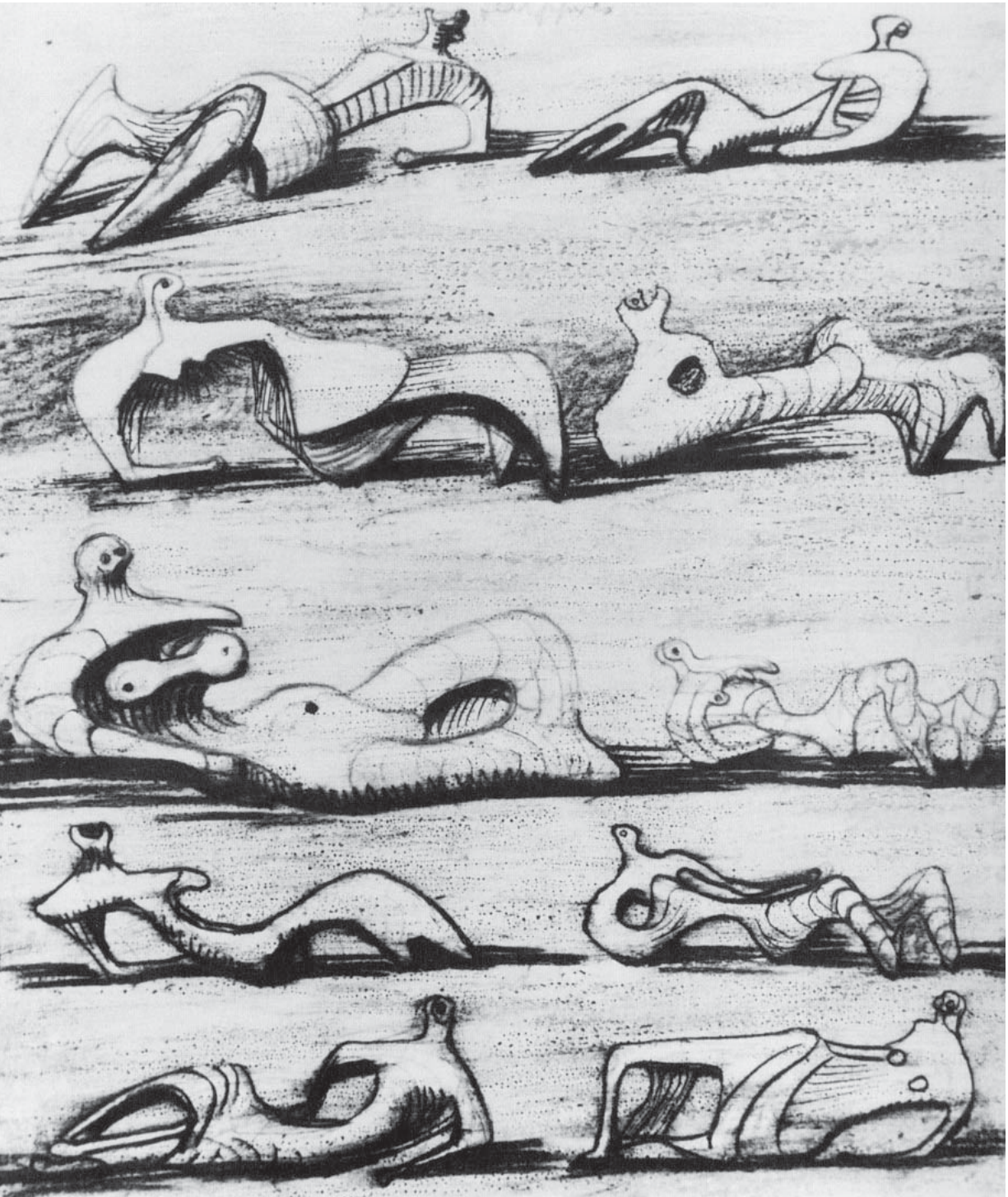


Fig. 5 Sketches of reclining figures, 1948

As a material for sculpting, plaster was much easier material to work with. In *With Henry Moore: The Artist at Work*, Moore asserts, "Plaster is an important material for sculptors. Good quality plaster mixed with water sets to the hardness of a soft stone. I use plaster for my maquettes in preference to clay because I can both build it up and cut it down. It is easily worked, while clay hardens and dries, so that it cannot be added to." ⁶ Within the same source Moore also explains how, "any tools can be used for plasterwork, for example, kitchen tools such as cheese graters or nutmeg graters, spatulas, knives, or anything." ⁷ Based on these comments, it is clear how Moore's affection for the determination and hard work involved in direct carving gave way to an artistic vehicle that was much more flexible and easier to use.

Another key component to Moore's artistic vehicle throughout his life was his sketching. For Moore, sketching is not only used for reproducing what he saw but as a means of generating and refining ideas. This is evident in his sketches for stringed figures (Fig. 19, Pg. 55), pointed forms (Fig. 17, Pg. 53), as well as reclining figures. (Fig. 5, Pg. 45)

Based on Moore's descriptions of his artistic vehicle it is clear a myriad of considerations were involved in its evolution. In turn, Moore demonstrates an intertwined relationship with his artistic vehicle which can be likened to the two knitted forms in his sculpture, *Locking Piece*. (Fig. 6 -7, Pg. 46-47) As a metaphor, these forms can be interpreted as the artist and his artistic vehicle, while their harmonious locking together is representative of an artistic vehicle being in synch with the needs and preferences of the artist.



Fig. 6 Detail of *Locking Piece*, 1963-64

Fig. 7 (Opposite) *Locking Piece*, 1963 - 64





Early on in his career Moore focused on carving directly into stone and sometimes wood; however, his creative process later relied on the development of ideas through plaster maquettes. This evolution can be best characterized in the following passage originally published in *Five British Sculptors: Work and Talk*, by Warren Forma.

When I first began doing sculpture about 1922 or so, I often worked direct in a piece of stone or wood, which might have been not a geometric shape but just an odd random block of stone that one had found cheaply in some stonemason's yard, or log of wood which was a natural shape, and then I'd make a sculpture, trying to get as big a sculpture out of that bit of material as I could, and therefore one would wait until the material suggested idea.

Nowadays I don't work so much in that way, as I have an idea, or an idea comes to me, and then I find the material to make it in, and to do that, sketches in plaster - not much bigger than one's hand ... It's as though one were drawing in a little sketchbook a tiny little sketch for a monument, or a tiny little drawing might be on the back of an envelope, but in your mind would be the equestrian statue that is over life-size. In the same way, these little plaster maquettes that I make, to me, are all big sculptures. Therefore, when I choose the one that I think has the best personality and retains my interest, then it's only carrying out one's original idea in reality.⁵

Moore also describes in greater detail how these sketches in plaster emerge and evolve into a finished full-size sculpture during an interview with Donald Hall that was published in *Horizon*.

Fig. 8 - 11 Bones, pebbles, wood and other found objects serve as inspiration for Henry Moore



Fig. 8



Fig. 9



Fig. 10

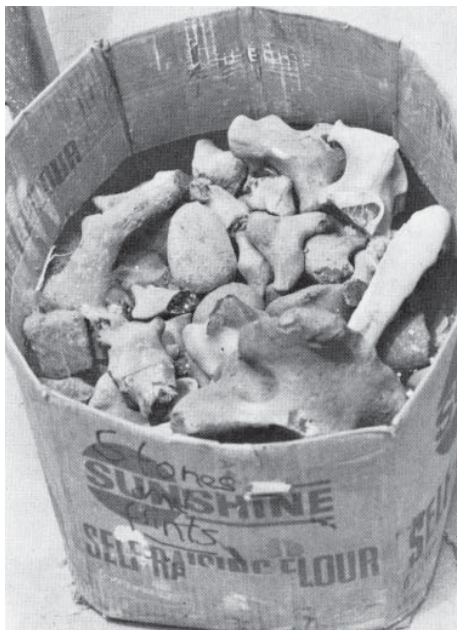


Fig. 11

HALL: Do you consciously try to get your mind working on a new piece? How do ideas come to you?

MOORE: Well in various ways. One doesn't know really how any ideas come. But I can induce them by starting with looking at a box of pebbles. I have collected bits of pebbles, bits of bone, found objects, and so on, all of which help to give one an atmosphere to start working. (Fig. 8-11, Pg. 48-49) Sometimes I may scribble some doodles, as I said, in the notebook, I (Fig. 5, Pg. 45, Fig. 17, Pg. 53, Fig. 19, Pg. 55) sit down and something begins. Then perhaps at a certain stage the idea crystallizes and then you know what to do, what to alter. You dislike what you've just made, and change it. At the end of a week you're sitting in that nice little easy chair with the bench in front, and there'll be probably some fifteen or so maquettes about five or six inches long, if it's a reclining figure, or that high if it's an upright. Then, either I know that a few of those are ideas I like or that I don't like any of them. If some are ones I like, then I'll do a variation on that idea, or I'll change it if I'm critical. Done in that way the thing evolves. Always in my mind though, in making these little ideas, is the eventual sculpture which may be ten or twelve times the size of the maquette that I hold in my hand.⁸

The development of *Locking Piece* (Fig. 6 - 7, Pg. 46-47), demonstrates how this use of maquettes

manifests itself in the evolution of one of his finished sculptures.

The maquette for this two-piece locking piece, came about from two pebbles which I was playing with and which seemed to fit each other and lock together, and this gave me the idea of making a two piece sculpture - not that the forms weren't separate, but that they knitted together. I did several little plaster maquettes, and eventually one nearest to what the shape of this big one is now pleased me the most and then I began making the big one. But in making the big one, the small one changes because you have to alter forms when they are bigger from what they are when they're small, because your relationship to them is a different one.⁹

Whether it is his early carvings or his later works which emerged from a series of plaster maquettes they are all forms of explorative making. Moore's development of his sculptures through carving and the use of maquettes reveals an iterative experimentation that is characteristic of explorative making where each iteration builds upon the knowledge gained through previous experimentation. Moore shows an immense diversity in his experimentation ranging from the simple interaction with found objects, sketching, to carving and modelling various materials.

Fig. 12 - 15 (Opposite) Moore molding maquettes



Fig. 12

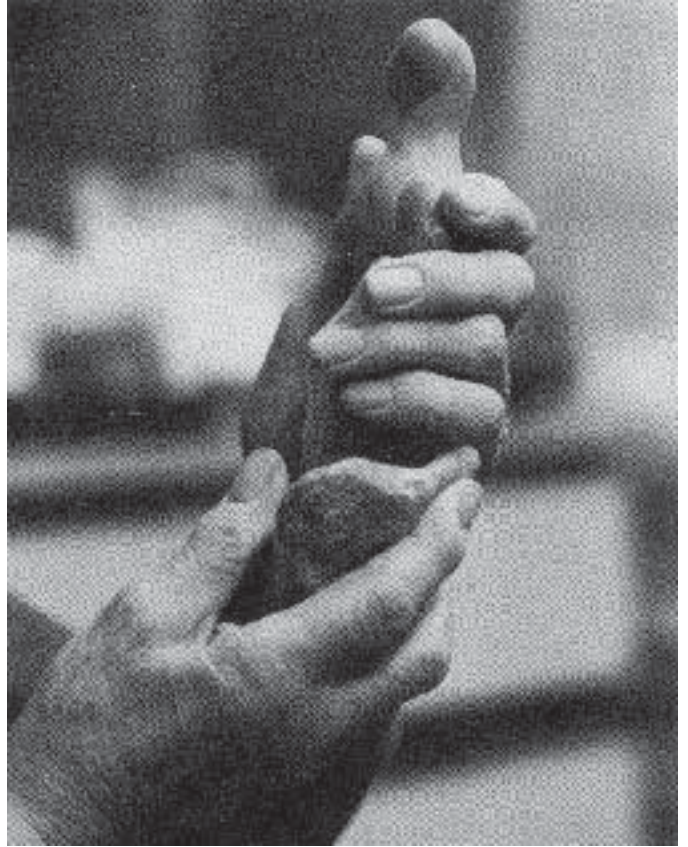


Fig. 13



Fig. 14

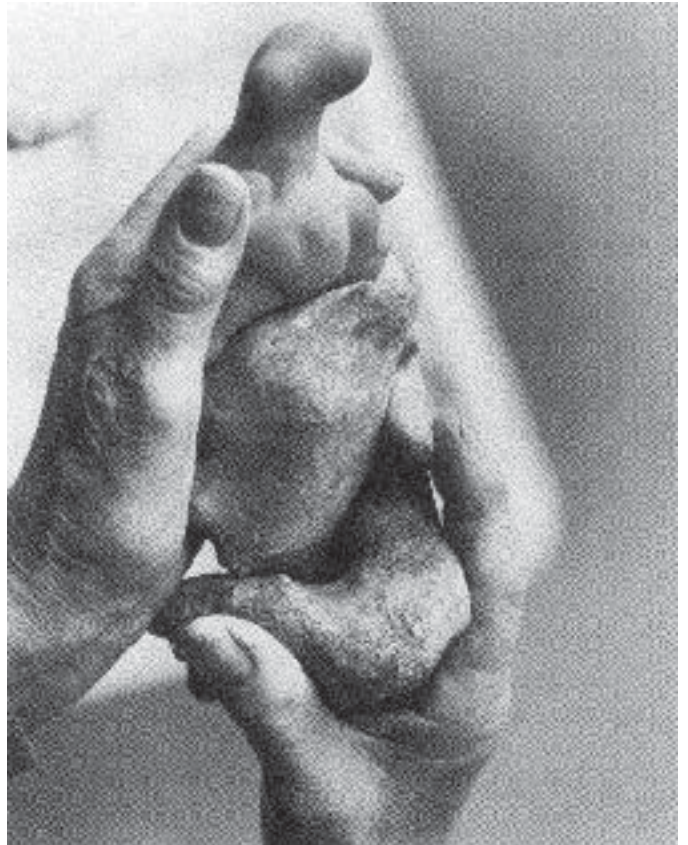


Fig. 15



Visceral Evaluations

Throughout Moore's descriptions of his iterative experimentation he refers to visceral evaluations that take the form of dislikes and likes that guide the maturation of his work. These evaluations, Moore asserts, are simply reactions to the maquettes he creates. In the text, *Henry Spencer Moore*, photographed and edited by John Hedgecoe, Moore describes the nature of these visceral evaluations in more detail: "The kind of alteration I make is not thought out: I do not say to myself - this is too big, or too small, I just look at it and, if I do not like it, I change it. I work from like and dislikes, and not by literary logic. Not by words, but by being satisfied with form."¹⁰

In other cases, Moore's visceral evaluations also take the form of ideas and inspirations. In his descriptions of his explorative making, Moore reveals how the material he is carving, the found objects he plays with, along with his sketches and recurring themes all trigger visceral evaluations in the forms of inspirations and ideas for sculptures. Moore's reflections on his own process even lead him to correctly ponder the origins of his ideas and other visceral evaluations. In *Henry Moore: Writings and Conversations*, he affirms, "The subconscious play[s] a great part in art, that is to say that in conceiving and realizing a work a great deal happens which cannot be logically explained - the mind jumps from one stage to another much further on without there being traceable steps shown between - preferences for one shape over another which cannot be explained - sudden solutions which cannot be followed step by step."¹¹

Whether it is in the form of ideas or likes, dislikes and other feelings, it is clear from Moore's comments that visceral evaluations play a significant role in his explorative making and, in turn, the evolution of his work.

Fig. 16 (Opposite)
Three Points, 1939 - 40

Fig. 17 (Opposite)
Sketches of Pointed Forms, 1940



Fig. 16



Fig. 17



Playful Mentality

Similar to Jackson Pollock, Moore adopts a playful mentality as a means to facilitate his explorative making. Based on the aforementioned personal accounts, this playfulness involves not being afraid to make changes and trusting his visceral evaluations implicitly throughout the development of his work.

Even as an art student, Moore demonstrated a willingness to be unconventional and follow his passion for direct carving even though he was criticized by his professors for doing so.¹² Moreover, Moore's willingness to look to various sources for inspiration including bones and knotted wood, also demonstrates an enthusiasm to push the boundaries of his work.

Fig.19 (Opposite) Ideas for stringed figures, pencil, 1938

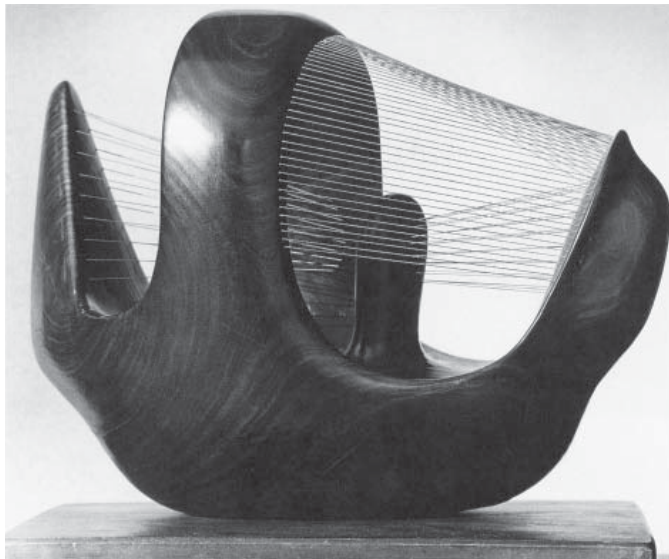
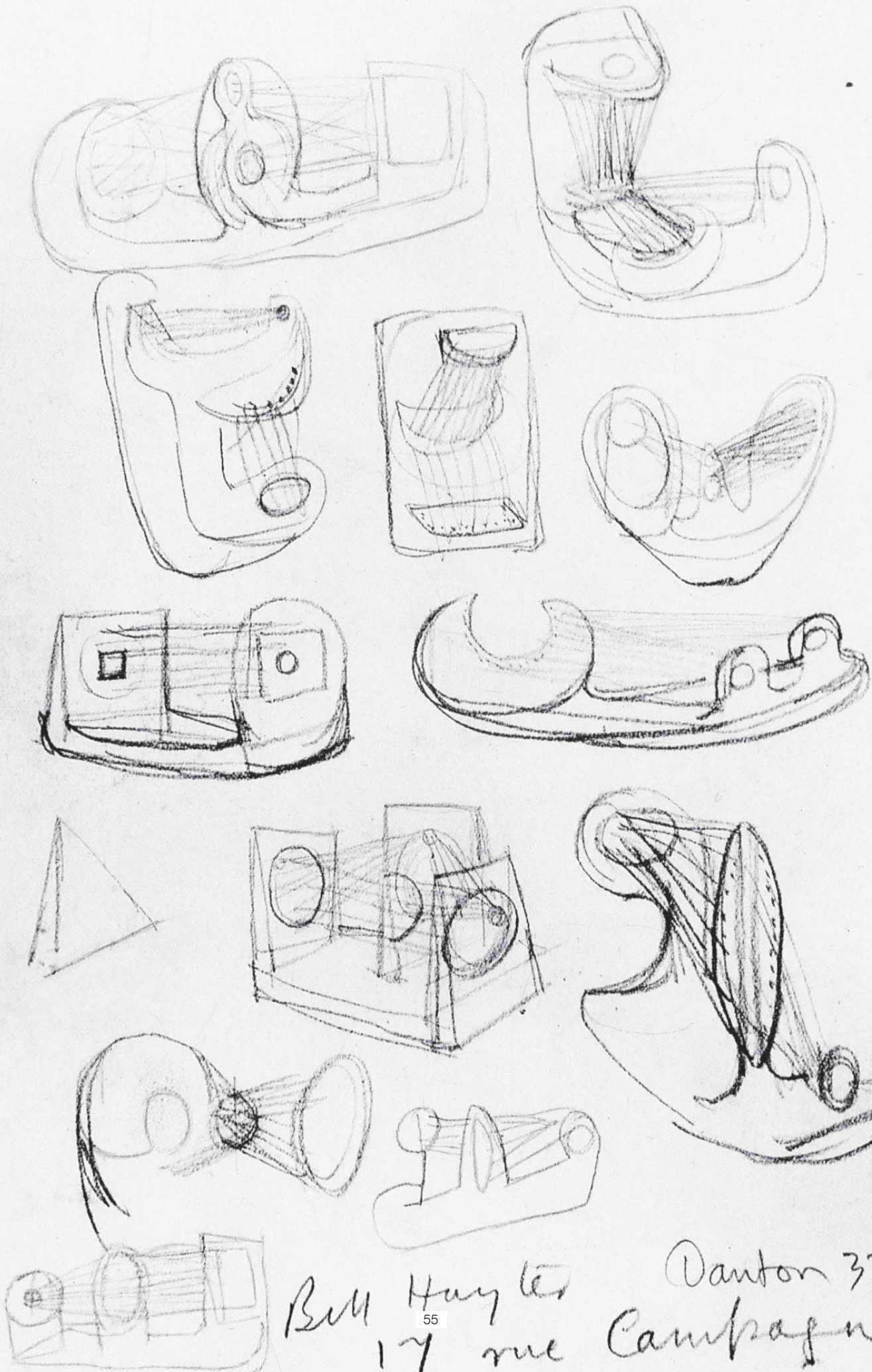


Fig.18 *Bird Basket*, 1939



to Geoff Feb 20th - tea 4.30

Bill Hayler
 17 rue

Danton 37.53
 Campagne



Henry Moore Concluding Remarks

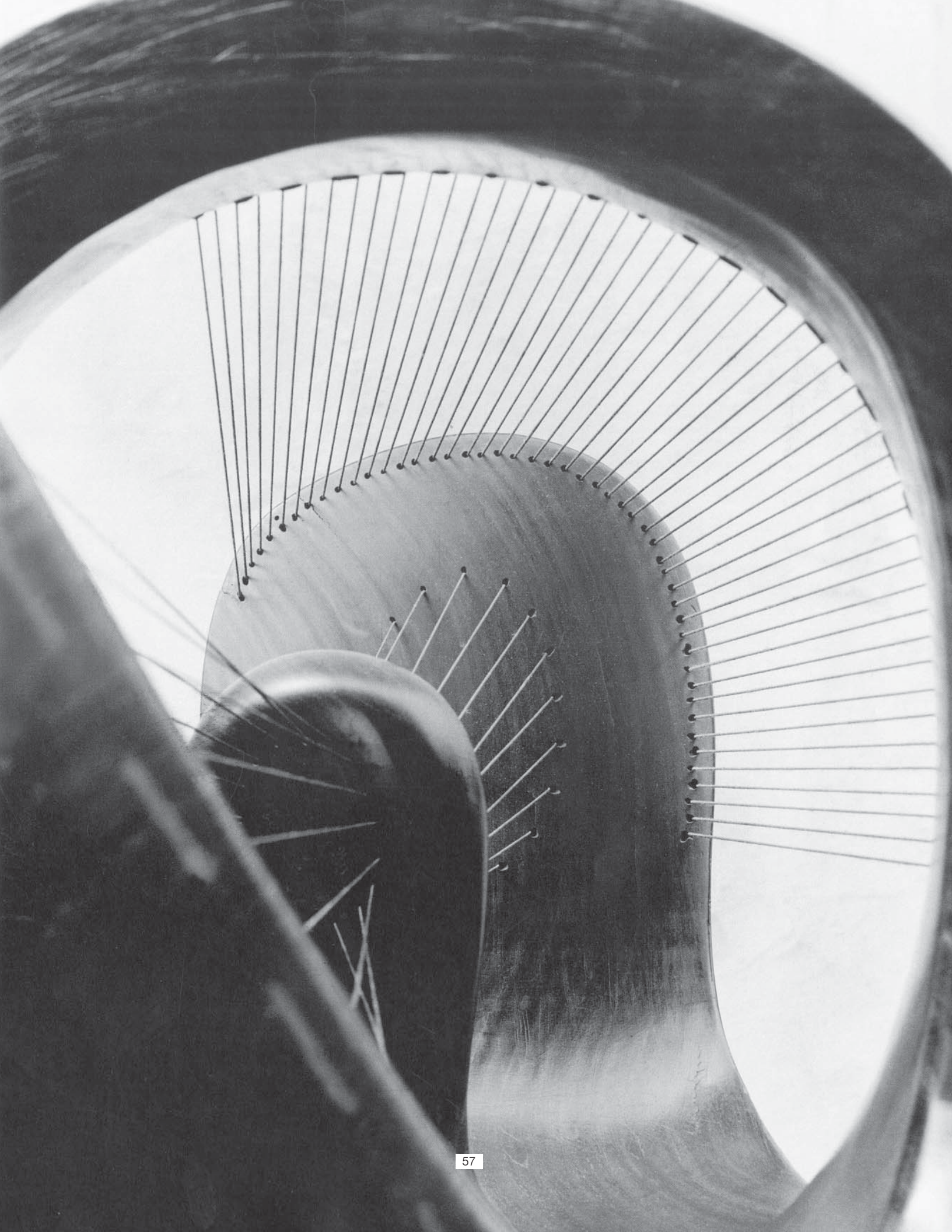
The development of Moore's sculptures and drawings testifies to the adaptability of explorative making within different situations, especially those with no functional requirements.

By breaking down Moore's general descriptions of his explorative making in relation to iterative experimentation, artistic vehicle, visceral evaluations, and a playful mentality much is revealed about how these characteristics interact with each other. Moore describes in detail how his visceral evaluations and iterative experimentation nurture and feed each other in a continuous cycle. Moore developed an artistic vehicle that prescribed a significant amount of interaction with a variety of materials and influences. Through this interaction Moore was able to discover new forms and ideas that he later developed into sculptures. In addition, Moore's playful mentality where he is not afraid to make changes and trust his feelings and inspirations, even when faced with criticism, also opens doors for him during the evolution of his work.

NOTES

1. John Hedgecoe, *A Monumental Vision: The Sculpture of Henry Moore* (New York: Stewart Tabori and Chang, 1998), 86
2. Alan Wilkinson, ed., *Henry Moore - Writings and Conversations*, (Los Angeles: University of California Press, 2002), 212
3. *Ibid.*, 231
4. *Ibid.*, 230
5. *Ibid.*, 214-215
6. *Ibid.*, 226
7. *Ibid.*, 226
8. *Ibid.*, 215-216
9. *Ibid.*, 215
10. *Ibid.*, 217-218
11. *Ibid.*, 115-116
12. John Russell, *Henry Moore* (London: Allen Lane Penguin Press, 1968), 10

Fig. 20 (Opposite) *Bird Basket*, 1939



2.1

Concluding Remarks

By using iterative experimentation, the artistic vehicle, visceral evaluations, and a playful mentality as an analytical lens it becomes clear the drip paintings of Jackson Pollock and the work of Henry Moore are primordial forms of explorative making. As primordial forms of explorative making they do not include any functional requirements inherent in architecture. Moore himself states, "Sculpture is different from architecture An architect has to deal with practical considerations, such as comfort, costs and so on, which remain alien to the artist."¹ Thus, in order to understand how explorative making can manifest itself in the generation of architectural form, functional requirements need to be somehow present and addressed in the final product.

1. James John Sweeney, Henry Moore :The Reclining Figure, (Columbus, Ohio, West Camp Press, 1984), 10

2.2

Simple Forms of
Explorative Making

Simple forms of explorative making only address a minimal number of functional requirements. Within this gallery, the case studies and models have been arranged to demonstrate a range of simple forms of explorative making.

The furniture of J.B. Blunk demonstrates a form of explorative making involved in the making of furniture. In contrast, Projects 1, Versions A and B, are two open-air, one room shelters that are my first attempts to create some sort of building through explorative making. This gallery concludes with a simple one room shelter centered on a fire pit. This final project is my first attempt to instill a sense of program into the forms I was creating through explorative making.



James Blain Blunk Introduction

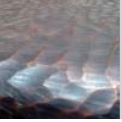
James Blain Blunk was an American sculptor, whose furniture often transcended the boundary between furniture and art. Within the context of this thesis, Blunk's work is a bridge between the visual arts and architectural case studies.

By reflecting on the development of Blunk's furniture in regards to iterative experimentation, artistic vehicle, visceral evaluations, and a playful mentality, it becomes clear his process is a simple form of explorative making. In particular, it only deals with very basic functional requirements that do not require any significant modifications to his explorative making. These functional requirements pertain to their use as pieces of furniture, whether it is a sink, (Fig. 10-11, Pg. 68 - 69), coffee table, (Fig. 2, Pg. 64), or a chair or stool, (Fig. 1, Pg. 63, Fig. 3, Pg. 65, Fig. 12, Pg. 70, Fig. 13, Pg. 71, Fig. 14, Pg. 73)

An examination of Blunk's work reveals how he employs explorative making as a useful means to discover new forms and ideas. It also sheds light on how the primary characteristics of explorative making can interact with each other.

Fig. 1 (Opposite) Chair carved from large chunk of redwood





Artistic Vehicle

While living at his home in Inverness, California, Blunk developed his own technique for carving with a chainsaw. Blunk affirms, "I began making wood sculpture in 1962. I knew how to use a chain saw and it was one of those things. One day you just start."¹ The act of carving in large chunks of wood, (Fig. 4, Pg. 66), is central to Blunk's work. Blunk often had a general notion as to what he is going to make beforehand, sometimes even drawing on the wood before he started carving, (Fig. 5, Pg. 66, Fig. 9, Fig. 67). However, it is during carving, "he encounter[s] unexpected qualities, faults or voids in the wood which may change my[his] intention, and sometimes the theme itself."² In this sense, Blunk is similar to Henry Moore in the way he finds inspiration in the properties of the material he is working with.

Another important aspect of Blunk's artistic vehicle is the inclusion of functional requirements within his work. These functional requirements are fairly simple and relate directly to the intended use of the piece, be it a chair, a bench, or coffee table. Although the inclusion of these simple requirements does not require any special modifications to his artistic vehicle, they always seem to be a consideration in the back of his mind while he is carving.



Fig. 2 Coffee table carved by J.B. Blunk

Unique to Blunk's way of working is the choice to use a chainsaw as his primary cutting tool. Upon first impressions, this seems rather peculiar until one bears in mind he had little knowledge of joinery, owned relatively few tools, but knew how to use a chainsaw. As Glenn Adamson reveals in a biography of J.B. Blunk, printed in *Woodwork Magazine*, he would use a chainsaw for a majority of the sculpting process, and finish his works with an angular grinder and chisel.³ Blunk developed his skills to such a degree that he could achieve subtle textured effects in his furniture, (Fig. 10, Pg. 68, Fig. 11, Pg. 69). Based on this biographical information, it is clear Blunk developed his own artistic vehicle to suit his existing skills, experiences, and personal preferences.

Collectively, it is clear a myriad of considerations including the dictates of the final form are all considered in the development of his artistic vehicle. The accommodation of all these factors point to an intertwined relationship with his artistic vehicle.



Fig. 3 Carved stool in Blunk's home in Inverness, California



Iterative Experimentation

In an interview with *Woodwork Magazine* Blunk reveals how all the aforementioned pieces of his artistic vehicle come together in his own form of iterative experimentation.

My way of working, the core of all my sculpture, is a theme, the soul of the piece. Sometimes it is evoked by the material, sometimes it is an idea or concept in my own mind. It is always present, regardless of the material, size or scale of what will be the finished piece.

In carving wood, it is a matter of revealing the theme and is achieved by removing material. Since I principally use a chainsaw to do this, it is a process that moves quickly. At times the cutting away and forming happen so fast it is almost unconscious. The fact of working with a tool that is dangerous affects the manner of shaping the piece. The aesthetic process is balanced with extreme awareness and attention to safety. Often, as I uncover more of the form, I encounter unexpected qualities, faults or voids in



Fig. 4



Fig. 5



Fig. 6

Fig. 4 - 9 J.B. Blunk employing his chainsaw technique in the development of his work



Fig. 7



Fig. 8



Fig. 9

the wood which may change my intention, and sometimes the theme itself. This is a satisfying and exciting aspect of working on large pieces... the fact that both my idea of what I want the piece to be, its own intrinsic theme, and the dictates of the finished object, be it a chair, table, bench or sculpture, need to be accommodated.

Overall, it is difficult to explain a way of working that even for me, the person doing it, is inexplicable. I suppose one could say I enter into a relationship with the material I am using and as in all relationships, there are opportunities for surprise.² (Fig.4 - 9, Pg. 66-67)

Blunk's description of his explorative making reveals an iterative experimentation where the carving of wood triggers some sort of emotional reaction within him that, in turn, influences the ongoing carving and sculpting.



Visceral Evaluations

Although Blunk's comments about his decision-making during his explorative making are brief, they do reveal much about his state of mind while he is carving. Specifically, the speed at which he works and the fact the process feels unconscious alludes both to a lack of conscious premeditation during and the unconscious forces guiding his work. All of which strongly implicate visceral evaluations as a guiding force in the evolution of his work.

These implications are validated by Mariah Neilson, the Director of Blunk's estate. Neilson views Blunk's approach to making of his own house as more sculptural than architectural. She reveals, "He didn't think in the way a traditional carpenter or a structural engineer. It was more like, 'Oh, I think this makes sense.'"⁴ Neilson's observations reveal the intuitive nature of Blunk's thought process and correspond well to his own reported experiences. Together, both Blunk's and Neilson's comments verify the presence of visceral evaluations in Blunk's work.



Fig. 10 Carved bathroom sink in Blunk's home

Fig. 11 (Opposite) Carved bathroom sink in Blunk's home





Playful Mentality

The manner in which Blunk carves his sculptures demonstrates a playful mentality characteristic of explorative making. Based on his own remarks Blunk embraces the surprises that occur while he is carving his furniture. These surprises emerge while he is carving in the form of faults and voids within the wood. These imperfections become sources of inspiration that alter the development of his work. Blunk's comments also demonstrate how he is not afraid to make significant changes and let his work evolve in new directions.

Fig. 13 (Opposite) Carved stool in Blunk's home in Inverness, California

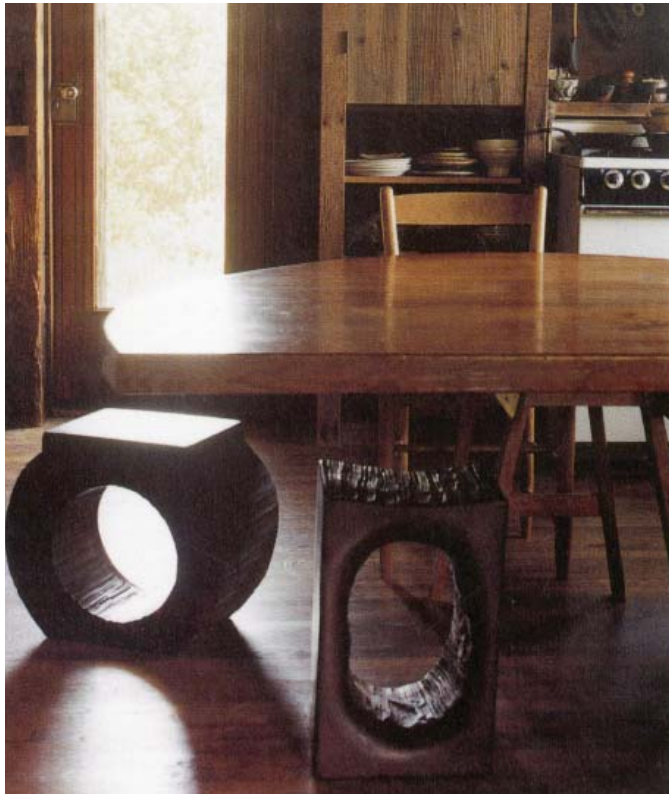


Fig. 12 Carved stools in Blunk's home in Inverness, California





James Blain Blunk Concluding Remarks

The development of Blunk's furniture reveals a simple form of explorative making. As such, it successfully addresses very simple functional requirements related to their use as furniture. These requirements are so simple that they do not require any special modifications to his explorative making.

Through Blunk explorative making is revealed to be a useful approach for discovering new forms and ideas, in turn, furthering the exploration of his artistic interests. When Blunk discusses how cutting away material leads to new ideas that alter the development of his work, he is demonstrating the reciprocal relationship that exists between iterative experimentation and visceral evaluations. In particular, the cutting away of material, triggers visceral evaluations in the form of feelings and ideas that influence further experimentation.

In order to facilitate his explorative making, Blunk adopts a playful mentality, which involves embracing the surprises he encounters while carving. He also develops an artistic vehicle in synch with his existing skill set, thus encouraging an easy and fluid expression of ideas and feelings.

NOTES:

1. "J.B. Blunk's Homepage", accessed March 05, 2011, <http://www.jbblunk.com/home>
2. "Work and home: A Visit with J.B. Blunk,", accessed March 05, 2011, <http://www.jbblunk.com/work>
3. Glenn Adamson, "Biography," accessed March 05, 2011, <http://www.jbblunk.com/biography>
4. "C Magazine, April 2009 Feature Article," on J.B. Blunk's Official Website accessed March 05, 2011, http://www.jbblunk.com/sites/jbblunk.com/files/c_blunk.pdf

Fig. 14 (Opposite) Invisible Presence, 1962



SICA and the Mission School



Project 1 (Versions A +B) Introduction

Both versions of Project One were constructed at the very beginning of the thesis, before I even knew what my thesis was about. As a result, this model was originally conceived as an architectural means of exploring my interests in how people collect and arrange personal artifacts within space.

A simple form of explorative making was employed throughout the development of this model. As such the models only address very simple practical concerns. Specifically, both models are simple, single room, open-air shelters, with no specific program.

When my experiences are broken down according to the artistic vehicle, iterative experimentation, visceral evaluations, and a playful mentality one can ascertain how these different characteristics influence each other during explorative making.



Fig. 1 Version A - Exterior





Artistic Vehicle

The artistic vehicle for this project emerged from an existing fascination in the way people collect and arrange personal artifacts such as furniture, books, pictures, and other objects. This interest first crystallized on a Friday afternoon in the early summer of 2008. I was crammed into a large meeting room with a number of colleagues listening to our boss make a speech on his birthday. Upon concluding his speech he invited everyone up to this apartment located above the firm's offices for a few drinks.

As people finished off their champagne and cake I started to filter up towards to the apartment with some of my work mates. The entrance at ground level was small and plain. The lift also felt small, especially as I was jammed in there with five other people. As it hummed its way up to the top floor I had no idea what to expect. However, I had heard people talk about this flat without taking much interest. The lift opened and we meandered through a slim corridor to a set of unassuming double doors. They were painted white like everything else in the hallway, and you could see the scuff marks where people had consistently used their feet to prop them open.

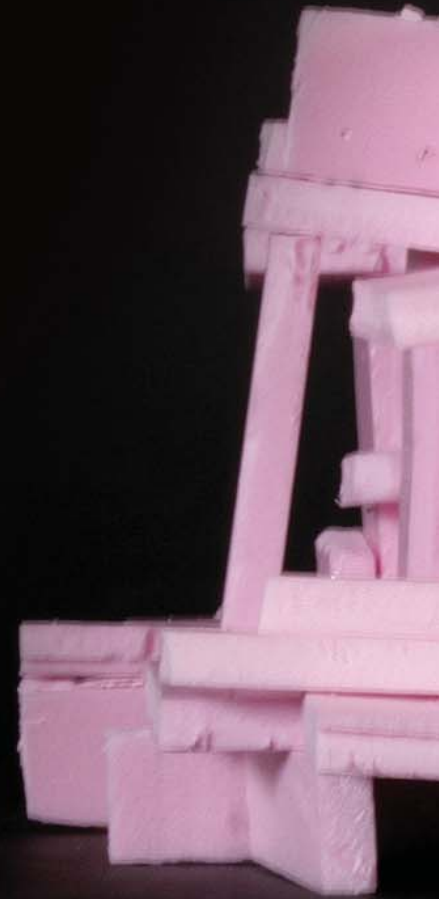
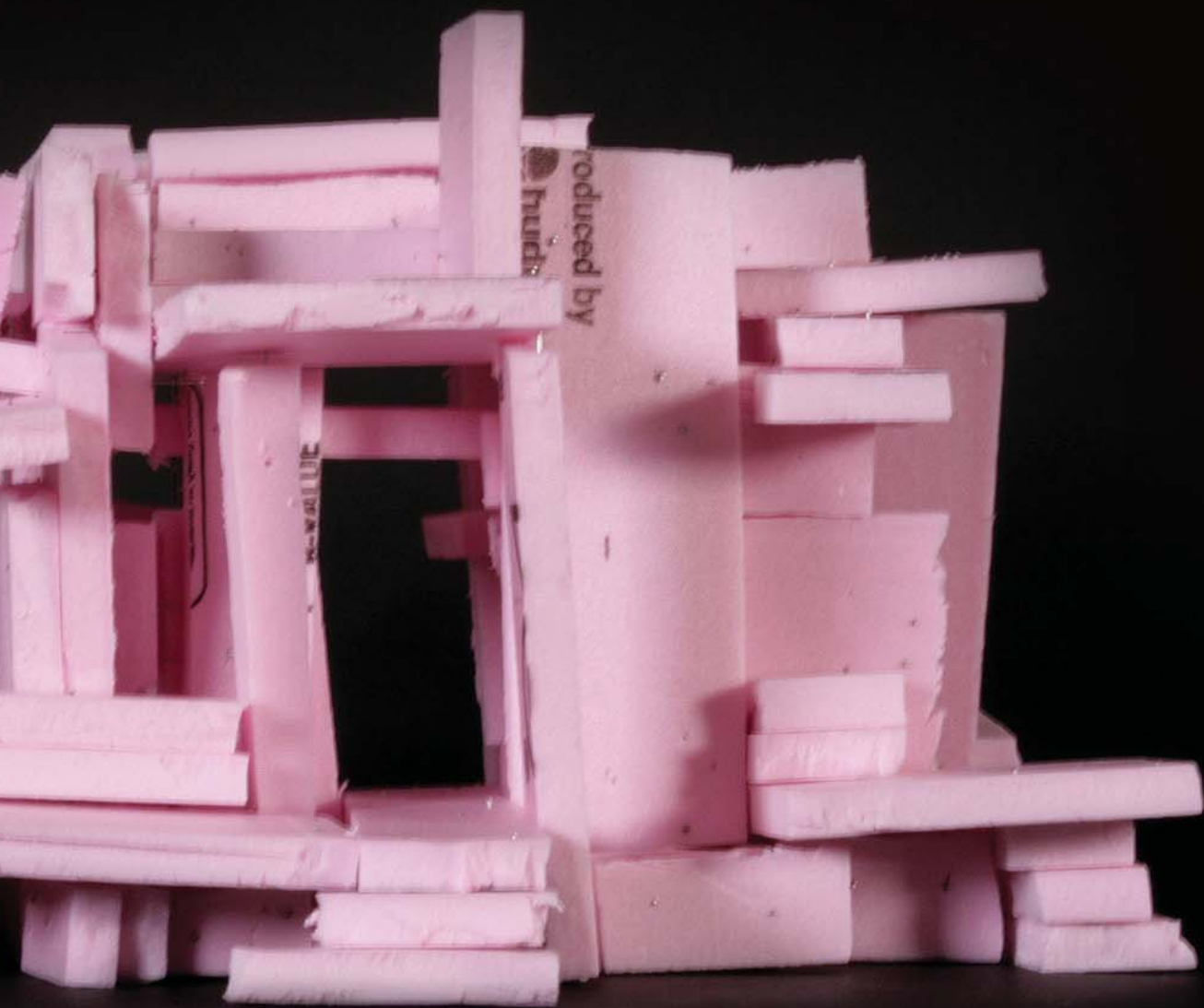


Fig. 2 Version A - Elevation



I pulled open the doors.

I paused.

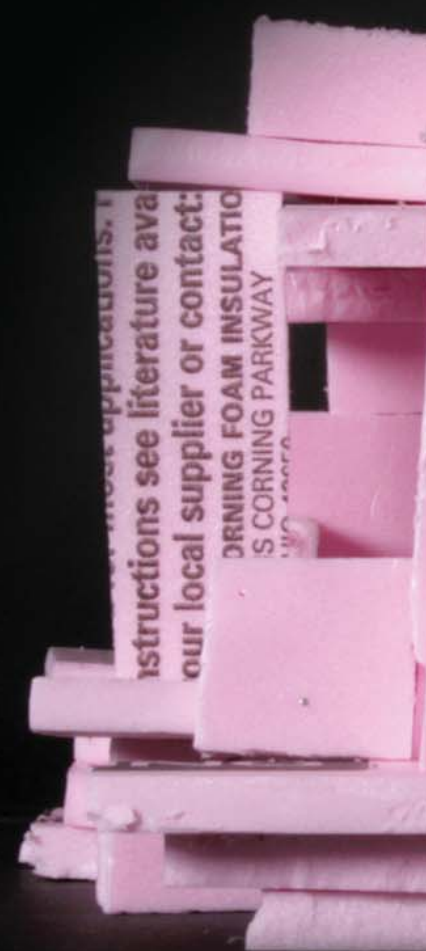
I stood there engulfed by what looked like an unapologetic collision between the lobby of a Las Vegas hotel and a factory. A wide industrial looking staircase stood prominently in front of me, decorated with a collection of potted plants on either side. Light splashed down from the soaring skylight located along the apex of the over-arching pitched roof centered over the stairs.

"You know this used to be the original offices for the firm," my colleague chimed in.

This made sense, the whole entrance sequence felt very public, especially for someone's apartment. You could easily see employees running up and down the wide staircase throughout the day. As I made my way up the stairs a distinct clinking sound marked each of my steps.

The clinking stopped.

I stood there at the top of the stairs, my attention captured by the myriad of personal artifacts which saturated the space. My eyes glided over the room like it was reading some sort of map. Different furniture, books, pictures of his family, different potted plants, and even a model airplane hanging from a ceiling had all been collected over time and carefully arranged in the largest





artifact of them all, the office space where he had started his firm. This was not simply a stifling and emotionally detached museum, but a living diary of his life. It seemed to take on a life of its own, growing like a forest, constantly evolving and being re-imagined depending on the different artifacts that were added. Although it looked like a lot of care had been put in this place it still seemed as if there was only a loose plan governing the growth of this forest, similar to how a trellis might influence the growth of a vine.

"Drink?"

"What?" I replied, flickering back into reality, "Sorry, excuse me?"

"Would you like a drink? We have red and white wine, as well as beer?"

"Ummm, beer thanks." Drink in hand I went and joined the crowd.

It took me a while to hone in on why this place had captured my interest. It was not until months later when I was trying to begin my thesis did I realize I was drawn to how this place was conceived as it was constructed; constantly evolving and being re-imagined according to the different artifacts that were added.





From these humble beginnings the artistic vehicle for this project was born. The personal artifacts that were used to fill space were replaced by rigid foam blocks used to define space. These rigid foam blocks were cut up in a variety of sizes beforehand with no idea as to what I was going to make and piled on and around my desk. These blocks would then put together one at a time with pins. The whole scenario resembled someone moving into an empty house with a number of belongings they wanted to arrange.

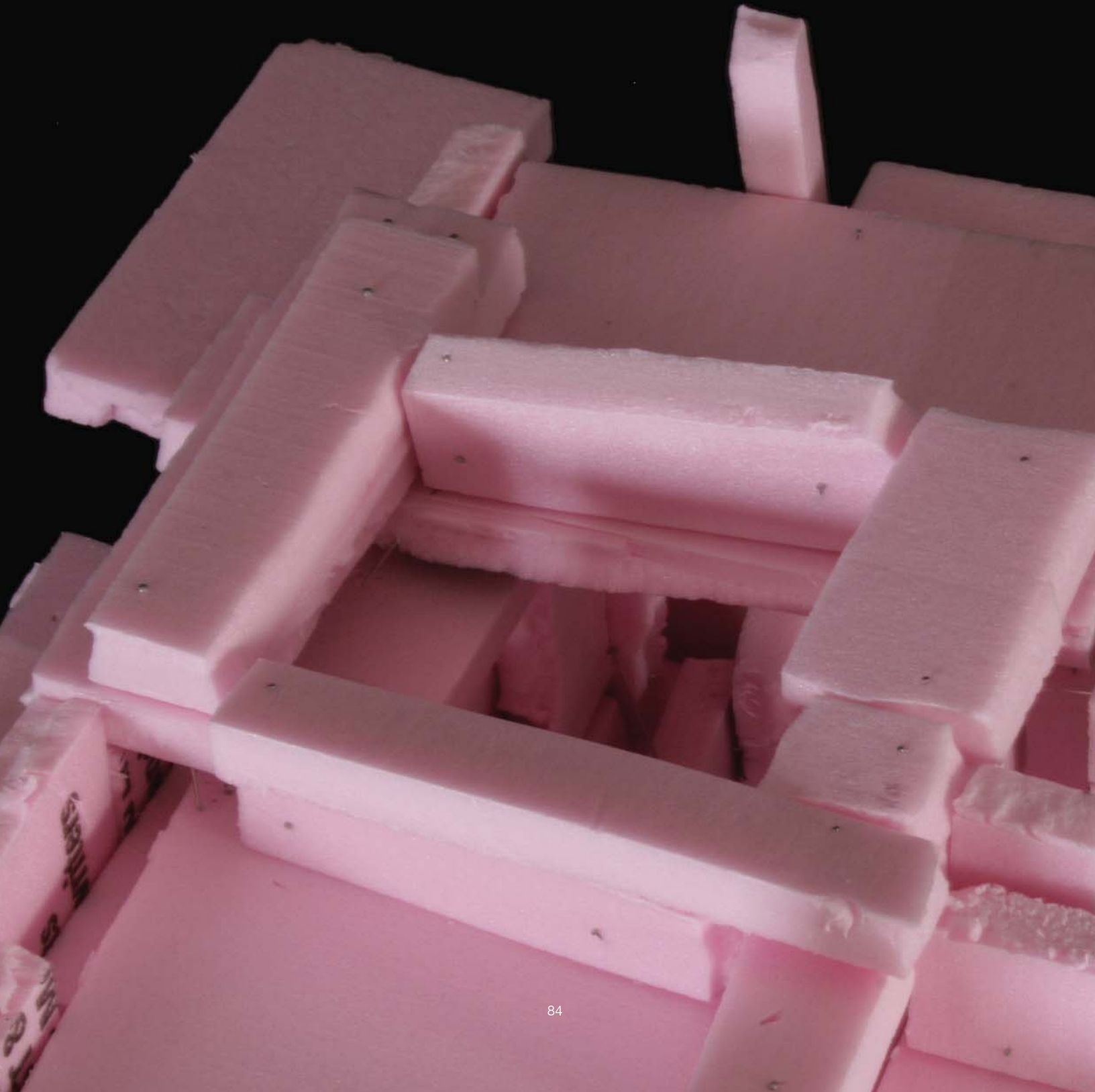
This method of creating space satisfied my basic need to work with my hands. It is hard to quantify but working my hands just feels more direct than working with a computer, I feel like I am more connected with the work because I am engaging my sense of sight and touch at the same time. This method also suited my preference to work quickly allowing me to easily put things together and take them apart. Working quickly meant that I did not premeditate too much and just acted on how I felt at the time.

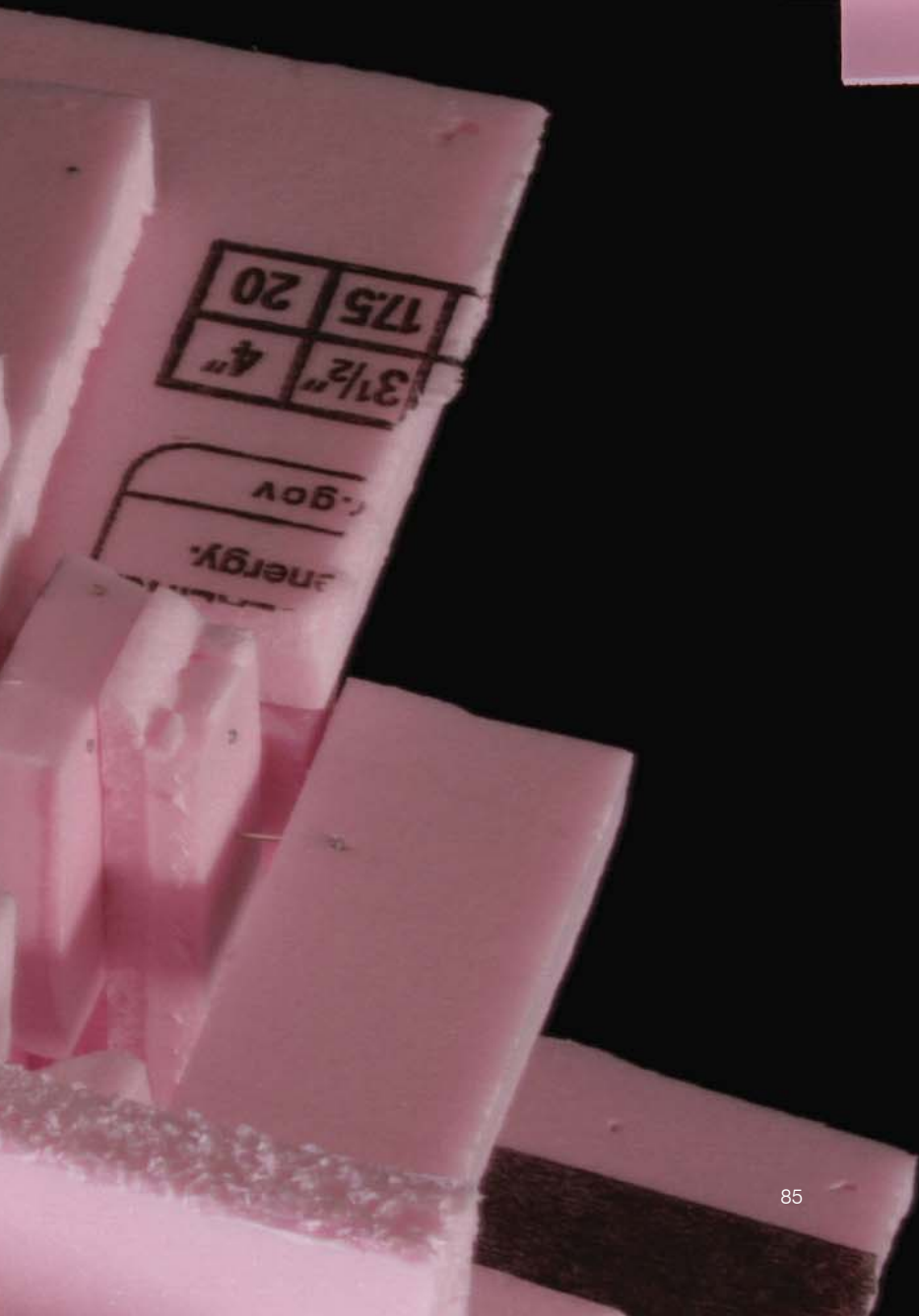
The second version of Model 1 utilized the exact same artistic vehicle, except that because of my experiences with Version A, I already had a clear parti in my mind before I began construction.





Fig. 6 Version A
Detail view of skylight in roof





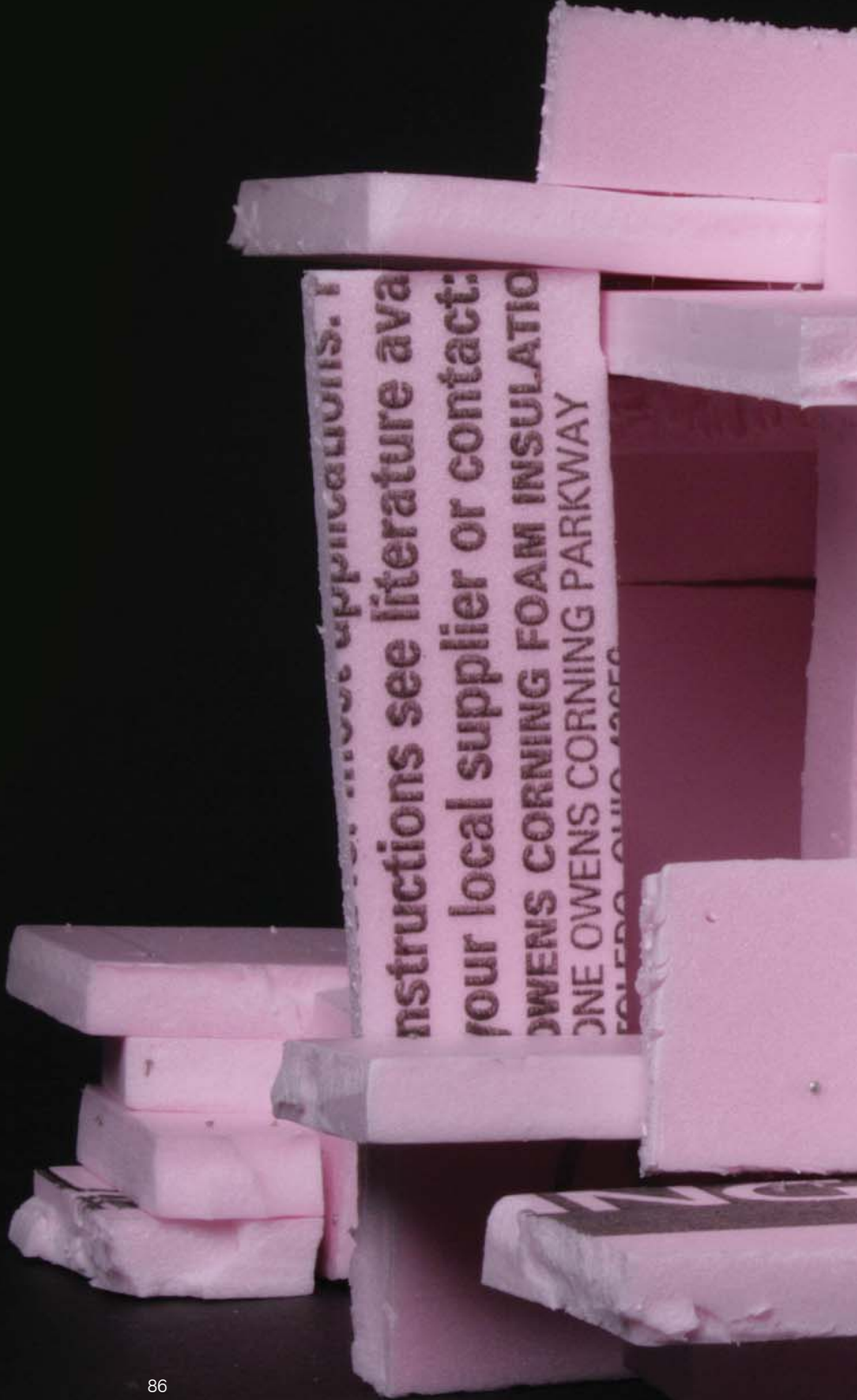


Fig. 8 Version A - Entrance



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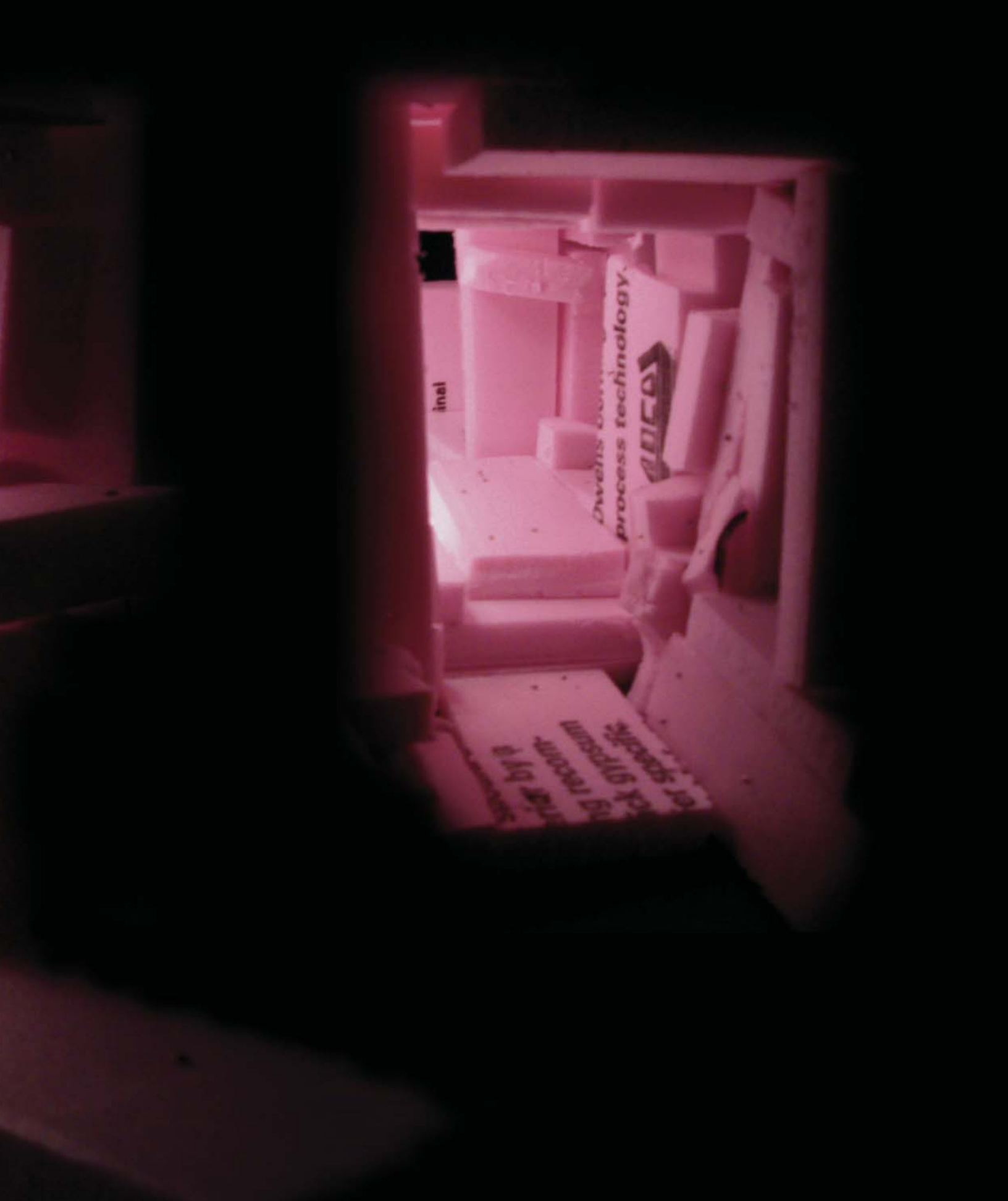
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Iterative Experimentation

Generally, with both versions of Model 1 my iterative experimentation included putting together a series of pre-cut rigid foam blocks together one a time with pins, with the placement of each block influencing the placement of the next in some manner. My experimentation would begin by selecting pieces from a large pile of pre-cut pieces and sometimes even breaking these pieces to suit my needs. At various points during the project I would also rotate the model on my desk and look at it from various angles, as well as test the lighting within the space using a desk lamp.

There was much trial and error involved during my iterative experimentation that was guided by my visceral evaluations. There were many times pieces would be attached to the structure only to be taken off minutes later and re-attached somewhere else or thrown back into the



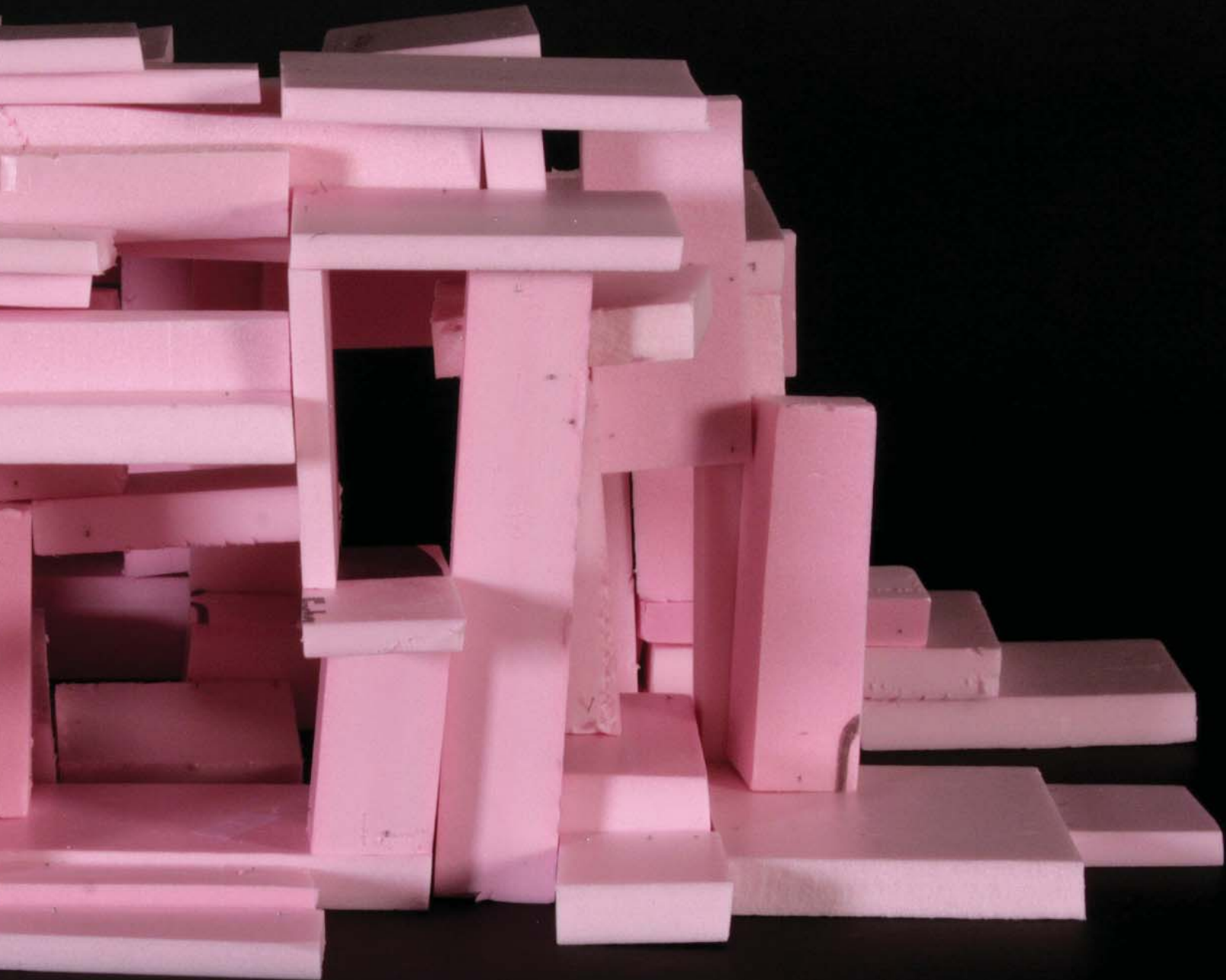
Fig. 10 Version B - Exterior



pile of pieces on my bedroom floor. Sometimes, I would simply pick up a piece and hold it against the structure just to see how I felt about it before attaching it to the structure. In some cases, I would do this for a minute or two before finally attaching the piece of foam or throwing it back into the pile.

The iterative experimentation for the second version of Project One was performed in almost the exactly same way as the first model. The only major difference was that the blocks were generally of different dimensions and sizes and this version began with the knowledge gained during the first version. Specifically, this model began with a pre-defined parti in mind before I started the project. This parti was more symmetrical compared to the first model with all the entrances aligned with each other.







Visceral Evaluations

Throughout my iterative experimentation nearly all of my decisions, including those pertaining to any functional requirements, were purely guided by my likes and dislikes of a non-verbal nature. Similar to Henry Moore, I never actually said to myself, "I like this, or I don't," I just had these little impulses, like little surges of electricity in my bones that would influence my actions. Whenever I felt ambivalent about something I had done I would deliberately start working on a different part of a model in an attempt to find a way forward.

Even in these early models I began to imagine new forms within these dumb foam blocks. Specifically, when I broke one of these blocks in half its jagged edge reminded me of stone. This image of a large stone did not emerge through an intense rational analysis where I systematically compared each characteristic of the block with different forms in my mind until I eventually came to

Fig. 24 Version 2
Photographs of exterior from above





the notion of a large jagged stone. This mental image, as a visceral evaluation, just sort of popped into my mind without any premeditation. The more jagged pieces I introduced the more this simple structure began to resemble some sort of meditation arbor you would find in a garden surrounded by fountains and vegetation.

The second version of the model was made of blocks that were thicker, larger and more block-like compared to pieces used in the first model. These pieces combined with the more formal and symmetrical parti to elicit a more monolithic and monumental feeling from the model, like it was some ancient temple buried in a jungle which had not been visited for centuries.

Collectively, I was surprised by the impressions I got even from these simple pieces, and began to wonder how different materials and pieces could influence my own explorative making.







Playful Mentality

Throughout the construction of both versions of Project One it felt like I was in my own little bubble and just let myself get swept away during the project. I was not worried about what other people would think, or if something was inappropriate. By relieving myself of the burden of expectation, and with so few functional requirements, I just simply trusted my feelings and other visceral evaluations to guide the explorative making. As it was so easy to attach and remove forms, I never really worried about making mistakes and I never dismissed ideas without first trying through my simple form of modeling. There were several instances where little surprises would emerge unintentionally during the course of the making that I would readily adopt. In turn, these surprises would alter the evolution of the work.





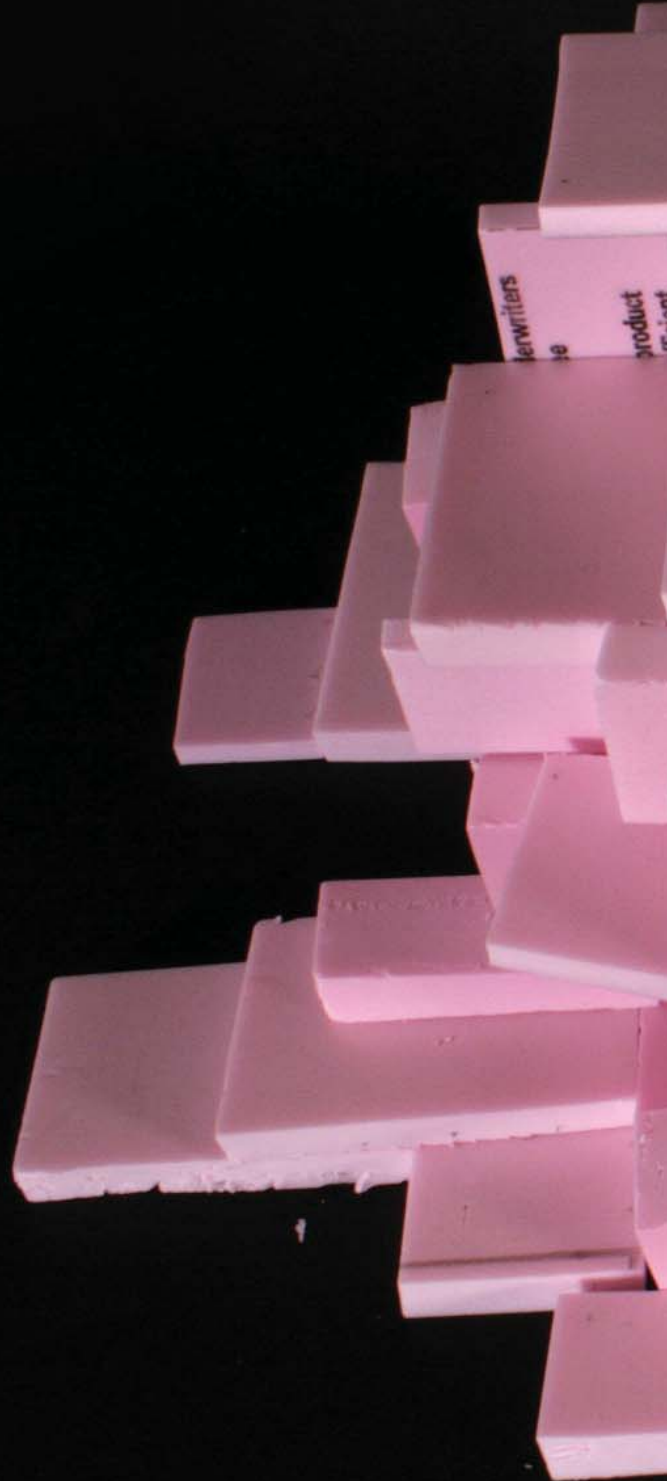


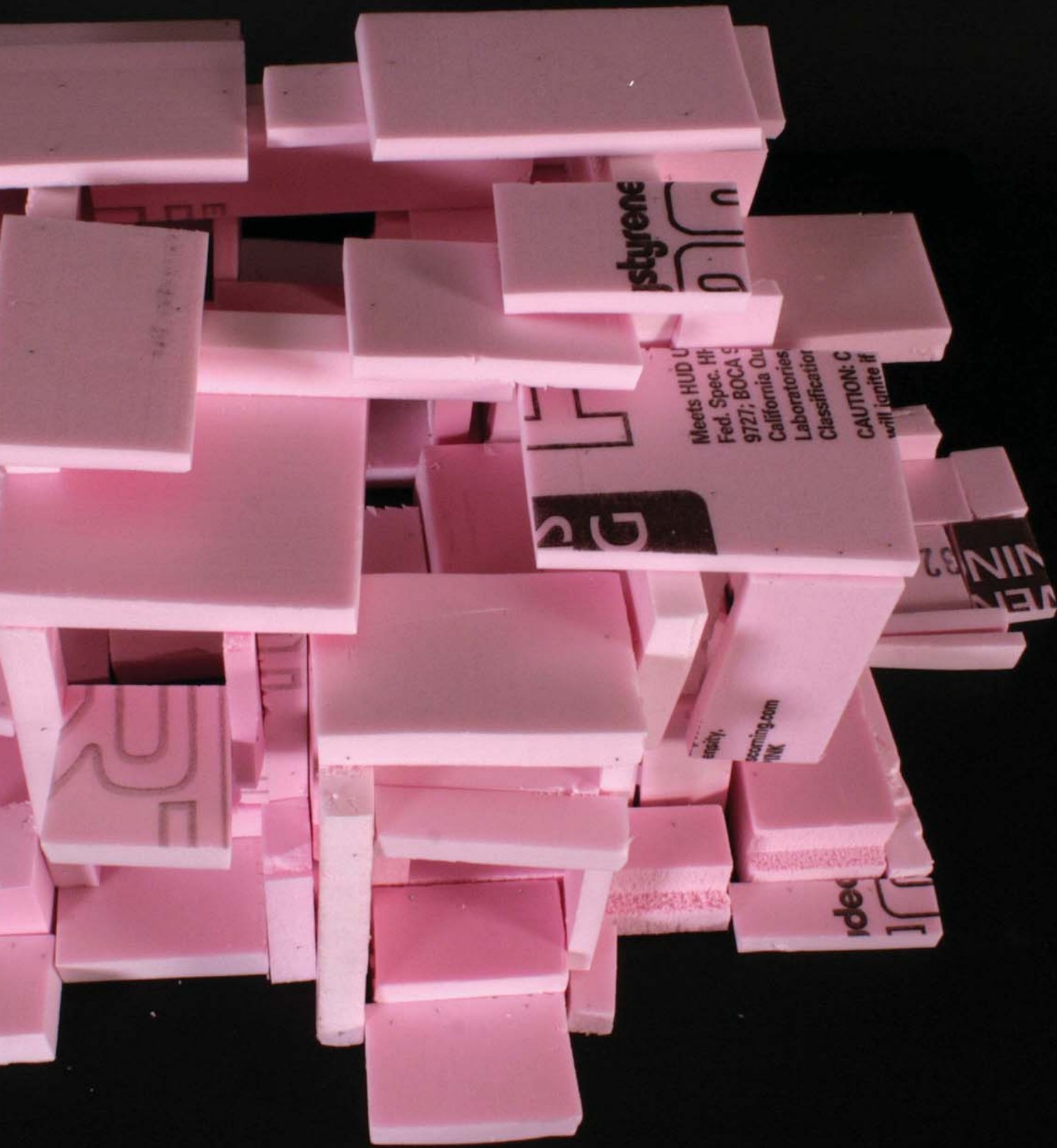
Project 1 (Versions A + B) Concluding Remarks

It is clear a reciprocal relationship existed between my iterative experimentation and visceral evaluations. The interaction and placement of different rigid foam pieces triggered a host of feelings and other visceral evaluations that guided further experimentation.

I also facilitated my explorative making by adopting a playful mentality where I was not afraid to make changes or mistakes. My explorative making was also encouraged through an artistic vehicle that was based on my own artistic preferences, allowing me to work quickly with my hands.

Based on my reflections it is evident a simple form of explorative making was used throughout the development of this project. As a result, the very basic functional requirements incorporated during the course of the project required little attention and did not result in any significant modifications to my explorative making.





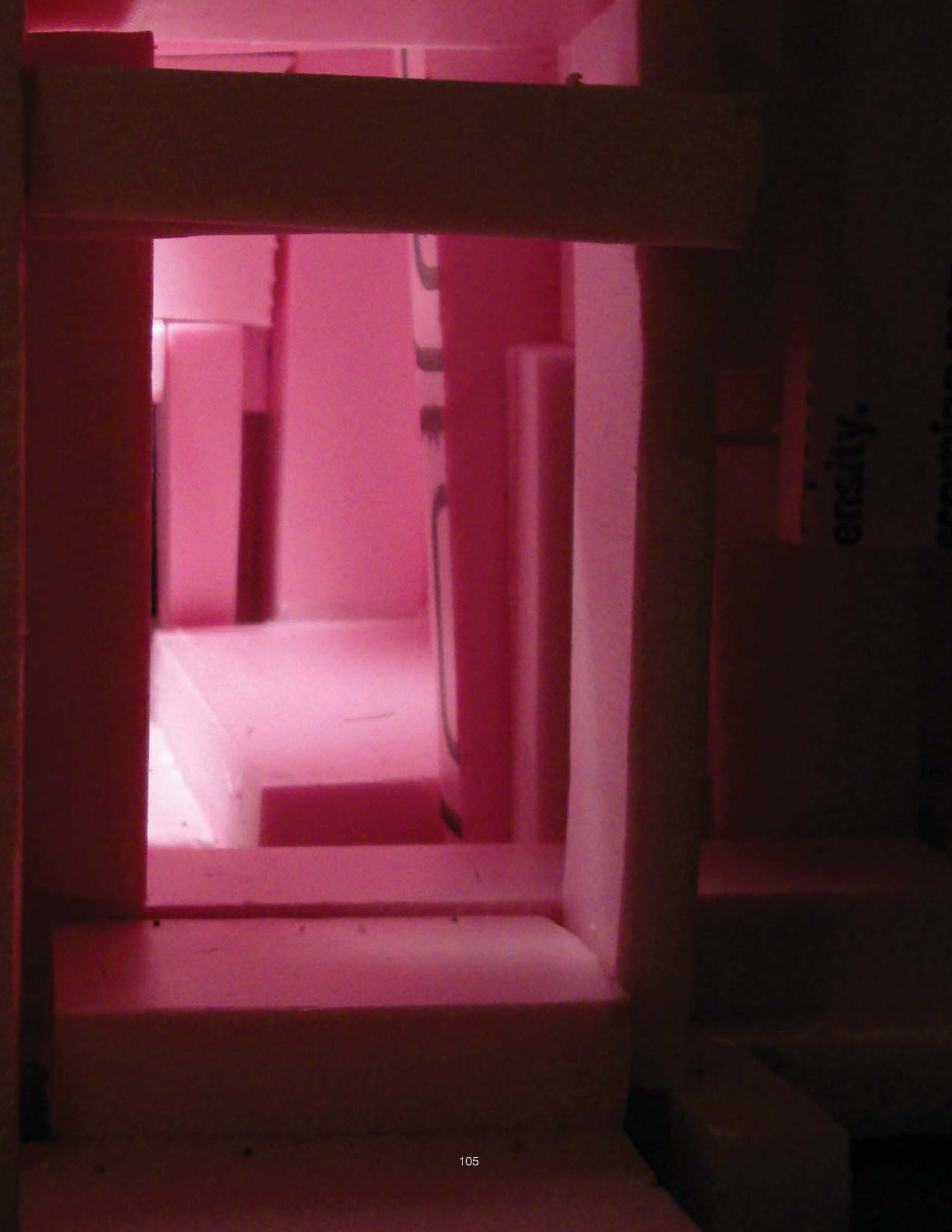
This project provided my first glimpse into the inner workings of explorative making. Although I could not verbalize or even describe this explorative making at the time I knew I had accidentally uncovered a means of generating architectural form I had not used before. During this project I also became aware of how the development of a project could be influenced through the simple interaction with material. In light of this, I decided to expand my materials palette in later projects in the hopes of learning more about this aspect of explorative making. Finally, this project also cemented my interest in the collecting and arranging of personal artifacts as a rich subject matter that could inspire different ways of generating architectural form and encouraged more research into this ritual through various case studies.

Fig. 16 (Opposite) Version B - Interior

Fig. 17 (Over) Version B - Entrance







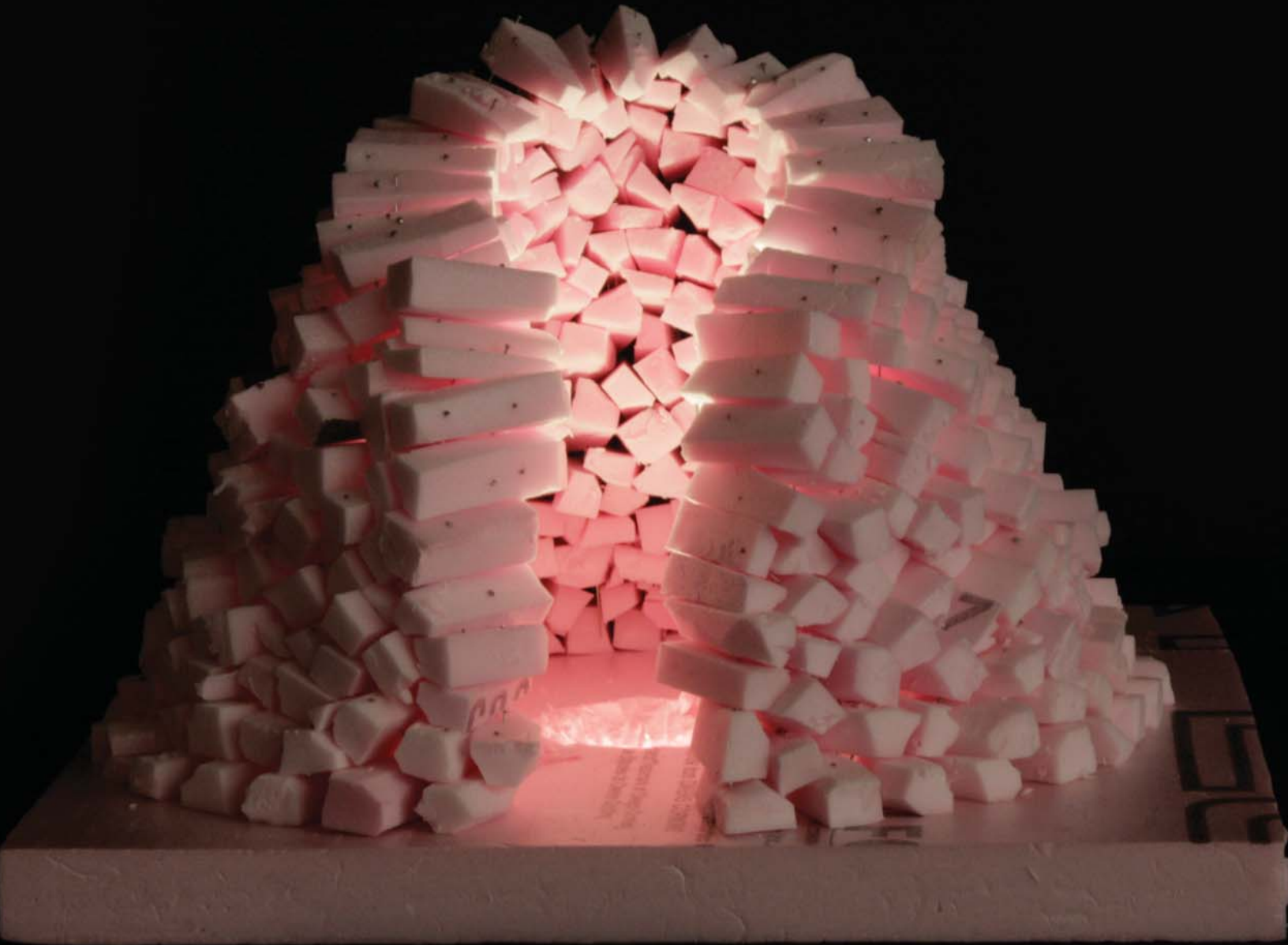


Project 2 Introduction

Project 2 was the third model I constructed in my investigations into explorative making. I actively sought other ways in which the collecting and arranging of artifacts could inform how I create architectural form. At the same time I wanted to expand upon my earlier models and instill some notion of program into the project.

The project is inspired by a ritual I grew up with in my childhood home that involved collecting fire wood from the garage and placing it in the fire place within my living room. It consists of an open-air shelter made of split wood, built around a fire pit in the centre.

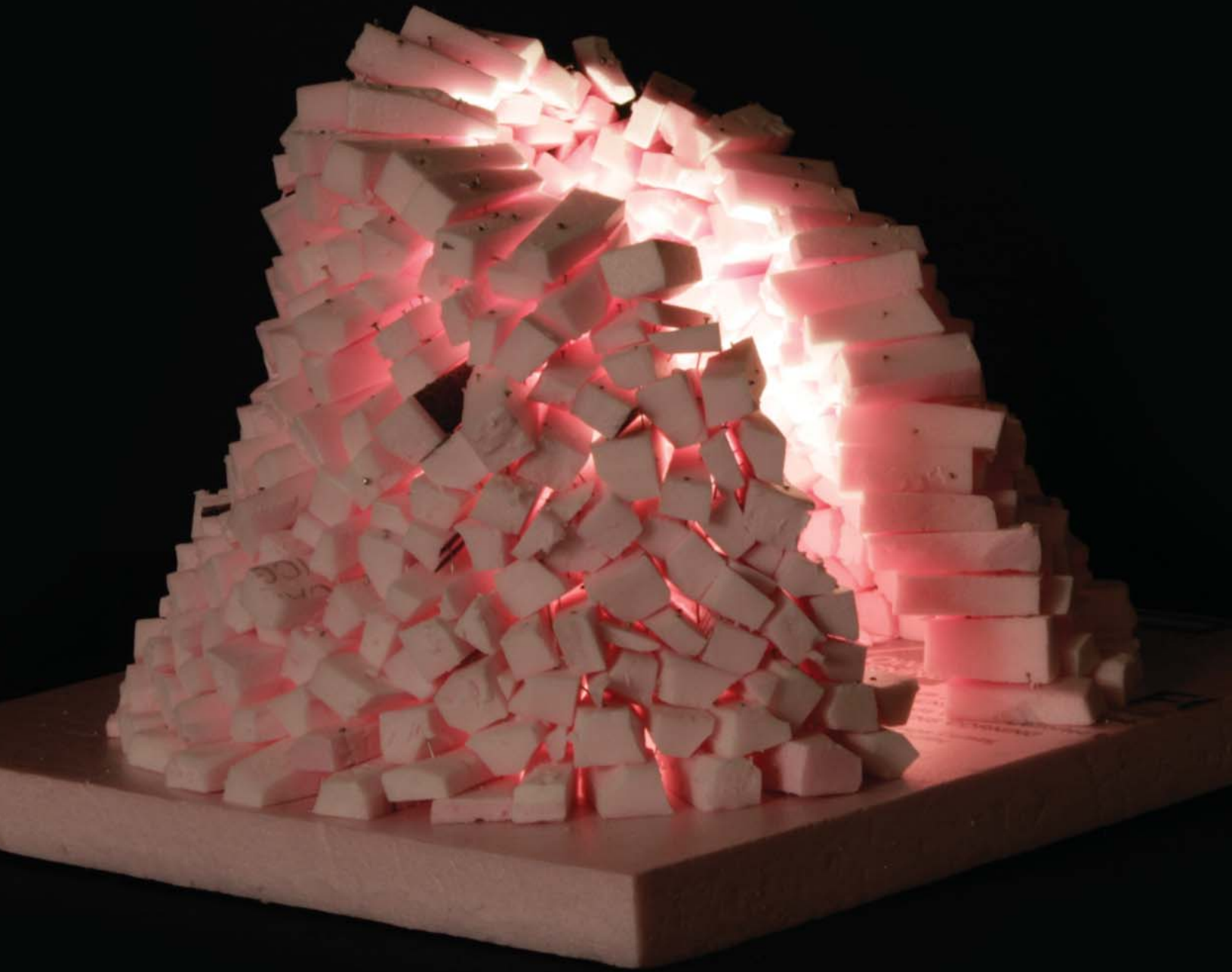
In order to satisfy these functional requirements a simple form of explorative making was employed. Through an investigation that involves breaking down my experiences according to the primary characteristics of explorative making one can determine how they influenced each other during the development of a project.





Artistic Vehicle

My experiences with the first model inspired me to start researching different collections of furniture, books, pictures and other personal artifacts. I reviewed several case studies including the home of English architect John Soane (Fig. 13, Pg. 118), the office of Sigmund Freud (Fig. 11, Pg. 128), the home of the American artist and craftsman, Wharton Esherick (Fig. 10, Pg. 116), a local barber shop owned by Danny Katsorov in Cambridge, Ontario, Canada, (Fig. 14, Pg. 118) and the home of artists Alexander and Louise Calder, (Fig. 4-5, Pg. 112, Fig. 7-8, Pg. 114). In all of these case studies, ritual proved to be a driving force in the emergence of these collages of personal artifacts. This is especially the case with the artists, Alexander and Louise Calder, and their home in Roxbury, Connecticut. When one observes the collage of furniture, appliances, and other personal belongings within their kitchen, it is obvious the ritual of eating and entertaining guests heavily influenced the articulation of this space.



Reflecting on his visit to Calder's home in Roxbury, Connecticut, the photographer Pedro E. Guerrero expands upon this notion in detail.

Calder couldn't tolerate anything that wasn't well designed. He thus devised and hammered out an array of cunning implements, gadgets, tools, and trinkets. The Roxbury kitchen in particular was filled with his handiwork: A large red cupboard made from the Paris packing crates stood next to the antique stove. Nearby, on the wall, a wire rack held strainers and trivets in Calderesque spirals of wire, along with huge outdoor meat roasters. Overhead, a star shaped aluminum baffle, painted black diffused the light from an otherwise offensive bulb. Ladles of different sizes with intricate but varied handles and a fork in the shape of a hand, its thumb under the forefinger (a Brazilian motif), were hung from nails driven into the walls. The mantel over the fireplace and other shelves were crowded with small mobiles, clay statues, bottles, and china that caught Sandy and Louisa's fancy on their far-flung travels. Chinese teacups without handles were made easier to use with handles fashioned by Sandy from brass wire.

On my first visit, a large bowl of quince butter had been placed on the large kitchen table. The bowl rested on a beautiful tray that Sandy had fashioned from a flattened gallon can of Italian olive oil nailed to a wooden frame. There were also several bottles of wine...and a tray of Calder-handled china.¹

It is clear from Guerrero's observations that Calder finds a significant amount of artistic opportunity in the refashioning the various utensils involved in the rituals of daily life.

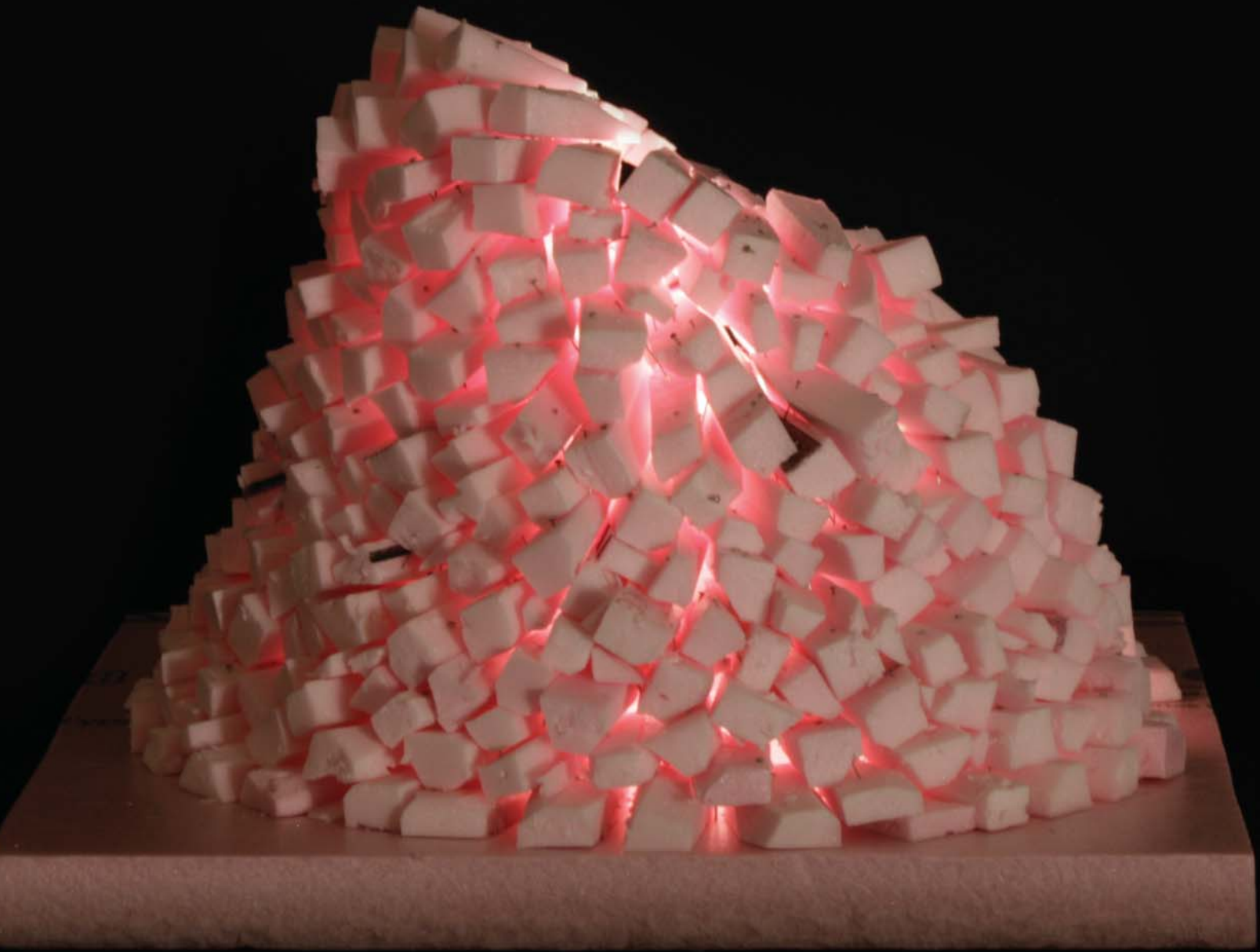




Fig. 4 The kitchen of Alexander and Louise Calder



Fig. 5 The kitchen table and fire place of Alexander and Louise Calder

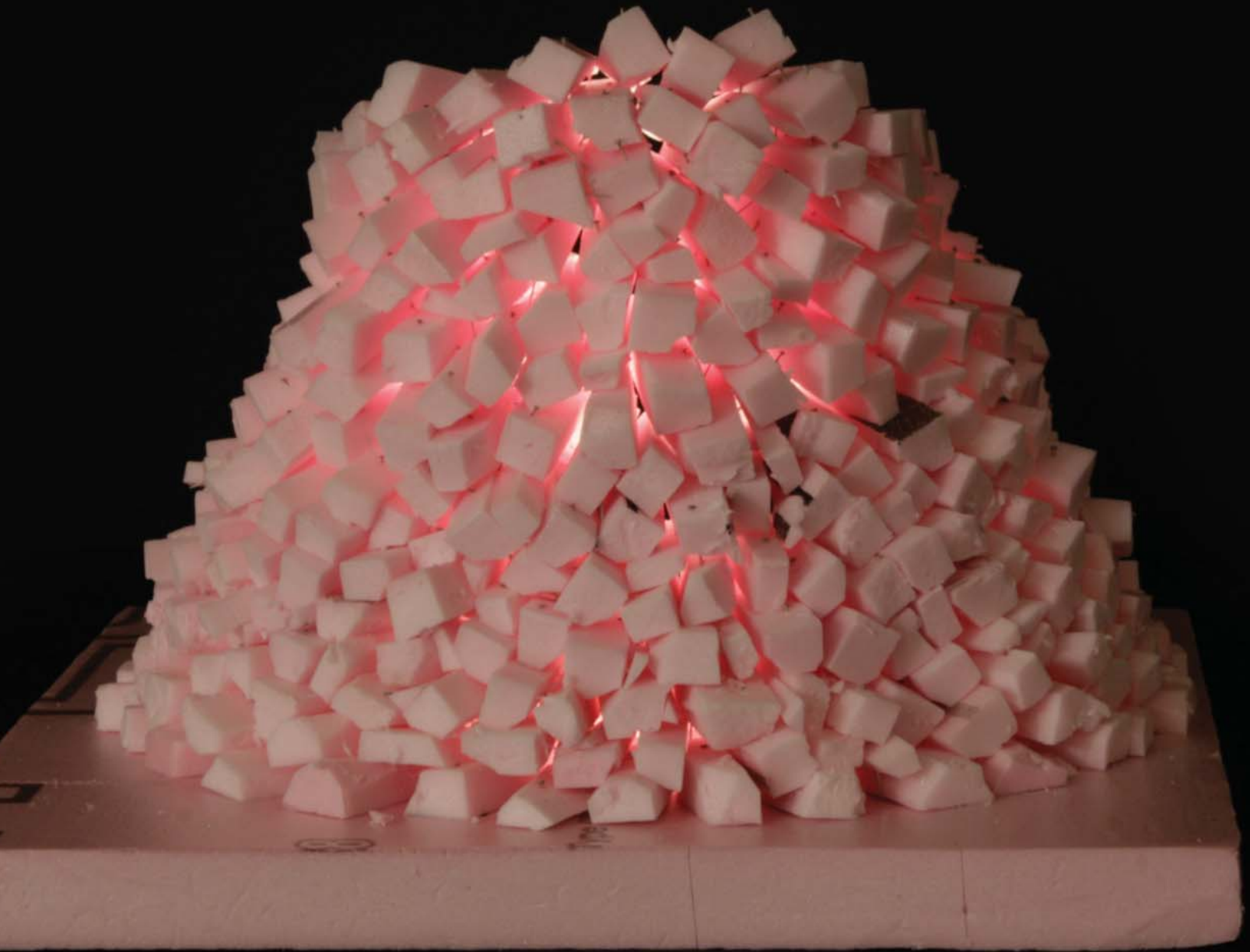




Fig. 7 Kitchen utensils fashioned by Alexander Calder



Fig. 8 Window sill in kitchen of Alexander and Louise Calder

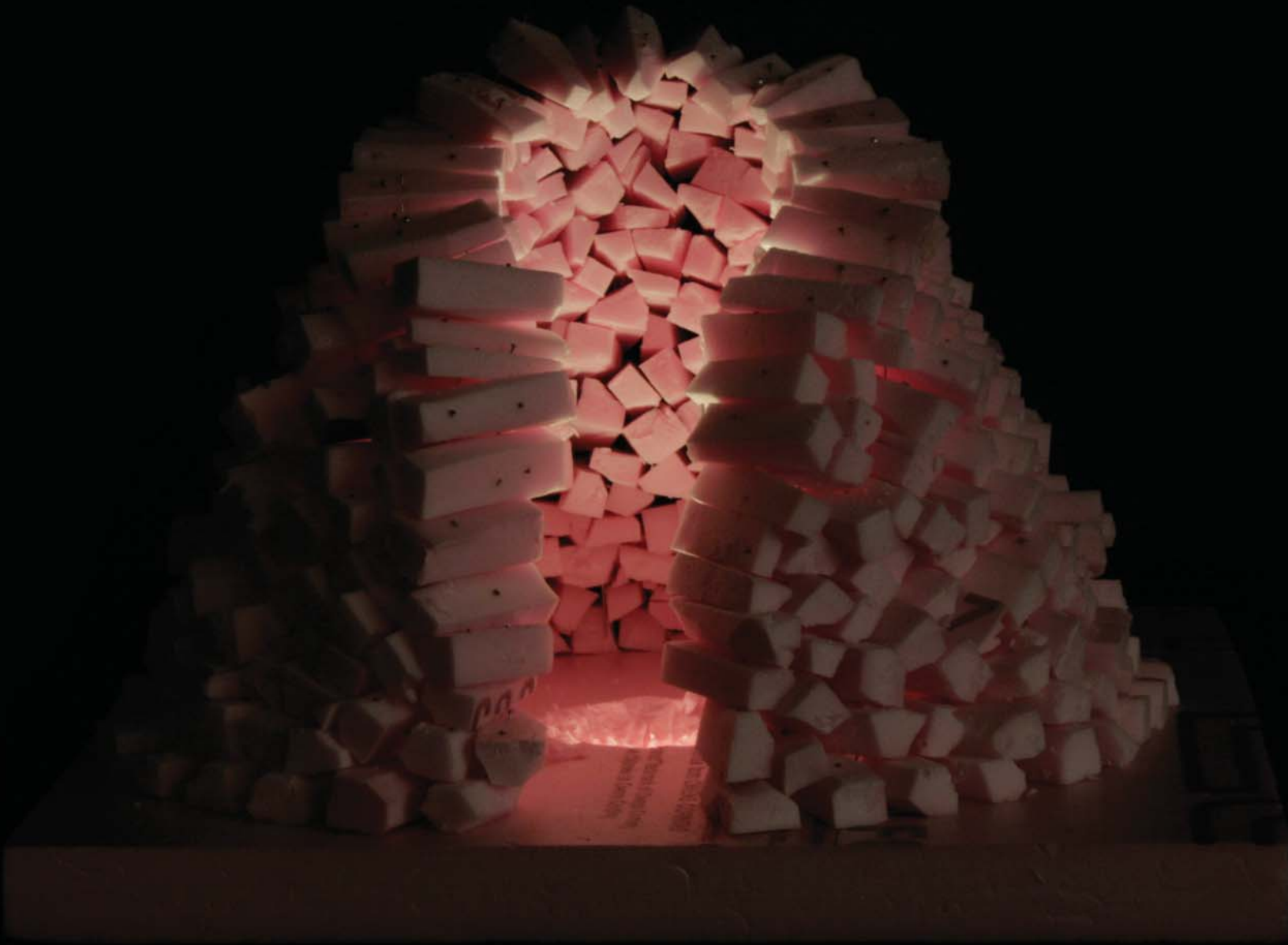




Fig. 10 The Home of Wharton Esherick



Fig. 11 The office of Sigmund Freud

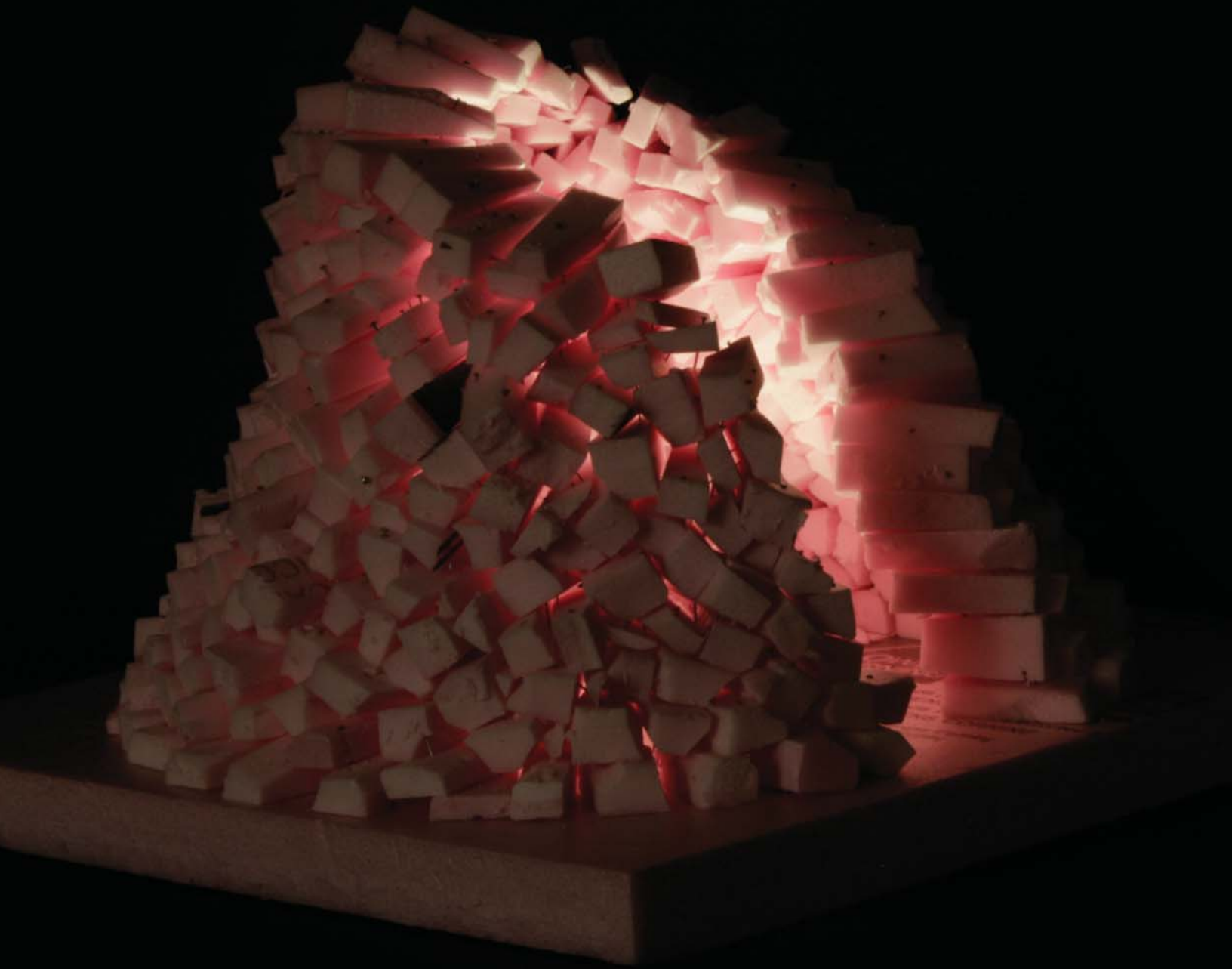
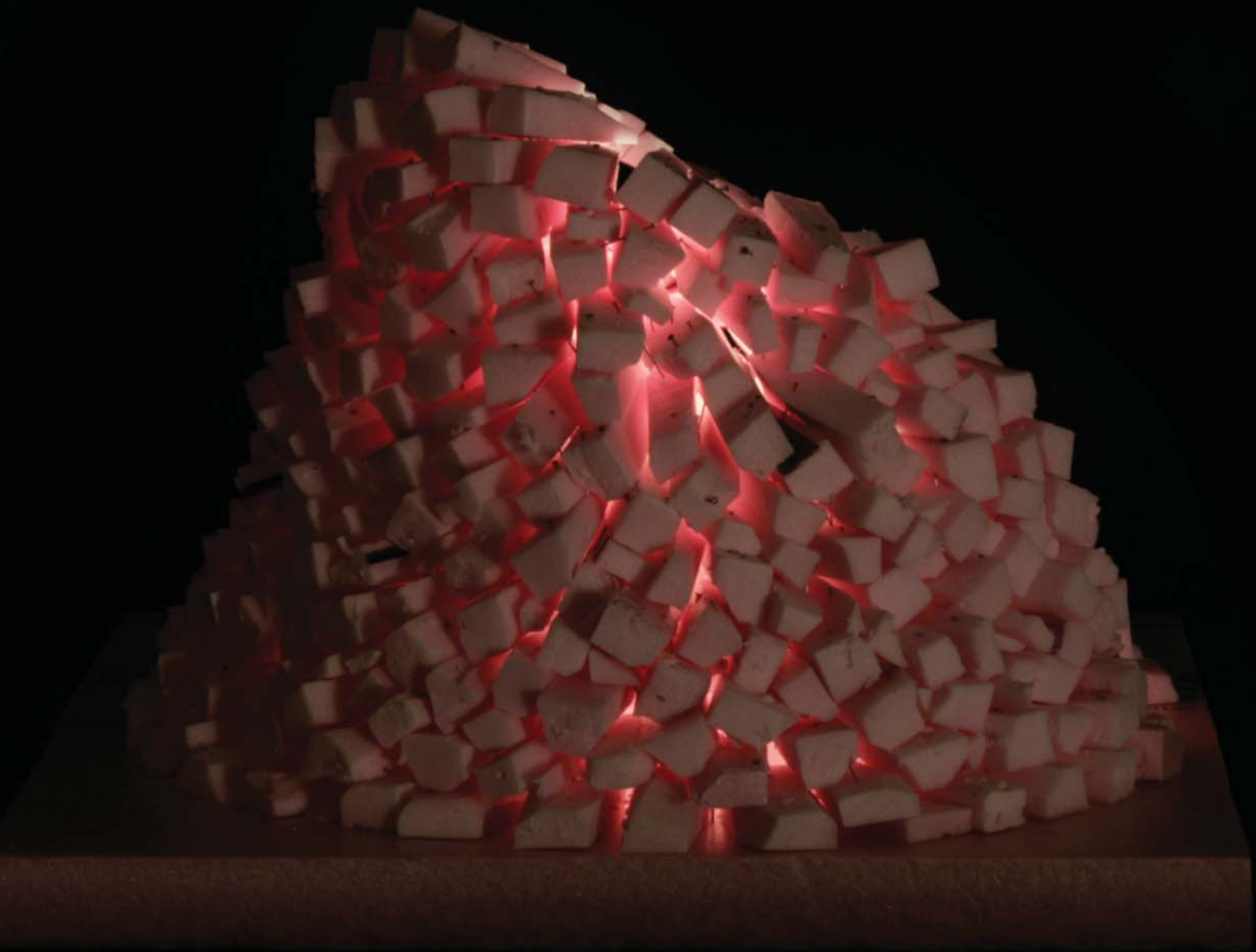




Fig. 13 The home of John Soane



Fig. 14 The barber shop of Danny Katsorov

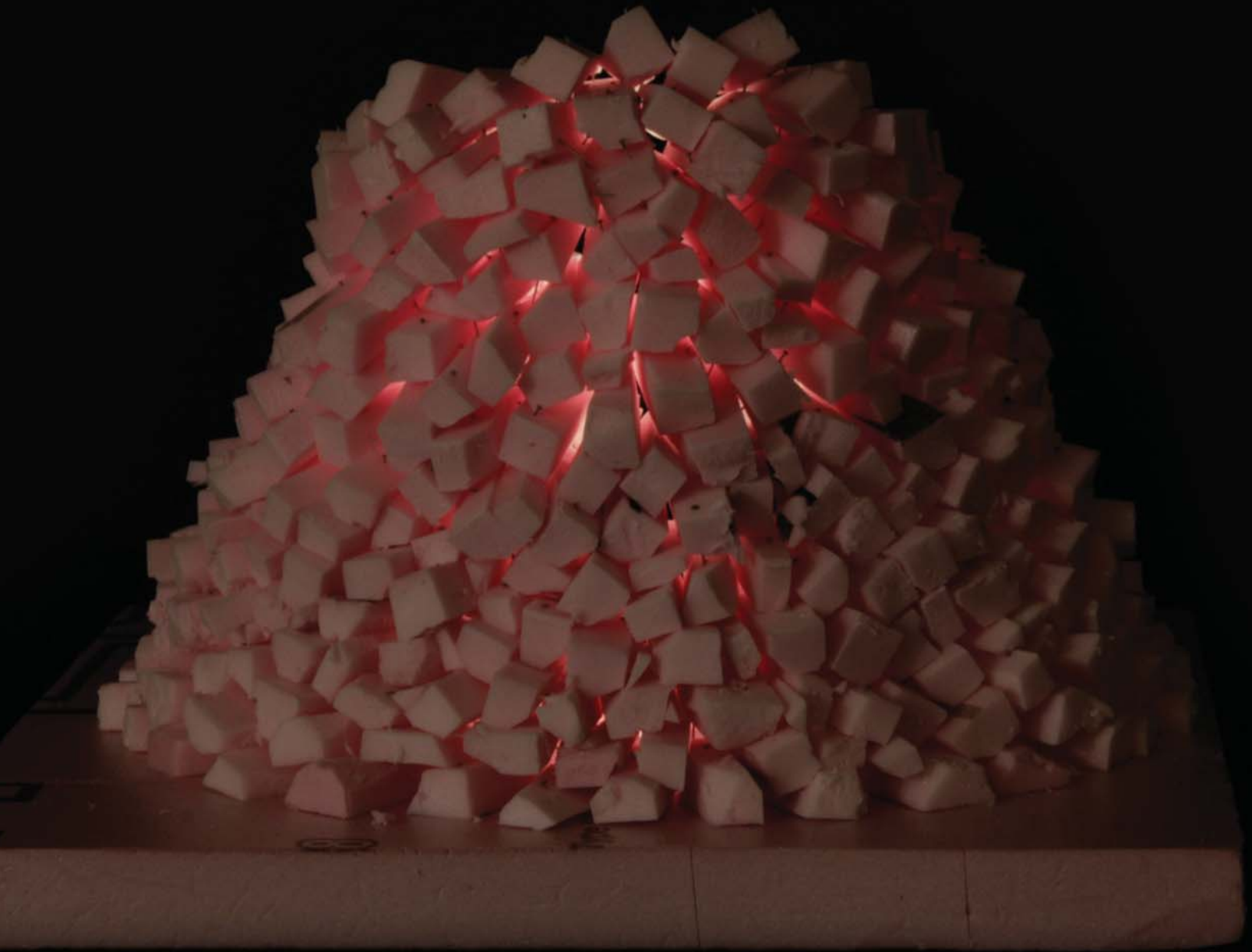


Inspired by Calder and other case studies, I decided to play with this idea of form born out of daily ritual. This led me to search my own memories for a ritual that was important to me. I was immediately drawn to the fireplace in my family home when I was child. Each winter, fire wood was dropped off in our driveway by a local lumber company. Amongst the snow, it would first be stacked in the garage to help dry it out. The stacking itself included several techniques to ensure it did not fall over.

Every night wood would be taken from the larger pile and placed on the step between the garage and house. Throughout the evening, we would move the wood from this step as needed and place it on the stone podium around the fire place. Here the wood would finish drying and then be placed on the fire. When all the lights were out this fire glowed like a lantern as I curled up in front of it wrapped in a duvet watching television.

I used this ritual to develop an artistic vehicle similar to the first model. I cut up a bunch of foam pieces before hand in various shapes resembling split wood and then assembled them using pins. Similar to Project One, working with pins and foam suited my preferences to work quickly with my hands.

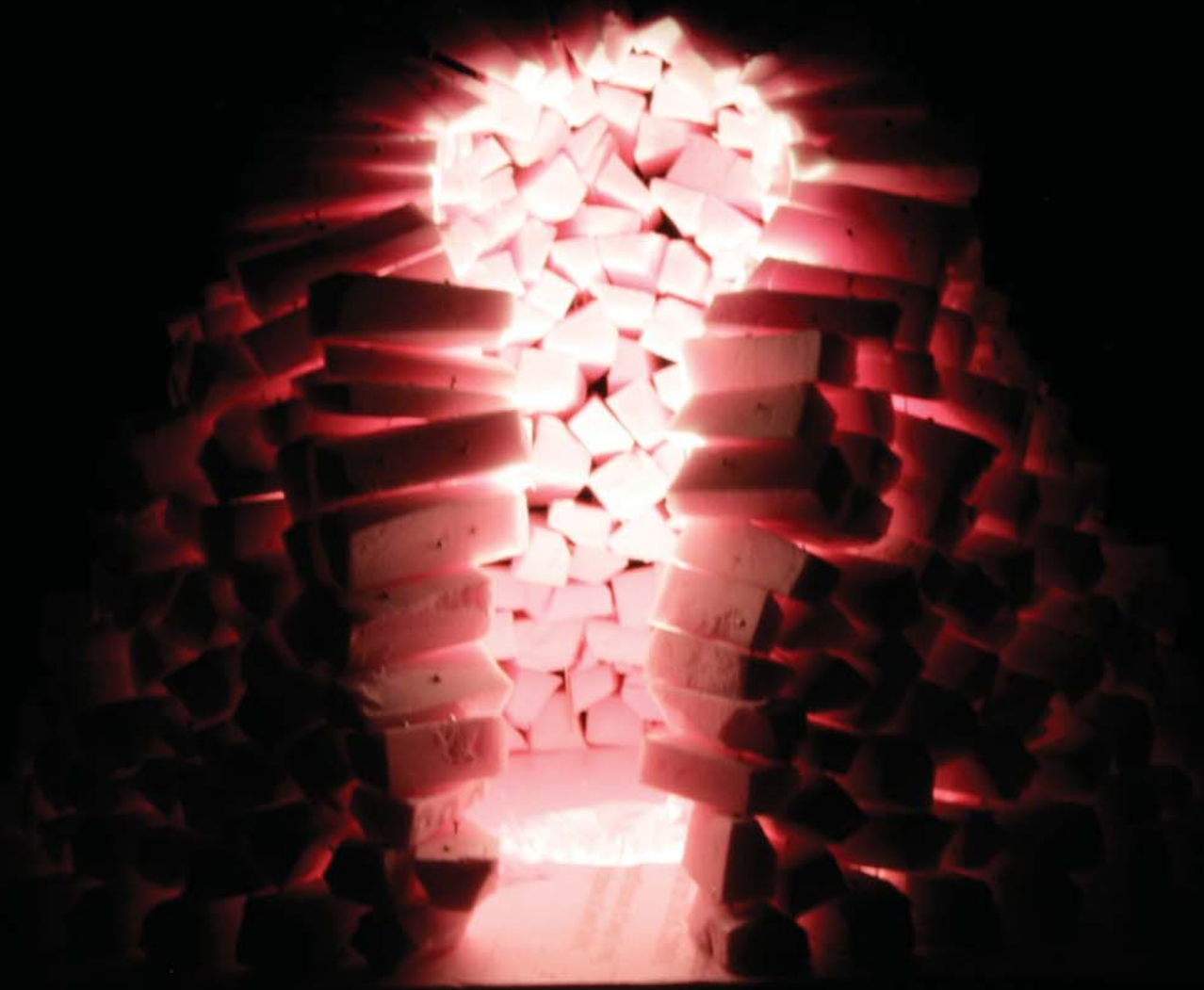
As the functional requirements were so simple they did not have to be accommodated in any special way within my artistic vehicle.





Iterative Experimentation

My iterative experimentation began with the setting out of different timber pieces in an attempt to define the perimeter of the shelter. Although it took a few tries to settle on the size of the circle, for the most part the structure just sort of flowed out of me without much trial and error. However, this is not to say I knew what it was going to look like beforehand or while I was making it. Even the silhouette of the shelter emerged unintentionally from the uneven stacking of wood. The experimentation concluded with me poking a hole in the floor of the model where the fire pit would be located and then testing how a fire would illuminate this structure using a desk lamp. It is important to note that the functional requirements were so simple they did not require any special attention during the course of my iterative experimentation.





Visceral Evaluations

Throughout the development of this project my visceral evaluations typically manifested themselves as non-verbal likes and dislikes. They were present throughout the research phase and during my iterative experimentation.

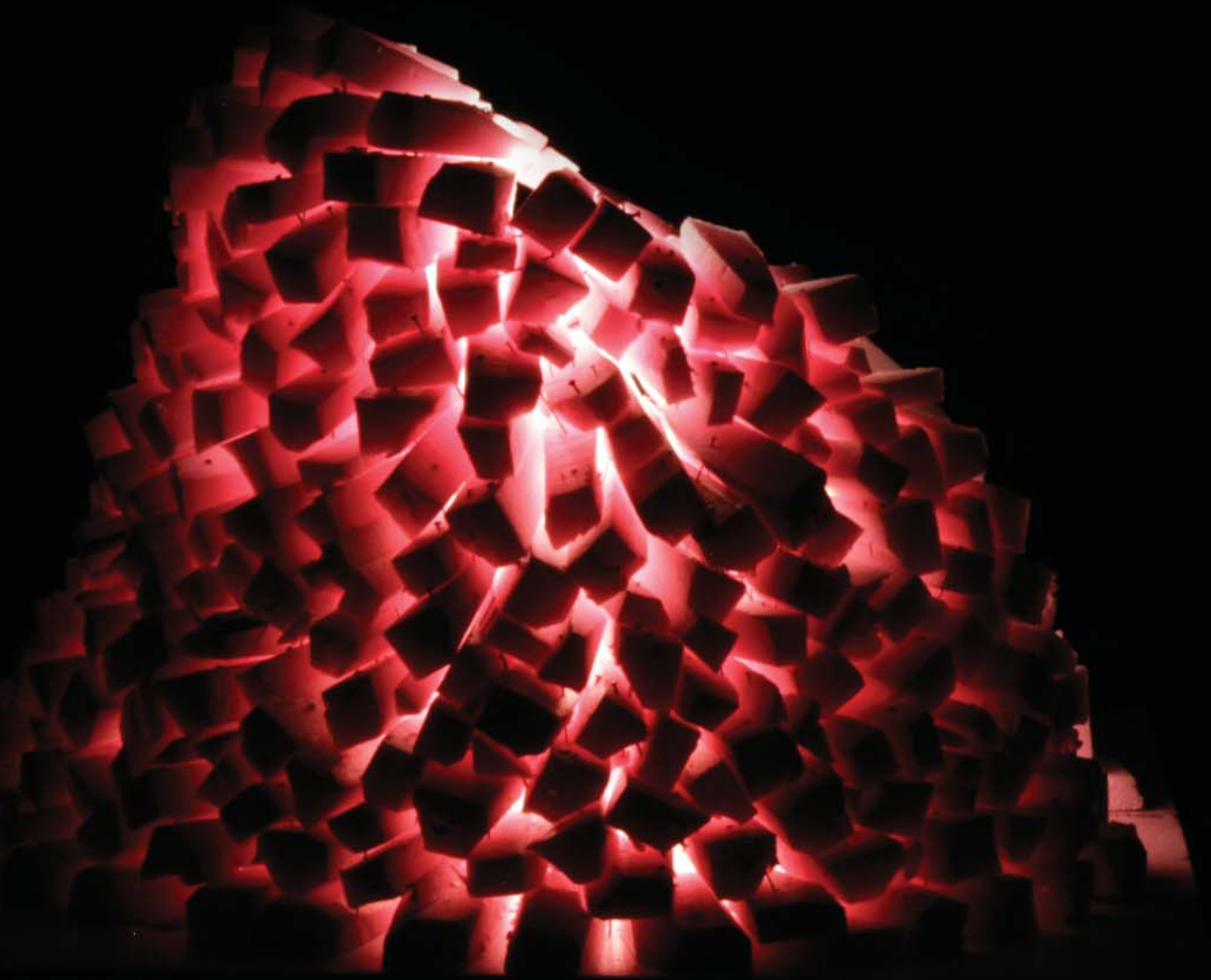
There was one instance where my feelings were especially strong and played a significant role in the development of the project. As I stacked the pieces together and the walls emerged from the ground, I was worried about how the top of the form would resolve itself. I literally had no idea until it made itself right in front of me. As I stacked these pieces I accidentally created a profile that imbued this form with a flowing silhouette. At that moment I just stopped and knew right away I had found the shape I wanted, even though I was not completely sure at the time why I liked it. In hindsight, when I look at this form, its flowing silhouette gives the work an almost fabric-like quality, reminding me of the times I would curl up in front of the fire wrapped in a duvet.





Playful Mentality

In many respects, I was able to envelope myself in the same sort of playful mentality as I did during the first model. Although there wasn't much experimentation I was still very much open to the surprises that emerged during the explorative making. Specifically, the creation of the flowing profile was an accident that just emerged from the uneven stacking of pieces. In this situation not only did I welcome this surprise, I also trusted my feelings enough to pursue it even though I was not exactly sure where it was going to lead me.





Project 2 Concluding Remarks

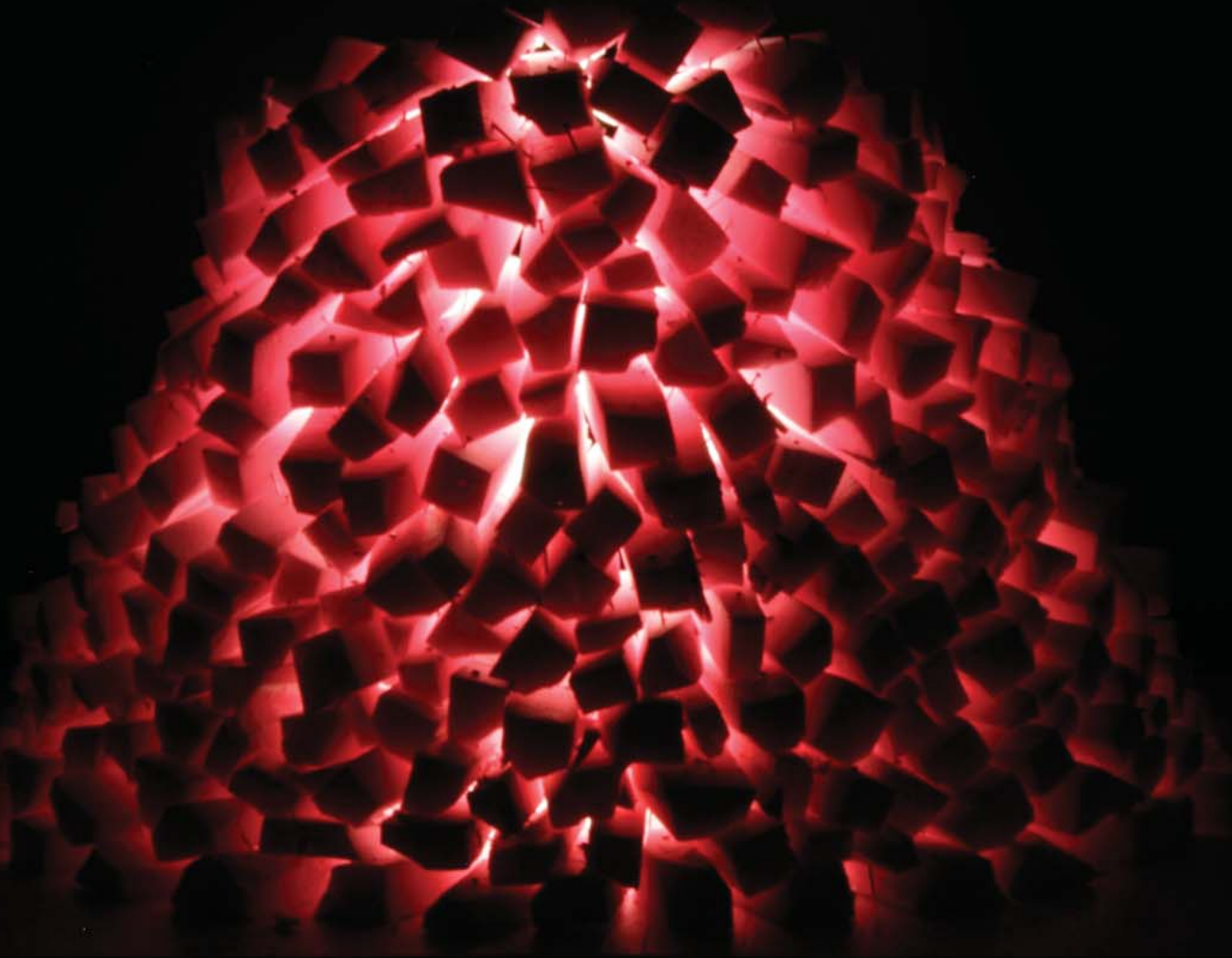
Based on my reflections it is clear a reciprocal relationship existed between my iterative experimentation and visceral evaluations. This is evident in the development of the silhouette of the shelter where the unintentional stacking of different pieces triggered feelings that, in turn, influenced further experimentation.

This cycle was facilitated by both a playful mentality and my artistic vehicle. A playful mentality was evident in the way I embraced surprises as opportunities throughout the course of the project. Specifically, the accidental discovery of the flowing profile for the shelter was a welcome surprise that I readily adopted. The artistic vehicle also facilitated explorative making in the way it accommodated my preferences for working quickly with my hands. Similar to Project One, the collecting and arranging of personal artifacts acted as a rich subject matter that inspired the premise for the project and facilitated explorative making.

Finally, as the functional requirements in this project were so simple that they did not require any significant changes to my explorative making.

NOTES:

1. Pedro E. Guerrero, *Calder at Home*, (New York: Stewart, Tabori and Chang: 1998), 36



2.2

Concluding Remarks

The furniture of J.B. Blunk along with Projects One and Two illustrate how simple forms of explorative making can readily accommodate very simple functional requirements such as making furniture or an open-air shelter. In turn, significant changes to this creative process were not required in order to accommodate them. The early success I had with these models encouraged me to be more ambitious and try to make complex structures.

The work in this gallery also reveals how the primary characteristics of explorative making interact with each other. Specifically, there exists a reciprocal relationship between iterative experimentation and visceral evaluations which involves them nurturing each other in an ongoing cycle during explorative making. This relationship is lubricated by a playful mentality and artistic vehicle that allows for an uninhibited expression of ideas and inspirations.

The most fulfilling aspect of my models involved using the collecting and arranging of furniture, books, pictures, and other personal artifacts as inspiration for developing different methods of creating architectural form. Encouraged by these early models I wanted to continue mining this subject matter for more ideas on how to generate architectural form.

2.3

Modifying Simple Forms of Explorative Making

The following models expand my explorative making beyond the basic single room structures in Gallery 2.2. In each project, I attempted to make a house with a program made up of multiple rooms.

In both their scale and their program houses were a suitable direction in which to expand and challenge my explorative making. A house typically involves multiple spaces with differing functions arranged to relate to each other in a particular fashion. A simple example of this is the dining room is often located close to the kitchen because they accommodate eating and cooking, two closely related rituals. The challenge of arranging multiple rooms with regards to use and ritual was a functional requirement my earlier models did not address and presented a new challenge for my explorative making. At the same time, the home was also the backdrop for many of the collages of furniture, pictures, books, and other personal artifacts I was studying and was an appropriate setting to further explore these more artistic interests.

The following projects are my attempts to modify simple forms of explorative making to create architectural forms made up of various rooms. While all the models generally tackle the program of a house, only the fourth and fifth projects attempt to tailor rooms to specific functions.



Project 3 Introduction

Project Three was my second investigation into explorative making and occurred around the same time as Project Two. For this model, I was interested in investigating if a simple form of explorative making could be utilized to create more complex architectural forms compared to the single room shelters in Gallery 2.2. I also wanted to explore how the collection and arrangement of artifacts could inspire new ways of generating architectural space. Specifically, these explorations took the form of trying to create a gestural model of a simple home with a program consisting of multiple rooms. In addition, my research into the collecting and arranging of personal artifacts led me to develop an artistic vehicle inspired by the *Merzbau*, (Fig. 3 , Pg. 150, Fig. 5 Pg. 152), by Kurt Schwitters.

As a simple form of explorative making it did not include any special provisions to accommodate the project's programmatic requirements. There was absolutely no sense of program developed beforehand, other than the notion of a small house. In short, the program and all its inherent functional requirements were addressed as I constructed the model, and any decisions made in regards to program were based solely on my visceral evaluations.

Through an analytical lens consisting of the primary characteristics of explorative making it becomes clear how these different characteristics can influence each other during explorative making. These reflections also reveal how this simple form of explorative making was unable to accommodate a complex program of multiple rooms.





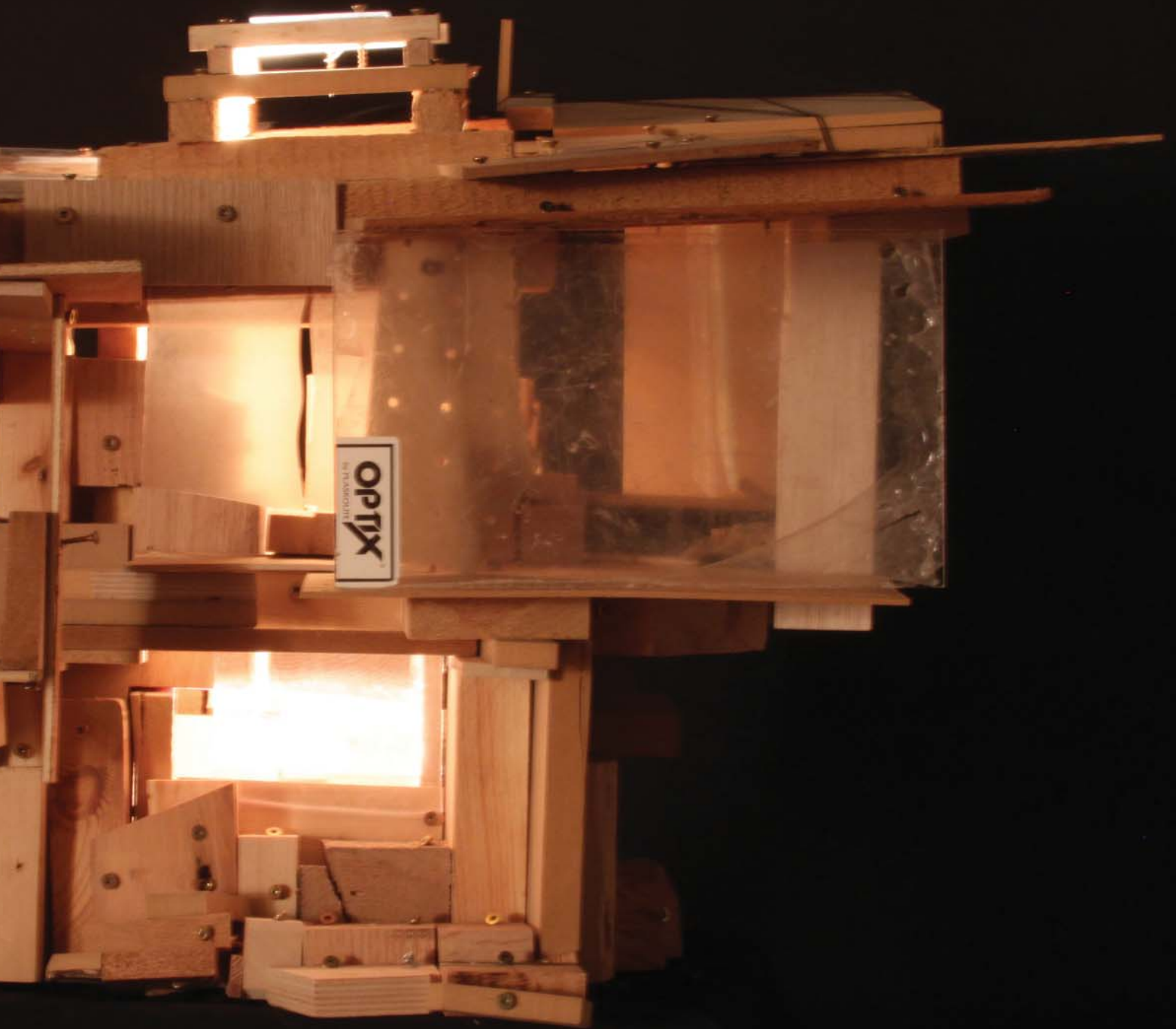


Artistic Vehicle

As I continued to pour through case studies of different collages of personal artifacts I expanded my research to include art works that were in some way similar to these collages. During this expanded search I stumbled across the *Merzbau*, also known as *The Cathedral of Erotic Misery*, by Kurt Schwitters. Schwitters began construction of the first *Merzbau* with the *Merz Column* in 1923, and continued with its construction in his home in Hannover, Germany until 1937. After which he was forced to escape Germany to Norway to escape Nazi persecution. Essentially, the *Merzbau* is a collection of found objects and scrap materials glued and nailed together to form an environment that enveloped the space in which it was built. This work is developed in the spirit of his own artistic philosophy, *Merz*. The concept of *Merz* first emerged in 1919, amidst a political and social climate ripe with upheaval. Schwitters outlined his philosophy in the July, 1919 issue of *Der Sturm*, and is quoted by John Elderfield in *Kurt Schwitters*.

Merzbilder are abstract works of art. The word Merz denotes essentially the combination of all conceivable materials for artistic purposes, and technically the principle of equal evaluation of the individual materials. Merzmalerei makes use not only of paint and canvas, brush and palette, but of all materials perceptible to the eye and of all required implements. Moreover, it is unimportant whether or not the material used was already formed for some purpose or other. A perambulator wheel, wire netting, string and cotton wool are factors having equal rights with paint. The artist creates through the choice, distribution and metamorphosis of the materials.





The metamorphosis of materials can be produced by their distribution over the picture surface. This can be reinforced by dividing, deforming, overlapping, or painting over. In Merzmalerei, the box top, playing card and newspaper clipping become surfaces; string, brush stroke and pencil stroke become line; wire netting becomes over-painting or pasted-on grease proof paper becomes varnish; cotton becomes softness.

Merzmalerei aims at direct expression by shortening the interval between the intuition and realization of the work of art.¹

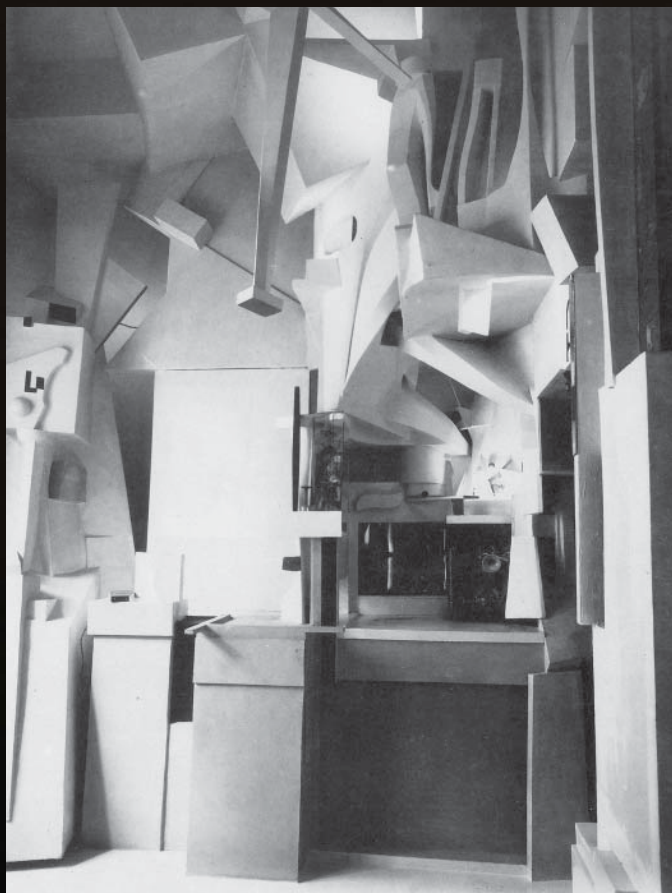
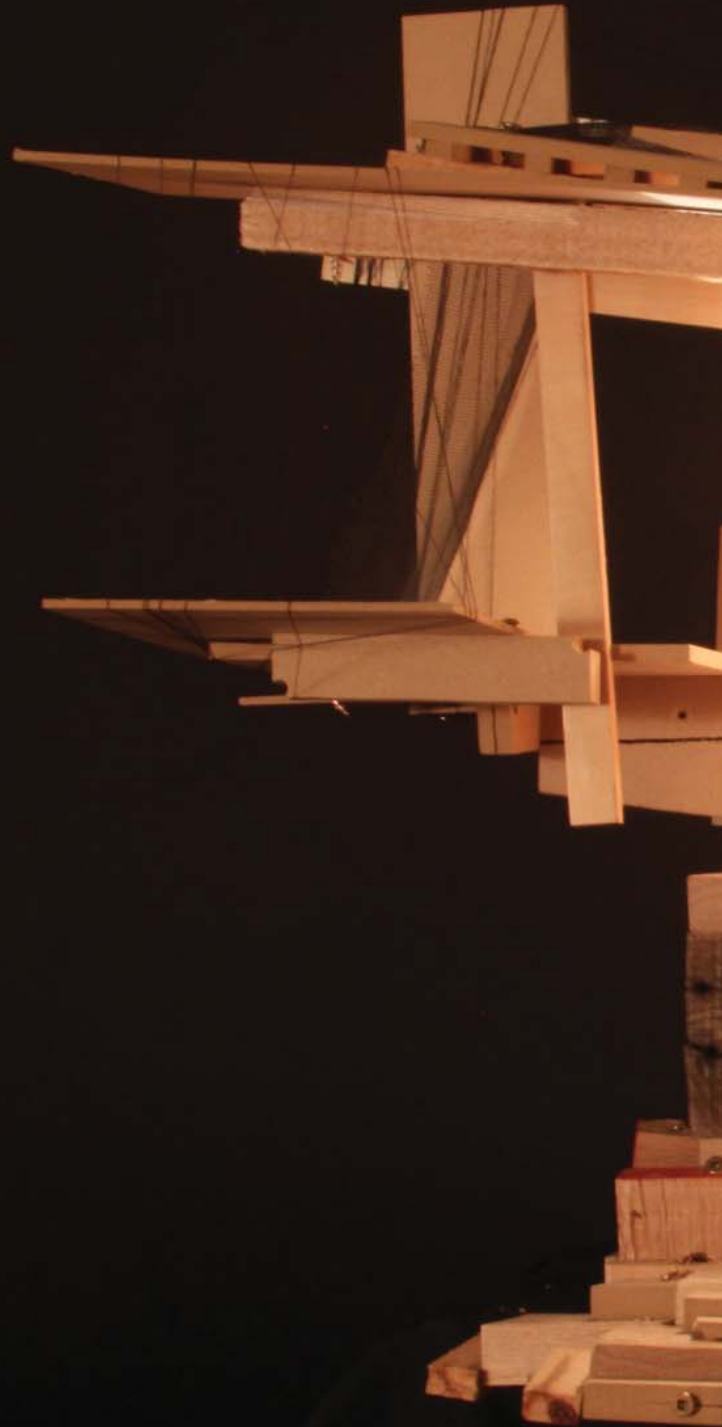
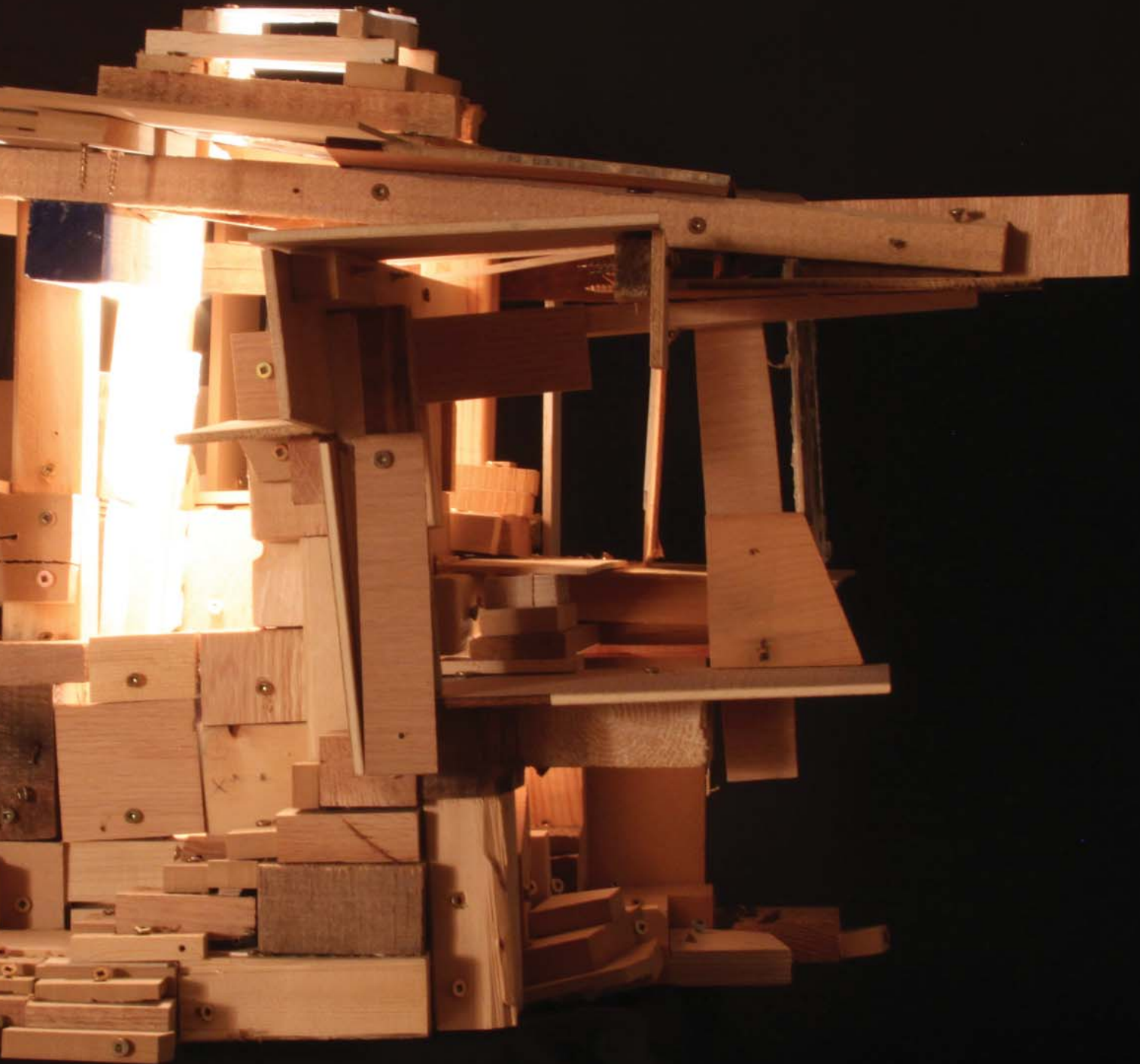


Fig. 3 The Merzbau





As per his philosophy, the development of the *Merzbau* involved the collection and putting together of scrap materials such as a dolls head, bits of hair, coal, pencil stubs, small reproductions of Michelangelo's sculptures and paintings, plaster, wood, as well as paint and varnish. In *The Collages of Kurt Schwitters*, Schwitters explains the development of the *Merzbau* in detail.

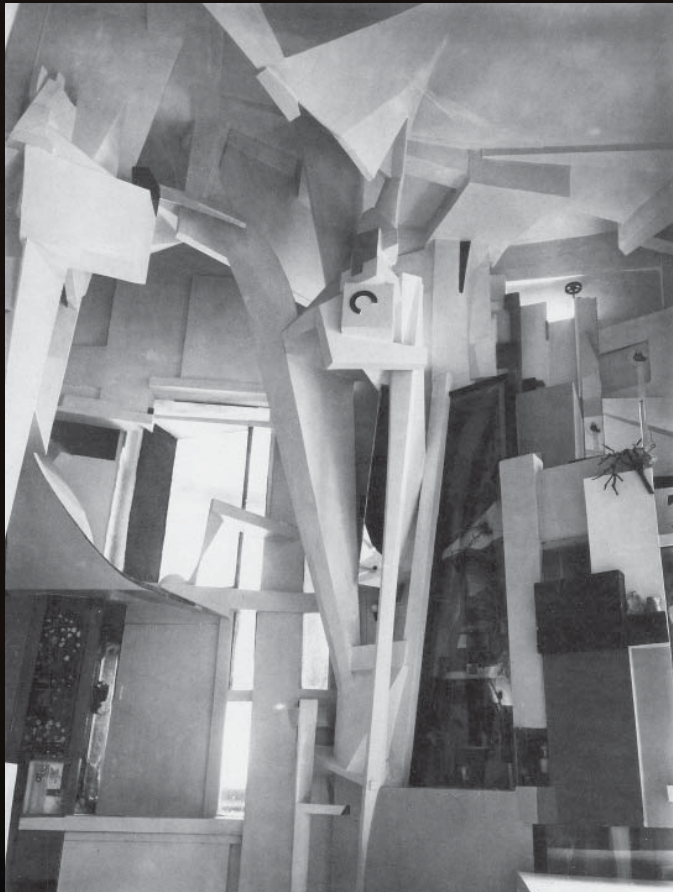


Fig. 5 The Merzbau



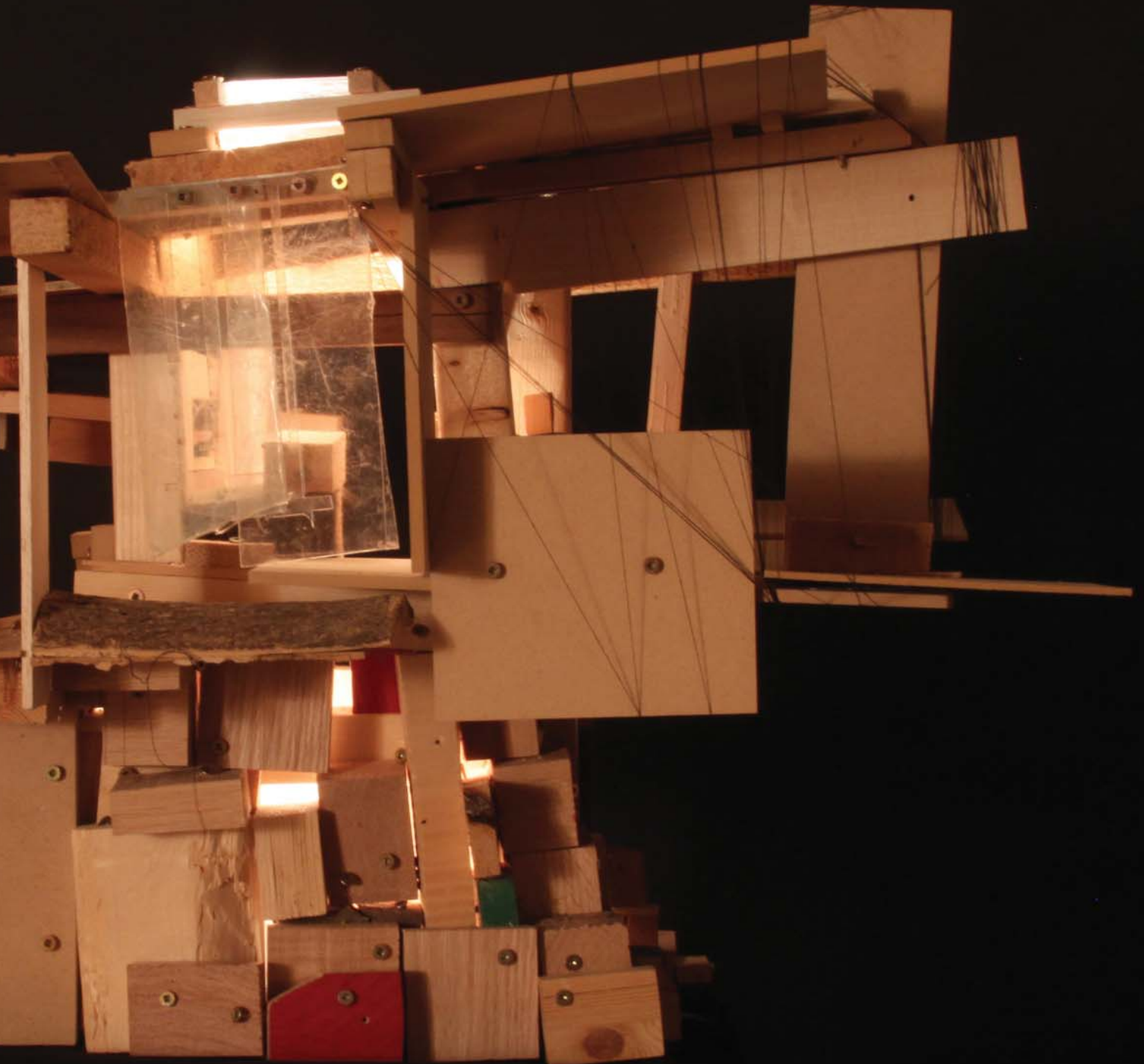
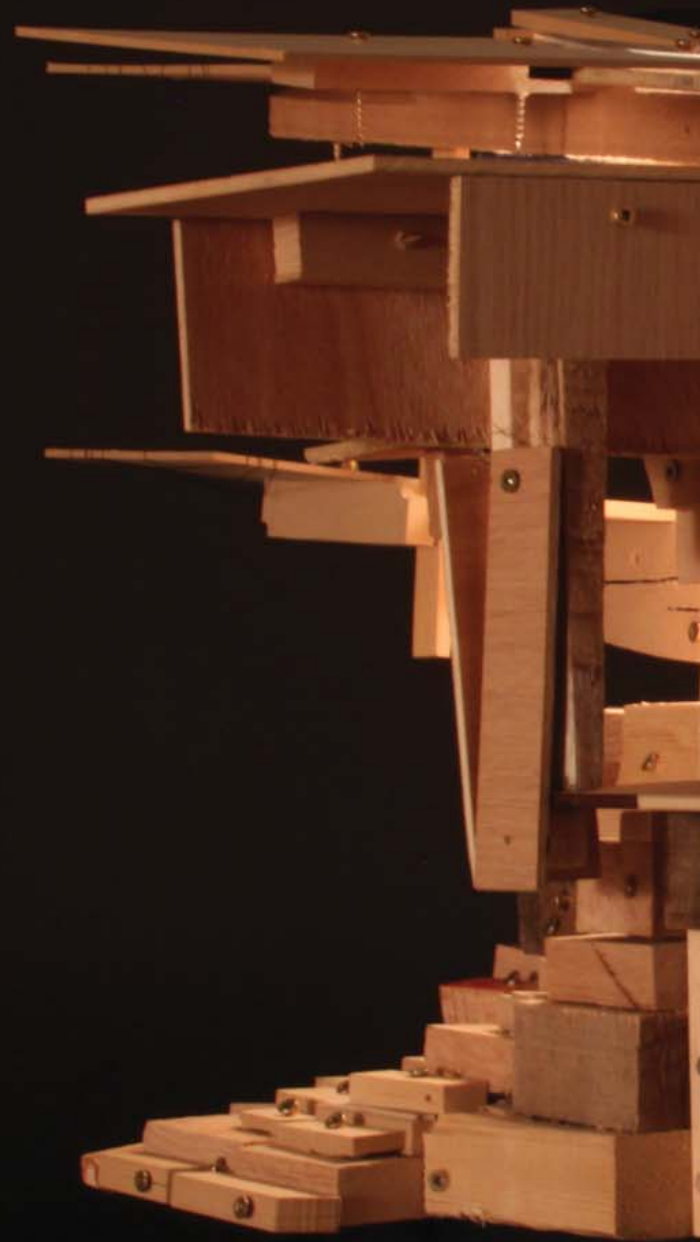


Fig. 6 Elevation

[The Merzbau] grows like a city; ...When I find an object and know that it belongs in the [Merzbau] I take it along and glue it on, cover it with plaster and paint it according to the impression of the whole. And one day, a new direction develops which steps totally or in part over the object's corpse. In this process things that are entirely or partly obsolete remain as proof that they have lost their value as independent elements of the composition. As the ribs of the architecture grow, new valleys, hollows, grottoes come into being that again has a life of their own within the whole of the construction.²

In the same text, the author complements the personal accounts of Schwitters with the observations of his friend, Hans Richter. Richter comments, "This was more than a sculpture; it was a living, daily changing document on Schwitters and his friends. He [Schwitters] explained it to me, and I saw that the whole thing was an aggregate of hollow space, a structure of concave and convex forms which hollowed and inflated the whole sculpture."³

Through the comments of both Schwitters and Richter it is clear the *Merzbau* was developed through the collecting and arranging of artifacts, although in this case the artifacts are various types of scrap material. In addition, Schwitters employs a process very much like explorative making in the development of the *Merzbau*. Based on his descriptions, all the primary characteristics of explorative making are evident in this work. The growth of the environment involves an artistic vehicle in the form of collecting and arranging scrap material.



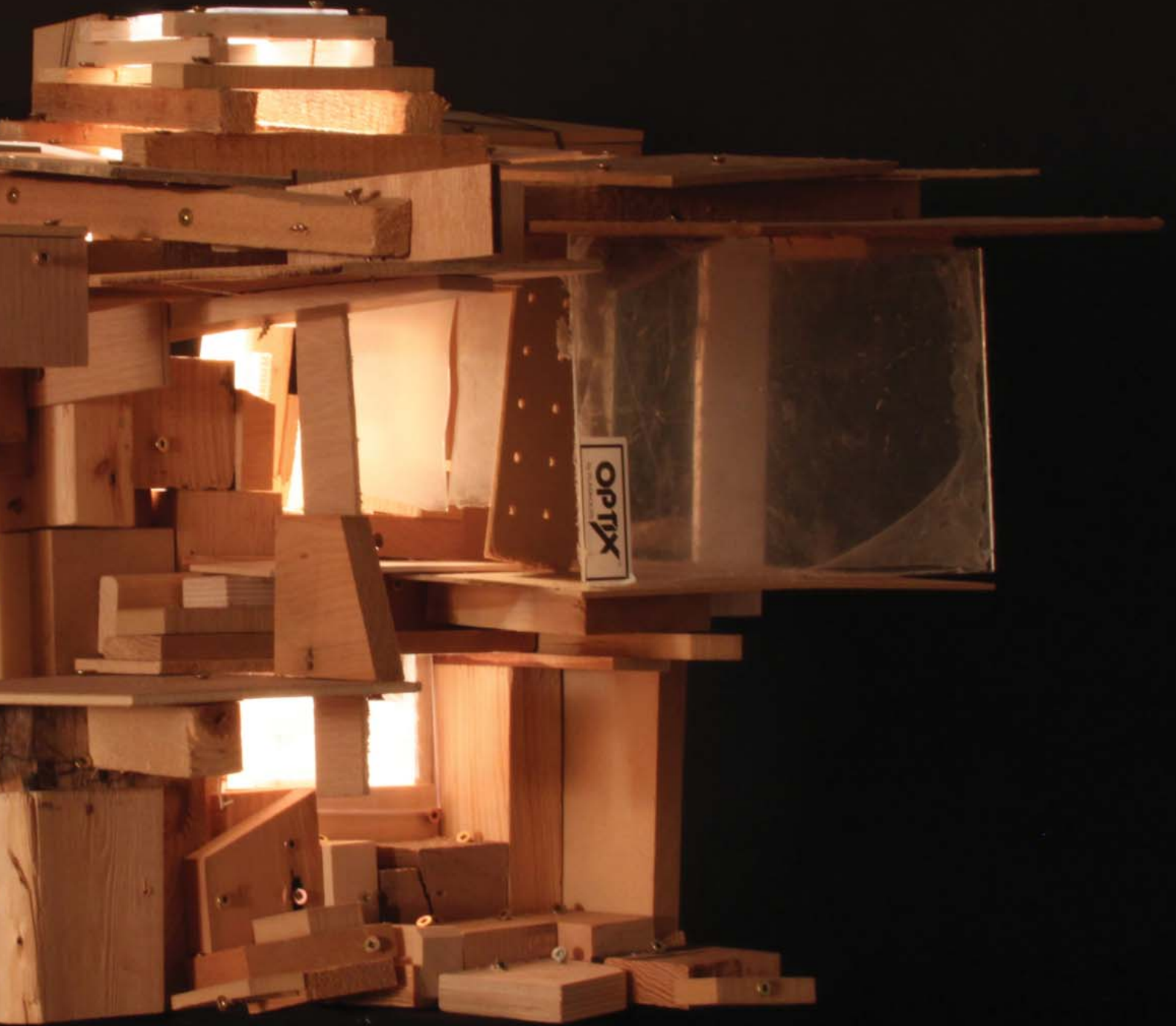
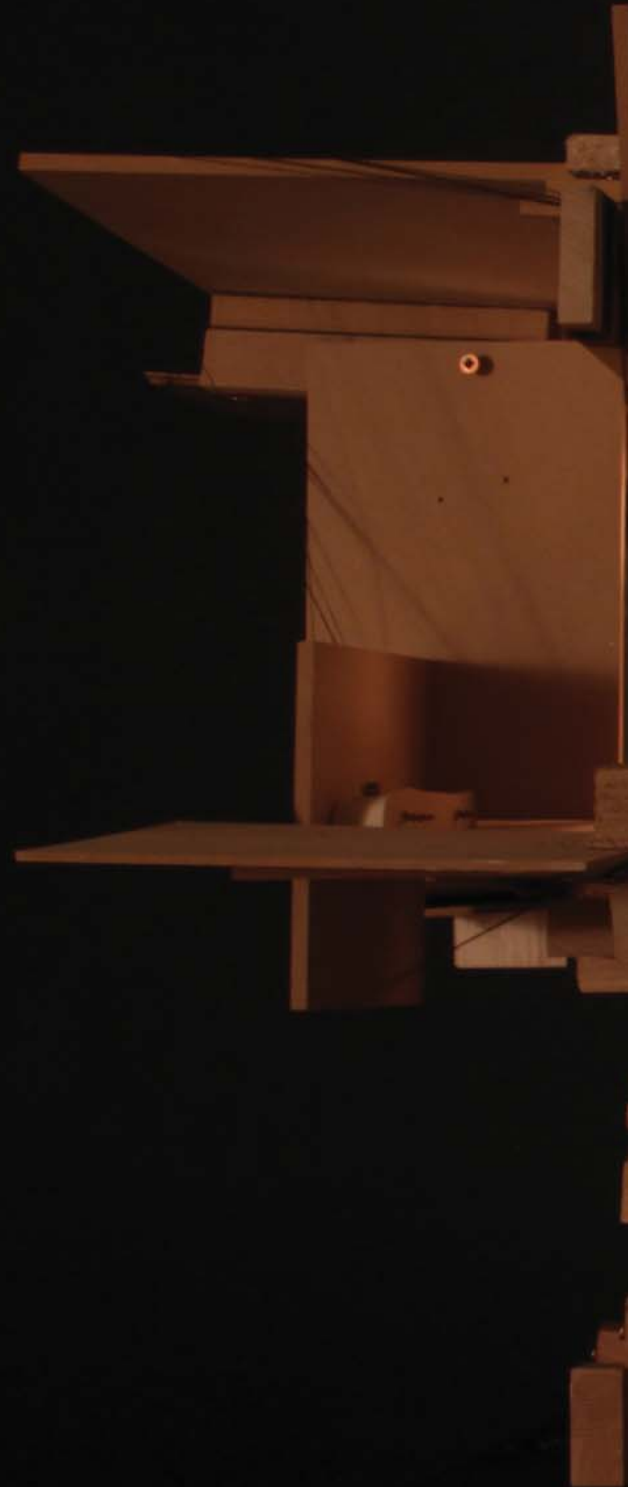
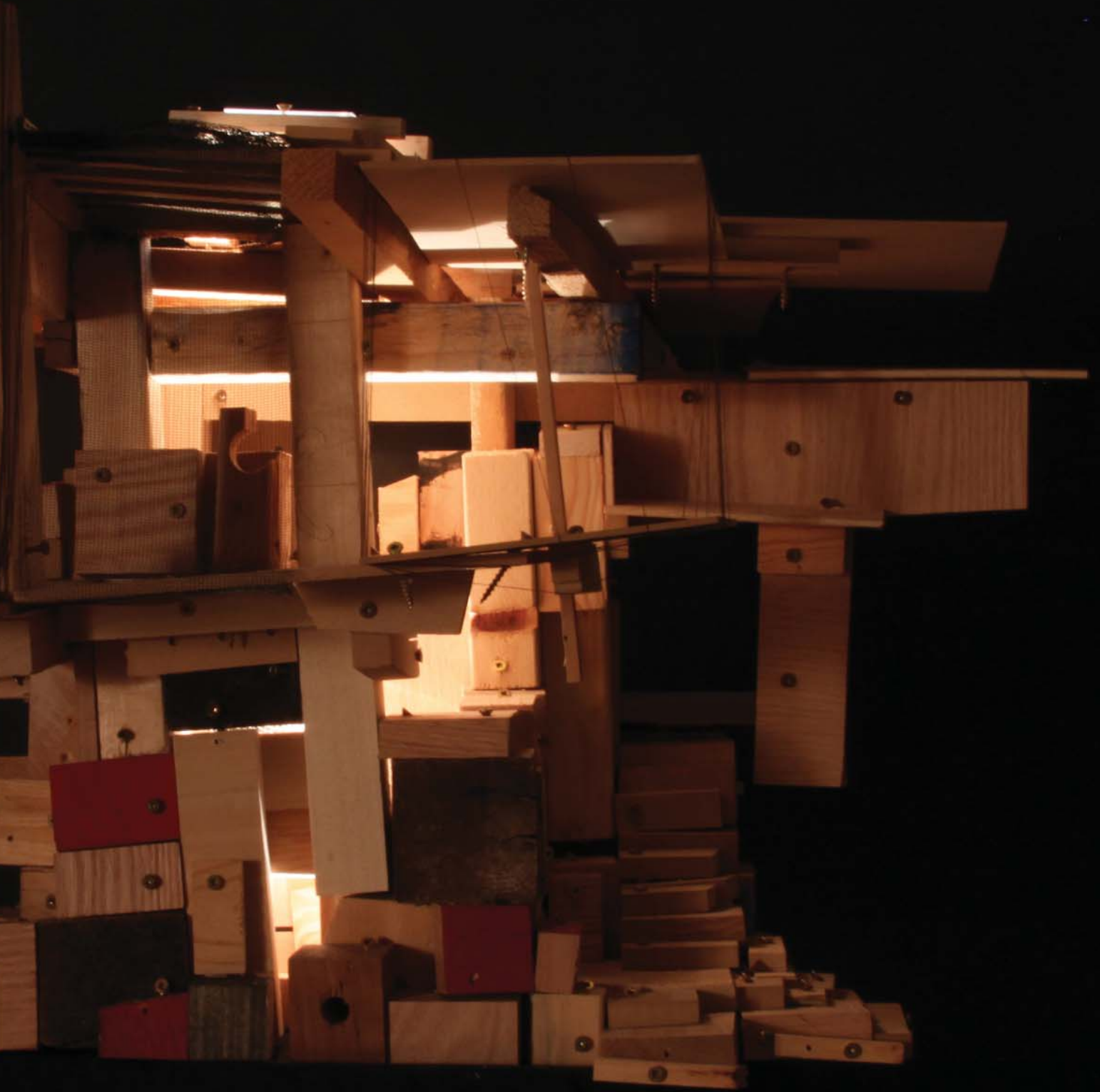


Fig. 7 Elevation

There is also evidence of a significant amount of iterative experimentation that involves new material being glued and painted over top of old material. As per the *Merz* philosophy, the development of this work was guided by intuition; furthermore, he often exhibited a playful mentality in the constant re-imagining of scrap material originally used for different purposes. As an example of explorative making, and a means of generating space inspired by the collection and arranging of artifacts, the *Merzbau*, became an ideal basis for this model.

Inspired by the *Merzbau*, I developed my own artistic vehicle as a means of generating architectural form. From the first model I learned how the simple interaction with material can stir up any number of visceral evaluations. I chose to exploit this by collecting a variety of scrap materials beforehand including mesh, tree bark, plexi-glass, perforated boards, and a host of timber off-cuts of various shapes, textures, and colors. To accommodate my preference for working quickly, I chose to use screws and a drill to put the pieces together rather than glue. At the time, I felt glue would take too long to dry and it would inhibit the flowing expression of my ideas and feelings.



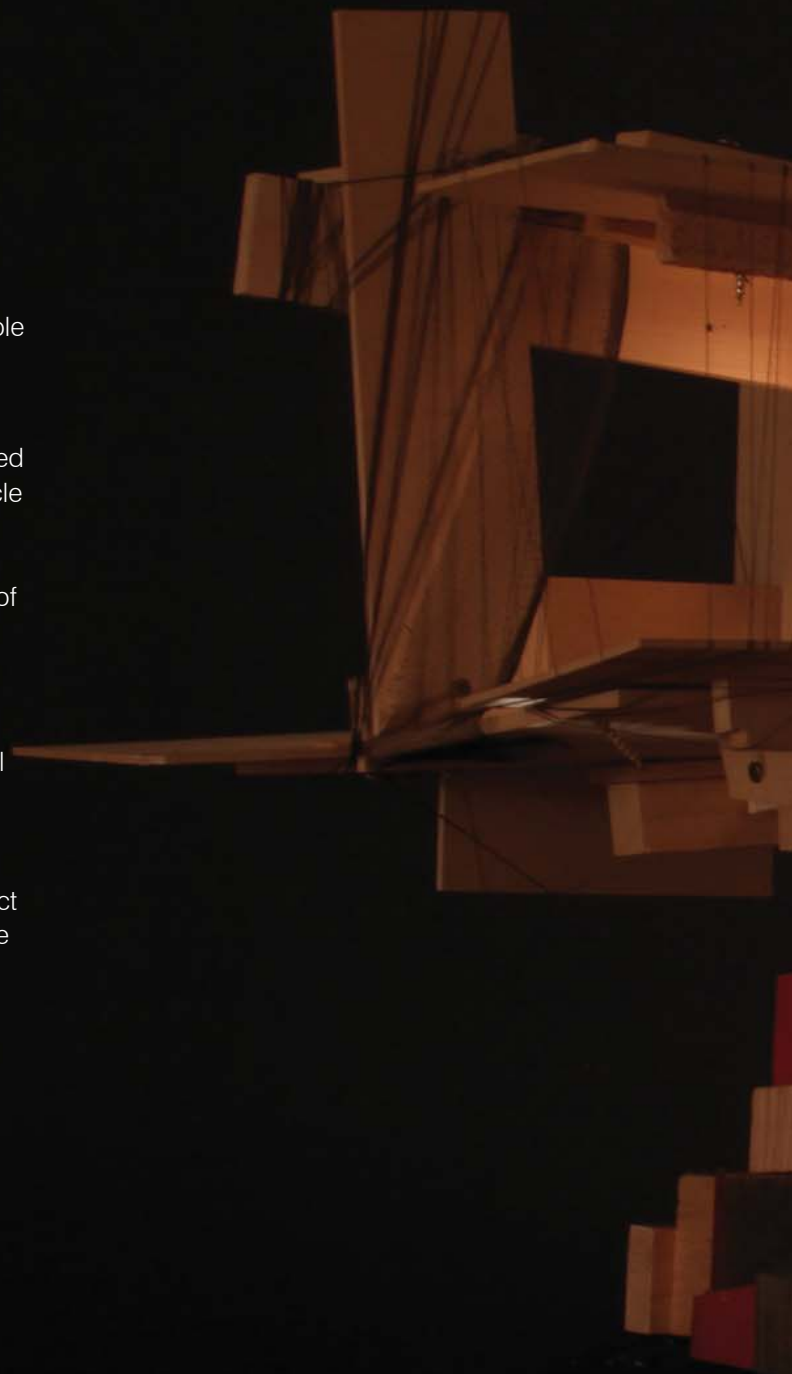


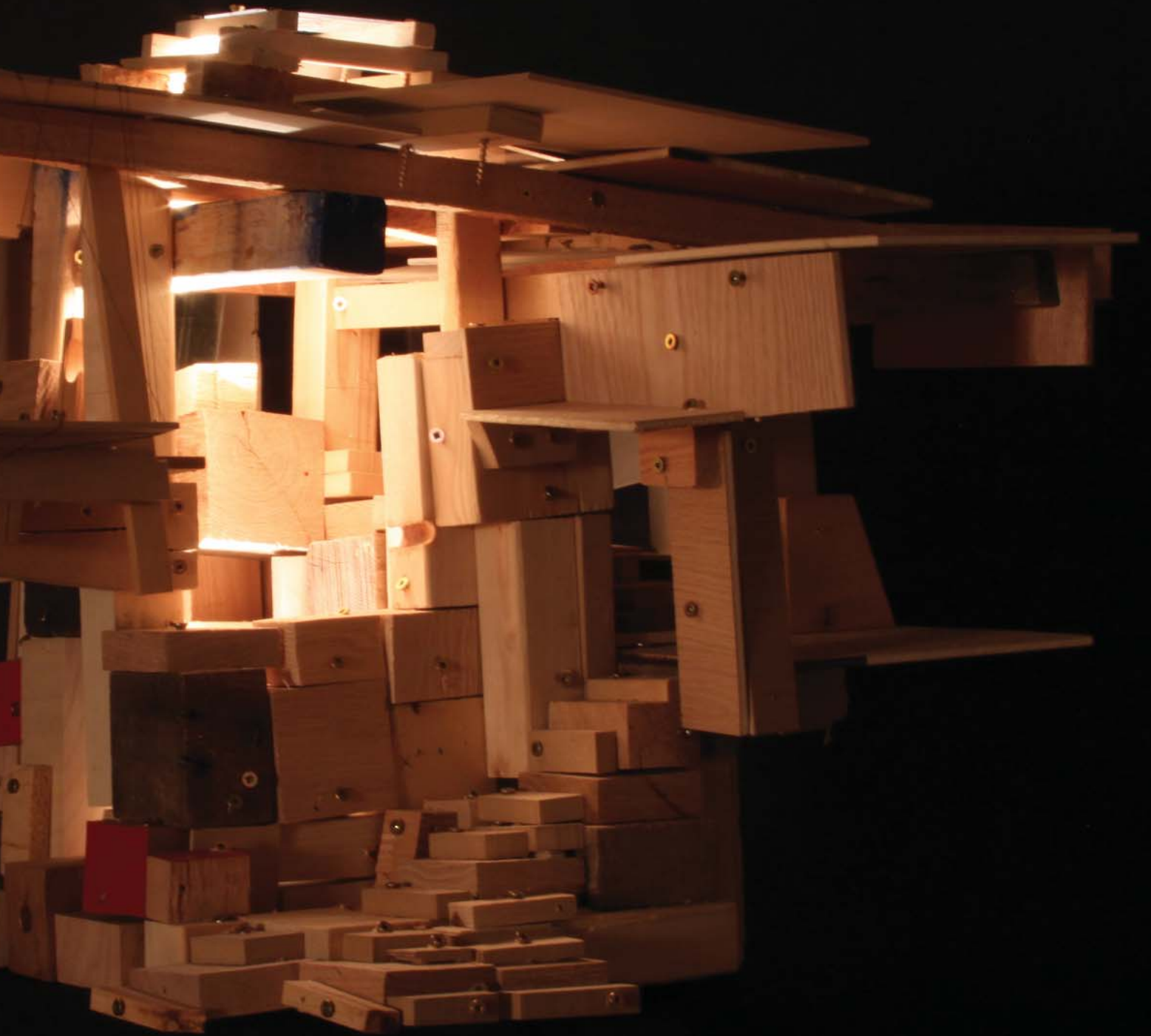
I then decided to challenge myself and see if I could create an architectural form consisting of an organized set of spaces similar to a house using a simple form of this approach to making.

Generally, the variety of materials triggered a number of ideas, inspirations, and feelings that enhanced my explorative making. Specifically, as the artistic vehicle accommodated my preference for working quickly and because of the variety of materials at my disposal, I feel this artistic vehicle allowed me to explore a wide range of options fairly quickly.

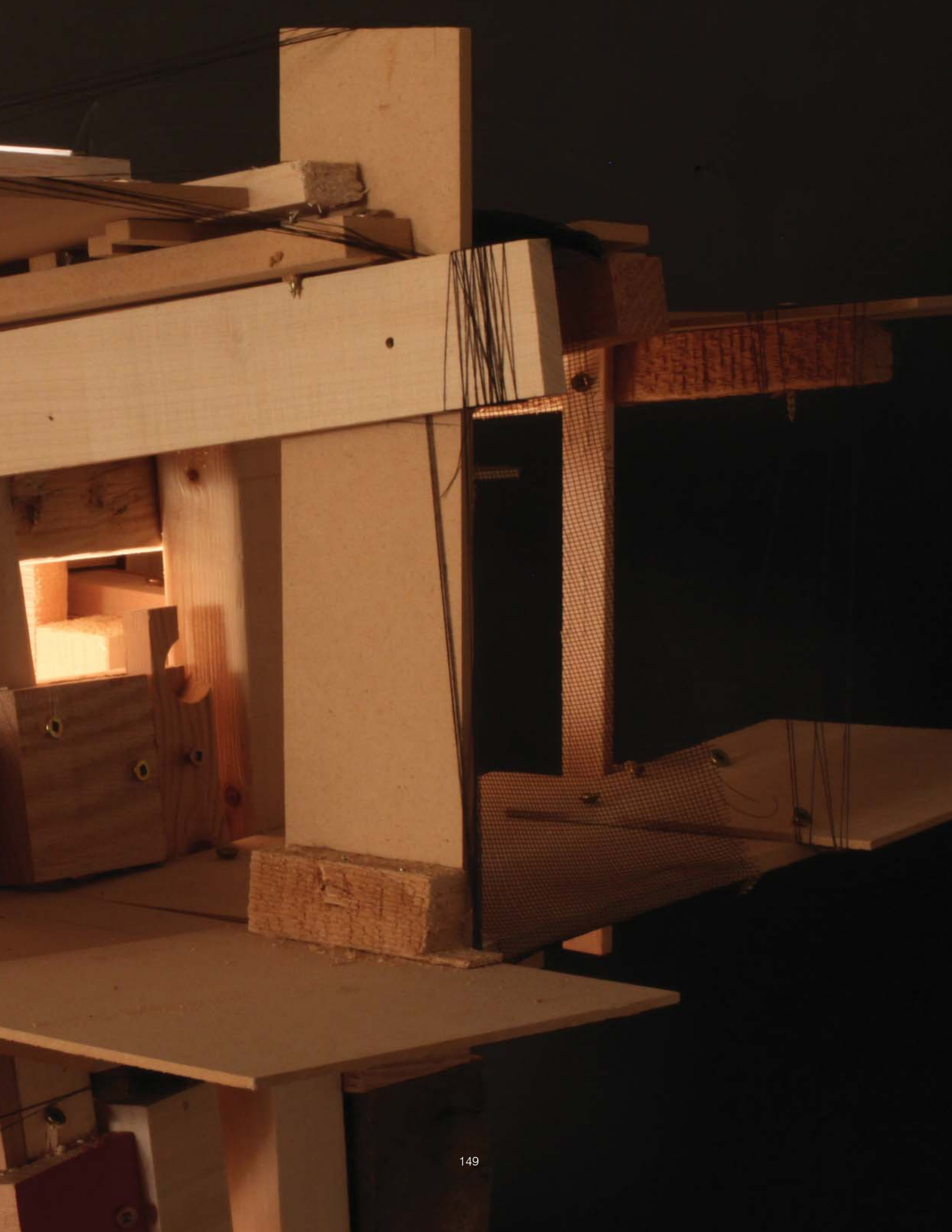
In retrospect, I feel I underestimated the visual impact the screws had on the model. Even though this sometimes worked to my advantage, there were several instances where the screw simply felt out of scale with different elements of the model such as the staircase, (Fig. 12, Pg. 152-153). Also, by not making any special considerations to accommodate the program this aspect of the project was not resolved as much as I would have liked.

- Fig. 10** Rooms and Balconies, Pg. 148-149
- Fig. 11** A lightwell, Pg. 150-151
- Fig. 12** A staircase, Pg. 152-153
- Fig. 13** A skylight, Pg. 154-155







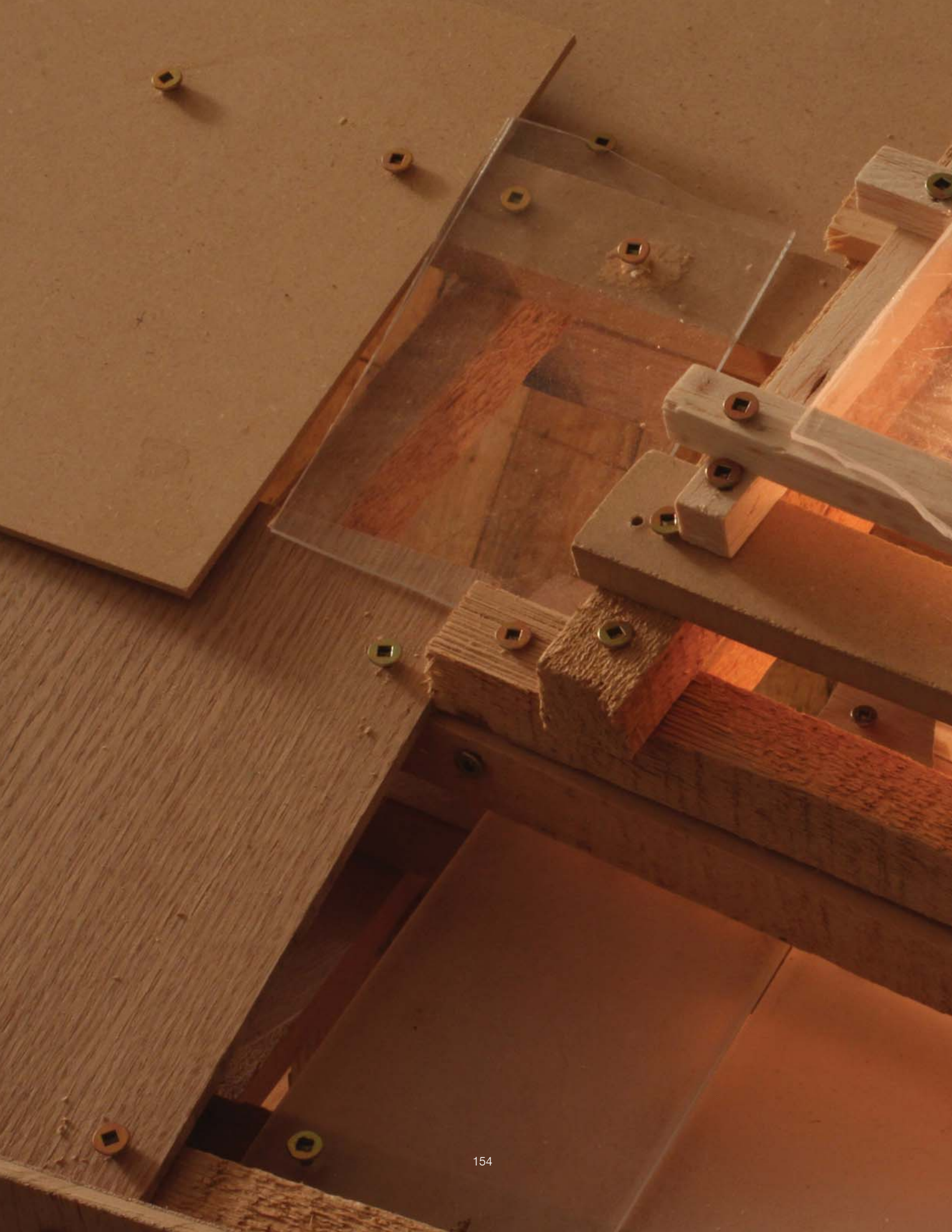


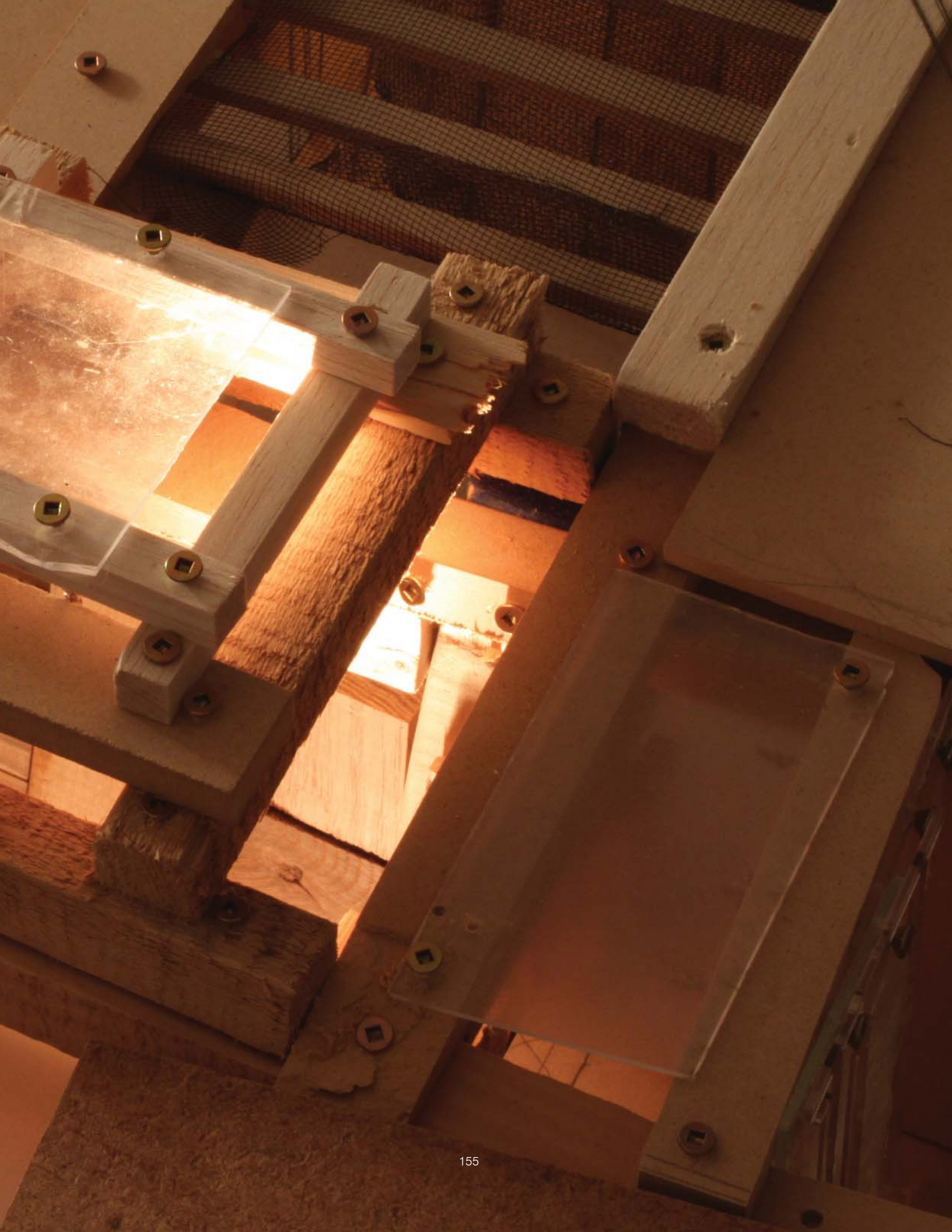














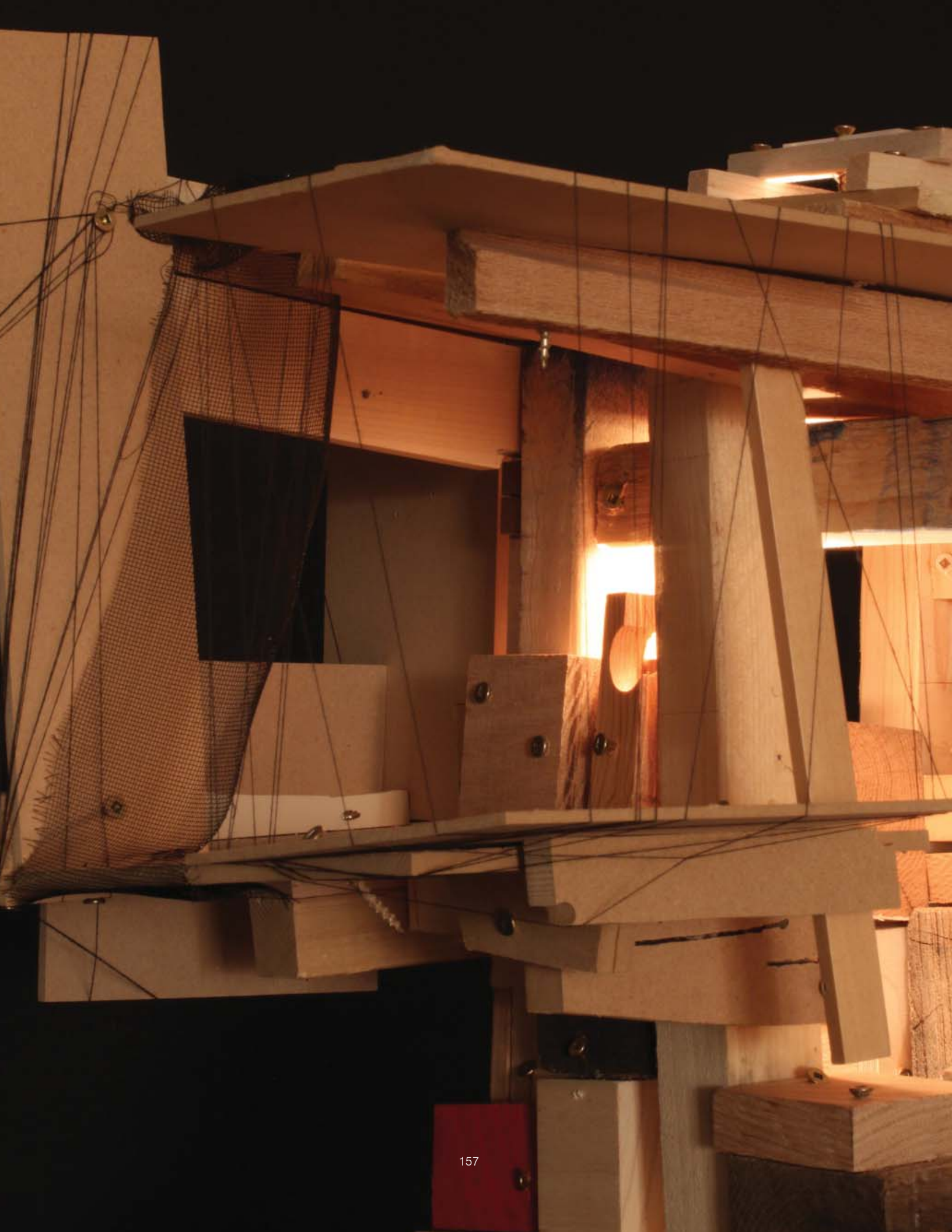
Throughout my iterative experimentation, the selection and arrangement of pieces was largely guided by my visceral evaluations.

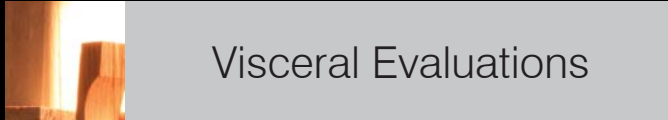
Before the actual construction of this project I went to local wood shops and collected piles of timber off-cuts of various shapes and sizes, along with other types of scrap material. The selection of these materials generally was based on how I felt about them. In short, if there was something about the shape, size, color or texture of a piece that tweaked my interest than I generally kept it. The only other considerations were I needed a variety of pieces that were suitable for the scale of model I was making.

After collecting all these scraps into a series of bins I set them up around where I was making my model. I dumped a bunch of pieces on the table and started picking them out of the bins and putting them together. Many times I would just hold a piece against the model to see what it felt like. If I got a positive feeling I would attach it, otherwise I would put it in another location, or throw it back into the bin. As I became more confident I started to introduce different materials including plexi-glass and string.

As I continued to put different pieces together the model generally progressed from the central, block-like trunk, to the lighter canopy above of spaces above. It was not until I put the final screws into the skylight did the project feel as if it was complete.

Fig. 14 (Opposite) A room





Similar to Project One, the iterative experimentation was guided by my visceral evaluations in the form of likes and dislikes, as well as my visual imagination.

Generally, the selecting, attaching and re-attaching of pieces was all done based on my non-verbal likes and dislikes. Every time I placed a different piece on the model I got a feeling that would tell me if it felt right or not. These feelings would then influence whether I attached the piece to the model, moved to it another location, or threw it back in the bin.

My visual imagination played a significant role in the development of a very general sense of program inherent in the model. I would not say to myself, "I am going to build a bedroom, or a bathroom." I would simply build a form and then begin to imagine program within it. One instance of this occurred when I putting together the block-like trunk of the model. Upon drilling the screws, I immediately thought of cupboards with little door handles. I then imagined personal artifacts such as books, pictures and other artifacts all over these shelves and within the cupboards as a sort of personal library or archive. I also imagined seats integrated into this mass of boxes. I became enthralled by this idea of a collection of artifacts literally being the central trunk of the home from which other parts of the home spiraled out from. This led to me imagining some of these cupboards being able to move, revealing a passage into a central chamber which could be a quiet reading room, office, or library.

Fig. 15 (Opposite) A staircase and doorway





Throughout my iterative experimentation I feel I exhibited a playful mental in my conscious effort to play with different materials as a means of developing the project. This not only applied to the selection of materials but also during the actual construction of the model. Specifically, after I had finished constructing the central trunk of the model, I stepped back and realized I had only been using the block-like pieces and intentionally started to play with the thinner and lighter pieces. Coincidentally, I liked the contrast between the lighter pieces at the top and the blockier pieces at the bottom. Even though I was not sure how it was all going to turn out, I pushed the idea anyway until the resulting tree-like form emerged.

Fig. 16 (Opposite) Cupboards, cabinets, shelves and seating





Project 3 Concluding Remarks

Through this simple form explorative making I established a basic spatial gesture while not defining a precise layout of rooms. This entailed circulation spaces and various rooms spiraling out from this central room. Inherent in this gestural model was its tree-like articulation composed of a heavier trunk and a lighter, sprawling canopy. If I were to continue developing this model I would strive to resolve the obvious planning issues and better define the building envelope through further iterations.

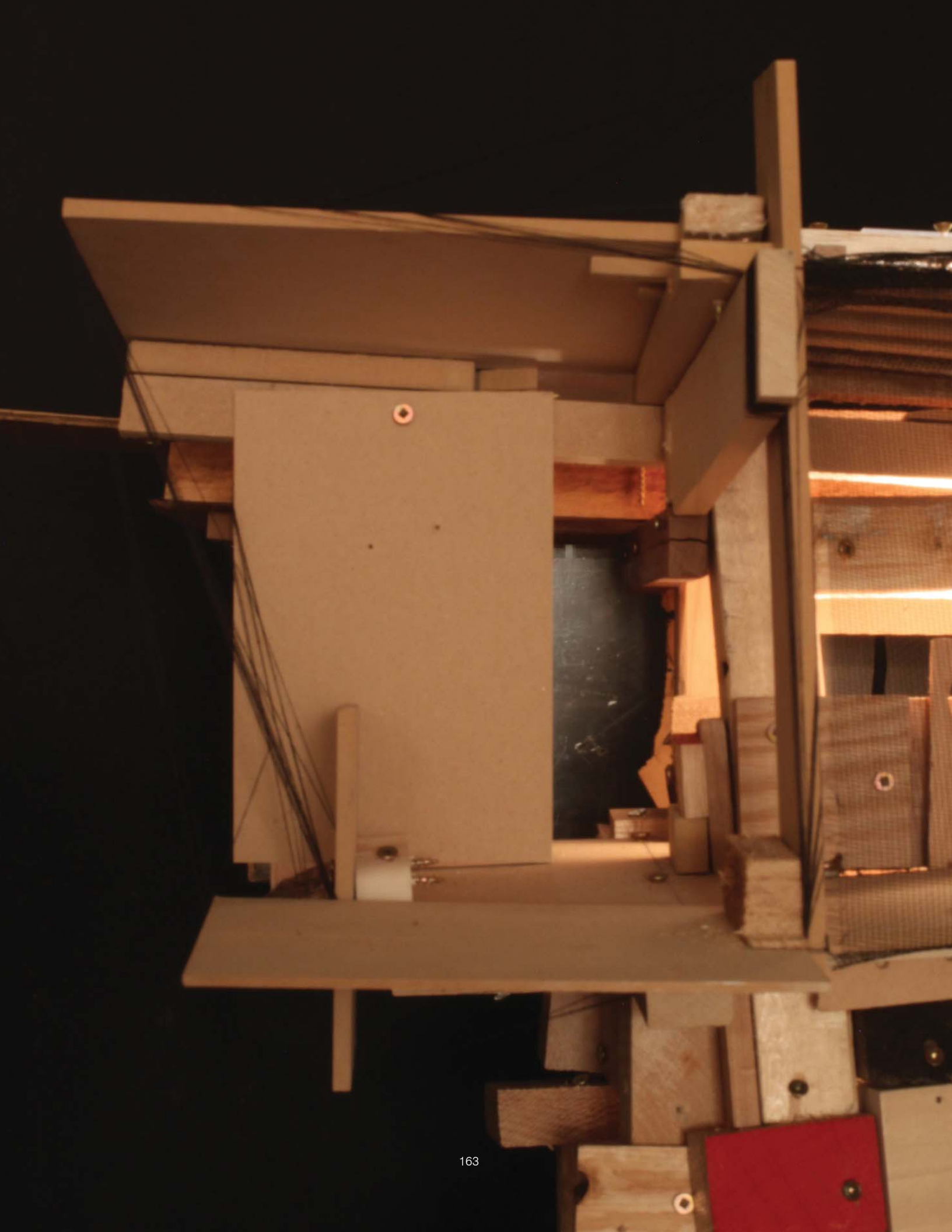
It is clear a reciprocal relationship existed between my iterative experimentation and visceral evaluations. In detail, the selection and placement of pieces would trigger a multitude of visceral evaluations in the form of likes, dislikes, and mental images that would influence the selection and placement of pieces on the model.


This relationship was nurtured by making a conscious effort to select and experiment with a variety of scrap materials. At the same time, this rich experimentation was also made possible through the development of an artistic vehicle that incorporated a variety of materials, and allowed to work quickly and comfortably. In fact, the simple interaction with the form, color and texture of these scrap materials triggered a number of visceral evaluations that greatly influenced my work.

NOTES:

1. John Elderfield, *Kurt Schwitters*, (London: Thames and Hudson: 1985), 50
2. Dorothea Dietrich, *The Collages of Kurt Schwitters*, (New York: Cambridge University Press:1993), 187
3. *Ibid.*, 188

Fig. 17 (Opposite) A room





Project 4 Introduction

Similar to the Project Three, I wanted to investigate explorative making and how it can be adapted for the purpose of creating architectural forms consisting of multiple rooms. However, in this project I wanted to challenge myself and see if I could move beyond a basic spatial gesture and create a more defined layout of rooms.

As a result of my experiences during the previous project, I devised a notional program beforehand and researched some precedent images to give me a rough idea of how I wanted to articulate the different spaces. However, the actual arrangement of these spaces was left to be resolved during the course of explorative making.

As I was happy with how the variety of scrap materials influenced explorative making during Project Three I decided to adopt this method again for this project.

By unraveling my experiences in respect to the four primary characteristics, I can ascertain the role each of these characteristics played throughout the development of the project and how they intertwined with each other.

Fig. 1 (Opposite) View of fire place, chimney and living area





Artistic Vehicle

In most respects, the artistic vehicle for this model was very much the same as with Project Three except for a few key modifications.

The first modification involved making the model large enough so that I could integrate furniture and more detail into the model. At the time I felt this would allow me to more easily investigate how the different spaces would be inhabited.

For this model I also purchased a finishing nail gun to put the different pieces together. This nail gun was quicker than the drill and screw method, but more importantly it also did not have the same awkward visual impact on the model as the screws. This was especially important in the fixing together of small pieces where the screws would be too large and look out of scale.

The final modification involved a research phase before the project began. This research involved developing a more detailed program including a bedroom, bathroom, living area with fire place, small kitchen dining area, utility cupboard, and some sort of small office or studio space. I also looked at a number of precedent images and referred to my own experiences as a way of developing a general notion as to how I wanted these rooms to be articulated. Specifically, I decided to reuse the fire place from my family home, but this time I decided to shift the focus from the gathering of wood to its 15ft chimney. Visually, this tall chimney had a commanding presence within my home. I wanted to recreate that same commanding presence around the fireplace in this model, and make it a strong central feature within this scheme.

Fig. 2 (Opposite) An unfinished room

Fig. 3 - 6 (Pg. 168 - 171) Additional views of entire model

Fig. 7 (Pg. 172 - 173) Room with fire place


















Iterative Experimentation

Except for the modifications to my artistic vehicle, the iterative experimentation was very much the same as it was in Project Three. Throughout the construction of this model, the selecting, playing with, and placement of pieces triggered numerous visceral evaluations that, in turn, played a significant role in the continued placement of different materials.

Generally, the construction progressed from the central living room and fire place to the rough beginnings of a room in behind. The scale of the model allowed me to put more detail into the project. As a result, I spent more time developing detailed elements such as furniture and surface finishes. This is evident in the tall central living area (Fig. 1,3,4,7, Pgs. 170, 180-181, 184-185) with its mosaic floor finish, the fireplace (Fig. 1,3,4,7 - 8, Pgs. 170, 180-181, 184-185, 187), and the circular timber log (Fig.7, Pg. 185) that defines the space. While I appreciated the opportunity to investigate in detail how the different spaces were inhabited, the size of the model meant that constructing any of the rooms became a time consuming endeavor. This was especially frustrating when I was not sure as to what arrangement of rooms I wanted and needed to try a number of different options quickly for the sake of comparison. Ultimately, this inability to quickly try different options caused me so much frustration that I eventually quit making the model.

Fig. 8 (Opposite) Fire place





Visceral Evaluations

Similar to other models, my iterative experimentation was guided by visceral evaluations that manifested themselves in the form of mental images and likes and dislikes. The mental images often resulted from me imagining new forms based on the characteristics of the scrap materials I was playing with at the time. Moreover, all these visceral evaluations were often informed and bounded by the research I did beforehand.

During the construction of the living area and fire place; every time I picked up a long, skinny piece it reminded me of the tall chimney from the fire place within my family home. Drawn to these types of pieces I started collecting them and putting them behind the fireplace. I found I liked what they were doing visually and decided to push the idea further until a dramatic backdrop had been created. During the evolution of this part of the model I never said to myself, "I like this, so how about I try this." These decisions were like little surges of electricity that guided and informed my iterative experimentation.

Fig. 9 (Opposite) View above unfinished room






Throughout the development of this project I exhibited the same sort of playful mentality as I did in the other projects. In detail, I made a conscious effort to play with the variety of pieces that were available to me, including a rough sawn timber chunk with a circle cut of the middle. Although I knew right away I liked this piece, at first glance I had no idea what to do with it. In this instance, this playful mentality involved not focusing on what the piece was, a dumb piece of wood with a circle out of it (Fig. 7, Pg. 185) but trying to imagine what this piece could be. Asking these types of questions often facilitated explorative making by encouraging me to look at various elements of my model in a different light. Through a combination of iterative experimentation and visceral evaluations I eventually likened this piece to an outline of a room and used it to accentuate the fire place and its dramatic backdrop.

Fig. 10 (Opposite) Unfinished room





Project 4 Concluding Remarks

Similar to Project Three, the model ended up being a basic spatial gesture more than a precise layout. I found the scale at which I worked at to be rather limiting. Specifically, due to the size of the model it took quite a bit of effort to build any sort of idea; thus, I was not able to quickly sketch several ideas and compare them. Eventually, my frustration grew until I just quit making the model. Due to these experiences, I was inspired to expand the methods of my future artistic vehicles so that I could perform a greater variety of investigations throughout the duration of a project.

One of the positive aspects of working on this piece was the interaction with the variety of scrap materials available to me. Similar to Project Three, I found these scrap materials to be a rich source of inspirations and ideas that had a significant influence on my explorative making. Also, despite the aforementioned frustrations, working at a scale where I could play with both the furniture and surrounding architecture in unison yielded the benefit of allowing me to create a harmonious relationship between the two. Finally, I found the research I did beforehand, especially the memory of the fire place in childhood home, was successful at informing my work without necessarily constricting it. Within these conceptual boundaries I still had significant room to play and create different forms.

Fig. 11 (Opposite) View into unfinished room



Similar to the other models, a self propagating cycle was established between my iterative experimentation and visceral evaluations. This involved the selection, placement, attaching and re-attaching of pieces triggering a multitude of mental images and other non-verbal feelings that, in turn, informed further experimentation.

Obviously, there were aspects of my artistic vehicle that were not in synch with my preferences and needs. At the same time, the research, interaction with scrap material, and working on the furniture and architecture at the same time did facilitate this approach to making in a positive way by triggering a number of ideas and inspirations that propelled the development of the project. In addition, my playful mentality led to open ended investigations that encouraged me to view various parts of my model from a different perspective.

Fig. 12 (Opposite) View into unfinished room





Project five was my third endeavor to create an architectural form with a relatively defined layout of rooms using only a simple form of explorative making

Thus far, the different materials I had been working with had exuded a positive influence on my work. In turn, I wanted to further expand my materials palette, and introduce new ways of making, regardless of whether or not it related to the collection and arrangement of personal artifacts. This led to the introduction of modeling clay, along with the re-introduction of rigid foam. Both of these materials allowed me to introduce carving and sculpting into my explorative making.

Before the actual construction of the model, I had a clear program similar to a typical one bedroom cottage in mind along with a general parti that loosely dictated the arrangement of different rooms. However, the detailed arrangement of rooms was to be resolved during the course of explorative making.

During Project Four, I encountered certain limitations while working primarily at a larger, more detailed scale. Despite these limitations, I was inspired by the opportunity to integrate furniture into tectonic elements. It was my hope that by already establishing a basic spatial gesture in mind from the beginning, I would not encounter the same limitations as I did in the previous project.

By reflecting on my experiences through the lens of the primary characteristics I can gain insight into how they influenced each other throughout the evolution of the project.

Fig. 1 (Opposite) Plan view of model





Compared to the previous model, the research phase for this project was partially replaced with a series of sketches meant to trigger a general idea of what I wanted the building to feel like as well as loosely define the arrangement of the different rooms. In addition, a general program for a two-level home consisting of a small kitchenette, dining area, living area, bathroom, some sort of utility cupboard, bedroom, and possibly a small office or studio area was defined beforehand.

The next phase of the project involved the actual construction of the model. This involved carving the site out of a large piece of rigid foam using a box cutter and an electric turkey carver. This was followed by using modeling clay to sculpt the different forms that made up the house. The carving and sculpting were both methods of creating form that called for a lot of interaction with the material, which I fully appreciated as a direct method of working. Moreover, carving and sculpting introduced a whole new level of flexibility compared to my previous artistic vehicle where I could literally create any shape I wanted.

Within my artistic vehicle I made no provision to address different design issues in any particular order. As a result, it meant that I was free to go back and forth between furniture and architecture in an attempt to unify the two.

Fig. 2 (Opposite) Detailed plan view of model

Fig. 3 - 4 (Pg 188 - 191) Living area

Fig. 5 (Pg 192 - 193) Plan of fire place and chair

















Iterative Experimentation

As per my artistic vehicle, I started with the original intention of creating a small home. I established a program and simply started doodling with no other idea as to what I wanted to create. As one sketch flowed into the other guided by my intuition and feelings, ideas began to emerge until I had a rough idea in my mind of a suitable parti for this model. It was during this doodling phase that I decided to introduce some sort of site and topography into the project.

The next phase of the project involved carving the site. Using the electric turkey carver I turned the large block of rigid foam into something resembling a landscape and started to carve the building footprint into this landscape, (Fig. 7). As I had no real drawing of this lower level, all this carving was done based on the rough notion in my mind I had developed from my sketching.

Afterwards, I began using the modeling clay to sculpt the lower level of the home. As I sculpted different pieces of furniture I found I liked how the smooth, rounded forms I was making contrasted the rugged texture left behind in the foam from all the carving. I accentuated this contrast until the furniture started to feel like large bones. This was an unintentional, but welcome surprise and I soon started to emphasize this quality within all the furniture in the living area.

Relying only on an iterative experimentation influenced by a variety of feelings I spent nearly a day refining these different pieces of bone furniture without paying attention to other design issues. Afterwards, I soon realized the inefficiency in this because all this work could easily be thrown away depending on the other, more general, design decisions I had not yet considered. In retrospect, I wish I had worked more loosely with the modeling clay, moving back and forth between the furniture and the general layout of the spaces.

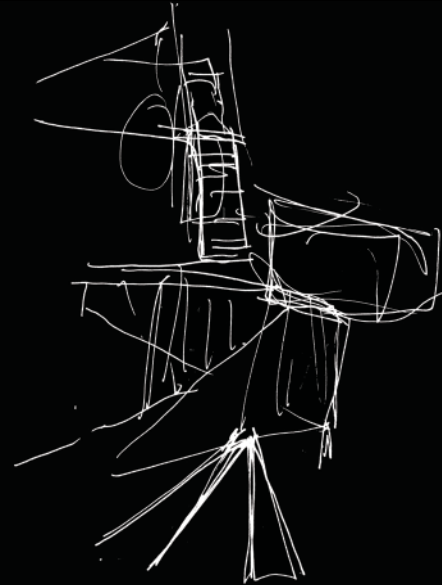


Fig. 6 Preliminary Sketch

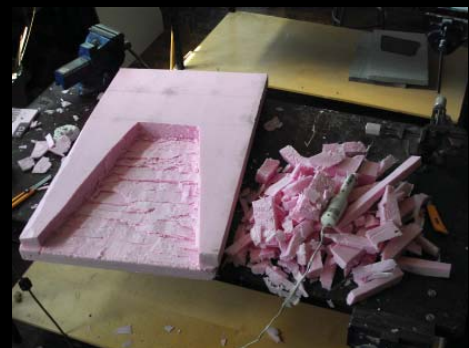


Fig. 7 Carving the topography



Fig. 8 Sculpting the living area

Fig. 9 (Opposite) Chair and fire place





Visceral Evaluations

Throughout this project my visceral evaluations played a significant role by guiding my iterative experimentation. In addition, they were also informed by my interaction with material. Similar to before, my visceral evaluations manifested themselves as non-discursive likes, dislikes and mental images. For instance, I simply liked the rugged texture that resulted from my carving the building footprint into the topographical model. Afterwards, I also liked how the sculptural furniture contrasted the ruggedly cut foam. In both situations, there was no intellectualized reason behind my affection towards these elements, I just liked them; in addition, this feeling was reason enough for me to develop these elements in more detail.

Despite the largely positive influence my visceral evaluations had in the development of this project, they did not prevent me from blindly refining one tiny aspect of the project when it would have been more useful to work on several different elements of the model at once. This experience taught me that although my visceral evaluations were a powerful resource, they still need to be educated through experience, and guided by various methods and other aspects of the artistic vehicle.

Fig. 10 (Opposite) Chair and fire place

Fig. 11 (Pg. 198-199) Chair

Fig. 12 (Pg. 200-201) Seating integrated into staircase













The conception of this project was born out of a playful mentality. In an effort to expand upon my explorative making, I deliberately introduced new materials and methods of creating space that contrasted those used to make earlier models. Specifically, I replaced the simple placement of pieces with the sculpting of modeling clay and carving of foam just to see how these new materials and methods could influence the evolution of my work.

As discussed earlier, I also allowed my explorative making to take on a life of its own by trusting my visceral evaluations to guide the development of the furniture.

Fig. 13 (Opposite) Seating integrated into staircase





Project 5 Concluding Remarks

After sculpting the furniture for the living room for about a day and a half I quit working on the model. While I was happy just sculpting away I found other more general issues pertaining to layout were neglected. Through this model, I became aware of the inefficiencies involved with working serially from space to space, and how this left me vulnerable to extensive revisions which could likely be avoided to some degree. If I were to do this project again I would have approached my sculpting differently and work very loosely at first going back and forth between the furniture and tectonic elements refining both of them in tandem.

I fully appreciated working with the modeling clay and foam. The acts of carving and sculpting introduced a range of new possibilities not previously available to me during the making of the other models.

Based on my reflections it is clear a reciprocal relationship existed between my iterative experimentation and visceral evaluations. Throughout the development of the model, and especially the different pieces of furniture, my experimentation triggered feelings and mental images that, in turn, influenced my ongoing experimentation.

This relationship between my visceral evaluations and iterative experimentation was facilitated by a playful mentality and artistic vehicle that led to the selection of different materials and methods that played a crucial role in the development of the project. However, my experimentation could have been facilitated further if I had developed the layout, tectonic elements, and furniture, in tandem.

Fig. 14 (Opposite) Detail of seating integrated into staircase



2.3

Concluding Remarks

My experiences with these projects taught me several valuable lessons about incorporating functional requirements within my explorative making. First and foremost, I learned the importance of considering the order in which to tackle different design issues and how this is closely related to the scale you choose to work at. Specifically, working with large models at the very beginning of a project allowed me to consider both the furniture and architecture at the same time. However, this also contributed to me needlessly wasting time sculpting details that were likely going to completely change as a result of other larger scale design decisions. In short, while there is much opportunity in working out the furniture and architecture at the same time, one must also pay close attention to develop both these aspects in parallel. Finally, in all of the models the simple interaction with material was valuable in triggering numerous ideas and inspirations which propelled the evolution of my work.

Similar to Gallery 2.2, my experiences with the models helped to reveal how the primary characteristics interact with each other during explorative making. In detail, both the artistic vehicle and playful mentality helped to facilitate a reciprocal relationship between the iterative experimentation and visceral evaluations.

2.4

Towards an Evolved Form of Explorative Making

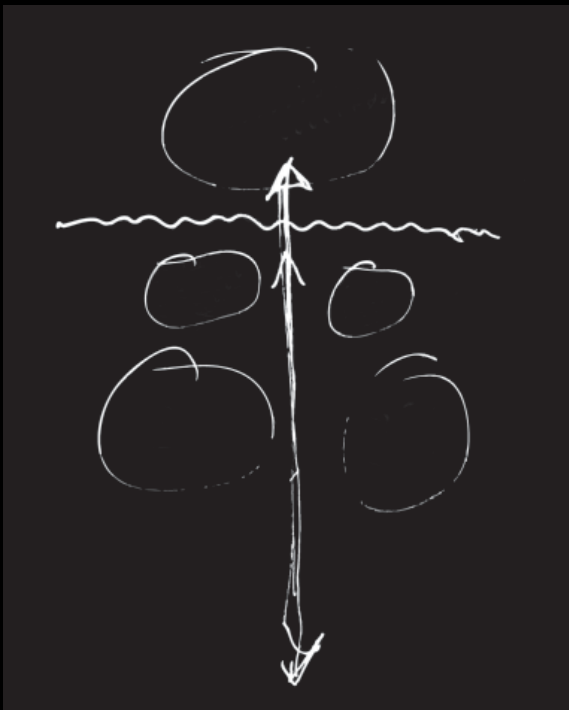
The projects within this gallery serve as a transition between the models in Gallery 2.3, and the completed buildings in Gallery 2.5. In turn, they only address some of the requirements inherent in finished buildings to varying degrees and can be viewed as stepping stones to the more evolved forms of explorative making found in Gallery 2.5.

Project 6 successfully integrates a very basic parti made up of a series of undefined rooms that open up onto a central circulation space. Project 7 does the same thing while also including the notion of structure and skin in several aspects of the model. Project 8 is a proposal for a general layout of a mixed use scheme that meets building code regulations in regards to access and egress. It responds sympathetically to an actual site and incorporates structure and mechanical services on a very notional level.

**Fig. 1** Parti Sketch**Fig. 2** (Opposite) Developmental Sketch

One of the motivations going into this project was to incorporate some level of spatial organization in the form of several spaces feeding off of a central circulation corridor. This parti would then be the basis for sketches that would serve as an inspiration for the model. In my research, I had learned how Henry Moore used to sometimes start a project with aimless sketching until something in the sketches inspired him. I opted to try something similar by aimlessly sketching while only being informed by this pre-established organizational gesture.

By employing the primary characteristics as a means in which to review this project, I can understand the roles each of them played as well as how they interacted with each other.



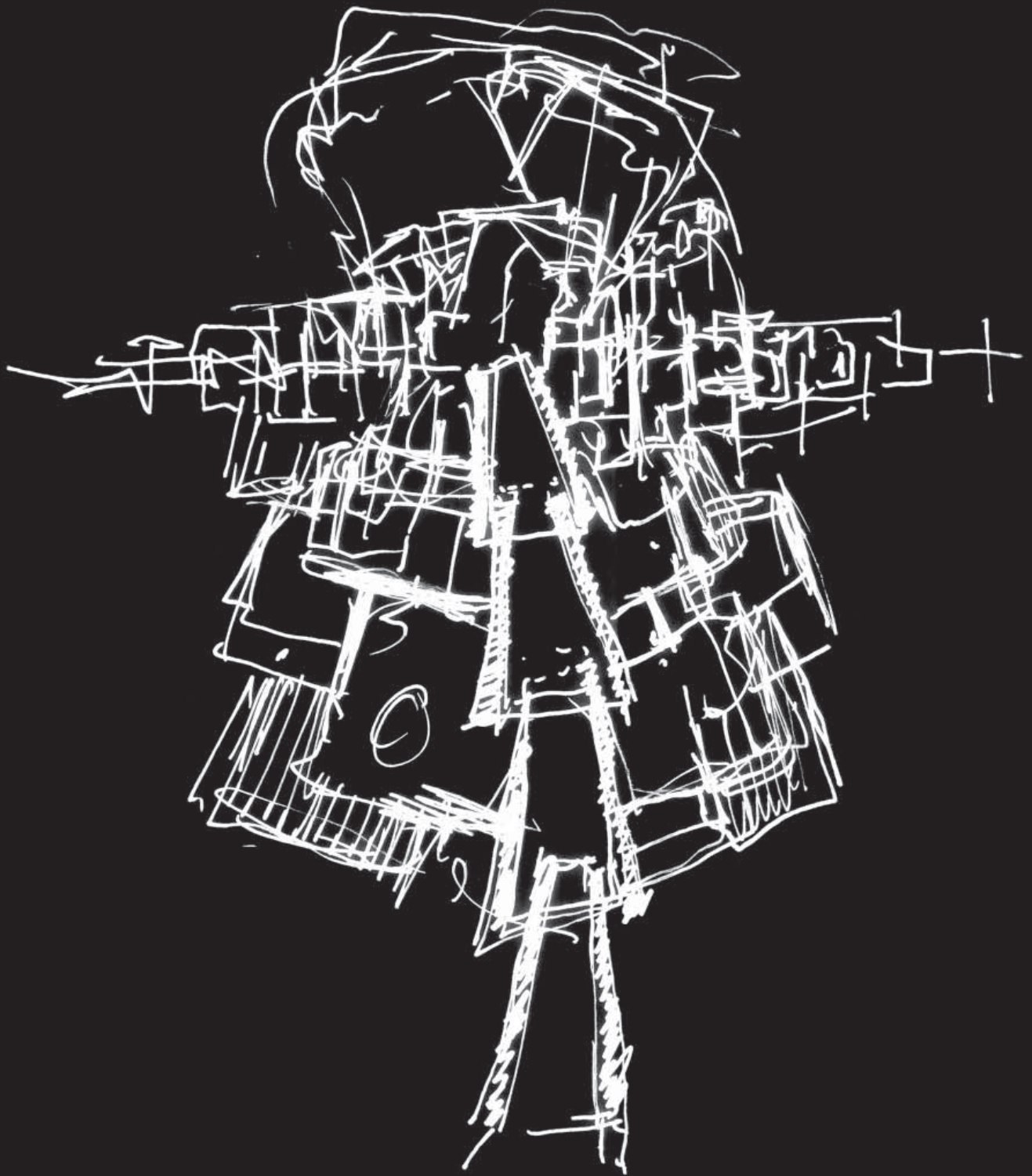




Fig. 3 (Opposite) Central armature of model

The method for this artistic vehicle involved first determining a basic organizational gesture involving several rooms opening up onto a central corridor. This was followed by some aimless sketching informed only by this parti. Similar to Henry Moore, I continued this sketching until I stumbled across something that inspired me enough to build a massing model. By working at a less detailed scale, it was my hope to isolate the more general issues of the project instead of trying to address every issue at once as I had attempted to do in earlier projects. The materials for this massing model included a combination of rigid foam, millboard, and small timber blocks. These materials were held together with modeling clay, pins, and in some instances, tape. Similar to previous projects, this combination of materials allowed me to work quickly and comfortably.





Iterative Experimentation

The parti was drawn up in the form of a simple diagram, (Fig. 1, Pg. 222). As I began sketching, my first attempts were very literal and not inspiring in any way. In the third sketch, which was drawn in a looser, more gestural manner, I found the inspiration for the model, (Fig. 2, Pg. 223). The model began with carving the central corridor out of rigid foam, (Fig. 3, Pg. 224). Although this armature was inspired the sketches it was by no means measured from them. As a result, certain changes were made as I carved this armature out of rigid foam, which I then started to clad with shards of millboard. These shards of millboard were cut up generally at random, but within a particular range of sizes. Cladding the armature involved picking a piece from the pile of millboard and holding it up against the model. If it felt right then I would stick it on the model with a pin, otherwise I would try the piece in another location or throw it back into the pile and use another one. In this way the cladding progressed and soon covered the armature like a series of scales. As the model developed I started incorporating little blocks of timber on either side of the armature as a means to represent some of the spaces that would feed off this central circulation space.

Fig. 4 (Opposite) Overhead view of model

Fig. 5 (Pg. 216-217) Overhead view of model









Visceral Evaluations

The parti itself, as an analytical diagram, was partially driven by my own intuition, but also involved a very simple, more rational line of inquiry. Afterwards, the project guided purely by my intuition and feelings.

There was one point in particular where my visceral evaluations had a significant impact on the development of the project. It occurred immediately after I finished the third sketch. In particular, I was drawn in by the interlocking shapes running along the centre like the spine of an animal, and the lines either side of it flowed out of its centre like wings and the large space at the end of the corridor to be its head. For me, this whole sketch took on an organic quality like it was an insect or a beast of some kind. This feeling resonated with me to such a degree that it had a ripple effect throughout the project and even influenced the shape and nature of the cladding. Even students walking by my desk would comment on how it reminded them of either a fish, dragon, dinosaur, or some sort of bird.

Fig. 6 (Opposite) Front view of model



Fig. 7 (Pg. 220-221) Side view of model

Fig. 8 (Pg. 222-223) Detail view of model













Playful Mentality

For the most part, my playful mentality involved simply trusting my feelings and letting the work flow out of me without thinking about it too much. I also remember how relaxed I felt as I worked. It was similar to the feeling I get when I am exercising in the gym by myself. As I was placing different pieces on the model and taking others off the whole process took on sort of soothing rhythm where the rest of my day to day life just seemed to melt away. It was an odd feeling, as I felt absolutely focused on the work without actually thinking about the work as I was doing it.

Fig. 9 Rear side view of model

Fig. 10 (Pg. 226-227) Rear view of model











Fig. 11 (Opposite) Overhead view of model

In many respects this project was probably easiest of all my models. It was even easier than the first project because during this one I had more of a sense of what I was doing. I was extremely pleased with the unpredictability of the sketching phase as I feel its aimlessness opened me up to a wealth of opportunity. Not surprisingly, working in less detail on a simple massing model made the whole process a lot easier. However, it felt like I was simply making an object and not a series of spaces; subsequently, I regret not having the opportunity to work on the inside and outside of the form at the same time. If I were to continue this project further I would do a larger model or enter into another sketching phase in order to develop this project in more detail.

What is also significant about this model is it is the first time I included a more rational style of thinking in my explorative making, albeit very briefly. This was the first time I became aware explorative making can interspersed with more rational lines of inquiry.

The manner in which the sketches triggered visceral evaluations that later influenced the development of the model reveals a reciprocal relationship between my visceral evaluations and iterative experimentation. Furthermore this reciprocal relationship was facilitated by a playful mentality that involved putting my distractions to one side, trusting my feelings, and simply letting the work express itself naturally. Similar to my earlier models, the artistic vehicle and its inherent materials and techniques never inhibited the expression of my intuitions and ideas because it allowed me to easily make changes and work relatively quickly.



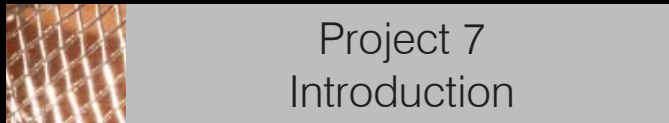


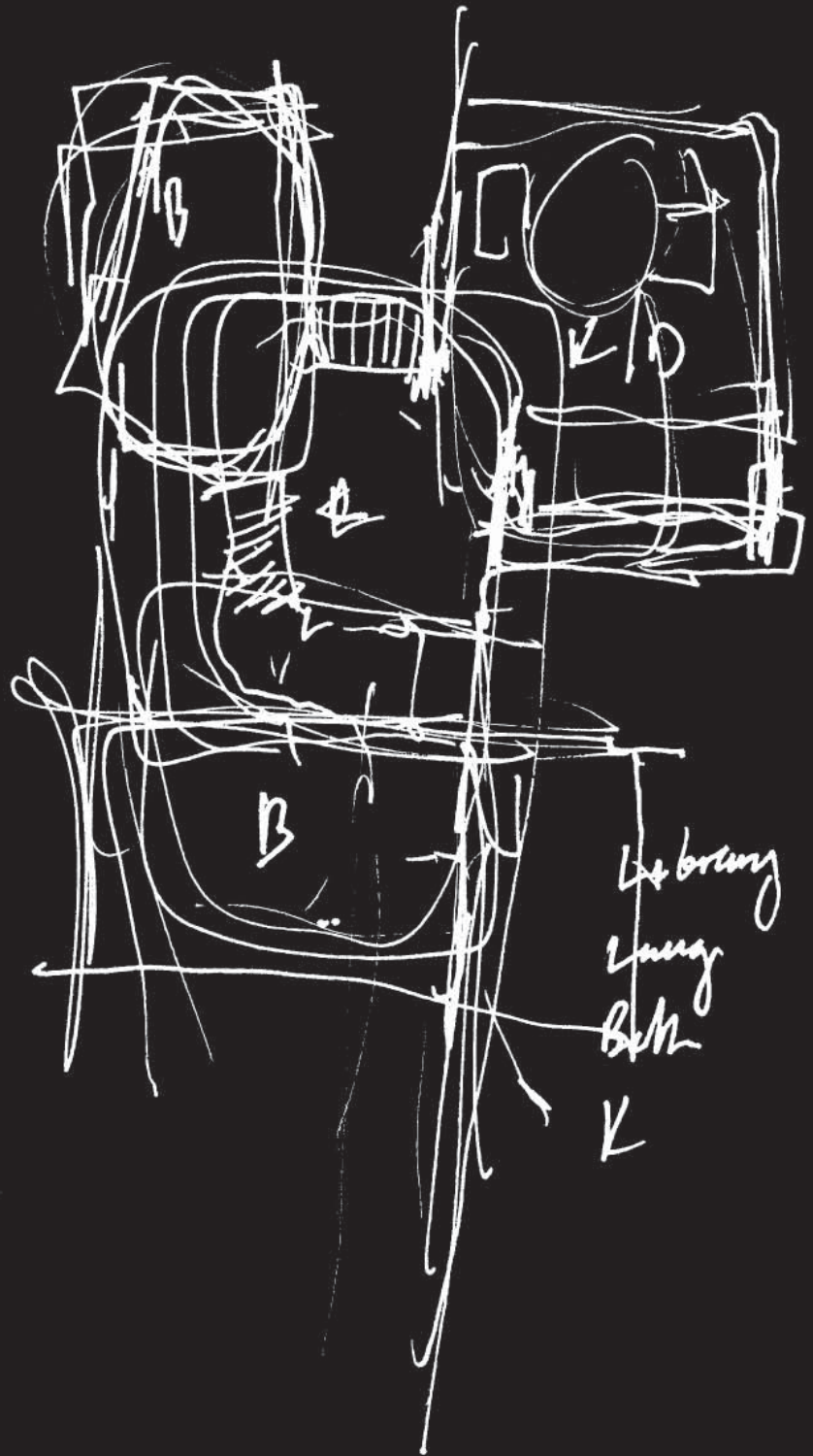
Fig. 1 - 3 (Pg. 231-233) Developmental parti sketches of project

Although I was happy with the results of Project Six, I found I missed the opportunity to work with both the interior and exterior at the same time. Project Six felt like I making an object, as opposed to sculpting and creating spaces. As a result, I decided to move back up to a larger scale. However, I did not want to have the same experience as in Project Five where I got so caught up in the articulation of furniture that I lost sight of the overarching spatial organization; thus, I was committed to developing the general layout of the spaces in parallel with the articulation of the actual rooms.

Similar to Project Six, the general intentions of the model were really to create a form consisting of several undefined dwelling spaces that open up onto a circulation space of some kind. As the dwelling spaces were undefined I did not include any furniture.

As I looked back on my earlier projects for inspiration, I found I wanted to expand upon the heterotopic character of Projects Three and Four. In these projects, scrap pieces of timber were used as building blocks to create tectonic elements such as openings and walls. I wanted to explore if a building block could be an entire room. These rooms would almost be like separate little projects within a larger project that would be collection of rooms brought together.

Using the primary elements of explorative making as a lens, I can reflect on how the aforementioned intentions unfolded in the making of these models.



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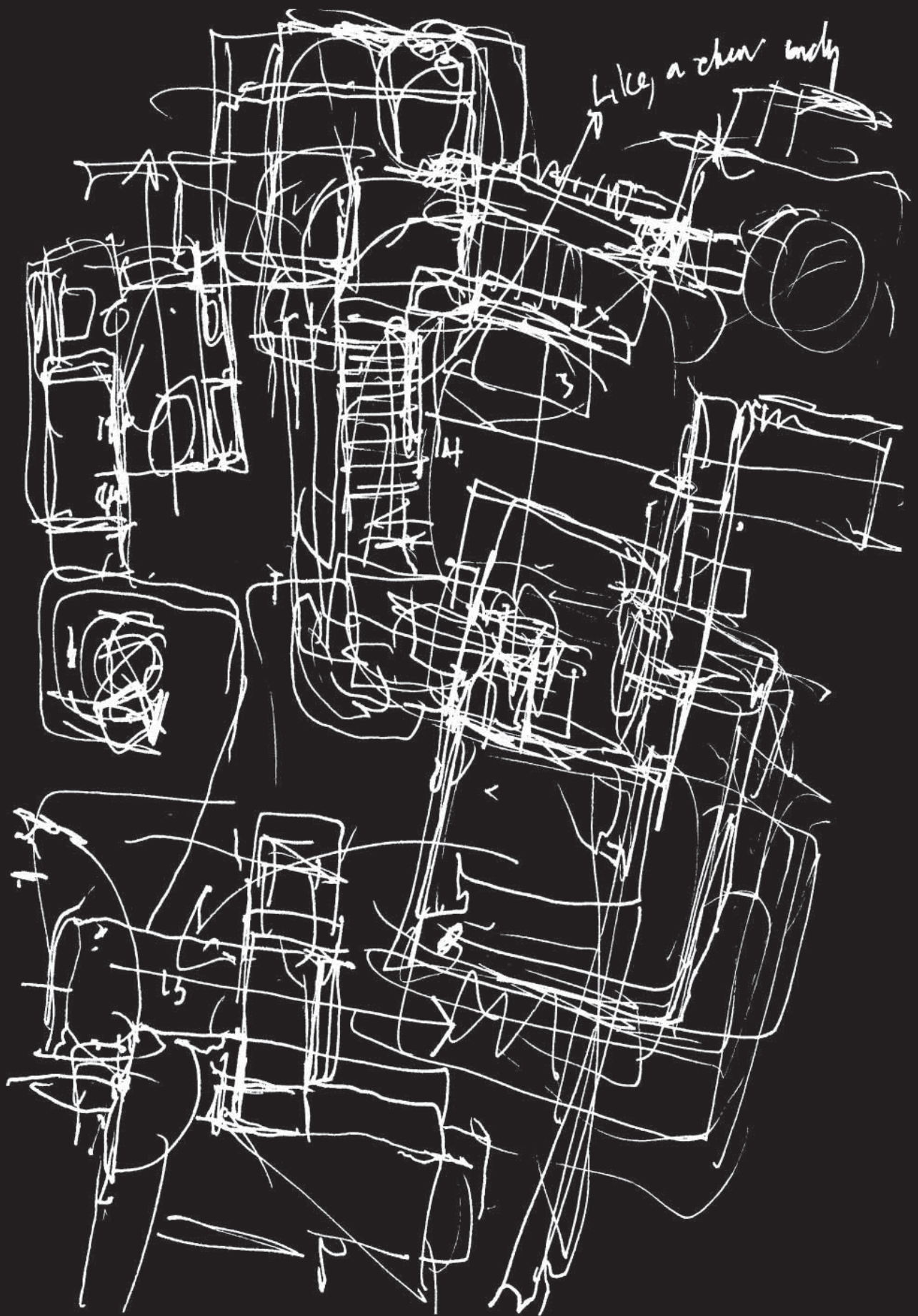




Fig. 4 - 6 (Opposite) Early iterations of model

In certain respects the artistic vehicle evolved in response to the needs of the project. When I began the model I worked solely in wood because I was drawn to its variety of textures and colors. Although, working in wood is much more physically demanding than other materials, I still enjoy using it because of the effects you can achieve through sanding. In particular, one can leave some edges smooth while others can be rough. Throughout this project I introduced sanding when I felt more craftsmanship was needed in order to more fully express what I wanted to in the model. However, as the project progressed I found I could only express so much with the wood. In some circumstances, wood felt too heavy for what I wanted to express in the model so I started introducing lighter feeling materials such as mesh, water color paper, sanded plexi glass, and different types of millboard.

The method for this project involved a few really rough pen sketches that loosely depicted a central circulation space with a series of rooms feeding off of it. These sketches were meant to be a sort of loose footprint for the rest of the project. The rooms on the other hand, were conceived entirely through simply playing with material. As I constructed the model, I worked back and forth between the rooms and the entire building so that I did not lose sight of the general spatial arrangement of the project.





Iterative Experimentation

Fig. 7 (Opposite) Room One - Progress photo of structure

The sketches were produced using the same sort of aimless sketching that I employed during the last project, Fig. 1 - 3, Pg. 231 - 233). Early on in the project I quickly put together a number of different blocks of scrap hardwood in order to define central circulation space, (Fig. 4 - 6, Pg. 235) which at this stage was more akin to central room than any sort of hallway. I then began making different rooms and inserting them in the model, going through several iterations of rooms before stumbling upon Room One, which ended up changing the entire direction of the project.

As I began constructing Room One I imagined it somehow growing out of the central circulation space. When I initially finished the room I was pleased with the results, until I inserted it into the rest of the model. I was horrified by how out of scale it was compared to the central circulation space; however, I felt this room was far better than anything I had made so far. As a result, I stood at a proverbial fork in the road; either get rid of the room I like so much, or keep the room and re-imagine the part for the project.



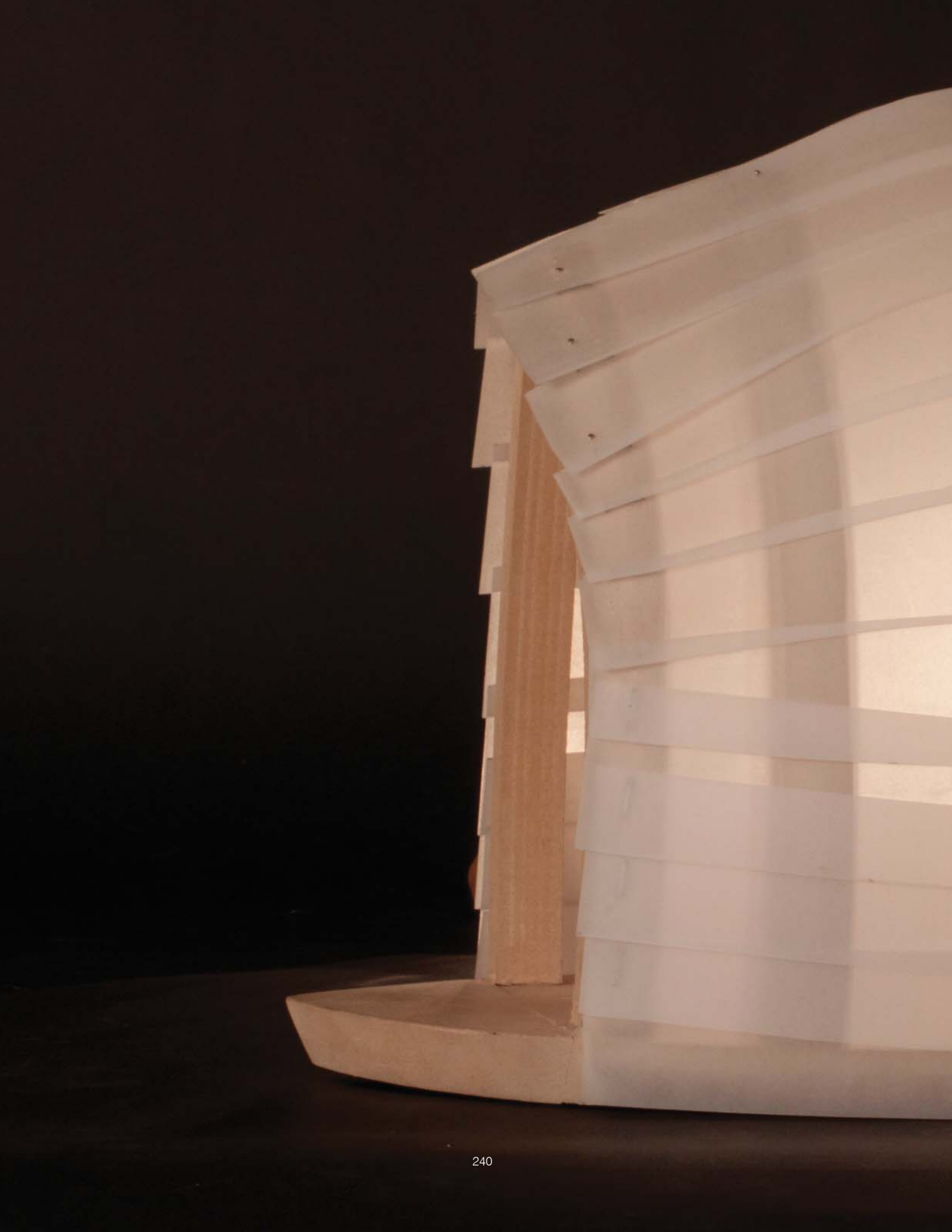
Despite the extra work, I abandoned the sketches I had done earlier and started rearranging the rooms guided only by this inspiration of the dwelling rooms growing out of a circulation space. After playing around for a couple of hours I arrived at the final organizational gesture for the project.

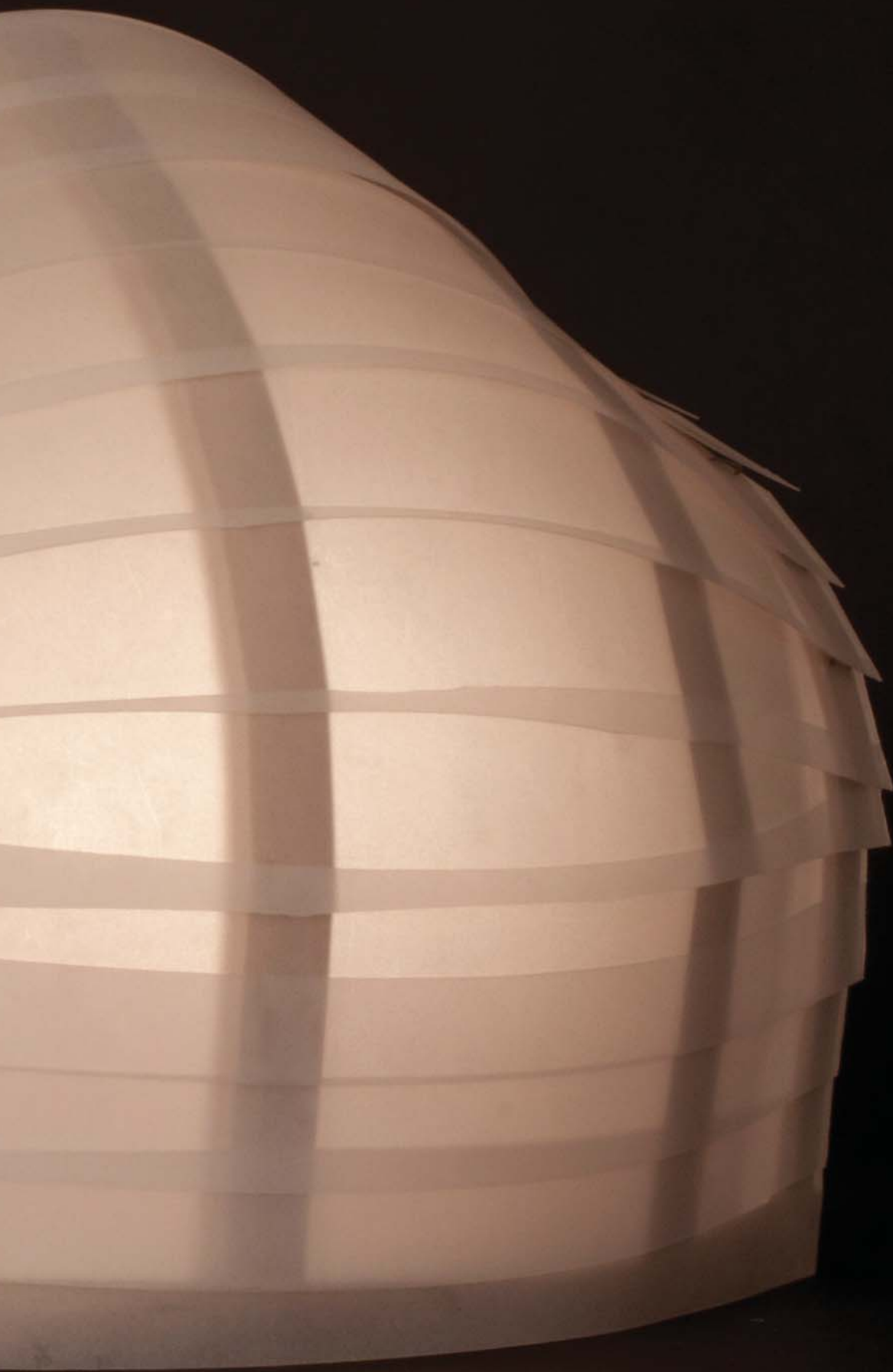
The project evolved from this new parti and I constructed each of the rooms sequentially with each space influencing the next in some manner. As I constructed them I wanted the skin of the dwelling spaces to feel light and delicate. In contrast, I wanted the stem to feel long, thin and much more textured. It was these concerns for lightness and texture that I introduced a new level of craftsmanship into my models which I had never done before. I expanded my materials palette by introducing mesh, sanded plexi glass, millboard, and watercolor paper. I also started sanding the rooms in order to fully realize their forms. This craftsmanship was not introduced for the sake of presentation, but as a means to better explore and understand my inspirations. This desire for lightness in the rooms is also what led to the separation of structure and skin, something that I had never done in any of the previous models.

Fig. 8 (Opposite) Room One - Elevation

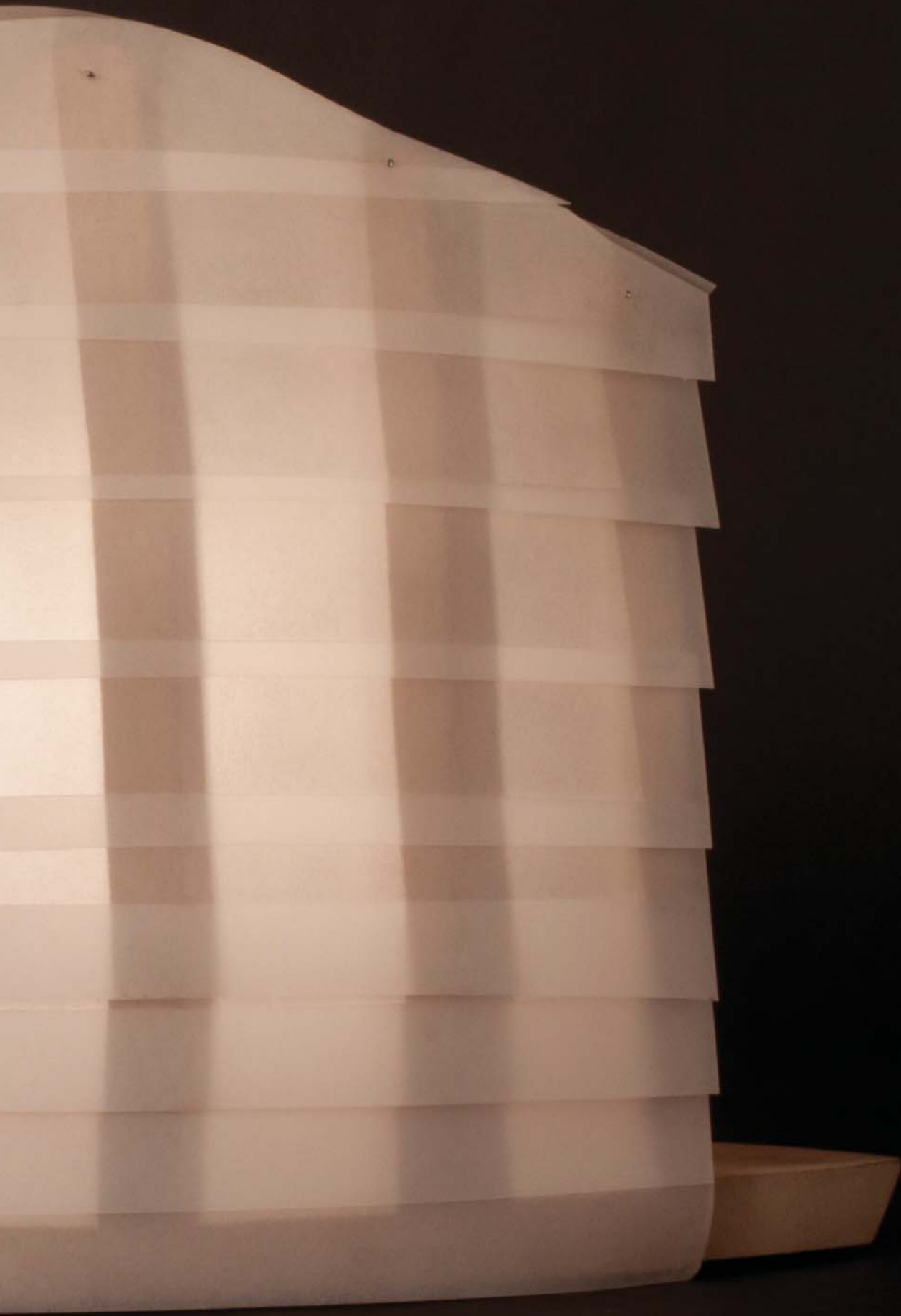
- Fig. 9** (Pg. 240 - 241) Room One - Elevation
- Fig. 10** (Pg. 242 - 243) Room One - Elevation
- Fig. 11** (Pg. 244) Room One - Detail of Interior
- Fig. 12** (Pg. 245) Room One - Detail of Exterior
- Fig. 13** (Pg. 246) Room Two - Progress Photo of Structure
- Fig. 14 - 16** (Pg. 247 - 253) Room Two - Elevations
- Fig. 17** (Pg. 254 - 255) Room Two - Detail of Exterior
- Fig. 18** (Pg. 256 - 257) Room Three - Progress Photo of Structure
- Fig. 19** (Pg. 258 - 259) Room Three - Elevation
- Fig. 20** (Pg. 260) Room Three - Overhead View
- Fig. 21** (Pg. 261) Room Three - Detail of Exterior
- Fig. 22 - 23** (Pg. 262 - 265) Room Three - Details of Interior
- Fig. 24** (Pg. 266 - 267) Room Four - Progress Photo of Structure
- Fig. 25 - 27** (Pg. 268 - 271) Room Four - Elevations
- Fig. 28 - 29** (Pg. 272 - 274) Room Four - Details of Interior
- Fig. 30** (Pg. 275 - 276) Room Four - Detail of Exterior



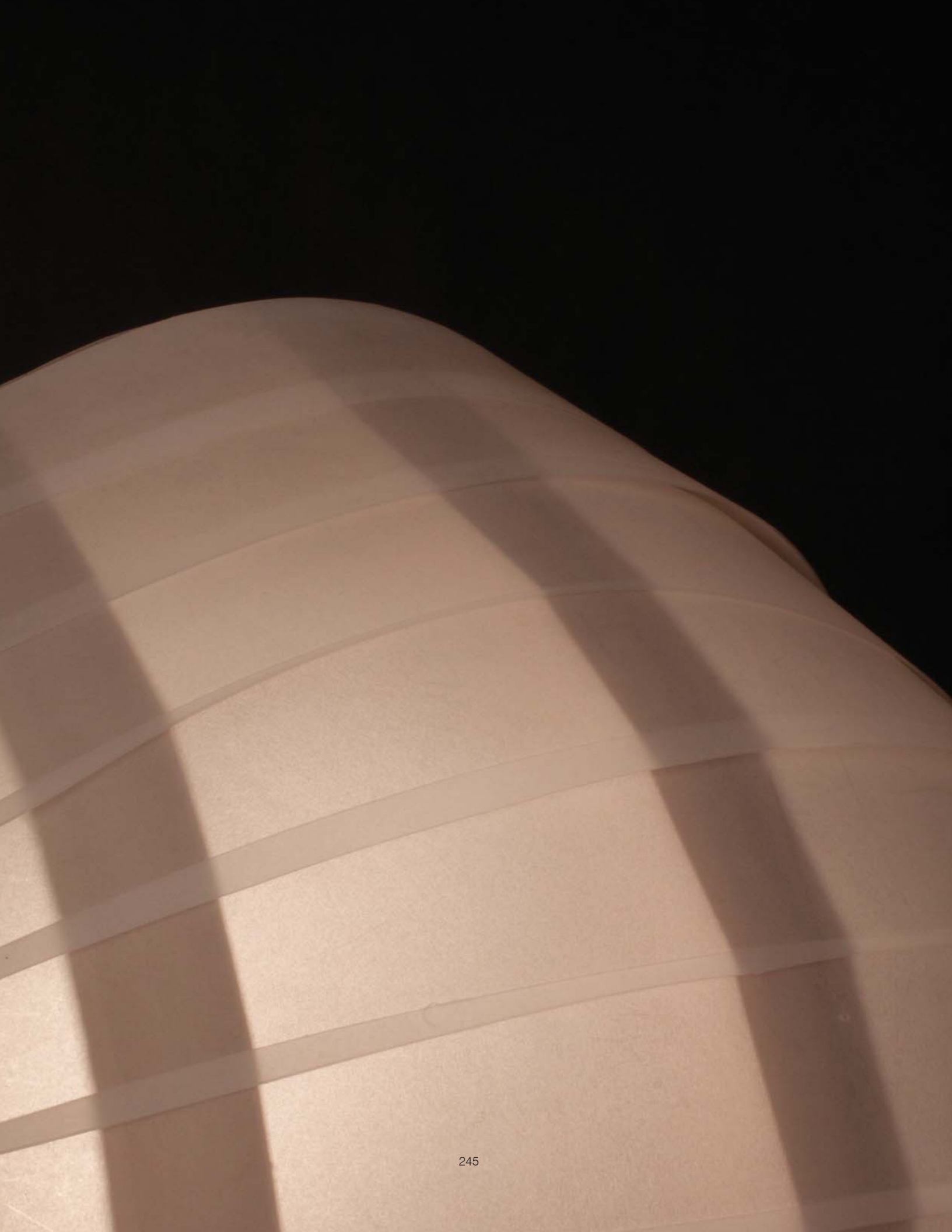




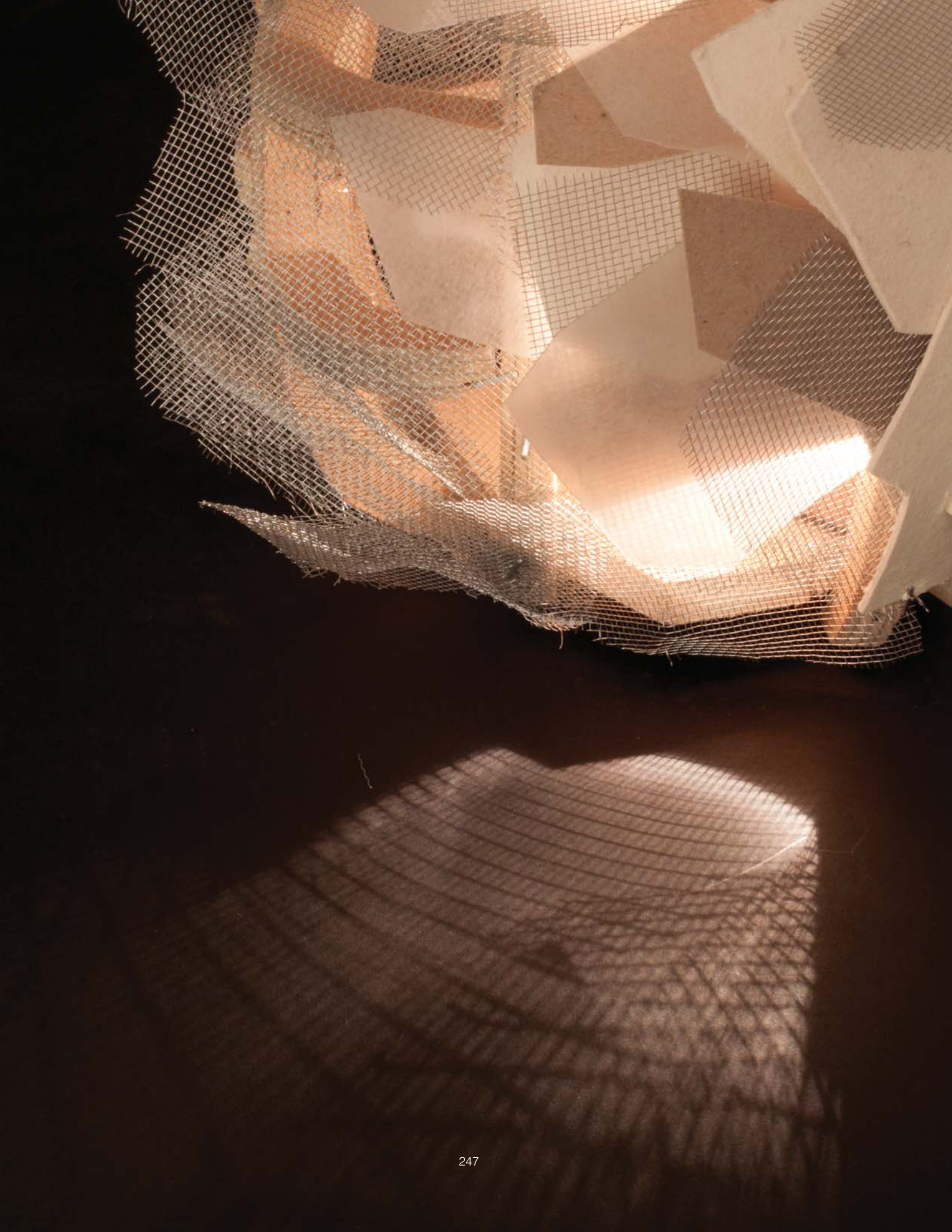
















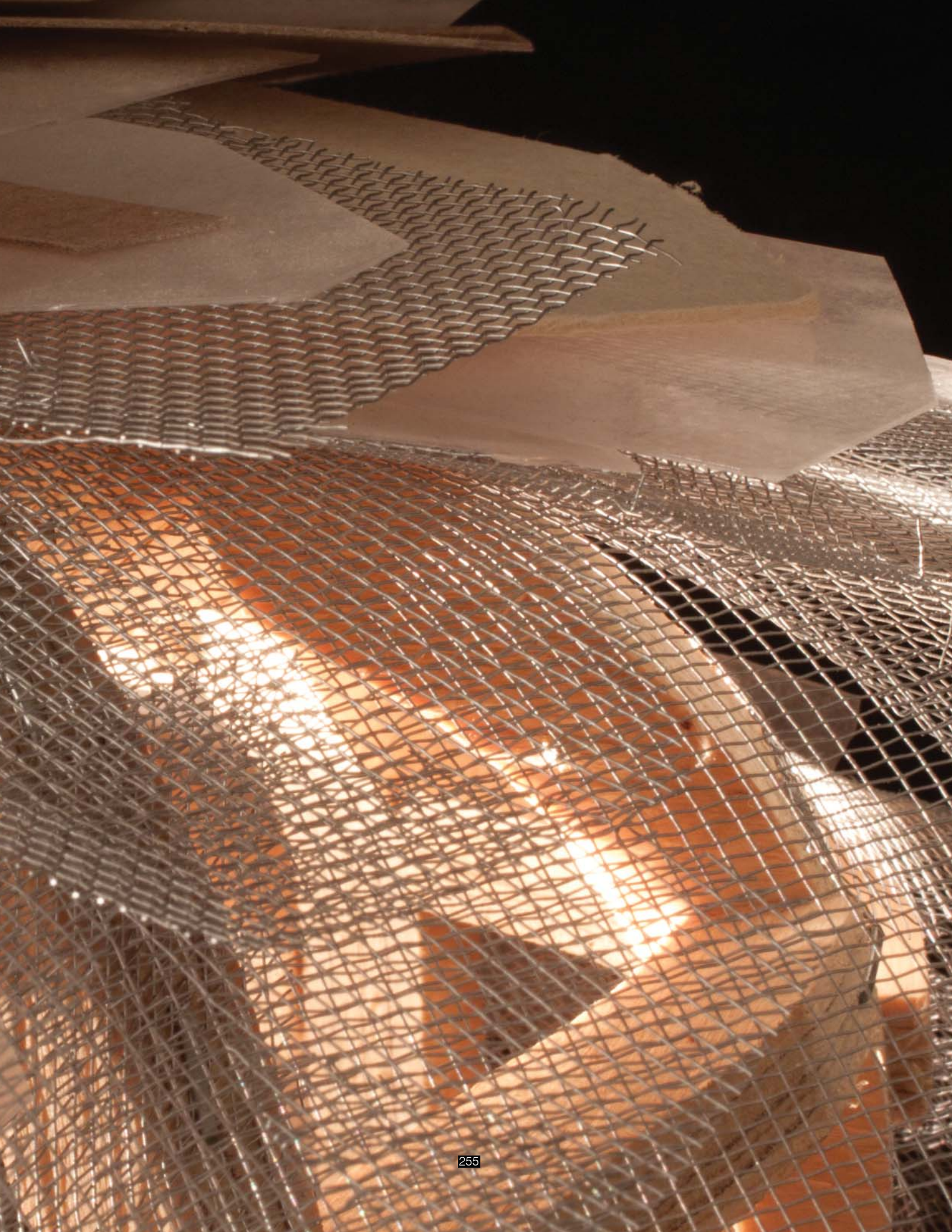






























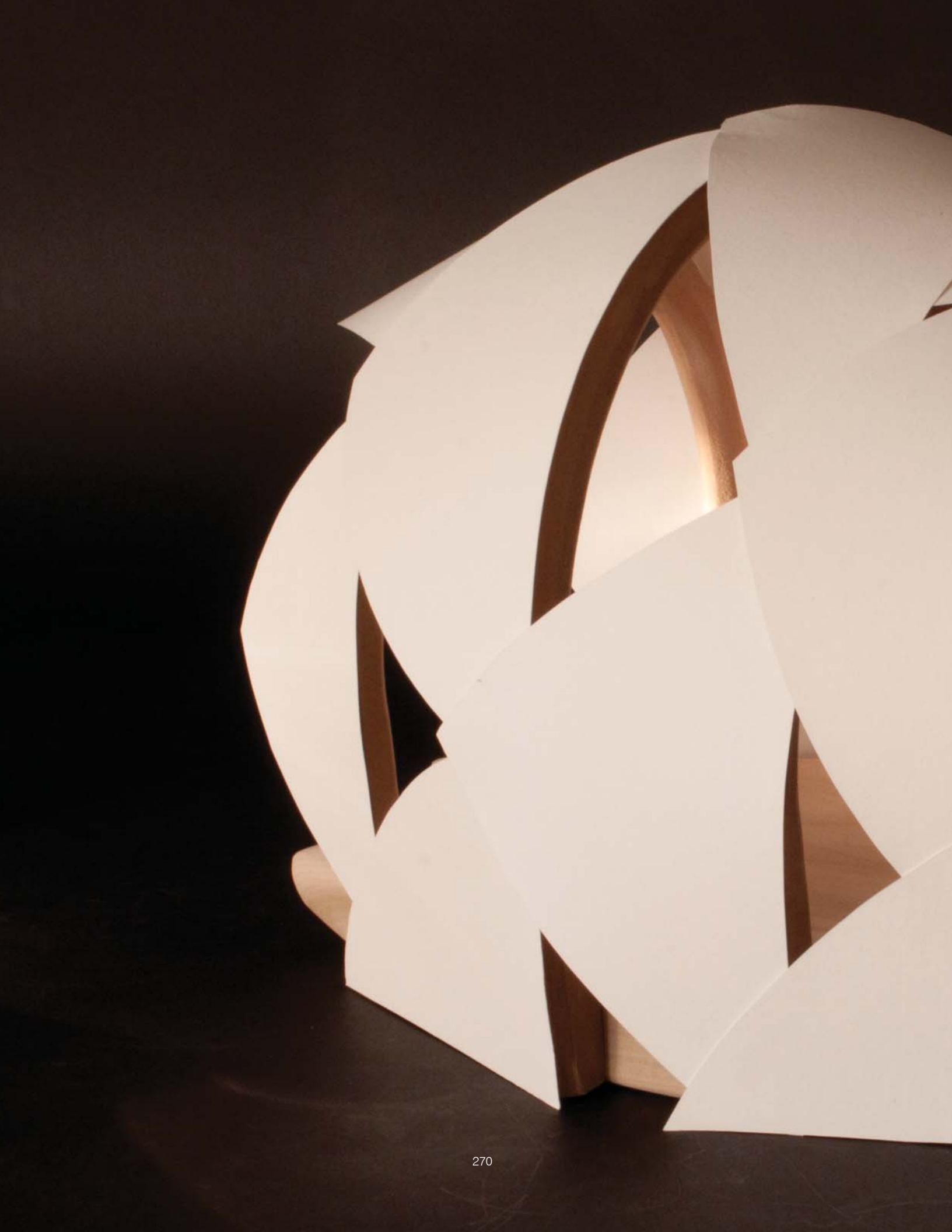




























Visceral Evaluations

During the development of the model, there was several times in which my visceral evaluations influenced the iterative experimentation. The making of Room One was driven by a gut feeling to make the room feel like it was growing out of the circulation. Admittedly I had no idea why I was drawn to this notion; I just knew this is what I wanted. The form of this room emerged purely through my gut reactions in response to playing with material.

When I started reworking the general layout I placed Room One on my table and put a couple of long sticks down in front of it to represent a very crude outline for a hallway. The leaf-like form of Room One juxtaposed with the sticks immediately triggered a mental image of a flower and a stem. It was this image of a stem as a hallway, and a flower as a room that inspired the parti of the project. This organizational gesture entails several light, delicate, dwelling spaces blooming as bulbous forms from a long, thin, and textured hallway.

Fig. 31 (Opposite) Room Five - Progress photo of structure

- Fig. 32 - 33** (Pg. 280 - 283) Room Five - Elevations
- Fig. 34** (Pg. 284 - 285) Room Five - Interior
- Fig. 35** (Pg. 286) Room Five - Detail of Interior
- Fig. 36 - 37** (Pg. 287 - 289) Room Five - Details of Exterior
- Fig. 38** (Pg. 290 - 291) Room Six - Elevation
- Fig. 39** (Pg. 292 - 293) Room Six - Exterior
- Fig. 40** (Pg. 294) Room Six - Overhead view
- Fig. 41** (Pg. 295) Room Six - Interior
- Fig. 42** (Pg. 296 - 297) Room Six - Detail of Exterior











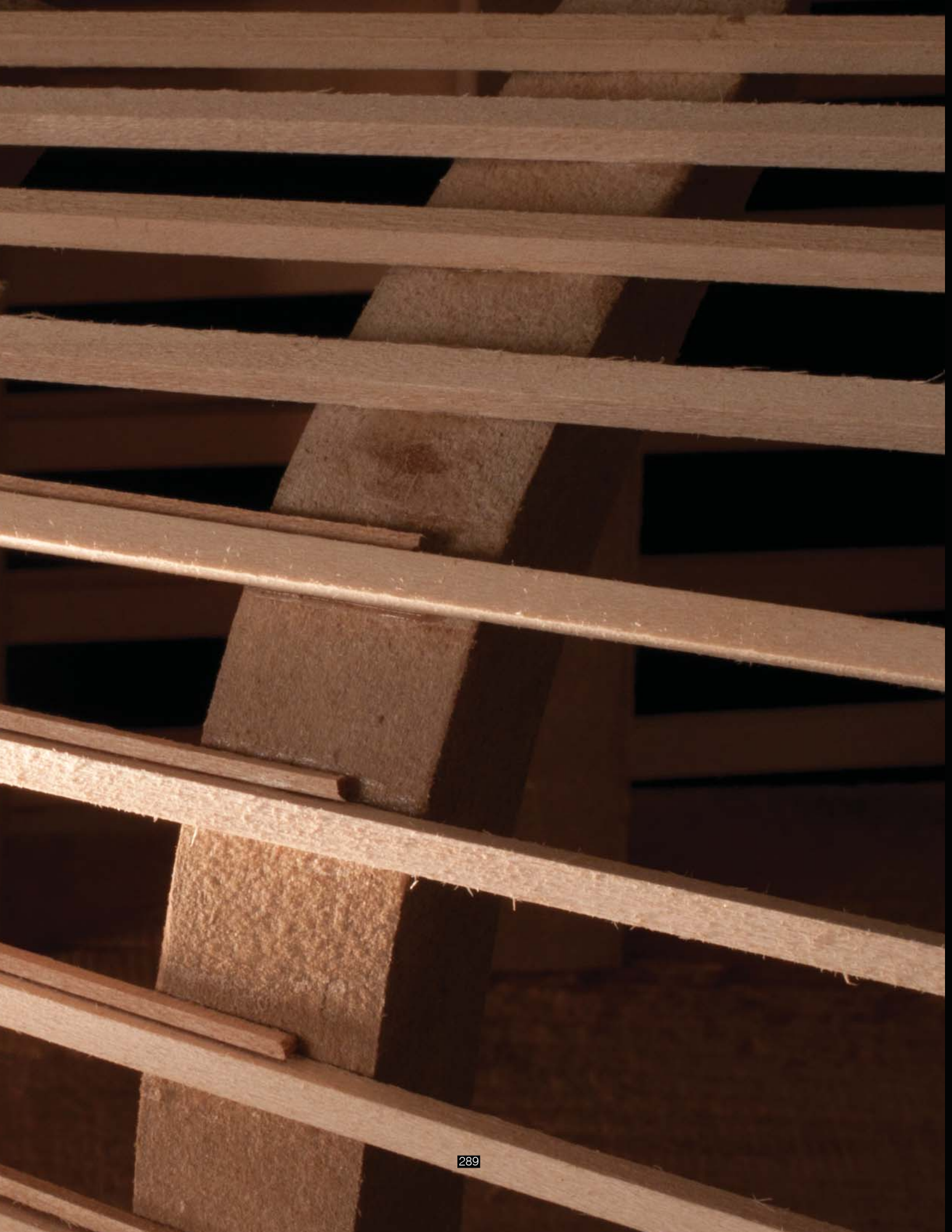






























Playful Mentality

In many regards, a playful mentality played a significant role in the development of the project. It was my openness to surprise that urged me to revisit the general layout for the project. As a result, the project evolved in a completely new direction which I felt much happier with than in the previous model.

During the construction of the dwelling places I made a conscious effort to play with different materials in order to make the dwelling spaces feel lighter such as watercolor paper, mesh, millboard, timber strips, and sanded plexi glass. I even tried experimenting with different types of veneers.

Throughout the construction of the rooms and even the sketches I let the work simply flow out of me as much as possible. I just simply trusted how I felt and let the models develop naturally through trial and error.

Fig. 44 - 45 (Pg. 300 - 303) All Rooms - Elevations

Fig. 46 - 48 (Pg. 304 - 309) All Rooms - Detail elevations

Fig. 49 (Pg. 310 - 311) All Rooms - Detail of Exterior

Fig. 50 (Pg. 312 - 313) All Rooms - Interior

Fig. 43 (Opposite) All Rooms - Overhead View

































Fig. 51 (Opposite) All Rooms - Interior

Ultimately, I was pleased with how this project turned out. It felt like I was able to strike a balance between the over arching organizational structure and the heterogeneity which I appreciated from the earlier models. I believe I was eventually able to achieve this balance by going back and forth between working on rooms in isolation and as part of a larger composition.

At the same time I also learned more about the role craftsmanship can play within explorative making. Specifically, I learned to tailor the amount of craftsmanship in relation to the feelings and ideas I am trying to express and convey. Sometimes it is worth carefully sculpting a form in order to fully understand it and other times it can be just as beneficial to work in a raw manner. This same principle applies to selecting materials. During this project I was more flexible and just let my feelings and ideas govern the materials I used.

Based on my reflections it is evident that each of the primary characteristics played a significant role in the development of this project. Similar to previous projects, a reciprocal relationship was established between iterative experimentation and visceral evaluations. This reciprocal relationship involved feelings and ideas being triggered through the making of my models which, in turn, later influenced how these models evolved. Fuelling this cycle was a playful mentality that translated into my own enthusiasm to revisit previous decisions, introduce new materials, and simply trust my own feelings to guide the development of my work. The artistic vehicle evolved throughout the project in order to allow me to fully express my ideas and artistic inspirations. In many ways, it was more sophisticated than in previous projects because I worked at both the scale of the room and the entire building in parallel. It also incorporated sketching, a wider materials palette, as well as more refined techniques for making.





Project 8 Introduction

In Projects Six and Seven I used both sketching and physical model building to create architectural forms consisting of multiple rooms imbued with some sense of spatial organization. At this point, I felt it was time to push my work further and take on projects grounded more in reality.

I wanted to start developing a project for a particular site to a very schematic level. From the outset, I was not interested in developing a fully resolved project. In fact, I only wanted to experiment with different combinations of methods and mediums in an attempt to accommodate pragmatic concerns within a project. These concerns included various site issues, program, building regulations pertaining to access and egress, as well as structure and materiality on a very notional level.

Similar to the other projects, the primary characteristics of explorative making were used as a means to reflect upon my investigations.



Fig. 1 View of site and existing building on Augusta Ave.



Fig. 2 View of site and existing building at the corner of Augusta and Baldwin



Fig. 3 View of site and existing building at the corner of Augusta and Baldwin



Artistic Vehicle

The methods for this project were not all established before the project commenced. When I stopped working I had completed four phases of work: research, physical modeling, computer drafting, and sketching. Only the first two phases were established before the beginning of the project while the latter two were decided upon in response to what I felt the needs of the project were at the time. Collectively, the four phases of work generally alternated between pragmatic and aesthetic concerns. The research and computer drafting phases were focused on addressing functional requirements while the other two delved more into aesthetic considerations.

The research phase entailed collecting information on all the functional requirements of the project and studying them until they became implicit knowledge. These pragmatic concerns stemmed from the selection of a site. They included studying existing building typologies through site visits, photographs, a rough massing model, and studying census information of the surrounding area. This research led to the development of an in-depth program, investigating relevant parts of the Ontario Building Code pertaining to access, egress, and circulations spaces. Finally, this phase of work concluded with doing several diagrammatic studies to determine the rough sizes and layout of the apartments.

After taking a break from the project, all of this ingrained information was used as the basis for several physical models. These models were made of rigid foam, paper, millboard, and mesh. They were carved using a box cutter and held together with pins. As I have mentioned previously this combination of materials and means facilitated a fluid expression of my visceral evaluations. In addition, most of the implicit knowledge



Fig. 4 View of site and existing building (left) looking down Augusta Ave.



Fig. 5 View of site and existing building (right) looking down Baldwin St..

attained during my research could also be readily included in the models without me having to think about it too much. This allowed to me simply listen to how I felt and let these intuitions and inspirations guide the development of the project.

The massing models then became the basis for computer drafted plans and a section drawn in AutoCAD. The purpose of this phase was to determine if the forms I had carved in rigid foam could actually house all the required programmatic elements. As AutoCAD allows one to draw with a high degree of precision, it was a program well suited to this task. While drafting in this program I found it more difficult to draw the curved shapes that I could easily carve with the rigid foam. Despite my best efforts, these difficulties resulted in a less than fluid expression of my visceral judgments.

The translation of these forms into AutoCAD did not involve the precise replication of the models into the computer; in fact, they were only used as a guide. Specifically, as the design was translated into the computer, I took the opportunity to refine my work and make changes along the way as well.

Afterwards, the finished AutoCAD plans and section were stripped of their detail and used as a basis for some much looser hand drawings. This phase was introduced in response to the results of the computer drafting phase where I felt certain elements of the scheme were slightly over-rationalized. Using a pencil gave me the freedom to investigate formal spatial possibilities with relative ease. As a result, the curvy character of some of the spaces was reintroduced and even refined through these types of drawings.

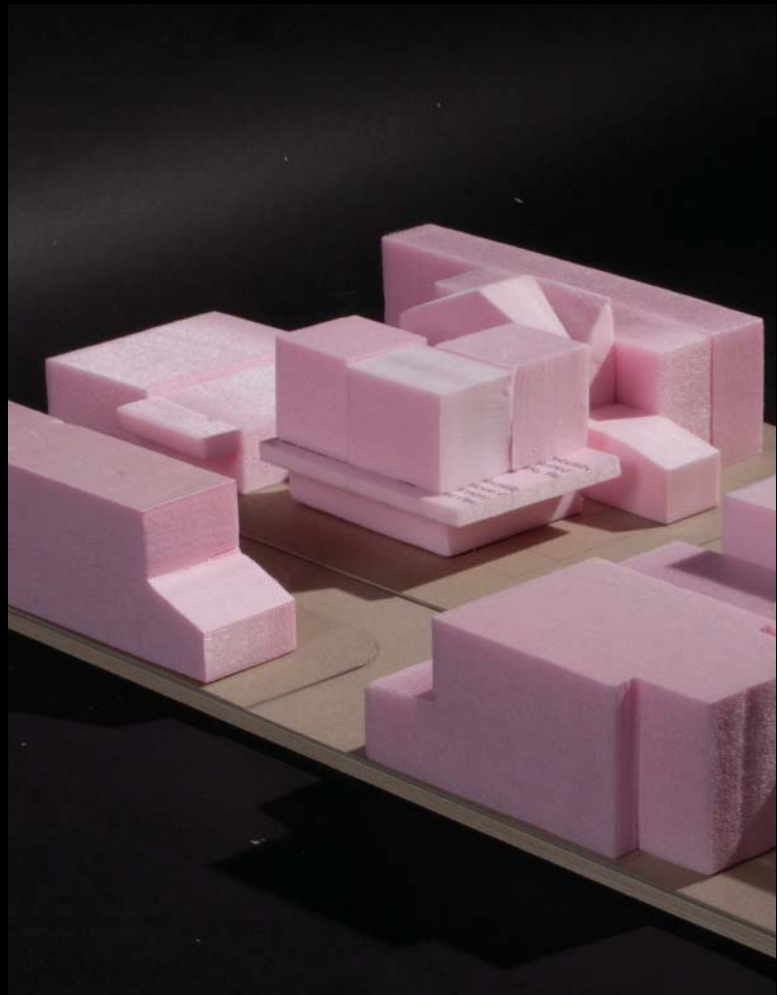


Fig. 6 Southeast view of very rough massing model (centre) of proposed development



Iterative Experimentation

As implied earlier, my iterative experimentation began with a research phase propelled by the selection of a site based on two sets of criteria. The first was concerned with finding a site that would be appropriate for redevelopment from a pragmatic and financial perspective. The selected site, (Fig. 1 - 5, Pg. 316-317, 319) is currently occupied by a single storey commercial building arranged in such a way that garbage has to be continually stacked out front on the street corner. This building lies between several buildings that are two to three stories tall with commercial space on the ground floor and apartments above. Based on these observations the selected site in figures one to five, located at the intersection of Baldwin Street and Augusta Avenue, presented itself as an ideal opportunity for a new two to three storey mixed use redevelopment.

The second criteria involved finding a site with some of the same qualities as the collections of artifacts which had inspired some of my earlier models. In particular, I wanted to find a setting with the same heterotopic character ripe with juxtaposition and contrast; yet somehow connected through an underlying theme or idea. I found these qualities in Kensington Market, located in Toronto, Ontario. The streets were filled with the rich textures of different market stalls and their various fruits and other goods. This eclectic character was also present in the different buildings, cultures and ethnicities within the surrounding area. In addition, all these different elements were bound together by the act of selling goods and

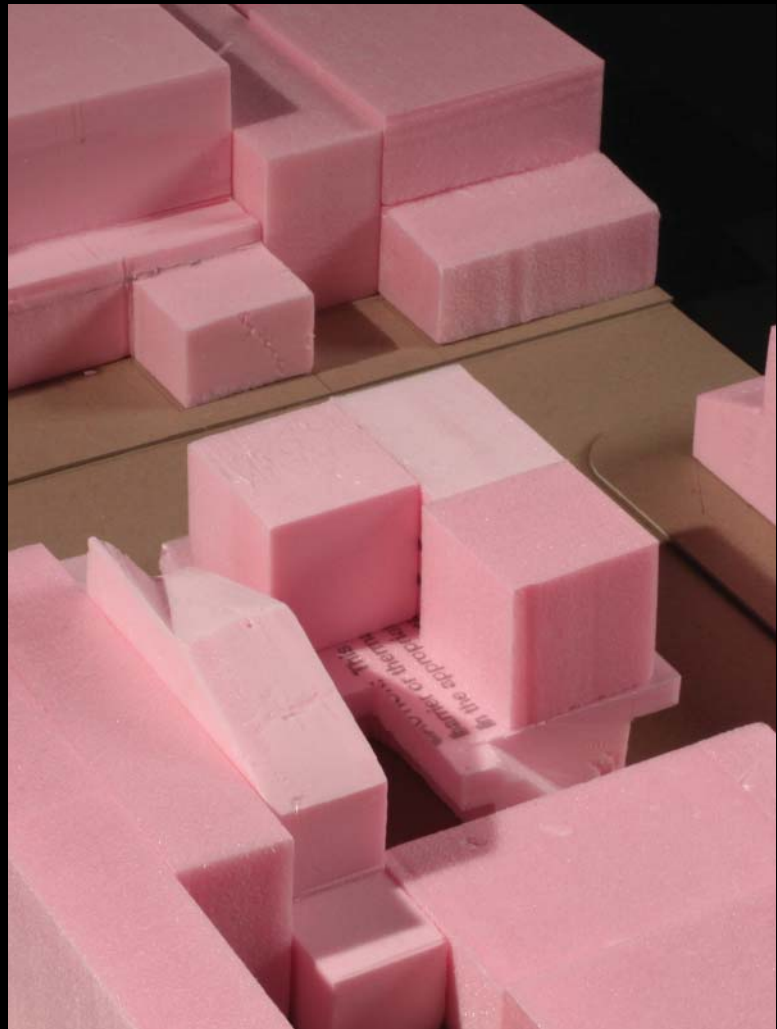


Fig. 7 Northwest view of very rough massing model (centre) of proposed development

helped to give the neighborhood a unified character. In this patchwork I felt a certain creative freedom where, like the collections of artifacts, I was free to play with contrast and juxtaposition.

After the site was selected I proceeded to gather as much information as I could through site visits, photographs, census information, and a rough massing model, (Fig. 6 - 7, Pg. 321, 323), of the surrounding buildings. I then started to put together a program consisting of three commercial units on the ground floor with three, two storey, one bedroom apartments above. Further studies were done to ensure the access and egress to each of the units was generally in accordance with Part Nine of the Ontario Building Code. I also did a sketchbook of studies depicting various spatial arrangements for each of the proposed apartments, (Fig. 8 - 9, Pg. 325, 327). These studies were essentially diagrams aimed at figuring out how much program I could fit above the commercial units. While this phase of work focused on researching pragmatic requirements, it also helped generate several flashes of insight and other intuitive judgments that were useful later on in the project.

After studying this information until it became implicit knowledge, I entered into a sort of incubation phase and took a break from the project for a couple of days. Armed with this implicit knowledge and numerous inspirations I began to make very rough 1:50 models, (Fig. 12-25, Pg. 330 - 343). The making of these models relied heavily on the carving of rigid foam using a box cutter. As I did not know what I wanted these forms to look like I started off with plain blocks of rigid foam, (Fig. 12 -14, Pg.

Fig. 8 (Opposite) Diagrammatic studies of one bedroom apartments

Flats - 8
Ground floor

Circular Kitchen
closet
Living ↔ Dining



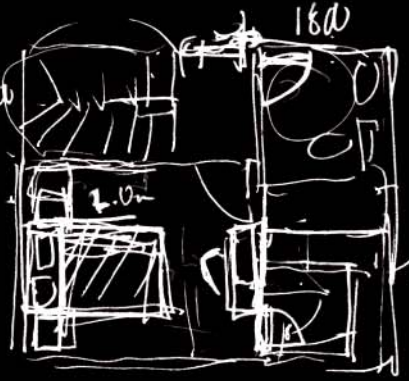
1150
1800

2950
4.14
5800
2.980

2.650

Upper level

circulation Bathroom
sleeping area walk-in
500



2.6
1.2

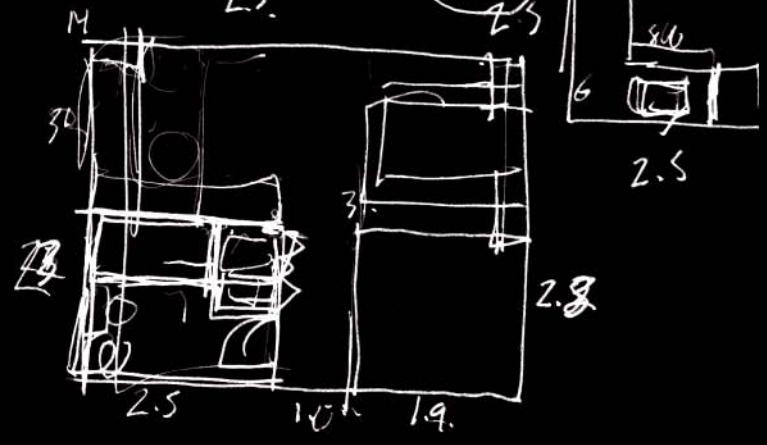
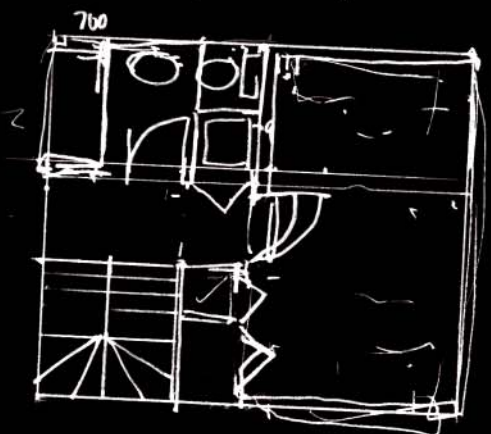
4
1150
2650

3800
4
228
23.4
1140
3.6

1368
1800

228
1140

70 60 50
60 6m could be 5.8m

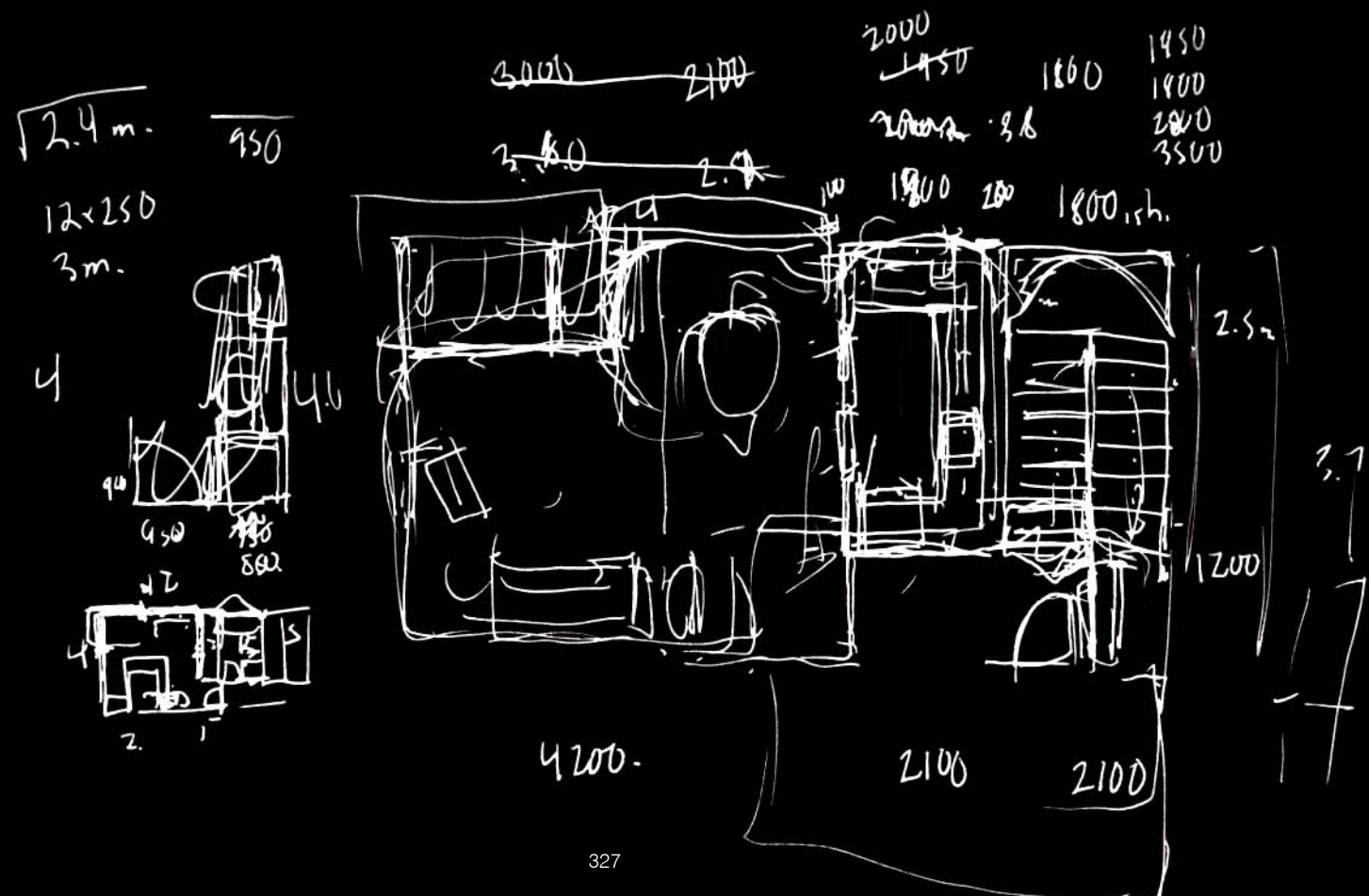
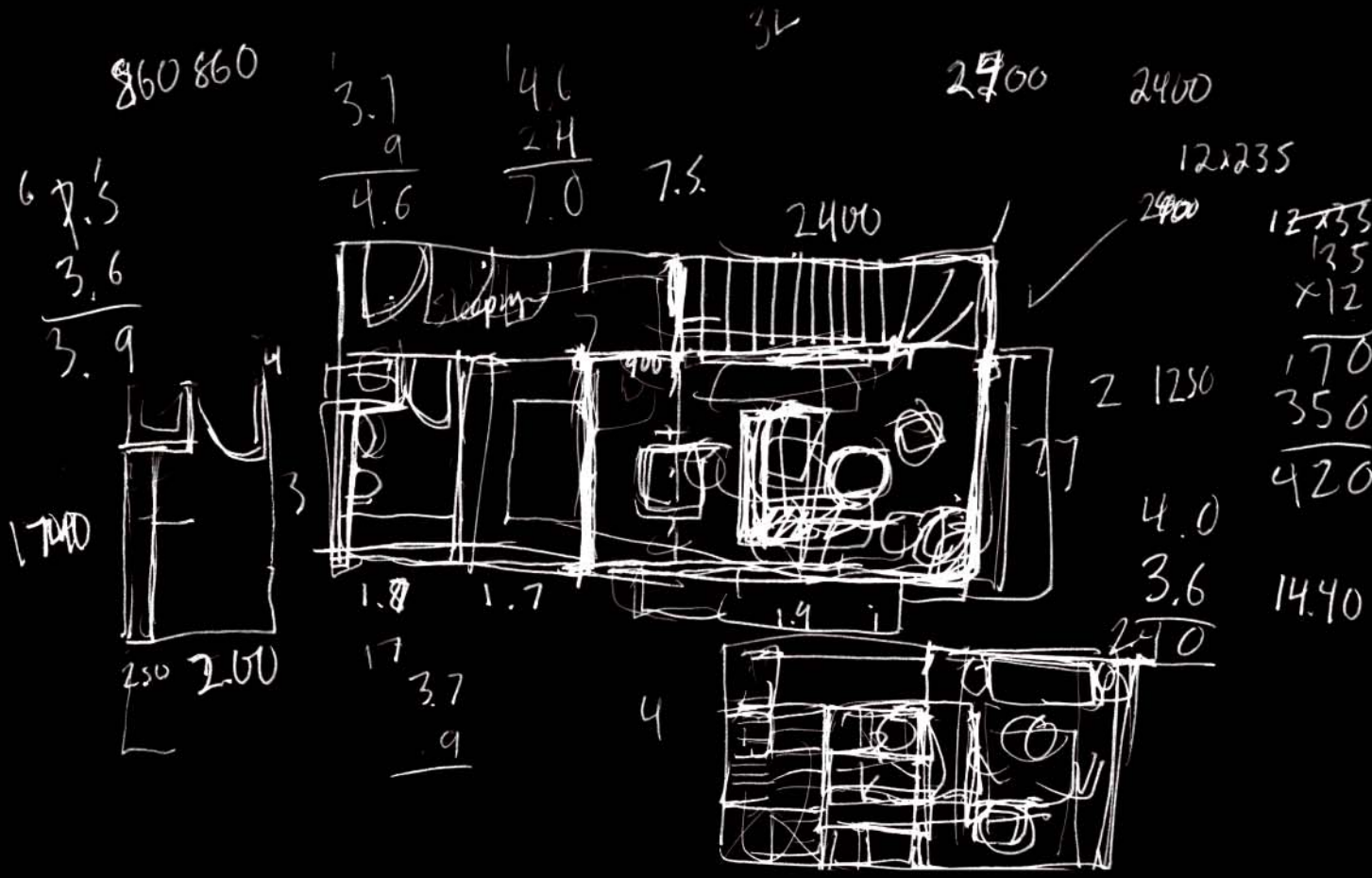


330-331), and started shaving off little pieces until I arrived at something I was happy with. This form of trial and error was guided primarily by my instincts and feelings and by the time the last model was completed my desk was surrounded by piles of rigid foam shavings.

These models were then used as a guide for computer drafted drawings including a section and three plans that helped to determine if the newly carved forms could actually house the necessary programmatic elements, (Fig. 26 - 29, Pg. 344 - 347). As mentioned previously in my discussion regarding the artistic vehicle, the nature of this medium and a desire to get different bits of program to fit led to certain parts of the scheme becoming quite rationalized.

After I was satisfied that everything could actually fit, I further refined the scheme through a series of sketches and hand drawings, (Fig. 30 - 35, Pg. 348 - 359) Using pencils allowed me to draw more freely than in AutoCAD and soon enough I was engaged in a rhythmic flow of trial and error similar to what I had experienced with the models. Through a constant flow of drawing, redrawing, and even erasing lines the project continued to progress. I even introduced pencil crayon as a means to better understand the extent of the building envelope in the plans and introduce some sense of materiality in elevation and section. Annotation was also added to the drawings in the form of color in the rough plan sketches as a means to distinguish different types of spaces, along with others to identify unresolved issues.

Fig. 9 (Opposite) Diagrammatic studies of one bedroom apartments





Visceral Evaluations

Throughout the development of this project, the presence of my visceral evaluations varied depending on the phase of work I was in. During the research and computer drafting phases I focused more on resolving functional requirements and found myself thinking more logically in order to resolve these functional issues. In contrast, during the model building and hand drawing phases, where I was using mediums and techniques that allowed me to work more fluidly, I found the progress of the work was guided primarily by intuition and feeling. Unlike the other phases, in these circumstances I did not premeditate too much, thought and action just sort of became intertwined.

It is important to note the aforementioned descriptions of different phases of work and the style of thinking which dominated them are only generalizations. There are many instances where both were present simultaneously within the same phase of work.

One such instance occurred when I was researching building typologies throughout Kensington Market. I came across some boxes piled high with different fruits and imagined them to be the basic gesture for my building, (Fig. 10-11, Pg. 341). This idea came with no deliberate premeditation; I was just walking around Kensington market and its numerous fruit stalls. At the time I did not understand really why I liked it so much. It was only when I sat down afterwards and actually thought about it in detail did I begin to see the potential in the idea as a premise for an entire building. Specifically, I could easily imagine the shell of commercial units within the boxes, and dwellings units within the fruits piled on top.



Fig. 10 Fruit stand at Kensington Market



Fig. 11 Fruit stand at Kensington Market

The same principle can be applied to the model building and hand drawing phases of the project. There were several times when I was putting curved forms together I would stop making and think about how program would exist within all these organic shapes.

In very general terms, it is still fair to say that certain phases of work were predominantly associated with a particular style of thinking, but this does not mean that the other was not present in some form. Based on my own experiences, it felt like the two styles of thinking often danced together, but sometimes one would take the lead.



Fig. 12 Detailed massing study of proposed development viewed from above



Fig. 13 South elevation of detailed massing study of proposed development



Fig. 14 North elevation of detailed massing study of proposed development



Fig. 15 First iteration of proposed development (Amorphic shapes represent flats above and more rectilinear shapes represent commercial units below)



Fig. 16 First iteration of proposed development (Amorphic shapes represent flats above more rectilinear commercial units below)

Fig. 17 Second iteration of concept model viewed from above



Fig. 18 Side view of second iteration of concept model



Fig. 19 Southwest view of third iteration (Pg. 334 - 335)

Fig. 20 Northwest view of third iteration (Pg. 336 - 337)

Fig. 21 View of third iteration facing east (Pg. 338)

Fig. 22 Detailed view of third iteration facing east (Pg. 339)

Fig. 23 Detailed view of third iteration facing east (Pg. 340 - 341)

Fig. 24 Fourth iteration of concept model (Pg. 342)

Fig. 25 Detailed view of fourth iteration (Pg. 343)





















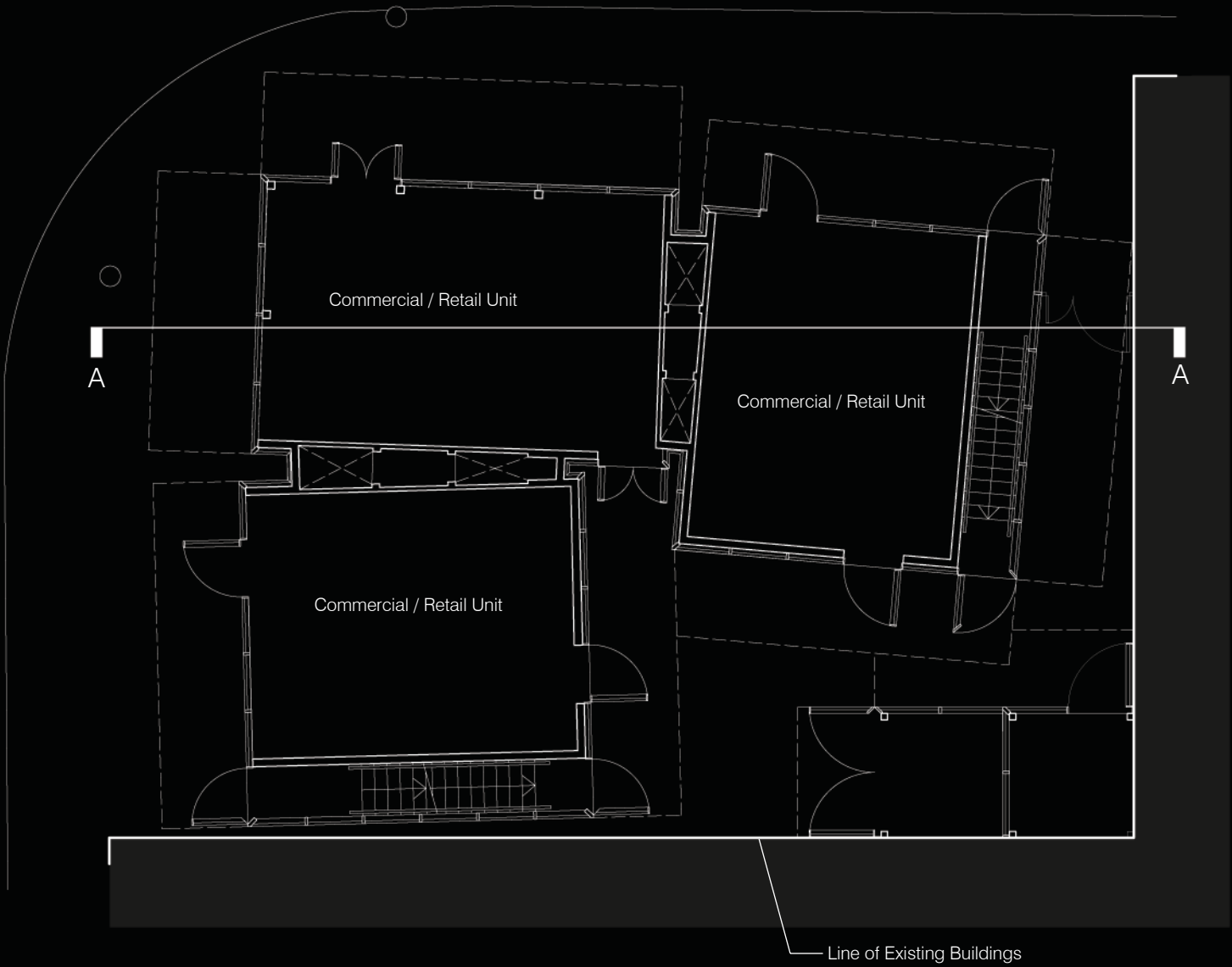


Fig. 26 Ground Floor Plan / 1:125



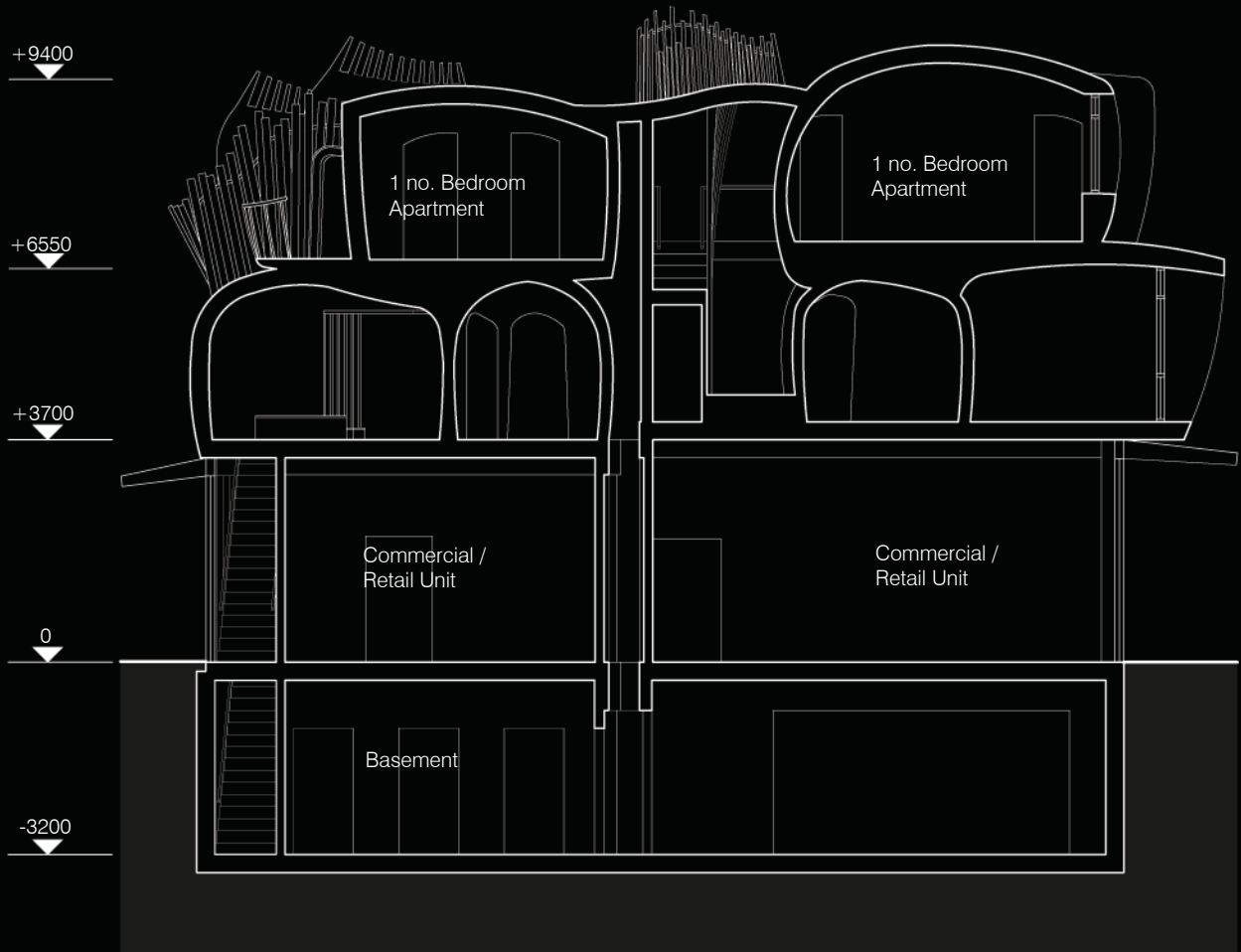


Fig. 27 Section A - A / 1:125

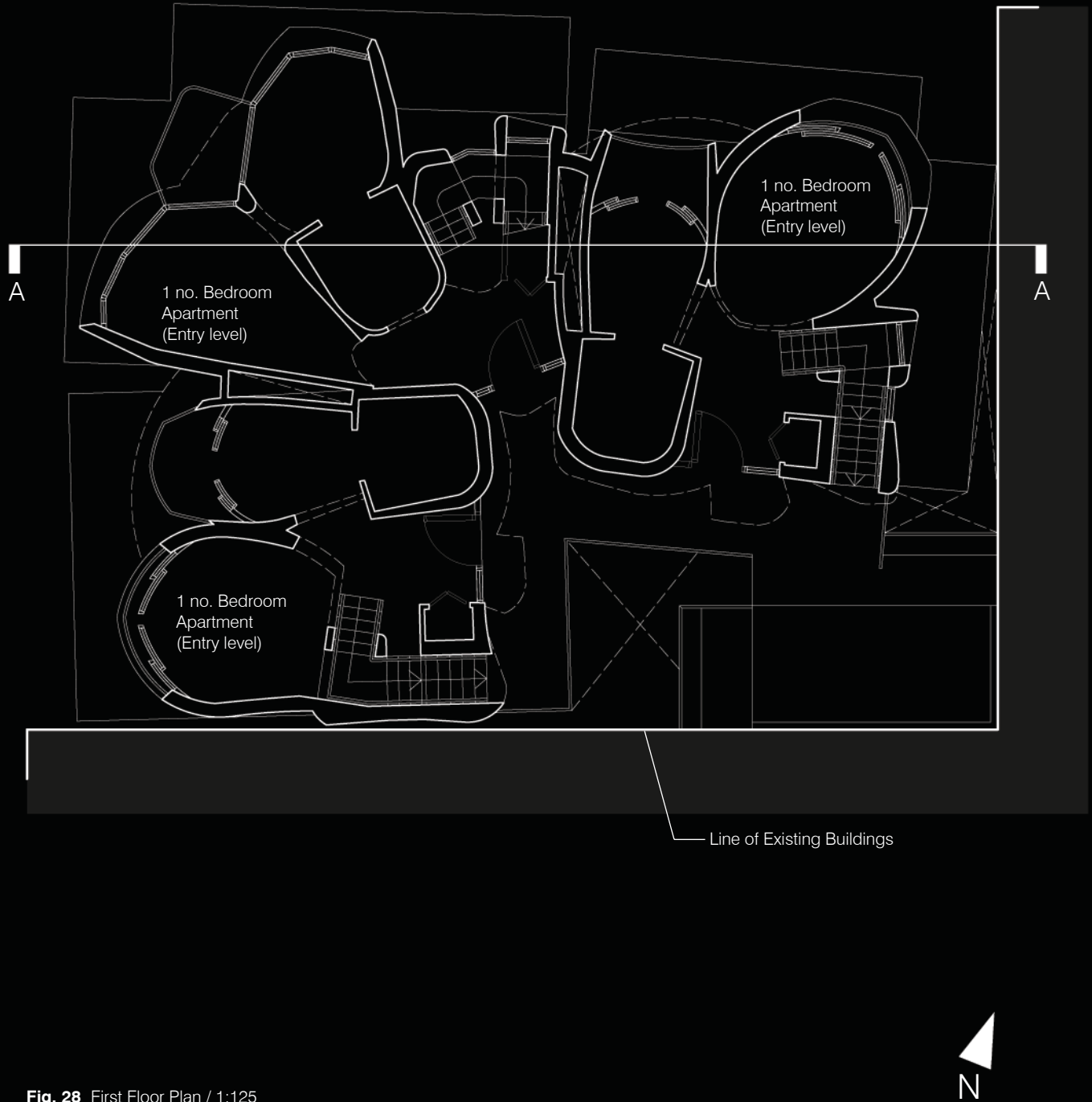


Fig. 28 First Floor Plan / 1:125



Fig. 29 Second Floor Plan / 1:125



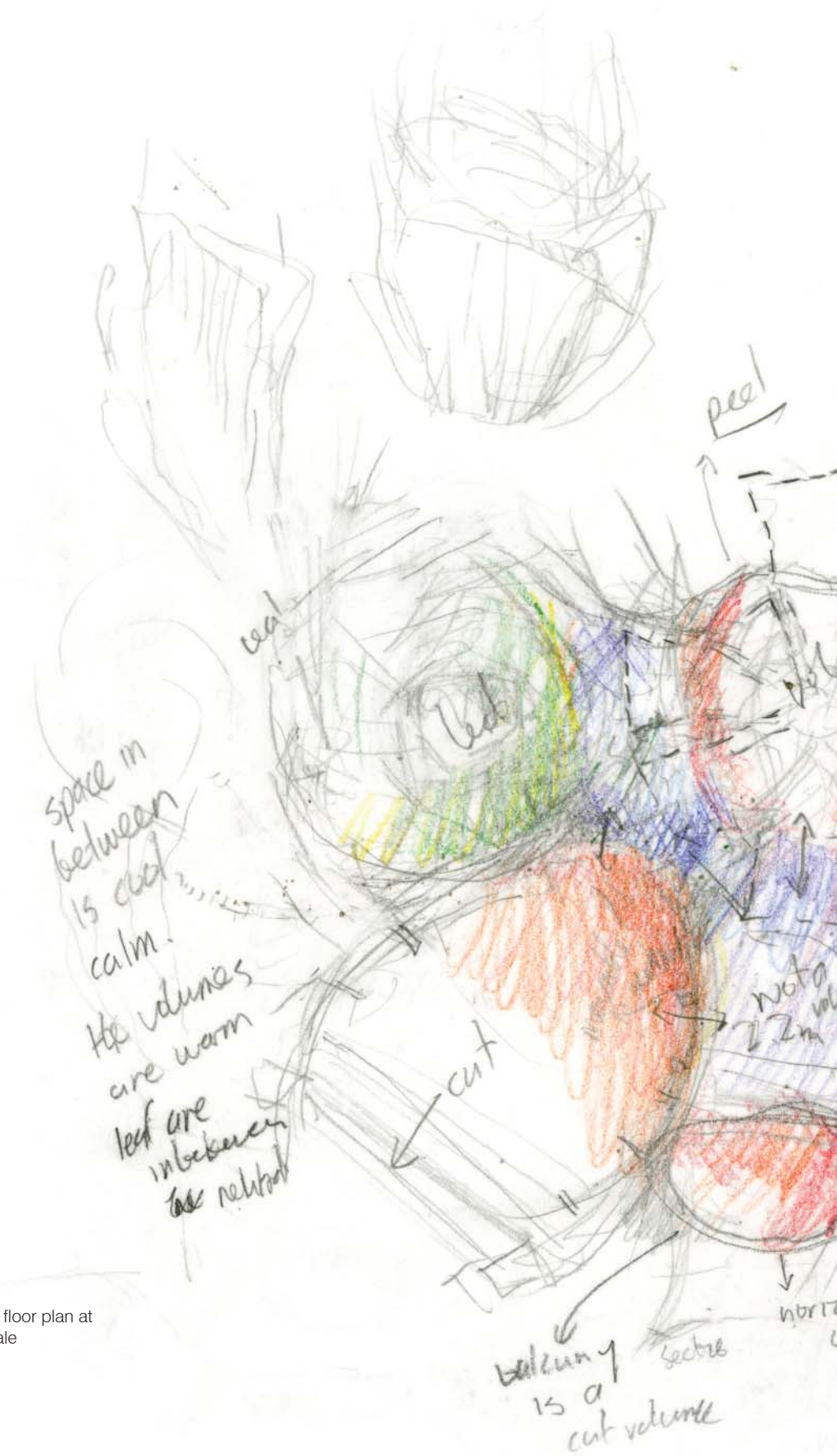
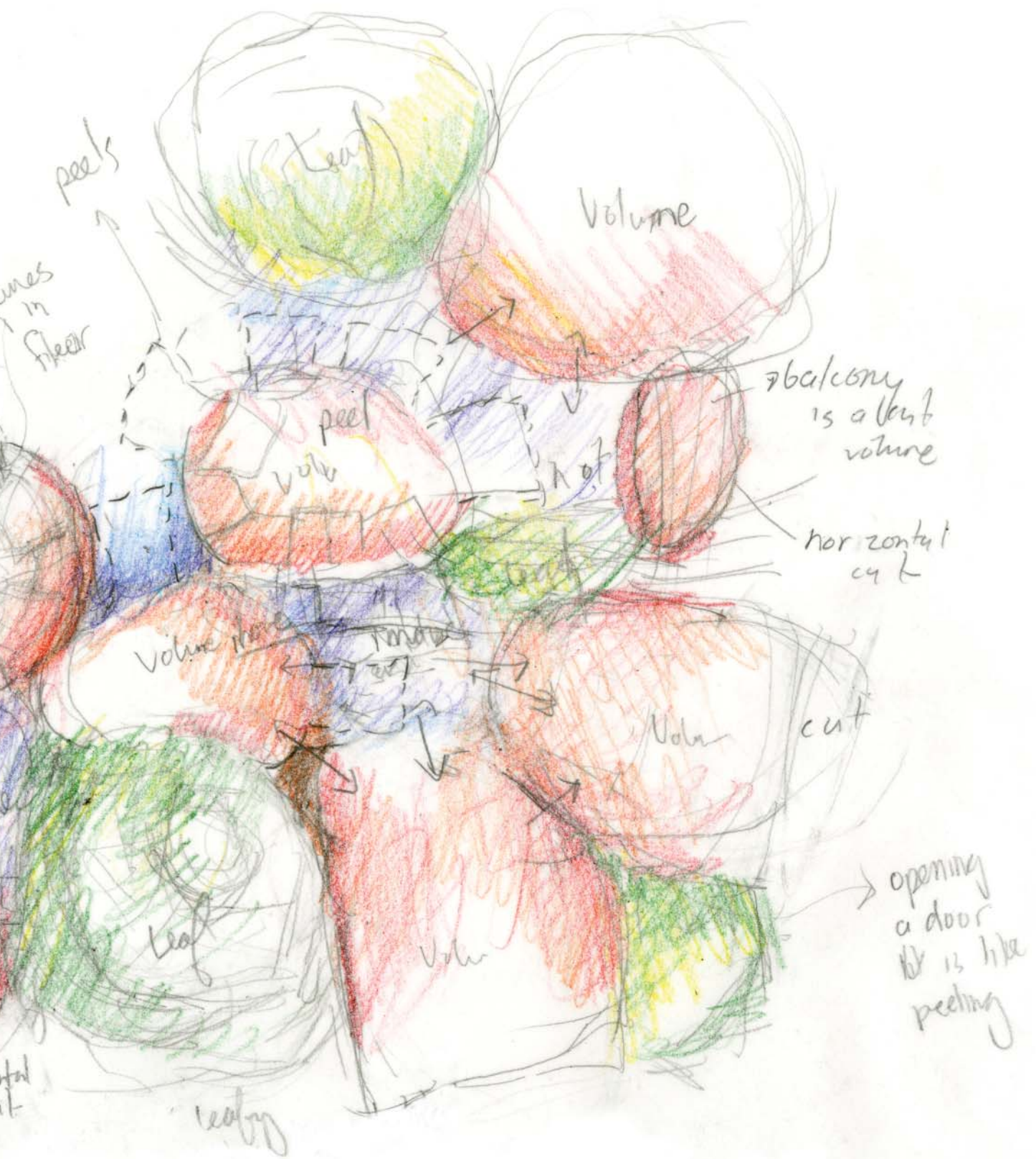


Fig. 30 Concept sketch of first floor plan at approximately 1:75 scale



leaf
peel
cut
gaps
different material.



Fig. 31 Concept sketch of second floor plan at approximately 1:75 scale





Fig. 32 Concept sketch of Section A-A at approximately 1:75 scale



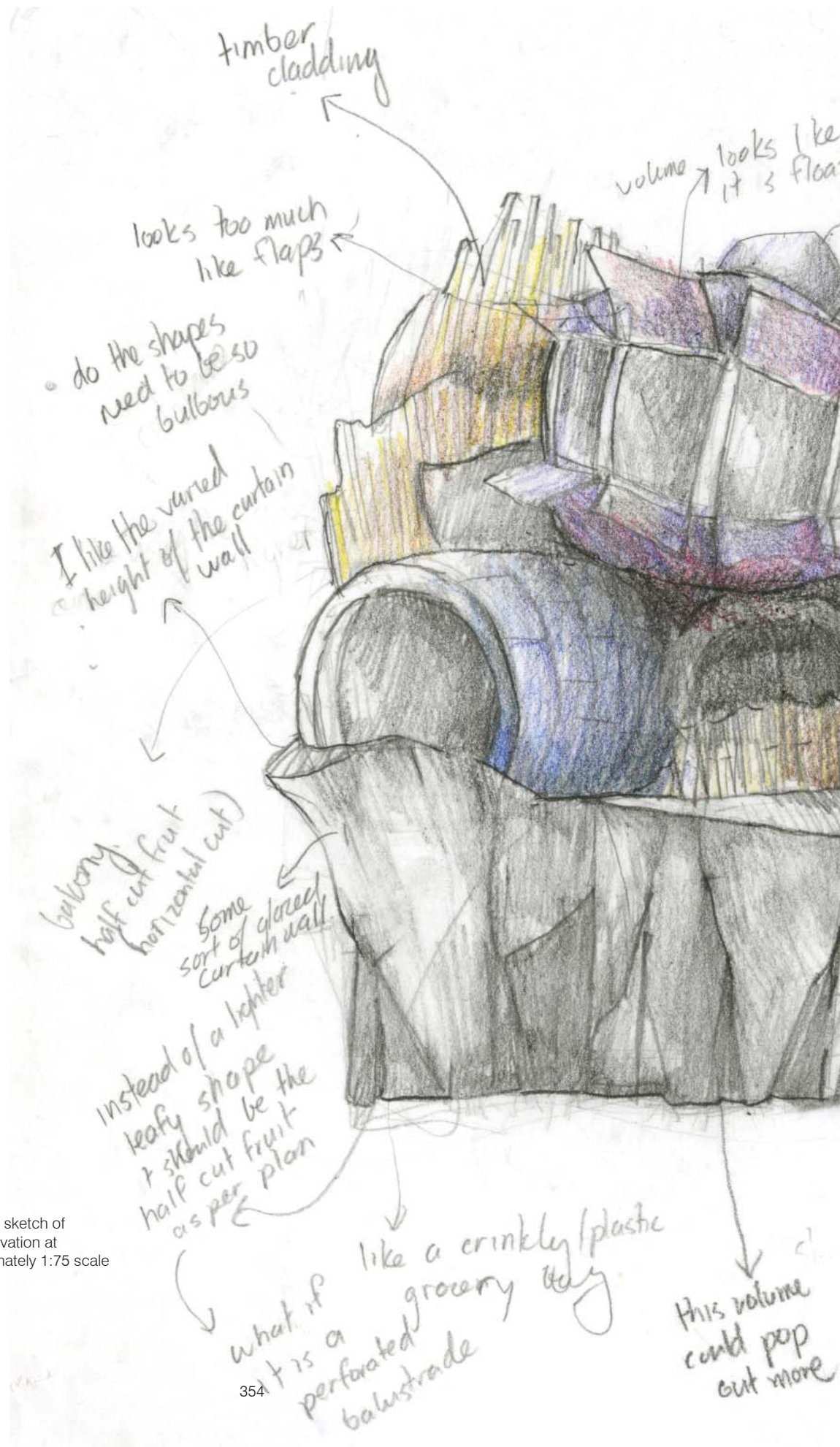
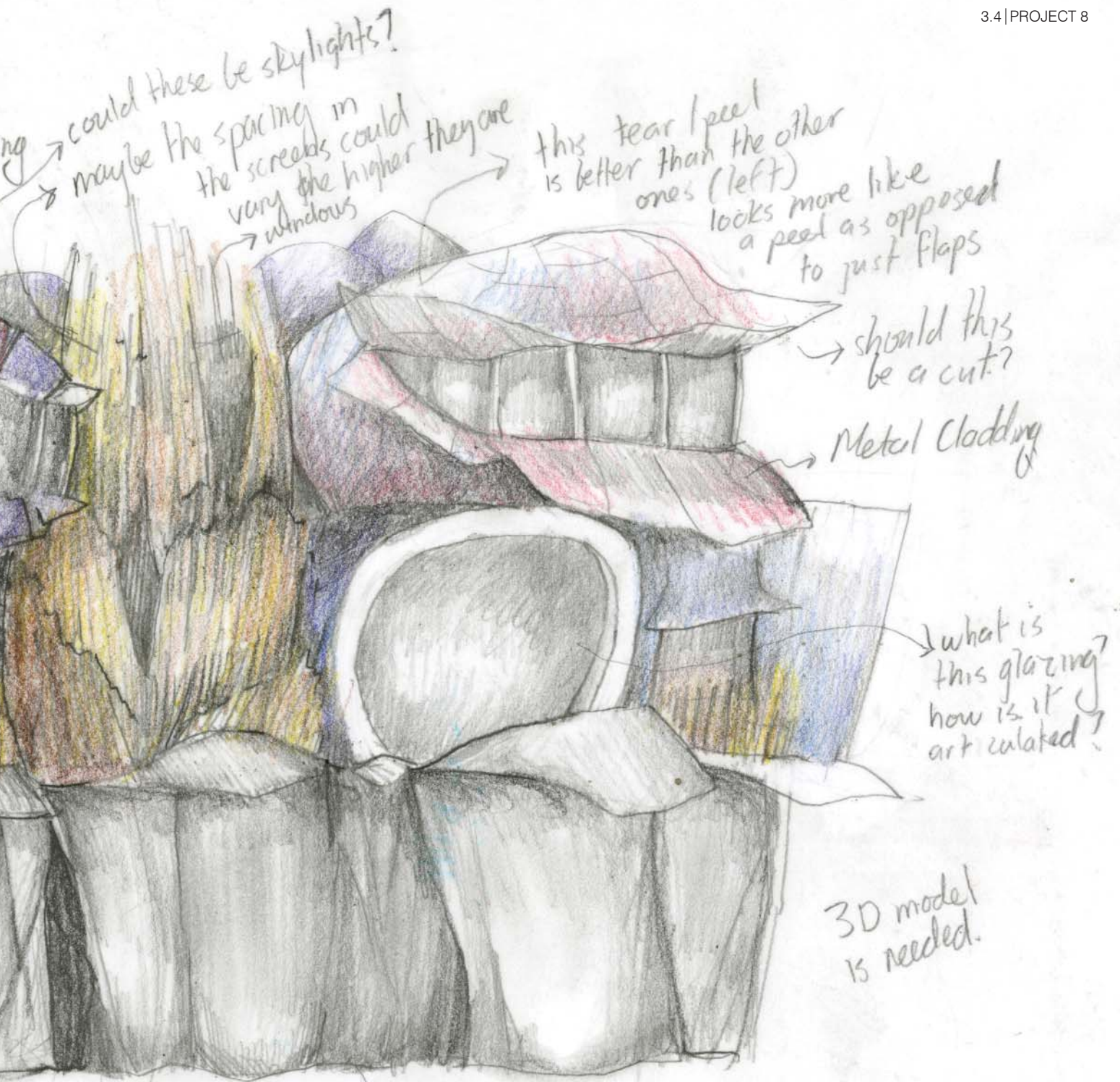


Fig. 33 Concept sketch of north elevation at approximately 1:75 scale



could these be skylights?
 maybe the spacing in
 the screens could
 vary the higher they are
 windows

this tear/peel
 is better than the other
 ones (left)
 looks more like
 a peel as opposed
 to just flaps

should this
 be a cut?

Metal Cladding

what is
 this glazing?
 how is it
 articulated?

3D model
 is needed.

should maybe try
 and define each of
 "leaves" or groups of
 timber cladding more

how crinkly vs amorphous
 should this be
 I could play with different tints
 in the glass



Playful Mentality

In terms of pure enjoyment, working with the sketches and the models was much more fulfilling than the other phases of work. This is because acting on my intuition involved doing work I wanted to do, and while there is a certain satisfaction to resolving technical issues, it still felt like I was doing work I was obligated to do. As such, it was only when I was working from my visceral evaluations did it feel like I was enjoying the project as an end in itself,

Throughout this project, my playful mentality typically manifested itself as a willingness to play with different mediums and experiment with how they can complement each other. Model building, drawing, and computer drafting all played a significant role in nurturing and refinement of ideas within this project.

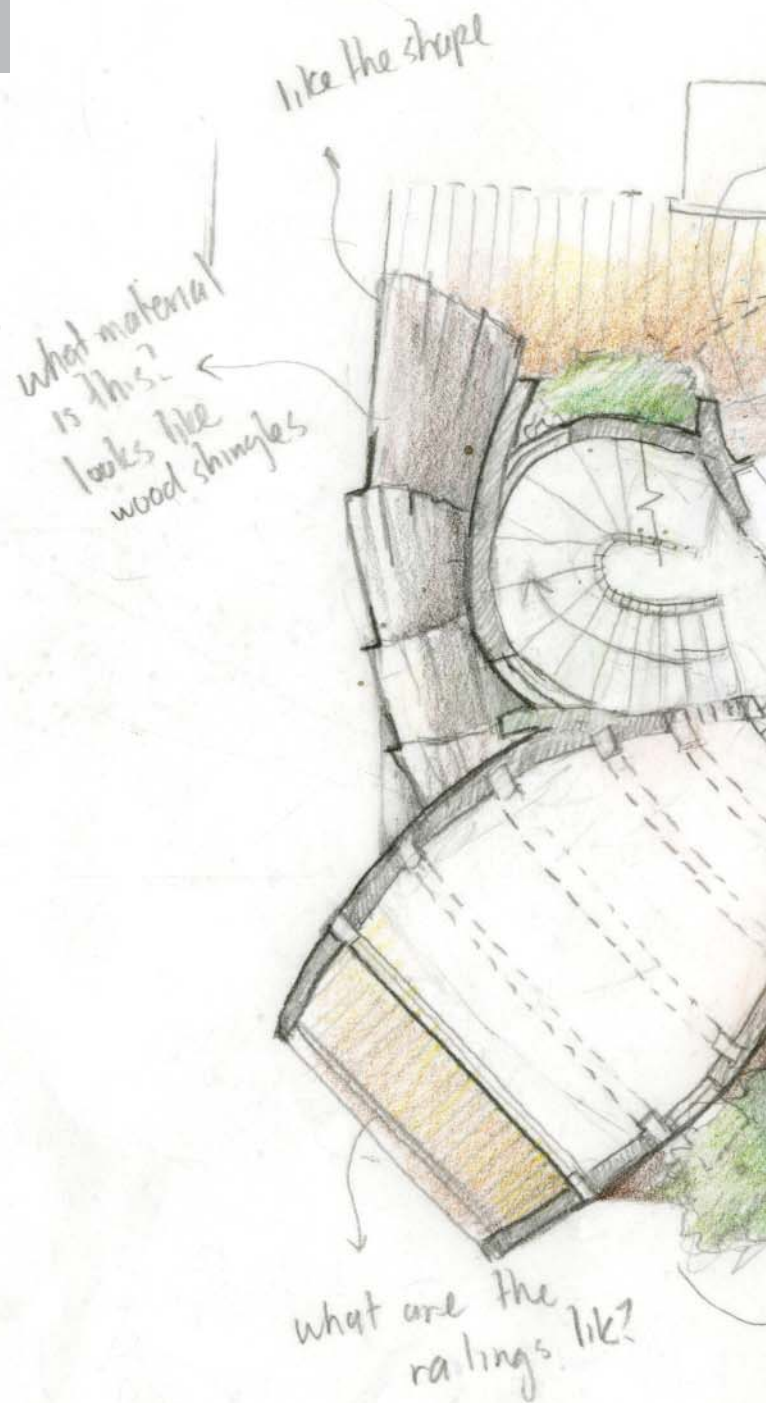
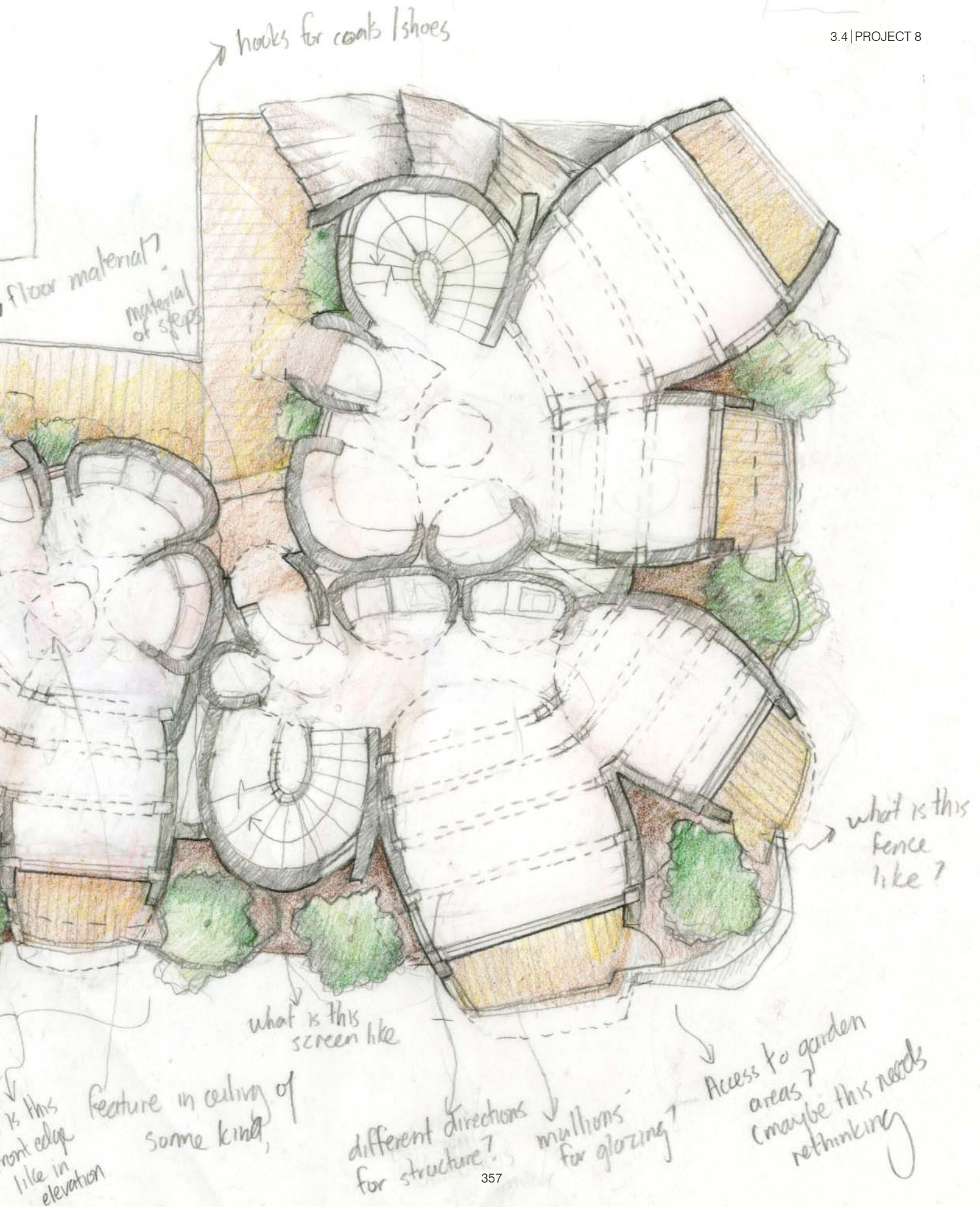


Fig. 34 Developed sketch of first floor plan at approximately 1:75 scale





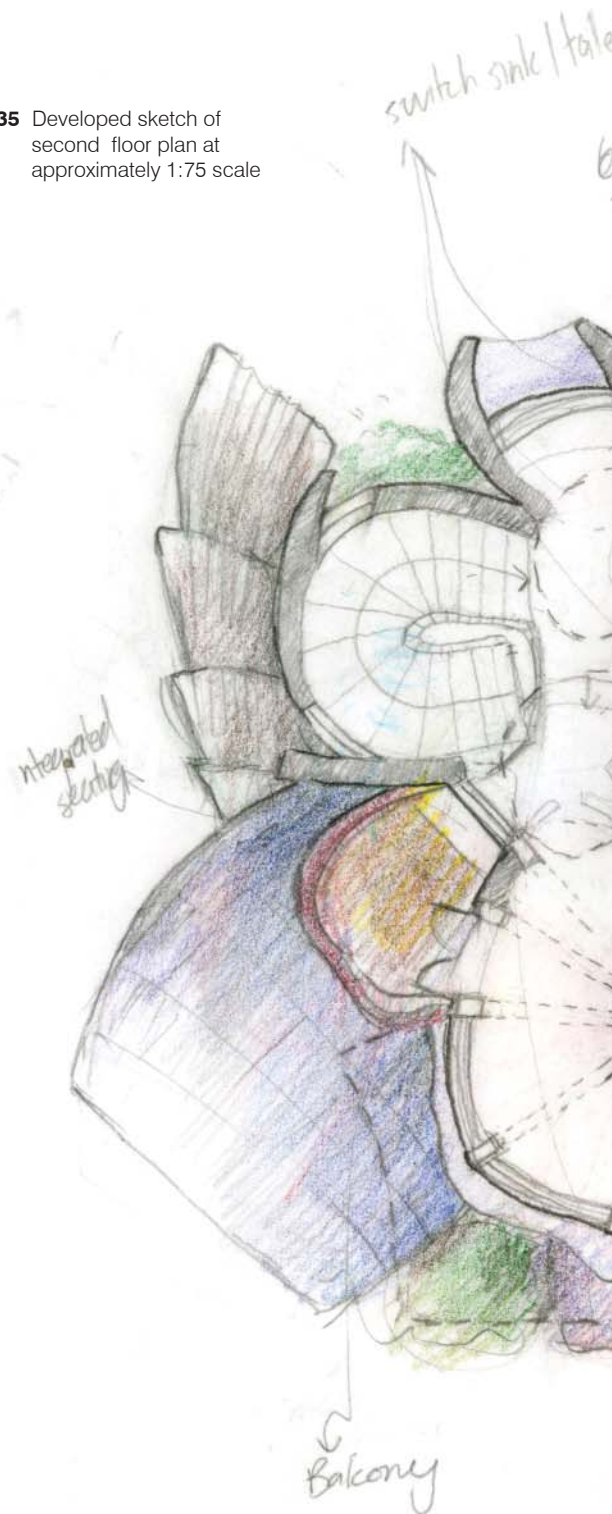
Project 8 Concluding Remarks

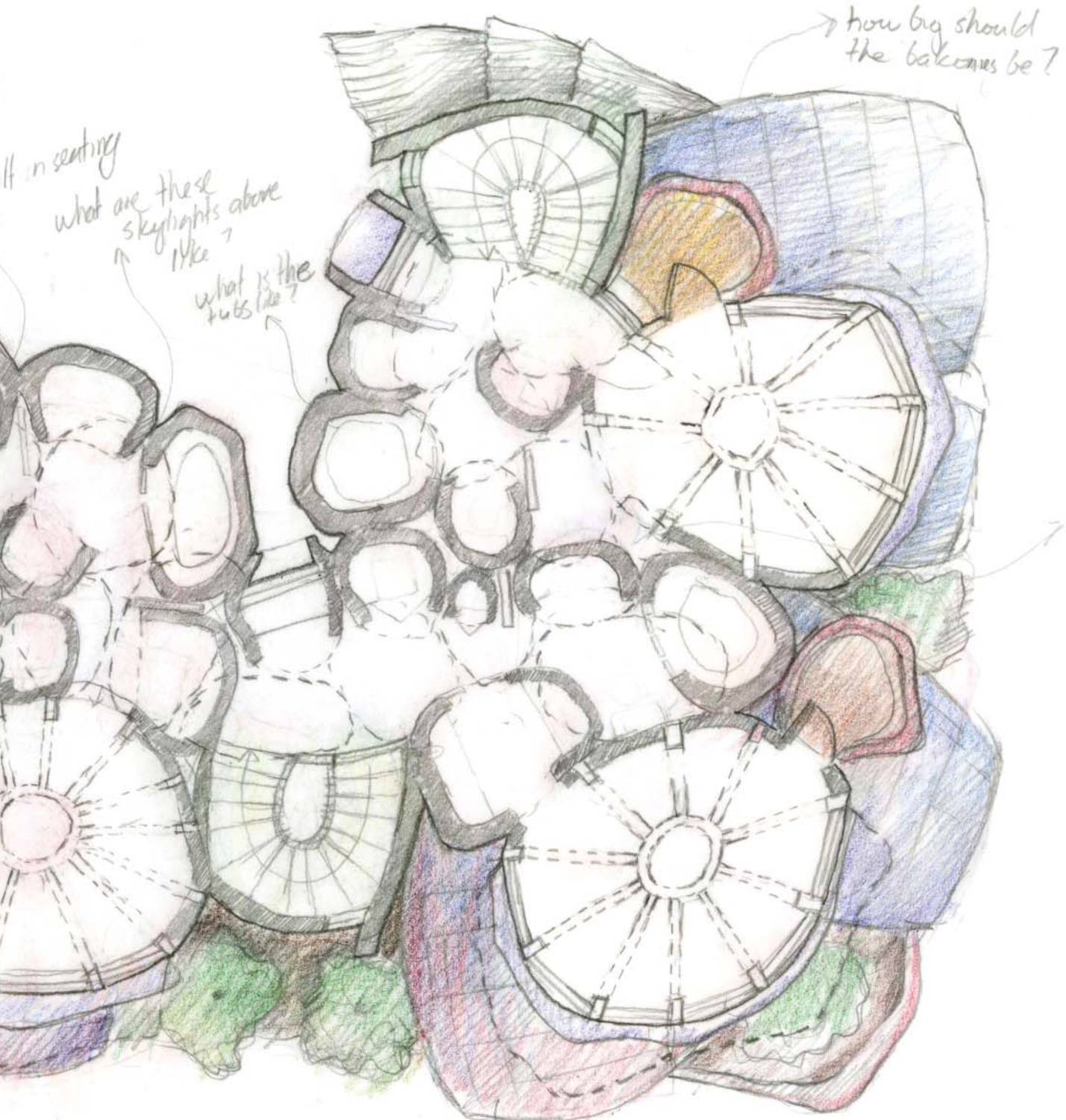
The investigations surrounding the use of different mediums within my explorative making were quite useful. Specifically, they highlighted the value of employing different mediums and techniques to tackle the various issues in the design of a building. Just as architects will typically use plans, elevations, and sections to examine different aspects of a project, this investigation illustrated how this same principle can be applied to the mediums one employs in the maturation of their work. In this instance, because AutoCAD allows one to draw with a high degree of precision it was well suited for determining how much program could fit above the commercial units. However, drawing with pencil or carving rigid foam is much easier and more comfortable to use; in turn, facilitating a more flowing expression of feelings and other visceral judgments.

If I were to continue on with this project I feel I would have eventually moved back to model building, both at a 1:50 scale and a more detailed scale as I did during Project Seven. By working with physical models it would have been easier to understand the sculptural forms of the project in three dimensions.

As with the other projects, the explorative making during Project Eight was based on a reciprocal relationship between my iterative experimentation and visceral evaluations. Even when I was just walking around the site ideas and feelings were triggered that influenced my experimentation later on. This cycle was facilitated through a willingness to play with different combinations of mediums. Through this play with these different mediums, I was able establish a series of methods that helped facilitate my explorative making as well as integrate several functional requirements.

Fig. 35 Developed sketch of second floor plan at approximately 1:75 scale





→ how big should the balconies be?

If in seating
what are these skylights above like?
what is the tubs like?

↓ maybe rework floor in this area

colors of cladding ???!!!
darker?

2.4

Concluding Remarks

Within this gallery, the number of functional requirements accommodated within the work increased with each successive project. Project Six incorporates a rough parti consisting of a series of spaces feeding off of a central circulation space. In turn the final project in this gallery, Project Eight, addresses a site, issues pertaining to access and egress, and incorporates a reasonably developed program while also addressing issues of material and structure at a very notional level.

Collectively, this gallery reveals how an increase in the number and complexity of functional requirements within a project generally requires a more elaborate artistic vehicle in order to accommodate them. Through means, materials, medium, method, and technique these functional requirements are integrated into my explorative making. Specifically, my experiences with Project Eight begin to reveal how a variety of means ranging from physical modelling to computer drafting are necessary to include a sense of play, visceral evaluations as well as functional requirements within explorative making.

In this gallery, conscious, rational thought was also introduced to deal with pragmatic concerns. Although more research is necessary, my own experiences with Project Eight suggest there is room for both in architectural design.

2.5

Evolved Forms of Explorative Making

Evolved forms of explorative making remain effective despite the burden of functional requirements. Functional requirements are the practical and utilitarian considerations that must be satisfied in order for a building to fulfill its intended use.

Frank Gehry and Alvar Aalto both develop their work through explorative making during the conceptual and schematic design stages. At the same, their explorative making is also sensitive to many functional requirements relating to program, site, cost, construction, occupant comfort, budget, and safety. As the construction of buildings is a long and complex process it is difficult to ascertain how explorative making may have infiltrated the latter stages of a project. As a result, these latter stages have not been included within these case studies.



Alvar Aalto is a Finnish architect whose work also included furniture, painting and sculpture. He is recognized for a variety of buildings including the Viipuri Library in Vyborg, Russia, (Fig. 12 -18, Pg. 372 - 373), as well as Villa Mairea, located in Noormarkku, Finland, (Fig. 1, (opposite), Fig. 3-11, Pg. 366-371 19-39, Pg. 374-385)

A study of Aalto's creative process during the conceptual and schematic design stages reveals it to be an evolved form of explorative making. His approach incorporates many functional requirements such as program, occupant safety and comfort, context, cost, and even some aspects of construction such as materiality.

Studying Aalto's work and design process through the lens of the primary characteristics sheds light on to how he incorporates these pragmatic concerns as well as revealing how the different elements of explorative making interact in the development of his buildings.



Fig. 2 Oil painting, 1965, 43 x 52cm

Fig. 1 Villa Mairea elevation







Artistic Vehicle

During the conceptual and schematic design stages, Aalto's artistic vehicle mostly involves sketching, but also integrates other mediums as well. In the preface to Leonardo Mosso's *Alvar Aalto: Teokset -1918-1967*, Aalto asserts, "Paintings and sculptures are all part of my working method. So I wouldn't like to see them separated from my architecture as if they could express something above and beyond it. Many architects have turned to painting as a side shoot of their work. In my case things are different. We could say that I don't see paintings and sculptures as things in different professional spheres. This is difficult to prove case by case: to me these works are all branches of the same tree, the trunk of which is architecture."¹

The influence of his abstract oil paintings, (Fig 2, Pg. 364) on the design of his buildings and vice versa can be deduced from the fact they both often play with and incorporate similar amorphous shapes. (Fig. 1, Pg. 365, Fig. 10, Pg. 370, Fig. 17-18, Pg. 373)

In Juhani Pallasmaa's analysis of Villa Mairea he observes, "Aalto keeps adding motifs and textures as a painter works on patches of local colour, light and shadow. The whole is not a conglomeration of ideas, moods and associations is rather held together by a sensuous feeling in the way that a multitude of elements in a painting are integrated by a consistent light. The design is a deliberate collage."² Pallasmaa validates his observations by citing detailed examples within Villa Mairea.



Fig. 3



Fig. 4



Fig. 5

Fig. 3

Local vernacular construction, the inspiration behind canopy details for Villa Mairea

Fig. 4-7

Canopy details for Villa Mairea



Fig. 6



Fig. 7

Specifically, The rectangular white walls, employed here as a modernist device, contrast a series of more organic timber clad surfaces, field stone pathways and garden walls laced with thick moss, (Fig. 1, Pg. 365, Fig. 38-40, Pg. 383 ,385). On the courtyard side, modernist features such as the sliding glass wall, flat roofs, and blue tile surface, contrast the primitive stone fireplace, simple untreated timber railings and green roof, (Fig. 5, left, Fig. 9, Pg. 369). Within the canopies the white concrete beams and cylindrical columns contrast other parts of the canopy constructed of untreated timbers tied together with rope, (Fig. 4,6, 7, left). Even on a small scale the theme of collage is still present in the hard metal, pitch black fireplace and its rugged stone base contrasting its pure white encasement and its sensual curving forms, (Fig. 10 -11, Pg. 370 - 371).

The whole composition hangs together because the contrasting elements accentuate each other's characteristics creating a balanced heterotopic vision. Collectively, Pallasmaa's analysis reveals how Aalto's interest in painting influenced his approach to design on an innate level.

An important part of Aalto's artistic vehicle is the methods he uses to address functional requirements. Aalto goes to great lengths to research and absorb all the technical, social, economic, and human demands before starting a project. He then forgets about these requirements and lets them sink

into his unconscious. Afterwards, he starts sketching from instinct until the main idea of the project takes shape.

Another method Aalto employs involves organizing his design process into different stages. As demonstrated by the sketches of the Viipuri Library, (Fig. 12, 16, Pg. 372 - 373) and Villa Mairea, (Fig. 19 - 23, Pg. 374 - 375), Aalto typically starts a project by addressing the general idea behind the building. After this is sorted out Aalto then uses sketching as a means to investigate more detailed issues within a project, (Fig. 32 - 36, Pg. 378 - 379). This organization is not surprising as it is a means architects typically employ in order to manage the complexities of architectural design.

Finally, as demonstrated in the development of Villa Mairea, Aalto does several different versions of the plan for the purpose of comparison. This is not unlike Moore who makes several maquettes in order to examine different ideas for a sculpture side by side, (Fig. 24 - 31, Pg. 376 - 377).

The manner in which Aalto's artistic vehicle is molded to suit his various passions as well as the functional requirements in his projects reveals an interlocking relationship between Aalto and his artistic vehicle.

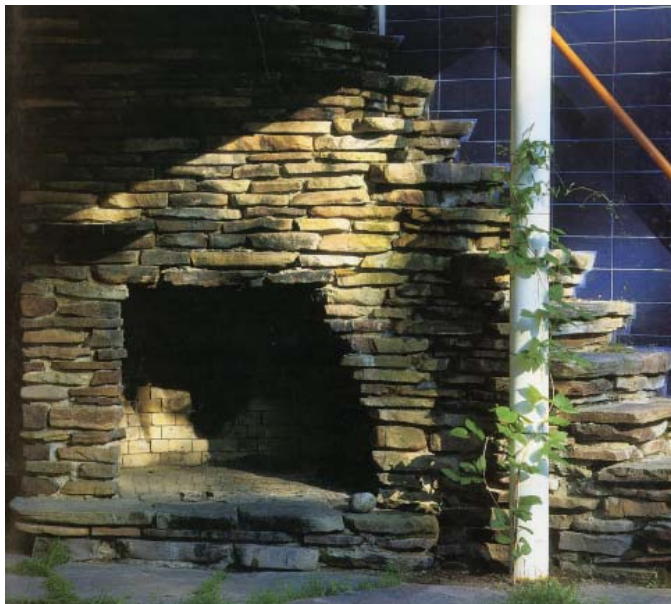


Fig. 8 Courtyard fireplace

Fig. 9 (Opposite) Villa Mairea
detail courtyard elevation



Fig. 11 (Opposite) Villa Mairea, fire place in living room



Fig. 10 Fireplace in living room





Iterative Experimentation

In the *Trout and the Stream*, Aalto's description of his iterative experimentation illustrates how all the different elements of his artistic vehicle come together and are put into practise.

When I personally have to solve some architectural problem, I am constantly - almost without exception, indeed - faced with an obstacle difficult to surmount, a kind of 'three in the morning' feeling. The reason seems to be the complicated, heavy burden represented by the fact that architectural planning operates with innumerable elements which often conflict. Social, human, economic and technical demands combined with psychological questions affecting both the individual and the group, together with the movements of human masses and individuals, and internal frictions - all these form a complex tangle which cannot be unraveled in a rational or mechanical way. The immense number of different demands and component problems constitute a barrier from behind which it is difficult for the architectural basic idea to emerge. I then proceed as follows - though not intentionally. I forget the whole maze of problems for a while, as soon as the feel of the assignment as the innumerable demands it involves have sunk into my subconscious, I then move onto a method of working that is very much like abstract art. I simply draw by instinct, not architectural synthesis, but what are sometimes quite child like compositions, and in this way on an abstract basis the main idea generally takes shape, a kind of universal substance that helps me, to bring to numerous contradictory, elements into harmony.

.....

- Fig. 12** Concept Sketch
- Fig. 13-14** Main Reading Room
- Fig. 15** Longitudinal Section
- Fig. 16** Concept Sketch
- Fig. 17** Detail of Undulating Ceiling in Lecture Room
- Fig. 18** Discussion and Lecture Room



Fig. 12



Fig. 13

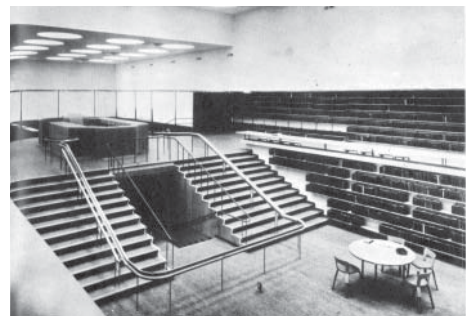


Fig. 14

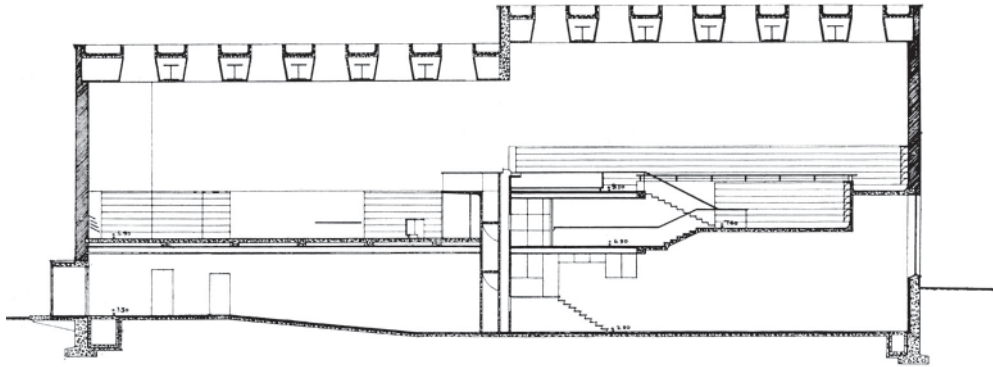


Fig. 15



Fig. 16

Just as it takes time for a speck of fish spawn to develop into a fully grown fish, so, too, we need time for everything that develops and crystallizes in the world of ideas. Architecture demands more of this time than other creative work. A minor example that I can mention from my own experience is that what may seem to be just playing with form may unexpectedly, over a long period, lead to the emergence of an actual form.³

In same essay Aalto also goes on to provide a specific example of his iterative experimentation

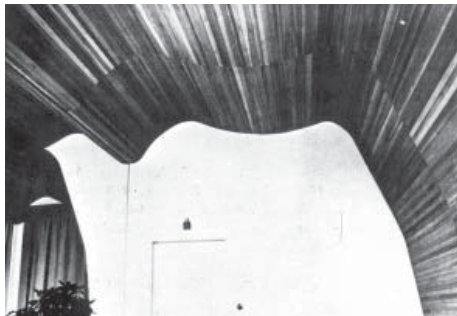


Fig. 17



Fig. 18

When I designed Vipuri City Library (and I had plenty of time - a whole five years) I spent long periods getting my range, as it were, through naïve drawings. I drew all kinds of fantastic mountain landscapes, with slopes lit by many suns in different positions, which naturally gave birth to the main idea of the library building. The architectural framework of the library comprises various reading and lending areas stepped at different levels, while the administrative and supervisory centre is at the peak. My childlike drawings were only linked very indirectly with the architectural idea, but in any case they lead to an interweaving of the section and the plan shape, and to a kind of unity of horizontal and vertical construction.³ (Fig. 12 - 18, left)

The numerous developmental sketches and drawings done for Villa Mairea, (Fig. 19 - 35, Pg. 374 - 379), provide an elaborate example of the iterative experimentation Aalto describes in the *Trout and the Stream*. Based on the descriptions and accompanying sketches iterative experimentation is a significant part of Aalto's explorative making. In short, whether he uses rough, free hand sketches, (Fig. 19 - 23, below and opposite, Fig. 32 - 35, Pg. 378 - 379) or different versions of fully drafted plans to refine his work, (Fig. 24 - 31, Pg. 376 - 377), the knowledge gained from each drawing or iteration somehow influences any subsequent drawing.

- Fig. 19** Sketch of ground floor plan
- Fig. 20** Sketch of ground floor plan and elevation
- Fig. 21** Site plan and volumetric studies
- Fig. 22** Plan and volumetric studies
- Fig. 23** Plan and perspective studies

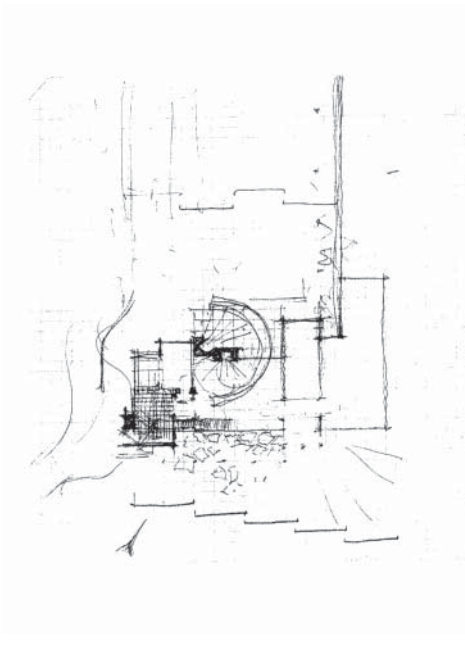


Fig. 19

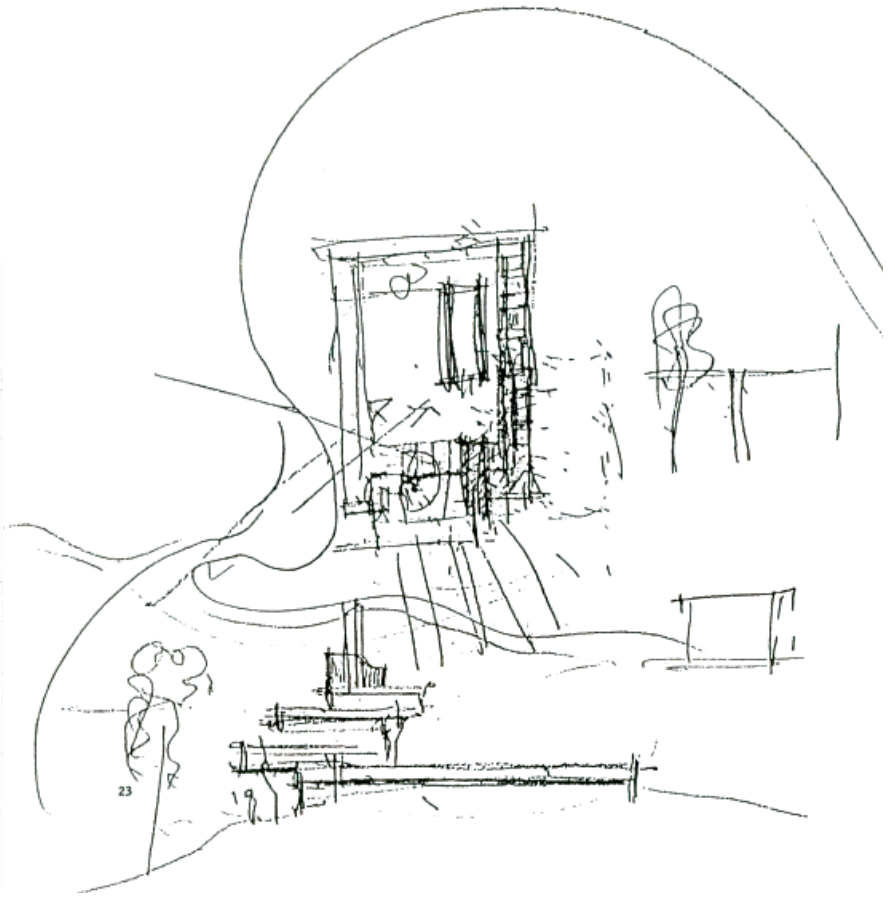


Fig. 20

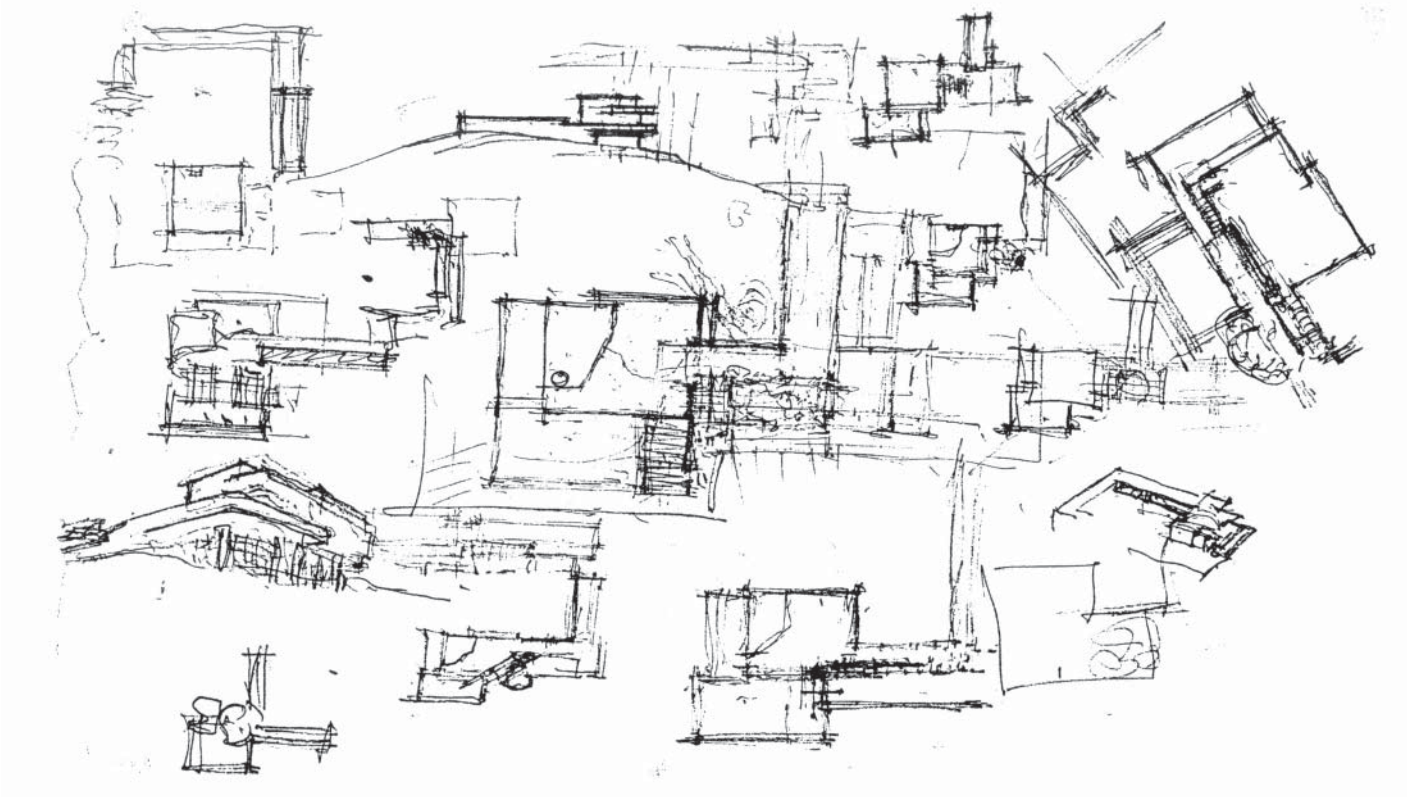


Fig. 21



Fig. 22

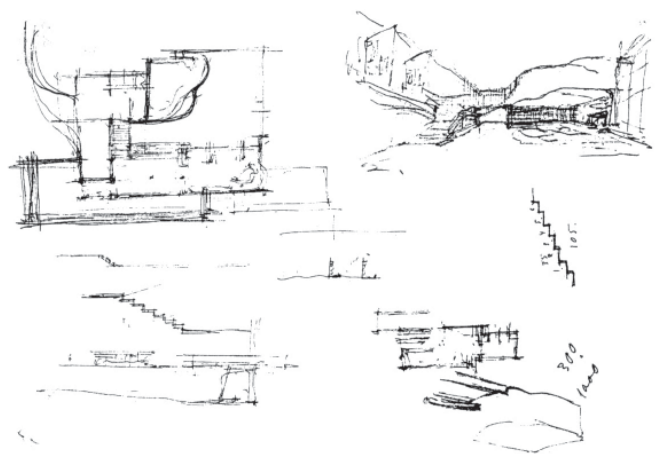


Fig. 23

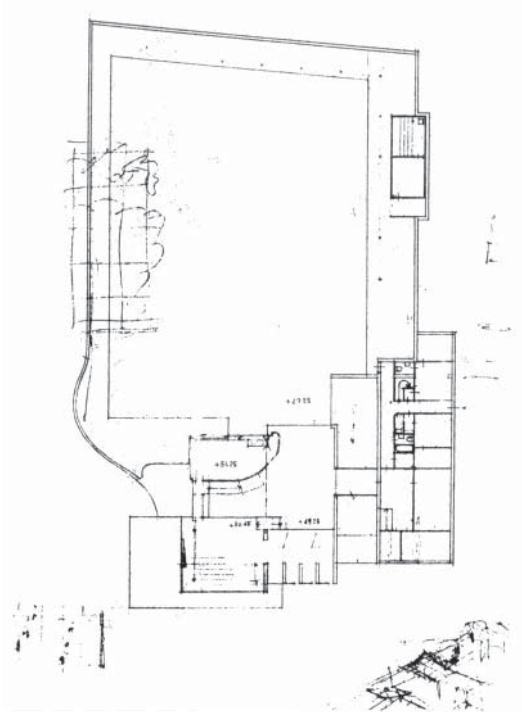


Fig. 24

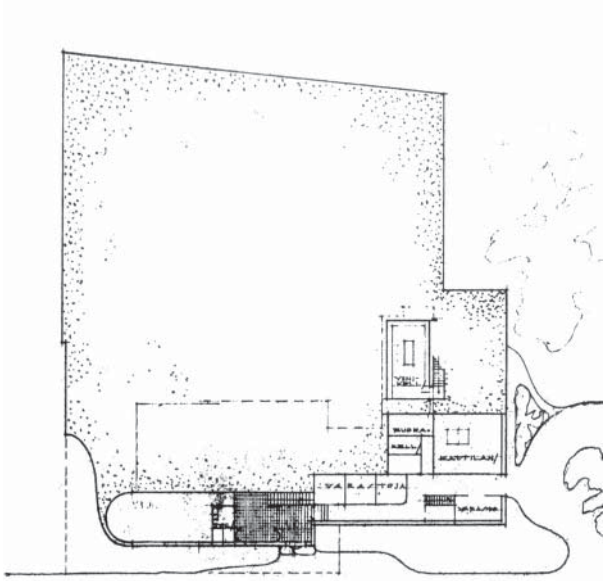


Fig. 26

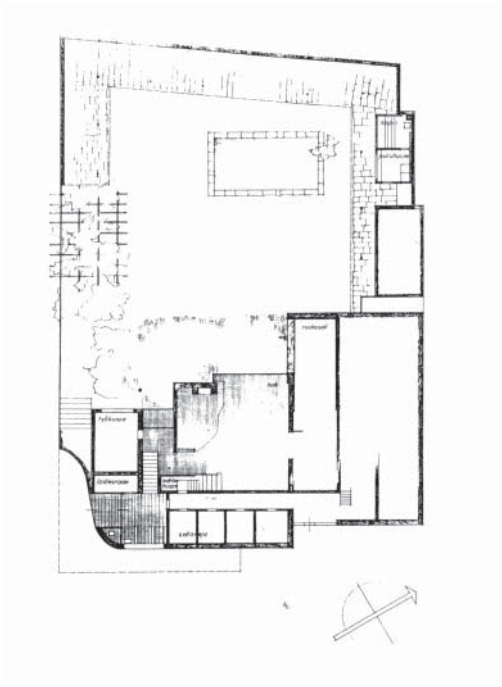


Fig. 25

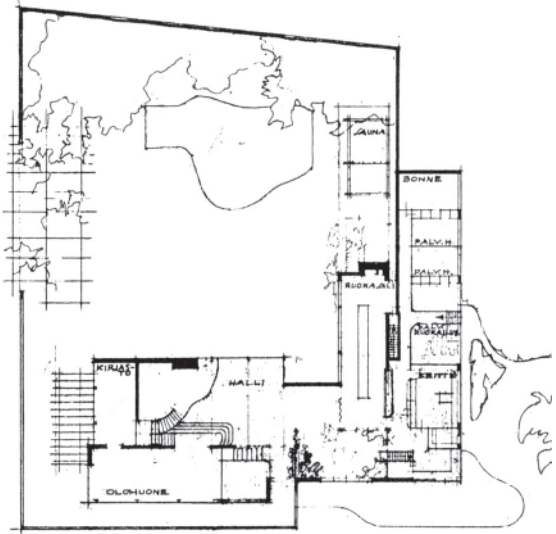


Fig. 27

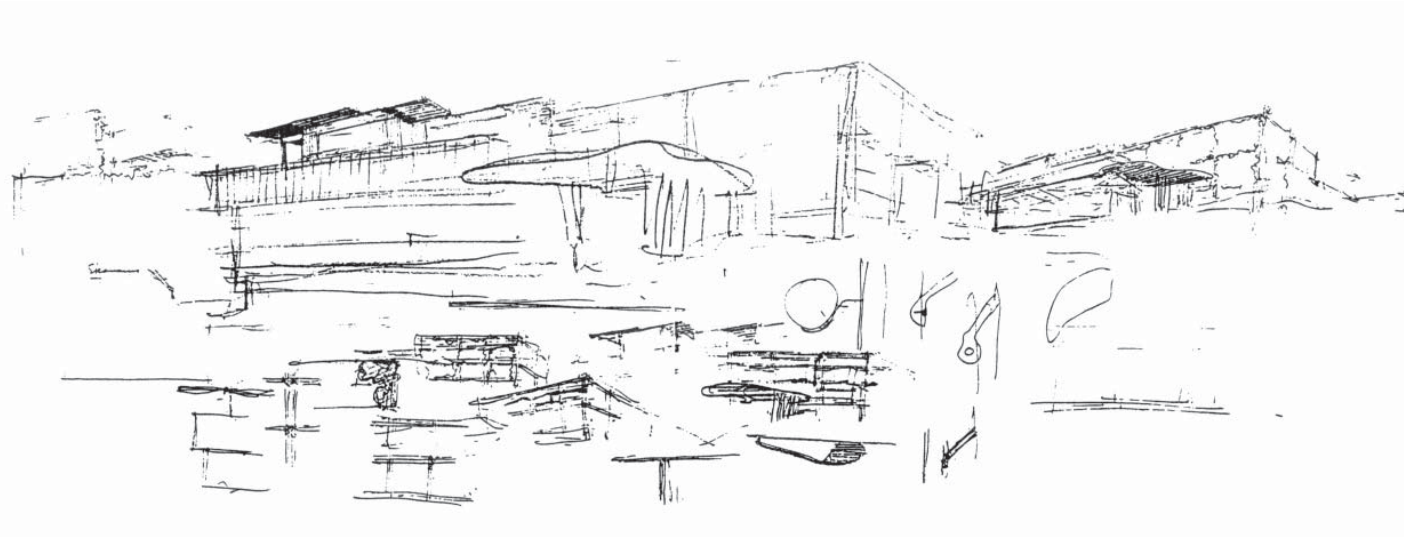


Fig. 32 Sketches of canopy

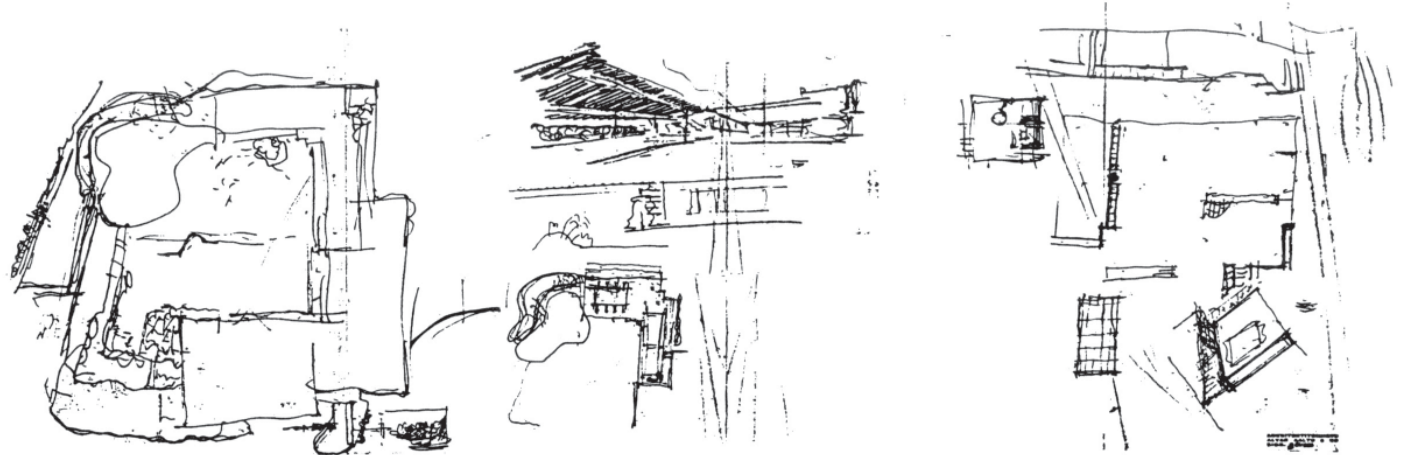


Fig. 33 Sketches of courtyard and site

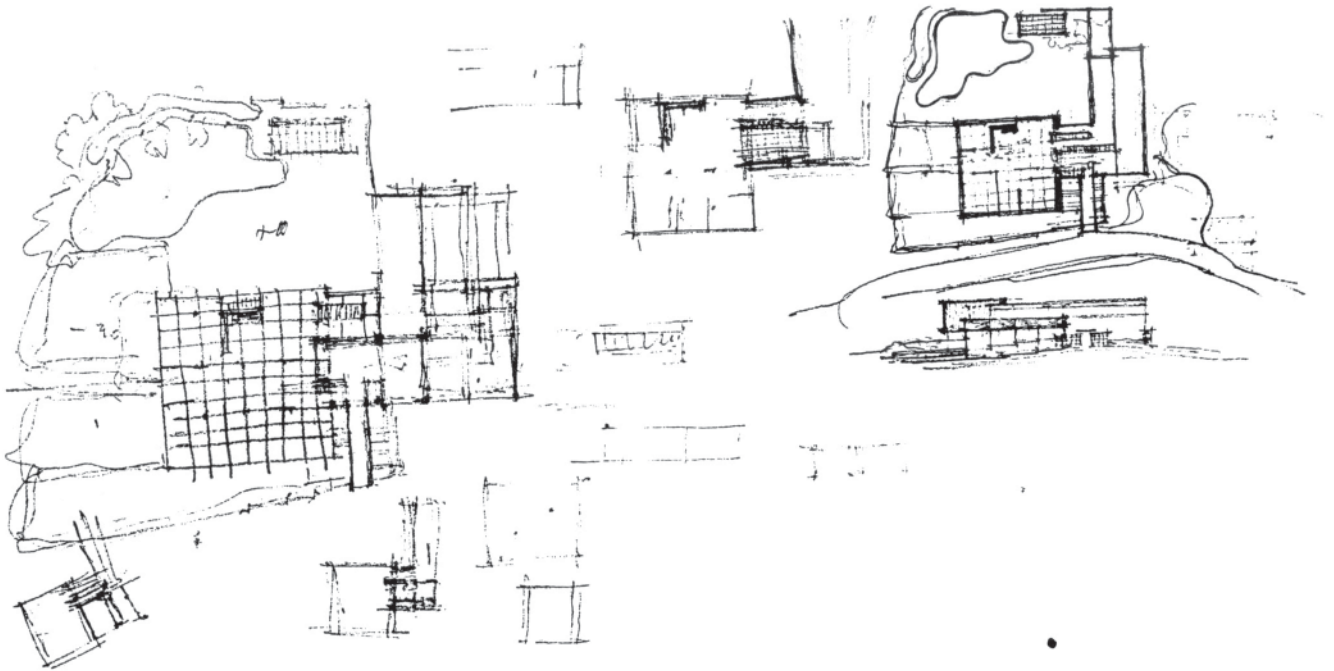


Fig. 34 Detailed plan studies of living area and courtyard

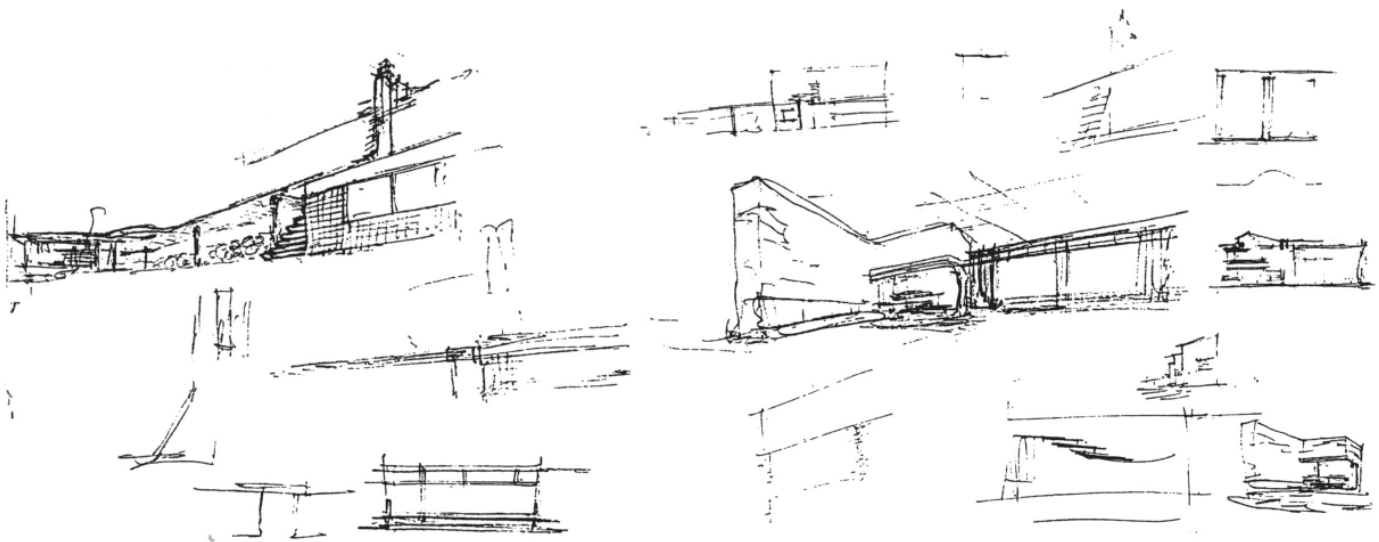



Fig. 35 Detailed sketches of dining room, living room fireplace, and sauna terraces

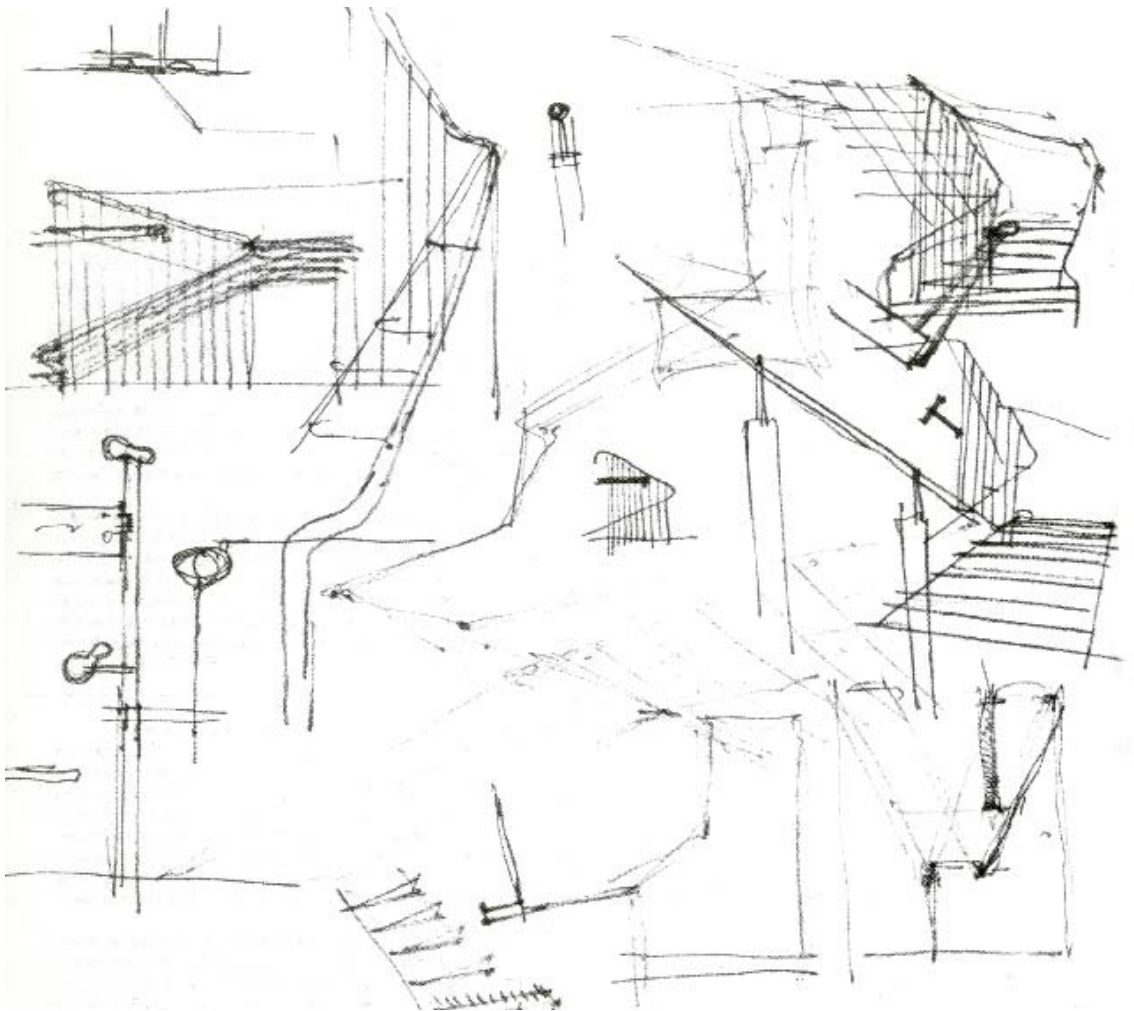


Visceral Evaluations

During the very early stages of his work, the reactions that guide Aalto's iterative experimentation comprise of different types of visceral evaluations. This much is clear from the *Trout and the Stream* when he talks about how he simply draws "by instinct, not architectural synthesis."³ He also goes on to correctly speculate how the source of his visceral evaluations when he asserts, "architecture and the free arts have a common root, a root which is abstract in some way but nevertheless based on knowledge and analyses stored in our subconscious."⁴

Fig. 36 (Below) Villa Mairea stair sketches

Fig. 37 (Opposite) Finished staircase





5.1.18

5.1.40



Playful Mentality

In the *Trout and the Stream* Aalto makes specific reference to the value of play as a means to develop a project. In *Arkkitehti*, Aalto states how highly he values the notion of play as part of his creative process.

Though we are in the middle of an experimenting, calculating and utilitarian age we still have to believe that play has a vital role in building a society for man, the eternal child....

Thus we have to combine experimental work with the mentality of play, and vice versa.

It is only when the structural parts of a building, the forms logically derived, and empirical knowledge are imbued with what we can seriously call the art of play that we are on the right road. Technology and economy must always be combined with a life-enriching charm.⁵

The numerous sketches presented here demonstrate how Aalto is not afraid to make changes to his work to help it develop. This embracing of explorative making through his numerous sketches validates his earlier comments on the importance of fuelling his work with a playful mentality. Furthermore, his descriptions in the *Trout and the Stream* also demonstrate how he is willing to trust his visceral evaluations implicitly in the development of his projects.



Fig. 38 Villa Mairea entrance canopy



Fig. 39 Front elevation



Through his own accounts and work it is clear Aalto utilizes an evolved form of explorative making. In turn, his approach addresses many functional requirements during both the conceptual and schematic design stages of a building. Specifically, Aalto developed an elaborate artistic vehicle which employs several methods including a research phase and sequencing design decisions according to their scale as a means to integrate these practical concerns.

Studying Aalto's explorative making provides insight as to how the primary characteristics can interact with each other. He reveals how his iterative experimentation, which takes the form of research and various forms of drawing, nurtures his instincts which, in turn, instigate further experimentation.

Aalto's creative process is also facilitated by a playful mentality typified by his willingness to make changes and trust his feelings to guide the maturation of his work. In addition, Aalto also employs an artistic vehicle that not only incorporates his artistic training, but the practical requirements of a project as well.

NOTES:

1. Aarno Ruusuvuori, ed., Alvar Aalto, 1898 - 1976, (Helsinki: Yhteiskirjapaino Oy, 1978), 40.
2. Juhani Pallasmaa, Global Architecture: Villa Mairea, Noormarkku, Finland, 1937-39, (Tokyo: A.D.A. EDITA, 1985), 3.
3. Ruusuvuori, Alvar Aalto, 22,25.
4. Ibid., 25.
5. Ibid., 39-40.

Fig. 40 (Opposite) Courtyard elevation





Frank Gehry Introduction

Similar to Alvar Aalto, Frank Gehry came at architecture through the visual arts. In addition to being an architect, he is also a painter, sculptor, and furniture designer and is renowned for several projects including his own home in Santa Monica, California, (Fig. 1, right) as well as the Guggenheim Museum in Bilbao, Spain, (Fig. 10 - 17, Pg. 390 - 393).

Through an analytical lens made up of the primary characteristics the development of Gehry's buildings during the conceptual and schematic stages is revealed to be an evolved form of explorative making. In turn, he balances numerous functional requirements with his aesthetic interests. Studying the development of Gehry's projects also reveals how iterative experimentation, the artistic vehicle, visceral evaluations, and a playful mentality can interact during the course of explorative making.

Fig. 1 Elevation of Gehry's Santa Monica Home







Artistic Vehicle

In relation to his buildings, Gehry's artistic vehicle weaves together different types of modeling and drawing that accommodate his passion for visual arts as well as the numerous practical concerns inherent in his projects. Similar to Aalto, a conflict arises for Gehry when he is forced to consider these functional requirements in his projects. He confesses, "Painting and sculpture can engage you emotionally, and architecture has the potential for doing it when it's done with that intention. But there is so much stuff to hide behind, such as function and context. How do I make it? We are really struggling here, but that is the kind of detailing I do, and that is different from the way other architects work. I don't know if that's better or worse. It's just different."¹

In order to confront these practical concerns Gehry begins by researching these constraints in detail. Small examples of this are the initial site sketches for the Guggenheim project in Bilbao, (Fig. 10 - 13, Pg. 390 - 391), and his survey of the materials on the properties in and around his home in Santa Monica. Specifically, the metal siding on the camper vans and chain link fences in his neighbors' yards became the inspiration behind the cladding materials for his home.² (Fig. 1, Pg. 387).

After this research phase Gehry organizes his design decisions according to scale. For instance, the overall vision for the project is addressed first through a series of rough sketches and massing models.

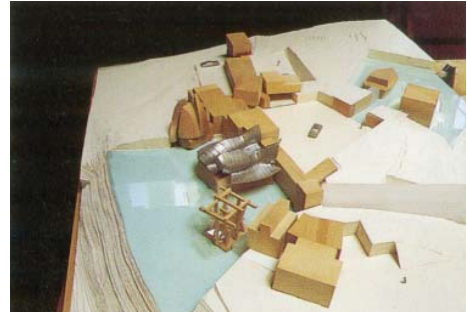


Fig. 2 May 1991

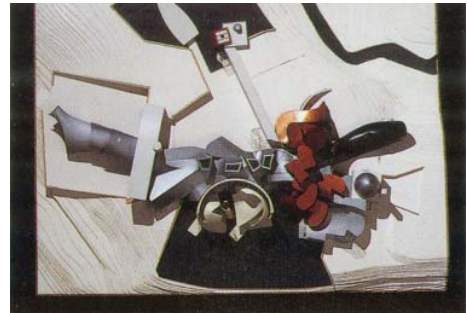


Fig. 3 September 1992



Fig. 4 December 1993

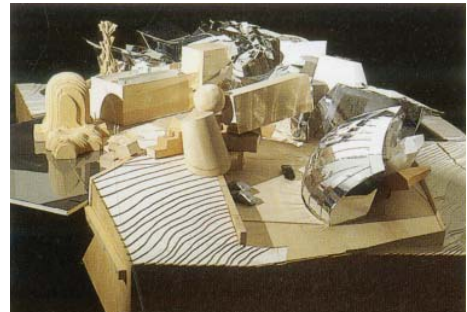


Fig. 5 December 1994



Fig. 6 May 1994



Fig. 7 December 1994



Fig. 8 February 1995



Fig. 9 Final Model 1995

Fig. 2 - 9 The development of the Lewis Residence through several iterations from 1991-1995

When we start a project we play in plain and neutral blocks of wood for a long time until we get the organization and the scale right for the buildings on the site. While we're doing this, I make my sketches, because as soon as I understand the scale of the building and the relationship to the site and the client, I start drawing. Those drawings give Edwin [Chan] and Craig [Webb] a sense of where I want to go, and they start making rough study models with some inkling of scale and architectural language; we go through that for what feels like months.³

This weaving together of different models, sketches and plan drawings is demonstrated in the development of the Telluride Residence, (Fig. 31 - 37, Pg. 402 - 403, 405).

The drawing Gehry refers to in his comments is a key component of his artistic vehicle as it is through sketching Gehry acquires an artistic freedom to comfortably express his feelings and inspirations. Gehry writes, "You see it in Michelangelo's Slaves, for example, where he left rough marble untouched. He didn't have a picture to work from, he found the form in the marble. It's the same in my drawings. I have a freedom in my drawings that I love to express in my architecture."⁴ (Fig. 10 - 17, Pg. 390 - 393)

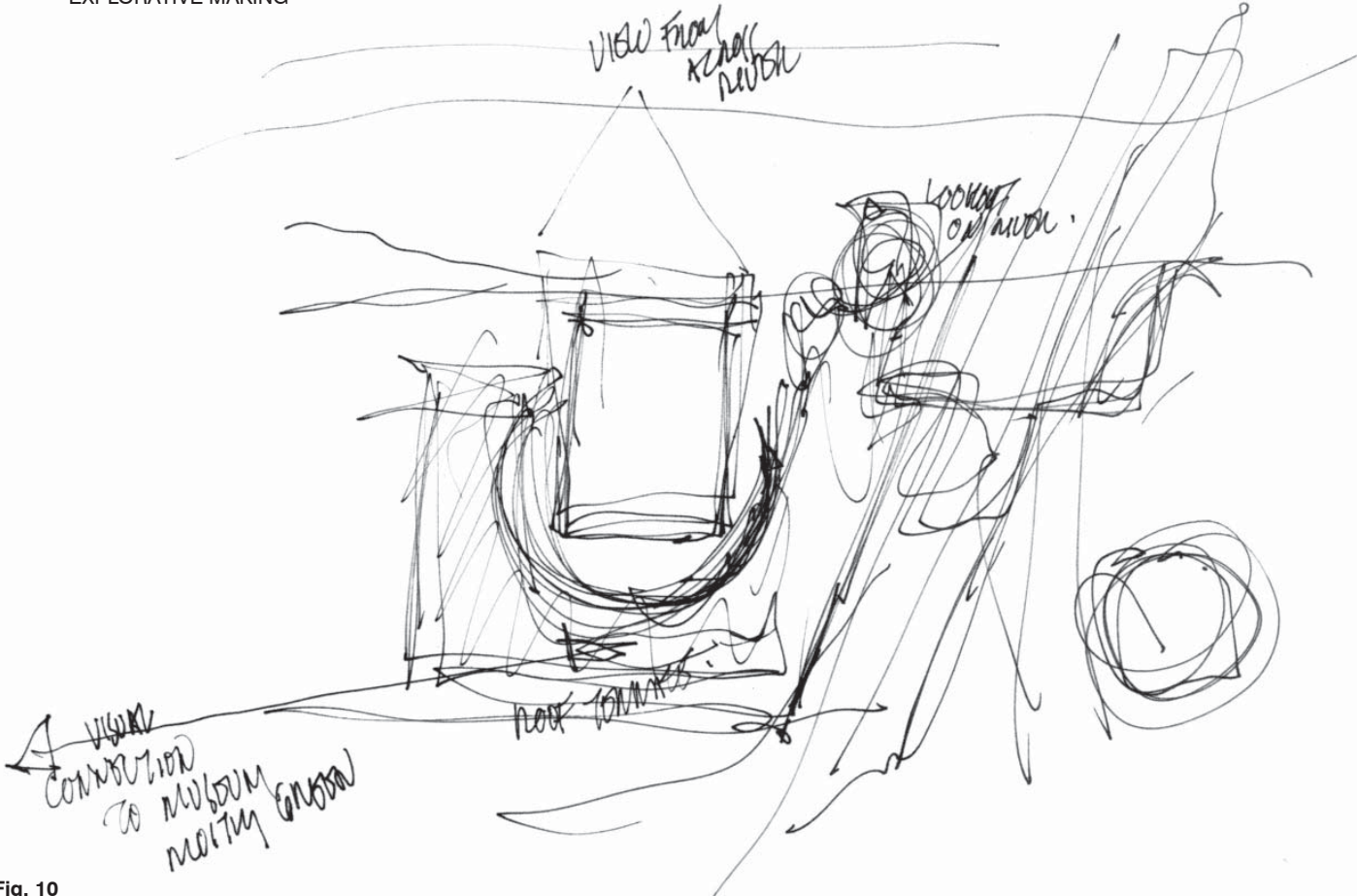


Fig. 10

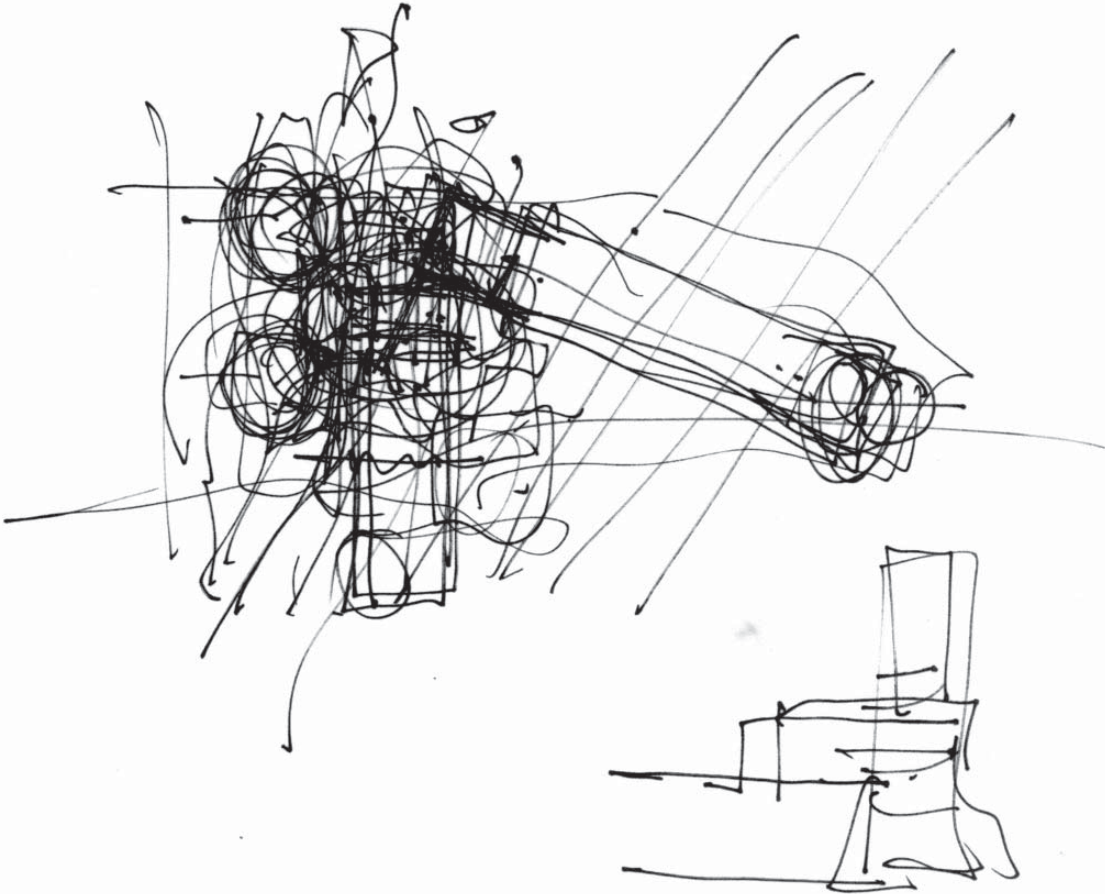


Fig. 11

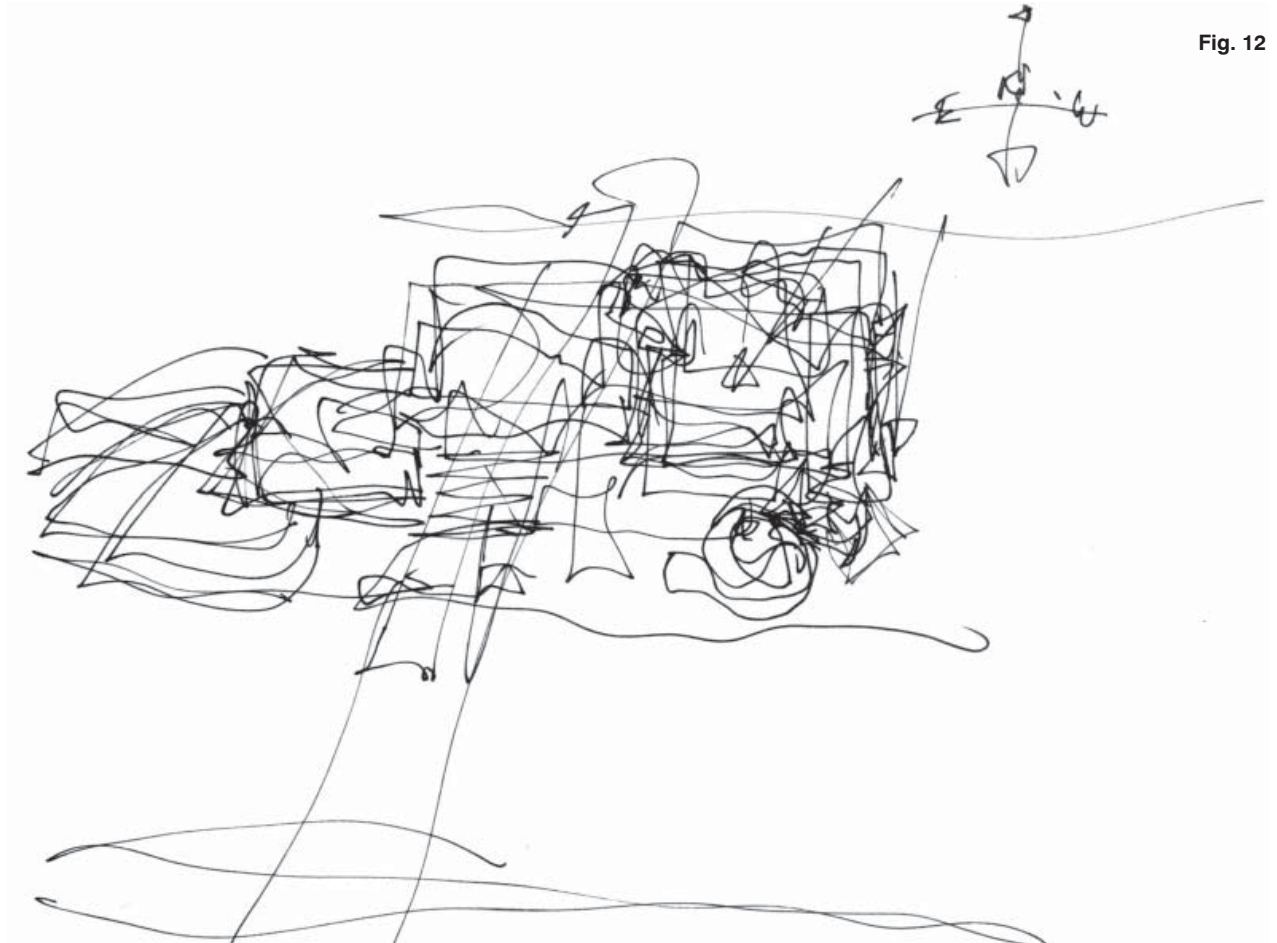
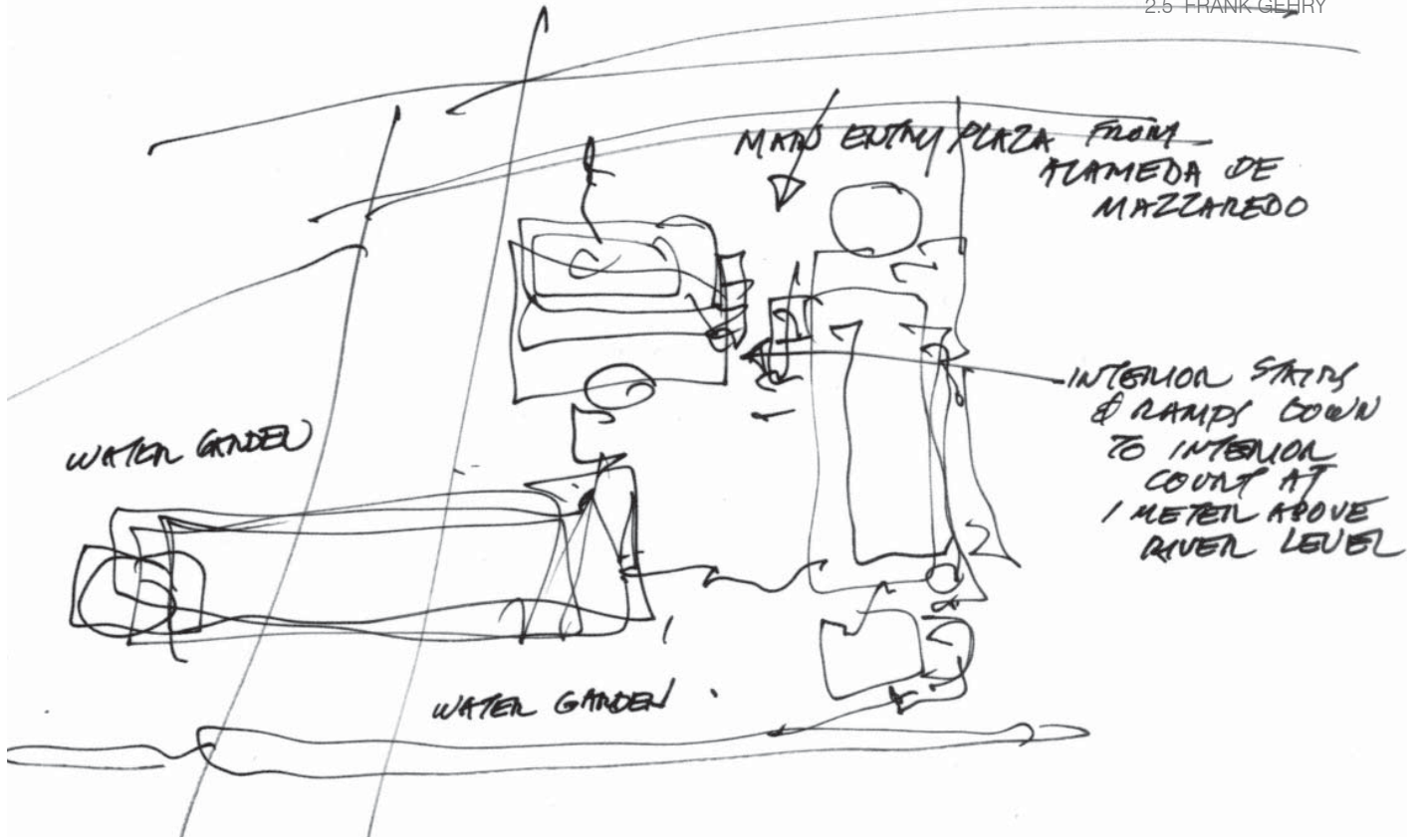


Fig. 10 - 13 Site concept sketches for Guggenheim Museum, Bilbao

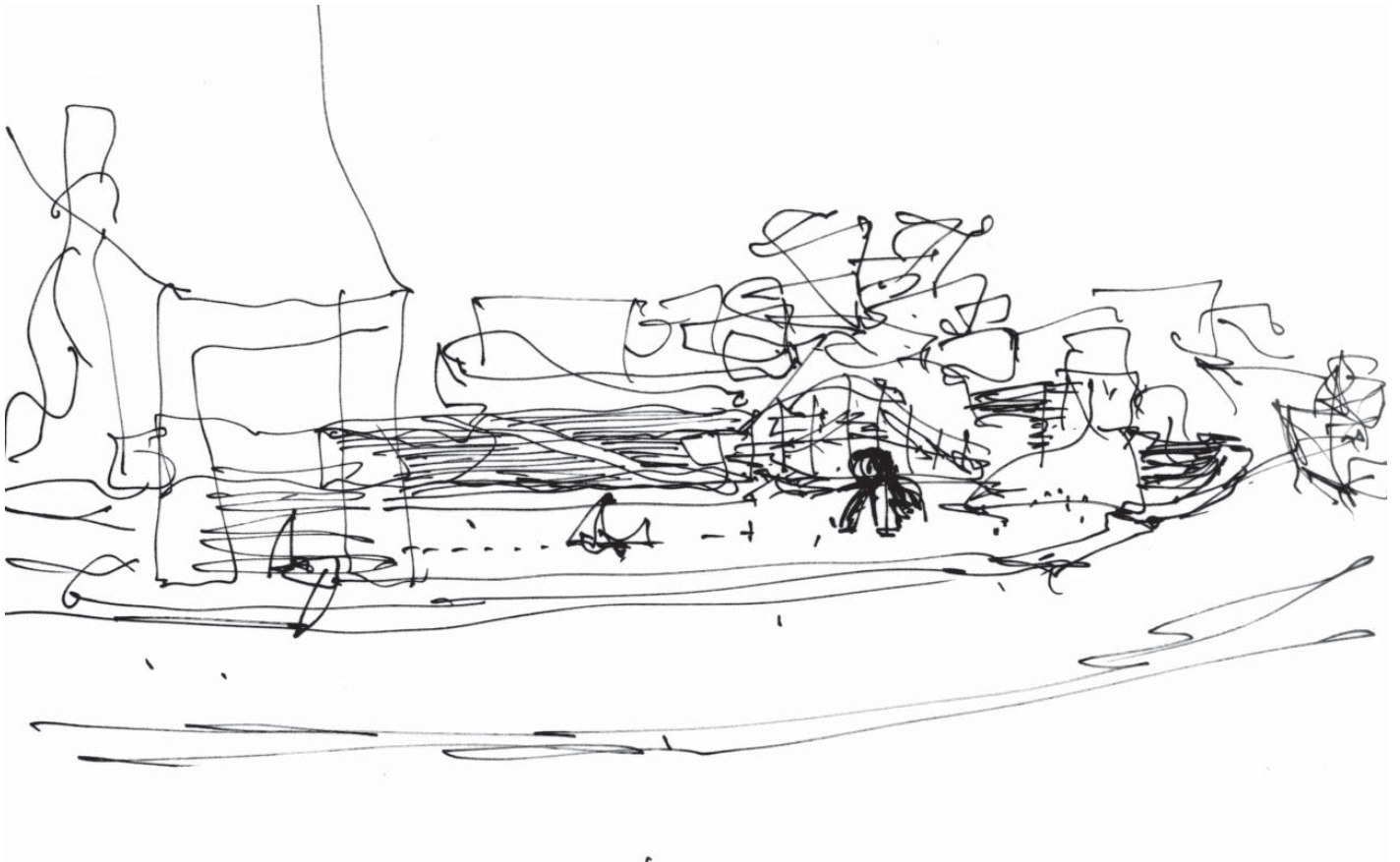


Fig. 14

187. GUSTAVS. F. GERNY BILBAO

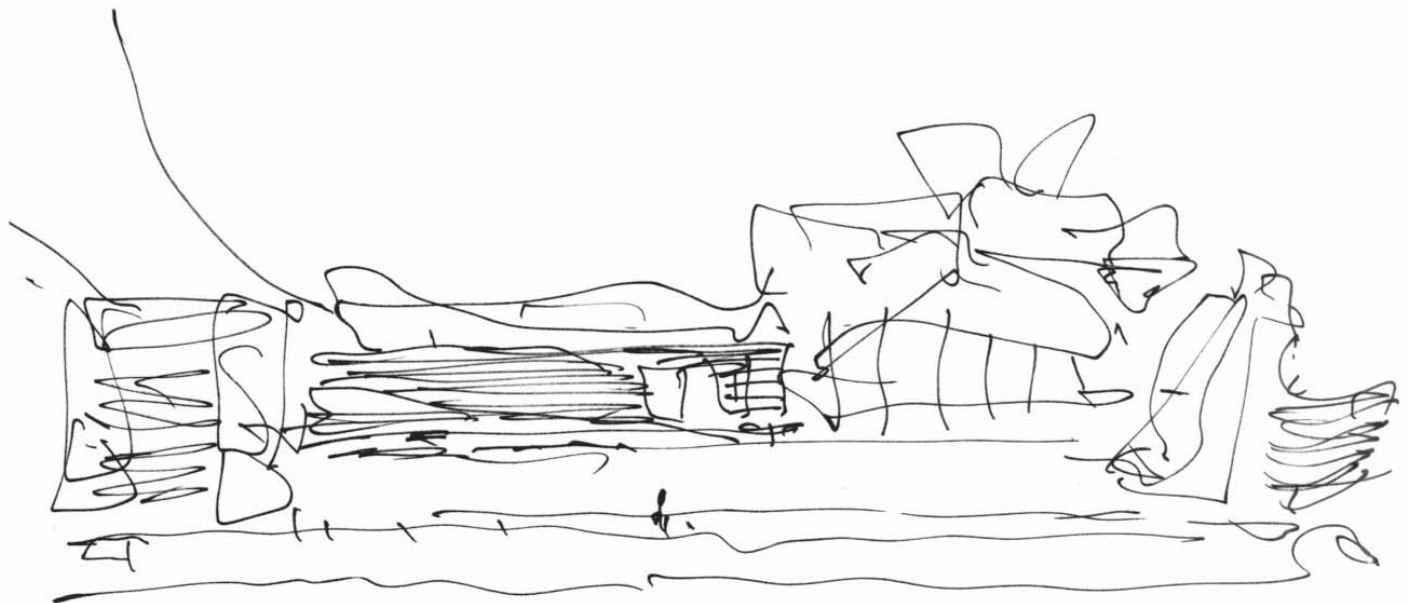


Fig. 15

187. GUSTAVS. BILBAO F. GERNY



Fig. 16

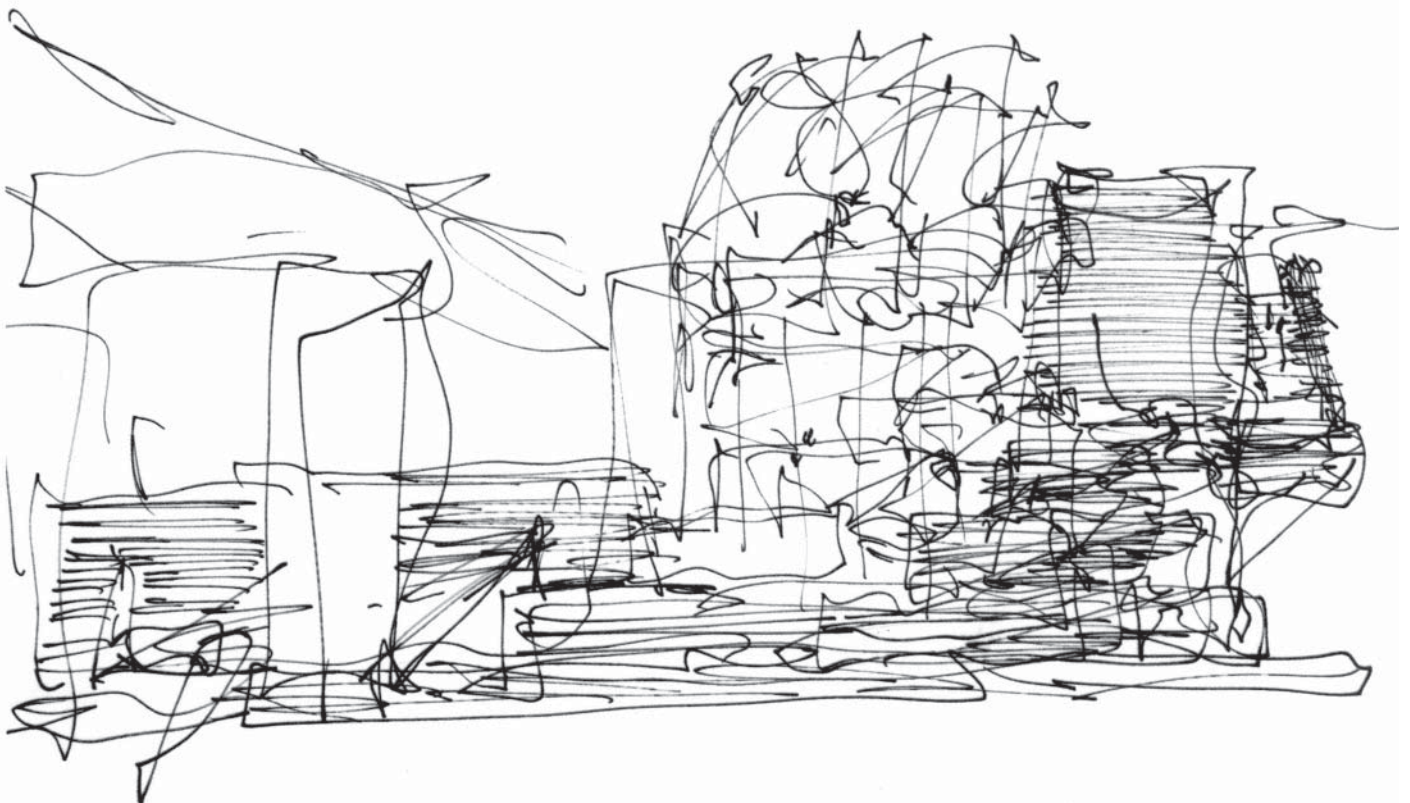


Fig. 14 - 17 Elevation and Section Concept Sketches for Guggenheim Museum, Bilbao

Another layer of complexity is added to his artistic vehicle when Gehry works with, "two or three different scale models at the same time, so that the finished building is the issue rather than the model."⁵ In addition, similar to Henry Moore with his maquettes, Gehry also makes several versions of a model and then selects the one he likes best for further development. Both of these methods are evident in the development of the Museum of Tolerance in Jerusalem, where several versions for the Great Hall (Fig. 19, opposite) are integrated into a larger model (Fig. 18, below) of the entire scheme.

Like all of the artistic vehicles described in this thesis, the molding of Gehry's multi-faceted artistic vehicle to suit a myriad of artistic aspirations and functional considerations reveals an intertwined relationship between the two.

Fig. 18 (Below)
Full model of Museum of Tolerance, Jerusalem

Fig. 19 (Right)
Detail models of different options for Great Hall for Museum of Tolerance

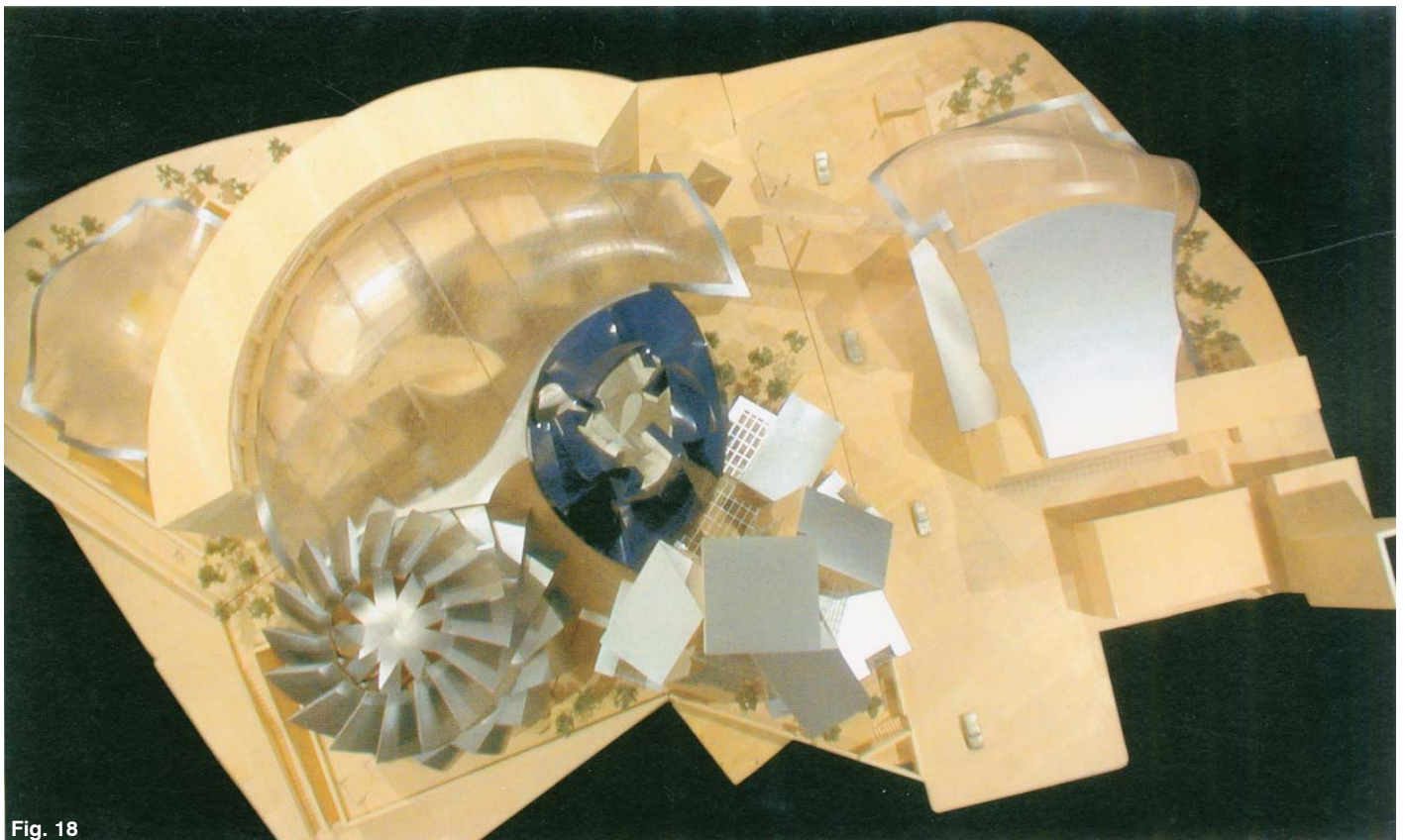


Fig. 18



Fig. 19



Iterative Experimentation

Through Gehry's comments one can get an overall snapshot of how all the different elements of his artistic vehicle come together in his iterative experimentation: "When I start a project, I inform myself a lot about the project requirements and the people involved. And then I work in the models - trying things, trying forms, looking. I try something and I take it off, then I try it again, and the work slowly evolves a piece at a time. If I too consciously premeditate, I don't enjoy it. I don't find it as exciting, and the end result isn't as good. Sometimes when I'm presenting a project I don't know where I'm going beyond a certain point." ⁶ Specifically, Gehry talks about how he works, "more like a sculptor, "molding, pushing, changing, and I sketch and work back to the plan." ⁷ This iterative experimentation can be understood in more detail through the following excerpt from *Sketches of Frank Gehry*.

Gehry working on a model with Craig Webb, during his pseudo documentary filmed by Sidney Pollock,

Pollock : "What don't you like?"

Gehry: "I don't know yet. Seems a little pompous, pretentious."

Gehry pauses, looks at the model and thinks for a little while.

Gehry: "This has to get crankier", he then looks at

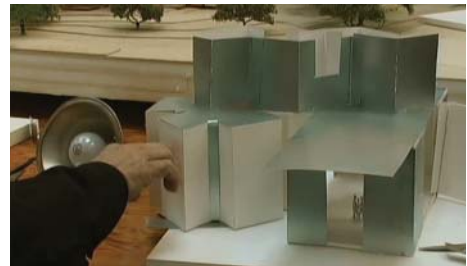


Fig. 20



Fig. 21



Fig. 22

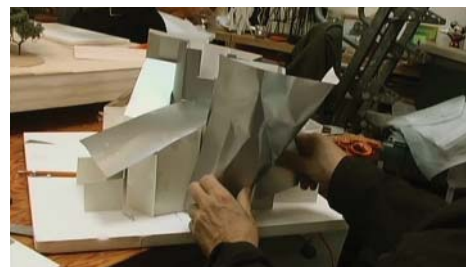


Fig. 23

Fig. 20 -27 Frank Gehry working with Craig Webb during *Sketches of Frank Gehry* documentary by Sidney Pollock



Fig. 24

Craig Webb, (his colleague) "Want to try it?"

Craig cuts up some paper and corrugates it and places the paper on the model. Gehry pauses, and asks Webb to take out a couple of the corrugations which he does. Webb then re-inserts the corrugated paper into the model.



Fig. 25

Gehry: "That is so stupid looking it's great." ⁸

This excerpt along with figures 20 - 27 demonstrate how Gehry's explorative making manifests itself through an iterative experimentation where each new piece added to a model is influenced by his previous experimentation.



Fig. 26

This iterative experimentation is also evident in the gradual development of the Lewis Residence, (Fig. 2 - 9, Pg. 388-389), the Samsung Museum of Modern Art, (Fig. 26, Pg. 399), as well as the different versions of the Great Hall in the Museum of Tolerance (Fig. 18 - 19, Pg. 394 - 395), the different versions of the interior for the Walt Disney Concert Hall, (Fig. 29, Pg. 401), and the Telluride House (Fig. 30 - 37, Pg. 402-403, 405). In conjunction with the model shown in the *Sketches of Frank Gehry*, these projects demonstrate how this iterative experimentation can involve developing a scheme through a single model or multiple models, different types and combinations of drawings and models, and even simply doing different versions of a scheme. In regards to the site sketches for the Guggenheim in Bilbao, and choosing the materials in which to clad his Santa Monica home, this iterative experimentation even takes on the form researching the characteristics of a particular site.



Fig. 27



Visceral Evaluations

Through Gehry's earlier quotations and the aforementioned excerpt from *Sketches of Frank Gehry* it is evident he relies on visceral evaluations to help guide the evolution of his work. The first clue comes when he admits to making decisions with little conscious premeditation. The second clue comes from the documentary when Sidney Pollock asks Gehry what he does not like about the model. Gehry replies, "I don't know yet, seems a little pompous, and pretentious."⁸ Gehry's struggle to explain the reasoning behind feelings he is convinced are true, coupled with decisions based on little conscious premeditation reveal the presence of visceral evaluations in the development of his work.

Gehry's explorative making relies on different types of visceral evaluations. For Gehry many of his visceral judgments are rooted in visual imagery. In an excerpt from *Gehry Draws*, Gehry describes how he embraces and hones his visual imagination: "If you want to be involved with the visual world and make things that are visual, then you have to look at everything. I spend all my time looking at things and learning about them. There was a period when I used to look into my wastepaper basket and fantasize buildings and forms."⁹

Fig. 28 (Opposite) Gradual evolution of Samsung Museum of Modern Art, (Seoul, Korea) from simple massing models to more refined schematic models with a developed sense of architectural language

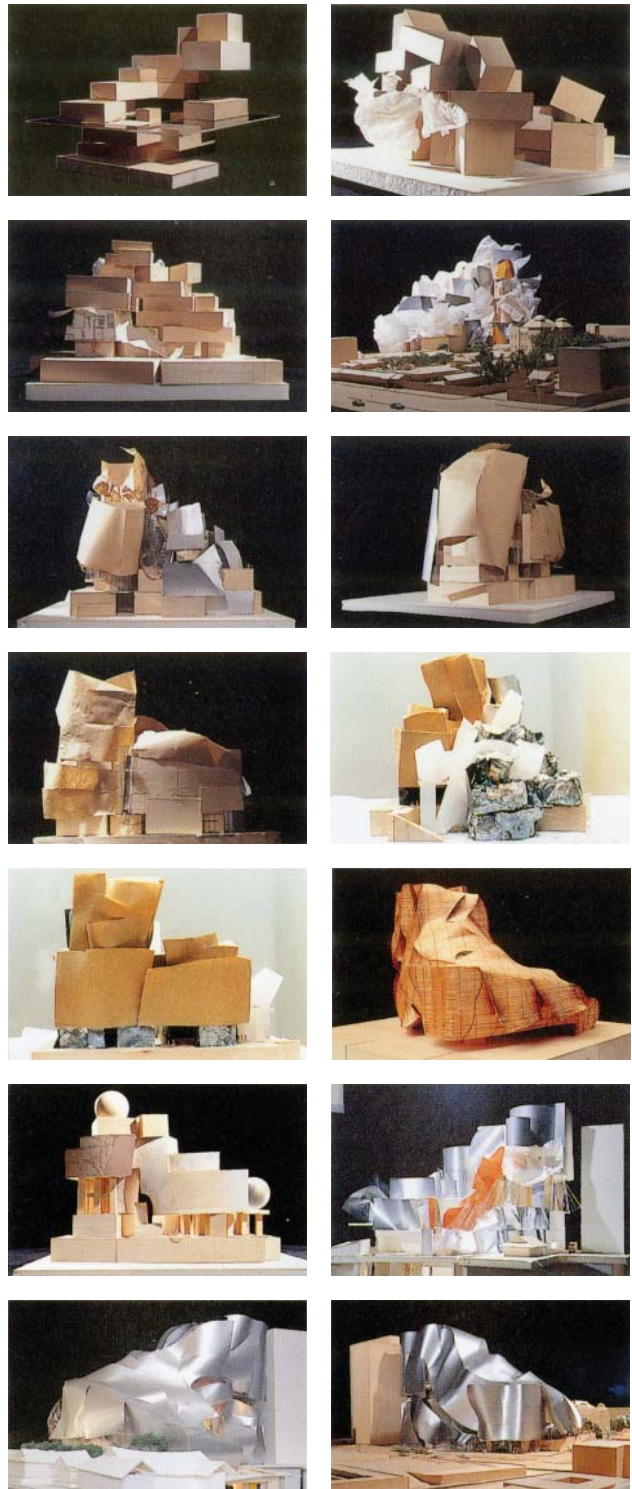


Fig. 28

In conjunction with visceral evaluations, Gehry also uses conscious, linear reasoning in the development of his projects. Gehry admits to employing this style of thinking as a means to resolve the functional requirements in a project.

Solving all the functional problems is an intellectual exercise. That is a different part of my brain. It's not less important, it's just different. And I make a value out of the solving all those problems. Dealing with the context and the client and finding my moment of truth after I understand the problem. If you look at our process, the firm's process, you see models that show the pragmatic solution to the building without architecture. (Fig. 35, Pg. 405) Then you see the study models that go through leading into the final scheme. We start with shapes, sculptural forms. Then we work into technical stuff.¹⁰

Gehry's comments reveal how his conscious reasoning is often coupled with pragmatic models that are not concerned with architectural language.

Through his visceral evaluations interspersed with conscious reasoning it is evident there a rich mental life that goes into the evolution of his buildings.

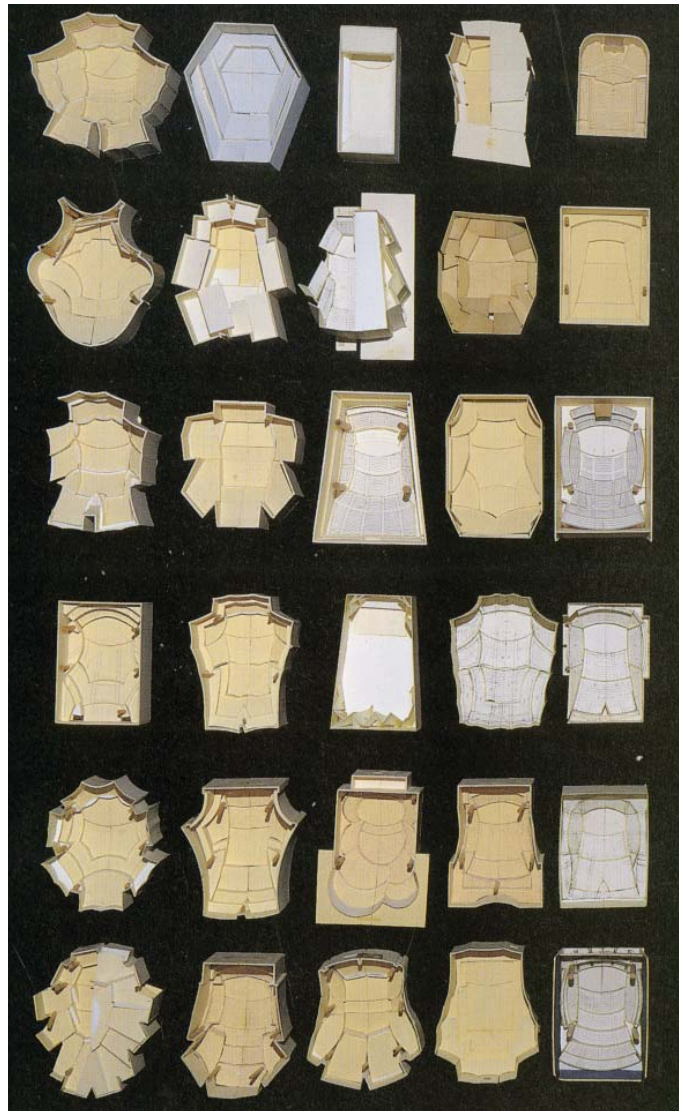


Fig. 29 Different versions of the interior for the Walt Disney Concert Hall in Los Angeles, California



Gehry's complex visceral evaluations are let loose via a playful mentality that is evident in both his comments and actions in the aforementioned *Sketches of Frank Gehry*. In this documentary, Gehry demonstrates how he releases himself from inhibitions. Specifically, this translates into a willingness to try ideas just to see where it will lead him, he trust his feelings and reactions to guide his experimentation, and even considers even though part of him feels they may be, 'stupid looking.'⁸

Gehry also exudes a willingness to be unconventional in his re-imagining chain link fence and metal siding as cladding materials for his home in Santa Monica, despite the plethora of criticism he received from neighbors.¹¹

Fig. 31 (Opposite) Concept sketch for plan of Telluride Residence

Fig. 32 (Opposite) Study model showing architectural language



Fig. 30 Model pieces for the Telluride Residence lining the work area at the offices of Gehry Partners, LLP.



Fig.31



Fig. 32



Frank Gehry Concluding Remarks

An examination of Gehry's creative process reveals how the primary characteristics can interact with each other throughout a project. As demonstrated in *Sketches of Frank Gehry*, and supported by other personal accounts, a reciprocal relationship exists between iterative experimentation and visceral evaluations. Specifically, the sketches and models Gehry makes trigger feelings, ideas, and reactions that, in turn, influence further experimentation.

Gehry's explorative making is further facilitated by an artistic vehicle in synch with his aspirations and needs, and a playful mentality where he is not afraid to make changes or be unconventional. Both of these primary characteristics help to facilitate explorative by encouraging a flowing expression of Gehry's visceral evaluations.

Gehry also employs his artistic vehicle to manage and incorporate practical concerns within his work. In detail, he utilizes a research phase, and different types of modeling and drawing, in addition to sequencing his design decisions relative to their scale in order integrate these functional requirements in his projects.

NOTES

1. Mark Rappolt and Robert Violette, ed., *Gehry Draws*, (Cambridge, Massachusetts: MIT Press: 2004), 288
2. Mildred Friedman, *Frank Gehry - The Houses*, (New York: Rizzoli International Publications, Inc.: 2009), 64-65
3. Rappolt and Violette, *Gehry Draws*, 78
4. *Ibid.*, 392
5. *Ibid.*, 186
6. *Ibid.*, 296
7. *Ibid.*, 164
8. "Sketches of Frank Gehry," directed by Sidney Pollock (Culver City California: Sony Pictures: 2006), DVD.
9. Rappolt and Violette, *Gehry Draws*, 250
10. *Ibid.*, 52
11. Friedman, *Frank Gehry - The Houses*, 64-65

(Opposite)

Fig. 33
Schematic Section

Fig. 36
Upper Floor Plan

Fig. 34
Ground Floor Plan

Fig. 37
Lower Ground Floor Plan

Fig. 35
Pragmatic Study Model



Fig. 33

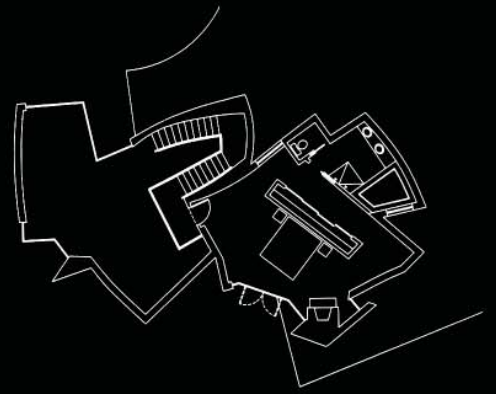


Fig. 36

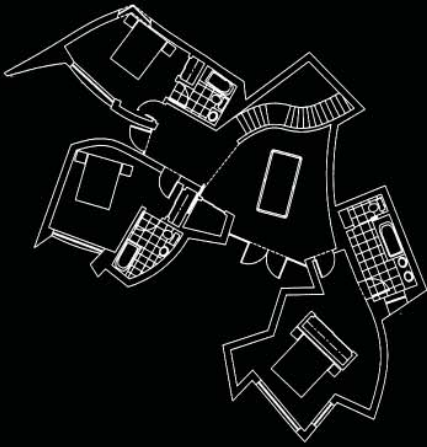


Fig. 34

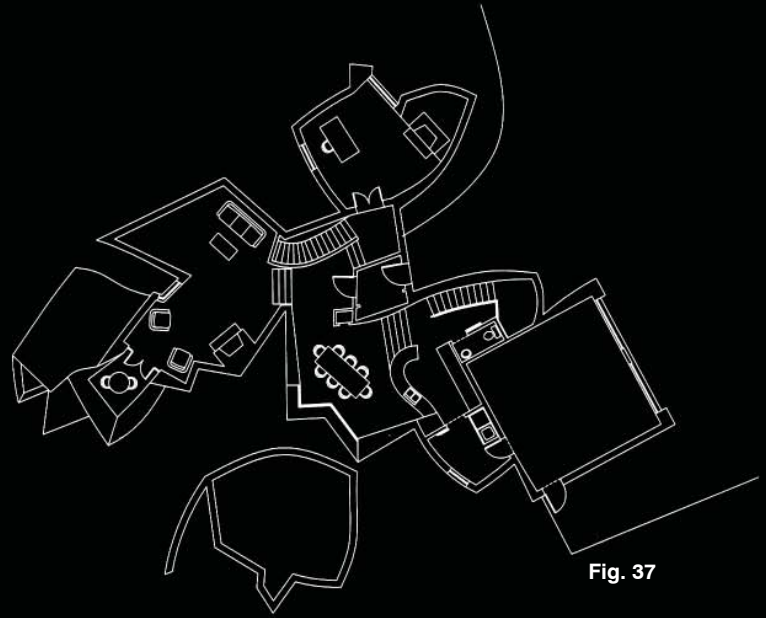


Fig. 37

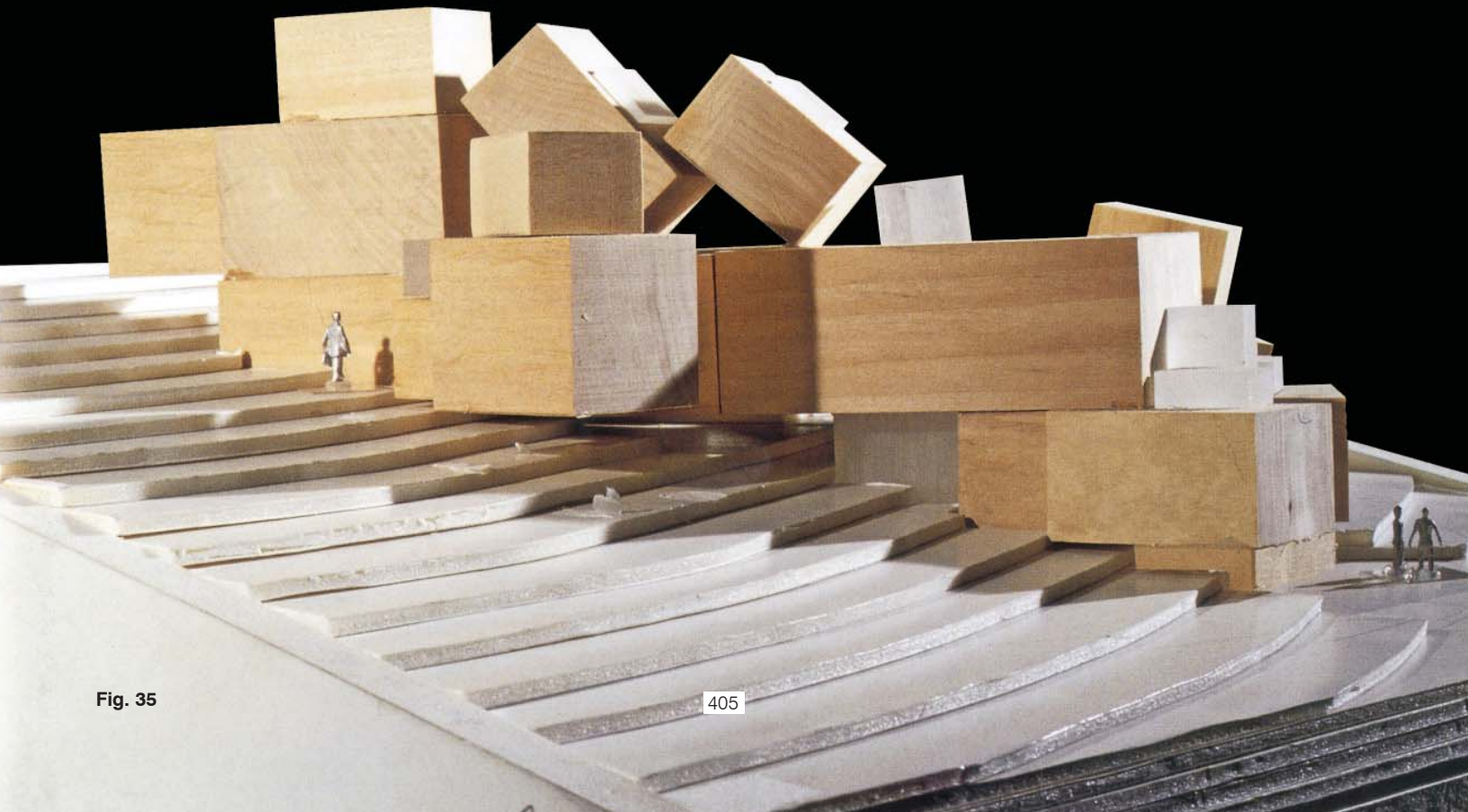


Fig. 35

2.5

Concluding Remarks

Through Aalto and Gehry it is evident explorative making can evolve to cope with the functional requirements inherent in many buildings. Similar to my own experiences discussed in Gallery 2.4, both Aalto and Gehry needed to do a significant amount of research on the project's functional requirements before they started making anything. Both architects also organized their explorative making into stages where the overall gesture of the building is resolved first and then other aspects of the project are resolved in more and more detail. Frank Gehry also addresses functional requirements by making through different types of models that investigate pragmatic issues in isolation.

In comparison to Henry Moore, one can identify certain similarities between the development of his work and that of Alvar Aalto and Frank Gehry. Moore performs his own type of research before he starts a project which takes the form of playing with pebbles and found objects. In contrast, both Gehry's and Aalto's research involves delving into pragmatic and aesthetic concerns. Furthermore, Moore also organized his explorative making so that he could tackle very general compositional issues at a small scale through several maquettes and sketches. Aalto and Gehry employ the same method, yet their organization is much more extensive because they are designing buildings that have substantially more functional requirements than Moore's sculptures.

2.6

Explorative Making and
Architectural Design

Collectively, the galleries reveal the importance of the artistic vehicle as a means of adapting explorative making to be effective in the making of buildings generally, even those with numerous pragmatic concerns. Method, in particular takes on a significant role in order to accommodate the many functional requirements required to make a building.

In regards to addressing practical requirements, from the first gallery to the last there is a general increase in complexity and sophistication in regards to the methods used to develop the projects. This is due to the increased number of practical concerns in each of the projects. This concept is clearly illustrated by comparing my experiences with Project One and Project Eight.

The method for Project One involved simply cutting up rigid foam within a predetermined range of sizes and shapes into a series of blocks and then piecing them together using pins to create a single room, open-air shelter. There was no consideration in regards to real life construction, materiality, and program during the making of this model.

In contrast, Project Eight set out to satisfy a number of practical requirements. The first being it had to sympathetically respond to various conditions of a real site. The project also had to generally satisfy numerous requirements from Part Nine of Ontario Building Code relating to access and egress. The building's layout was developed

to a schematic level while structure and materiality were included on a very notional level. While furniture was in mind during the development of the layout, it was not designed or integrated within this project.

In order to accommodate this extensive list of practical concerns a sophisticated artistic vehicle was developed and revised as the project progressed. The project began with an intense research phase into the site and program. A site was selected that both inspired me on an artistic level and was suitable for redevelopment. Afterwards, information was gathered about the site in the form of photographs and census information. A rough massing model of the site was also made as a means of getting an overview of building heights and typology. Following on, a rough notion of program was established based on this research and simple massing models were completed and compared to the existing context. I also did a sketchbook of studies of various spatial arrangements for the apartments to be placed above the commercial areas. Interspersed with these activities I researched the building code to ensure that the proposed development could satisfy all the relevant regulations in regards to access and egress. In many respects this phase of work was similar to the preparation phase with the traditional model for the creative process.

After studying this information until it became implicit knowledge, I entered into an incubation phase and took a break from the

project for a couple of days. I then began to make 1:50 models guided simply by my instincts. These models were made out of rigid insulation and millboard; in addition, pins were used to keep them together. Rigid Insulation is easy and quick to carve, and using pins to hold the model together allows me to work quickly. As a sculptural medium I am extremely comfortable using it because it allows the work to simply flow out of me.

After a few iterations and experiments with these models I then used them as an approximate guide for several computer drafted drawings including sections and plans. While this medium offered a precision that allowed me to determine exactly what could fit and where, I wasn't able to draw as freely as I could with a pen and the work did not flow out of me as much it did with previous models. Also, during this phase I was more preoccupied with making rooms fit and, as a result, some of my aesthetic intentions were compromised.

Once I was satisfied that everything was going to fit I printed out stripped-down versions of these scaled plans with very little detail and started sketching over them with trace paper and pencil. Compared to the computer, the pencil empowered my hand and afforded much more freedom for the work to flow out of me, allowing me to once again let my feelings and intuition guide my drawings.

From this prolonged description of my experiences with Project Eight, several useful observations can be extracted that can help one adapt explorative making for the purposes of making architectural form.

I found an elaborate preparation phase at the beginning to be crucial. By studying my initial research to the point where it became implicit knowledge I was able to let my informed feelings and intuition guide my work later on. Even while I was reading through my research and doing various studies I found it triggered a host of ideas and inspirations that later filtered into the 1:50 models. In general, this concept is not unlike Alvar Aalto's description of his architectural design process in *The Trout and the Stream*.¹ He also embraces an intense research phase at the beginning in order to educate his instincts for later on.

This project entailed a sort of going back and forth between pockets of work that were performed in different ways. During the preparation phase and computer drafting of the plans I found myself focusing on resolving practical issues and consciously working through problems logically and thinking about them in a linear fashion. This is in stark contrast to the models that were purely guided by my visceral reactions. The reason for this distinction can be traced back to the intent and medium of each phase of work. In the more rational phases of work, there was an emphasis on measurement

and finding efficient solutions to accommodate practical considerations. Also, I was much less comfortable with the mediums I was using during these more practical phases. Although I felt I adjusted well to using computer drafting programs, they were certainly not as free flowing or comfortable as drawing with a pencil or carving foam.

Within the case study, Frank Gehry speaks of a similar experience in regards to resolving practical issues. He asserts, "Solving all the functional problems is an intellectual exercise. That is a different part of my brain. It's not less important, it's just different." ² He too, operated in different phases of work and oscillated between pragmatic models that focused on technical issues, and other models that were much looser and artistically driven.

Another method revealed in Project Eight, as well as in the work of Gehry and Aalto, includes organizing explorative making into a sequential series of stages according to the scale of decisions to be made. Typically, this involves developing a loose parti and massing for the project before moving on to smaller scale decisions such as the precise layout of spaces and structure. These stages are then followed by even more detailed decisions such as the articulation of furniture. Organizing decisions in this manner ensures one is not overwhelmed by too many decisions at any one stage during the design process, and helps to introduce some level of efficiency into the evolution of a project. In relation to my own work, I started with a very approximate 1:100 massing models before moving on to 1:50 models, and then on to more detailed plans.

Closely related to the issue of organization is that of scale. From my own experiences, working in larger, more detailed models early on in the project afforded me the opportunity to fully harmonize furniture with other tectonic elements. Unfortunately, in the case of Project Four, it also made trying to develop an over-arching layout to the building extremely difficult and cumbersome when it would have been easier to simply do a few napkin sketches. It is perhaps most sensible to do what architects commonly do and tailor the scale and medium to suit the aspect of a building they wish to study. This may involve working at a variety of scales, resolving the general layout through a series of smaller sketches, and then building larger, more detailed, feature models later on in the project.

All the aforementioned methods so far have outlined how to incorporate functional requirements in buildings conceived through explorative making. However, the galleries present several methods describing how to guide the evolution of architectural form in more general terms.

Particular to my own work, I found the level of abstraction and how much a model was a true depiction of reality made a significant difference to the evolution of a project. Looser, more abstract models were more open to different interpretations and, in turn, more effective at triggering ideas, epiphanies and other visceral judgments. More realistic models were much better suited to resolving technical issues. As noted in the reflections within the galleries, these looser models engaged my imagination in a way more realistic models could ever do.

By reflecting on all of my experiences I can also speak to the issue of craftsmanship within explorative making. From these experiences I can sensibly conclude that carefully sculpted models have as much of a place in this explorative approach to making as the simpler forms of making that allowed me to work quickly. Both the finally crafted and rough models served as a valuable springboard for my visceral judgments. The models illustrate it is important to be strategic about the level of craftsmanship and detail in one's work. For me, a higher level of craftsmanship was needed in Project Seven in order to investigate the formal contrast between the long circulation stem, and the dwelling spaces on the end. In the earlier, more raw models made of scrap wood, a less refined level of craftsmanship was necessary, and actually contributed to their raw quality. Ultimately, it all comes down to the feelings and ideas one is trying to express, and the level of detail in which you want to express them. Furthermore, it is also possible to employ different levels of craftsmanship throughout the duration of a project.

Bound up in the ideas of craftsmanship and abstraction is the role of material in explorative making. Throughout my earlier models, I discussed how simply playing with different materials can trigger inspirations and feelings that can facilitate the evolution of one's work. During Project Four, the frayed edges of a scrap piece of timber reminded me of a fireplace, and the rough sawn timber with a perfect circle cut of it triggered the idea for a room.

Collectively, the work of Aalto and Gehry, along with my own projects, reveals several methods in which explorative making can be adapted for purposes of creating architectural form as well as incorporating several pragmatic concerns within those forms. All these methods point to fashioning a sophisticated artistic vehicle. Introducing an elaborate preparation phase at the beginning of a project educates one's visceral evaluations so they can effectively guide making later on. At the same time, interspersing explorative making with phases off work which focus on the resolution of functional problems also allows one to integrate pragmatic concerns into their projects. Organizing explorative making in relation to the scale of the decisions being made also helps to channel this approach to making. Finally, one can influence the development of one's work simply by tailoring and being aware of the effects of scale. On a more general level, realizing the potential of craftsmanship, material, and the level of abstraction within one's models can influence the development of architectural form on a more general level.

The introduction of phases of work that employ a more linear, intellectual style of thinking suggests that it is unlikely explorative making can be used entirely throughout the design of a building; however, the strategies outlined here go a long way to successfully adapting explorative making in the design of buildings. All these methods employed by Gehry, Aalto, and me influence explorative making in the same way that embankments, dams, and canals help to channel a speeding river.

2.7

Conclusion

As I revealed in the Introduction to the Primary Characteristics, I had no idea this investigation would lead to explorative making. As a conceptual model for making, it naturally involves the changing, molding and combining of material for the purposes of discovery and exploration. The model consists of four intertwined characteristics, an artistic vehicle, iterative experimentation, visceral evaluations, and a playful mentality. In general terms, these characteristics interact as follows: a reciprocal relationship is established between one's visceral evaluations and iterative experimentations, while the artistic vehicle and the senses serve as a bridge between these two poles. This entire approach is fuelled by a playful mentality, whose inherent urges to explore and induce surprise animate the evolution of one's work. The galleries not only illustrate the origins of this model, but also show how it manifests itself within a variety of situations. Along with painting, furniture, and sculpture, the galleries also reveal how this approach can evolve in order to create architectural form that is responsive to several functional requirements.

Within an architectural discourse, the thesis illuminates the significant role that non-discursive thinking involved with visceral evaluations and a playful mentality can have within architectural design; even in the presence of numerous pragmatic concerns. The conceptual model combined with the strategies outlined in Section 2.6 clearly establishes how various aspects of one's artistic vehicle can be used to include a certain level of intuition and play in one's work. The thesis also speaks to the issue of representation. In this approach, the drawings and models are not simply scaled down versions of reality but a springboard for our visceral judgments and urge to play. In turn, when one's work is viewed in this manner, it does not matter so much if it is considered aesthetically pretty by others, only that it somehow inspires the maker. Finally, this work validates our intuition and playful mentality as guiding forces in architectural design; in turn, it forces one to reconsider the value of judging and understanding works of architecture through syllogistic reasoning.

This thesis also speaks to a more expansive discourse which not only includes architecture but other tactile forms of artistic expression as well. First and foremost, the thesis establishes and articulates the potential value of visceral evaluations and the notion of play as powerful resources in creative endeavors. The conceptual model outlines how to unlock, harness, and integrate this potential within artistic activities. In doing so, it highlights the significant roles that technique, medium, method and other aspects of an artistic vehicle can have within the evolution of one's work.

Collectively, this thesis brings together several different lines of inquiry pertaining to making, intuition, play, and creativity. They have been brought together through philosophy, psychology, neuroscience, as well as my own artistic interests and actual making. The conceptual model structuring this diverse material seeks to bring it together in a mutually beneficial, symbiotic manner with each characteristic bringing something vital to the model. These different spheres of thought and inquiry have been brought into the same arena in the hopes that a larger, more inclusive dialogue surrounding

making will ensue. If there is one thing I hope this thesis introduces into a larger discourse, it is that bringing ideas to life is a truly dynamic and multifaceted event. One who studies the act of creating must take the role of the composer and understand the capabilities of all the instruments to ensure they are all playing together harmoniously.

In accordance with this aim, the artistic vehicle and its nuanced differentiations between technique, medium and method, along with iterative experimentation, visceral evaluations, and playful mentality, provide the beginnings to a holistic dialogue on creating that I have termed explorative making. However, any dialogue on this subject will always be limited because it employs sensorial and unconscious processes that defy/ resist / exceed comprehensive representation in language or image. This loss in translation reveals explorative making as something that needs to be experienced to be fully understood. Thus, it is my hope the work presented here not only provides creative makers with the tools to understand and harness explorative making, but also encourages them to employ this rich form of making in their own work.

2.8

Afterward

From this point, many lines of inquiry could be taken that would both add to and complement this work. While it is impossible to list every direction this thesis could move in, it is worth highlighting those that would likely make a significant contribution to the examinations with the thesis.

First and foremost, while the thesis establishes how one can integrate non-verbal forces within architectural design, it does not fully address the relationship between the linear style of thinking which dominates our conscious minds, and the parallel processing of our unconscious minds. As a precedent, Jonah Lehrer's, *How We Decide* talks about this issue in great detail in various aspects of day to day life, making it an appropriate starting point for this line of inquiry. The next step would be to take this knowledge and try to understand how it can apply to creative activities.

Within the realm of architecture, the thesis only examines explorative making in regards to the earlier stages of design, but what happens when one is developing construction details and other, more technical aspects later on in the process. Further research would be worthwhile into determining the potential role of explorative making within these circumstances.

As briefly mentioned in the conclusion, this thesis generally examines this approach as it pertains to painting, sculpture, furniture, and architecture, yet there is potential here for it to be

expanded to numerous other creative activities. Additional study in this regard would help to refine the conceptual model presented in this thesis.

As this work is heavily invested in bringing ideas to life it has the potential to significantly impact an architectural or artistic education. The extent of this potential could only be truly ascertained through some sort of design studio based on the work within this thesis.

Intertwined with this idea of education is the role the advice and instruction from others. As I primarily worked alone, I was not able to investigate this issue in significant detail; however, my brief conversations with other people regarding my work were often useful. These alone were enough to convince me that this aspect of explorative making is worth further investigation.

Finally, as this thesis is concerned primarily with the definition and application of a conceptual model, it only briefly establishes connections with other spheres of thought related to making such as play and creativity. It is worth investigating these connections further, not simply as a means to ground this work within a larger context, but to inform and expand upon the work itself.

The underlying premise in all these proposed lines of inquiry is this thesis is a promising beginning of a holistic dialogue on creating. This dialogue would greatly benefit from simply expanding upon the issues raised within the thesis through further study.

PART III

Back Matter

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GLOSSARY OF TERMS

EXPLORATIVE MAKING

A conceptual model tailored to more tactile forms of artistic expression. It involves the shaping, changing, and combining of material for the purposes of discovery and exploration. It is a means of unlocking the potential of visceral evaluations and a playful mentality and integrating them into creative endeavors.

VISCERAL EVALUATIONS

Judgments rooted in any combination of mental images, ideas, feelings, hunches, instincts, impulses, intuitions, gut reactions, epiphanies, and inspirations that are arrived at through little premeditated rational analysis. They embody our subjective wants and needs, are based on our prior experiences, and can also vary in intensity. Visceral evaluations have a unique phenomenology where the feeling or judgment in question simply feels right, even though in many cases it is difficult to explain why it feels right.

PLAYFUL MENTALITY

This characteristic is rooted in an innate passion to create and make new discoveries simply because one finds it enjoyable and fun as an end in itself. Whilst it manifests itself differently in each person it typically involves a special type of focus where the maker is free of inhibition. This translates into not being afraid to make mistakes or changes, demonstrating a willingness to be unconventional and be open to surprises, in addition to simply trusting their own intuition and feelings and acting on them just to see what will happen. In phenomenological terms it feels like the work is simply flowing out of you without having to think about it.

ITERATIVE EXPERIMENTATION

It is the process of repeatedly experimenting and exists as some form of trial and error where new experimentation is somehow informed by previous iterations. Specifically, it entails the range of physical interactions between the individual and their work and includes the holding, looking, playing, touching, working, changing and molding of material.

ARTISTIC VEHICLE

It is the means to express these immaterial visceral judgments as corporeal objects while also influencing what information we gather through our senses during creative activities. Specifically, it is the tools, materials, subject matter, functional requirements of the final form, techniques, mediums and methods that constitute a means of transmission by which ideas and other intuitive judgments are expressed in physical reality.

Within this thesis, technique, medium, and method all operate in the corporeal realm as they deal in practical and hands on ways of doing things. Each of these terms fall under the same umbrella that is the artistic vehicle. In contrast, as implied in term, conceptual models operate in the arena of principles and ideas and, in turn, are not part of the artistic vehicle.

FUNCTIONAL REQUIREMENTS

The practical and utilitarian considerations that must be satisfied in order for something to fulfill its intended use.

TECHNIQUE

The practical and formal aspects of artistic expression. It is the concert of movements between body, hand and tool. eg. Jackson Pollock developed his own unique technique for painting involved the dripping paint onto a canvas using sticks and hardened brushes and the corresponding movements of his wrist, arm and body to facilitate this action.

MEDIUM

A mode of artistic expression. eg. Jackson Pollock worked in the medium of painting, his technique involved dripping paint onto a canvas with sticks and hardened brushes along with the corresponding body movements to facilitate this technique

METHOD

Similar to procedure, an organized series of steps followed in a systematic fashion in order to achieve a particular aim. Method organizes mediums and techniques into a series of steps.