

# **More than a “Thing-in-Itself”**

An Inquiry into Work through the  
Interrelations of *Making, Material, and*  
*Design*

by

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A thesis  
presented to the University Of Waterloo  
in fulfilment of the  
thesis requirement for the degree of  
Master of Architecture

Waterloo, Ontario, Canada, 2021

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## Author's Declaration

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.

I understand that my thesis may be made electronically available to the public.

## Abstract

The thesis began with a desire to better understand the built environment and its relationship to value, temporality and material. The seat became the vehicle for this exploration. In its ubiquity the seat has found a special place in the world of design through the way it relates to the body, its structure, and ability to respond to cultural context. Over the course of the past sixteen months I made nineteen seats iteratively to understand the process of their becoming.

While making the seats I developed three lenses: *making, material, and design*. These three lenses expand the scope of the design process. Through this expansion, the process begins with the life of the material, through the process of fabrication and design, into work. The resulting work is understood holistically through its many phases of becoming.

Through this holistic understanding, the seats become a network of relations. These relations make the consumption and replacement of the seats consequential. The seats' value changes. It is no longer a product but rather a process.

## Acknowledgment

I must begin by acknowledging and expressing gratitude for the land, the forest, and the trees. They have gifted me the materials that I need to make this thesis possible, teaching me their secrets, to value them, and acknowledge their most important role in the cycle of life. I must also acknowledge the original caretakers of the land that I have worked on and collected from. The original peoples of current day London, ON where I worked throughout COVID and harvested a great deal of material, and Cambridge, ON the place I always return to: the Anishinaabeg, the Haudenosaunee, the Lenape, the Attawandaron, and the Wendat peoples.

I must thank my parents who have inspired my ways of thinking and making through their continued care for the land of Site O1. I was very lucky to be raised in such a special space, and taught about its value by you both. I must thank my father who has taken me on countless walks, pointing to the trees and teaching me about them: how to notice the ridges of the bark and the folds in the leaves. For teaching me about making and how to value the work that comes from it. For making that first table with me that brought me to this school. To my mother who is always there with words of optimism and support and a tasty meal or treat. For letting me use her oven as a kiln. For always supporting and pushing me to explore, create, and push myself. To both of them for welcoming me home when things changed March of 2020.

I must also thank Andrew Levitt for encouraging me to trust my instinct and intuition, supporting me to just make things even when there wasn't a clear outline or goal. To Rick Andrighetti for stepping in and being with me for the final push, providing words of wisdom and kindness, helping me refine my ideas, making them clearer to me than I sometimes knew. To Anne Bordeleau for coming in at the end and providing a thoughtful and fresh set of eyes when I needed them the most, and for all the work that you do for the school. To Derek Revington and Marie-Paul Macdonald for giving me a strong base to begin with.

I much thank Heinz Koller and Michael Syms for all of their help and guidance in the shop, for being patient teachers.

To friends who have supported my work, those who have purchased some of these pieces, sent kind words of encouragement, or visited my exhibition. To my number one fans Kelsey and Jiyeon. And To Jeff for being there through it all.

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fig. 01

## Ode to Chairs

By Gemma Holt

*Dear chairs,*

*You appear to be multiplying in our quiet brown house.*

*Some of you are familiar old friends, others of you have only just arrived and I haven't quite got used to you yet. Some of you I can't move, some of you make me constantly stub my toe. Others of you are light as air as I move you from one corner of the room to another. Some of you are quite uncomfortable, others surprisingly relaxing; some quiet and humble, others a little louder. Some of you are ugly, but all of you are beautiful. Some of you I dislike, yet none I would want to live without.*

*You come from nature, from the ground, trees and rocks, but you also speak of modern times.*

*You are all different, but you are all made in the same spirit, by the same hands, and can stand alone or live together. Each of you speaks of a time, a place and a moment in our lives.*

*With love, Gemma & Ivo*

1 Gemma Holt, "Ode to Chairs" in *Exercises in Seating*, ed. Max Lamb (London, England: Dent-de-Leone, 2015) 2.

## Preface

The thesis began with a desire to better understand the built environment and its relationship to value, temporality and material.<sup>2</sup> The stool and chair became the vehicle for this exploration. In its ubiquity the seat has found a special place in the world of design through the way it relates to the body, its structure and its ability to respond to societal values. Over the course of the past sixteen months I made nineteen seats iteratively, in order to understand the process of their becoming.

While making the seats I developed three lenses: *Making*, *Material*, and *Design*. While each of these three elements is its own lens, they are related. *Making*, *Material*, and *Design* do not necessarily need to be in balance, nor do they have a hierarchy of importance. These three lenses expand the scope of the formative process. Through this expansion, the process begins with the life of the material, through the process of fabrication and design, into work. The resulting work can be understood holistically through its many phases of becoming.

This holistic understanding of *work* challenges the idea of the “*thing-in-itself*” rather proposing that work is an *assemblage*. Throughout the document I often refer to the seats as *work*. This term in part relates to Hannah Arendt’s definition of *work* as useful objects that are durable because they are a tangible manifestation of the human experience.<sup>8</sup> I am interested in Hannah Arendt’s definition of work because of the notion of durability. Throughout the thesis I expand upon Arendt’s definition. Work is not only a summation of human experience but also includes the experience and context of material. *Work as more than a “thing-in-itself”* comes from the land artist Robert Smithson’s critique of Kant’s term “thing-in-itself” in his essay “Frederick Law Olmsted and the Dialectical Landscape”. The “thing-in-itself” isolates the thing from observation or context.<sup>9</sup>

8 Arendt, “Work” in *The Human Condition*, 137.

9 Kant, *Prolegomena to Any Future Metaphysics*, § 52c.

In the aforementioned essay Smithson refers to the site of Central Park as “more than a thing-in-itself” due to the network of relations the park embodies.<sup>10</sup> The park is ever evolving through its relations to time, space, and place.<sup>11</sup> Smithson describes the park as an assemblage. *Assemblage* is a term by Gilles Deleuze that describes all things as the result of a process of connections.<sup>12</sup>

The three lenses are the means to investigate the assemblage of work. Each of the three lenses is its own network of relations. They also relate to each other, interacting and overlapping.

In combination with Smithson’s essay on Central Park, the geographer Yi-Fu Tuan’s writing on the experience of space and place has influenced how I investigate the network of each lens.

In his book *Space and Place: The Perspective of Experience*, Tuan explains different ways of experiencing place and the knowledge that they enable. He states that place is an object in which one can dwell.<sup>13</sup> We understand place concretely when we have total experience of them. We must experience places through all of our senses as well as through active and reflective thought. Being in a place or with an object and experiencing it physically allows us to know it intimately, yet this understanding may lack clarity unless we take a step back and reflect upon it.<sup>14</sup> These ideas can very directly relate to how to understand work.

Yi Fu Tuan’s writing on understanding place or objects through multiple means is echoed by Gregory Cajete, an Indigenous scholar. He discusses indigenous ways of knowing, which emphasize that we can only understand something completely when we understand it with our body, mind, emotion, and spirit. This means of understanding expands on typical western

10 Smithson, “Frederick Law Olmsted and the Dialectical Landscape,” in *Robert Smithson: The Collected Writings*, 119

11 Smithson, “Frederick Law Olmsted and the Dialectical Landscape,” in *Robert Smithson: The Collected Writings*, 123

12 Colebrook, “A guide to key Deleuzian terms” *Understanding Deleuze*, xx.

13 Tuan, “Experiential Perspective” in *Space and Place: The Perspective of Experience*, 12.

14 Tuan, “Experiential Perspective” in *Space and Place: The Perspective of Experience*, 18

15 Gregory Cajete, “Telling a Special Story” in *Native Science: Natural Laws of*

thought which focuses on only understanding through the mind or body.<sup>15</sup>

I have attempted to understand each of the three lenses and their associated places in multiple ways, using a variety of tools and modes, as Tuan and Cajete suggest. Each lens is first explored through a short essay that summarizes my research. Then, the associated place of each lens is explored through a series of vignettes. For Making, this becomes the workshops in which I fabricated the chairs. Material's place is the sites in which wood, stone, and metals were collected. Design's place is more abstract as it locates the work within a cultural context, where I trace the history of the seat. Each of these places is mapped. The maps are paired with a short description and pictures that reflect my personal experience of them. This combination of mapping, personal experience, and academic research reflects a desire to know these places and the thoughts and work that they result in concretely, through multiple ways of understanding and knowing.

Tuan goes on to describe places as a consolidation of value.<sup>16</sup> Through understanding the places that relate to the work, I can also begin to understand the values that these places promote, which become embodied within the work. When we recognize a work as having values similar to our own, they resonate.

Language, like places, speak of values. It should be noted that there are a number of grammatical choices that I have made throughout the thesis document to reflect the animacy of the trees I use, referring to trees as *they* rather than *it*. I have also capitalized tree species, though it is not traditional practice.

*Interdependence* (Santa Fe: Clear Light Books), 26.

<sup>16</sup> Tuan, "Experiential Perspective" in *Space and Place: The Perspective of Experience*, 12

<sup>17</sup> Robin Wall Kimmerer, "A Note on the Treatment of Plant Names" in *Braiding*

By capitalizing the names of species they become they become a proper noun, equal in status to the name of a person or brand. These two choices, inspired by Braiding *Sweetgrass* by Robin Wall Kimmerer, reflect the sentience of non-human beings.<sup>17</sup>

Part 1 of this document is organized into three sections, reflecting the three lenses: *Making*, *Material* and *Design*. Part 2 includes a description of the nineteen seats and an explanation of the approaches that I used to make them. This organization of individual parts lends itself to clarity, but does not always speak of their interrelations. Part 3 attempts to bring these three lenses and the physical work together, to speak of the relational approach that drove this research.

*Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*, (Minneapolis: Milkweed Editions 2013), 385.

The Three Lenses



*Making*



*Material*



*Design*

Fig. 02

# Part 1: The Three Lenses

## Defining the Three Lenses

The following questions drove this research:

Is the experience of *making* fundamental to produce good work?  
How can a work express the agency of *material*?  
What is good *design*?

These questions informed the three lenses: making, material and design. As the thesis grew and deepened, it became more about how the lenses overlapped, their inter-relations, their reciprocity.

*Making* refers to the process of fabrication, development of knowledge making facilitates, and the theory surrounding craft. The act of making results in an embodied knowledge. Not only practical knowledge of how the built environment is made, but how material transforms and reacts, patience, the value of time, and a sensitivity to work. I have documented the places of making to better understand their character, the types of knowledge they facilitate, the ways I move through them, and how they have influenced my work. Making has taught me about material.

*Material* refers to the matter (primarily wood) that the works are made from, methods of collection, and the sites and conditions of the matter. To begin to understand material, one must acknowledge them as an active figure within the design process. This begins with engagement. I have mapped and reflected upon each material's site, and the phase in their life that I have found them in. The form in which the material was collected directly connects with the character of the work that embodies them. When we understand the material as an active member of the process the resulting work also becomes active.

The third lens, *Design*, refers to the form, function, and human cultural context of the seat. Through the research around the history of the seat, its different typologies, and the evolution of its design, one can begin to understand the cultural context in which they were created. This study of the evolution of the seat is paired with the evolution of my own work showing how the details, scale and form changed with time and experience of material and making.

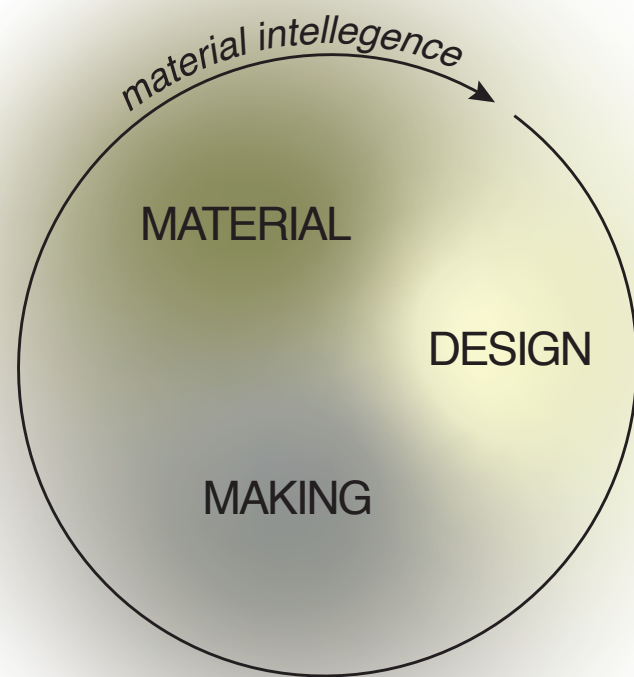


Fig. 03

Defining the Three Lenses

The Three Lenses

The thesis started with questioning the role of making in the design process. Through making I began to question the material I was using to make with. Design was a fundamental undercurrent throughout, evolving with the development of the work.

These three lenses become three different ways of understanding work, though they support and relate to one another. *Material* and *Making* rely on each other to promote empathy for the made world, creating durable work. *Making* teaches us the secrets of *Material*: how to read it, how to correspond with it, how to respect it. *Material* teaches us about *Making*, their reactions to tools, properties and structure. *Making* teaches one about *Design*: about scale, proportion and joinery. *Design* also teaches about *Making*: about form, function, and cultural values. *Material* can inform *Design*, through the study of material's inherent properties. Through the teaching of these three lenses a *material intelligence* develops. Glen Adamson, an American curator, author and historian, defines material intelligence as "a deep understanding of the material world around us, an ability to read that material environment, and the know-how required to give it new form."<sup>18</sup> (fig. 03)

With material intelligence work becomes durable. The maker's hands imprint an ideology onto material, and in turn, material knowledge is worked into the maker's consciousness, influencing their design ideas. This is a reciprocal relationship. The work becomes more than a "thing-in-itself".<sup>19</sup> It is a network of relations, connecting the sites of the maker's body, the place of making, the site of the material, and the work itself.

This relational approach moves beyond work as the manifestation of only human experience but relates it to the experience of both human and non-human entities.<sup>20</sup>

<sup>18</sup> Glenn Adamson, "Introduction" in *Fewer Better Things: The Hidden Wisdom of Objects* (Bloomsbury: New York, 2018) 4.

<sup>19</sup> This idea comes from a text by Robert Smithson where he challenges Immanuel Kant's idea of a "thing-in-itself" proposing instead that Central is series of ongoing relations that change with time that cannot be seen in isolation as Kant proposes from Robert Smithson, "Frederick Law Olmsted and the Dialectical Landscape," in *Robert Smithson: The Collected Writings*, 160

<sup>20</sup> This statement refers and expands upon Hannah Arendt's definition of Work in *The Human Condition*, and contrasting it with Jane Bennett's ideas of "Thing-Power" in *Vibrant Matter*. See the Glossary for further explanation.

## Making

At the beginning of my thesis in the Fall of 2019, I was primarily making work in the shop at school, with some making taking place at my parents' workshop over the weekends. When lockdown was announced early March of 2020, I shifted from working at school to my parents' home. These two different spaces, the tools, and resources that come with them reflect different relationships to making.

The first setting, the workshop at the school is an institutional space, shared with others, providing a number of resources and technologies for a variety of materials. One of the most important resources of this space is the people that occupy it, Heinz Koller and Michael Syms, the workshop manager and fabrication specialist, as well as other students and staff.

The second setting, the workshop at my parents' home, leans towards the makeshift. The layer of dust that is cleaned away in the school workshop remains in this space, telling stories of its use and the things that have been made there. There is a different connection to place. My parent's shop is rooted in its landscape. The wood that transforms in this space comes from the trees in the forest it is nestled beside.



# Places of Making

## 01

Cambridge, ON  
09/2019 - 03/2020  
08/2020 - now

I remember my first time in this space; I was in grade eight or nine, on an open house tour with my sister who was interested in coming to the school. She decided to study engineering and I was the one that ended up at the school five years later.

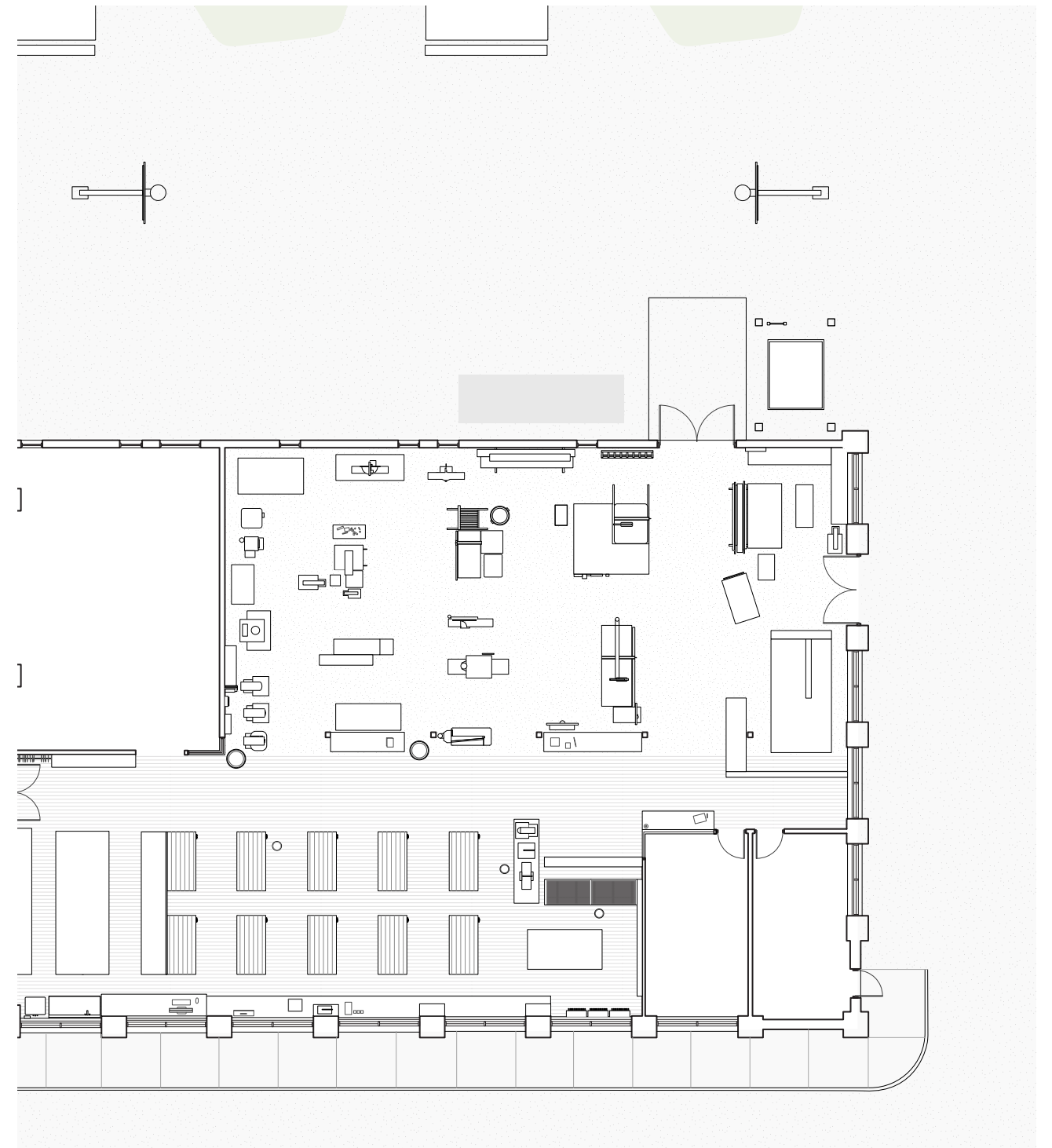
The space had little impact on me then. What stands out more in my memory is the introduction that took place during the first days of first year studio. I was nervous about the tools; though I had spent time around them at home. In the space of the institution they felt different. There were clear rules and regulations. I made a push stick on the bandsaw. Dan Jessel, who worked at the shop at the time, watched me. This was very different from the shop at my parents' home, where my father and I worked together. Instead someone was watching over me and I was the one in control.



fig. 04

Making

The Three Lenses



N↑ 1:200

fig. 05

I was afraid of the school's shop for a couple years, not using it until second year when we made 1:1 conceptual models and small pavilions in the back of the school. These projects were the first times I truly resonated with the work I was doing. I had found a sense of place within the school. I realized through these projects how much I enjoyed the space and how this type of learning worked for me. I was able to translate ideas in my head that I could not explain with words or drawings with as much success.

The space is divided into a few areas for clay, digital fabrication, workbenches and the power tools. Throughout my undergraduate degree and even in the beginning of my masters, there was always a rush to get into these spaces, to have access to the machines, get a workbench, and some storage underneath.

This space, before COVID, was always a very social space, where you would see and discuss what others were working on, mingle with other years, and get advice. It was similar to the studio but less confined to one's own class. Deadline evenings were always when it would really come alive, Heinz had left, and we would squeeze into the workbenches. People would take turns putting music on the speakers and we would chat as we worked.

The learning that happens in the shop is very different from the learning in the lecture hall or the studio. These three spaces become three different experiences, representing three types of learning and knowledge.



fig. 06

Making

The Three Lenses



fig. 07

When the space reopened in August 2020, it was under a very different circumstance. With COVID, only authorized graduate students had access to the space for research. Most days I'm the only student in the space and the shop is eerily quiet, none of the chatter or the noise of the tools in the background. I am more aware of the HVAC and dust collector than ever.

In the time since I have returned to Cambridge the school is one of the very few places I go in a week; sometimes Heinz and Michael are the only people I see for days. I have made the morning walk to school a routine. The shop became a place to think, engage with material, and mull over what I was about to make. I would then return home, drawing, reflecting, and planning. The next morning I would return to the shop carrying out the plan I made the day before.

My way of working at home was less aware, ignoring some of the formal training I had received. Whereas the school and thus the school's workshop inspires a level of intentionality and rationality.

Making  
The Three Lenses



fig. 08

# 02

Komoka, ON  
03/2020 - 07/2020

When the school announced closure in early March it was a mad dash. My roommate and I drove to the school to pick up some necessities. I left most of my things in Studio, expecting to be back in a few months. I loaded everything into the car, and moved home to my childhood home, just outside London, ON.

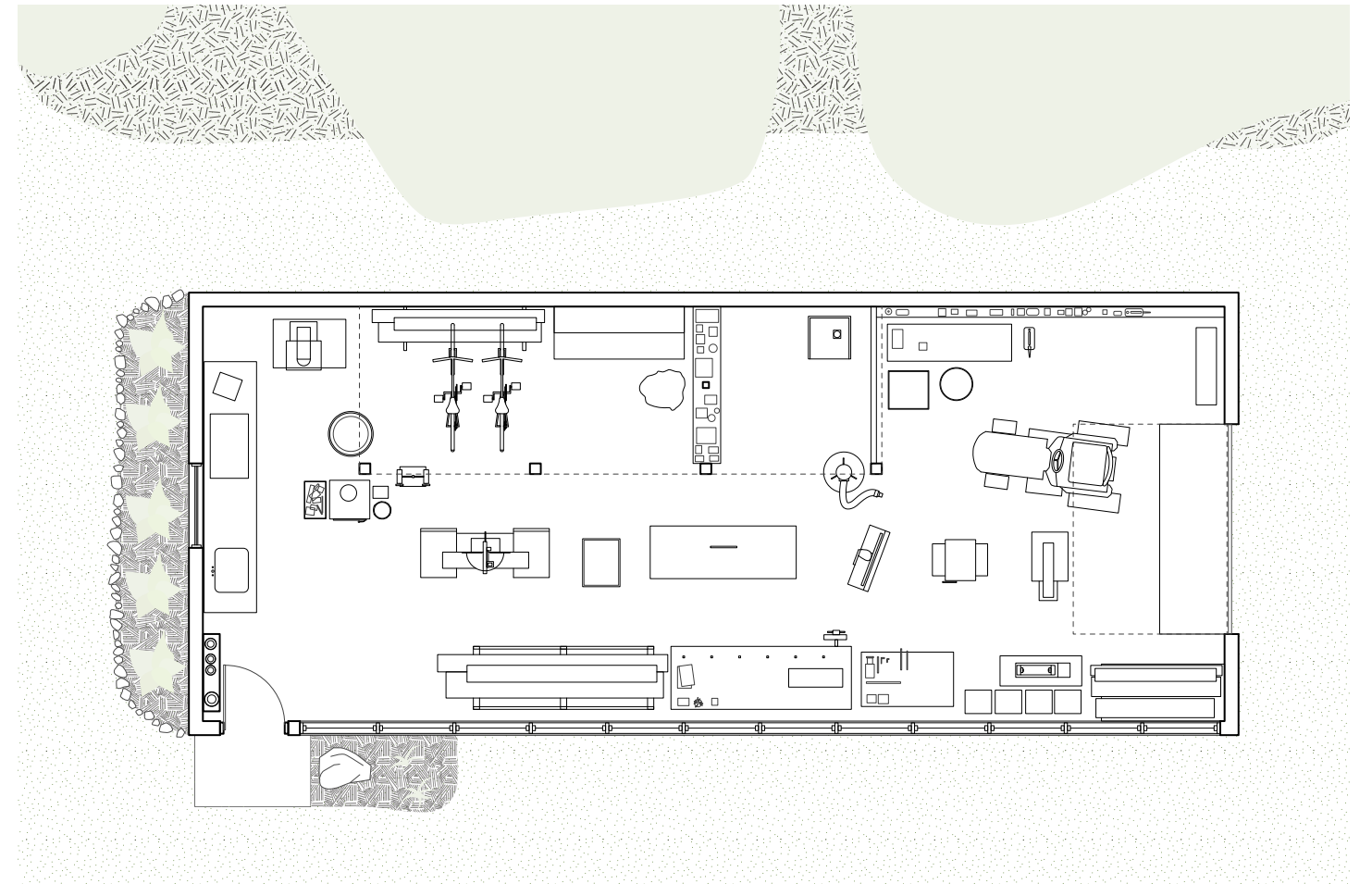
I fared quite well given the circumstances, I was getting most of my material from my parents' property anyways. They also have a well equipped woodshop. It's an old building that used to house chickens. It's long and narrow, with a series of bays. It has become a workshop, storage for bikes, a garage for the lawn tractor, and a bit of a catch all, since my parents bought the property 26 years ago.



fig. 09

Making

The Three Lenses



N↑ 1:100

fig. 10

The workshop is simply framed, on a poured concrete foundation, with lathed interior walls that have seen better days. A long strip of single pane windows cover the length of the building facing south, making the space bright. It is uninsulated, relying on the light and the surrounding trees to mediate the temperature inside. On a summer afternoon, it can get quite hot. In winter, the heaters get turned on, to warm hands cold from the metal of the machines. Under the bay of the windows are a series of flap doors, made for the chickens who used to call the building home. The inside is decorated with faded horse paintings and tobacco signs left by the old owner, antique doors, too nice to throw out, chipping away.

The table saw, left at the house from the previous owner, is homemade. A long, narrow piece of ply-wood, somehow completely square and flat, is mounted onto a frame, with a saw blade on an axle with a small motor underneath. Because of its length and width, you can't stand behind it, solving the issue of kick back.

Dotted throughout the space are pieces of wood my father has collected - a 1m wide burl, beautifully spalted Maple, Cedar left over from an old sauna, boards of Walnut they felled and had milled, and Ash we felled in the autumn of 2019 that was milled on the bandsaw and is starting to dry.

The space is filled with character, memories, stories, and stuff. It is a place for leftovers, things that one can't bear to part with, or that may be useful one day. It could not be more different from the fabrication labs at the school. It is not cleaned regularly by a team of staff, no fancy dust-collecting system. It is opposite of the bureaucracy of the university. It has a tone of anarchy.



fig. 11

Making  
The Three Lenses

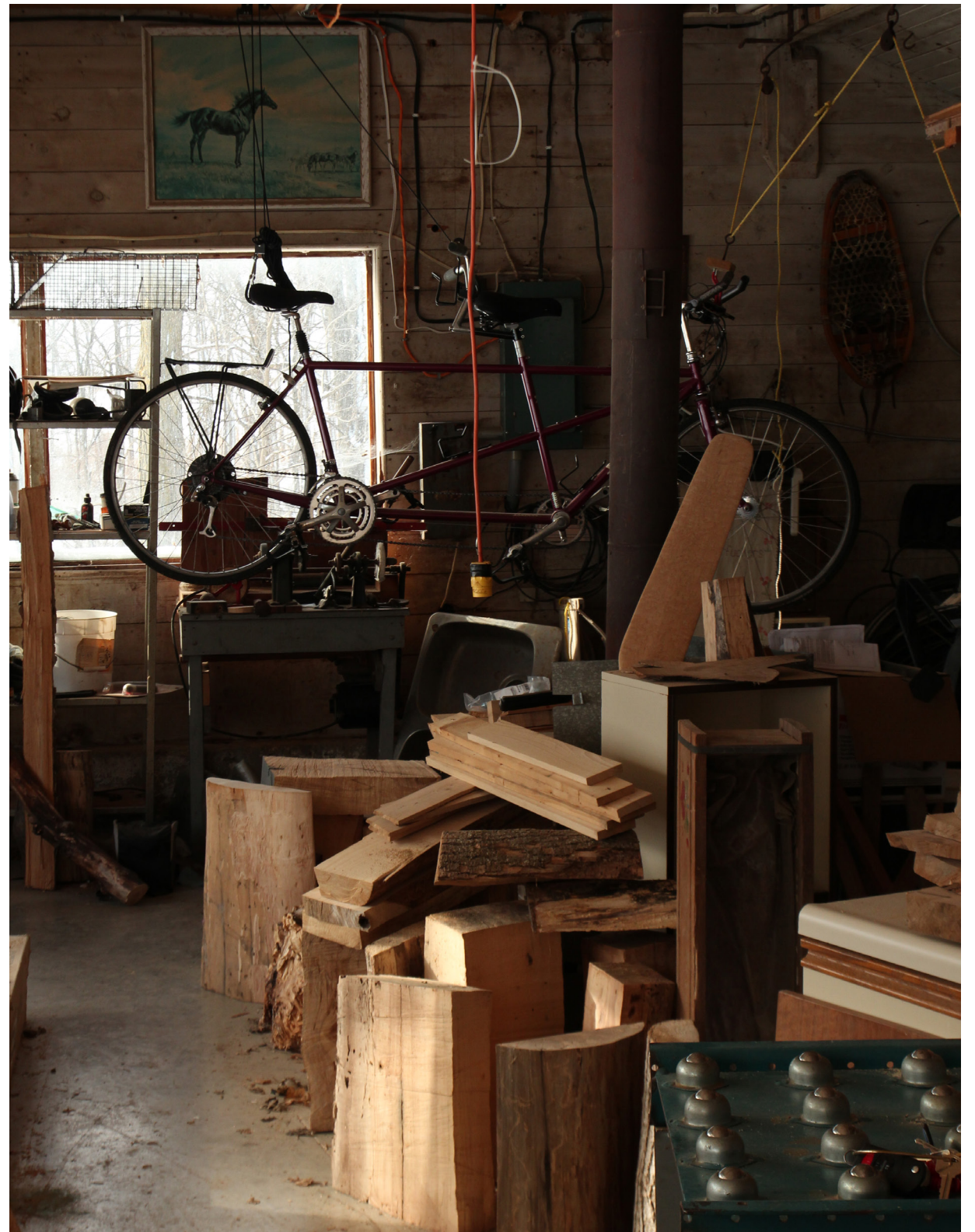


fig. 12

It is unruly, makeshift. I wear Crocs or sandals most days, my hair down, no safety glasses. It has the character of a place of experimentation.

Most of what is made here is either for practical purposes: cupboards, shelving, work for home renovations or Christmas and birthday gifts. Each of these works tells the story of this place. They have value because I know the spirit in which they were made. When they go from the shop to being installed on the bathroom cupboard, my mother can brag to her friends about the beautiful doors my father made.

The numerous cutting boards I have received that were made in this space are some of my most valued possessions. They remind me of my father teaching me about the trees and the forest and how to work with wood. I not only value the place of their making but know the story of the material. The wood that they are made from is from a tree that I used to climb. I oil them regularly, making sure to only wash them with warm water, drying them immediately. They will last far longer than the Bamboo cutting boards I have bought at Ikea, although the Bamboo may be more functional. The Walnut cutting boards my father made for me in this space will last a lifetime because they resonate with me so deeply, because I know their story of material and making, and the hands that made them.

Making

The Three Lenses



fig. 13

## On Making

As places for making these two sites both promote learning through experience. They reflect different attitudes towards work. The School Shop as a place for a professional education, directed and self-aware. My parent's workshop is a place of building for oneself, informal and less pressured. Although different they are united in their method of learning through engagement.

When one engages with making, one goes into it, rather than going around it as one does with scientific observation. Henri Bergson states that engagement creates a deep knowledge and understanding.<sup>21</sup> Tim Ingold echoes this sentiment calling it *correspondence*. When we participate in the world, opening up our perception to the active world and in turn responding, we correspond.<sup>22</sup> Correspondence is not a result of conceptual or logical thinking, but implies an understanding and a synthesis of lived experience.<sup>23</sup> Making is a form of correspondence. The maker applies force or acts upon a material, the material responds through the way it changes. For example: the burn marks often left from using a table saw to cut wood (especially hard woods), the tear out that occurs when using a chop saw, or the path in which wood splits when struck with an axe.

In this process of correspondence, making becomes an experiment, though not a scientific experiment where there is a preconceived hypothesis, but rather diving into something, opening the process. This is not *hylomorphism*, where form is dictated onto material, but rather a *morphogenetic* process where design emerges as one corresponds with material.<sup>24</sup> The generation of work and its form is ever emergent through the process of making, and the correspondence between the maker and material.<sup>25</sup> This process results in knowledge production that is impossible when things are learned *about* rather than *with*. Learning with is a form of correspondence.

<sup>21</sup> Mark Foster Gage, *Aesthetic Theory: Essential Texts for Architecture and Design* (New York: W. W. Norton, 2011) 153.

<sup>22</sup> Tim Ingold, "On Making a Handaxe" in *Making: Anthropology, Archaeology, Art and Architecture* (New York: Routledge 2013) 45.

<sup>23</sup> Juhani Pallasmaa, *The Thinking Hand: Existential and Embodied Wisdom in Architecture* (West Sussex, UK: John Wiley & Sons, 2009) 116.

<sup>24</sup> Ingold, *Making: Anthropology, Archaeology, Art and Architecture* 21

<sup>25</sup> Ingold, *Making: Anthropology, Archaeology, Art and Architecture* 25



fig. 14

The architect's drawings are a two dimensional description of a three dimensional space. Ultimately, a set of instructions in the form of a contract. We gather information *about* a design through the drawing set. In making we work *with* material and form. These are two very different means of understanding. When we learn *about* something, as we do with a drawing, we gather information and continuously *look back* over that information.<sup>26</sup> Whereas, when we work *with* something, we learn *from* it and move forward, iterating from what we have learned. Working *with* things is a transformational process.<sup>27</sup>

Each seat is an experiment, though again, not a scientific experiment where there is a strict methodology, or a hypothesis and preconceived outcome, but rather the development of an idea through correspondence with material.<sup>28</sup> This uncertainty of an outcome is what David Pye defines as *workmanship of risk* where “the result is not predetermined, but depends on the judgment, dexterity and care which the maker exercises as he works. The quality of the result is continually at risk during the process of making”.<sup>29</sup>

Through workmanship of risk, one learns about process. The iteration inherent within the organization of the thesis creates a cycle of making, reflecting, reading, writing then making, reflecting, reading, writing again. Richard Sennett describes this process as *rhythm*. The cycle changes, undergoes metamorphosis as it moves forward, but there is this continuous movement that maintains engagement.<sup>30</sup> The movement between bodily practice and thought creates a synthesis of the embodied and explicit knowledge. The cyclical nature of *rhythm* results in the ability to both look ahead, while also being reflexive.<sup>31</sup> The Greek term *techne* relates to this cycle of building, where the goals of work lay outside of the activity of production.<sup>32</sup> Within each cycle the goal is not to finish a single work, but rather to contribute to a greater goal of material intelligence.

26 Ingold, *Making : Anthropology, Archaeology, Art and Architecture* 2

27 Ingold, *Making : Anthropology, Archaeology, Art and Architecture* 3

28 Ingold, *Making : Anthropology, Archaeology, Art and Architecture* 6

29 David Pye, *The Nature and Art of Workmanship* (London: Herbert Press, 1995) 20.

30 Richard Sennett, *The Craftsman*, (London: Yale University Press, 2008) 175-176.

31 Sennett, *The Craftsman*, 176.

32 “Telos,” Wikipedia, 17 September 2020, [https://en.wikipedia.org/wiki/Telos#Telos\\_vs\\_techne](https://en.wikipedia.org/wiki/Telos#Telos_vs_techne).





fig. 15

Making

The Three Lenses

This means of understanding as a result of engagement and experience has been a fundamental part of indigenous cultures for generations. Gregory Cajete describes this tradition as *Native Science*, an understanding of the world that comes through direct experience.<sup>33</sup> When material is engaged *with*, it is understood as matter. It is recognized as active and alive, having agency and animacy. As the maker and designer I have empathy with the material and begin to listen to it as I work. This is the beginning of a reciprocal relationship with matter. Material is no longer a resource to be extracted and used to build, but rather a gift from the natural world to be revered.<sup>34</sup>

<sup>33</sup> Cajete, *Native Science*, 20.

<sup>34</sup> Kimmerer, "The Council of Pecans" in *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* 17

## Material

My work primarily focuses on wood. Wood is alive. Wood speaks of the biological time scale of their growth, climate, and site.<sup>35</sup> The lines of the tree's grain refer to the movement that has formed them and in turn suggest a reaction to the maker's tools. The trees I have used could have been a home for a bird or shade for a picnic. Cut them into boards and they become a building. Carve into their surfaces and they become something else. Grind them into a pulp and they are something else again. With each operation perspective changes, and wood becomes another. Though their properties still refer to their potential and to their past. The only way to learn about these properties is through engagement.

Over the past fifty years, architecture has moved away from being built with materials and towards being assembled from products, downloaded and specified.<sup>36</sup> Material has become *fetishized* and commodified.<sup>37</sup> There is a gap in knowledge regarding where material comes from, what something is made of and who makes it. By focusing on where material comes from, tracing it through the many hands it travels through, material can be decommodified.<sup>38</sup>

The two different places for making, described in the previous section, mark a different relationship to material. The shop at the school connected me to the resource of people and the knowledge of making that they carry, but in turn removed me from the material site. I often went to Home Depot or a specialty wood store to buy what I needed to then make my project. The material is fetishized, abstracted. At my parents home, I would go for a walk, touch the trees, measure them and mark them, then cut into them. There, I experienced the material site, witnessing the tree's growth and death.

35 Juhani Pallasmaa author., *Encounters : Architectural Essays*, edited by Peter MacKeith, Second edition. (Helsinki, Finland: Rakennustieto Publishing, 2012) 324.

36 Kiel Moe, "Interview: Keil Moe," *galt.publication: Burning*, no. 3 (2020): 70.

37 Fetishization of the Commodity as defined by Karl Marx in *Capital* occurs when markets do not divulge the source and condition of the commodities making, systematically detaching the consumer from the producer. Quoted from Jane Hutton, "Introduction" in *Reciprocal Landscapes*, 6.

38 Jane Hutton, "Introduction" in *Reciprocal Landscapes*, 4.

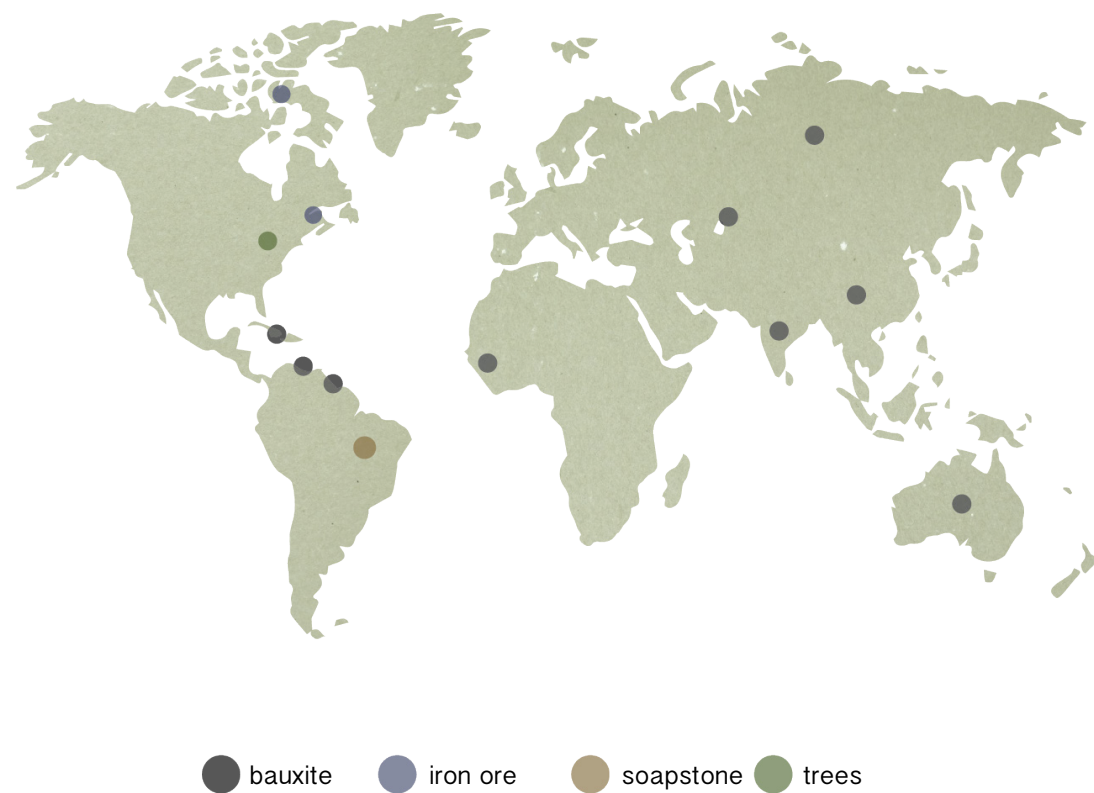


fig. 16: places of extraction

Material  
The Three Lenses

My use of these materials is just a phase in their life. As Kimmerer states, if we understand the tree as a living, active being, a *who* rather than an *it*, we will be that much more hesitant to cut it down.<sup>39</sup> The same can be said for the resulting work. When we recognize the matter that works embody as a *who*, works are no longer objects that can be consumed and replaced but rather they are subjects, the embodiment of the active material.

Subjectification of material and work can easily lean towards anthropomorphism, the projection of human qualities onto non human beings. Calling a tree a “they” is not meant to compare trees to humans. This is rather an attempt to acknowledge the tree’s animacy and value outside of human precepts and culture through the terms and grammar that we use to speak of them.<sup>40</sup> The acknowledgment of non-human beings, in this case the tree, as a *they* becomes a way to begin to think beyond the human-nature binary.<sup>41</sup>

I had the desire to understand the material I was using concretely as Yi-Fu Tuan describes. To really understand the material I had to experience them through many different means. I participated in the process of transforming a tree into lumber, mapped the landscapes that the trees came from, and observed the effect of drying as the wood passes between phases. I visited sawmills: watching logs being sliced as they moved along a conveyor belt. I experienced purchasing wood from a retailer, understanding the material’s commodification, seeing what makes a slice of a tree monetarily valuable or not.

The following outlines the sites where I have sourced material, at different stages of their lives, as well as the experience of gathering the matter, and the form of the material when it passed into my hands.

39 Kimmerer, *Braiding Sweetgrass*, 57

40 Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010) 5

41 Bennett, *Vibrant Matter*, 20

## Material Sites

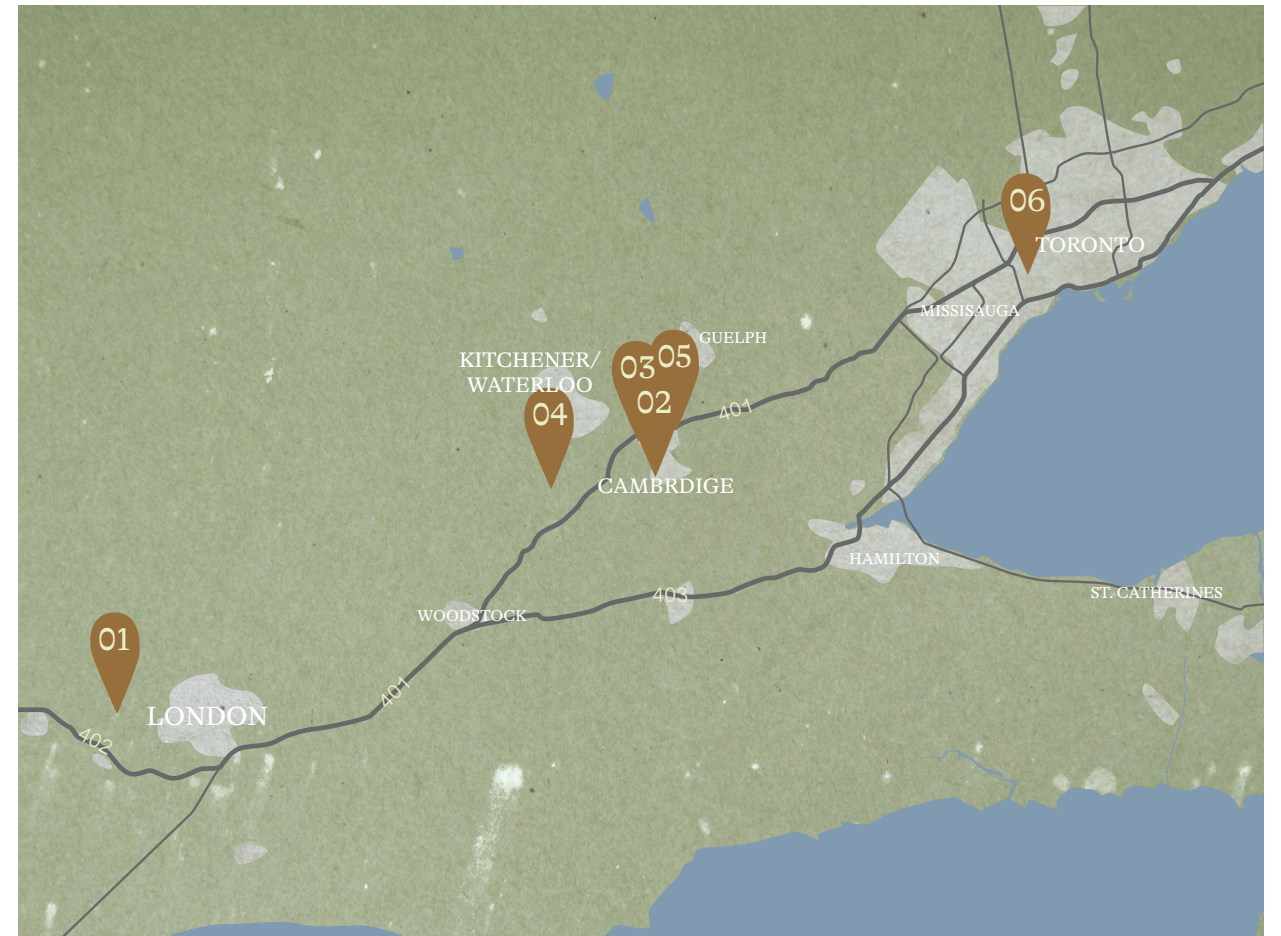


fig. 17

- Site 01 - Komoka, ON
- Site 02 - Cambridge, ON
- Site 03 - Cambridge, ON
- Site 04 - Kitchener, ON
- Site 05 - Cambridge, ON
- Site 06 - Toronto, ON

## Site 01

Komoka, ON

Black Walnut

Ash

Silver Maple

The majority of the wood that I used came from my parents home just outside of London, ON.

The Walnut was felled and milled many years ago. It has been drying in their barn and basement since.

The Ash and Maple were both standing dead and cut down by an arborist in the autumn of 2019. My father and I further split and milled them to be used for either my work or firewood.

The stories of all three trees follow.



fig. 18

Material

The Three Lenses



fig. 19

### Black Walnut



The Walnut had been growing on my parents property for as long as I could remember and likely long before. During a summer storm, about seventeen years ago, the tree was hit by lightning, killing them. My parents were in the process of building an addition to their home and thought of this tree. They had to come down anyway - so they milled them, dried them, and used the resulting boards for the floor of their new room.

A mobile mill came to the house accompanied by an older man. The tree was cut into slabs -- more than what was needed for just the floor. He cut the tree into a variety of sizes, shapes, and types of cuts - plain, quartered, rift. When these cuts were made the tree had a relatively high moisture content. The boards were stacked and left to dry for a few years in the barn. It is a semi-conditioned space that has the occasional raccoon or equine inhabitant, more than a few drafts, and an interior temperature that varies greatly depending on the season -- not necessarily the best place for drying wood.

The results of this process varied. Some of the boards made it through relatively unscathed and straight, others were bowed and cupped, with splits, cracks and some odd stains. A few years later some boards were milled and installed into the addition. Others were left in the barn and a few moved into the basement of the house, a far more controlled drying environment.



fig. 20

Ash



The Ash was felled by an arborist in the Fall of 2019. We collected the chunks using the tractor, rolling the logs into the front end loader then bringing them to the wood shop. They were cut into desired shapes and sizes using a chainsaw, then baked in my parents oven at 200C for hours until they felt dry. Without a humidity meter I relied on my hands, trusting my instinct.

Emerald Ash Borer is estimated to kill approximately 8.7 billion Ash trees in North America.<sup>42</sup> Infested Ash is often mature, which means that the trunks are irregular, and often forked. These trees have no economic value, worth about US\$0.25 per tree as they can not be processed by most sawmills.<sup>43</sup> Most trees either rot on the forest floor or are used as firewood.

My parent's forest, which was primarily Ash and Cedar when I was a child, is now primarily Walnut. The canopy has changed significantly from my childhood memories. There are many empty patches. It is a much thinner forest with more undergrowth than I ever remember. Walnuts are one of the last to leaf out in the spring and one of the first to drop their leaves in the fall. Ash continues to grow, young trees under-story the Walnut, likely to be infested and killed by Emerald Ash Borer as they age.

42 Sasa Zivkovic and Leslie Lok, "Making Form Work," *UCL Press: Fabricate 2020* (2020): 118.

43 Zivkovic and Lok, "Making Form Work," *UCL Press: Fabricate 2020*, 118



fig. 21

Silver Maple



This Maple was felled by the same arborist as the Ash in the autumn of 2019. This tree was in a cluster of Sugar Maples at the north end of the forest. Every spring we tap the trees to make syrup, carrying the sap back to the house in the snow.

The tree had been standing dead for some time. After they were felled, we cut them into more manageable chunks, to be used for firewood, further milled them on the bandsaw, for cutting boards, or left as they were - pieces of a tree.



fig. 22





fig. 23



fig. 24

*Material*  
The Three Lenses



fig. 25



fig. 26

## Site 02

St. Andrews Park, Cambridge, ON  
Silver Maple



Site 02 is St. Andrews Park in Cambridge, ON. The City fell the Silver Maple in the park late in the summer of 2019.

The logs from the tree had been sitting in the park for weeks. So, on a warm fall afternoon I employed two friends to help me roll a log from the park into the backyard of my townhouse nearby.

A few days later, my father came to help me break down the log into a more manageable size. My father ran the chainsaw, and I stood by. I am afraid of the tool, its power and strength. Through documenting the process I smelled the gasoline, heard the chainsaw's roar and could almost feel the jolt of the tree's reaction. The log was infested with carpenter ants, they poured out as we cut into the log.

After we cut up the log and I was working on N 02, my father and I worked to identify the tree. I scavenged for leaves around the site, noting the species of the others nearby. We looked at the bark, the grain and softness of the wood, and came to the conclusion it was likely Silver Maple.



fig. 27

Material

The Three Lenses



fig. 28



fig. 29

*Material*

The Three Lenses



fig. 30

## Site 03

A&M Wood Supply, Cambridge, ON  
Ash  
Black Walnut

A&M Wood Specialty is a fine hardwood and veneer retailer in Preston. It is located alongside the Speed River, a tributary of the Grand River. I had heard about the store throughout my undergraduate degree, never visiting as I always had used my parent's Walnut.

I purchased both Walnut and Ash from A&M on a few different occasions to make these seats.



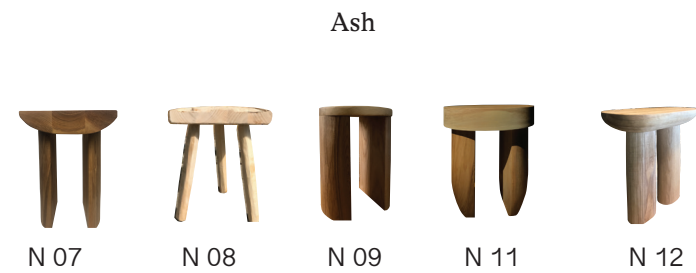
fig. 31

Material

The Three Lenses



fig. 32



I wanted some Ash for a project I was working on outside of my thesis. I needed boards quite quickly and to be kiln dried and stable. So instead of using the Ash trees from my parents' property I bought 60 board feet of Ash from A&M in the winter of 2020. The wood was not meant to be used for my thesis work, but because of unforeseen circumstances, they no longer had a planned use.

Similar to the Ash found on my parents' property, this Ash was cut down either to control the spread of Emerald Ash Borer or had been killed by the beetle.

These boards were mostly 12/4" thick in 4" widths, planed on two sides. Ash, even when purchased from a retailer like this is quite cheap for a hardwood, being sold at \$6.75 a board foot, in comparison to Walnut which is sold at \$14-18 a board foot.

Material  
The Three Lenses



fig. 33



fig. 34

Black Walnut



N 19

I purchased the Walnut for N19, as I wanted a thicker stock than the 1" boards that my parents have. I immediately noticed a difference between the A&M Walnut and the Walnut from my parents property. The wood from A&M was much darker, almost purple. The wood from my parent's property is much more red, almost orange.

Though these two trees are the same species their site, climate, soil, extraction, and drying process yield a very different colour of wood.

Material

The Three Lenses



Black Walnut from Material Site 01

Black Walnut from Material Site 03

fig. 35

## Site 04

Kitchener Saw Mill, Petersburg, ON  
Sugar Maple



N 16

I wanted the first piece cut off the log. A board that is normally discarded. One side is curved, the outside of the tree, and the other flat. I called local sawmills and lumber retailers to find this piece of the log, which I knew was typically waste.

A man named Bruce called me out of the blue, offering me one of these boards. He had plenty, he said. I drove to Kitchener Sawmill, just 20 minutes from Cambridge on the other side of the 401. As I turned onto their road, a huge freight truck passed me on the narrow country road, hundreds if not thousands of boards stacked on the trailer. I turned into the lumber yard. Stacks of boards, a graveyard for trees, and two pieces of equipment that looked like gigantic bugs greeted me. I parked the car and got out to find Bruce. He took me into the sawmill, and let me have a pick of the boards. It was like going to the butcher. We pulled the widest board out, they cut it in half so it would fit in my car. I handed Bruce a twenty and left.



fig. 36

Material

The Three Lenses



fig. 37



fig. 38

*Material*

The Three Lenses



fig. 39



# Site 05

Metal Super Market, Cambridge, ON

Steel  
Aluminum

The sheet metal I used (Steel and Aluminum) came from Cambridge Metal Supermarkets, which has since closed.

I was a bit nervous about going into the store the first time as I knew nothing about metal. I wasn't sure what I wanted to buy, the alloy, thickness, etc. Instead, I went online and ordered the 16"x19" hot rolled steel sheet after a bit of research. A few days later I picked it up. The store was in an industrial park near the 401. When I walked in they had metal music on. The man behind the counter was tall and burly. I meekly asked for my order.

I went again a few weeks later. This time a bit more confident. I went to the store instead of ordering online, as I wanted to see the material, pick it out, and touch it. The same man helped me. The same music was on. He helped me find what I needed, cutting the sheets of aluminum to size with a loud crack.

Both Steel and Aluminum have a high embodied energy due to the process of extraction, transporting, melting and forming each sheet. Though my consumption of each of these materials is quite minimal on the global scale, it is still important to realize the effect these materials in both their extraction and formation have on the environment. The potential to mitigate this high embodied energy lies within the ability to infinitely recycle both of these materials. The exercises that use these materials have been designed with the ability to take them apart, using hardware connections, allowing for replacement and recycling of each component.



fig. 40

Material

The Three Lenses

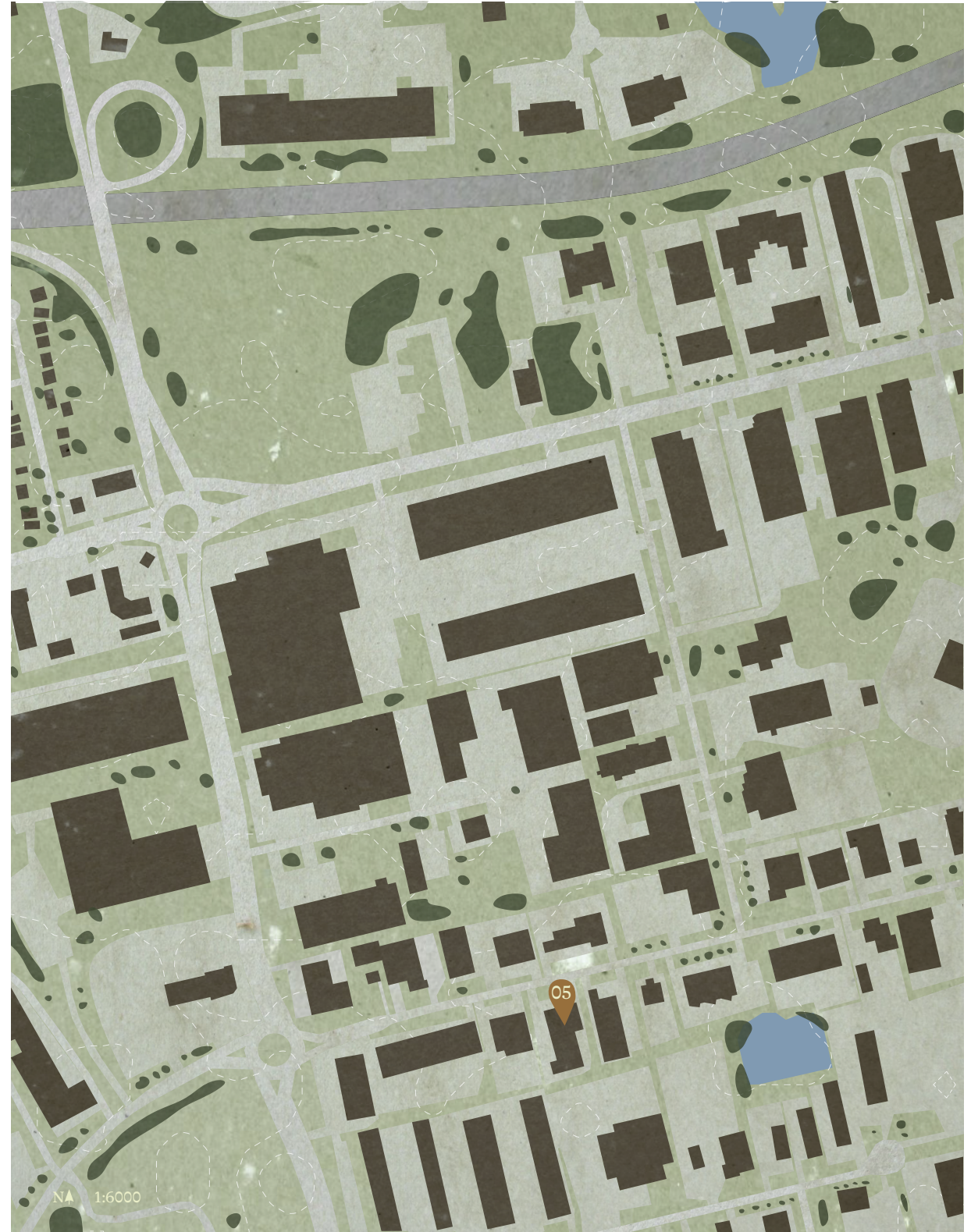


fig. 41

### Steel



Due to the difficulty of tracing steel, I have made an assumption that my steel was produced and mined in Canada which allowed me to gather some general research about the industry.

Steel is an alloy of iron ore and carbon. In Canada, Iron Ore is mined in Nunavut, Quebec, and Newfoundland and Labrador.<sup>44</sup> This raw material is then transported from these sites to a steel plant. There are 13 steel plants in Canada, 6 of which are in Ontario.<sup>45</sup> The Iron Ore is then melted in either a Blast Furnace or an Electric Arc Furnace (EAF).<sup>46</sup> There has been a shift in the industry to use EAFs as they have lower energy requirements.<sup>47</sup> The steel industry is a large industrial energy user in Canada, accounting for about 7.5 percent of Canada's industrial energy demand which is 2.0 percent of the nation's primary energy consumption.<sup>48</sup>

44 "The Atlas of Canada - Minerals and Mining," Natural Resources Canada, Government of Canada, last modified March 20, 2018 , <https://atlas.gc.ca/mins/en/index.html>.

45 "The Atlas of Canada - Minerals and Mining," Natural Resources Canada, Government of Canada, <https://atlas.gc.ca/mins/en/index.html>.

46 Natural Resources Canada, "BENCHMARKING ENERGY INTENSITY IN THE CANADIAN STEEL INDUSTRY," (2007): 6, accessed December 4, 2020, <https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/oeefiles/pdf/industrial/SteelBenchmarkEnglish.pdf>

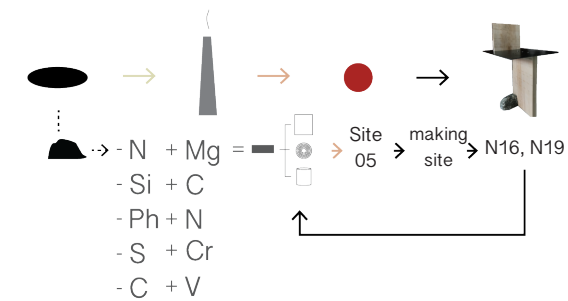
47 Natural Resources Canada, "BENCHMARKING ENERGY INTENSITY IN THE CANADIAN STEEL INDUSTRY," 6

48 Natural Resources Canada, "BENCHMARKING ENERGY INTENSITY IN THE CANADIAN STEEL INDUSTRY," 6

Material  
The Three Lenses

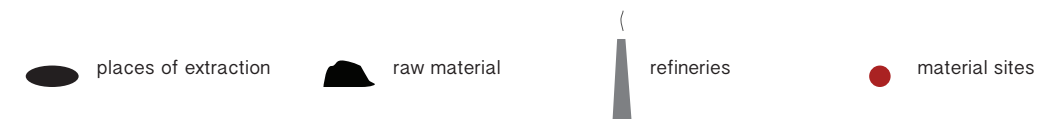


locations of extraction and production facilities

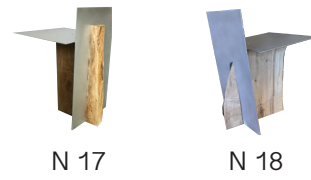


production of steel

fig. 42



## Aluminum



In nature aluminum does not exist in a pure state. The production of aluminum begins with bauxite ore, which is composed of hydrated aluminum oxide (40% to 60%) mixed with silica and iron oxide.<sup>59</sup> Bauxite is typically found in the topsoil of various tropical and subtropical regions such as Africa, Oceania and South America.<sup>50</sup> The ore is acquired through strip-mining operations.

It takes approximately 4 to 5 tonnes of bauxite ore to produce 2 tonnes of alumina.<sup>51</sup> In turn, it takes approximately 2 tonnes of alumina to produce 1 tonne of aluminum.<sup>52</sup>

There are 10 primary aluminum smelters in Canada: one is located in Kitimat, British Columbia, and the other nine are in Quebec.<sup>53</sup> There is also one alumina refinery, located in Saguenay, Quebec.<sup>54</sup> Many of these refineries are located in Quebec due to their immense energy requirements and Quebec's surplus of Hydro Electricity. As the world's fourth largest primary aluminum producer, Canada produced over 2.9 million tonnes of Aluminum in 2018.<sup>55</sup>

49 "Bauxite," The Aluminum Association, accessed December 4, 2020, <https://www.aluminum.org/industries/production/bauxite#:~:text=Bauxite%20is%20typically%20found%20in,projected%20to%20last%20for%20centuries.>

50 "Bauxite," <https://www.aluminum.org/industries/production/bauxite#:~:text=Bauxite%20is%20typically%20found%20in,projected%20to%20last%20for%20centuries.>

51 "Bauxite," <https://www.aluminum.org/industries/production/bauxite#:~:text=Bauxite%20is%20typically%20found%20in,projected%20to%20last%20for%20centuries.>

52 "Bauxite," <https://www.aluminum.org/industries/production/bauxite#:~:text=Bauxite%20is%20typically%20found%20in,projected%20to%20last%20for%20centuries.31>

53 "Aluminum facts," Natural Resources Canada, Government of Canada, last modified November 27, 2019, <https://www.nrcan.gc.ca/science-data/science-research/earth-sciences/earth-sciences-resources/earth-sciences-federal-programs/aluminum-facts/20510.>

54 "Aluminum facts," <https://www.nrcan.gc.ca/science-data/science-research/earth-sciences/earth-sciences-resources/earth-sciences-federal-programs/aluminum-facts/20510.>

55 "Aluminum facts," <https://www.nrcan.gc.ca/science-data/science-research/earth-sciences/earth-sciences-resources/earth-sciences-federal-programs/aluminum-facts/20510.>

Material  
The Three Lenses

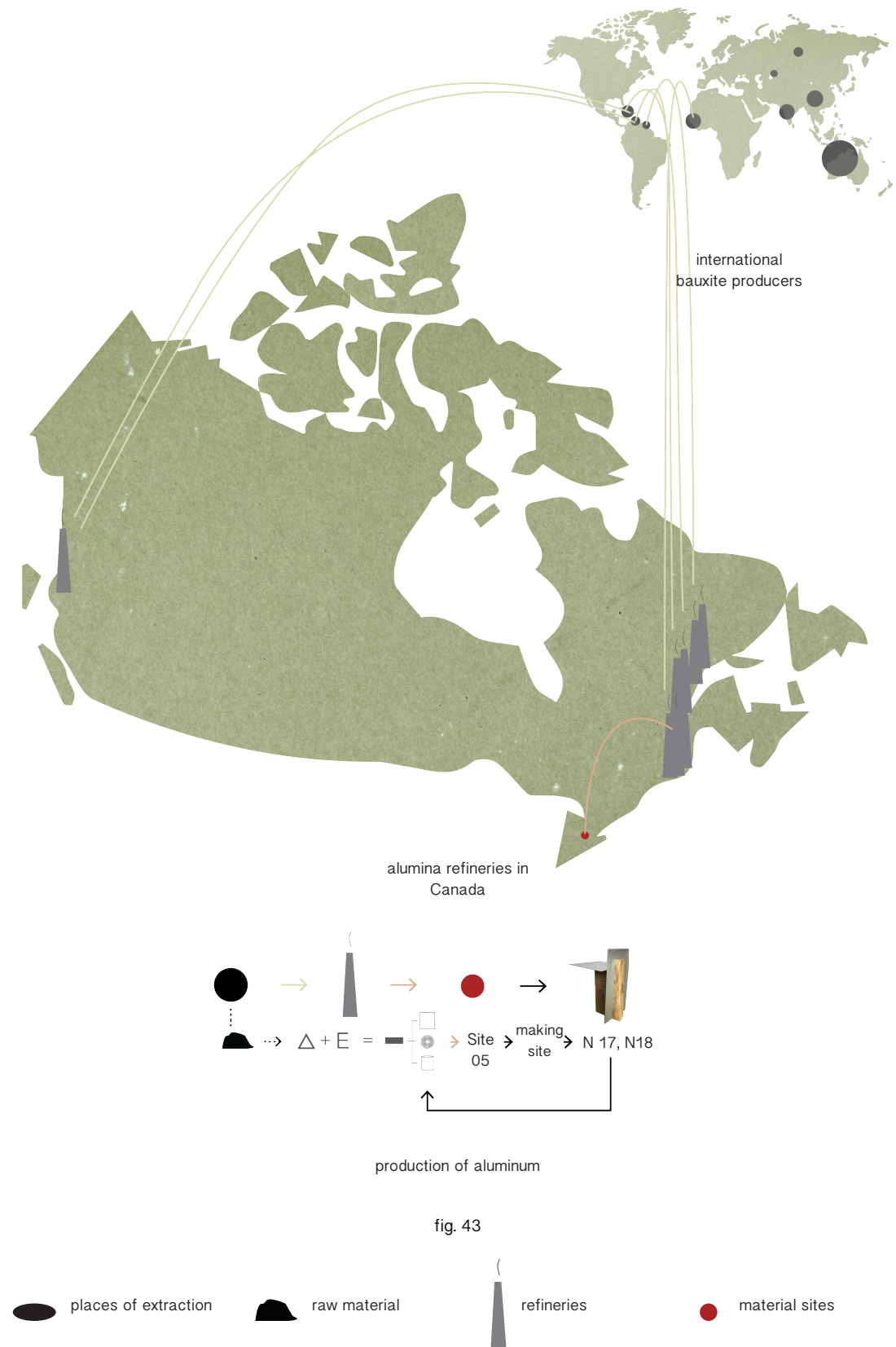




fig. 44

Material

The Three Lenses

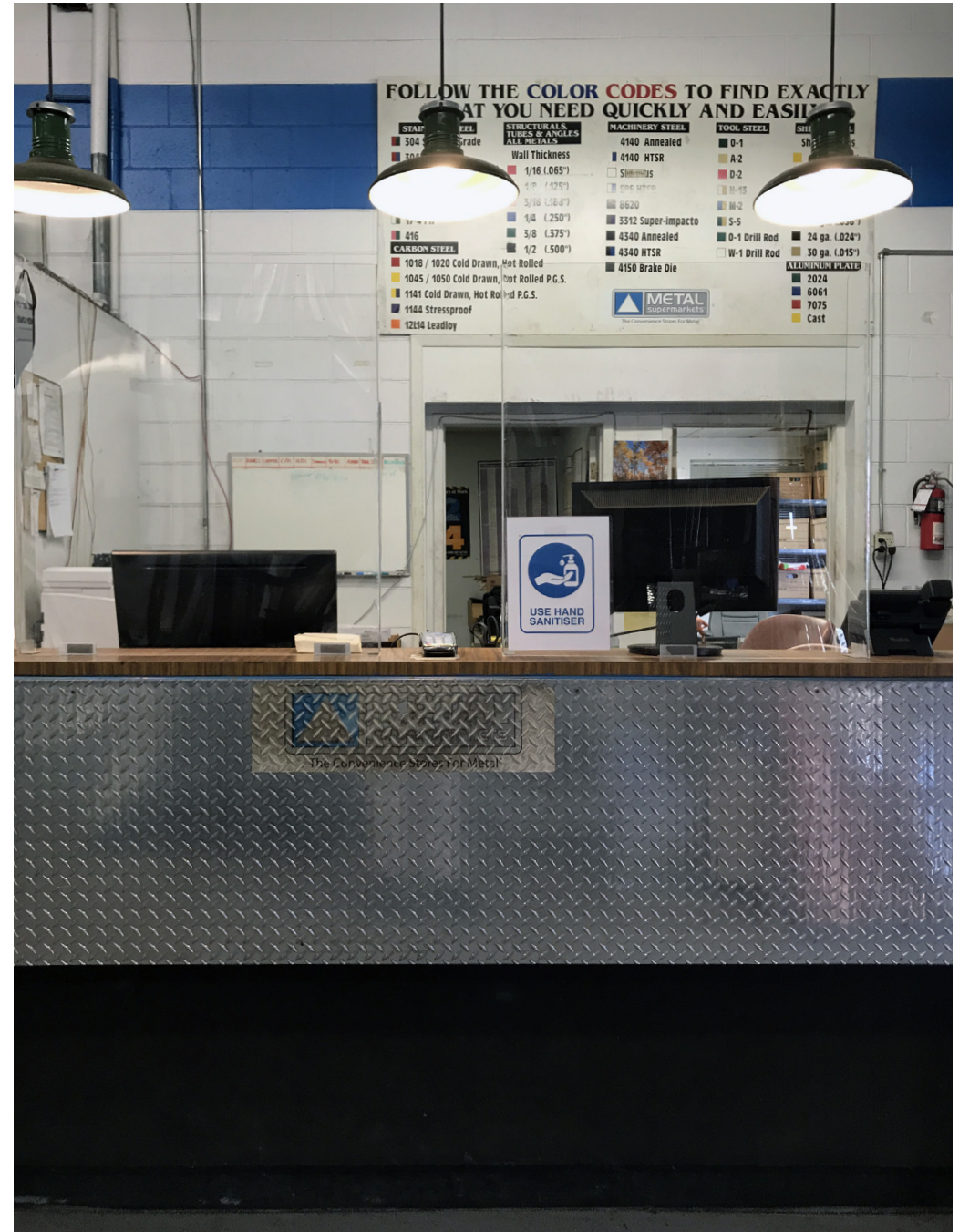


fig. 45

## Site 06

Sculpture Supply, Toronto, ON  
Brazilian Soapstone



N 16

I bought a chunk of Brazilian Green-Beige Soapstone from Sculpture Supply in Etobicoke, ON. I was travelling to Toronto to visit my partner for the September long weekend. I had not been on public transportation since the March weekend just before lockdown went into effect. Greyhound was no longer offering buses from Cambridge to Toronto, so I took the GO bus, which involved three methods of transportation and took about four hours. Sculpture Supply is near Kipling station, one of the transfers on my long journey. I got off my third bus of the day, walked into Sculpture Supply and to the outdoor space where they keep the stone. I picked out my rock, paid and continued on my journey, carrying my ten pound stone like a baby for the rest of the way. Reflecting on this trip, I think about how this piece of Brazil came to Etobicoke, how many hands this rock passed through, modes of transportation it took, just to be screwed into the bottom of a piece of wood.

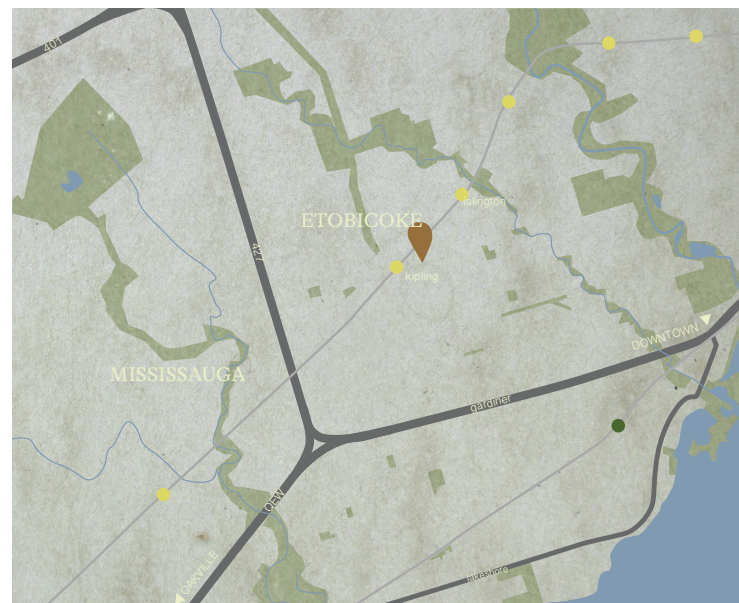


fig. 46

Material

The Three Lenses



fig. 47



fig. 48

Material

The Three Lenses



fig. 49



Seat N 07 made with 4" x 3" Ash boards laminated



Sea N 14 made with chunks cut from an Ash log

fig. 50

Material

The Three Lenses

## Place, Value, and Material

The material, its site, and form, inform of the character of the work and its perceived value, both commercially and emotionally.

The character of the work speaks of the material's site and the form in which the material was acquired. The opportunities that the material as a tree presents - the curves, the knots and splits - are different from the stable, uniform nature of the milled and dried wood. As the tree gets broken down into smaller and smaller pieces, cut into standardized sizes the relationship to the tree becomes more abstract.

Once the tree becomes standardized in dimension it is also given a commercial value that relates to scarcity, cultural context, and the embodied energy that it takes to make the tree into a commodity. The trees on my parents' farm were standing dead and had no perceived commercial value. Their value is emotional, based upon the narrative they carry through the relationship I have developed with them. They also are valuable through an ecological lens. They are trees that have died from natural causes, harvested a very small scale, based on need, locally. As trees that have sequestered carbon, by harvesting them and making them into furniture, the carbon remains sequestered, rather than being released as they rot on the forest floor.

When the material is understood as a being, material becomes an *active* rather than *passive* figure within fabrication. As designers we must respect the materials that we use. We are unlikely to respect a material or make things of quality unless we have an understanding of making and material. The material, its collection, extraction, and processing tell a story of a particular time and place, speaking of decisions that align with *values*.

## Design

The seat acts as the vehicle for this investigation into understanding work holistically. The consistency of function allows for iteration and learning across a continuous scale. Though the process of engagement with material and making is the core of the research; the design of seats unites the experience, while acknowledging the human cultural context that informs the work.

Everyone sits; it is how we spend more and more of our time. There is a connection between bodies, culture, and the artifacts we sit in. Although there are a number of iconic seats, the seat remains a ubiquitous design object. Seats reflect and are affected by culture, technology, economics, and trends.<sup>56</sup> They communicate their user's attitudes (*values*) towards these things. *They speak.*

During the Arts and Craft Movement, Modernism and the American Studio Craft movement, architects designed seats.<sup>57</sup> There is a tradition of chairs acting as an architect's manifesto, combining style, function, and structure, at a scale that is far more approachable than a building. The seat allows for greater and more immediate relation between material, design process and the maker. The nature of a seat allows for the potential of the work to outlast the original owner, designer, trends and time, making them similar to architecture.

<sup>56</sup> Witold Rybczynski, *Now I Sit Me Down : From Klismos to Plastic Chair : A Natural History* (New York: Farrar, Straus and Giroux, 2016) 7.

<sup>57</sup> Rybczynski, *Now I Sit Me Down : From Klismos to Plastic Chair : A Natural History* 5





fig. 51

Design

The Three Lenses

The seat began with the stool. Stools likely began with a slab of wood and three pegged legs. Three legged stools are easy to make and have the ability to stand on uneven ground.<sup>58</sup> This form is similar to what we think of as the milking stool of 17th century England. Its next iteration was the back stool, the simple three legged stool with a slab that had been attached to the seat.<sup>59</sup> Back stools were common throughout Europe and America throughout the 18th century, often thought to be descendants of the *sgabello*, a three legged stool with a back, originally meant for royalty of 15th century Italy.<sup>60</sup> The stool has been both ceremonious and a seat for milking cows. Chairs have often been reserved for those of social status. Until the late 1800s, in western societies, middle and lower classes did not use chairs, but rather stools and benches.<sup>61</sup> In non-furniture based cultures the stool or seat remains for those of status or for ceremony.<sup>62</sup>

My own work followed a similar trajectory as the timeline (fig. 54). I began with the stool, with the chair emerging quite recently. As the work progressed it became more sculptural. I began with the three legged stool, evolving then from four to two legs, to only having one leg with some cross bracing. The joinery also evolved, the technical demands changed, the complication of the seat increased with new materials being introduced. The dimensions were massaged as I used these works, testing them to help make decisions about the next.

58 Rybczynski, *Now I Sit Me Down : From Klismos to Plastic Chair : A Natural History* 15

59 Rybczynski, *Now I Sit Me Down : From Klismos to Plastic Chair : A Natural History* 12

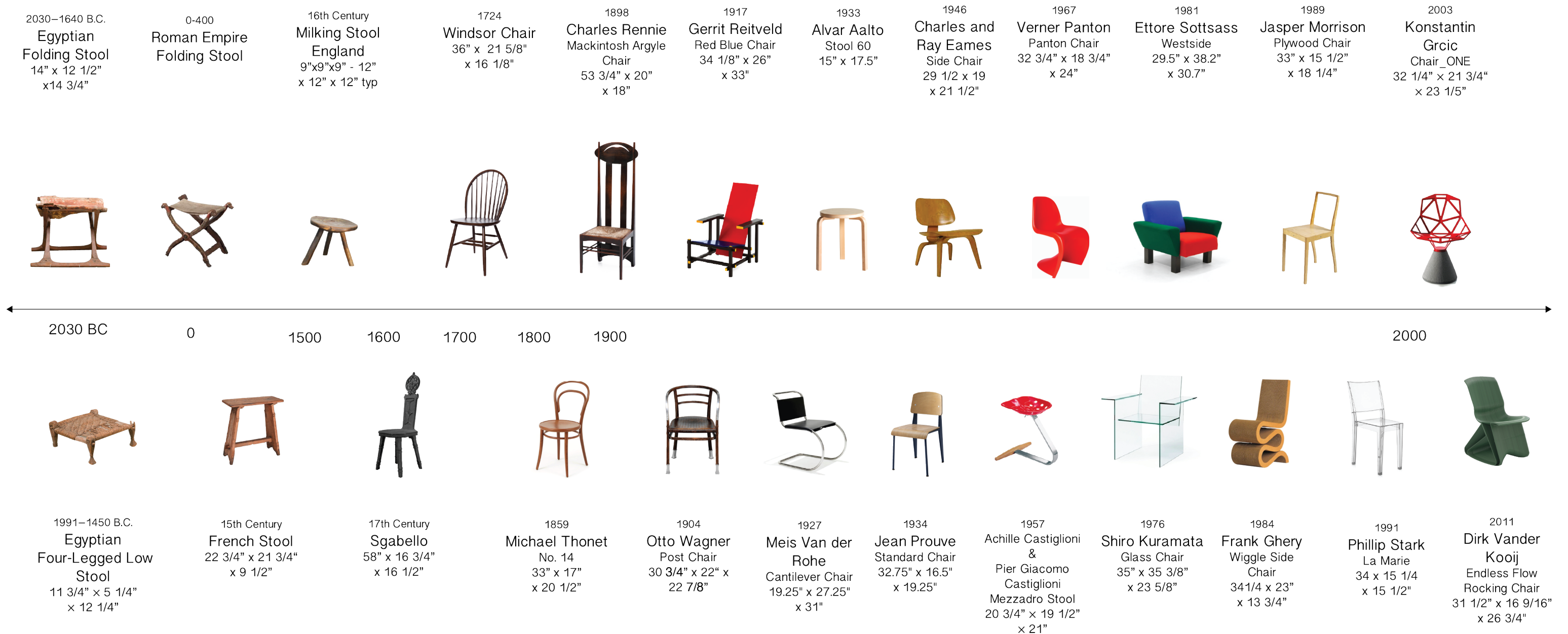
60 Rybczynski, *Now I Sit Me Down : From Klismos to Plastic Chair : A Natural History* 11

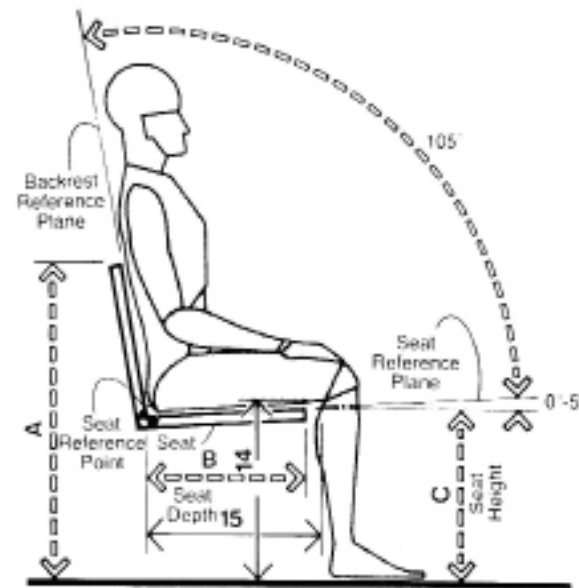
61 Chair Times: A History of Seating – From 1800 to Today, directed by Heinz Butler (2018 Zurich: HOOK Film & Kultur Produktion GmbH in cooperation with the Vitra Design Museum) web.

62 Rybczynski, *Now I Sit Me Down : From Klismos to Plastic Chair : A Natural History* 16

# History of the Seat

The following timeline shows the evolution of the seat throughout the western world primarily, beginning with stools from Ancient Egypt through to 2011. By no means comprehensive, the timeline aims to show a broad range and evolution of the seat. Each work reflects their cultural context through form, material, and scale.





	in	cm
A	31-33	78.7-83.8
B	15.5-16	39.4-40.6
C	16-17	40.6-43.2
D	17-24	43.2-61.0
E	0-6	0.0-15.2
F	15.5-18	39.4-45.7
G	8-10	20.3-25.4
H	12	30.5
I	18-20	45.7-50.8
J	24-28	61.0-71.1
K	23-29	58.4-73.7

fig. 53 typical chair dimensions

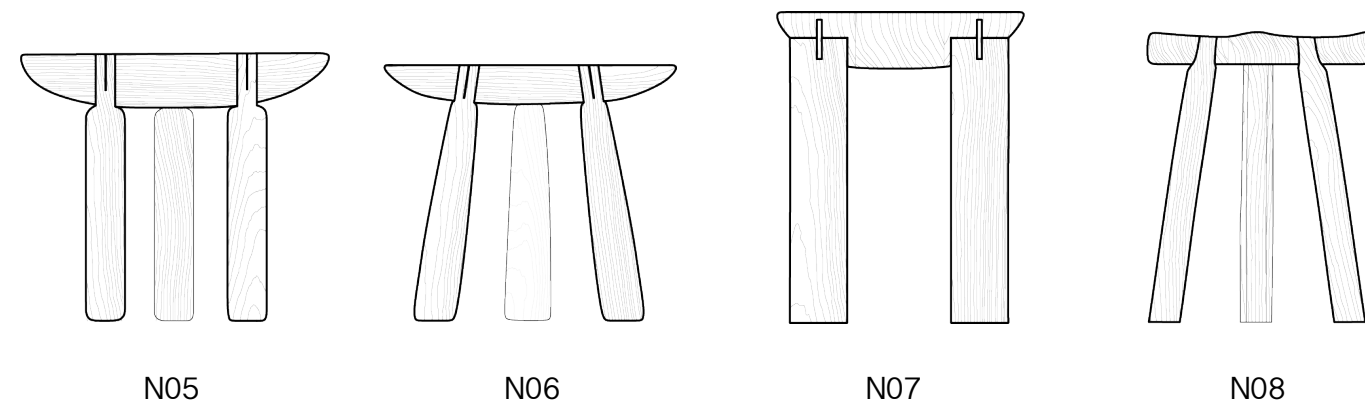
When beginning this process I measured all the seats I could find; from the bar stools at my student housing, my parents' Windsor chairs, to the Ikea chairs in the student lounge at the school. I searched the dimensions of chairs that I liked. There is a wide range of dimensions that often relate to when the seat was made and its purpose. Lounge seats as well as more contemporary chairs are larger, often the seat or the chair or stool measures between 20" x 20" and 22" x 22". Antique chairs and stools are often smaller, with the seat being closer to 16" x 16". These measurements were used as guidelines. The experience of making full scale prototypes and the reflection upon the prototypes drove the dimensions and scale. (Fig. 56)

The transition within my own work from the stool to the chair drastically changed the bodies relation to the seat. With a back the body can no longer spill over all four sides. The chair becomes contained. A low back made the chairs feel squat and low although the height of the seat may be the same as a stool that may appear more comfortable. The typical height for the seat of a chair ranges from 16" to 18". The stools I started with were closer to 12" - similar to the scale of a milking stool. Using my own body for scale I have found a comfort level around 18", especially for the low backed works, which often look short and squat when the seat height is lower. The dimensions of the seat are typically a minimum of 16"x16". Again, this dimension was much smaller with my earlier works, growing larger with the addition of the back.

The scale and form of the seat gives space for experimentation. It allows fabrication and iteration relatively quickly, experiments with joinery with few structural consequences and engagement with the design and making process over the relatively short timeline of a Master's thesis.

## Sections through the Nineteen Seats

The following sections of the seats, in chronological order, show the evolution of scale, form, joinery and to a lesser degree material. These drawings were made after all nineteen seats were made, reflecting on the evolution that occurred through this process. All drawings are shown at a consistent 1:10 scale, cutting through where the legs meet the seat in order to show detail of the joinery. The individual works and their process is further described in Part 2.



*Design*

The Three Lenses

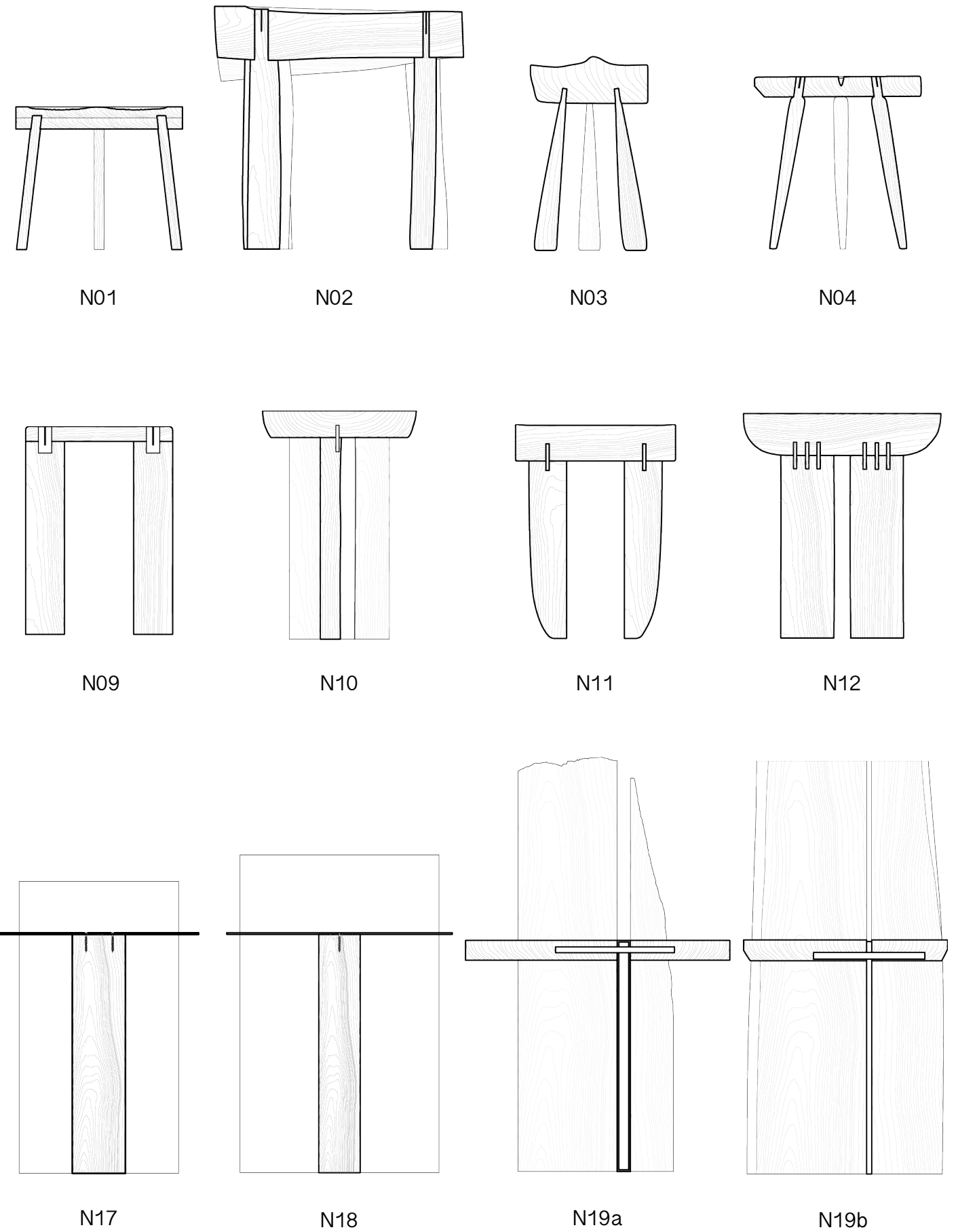




fig. 55

# Part 2: Nineteen Seats









## Finding an Approach

I began making seats at the beginning of my thesis work in the autumn of 2019. The first five months of my research were spent making things, allowing intuition to control the exercises. The first approach to making began as a critique of the division of thinking and labour. I was influenced by the approaches of architects and designers such as Adolf Loos and Josef Albers who emphasized the use of the physical and full scale models. I emphasized labour when I began making, excluding the traditional tool of the architect - drawing - only making full scale experiments. This decision was based on the predetermination of Computer-Aided-Design and its tendency to separate us from the reality of material. With time I became bored and unsatisfied with this approach. So, like the seats, the approach was iterated upon, drawing and scale models were slowly reintroduced. With these additions the relationship between doing and thinking changed. But, the exercises continued to build upon a foundation of material engagement. The 1:1 exercises with material still drove the design process. The final approach, Approach 04, follows a more traditional approach, drawing in completion and hiring a fabricator; though I assembled the seat. This final approach sits in opposition to Approach 01, completing a gradient of approaches which explore the relationship of material, making and the use of typical design tools such as drawings.

The time in the shop rearranging blocks of material, sanding them, cutting them, talking about and with them, in all approaches, drove the design. But in the later approaches, the afternoons at home in my makeshift COVID office researching, watching art documentaries, reading, and drawing iterations, allowed development of the work in a way that making alone could not do. Each of these approaches had their own difficulties and opportunities. Each approach had a different relation to both knowledge and understanding of the works.

Each work speaks of the time, the place, and the mindset in which they were made. They carry stories of the sourcing of the material, the passage of time, and the evolution of ideas. Each one becomes a marker for myself of lockdowns, leaving and returning to the school's workshop, and changing seasons. The gaps in between the making periods are also telling of August vacations, moments of frustration, or changes in methodology.

## Timeline Legend

	break in time
	making in the school shop
	making in my parent's shop
	change in approach
	significant point in the process
	reflection on or intention behind the process
	from earlier
<i>site 01</i>	material site
<i>carving</i>	gesture
	end

## The Works

I have organized the works into four different approaches that reflect the changes in the balance between drawing and fabrication. The work is arranged in chronological order to demonstrate how knowledge and skill develop over time with iteration. Each work starts with an image of its network of making, material, and design. The network diagram is preceded by a timeline that describes the work's process of becoming. Images of the making of each seat are arranged along a timeline. The graphics of the timeline reflect the making sites. The filled black dots reflect gestures within the making process. The outlined dots reflect a personal narrative and reflection that occurred throughout the making process. The placement of the dots and the other graphics reflect the advancement time, notable moments or changes within the process as noted in the the legend opposite.

These works could be arranged and rearranged in a number of ways, organized by ideology, material, form etc. Part 3 attempts showing connections between works that are not necessarily exemplified by the following linear and individual progression.



fig. 56: Seats N 02 to N 10 at Material Site 01

## Approach 01

During Approach 01 I made a full scale stool every two weeks, each an iteration of the last. None of the stools had been drawn before they were made, but rather designed through the process of making and influenced by the process and form of the previous stool. The knowledge gained from the previous prototype is transferred to the next, developing a series of objects that are never a representation of a drawing, but rather the result of engagement with material.



# N 01

milking stool  
2019-09  
11" L x 11" W x 12" H  
walnut

Approach 01

Nineteen Seats

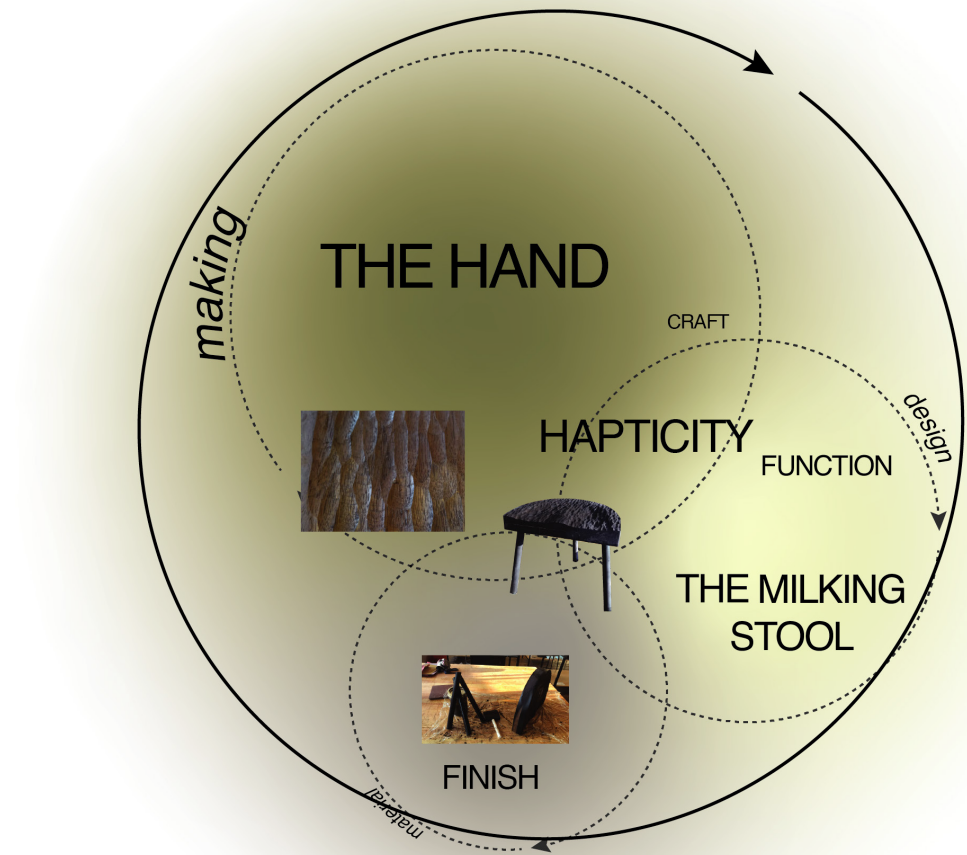
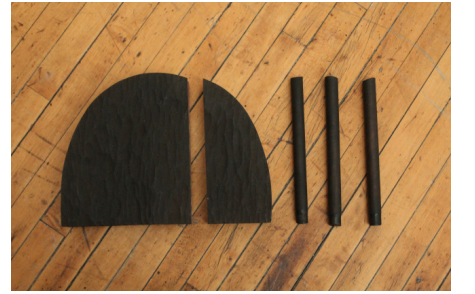


fig. 57



N 01

material

shaping

carving

connecting

finishing

completed

in pieces

site 01

I had an image in my mind for a while. A simple three legged stool - a milking stool. There was a deadline coming up and we had to make a model. I wasn't sure what my thesis was yet, but I wanted to do something with seating so I started here.

I was reading Juhani Pallasmaa, *The Thinking Hand*, and was interested in haptics and how the carved surface could mediate the experience of making and function. The carved surface is formed to make a comfortable seat, while the marks of the carving are left to interact with the user's body

The seat was designed through its making, evolving through the engagement with the material, and the tools that I was interested in.

N 02  
 split stool  
 2019-11  
 11" L x 18" W x 18" H  
 silver maple

Approach 01

Nineteen Seats

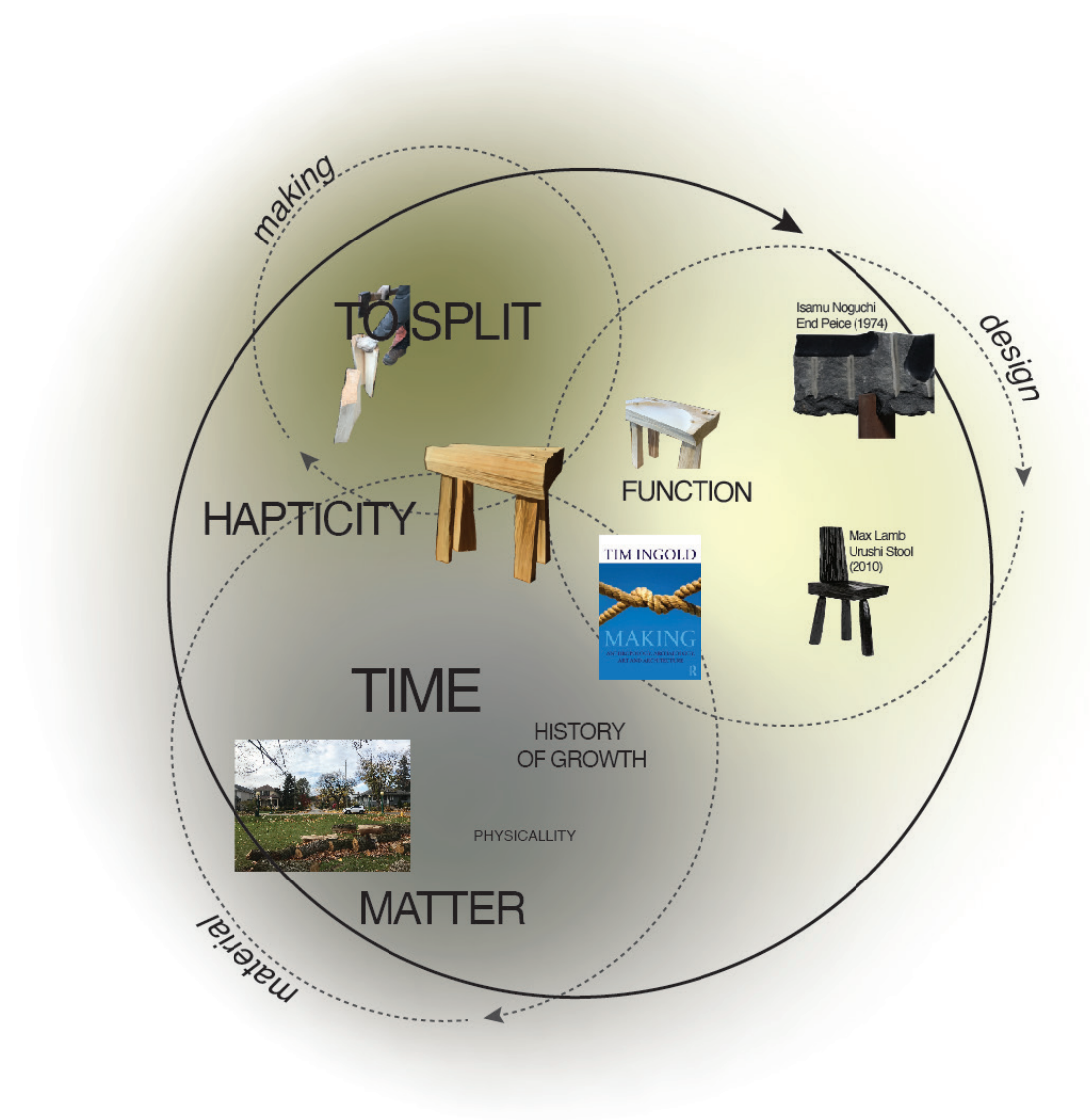
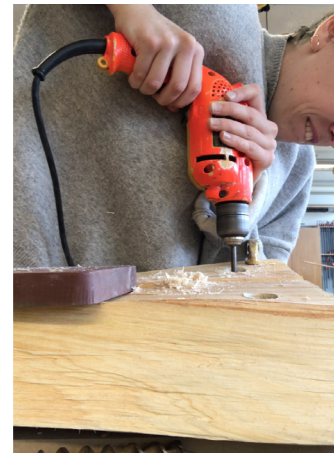


fig. 59



N 02

material

collecting

splitting

carving

connecting

carving

completed

site 02

*“The practiced woodsman brings down the axe so that its blade enters the grain and follows a path already incorporated into the timber through its previous history of growth, when it was part of a living tree”*

Tim Ingold, *Making : Anthropology, Archaeology, Art and Architecture* (Abingdon, Oxon: Routledge, 2013) 45.

I had been thinking a lot about material, it’s agency over form and its inherent multiplicity. The quotation included here by Tim Ingold resonated with me and inspired this seat. Using an axe we split up the logs I had found in St. Andrew Park.

After the stool was made, I continued to think about it. How was one supposed to sit on it? The split surface made this impossible. In the fall of 2020, almost a year after making this seat, inspired by the forms of Isamu Noguchi, I carved and sanded a half circle, making a place to sit.

fig. 60: Timeline of N 02

N 03  
deer stool  
2020-01-28  
11" L x 8.5" W x 15" H  
silver maple

Approach 01

Nineteen Seats

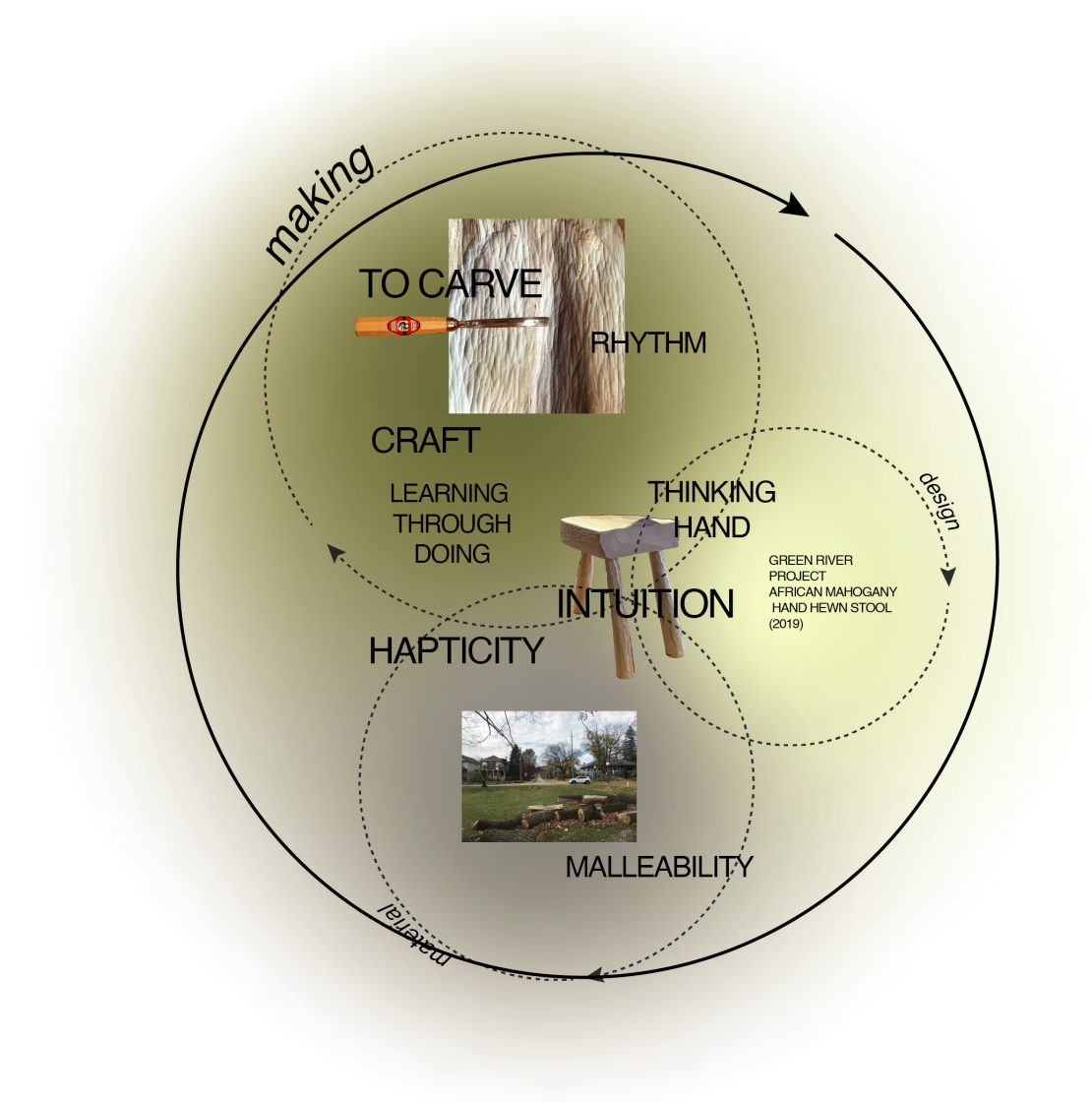


fig. 61

<



material



site 02



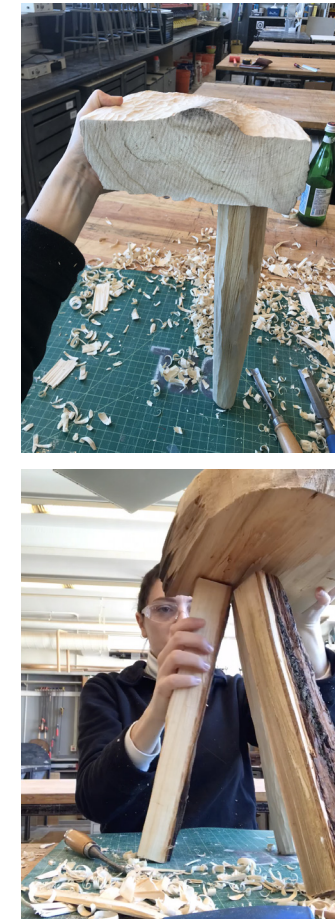
reflecting



carving



Unsure of where I was going I began in a familiar place: carving. I returned to the ideas of *The Thinking Hand*, I used the gouge to remove material, creating a patterned surface from the split chunk I was starting with. The colouring of the wood informed the section.



planning



Unsure of my carving, I sanded the whole thing. I contemplated again. I started carving again. The wood seemed almost plastic, being shaped and reshaped with my mood.



connecting



completed



The result is somewhat strange - a little monster that is about to take off.

N 03

# N 04

butterfly stool  
2020-02-11  
9.5" L x 12.5" W x 13.5" H silver  
maple

Approach 01

Nineteen Seats

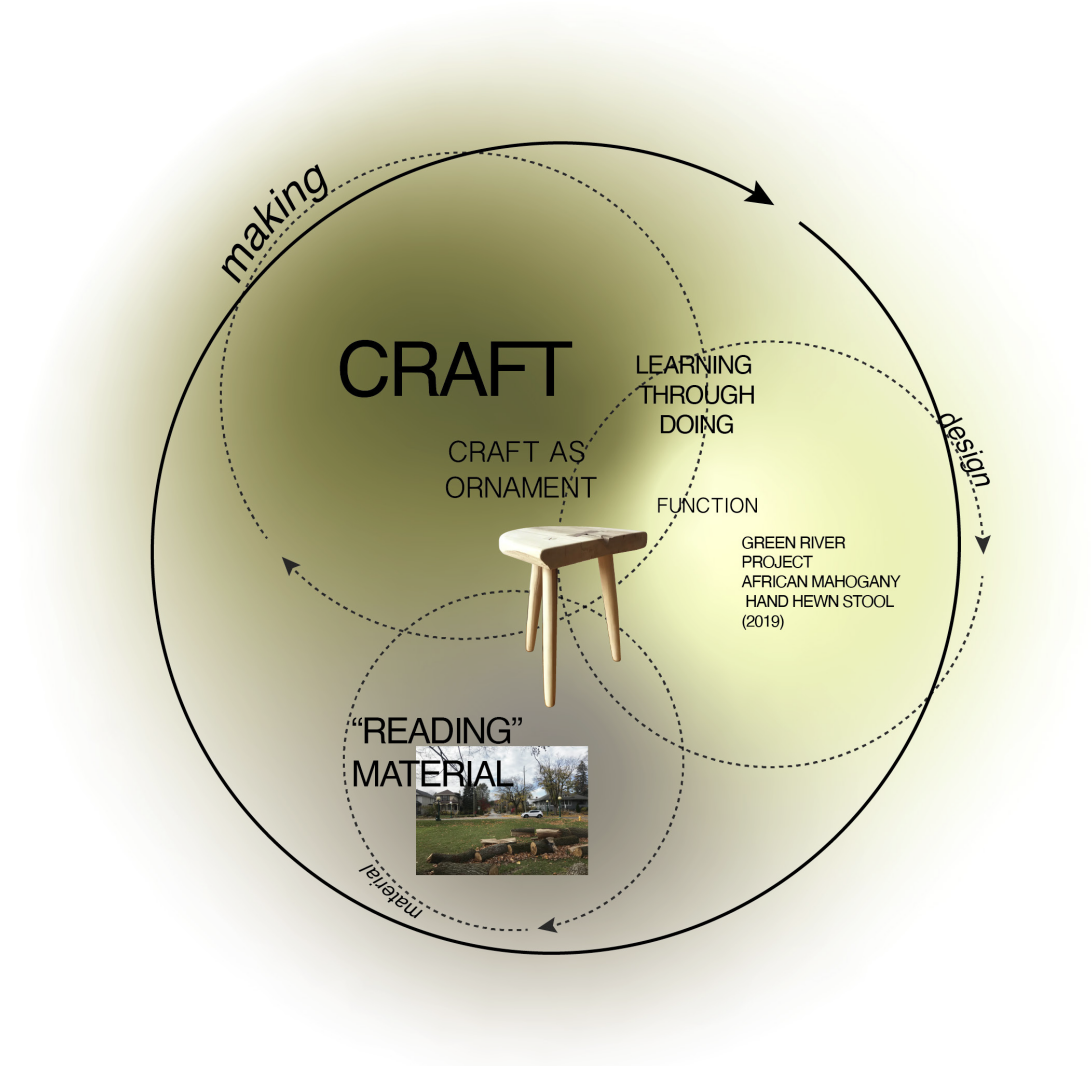


fig. 63



*material*



*site 02*



*shaping*



*carving*



*connecting*



*completed*



Disappointed and embarrassed by the previous stool I took a step back. Using the wood from the same tree as the previous two, I started building a standard 3 legged stool, similar to N1 but a bit larger. I focused on craft, a simple form made well.

N 04



# N 05

ample stool  
2020-02-26  
8.5" L x 15" W x 14" H  
ash

Approach 01

Nineteen Seats

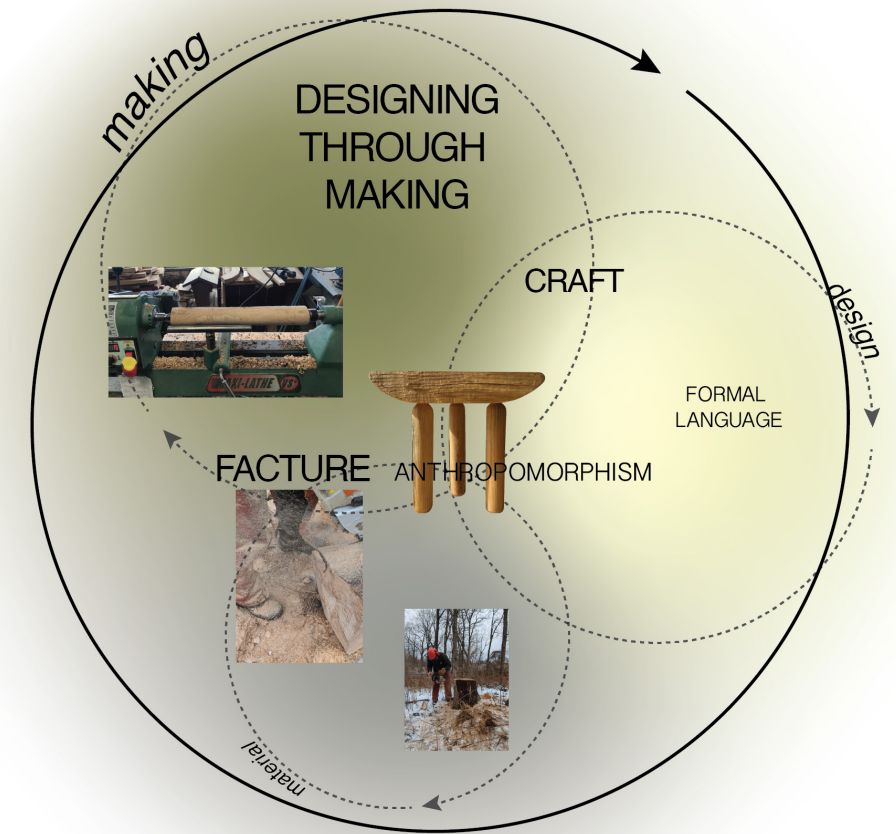


fig. 65



N 05

*material*

*reflecting*

*planning*

*shaping*

*connecting*

*completed*

site 01

Intrigued by the scale and form of the tree I went out to take down an ash stump that had been left from the arborist that had come in the fall.

This is the widest part of the tree and it turned out to be good dimensions for a small stool.

Once the log was cut, I used a wedge and hammer, to rough it into the shape that I wanted. This also made it easier and lighter to take back to the house. As the hammer hit the wedge, the log split into two. I could no longer execute the idea that I had in my mind.

Using these pieces, I returned to the three legged stool. I started with the legs on the lathe, which ended up informing the rest.

The front split, disconnected from the rest of the form is all that is left of that day in the forest, behind my parents' house, and the idea of what this seat was initially supposed to be. The idea transformed through the process, influenced by the experience with the log, but also the seats that came before and a level of comfort.

# N 06

ample stool 2  
2020-03-10  
9" L x 15" W x 14" H  
ash

Approach 01

Nineteen Seats

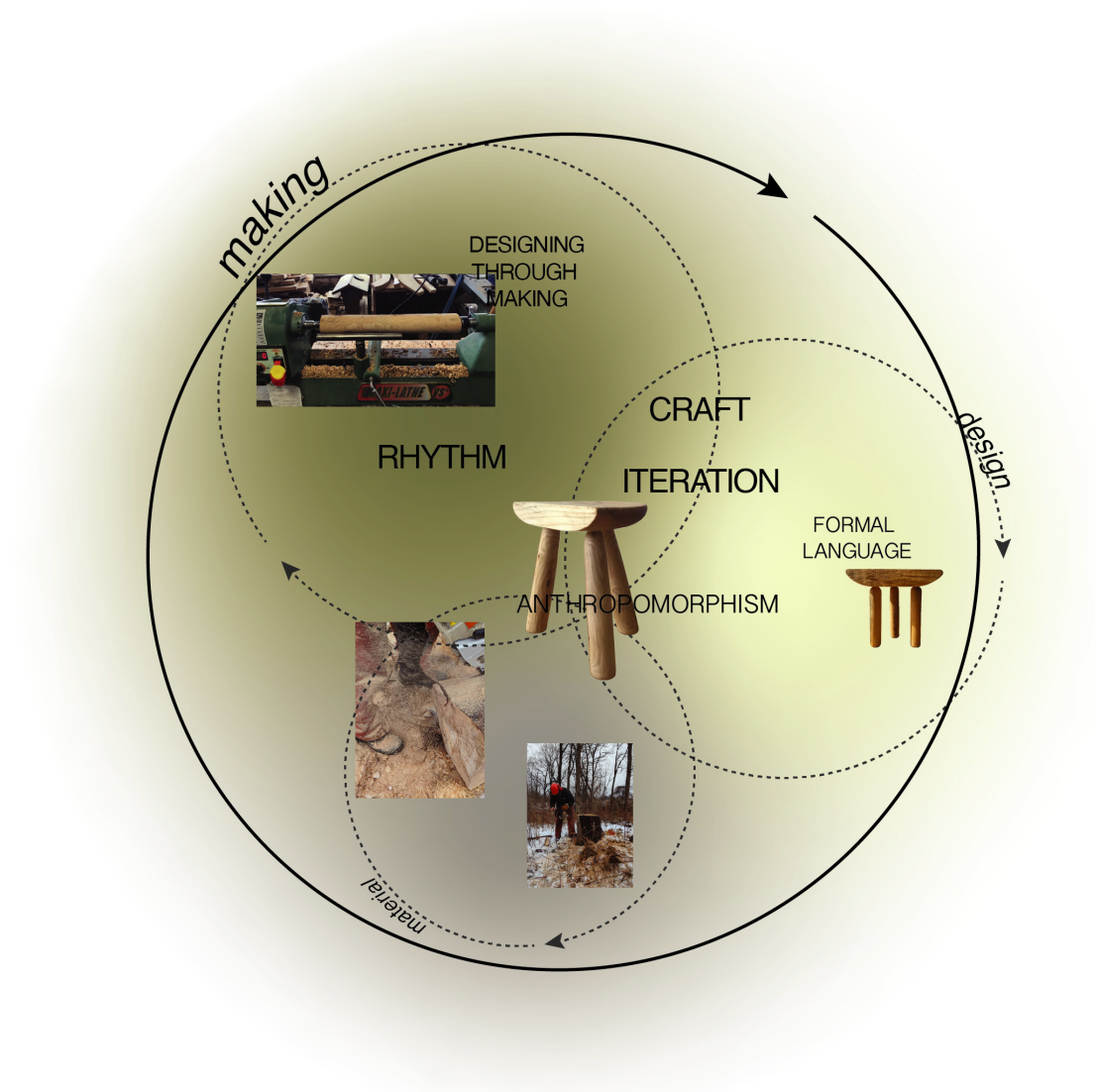


fig. 67

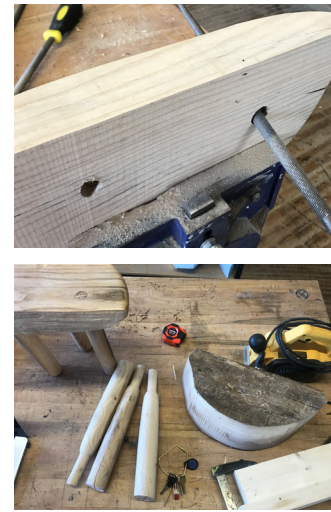


*material*

●  
*site 01*



*shaping*



*connecting*



*comparing*



*connecting*



*completed*

N 06

Satisfied with the stool before, there were a few adjustments that I wanted to make. So I went to work again, trying to replicate N5, using the same wood as before.

I splayed the legs to create stability while giving the form more definition. I sanded the front removing the split texture. The seat became a bit deeper and more generous, making it more functional.

With this next iteration, there were new challenges, things that were better in N 05. It is not simply a new version of N 05 but a new design.

# N 07

trunk stool  
2020-03-30  
12.5" L x 12.5" W x 16.5" H  
ash

Approach 01

Nineteen Seats

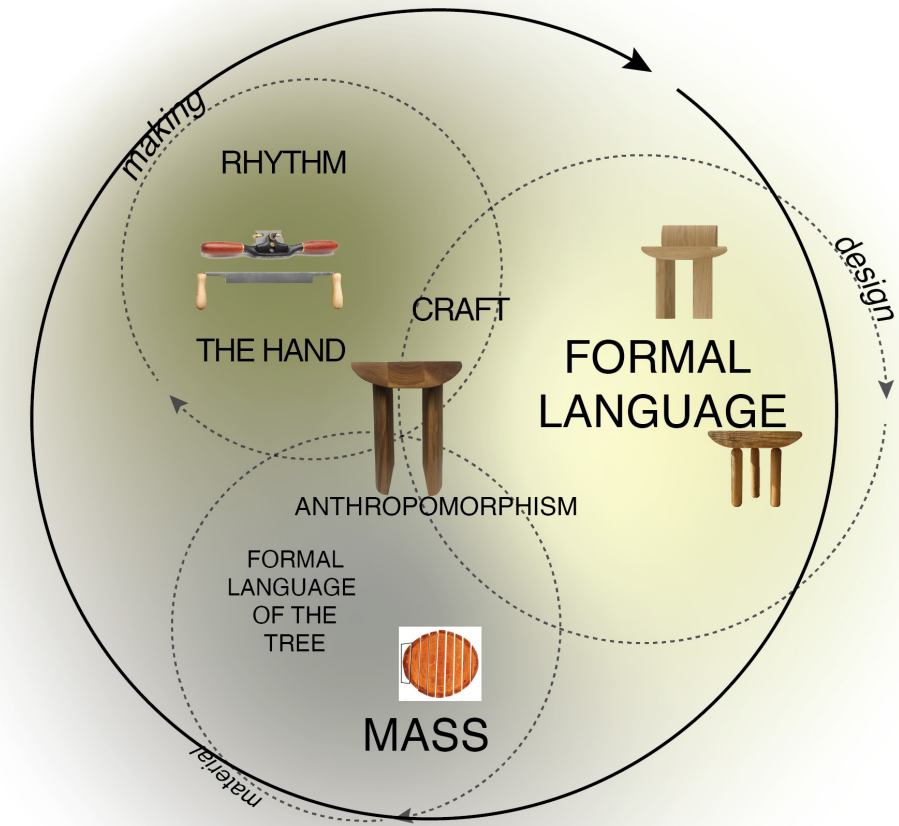


fig. 69



*material*



*shaping*



*carving*



*finishing*



*connecting*



*completed*

N 07

site 03

COVID closes the school and facilities

I was intrigued by the soft curves of the trunk of the tree, the warmth of the edges, and its contradicting mass.

The boards in front of me were hard and sharp. I started to remove the material. I wanted to find that softness again.

**N 08**  
 rough hewn stool  
 2019-04-08  
 12" L x 12" W x 15.5" H  
 ash

Approach 01

Nineteen Seats

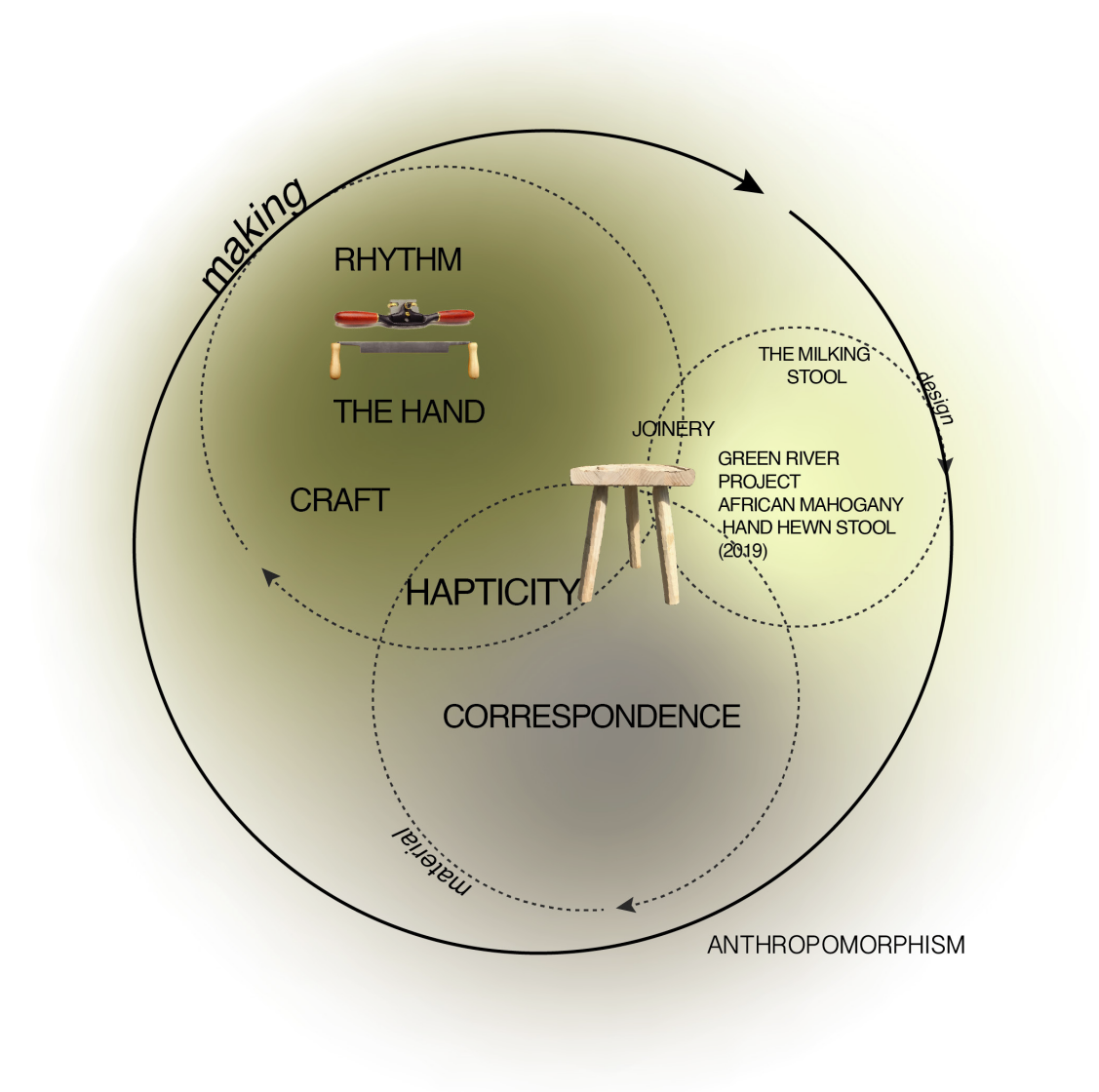


fig. 71



*material*



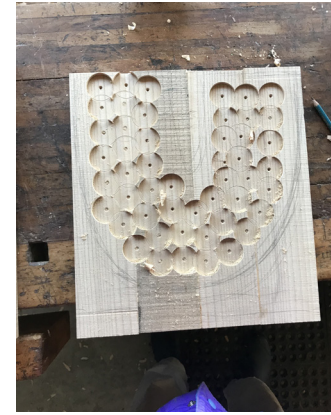
*preparing*



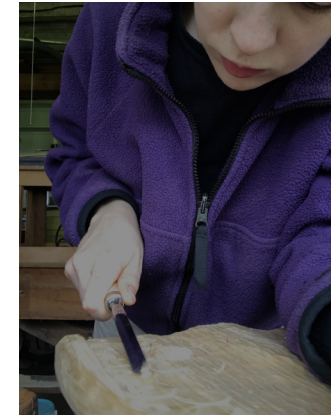
*carving*



*testing*



*shaping*



*carving*



*completed*

N-08

site 03

I got new tools: a drawknife, a spokeshave and a chisel. I returned to a place of comfort, the three legged stool and tried them out, learning to understand and refine the marks that they leave in combination with my hands.



# N 09

trunk stool 02  
2019-04-22  
11" L x 11" W x 16" H  
ash

Approach 01

Nineteen Seats

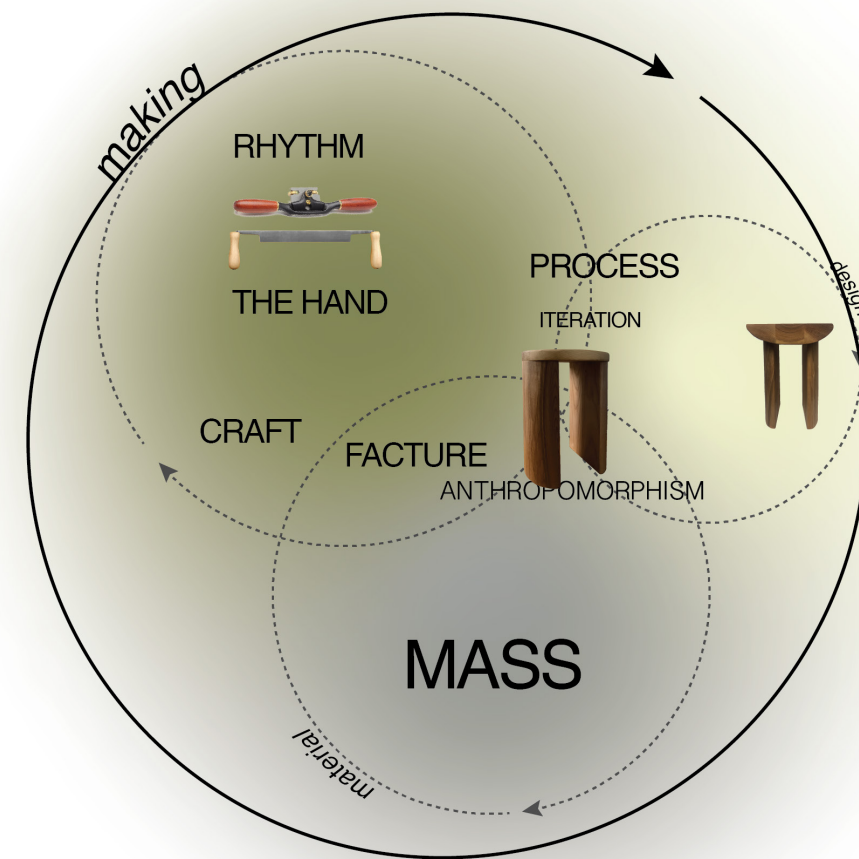


fig. 73



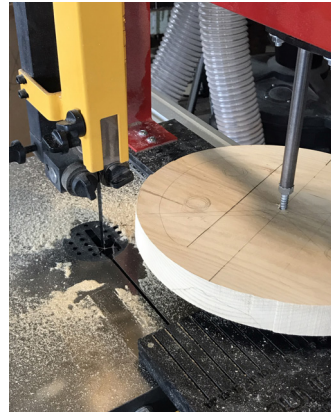
*material*



*carving*



*shaping*



*planning*



*connecting*



*completed*

N-09

site 03

After practicing with the new tools, I returned to the leg form of N7, but leaving the tooling marks, adding texture and a haptic quality to the legs.

**N 10**  
cambium stool  
2019-05-19  
11.5" L x 15" W x 17" H  
ash

Approach 01

Nineteen Seats

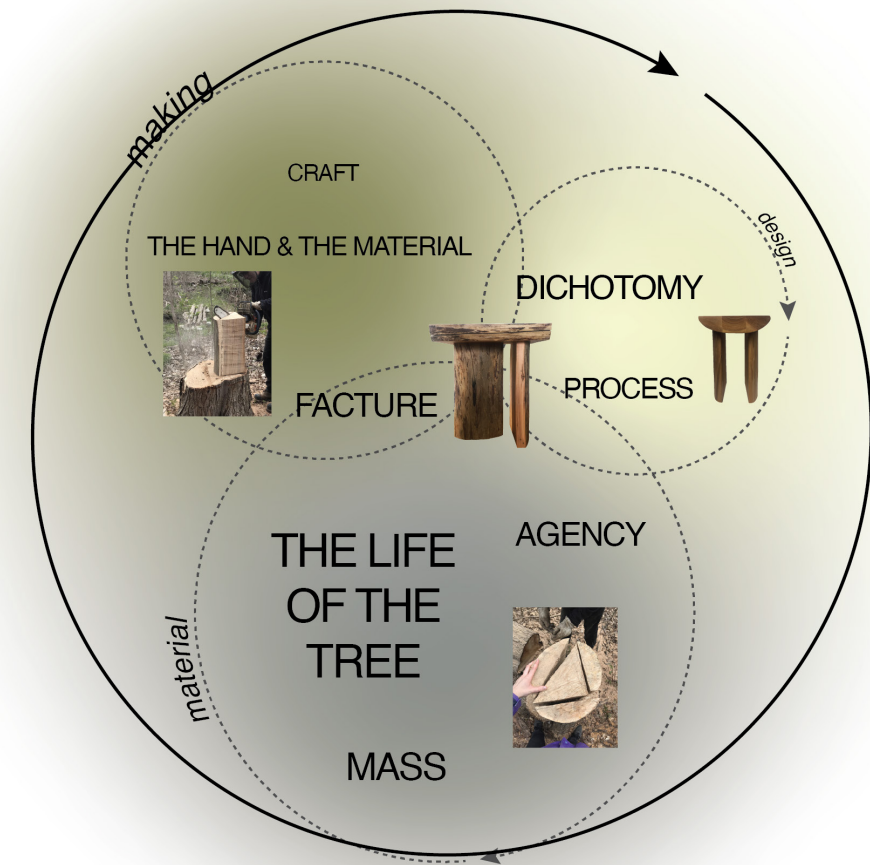


fig. 75



*material*



*cutting*



*preparing*



*testing*



*connecting*



*completed*

N-10

site 01

change in approach

I needed to make another seat but I was stuck. I went for a walk. There was a maple that had been cut down. The bark had fallen away over the winter and left this beautiful texture with hues of pink, green, beige and gray.

I had been longing to make something that spoke of the process that formed it, the life of the tree and the hand of the maker simultaneously.

This was an attempt at this, using the texture of the outside of the log, while pairing it with a smooth planed surface, process of fabrication.



fig. 77: Seats N 11 to N 15 at Material Site 01

## Approach 02

Approach 02 is based on reflections made through Approach 01. In an attempt to better balance the roles of the designer and maker, or thinking and labour, I reintroduced drawing back into the process. All prototypes remained at a 1:1 scale. The drawing that takes place was only done by hand, through sketching. These sketches became a way of working out a detail, proportions, etc. quickly in order to make decisions about how to proceed with the process of making. The stool was not designed entirely through drawing before it was made but rather through the movement between drawing and making that took place.

# N 11

tippy toe stool  
2019-05-29  
13" D x 16" H  
ash

## Approach 02

Nineteen Seats

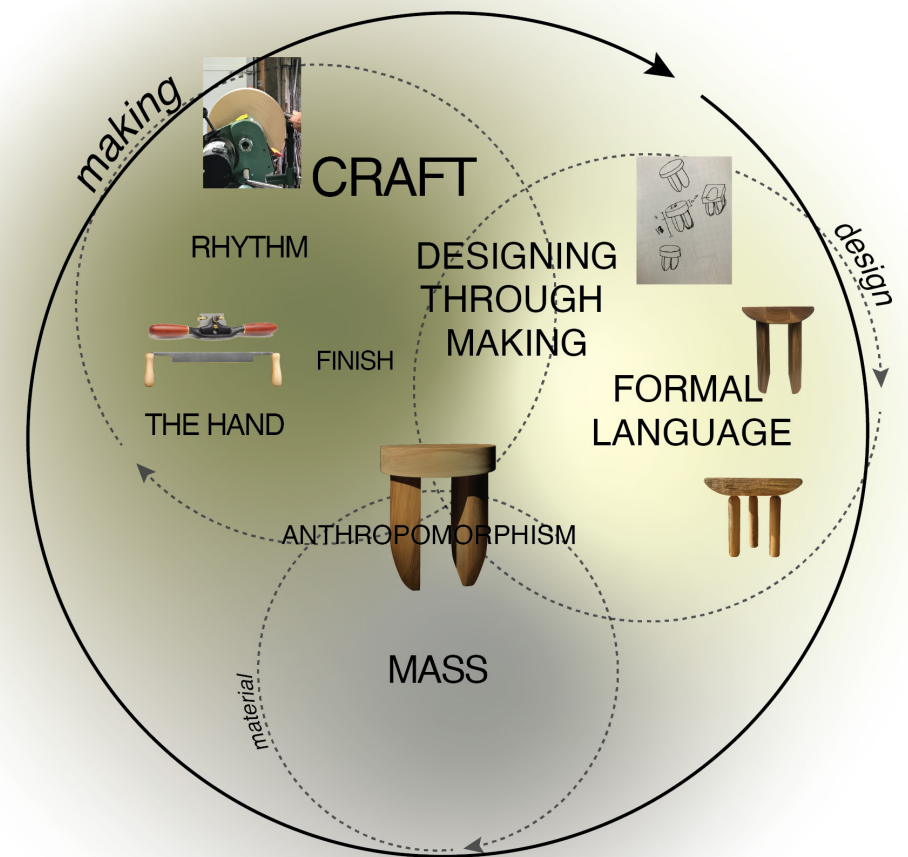
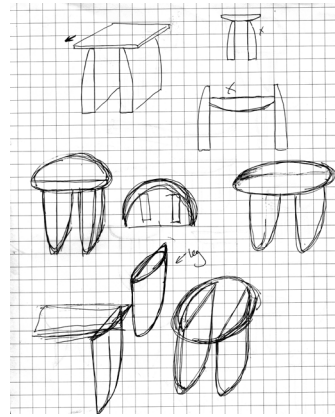


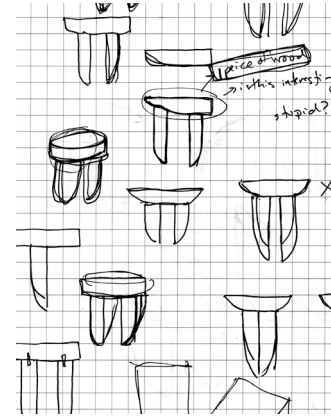
fig. 78



planning



shaping



planning



shaping



completed

N-11

site 03

The chisel digs into the wood. It flakes away with each blow of the hammer.

The rasp softens the rough edges left by the chisel.

The spokeshave rounds

with each pull. Sanding further abstracts the marks of the carving, leaving a soft biomorphic curve: tippy toes for the seat to stand on.

The seat was rough cut on the bandsaw before it started spinning on the lathe, rotating so fast it became a blur. It gets into the round. The seat is flattened and slightly carved out to create the slightest lip on the edge, barely noticed by the eye but felt with the hand.

**N 12**  
legged stool  
2010-06-11  
15" L x 8.5" W x 16.5" H  
ash

*Approach 02*

Nineteen Seats

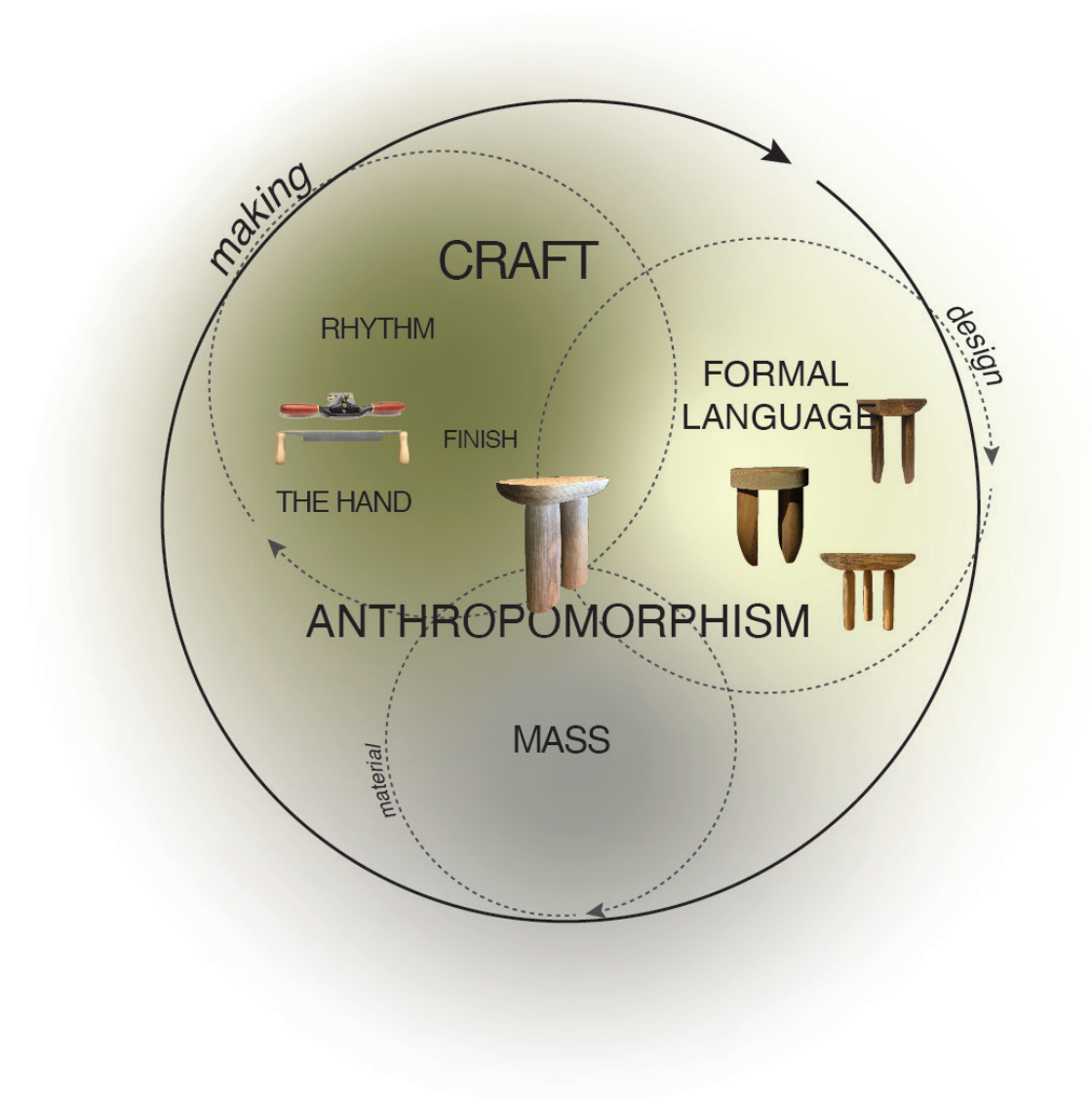


fig. 80

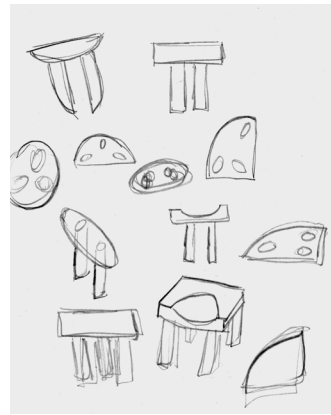




*material*



*carving*



*planning*



*testing*



*carving*



*finishing*



*connecting*



*completed*

N-12

site 03

Throughout this process I have struggled with the marks of my hand and the ideal of a "finished" work. I chose to hand sand this work to leave some of the marks of my hand while creating this flesh like texture.

two legs,  
a torso  
  
bumps and lumps,  
smooth striations

# N 13

one board stool  
2019-06-31  
9.5" L x 16.5" W x 17" H  
walnut with brass details

Approach 02

Nineteen Seats

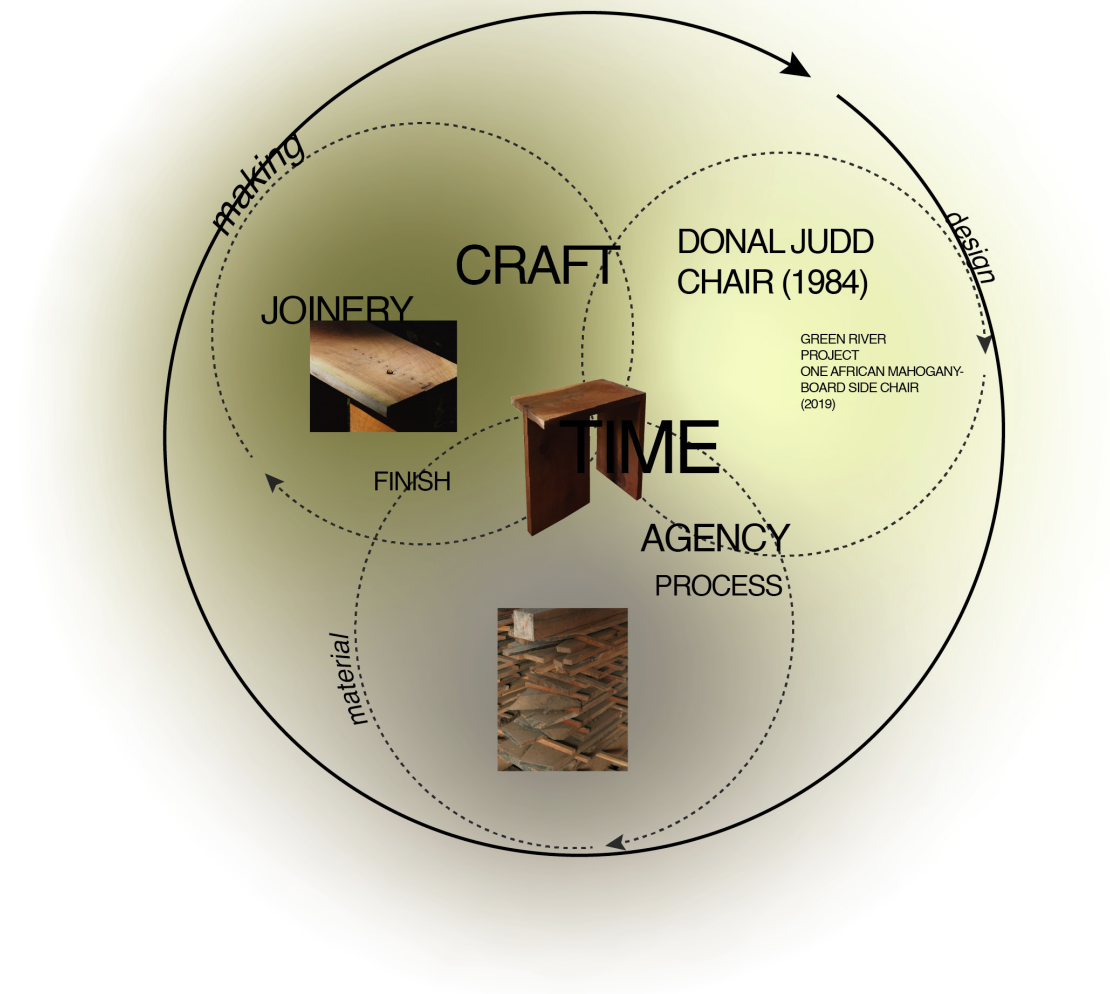
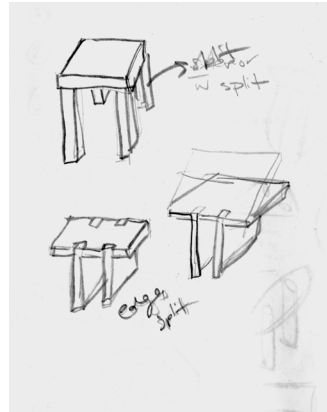


fig. 82



*planning*



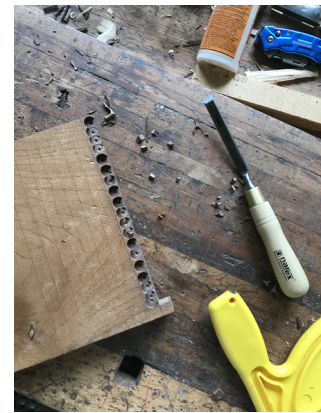
*material*



*testing*



*connecting*



*carving*



*completed*

N-13



site 01



The hope for this stool is to tell the story of the tree: its transition into a board, then a stool.

The board was cut into three pieces, leaving the rough edge that was the result of how it was milled visible for the seat. It wasn't jointed or planed, but left bowed and cupped. The wood shows traces of the less than ideal drying conditions, the planar cut, and the tension that exists within the grain of the slab.

The joints, announced by brass details, were designed to deal with non-planar boards.

Left unfinished it will continue to change with time and use, honouring the tree's past while adding to its story of *becoming*.

# N 14

trunk stool 3  
2019-07-15  
11.5" L x 10.5" W x 16" H  
ash

Approach 02

Nineteen Seats

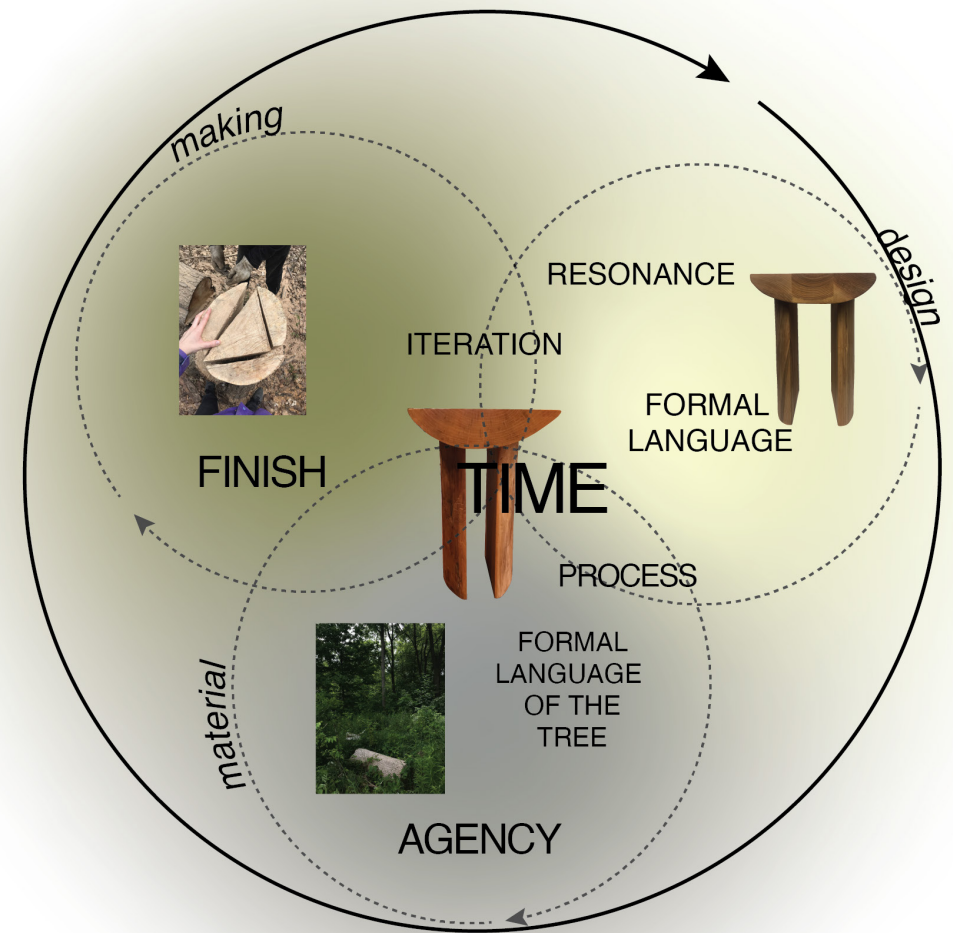
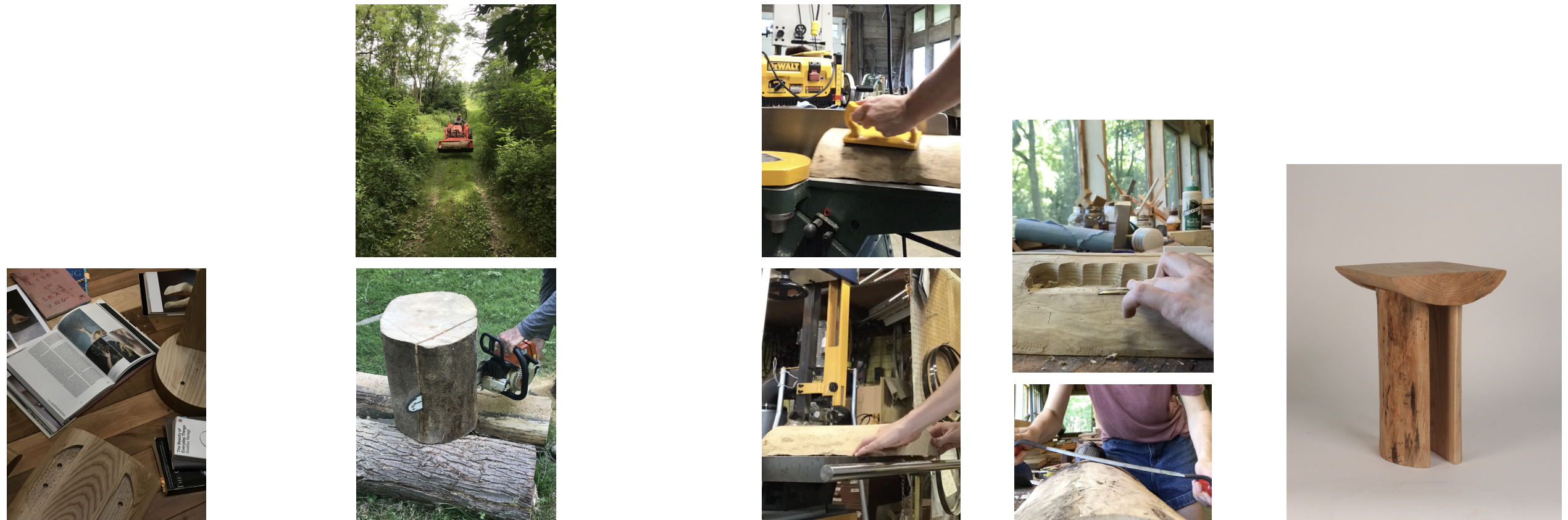


fig. 84

N-14



*planning*

*collecting*

*preparing*

*carving*

*completed*



I started with reflection: N 07 resonates with me the most. It is not the best made, or speaks of process well, but I am drawn to it. I reflected on some of the others; the clear joints of N 13, the lumps and markings of N 12, and the roundness of N 11.

- Things to work on on N7:
- how the carving is presented
  - lamination at the front
  - position of the legs
  - joint
  - amount of material
  - using the shape of the tree, rather than carving it from a square block

*site 01*

I started from the bottom of the list as that was what was bothering me the most. We hauled a tree from the back, an ash that had been on the ground for a while and started to cut into it using N 07 as a reference.

The bark was peeled away with a drawknife, revealing the path of bugs, that used to call this log their home

The result is very different then N 07. Although formally it is quite similar the character of the work has changed quite dramatically due to the material.

# N 15

4 slab stool  
2020-07-29  
14" L x 14" W x 16" H  
walnut with brass details

Approach 02

Nineteen Seats

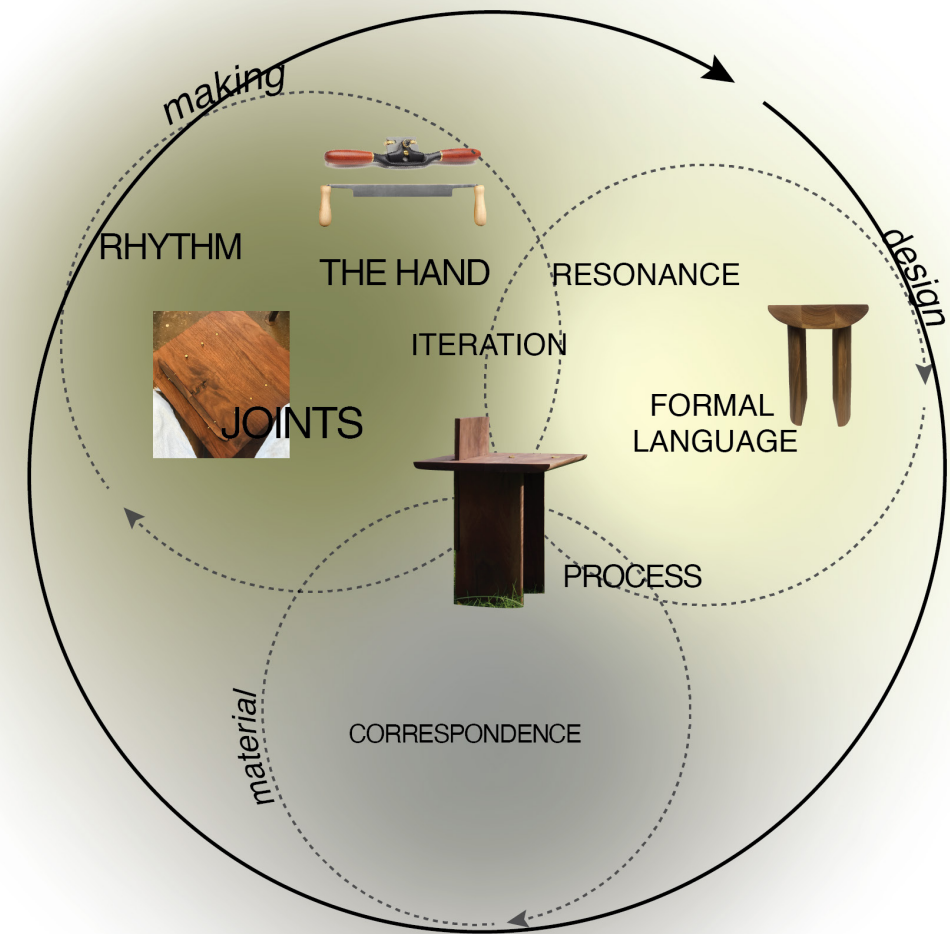


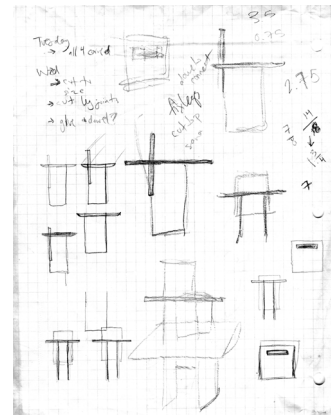
fig. 86



material



cutting



planning



testing



connecting



completed



re-making

N 15

site 01

I made three slabs using 1" walnut stock, curving the edges as I did with N 07.

The slabs became building blocks. I used these blocks to make decisions such as how the legs are placed, how they relate to each other, etc.

The thin profile of the legs needed some kind of stretcher or lateral support. I prototyped and played with stretchers, eventually adding a fourth slab. This acts as the back to the seat while providing lateral support the two other slabs needed.

I continued to think of this seat, I had never actually finished it. The joints were off and the dimensions were far too small.

I remade the seat a few months later learning from the first experience.

change in approach



fig. 88: Seats N 16 to N 18 at Places of Making Site 01

## Approach 03

Approach 03 marks a return to Cambridge and the school's workshop. The third approach aimed to increase reflection and rigour of each exercise. I removed my two week time limit, changing it to a month.

Because of COVID restrictions I had to pre-book my shop times. Typically I would go to the show 9am-12pm Monday through Thursday. The mornings were spent with material, and the afternoons reading, writing, CAD-ing, researching, and planning my work for the next morning. Rhino was used, mostly as a planning tool to confirm scale, plan final dimensions and locations of cuts. Again the seat was not designed entirely through drawing or Rhino before it was made but rather through the movement between drawing and making that took place.



# N 16

shift stool  
2020-09-14  
19" L x 16" W x 24" H  
maple, steel & soapstone

Approach 03

Nineteen Seats

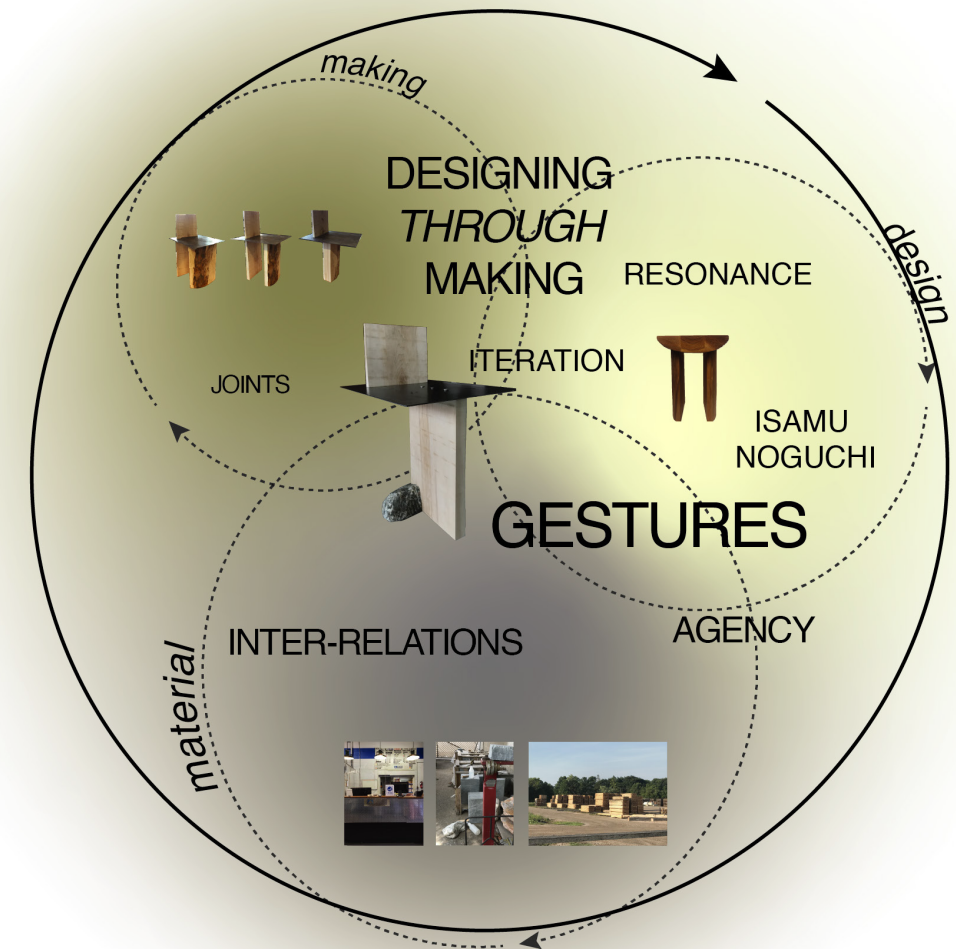


fig. 89



**N 17**  
cut stool  
2020-09-30  
17" L x 16" W x 21" H  
maple & aluminum

Approach 03

Nineteen Seats

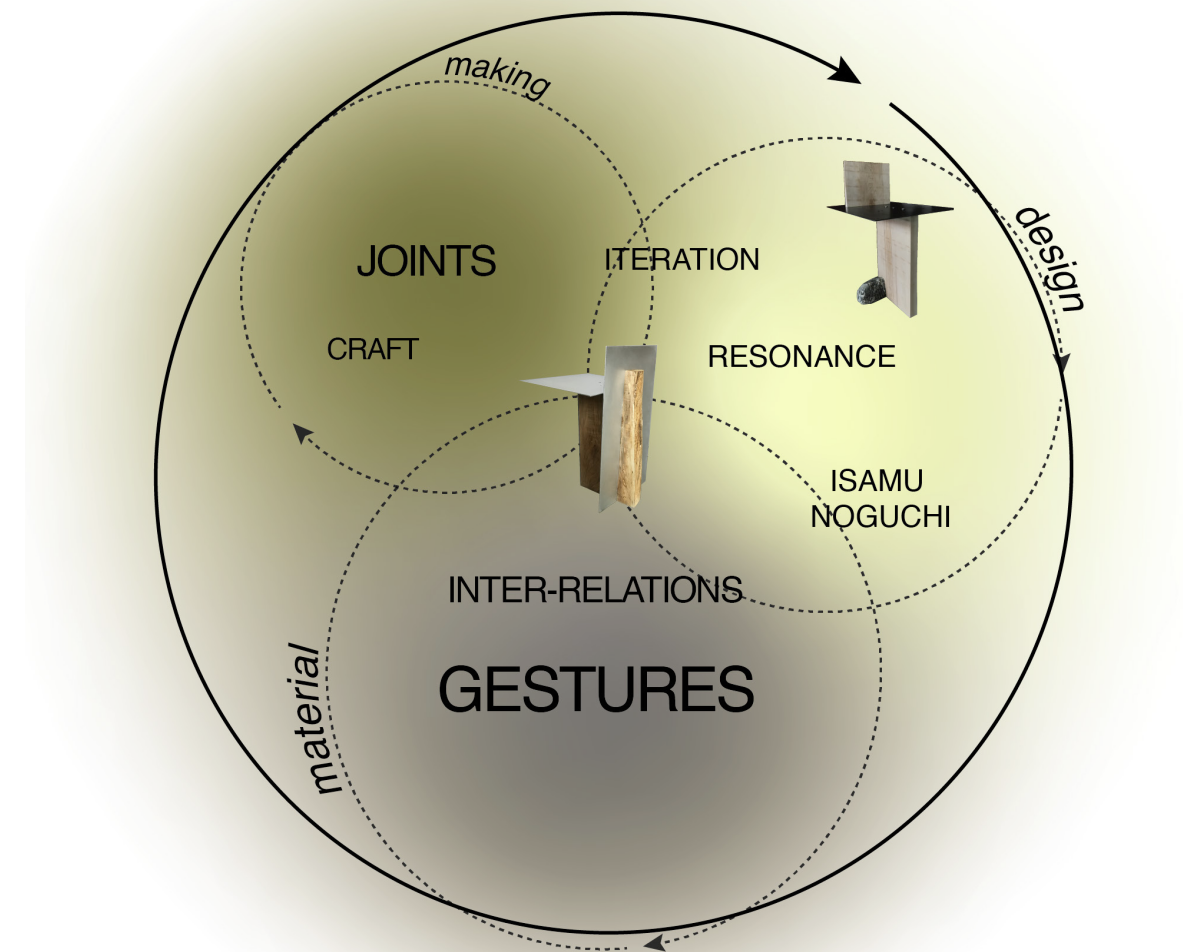


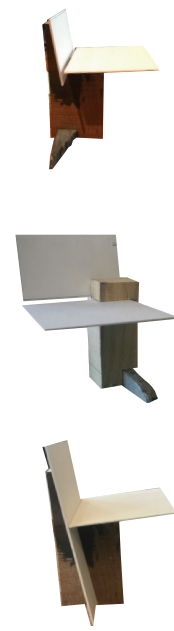
fig. 91



material



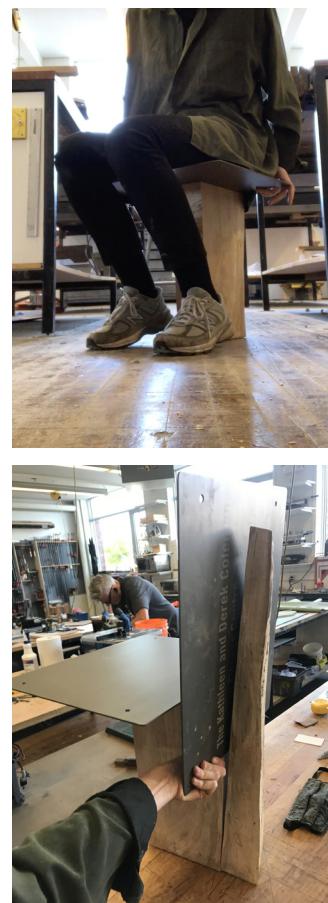
planning



modeling



preparing



testing



cutting



connecting



completed

N 17

site 01

Interested in the relationships between material explored in N 16, N 17 aims to further refine the gestures of each material as well as the details that join them.

site 05

The wood is the only piece that is perpendicular to the ground, the two aluminum elements are slightly canted, though perpendicular in reference to each other, making their own plane, not related to the verticality of the wood base.

These two elements reinforce the gesture of the other. The wood as a piece of a tree, rooted into the ground, solid and of mass. The aluminum, light and industrial, man-made wedging itself into the wood. The sharp edge of the aluminum cuts into the wood, signifying a familiar action: using a sharp metal blade to cut into a tree and extract wood.

**N 18**  
axe seat  
2020-10-16  
19" L x 19" W x 24" H  
maple & aluminum

Approach 03

Nineteen Seats

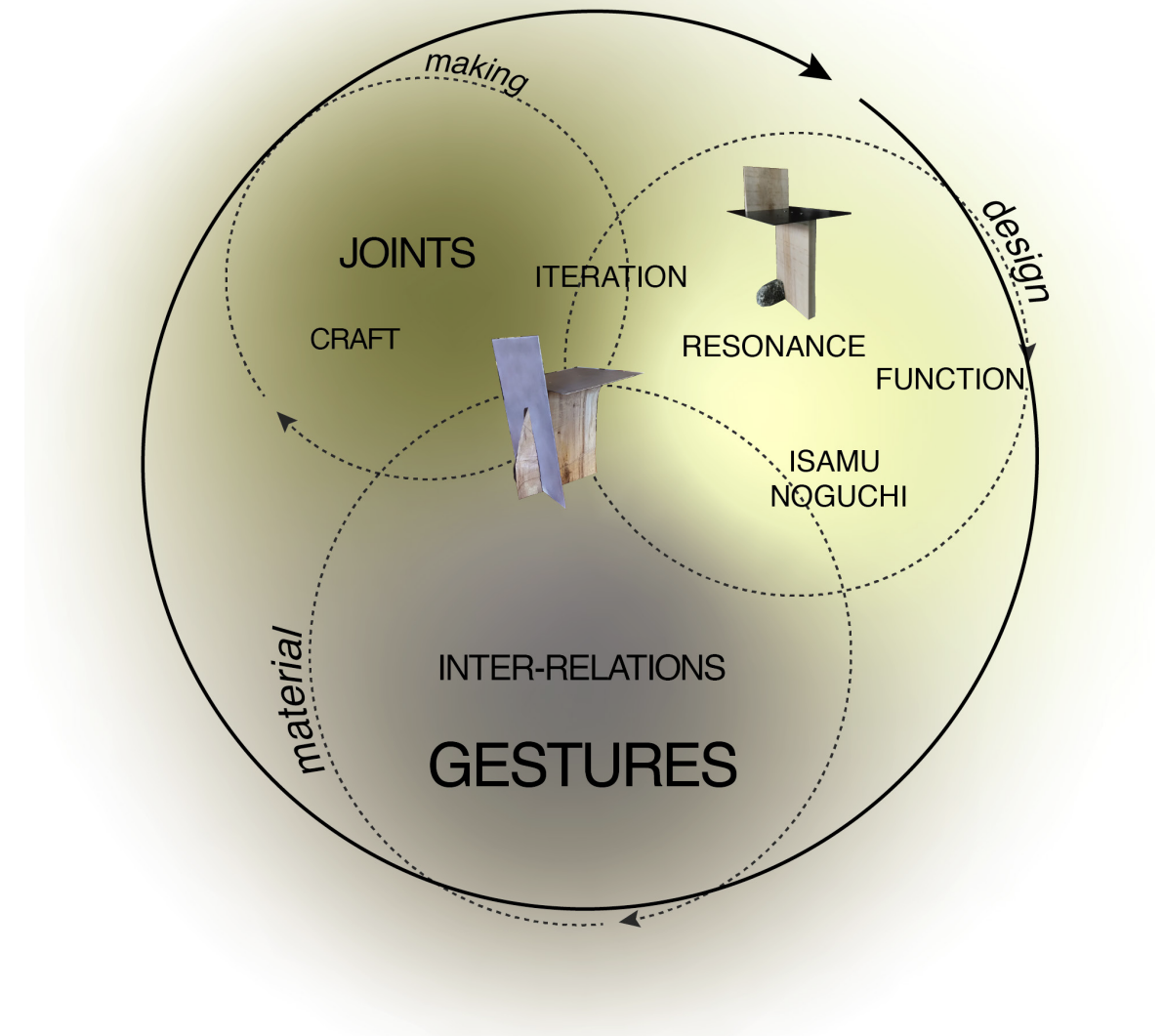
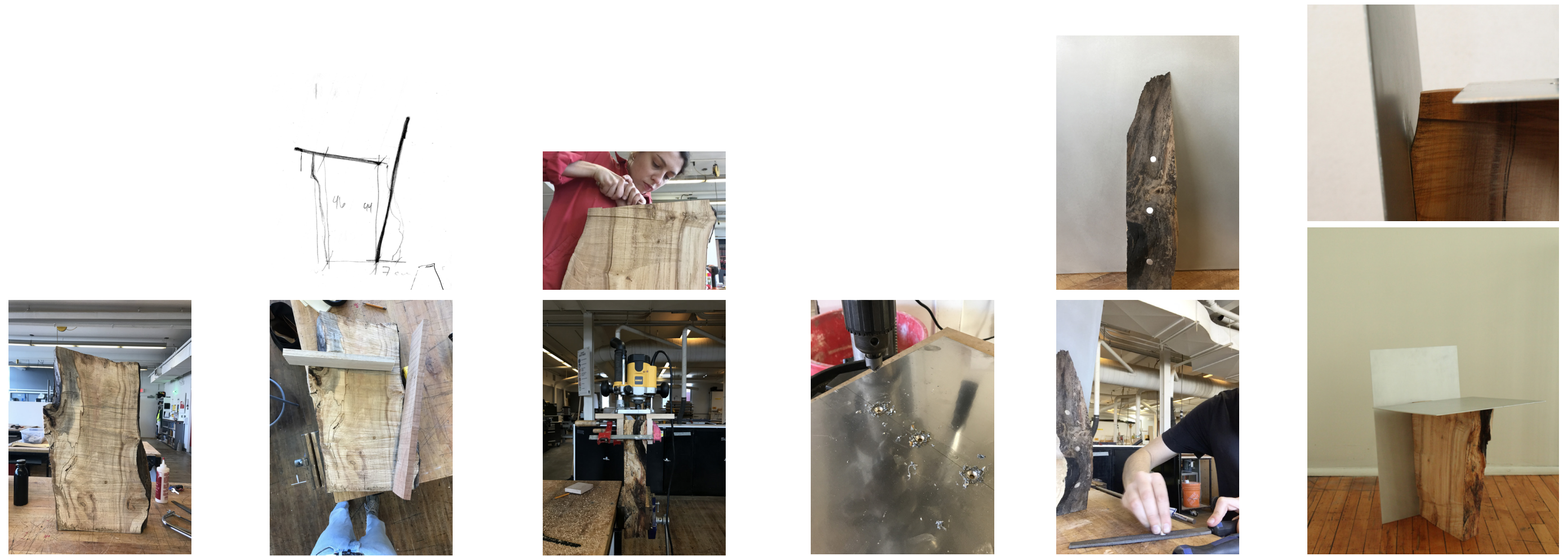


fig. 93

# N 18



*material*

●  
site 01

*planning*

○

*carving*

*drilling*

●  
site 05

*finishing*

*completed*

|  
*change in approach*

N18 is an iteration of N17, refining form, scale and joinery.

The base of the seat is the width of the tree that the wood comes from, reminding us of the source of the material, of the tree's mass and vitality.



fig. 95

## Approach 04

Approach 04 continues exploring the material themes that emerged in Approach 03. The significant change is the use of a fabricator to produce components for the work, which I then assembled.

The introduction of metal, a second material, in Approach 03 resulted in a new learning process, but also the realization of my limitations. So with the design of N 19 in Approach 04, I recognized my need to hire an individual who has experience with metal and the tools necessary to fabricate the metal component. With this final approach I have swung from one end of not drawing at all before making in Approach 01, to now drawing in completion before making.

**N 19**  
bandsaw stool  
2020-02  
26" L x 18" W x 31" H  
walnut & steel

Approach 04

Nineteen Seats

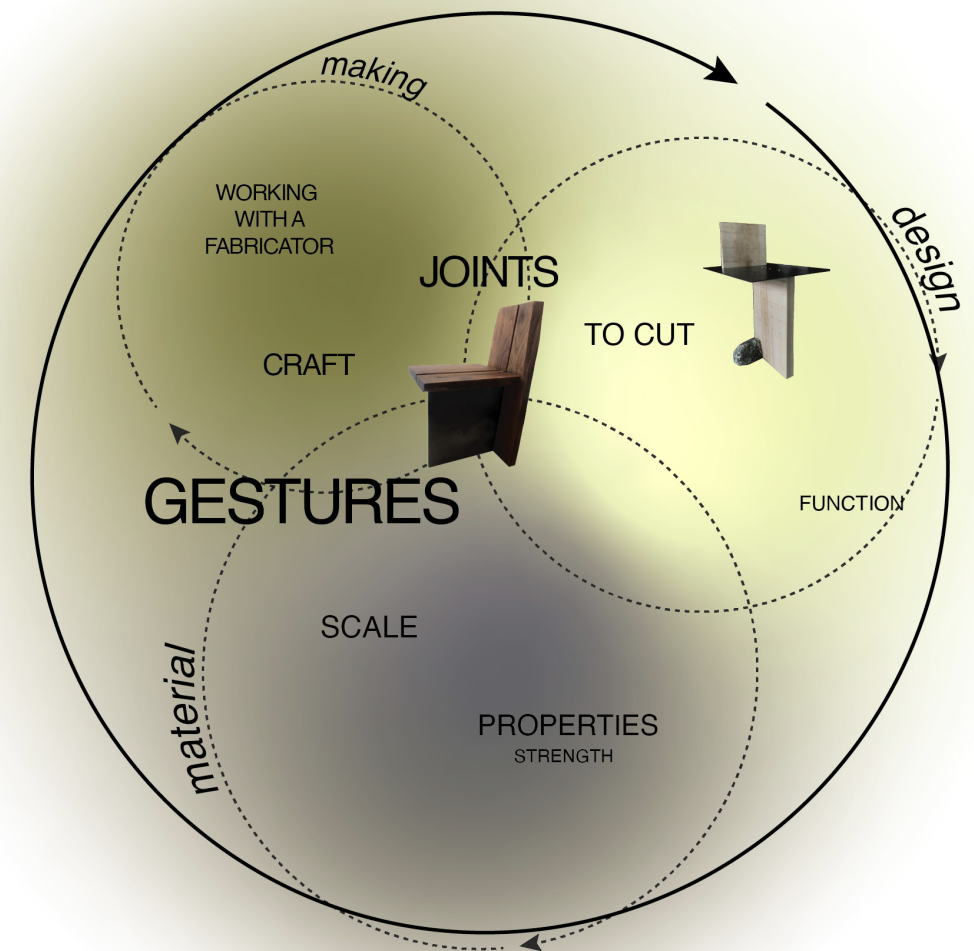
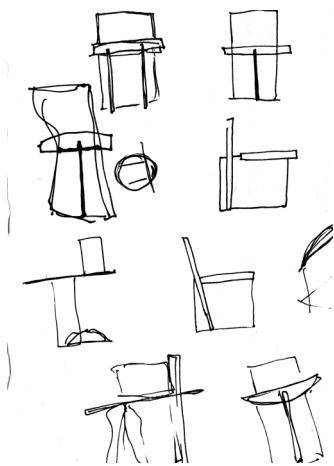


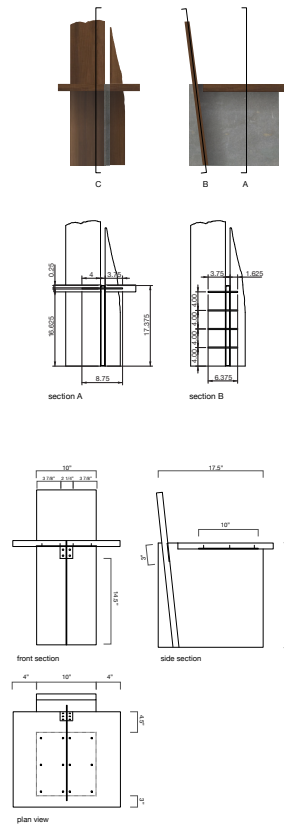
fig. 96



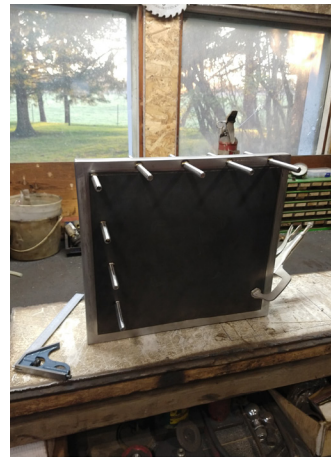
N 19



planning



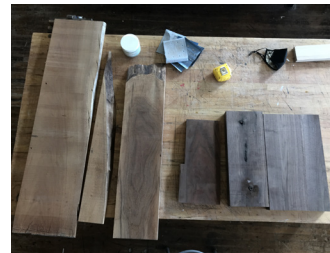
designing



connecting



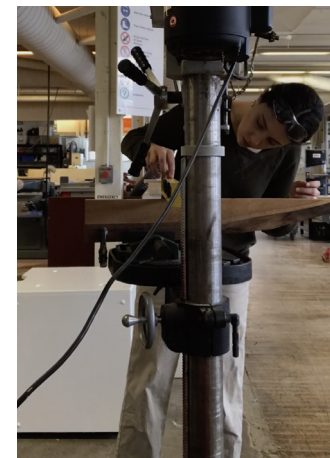
material



site 01 & 03



planning



drilling



completed

N19 continues with the relations of N16-N18, inverting the relations between the metal and wood. The wood becomes the seat and the back, with the base a thick steel plate slicing through the boards.

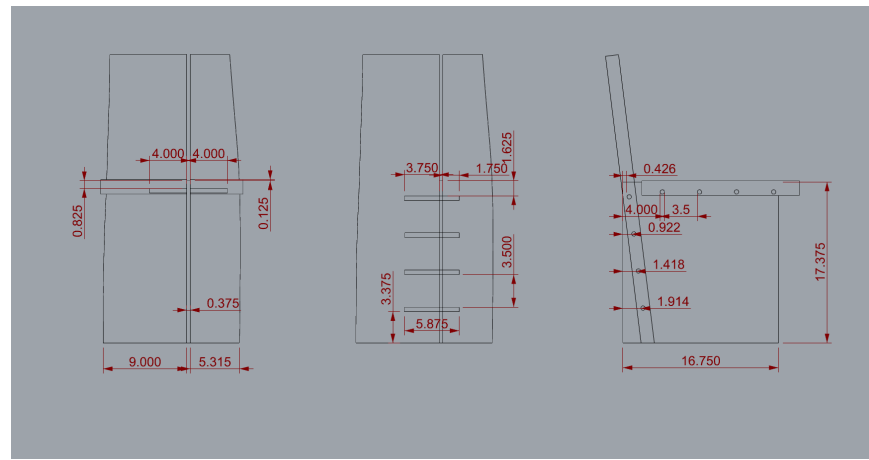
The fabrication of the steel base was done by James Kennedy, a welder based in London, ON that lives down the road from my parents.

After completing the seat, I was unsatisfied by the relation between the thickness of the wood in comparison to that of the steel. They were quite similar in dimension. The back was also too narrow and thin.



*material*

site 03



*planning*



I continued working with the design. For this next iteration I wanted the thickness of the wood to be the same with the steel much thinner, differentiating the material properties and gestures.

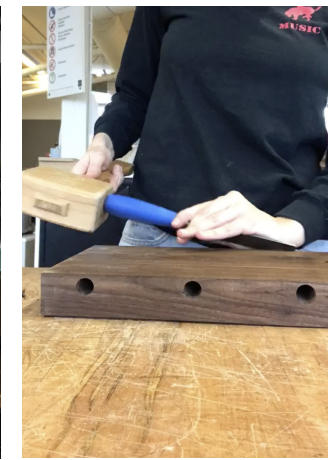
I had James Kennedy remake the steel base at a 3/8" thickness rather than 1" and purchased 8/4" Walnut to match the seat.



*drilling*



*connecting*



*shaping*



*completed*



fig. 99

## Reflection on Nineteen Seats

The making of these nineteen seats has allowed me to engage with the three lenses through multiple different means across a spectrum of understandings. Through this work I have come to understand each lens more concretely, becoming a better craftsperson and designer, while challenging the way I perceive and work with material.

Though many of the pieces individually are unsatisfying, the research is not about the individual product. Each seat as a part of the larger process of the thesis. Together they contribute to the development of each other and a material intelligence as Glen Adamson defines.

While Part 2 has looked at the network of each individual seat Part 3 brings the work of Part 2 together with the sites and theory Part 1.



fig. 100

# Part 3: Reflections

## Introduction

Part 3: The Reflection aims to draw connections between different works. It begins with a note on networks, relations and assemblages and the theory that surrounds these terms. As a response to Part 2, I have made a genealogy (fig. 88) as a reflection on how these works fit together, mapping the connections between the works. Following the genealogy there are a series of collections which begin to organize the works into smaller and specific groups.

Throughout my research there was always an intention to convey process through the attributes of the works. Process is fundamentally in opposition to product, which implies the commodification of work. By conveying process, the work can refer to the network it embodies: the life of the tree, the hand of the maker and the cultural context that the design participates within. Through an understanding of this network, the work can be understood through its process of becoming. This close reading and intimate understanding of the work through the network, allows it to be subjectified rather than objectified.

The approach to convey process varied over the different works. There are five collections which group works together based on attributes that speak of process. Each collection is paired with a piece of research, a description of how the attribute conveys process or inspires subjectification, and in some cases a critique of the attributes. The collections are organized in a loosely chronological order based upon the reflections I was having as I was making the work as reflected in the Timeline. (fig. 96)

The Timeline concludes the section, looking at the work of my thesis as a whole, connecting many of the pieces found throughout this document.

## On Networks, Relations, and Assemblages

Jane Bennett defines the term *Thing-Power* which is the assemblages' ability to relate and engage with a network of things, highlighting a thing's animacy outside of a human cultural context.<sup>63</sup> All things, including beings, both human and non-human, are the result of a process of connections.<sup>64</sup> Deleuze and Guattari refer to these things as *assemblages*.

The understanding that all things are a process of connections is fundamental to the Indigenous Paradigm. Leroy Little Bear, the former director of Harvard's Native American Program describes a similar "spider web" of connections.<sup>65</sup> Little Bear states that through this network all beings are related: if humans are animate and have spirit, everything within their network of relations must also be animate and have spirit. He extends this idea to works as they are often an assemblage which includes non-human and human beings as a part of their network.<sup>66</sup>

Bennett's Thing-Power materialism and the Indigenous Paradigm Little Bear describes are ultimately related to ecological thinking: all promote the idea that all things are intrinsically connected in a dense network. They also warn that any destructive behaviours affect many nodes of the web.<sup>67</sup> A "materialistic" way of life relies on the consumption and rapid replacement of things - a destructive behaviour. The consumption of work devalues the material it is made of, the labour it was produced with and the animacy of the work.<sup>68</sup>

The assumption that works participate within a network, inherently connects the work to the larger forces that form the material the work is made of. The work is also inherently connected to the cultural context of the hands and ideas that shape it. The work becomes understood as an assemblage of making, material and design. The assemblage promotes an awareness of the participants within the network. These connections make the consumption and replacement of work consequential.

63 Jane Bennett, *The Force of Things: Steps toward an Ecology of Matter*, *Political Theory*, Vol. 32, No. 3 (Jun., 2004), 351

64 Colebrook, "A guide to key Deleuzian terms" *Understanding Deleuze*, x

65 Leroy Little Bear, "Forward" in *Native Science* author Gregory Cajete, x

66 Little Bear, "Forward" in *Native Science* author Gregory Cajete, x

67 Bennett, *The Force of Things: Steps toward an Ecology of Matter*, 354

68 Bennett, *The Force of Things: Steps toward an Ecology of Matter*, 350

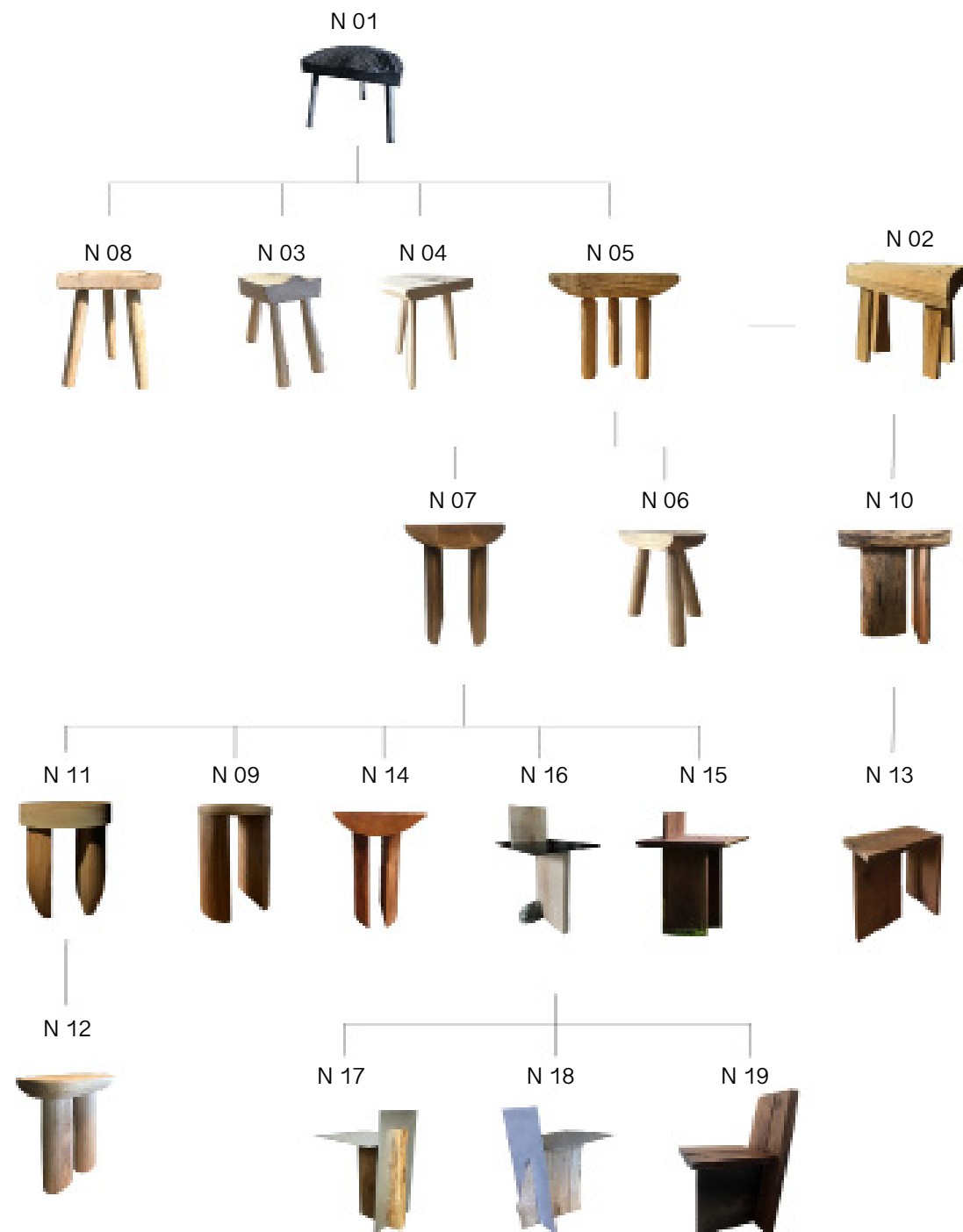


fig. 101

## Genealogy

The Genealogy traces the ideas, driving thoughts, material, and forms through of the body of work. This organization tracks the influence of earlier works on later works.

For example: the material thoughts that began with N 02 influence N 05, N 10, and N 13. The roundness of N 05 influenced the forms of N 07 and N 06. The form of N 07 and the tools that were used to make it influenced a series of works including, N 11, N 09, N 14, N 16 and N 15. The ideas and the introduction of metal in N 16, influenced N 17, N 18, and N 19. This is one example of the lineage that can be traced through the genealogy.

Through the genealogy different families of work which share similar traits can be observed, the three legged stool, anthropomorphic forms, and the introduction of new materials. The Collections that follow make specific groupings based on the connections found through the genealogy.

Genealogy

Reflection

## Collections

### 01 Visible Joints

*“Construction is the art of making a meaningful whole out of many parts. Buildings are witnesses to the human ability to construct concrete things. I believe that the real core of all architectural work lies in the act of construction. At the point in time when concrete materials are assembled and erected, the architecture we have been looking for becomes part of the real world.*

*I feel respect for the art of joining, the ability of craftsmen and engineers. I am impressed by the knowledge of how to make things, which lies at the bottom of human skill. I try to design buildings that are worthy of this knowledge and merit the challenge to this skill.”<sup>69</sup>*

The most readily available way to express the process of making is through visible joints.

Over the past decade there has been a trend towards rendering objects and architecture in a photo-realistic way. This mode of production and dissemination undervalue craft and labour. The object is predetermined through the photo-realistic imagery. The aesthetic that results from this mode of production are soft, fluid, indistinct forms, usually made of one continuous material. They rarely have joints or structure. They are not made of material, but are rather an image.

As Zumthor states above, the real core of architectural work lies within construction, the assembly of materials, and how these connections are expressed. Joints express the quality of the craft and material properties, while often supporting the design intent.

<sup>69</sup> Peter Zumthor, “A Way of Looking at Things” in *Thinking Architecture* (Basel: Birkhauser, 1998) 11.





fig 102(a-k): details of joints

Collections

Reflection

From my experience of making, the joints are often the most difficult part of the process. They are the first thing that falls apart and the easiest thing to make incorrectly.

Throughout the process of the thesis, the joints changed. They were expressed in many different ways as my skills improved and my understanding of detailing developed. The joints of N 01 have not held together, it now lays in many pieces on the floor beside me. Some of the early stools are quite solid, with a wedged peg joint that is quite sturdy but relatively basic. As I moved forward, I began to experiment with the details: how the pieces came together, and how those details were celebrated or hidden.

I started to move away from the simple dowel joint I had been working with around N 13. For N 13 and N 15 there was a question regarding how the joint was expressed. This continued through N 16, N 17 and N 18. I contemplated how to design the joints so they could reinforce the gesture of cutting or splitting: the ideas that were generating the work.

The knowledge of making is not only formed through human experience but is built upon through a reciprocal relationship between the human and material. A knowledge of material is fundamental to understanding joints. For example, knowing how to read wood to understand how it will grow and shrink and morph with time, is fundamental when designing durable joints. This becomes more complicated when you have two different materials with different properties. This material knowledge, developed through engagement, is fundamental to the assembly of work.

Successful joints speak of the larger ideas that generate the work. The expression of joints celebrate process, the centre of this research. Material means of production, and the knowledge and skill that they carry becomes explicit rather than abstract.

## 02 The Hand

*“Pleasurable objects and buildings mediate an experience of the processes by which the object or structure was made; in a way, they invite the viewer/user to touch the hand of the maker.”<sup>70</sup>*

Traces of the hand are traces of labour and the reciprocal relationship the maker has with the work and material. The marks I have left very clearly speak to the process of the work’s making. Within these marks there is my gesture, as well as the material’s response. Through these traces the network starts to be revealed.

The marks of the hand are quite similar to that of the visible joint. Joints require reflection upon material understanding. Whereas the marks of the hand reveal an intimate reciprocal relationship with material. The hand comes first. The hand is the basis of the relationship with the work and material. The knowledge accumulated by the hand through engagement is then reflected upon and can be translated into the design of the joints.

My own relationship with the marks of the hand has been a challenge. I often am inclined to sand away the marks I have left, leaving “clean and pure” material. There is a complexity to working with the textures and patterns that the hand leaves. They are another design element.

As with the joints, it became a matter of to which degree the hand was expressed. One strategy became to hand sand the work so the marks remain but to a lesser degree. In some seats the marks of the hand are felt but not necessarily seen. In others it is quite obvious.

My hands imprinted my ideologies onto the material, and in turn, material knowledge was worked into my consciousness influencing my ideas. This reciprocal relationship has connected the site of my body to the site of the material and its history of its growth and extraction within the work itself. The marks of the hand left on the material express this process and relationship.

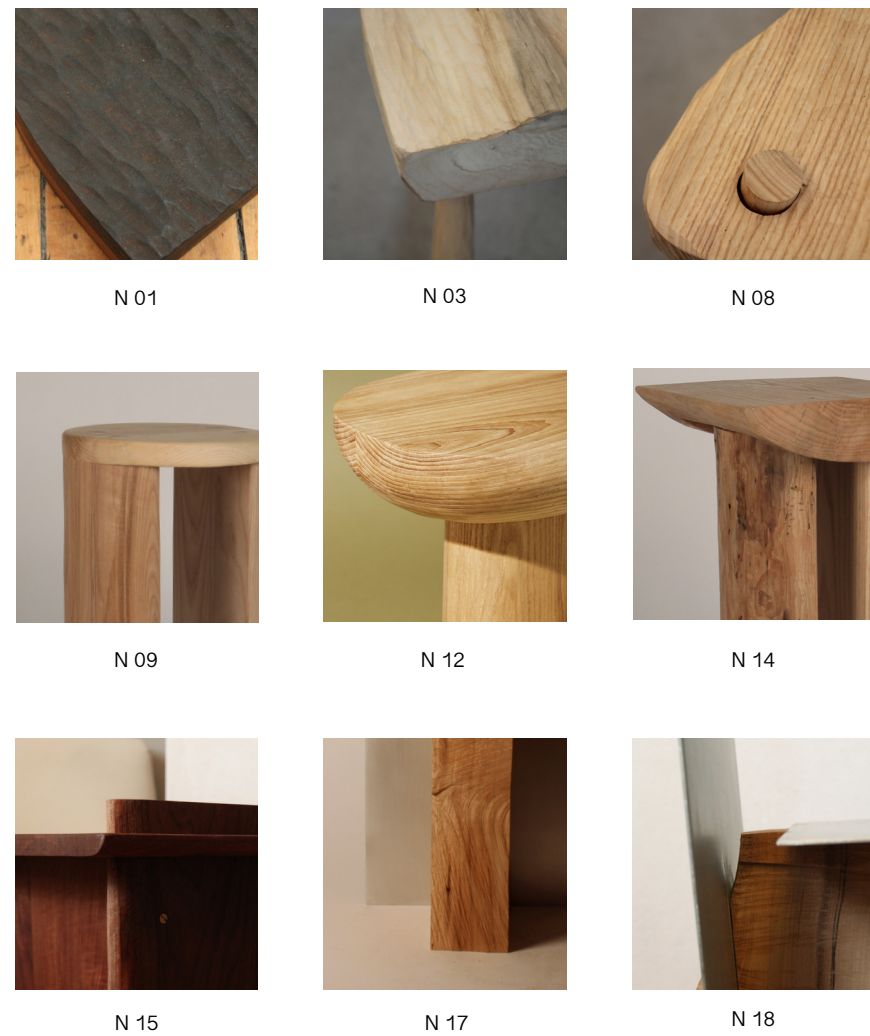


fig. 103 (a-i): details of texture left by the hand

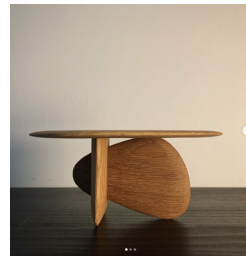
Collections

Reflection

<sup>70</sup> Pallasmaa, “The Drawing Hand” in *The Thinking Hand*, 104



Isamu Noguchi, Coffee Table (1944)



Casey Johnson (2020)



Jose Zanine Caldas "Namoradeira" rocker (1970)



Green River Projects COFFEE-STAINED DOUGLAS FIR HALF-MOON STOOL W/ BODE CORDUROY II, (2019)



JB Blunk, Untitled (1973)



Vince Skelly, Untitled (2020)



Wendell Castle "Pedestal" Chair (1967)



Casey McCafferty 005 Series, (2021)

fig. 104 (a-h): precedents

Collections

Reflection

### 03 Anthropomorphic Form

The pairings opposite (fig. 91) show furniture of designers that acted as precedents for my work, both aesthetically and ideologically. Many of these pieces have anthropomorphic forms. In each of the groupings I have paired a historic work with a contemporary work; reflecting the resurgence of this formal language and material use.

Isamu Noguchi is an early example of this style. His furniture uses soft anthropomorphic forms, echoing the formal qualities of his sculptural work. There was a resurgence of these forms in the late 1960s and early 1970s through Brazilian late modernism with Architects such as Jose Zanine Caldas. The American Studio Craft movement that was taking place in the United States around the same time echoed similar formal qualities as seen in the works of Wendell Castle and JB Blunk.

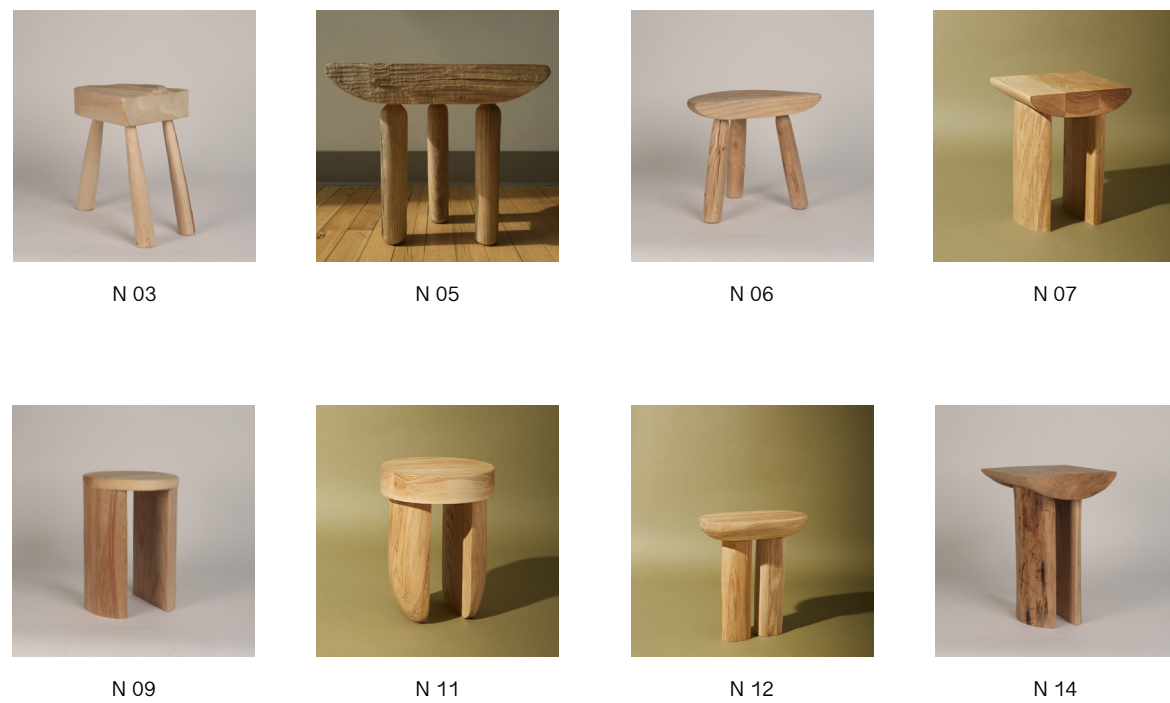


fig. 105 (a-h): works with anthropomorphic forms

Collections

Reflection

Anthropomorphic forms appeared in my own work primarily as a response to this cultural context. The American Studio Craft Movement of the 1970s inspired my research. The sculptural though functional work that came out of it and the ideologies surrounding material, workmanship and craft resonated with me.

These curved forms and shapes were very intuitive to me. I carved away material, finding softness in what often started out as a hard, sharp rectilinear board or slice of a tree. After making some of these works I found I often anthropomorphised them. I began to ascribe them with personalities: calling them he or she, speaking of them as 'friends' or 'children', or likening their formal characteristics to parts of the human body.

Anthropomorphism became a very clear way of using form to subjectify the object. However, as the work progressed and I continued to make, read, write and think about material I began to have a complicated relationship with these works. Although formally, they resonated with me deeply, I found the relationship limited. The reflections upon these works and their potential to explore the material lens was minimal. Anthropomorphism centres the work within a human cultural context, ignoring the potential animacy of the work and the material itself.



N 02



N 10



N 14



N 15



N 16



N 17



N 18



N 19

fig. 106 (a-h): details of traces the tree

Collections

Reflection

## 04 Traces of the Tree

*“If human labor and land are obscured through commodification, then tracing the lives of commodities can be an active method of uncovering, and also of de-essentializing, the commodity. While it is easy to take something’s commodity status for granted, as Arjun Appadurai argues in *The Social Lives of Things*, a commodity “is not one kind of thing rather than another, but one phase in the life of some things.” Only by observing “commodities-inmotion” – as they meander through commodity status, through various physical states, human relations, and locations – can we begin to understand them.”<sup>71</sup>*

After making the soft forms of the previous collection I became interested in the material’s animacy and agency. The seats are just one phase in the life of the tree. I began to understand the tree as a being, with a life and temporality.

I especially understood this with the walnut, which came from my parents’ property. I have a very intimate relationship with this tree. I had watched it’s cycle of growth in the spring, its turn to yellow, and it’s bareness of winter many times. I have memories of climbing it as a small girl. It housed a birdhouse which I had made. I remember when the mobile mill came to my parents house to cut it into boards after it was felled. I helped my father install some of the boards as flooring in what is now their living room.

<sup>71</sup> Arjun Appadurai, *The Social Life of Things* (Cambridge: Cambridge University Press, 1986) from Hutton, “Introduction” in *Reciprocal Landscapes*, 6



fig. 107

## Reflection

My hands as a child climbed this tree. Now almost 20 years later, with another form of curiosity, my hands correspond with this tree again, carving into them, splitting them into pieces, putting them back together, working with the tree to transform them into another. Throughout the process of this research I often questioned how to convey the multiplicity of this tree in the final work. This was done in a variety of different ways: using pieces of the tree that are typically removed or discarded in traditional lumber production (the curved outside edges), leaving the live edge, splitting the wood to reveal the tension within the grain, celebrating the fuzzy finish from the original milling process and working with boards that were cupped or cracked, rather than planing them flat, allowing them to speak of the tensions within the grain and drying process.

By consciously leaving traces of the tree, the life of the tree and its many phases becomes explicit. The material is clearly not just wood that has arrived at Home Depot as a commodity, square, flat, and ready for a project, but rather as a section of a tree: *the result of the process of their life*.



to split



N 17



to ground



N 16



to cut



N 19

gesture

work

fig. 108 (a-f): works and the corresponding gesture

## 05 Gestures of Making and Material

*“These pieces were more than fixed objects; they referred to the sites that they came from, and to their histories of geological and human transformation. The sites and non-sites were linked by material displacement from one to the other, but also through their differences. Sites were peripheral, overlooked spaces that supplied materials for urban development, while non-sites were central concentrations of cultural capital. Sites were real and physical, non-sites were abstract. Sites were the signified, non-sites the signifier.”<sup>72</sup>*

The last works, N16 - N19 are signifiers of actions and relationships I have seen and repeated over and over again throughout the process of the thesis: to cut, to wedge, to split, to join.

Take N 16:

The tree, as the vertical element, is split into two by the steel. The tree then shifts, to create the back. The rock, as earth, grounds and balances. These are relationships that we see when these materials interact. The cracks of a rock face hold the roots of Cedars which cling to it. The sharp edge of the knife peels away layers of wood. The upward growth of the tree finds light in the density of the forest. Each material has its own gestures, forces, and properties which I as the designer and maker have attempted to convey.

<sup>72</sup> Here Hutton is describing and analyzing Robert Smithson's Site Non-Site citing Lawrence Alloway, "Sites / Nonsites," in *Robert Smithson: Sculpture*, ed. Robert Hobbs (Ithaca: Smithmark Pub, 1983), 42–3. in Hutton, "Introduction" in *Reciprocal Landscapes*, 1

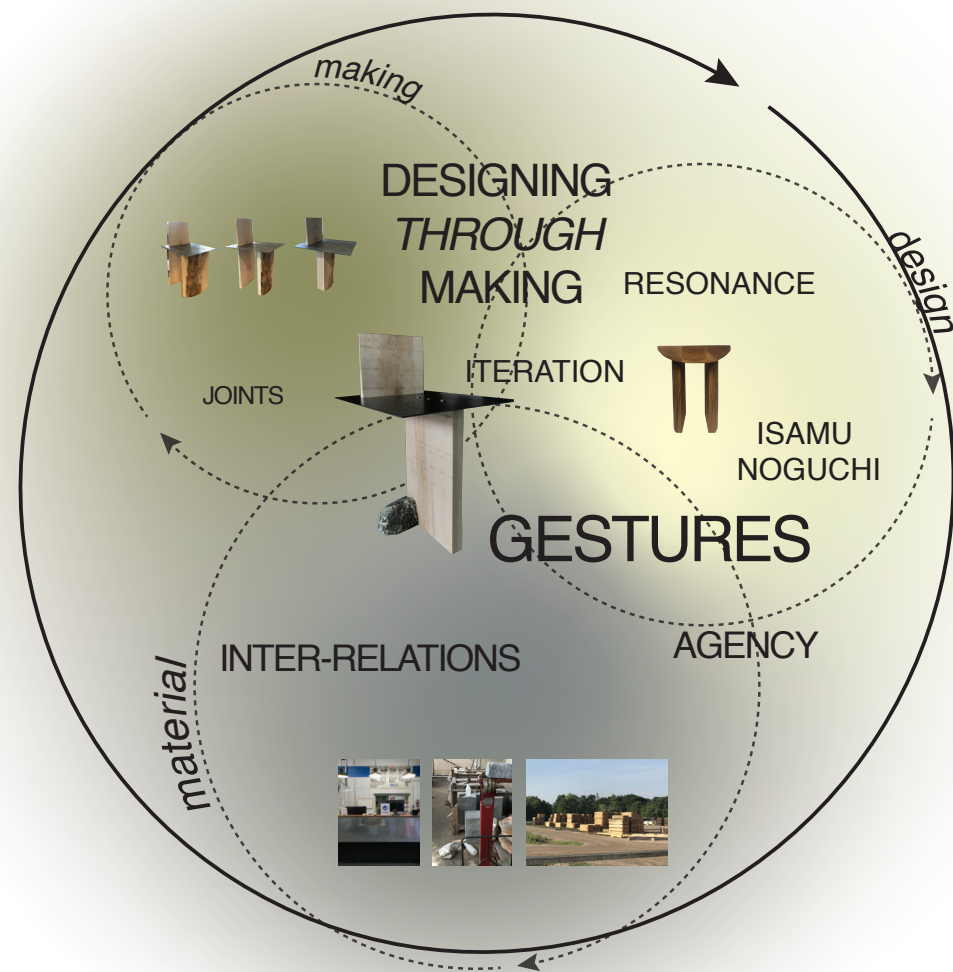


fig. 109

Collections

Reflection

*"In this assemblage, objects appear more vividly as things, that is, as entities not entirely reducible to the contexts in which (human) subjects set them, never entirely exhausted by their semiotics."*<sup>73</sup>

Though this assemblage is a clear signifier of a gesture and a place of extraction, it is also more than a collection of signs. The work incorporates traces of the tree, the joints are visible, there are traces of the hand. There are three material sources, three stories of collection, three different extraction processes. These three places, stories and landscapes are connected in this one piece. There is also the process of bringing them together, the influence of the place they were made, my hand, and the ideology and values that I carry. The choice of connections and details are influenced by the experience of the previous 15 seats. The curved form of the legs and back relate to N 07 and previous works within the overall series but also to the agency of the material and ideologies of locality and minimizing waste. The seat began as a way to iterate upon N 07 but through time, sketches, research and reading it became something else.

Though these four works clearly signify the gestures of the material and their making, they also refer to the networks of the three lenses. Making embodies the network of the works fabrication, the reciprocal relationship between the maker and material. The material traces the sites of the non-human beings that form the work and the process that forms these beings. Design traces the network of the human cultural context which influences the work's form as well as its function. Through engagement with these three lenses, the work can be understood concretely through its networks, as an assemblage.

<sup>73</sup> Bennett, "The Force of Things: Steps toward an Ecology of Matter," 351







fig. 111



fig. 112

## Epilogue

The networks, collections, timelines and genealogies emphasize that the work is a process rather than a product. That there was a material, a tree, a non-human resident of the earth who has formed it. There were also many human hands and ideas that influenced the work.

Thomas Berry, an American cultural historian said “we must say the universe is a communion of subjects, not a collection of objects”.<sup>74</sup> I have seemingly created a collection of objects through this thesis but through the experience of fabricating, mapping, collecting, and tracing I have come to see them as assemblages, a commune of subjects.

I live with many of them now, they sit with me and hold my books, my tea, and my laptop. Sometimes they hold my body, my feet or my elbow. In return I care for these works. I have sanded them down and refinished them as my hot teacups leave stains, recarved them as I have reflected upon them, taken them apart and re-used their pieces for other projects when they weren't quite right.

As I finish my thesis the works will go on to live with others. I hope will care for them in the same way. I hope in return the works resonate with those who homes they occupy. The works networks will evolve. They will acquire new scratches and dents that tell stories of their use. They will patina from exposure to the sun, responding to their environment. They will leave marks, scratches from where they have been dragged across the floor. Some of the works will be taken apart and remade or reused, becoming another.

<sup>74</sup> Brian Swimme and Thomas Berry, *The Universe Story* (San Francisco: Harper San Francisco, 1992) 243.



fig. 113

Conclusion

The reciprocal relationship with these works is due to my understanding of them concretely as Yi-Fu Tuan suggests. Through mapping the places of material collection, collecting wood, and observing wood's commodification, I have begun to understand the tree as a subject as well. The places of *making* reflect ways of thinking and ways of learning about *material*. The *design* speaks of function and cultural context. This empathy that I have for the work is a result of engagement with each of the three lenses.

As time accelerates work loses its durability.<sup>75</sup> As we continue to live and perpetuate materialistic ways of life works will be consumed and replaced. But when we see work as a network we realize that their consumption and replacement are not inconsequential.

Through an intimate understanding of this network that works embody, the work is not commodified, detached from its process of becoming, but rather recognized as an ever evolving assemblage. There is an understanding of the life that works carry.<sup>76</sup> They require care, empathy, repair, reimagining and a gentle touch. When work can be viewed not just as a *thing-in-itself*, but as a network of relations, their value changes. The seat is no longer a product but rather a process that carries with it its ever evolving story of becoming.

<sup>75</sup> Arendt, "Work" in *The Human Condition*, 125, 126

<sup>76</sup> Kimmerer, "Wisgaak Gokpenagen: A Black Ash Basket" in *Braiding Sweetgrass*, 155



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## Glossary

**work (noun)** I use work as a noun to describe the seats. This term in part relates to Hannah Arendt's definition of work, though she uses it as a verb and defines it as the fabrication of the human artifice, objects for use that possess the durability.<sup>2</sup> I am interested in Hannah Arendt's definition of work because of the notion of durability. Throughout the thesis I expand upon Arendt's definition. Work is not solely the process of the homofaber but is the result of correspondence between the maker and the material.

**"Thing-in-itself"** A term by Kant which describes isolating work from observation or context.<sup>3</sup>

**"more than a thing-in-itself"** This phrase comes from Jane Hutton's book *Reciprocal Landscapes*. She discusses a text by Robert Smithson the Land Artist where he critiques this term of Kant's using the example of Central Park. Smithson speaks of Olmsteads choice to uncover the bedrock, carving tunnels of stone, and situating boulders.<sup>4</sup> A choice that exemplifies the ever-changing landscape, referencing the park's evolving relations to time and space. Smithson says "A park can no longer be seen as "a thing-in-itself," but rather as a process of ongoing relationships existing in a physical region."<sup>5</sup>

<sup>2</sup> Hannah Arendt, "Work" in *The Human Condition* (Chicago: University of Chicago Press, 1988), 137.

<sup>3</sup> Immanuel Kant, *Prolegomena to Any Future Metaphysics*. ed. and trans. G. Hatfield (Cambridge: Cambridge University Press, 1997) § 52c.

<sup>4</sup> Jane Hutton, "Introduction" *Reciprocal Landscapes*, (New York: Routledge, 2019) 1.

<sup>5</sup> Robert Smithson, "Frederick Law Olmsted and the Dialectical Landscape," in *Robert Smithson: The Collected Writings*, ed. Jack Flam (Berkeley: University of California Press, 1996), 119

**place** Yi Fu Tuan defines place as an object. It is a concretion of value, though not a valued thing that can be handled or carried about easily; it is an object in which one can dwell.<sup>6</sup>

**value** Value can be defined as the regard in which something is held, it's perceived importance, worth or usefulness as defined by Oxford English Dictionary.<sup>7</sup> Throughout the thesis I explore and question the perceived value of a work, fabrication and the materials in which the work is made of, both commercial and emotionally

**ideology** The term ideology is often used in relation to the maker or designer. This term is referring to the intent or ideas of the designer or maker. Ideology is often in relation to values, both speak of decisions that align with values or ideals.

<sup>6</sup> Yi-Fu Tuan, "Experiential Perspective" in *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota Press, 1977), 12.

<sup>7</sup> Oxford English Dictionary, 2nd ed (1989), s.v. "Value."