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The home of the future now looks a lot like the home of today. Our environment is standardized, mass-produced, and limits new experience. Within practice and academia for interior architecture and design, there seems to be a dismissive attitude to exploring truly new or challenging ideas in favor of the practical and conventional. There is a homogenization of our environments based on market sectors of practice and established ways of living; Buildability has overtaken metrics for success. New ideas -- ideas that push the envelope, challenge our conventions, and explore an unrestrained stream of creativity are often dismissed as impractical because they are seen as expensive, unproven, or outright impossible. We have lost our visions of what could be; buried under what already works. The opportunities to move beyond our traditional methods of design has been limited, if not eliminated in the design of interior spaces by a cultural focus on productivity, evidence, marketability, and pre-defined responses.

This thesis explores an imperative for experimentation in interior design methods to push past the boundaries created by the profession's constraints. In particular, it examines the methods of Speculative Design, a practice developed by designers such as Dunne and Raby and many others in the late 20th century. A speculative approach has long been a staple of architectural education and adapted within practice but has been absent in the training and practice of interior designers/architects. The goal of this thesis project and research is to explore this opportunity for interiors by studying, analyzing, and applying the conceptual methodological process of Speculative Design to interior space and products and within the theoretical concept of interiority. The goal of this work is to expand accepted conventions within the design process for interiors and to expand the applicable frameworks for visual communication, theory, and philosophy to engender broader expression and innovation in this field.

PAPER SPACE & INTERIOR FICTION: EMPLOYING SPECULATIVE DESIGN TO
EXPLORE THE CREATIVE DESIGN PROCESS AND CONCEPTUAL INTERIORITY

by

Cameron John

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Approved by

<u>Dr. Lucinda Kaukas Havenhand</u>
Committee Chair

DEDICATION

To my partner in life Meghan, thank you for your love, encouragement, and support of my work through many late nights.

To my family and friends for your unconditional love, support, and always believing in me.

To my mentors, of whom I have lost count. Your influence has no adequate measure.

APPROVAL PAGE

This thesis written by Cameron John has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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CHAPTER I: ENTERING A REALM OF SPECULATION

The one thing more important than learning conventions is learning how to break them, bend them, and inspire a whole new understanding - a new way of thinking.

As both a student and practitioner of interior architecture, I have observed interior environments in film, illustration, concept art, video games, and various other forms of media that carry a greater sense of interior agency than the practice of interior design/interior architecture[1]. These environments possess qualities and attention to detail that is lacking or has no equivalent in most physical products of interior design. It remains curious to me that these creative and imaginative interiors are not the product of professional interior designers but are often the products of artists and designers in other disciplines. Certainly, many of these artists enjoy a different level of creative freedom, less concerned with the realities of client needs, construction methods, codes, and budget but that is not the whole story. I think that, faced with these constraints, as a discipline we have done little to challenge their dominion. Our conventions are inherited; we have yet to define the interior on our own terms.

This thesis explores the interior at the edge of consciousness. Within practice and academia for architecture and interior design, there seems to be a quick dismissal of exploring new or challenging ideas in favor of the practical and conventional. There is a homogenization of our environments based on market sectors of practice and established ways of living; Buildability has overtaken metrics for success. *New* ideas -- ideas that push the envelope, challenge our conventions, and explore an unrestrained stream of creativity are often dismissed as impractical because they are seen as expensive, unproven, or outright impossible. We have lost our visions of what could be; buried under what already works. The opportunities to move beyond our traditional methods of design has been limited, if not eliminated in the design of interior spaces by a cultural focus on productivity, evidence, marketability, and pre-defined responses. It

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[1] While there are subtle differences, for the purpose of this study interior design and interior architecture are considered synonymous and will be henceforth referred to as interior design within this text.

may be no wonder that in the current era despite outcries and demands for change, for the new and interesting, designed interior spaces seem to mostly embody familiar characteristics. We encounter the same typologies of space, familiar environments that are comfortable and easily digested. Our surroundings pass through our perception with ease; supposedly, a mark of good design. Our environment is standardized, mass-produced, and limits new experience. The home of the future now looks a lot like the home of today, perhaps with a few more automated surveillance devices. Is this the best we can imagine?

Anthony Dunne and Fiona Raby are a pair of designers practicing in the UK and are pioneers of the academic practice of speculative design. They propose that: "design has become so absorbed in industry, so familiar with the dreams of industry, that it is almost impossible to dream its own dreams..." (Dunne and Raby, 2013).

This seems especially true of the field of interior design whose education has become hyper-focused on the provision of a professional degree. Although many practitioners engage in innovative and creative research and projects, the primary goal of accredited programs is to prepare students for practice; to enter an industry that desires ready-made draftsmen and BIM gurus. This is not a bad thing, surely. We want our students and future designers to be well-prepared for what is expected of them. However, let us stop to wonder if we aren't missing something along the way. Is the role of academia to simply support practice? Does industry have to define the scope of interior?

I entered the field of interior design as an artist; I was a painter and a sculptor. As I progressed through my education, I felt the creativity that brought fulfillment through my work gradually slipping away and slowly being substituted by best practices, systems, and rationalized responses. I discovered that the field's accreditation standards formulated by CIDA (Council for Interior Design Accreditation) held a strong reign on the curriculum I was experiencing, giving rules to follow and criteria to meet. I never questioned the standards and conventions that were given to me. I was taught to abide by them and not to ask questions if I wanted to succeed as a professional designer.

For interior design education it seems that accreditation standards are a homogenizing framework designed to push programs and students through a course of study that reinforces rules and best practices, while promoting the mentality that there are 'right' answers to the problems of design. The field of architecture, however, has long noticed the often-negative impact of design driven by capital interest and overly prescribed standards. While interior design and its education has remained firmly rooted in a standardized set of rules and methods, architectural academics and practitioners have experimented with novel methods and approaches for decades, in practice and education, that engage with a deeper spatial philosophy, experience, and creativity in the design process.

The major thrust of this type of exploration and critique is centered in the practice of speculative design (SD, also known as design fiction, architectural fiction, or critical design) developed through the efforts of designers like Dunne and Raby and many others in architectural programs and offices across the world. Because of their influence and work, speculative design methods have become a niche and provocative element of architectural practice and education. The terms 'critical design' and 'speculative design' were first entered into the academic record by Dunne and Raby in the mid-1990s and describe a process through which "design contributes to the reimagining not only of reality itself but also our relationship to reality." (Dunne & Raby, 2013) This reimagining of reality is embodied in the experimental works of Dunne and Raby and several other influential architects and designers like Lebbeus Woods, Perry Kulper, and Daniel Libeskind who have established a recognizable identity from highly engaging works of speculation and design.

By distancing itself from the typical commercially driven and market-friendly design trends, speculative design allows the creation of new, innovative concepts that exist outside of the restrictive paradigms of modern building and design practice advocating for true innovation without the comforts and constraint of convention. Although often criticized as not sensible, real, or practical, Dunne and Raby argue that speculation and speculative design have always been an important part of the design process:

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The problem with speculation, for designers at least, is that it is fictional, which is still seen as a bad thing. The idea that something is not "real," when real means it is available in shops, is not good. Yet designers participate in the generation and maintenance of all sorts of fictions, from feature-heavy electronic devices meeting the imaginary needs of imaginary users, to the creation of fantasy brand worlds referenced through products, their content, and their use. Designers today are expert fictioneers in denial. Although there have always been design speculations (e.g., car shows, future visions, haute couture fashions shows)" (Dunne & Raby, 2013)

Architect and artist Lebbeus Woods goes further in stating the importance of speculation: "Frankly, I don't care much about building buildings, I care very much about building ideas and this can be done not only in concrete and steel and glass, it can also be done with pencil on paper." (Woods, *Rendering Speculations - AA School of Architecture Lecture Series* 2010) Many historic design collectives such as Archigram, Archizoom, and Superstudio have been a monumental influence on architectural culture and the practice of speculation as a medium for exploration and critique of the role of design in the modern era.

Through these efforts, speculative design methods, while not universally acknowledged or employed by all architects, has become a recognized design practice and degree focus in the fields of architecture and product design. Schools such as the Bartlett School of Architecture at University College London, Architectural Association (AA) School of Architecture, and Royal College of Arts (RCA) in London now provide a multitude of curricula and programs inspired by speculative methodology. These programs regularly produce incredible student work and striking graphic presentations. Their deviation from conventional methods of architectural drawing underscore the impressive talent and rigor of the programs.

While the practice and teaching of interior design has generally emulated architecture, evidence of speculative methods seems to be virtually non-existent in practice and design curriculums with the exception of introductory design studios. Nicolai Ourousoff in his New York Times article *An Architect Unshackled by Limits of the Real World,*

regarding the work of Lebbeus Woods, raises concerns about the current practice of architecture [and related design fields] and current trends toward pragmatism:

> By abandoning fantasy for the more pragmatic aspects of building, the profession has lost some of its capacity for self-criticism, not to mention one of its most valuable imaginative tools. (Ourousoff, 2008)

The modern practice of interior design models itself after architectural practice, but not this more experimental subcategory, and has allowed itself to be drawn down a path of professional pragmatism where it is firmly situated. There has been little interest in speculative and critical design fictions in the field and it is a topic that remains absent from most academic publications and discourse of interior design. A search for the term "speculative design" references in the Journal of Interior Design, the field's leading academic journal, yields no results.

> Even though these faculties are vital, necessary, and practiced in addressing the most pressing problems, they are ignored by academic institutions. An increasingly data-driven culture occludes the immeasurable. Sensibility, improvisation, and imagination aren't valued in the writing of prescriptive syllabi--the guidelines of curriculum committees and myopic strategic plans—yet they are indispensable for uncertainty and crisis. (Maeda, in Leski, 2015)

While interior design as a discipline strives for validation, legislation, and professional recognition as a field of practice, when compared to architecture in particular, the notion of employing methods of fiction, fantasy, and imagination may seem too risky in this quest for legitimacy and may invite critique from key practitioners that it might undermine the efforts made in these pursuits. Attempting to establish a standardized, approvable, and data-driven basis for interiors through a focus on ergonomics, well-being, sustainability, and human-centered design seems to predicate a distancing from the emotionality, sensibility, and intuition in which many design disciplines find their origin. In particular, the concern of interior design for combating its ongoing identification as a feminine practice creates a dichotomous rift between the inherent creative nature of design (which could be identified as expressive and feminine) and the modernist

academic predilection for logic, rationale, and quantifiable experience (identified as the normative masculine). This might be the primary underlying motivation for interior design leaving the methods of speculation and critical design unexplored.

In its ongoing and controversial relation to architecture, interior design has seemingly forgone the development or exploration of a capacity for self-criticism and imagination in practice. Interior space remains rather unchallenged and in the words of Daniel Libeskind: "We applaud the well-mannered box." (Libeskind, 2009) The well-mannered box as a container for a handful of prototypical and expected furnishings serving a conventional understanding of the space's use. The sofa, loveseat, and armchair cluttered orderly around the living room rug, facing the television centered atop the entertainment center. We do not seem to question if this is the best way to live.

The incorporation of speculative design methods in the development of interior design education and practice seems to be a clear opportunity for study. An expansion of the accepted conventions in visual communication, theory, and philosophy is crucial in developing a greater critical academic presence for interior design.

The goal of this thesis project and research is to explore this opportunity by studying, analyzing, and applying the conceptual methodological process of speculative design to interior space and products. Its intent is two-fold:

First, to immerse myself as a designer in the exploration and application of methods of speculative design to create a body of work. These explorations, and resulting body of work, are intended to engage with concepts of interiority to draw upon an expanded interpretation of 'interior' in design representation, process, and outcome as a means of interrogating my internalized ways of knowing and thinking about interior space as a student and professional.

Second is to document those explorations, to reflect on the process, and evaluate the body of work to consider how speculative design might apply to both practice and

instruction of interior design as well as the further development of a theoretical body of knowledge from which interior design might engage the concepts of interiority and interior space outside of the restrictions of the built environment.

Drawing inspiration from 'paper architects' such as Perry Kulper and Lebbeus Woods, this research considers the application of speculative design methods to interior design practice to examine how it can expand and improve how interior design is conceptualized and represented. The research and body of work, as it has been for architecture, is intended to establish a theoretical and imaginative entry point to design research in parallel to the technical concerns of design practice.

Questions considered in this project include:

- *How can speculative design be used to critique the interior design process? To expand and enhance the creativity involved in the design process?*
- *What happens when interior design investigations are released from the limitations of the standard process of interior design: Design without a client? Without specific financial and material parameters? Expanded forms of drawing and representing the project through collage, sculpture, or other artistic methods?*
- *How can speculative design methods be considered alongside traditional and professionally prescribed ways of designing to create an enhanced method for considering and creating interior spaces?*
- *Can speculative design methods be a useful tool for teaching creative process, inventiveness, and critical thinking within the design process?*
- *Can speculative design methods assist in establishing a greater critical presence for interior design?*

This body of work serves as a probe into whether speculative design might be employed more directly within interior design education and practice to improve and expand methods of conception, representation, discussion, analysis, and critique. This

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research will hopefully assist in developing the theoretical and philosophical space of interior design through speculation, critical expression, and graphic communication.

CHAPTER II: DEFINITIONS, SOURCES, AND PRECEDENTS

The foundation of this thesis is based in four primary concepts: speculation, precedent, process, and interiority. Speculation in the design process provides opportunity to construct conditions adjacent to or outside of reality. Precedents of speculative practice in architecture and product design are presented as foundations for the development of an adjacent interior process. It is my perspective that each designer precedent also expresses a distinct sense of interiority within their work and their practice. These ideas of Interiority expand the realm of speculation for interior design beyond the architectural shell.

Speculation

Speculation, in the Cambridge Dictionary, is the activity of guessing possible answers to a question without having enough information to be certain. Speculation as a framework in architectural expression has a long history. Speculative works of architecture can be traced back to Piranesi, Ledoux, Boullée, and more in the 18th century; speculation in design as we recognize it today was born from a series of cultural, counter-cultural, and design collective movements in the post-war period and throughout the 1960s and 1970s. These collectives and visionaries were influenced by historic precedents and an era of upheaval; design became a vehicle for imagining a revolutionary cultural shift. The foremost influence on contemporary speculative and critical design practice is the Radical Architecture movement rooted in collectives such as the Italian Archizoom Associati and Superstudio, Ant Farm in San Francisco, and the oft-cited Archigram group in the United Kingdom. These collectives emerged in response to the grand modernist visions that preceded them in an effort of:

> reestablishing architecture as an instrument of political, social, and cultural critique, they drafted bold manifestoes and designs, experimented with collage, music, performance art, furniture, graphic design, zines, installations, events, and exhibitions. (Hasan, 2019)

It was an era of great social change that urged these designers to reinvent the way architecture is conceived and represented. What began as "anti-architecture" and "radical design" evolved continuously into varied speculative approaches from design fiction to critical design. The isolated and avant-garde nature of these collectives ultimately limited their impact to academic institutions, with many of their members becoming embedded at universities around the world. Their convictions carried with them, they transferred their ideals and vision to a new generation of influential designers.

The academic terminology for 'speculative design' was coined by designers Anthony Dunne and Fiona Raby in the early 2000s when they were both professors at the Royal College of Art in London. In the years following, Dunne and Raby have explored speculative design, critical design, and design fiction through their academic and professional works. In an interview with their colleague James Auger, Dunne and Raby argue that design has a unique power to "give form to ideas, beliefs and perspectives making alternate realities and 'systems of reality' accessible in ways that inspire varied reflections on ways of living rather than a singular vision of how things might be. (Auger, 2019)

Dunne and Raby solidified their methodology and approach in 2013 with the publication of their book *Speculative Everything: Design Fiction and Social Dreaming*. The book presents speculative design as an academic and professional methodology. The speculative methodology provides the foundation to establish a practice of inquiry; to challenge the present and explore alternatives:

> to use design as a means of speculating how things could be [is] speculative design. This form of design thrives on imagination and aims...to create spaces for discussion and debate about alternative ways of being, and to inspire and encourage people's imaginations to flow freely. Design speculations can act as a catalyst for collectively redefining our relationship to reality. (Dunne & Raby, 2013)

Ivica Mitrović (2017) expands on Dunne and Raby's speculative design in practice by designating a space for a type of 'new designer' that "acts on the borders of traditionally defined disciplines, removing the borders between them." The 'new designer' is less concerned with solving problems through design and more concerned with presenting issues and inquiries for discussion or debate. Mitrović cites Ramia Mazé's comments on the necessity of internal critique in developing a discipline:

> Criticality has an important role to play within design on many levels...criticality within our own personal practice can be seen in how we reflect upon our methods in order to locate our voice and articulate our position; criticality within a community of practice or discipline can be about trying to challenge or change traditions or paradigms;" (Mazé, 2009)

Mazé goes on to posit that critical practice becomes the basis to mount critiques of the practice, discipline, and status quo within design practice. With these perspectives of critical practice and speculation in mind it would seem interior design has, due to its relatively new establishment and difficulty in separation from architecture, suffered from a lack of distinct critical perspectives and speculative practice.
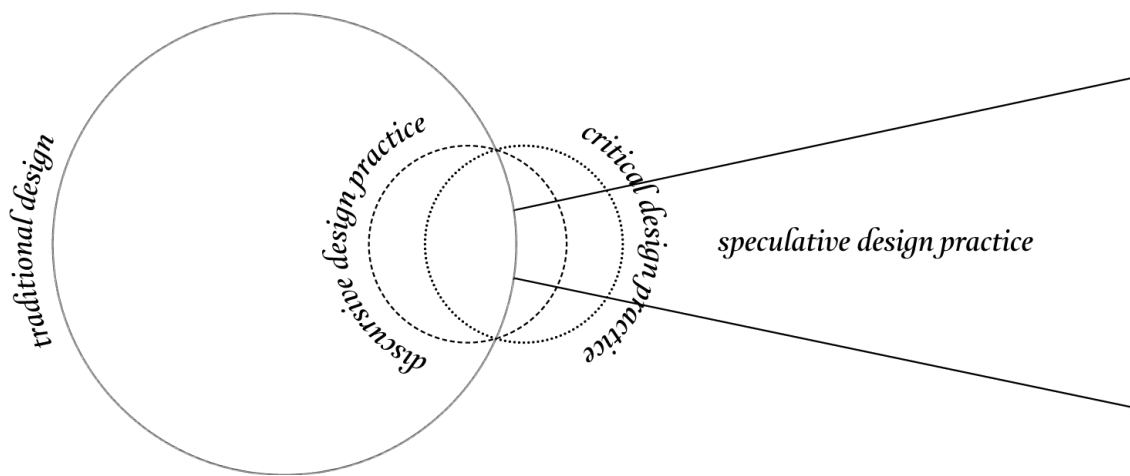

Figure 1. Ivica Mitrović, Diagram of Traditional Design vs. Speculative Design

Mitrović presents that since speculative design interacts with a variety of related practices and disciplines, the methodologies available to it are any methods that are accessible and appropriate. These methodologies may take the form of fictional

narratives, film, screenplay, storyboard, user testing, interviews, questionnaires, games, but also media and pop culture phenomena. (Mitrović, 2017) The flexibility provided by speculative design as a methodology for design research presents a unique opportunity to push the boundaries of disciplinary restrictions and in the words of speculative architect Liam Young, "to operate in the space between design, fiction, and futures." (Young, 2017)

Interiority

In her seminal summary of the concept, *Towards a Definition of Interiority*, McCarthy (2005) establishes interiority as the "abstract quality that enables the recognition and definition of an interior." McCarthy adds that "It is a theoretical and immaterial set of coincidences and variables from which 'interior' is made possible." Interiority in relation to 'interior' becomes an element of constraint and control; A boundary that encompasses spatial elements, whether physical or philosophical. Boundaries in this context can originate as physical objects, sensory elements such as scent or temperature, mental elements such as anxiety, and philosophical bounds such as morality. The expansive nature of interiority presents a unique theoretical framework to consider the interior without a dependent architectural structure. (McCarthy, 2005)

Power (2014), reiterates interiority as 'free' from direct application, "shifting space from the actual to the possible; in other words, disembodying space from architectural form." The conceptual context of interior is fundamentally triadic; composed of the interior, exterior, and the threshold or boundary separating interior and exterior. Ionescu (2018) expands the interior concept in the context of architecture as a place that distributes functions such as working, resting, or moving. The interior becomes a reflection of its occupants. Interiority, as an element of morality and inner truth, becomes a component of defining atmospheric conditions of intimacy, hierarchy, and intent. (Ionescu, 2018) Interiority in this context can represent a manifestation of the self, subjectivity, and how we perceive our environments. Interiority is grounded in the idea of abstract presence rather than physical space or location. (Perolini, 2014) Power also presents the notion

that "space is disciplinary specific" and interiors as a discipline has not yet laid claim to space on its own terms. (Power, 2014) This pretense of space, on interior terms outside of the architectural shell, presents the site for interrogation and development of an interior identity.

Beyond this interior identity, Pimlott (2018) remarks that the concept of interiority is difficult to work with in practice, especially at the urban and cultural scale, given its nature as highly specific to the individual. We cannot create a place for each potential occupant, but we must also tread carefully as to avoid making non-places for no occupant in particular. He puts forth that designers and 'architects of the interior' have a responsibility to make places that activate occupants to become more aware; aware "of themselves and others, the world and their place in it." (Pimlott, 2018)

Designer Precedents

The designer precedents below represent a small sample of influential designers currently or formerly engaged with speculation as a distinct methodology to explore complex cultural, social, environmental, and political concerns relevant to the built environment. Each precedent also exhibits, from the author's perspective, a distinct sense of interiority and coming to their own terms with space along with its manifestations and representations. Many influential and visionary designers and artists (such as Giovanni Piranesi, Claude Ledoux, Syd Mead, Perry Kulper, Tsutomu Nihei, Beatriz Gomez-Martin, Neil Denari, Lucy McRae, Olafur Eliasson, and *many more*) have been omitted from this thesis for brevity. Acknowledgement of their influence is nonetheless critical to the precedence of the work included in this thesis.

ANTHONY DUNNE & FIONA RABY

Dunne and Raby are co-founding partners of the self-titled Dunne & Raby design firm. The firm is centered on the use of design as a vehicle to establish discussion and debate across disciplines regarding the implications of technology across socio-cultural

and ethical boundaries. Dunne and Raby primarily present their works in the form of diegetic artifacts; objects and products that belong to the narrative space of their origin. (Dunne & Raby, 2013) By situating products in a narrative space, their functions and possibilities are given credibility. By presenting their works in physical settings, they directly engage the viewer to imagine that the speculative artifact is a real product. The setting becomes a critical point as expressed by James Auger (2013) in carefully controlling the speculation by providing real context and the construction of a believable alternative present.
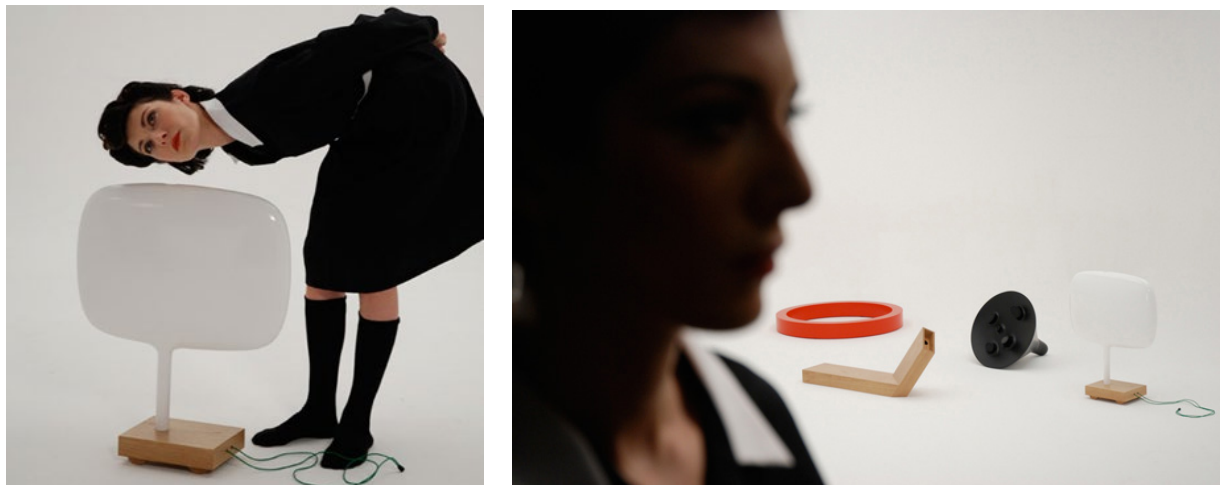

Figure 2. Dunne & Raby, Technological Dreams series: No.1, Robots, 2007

Many of their projects are situated in the presence of environmental and future logistic concerns such as overpopulation, food scarcity, energy production, surveillance, and conflict to call attention to the challenges ahead as well as expand the role of the designer to respond more actively in shaping the future.

Their practice also takes aim at the limits of both contemporary practice and academia in limiting the scope of design. Dunne and Raby's short essay *The School of Constructed Realities* presents a response to fictional presentations of a 'Constructed Realities' MA program that offers a divergent model for a degree program focused on 'unreality' and breaking free of the borders of realism in practice and discipline. It becomes the onus of the academy to challenge the discipline and redefine the bounds of practice.

Lebbeus Woods is an architect and academic famed for his evocative drawings and brilliant speculations on alternate forms of architecture. He is remembered as a distinctly 'unconventional' architect, praised for his philosophy, drawings, and ideas. His career is represented by decades of sketches, physically rendered drawings, scale models, writings, lectures, and a blog which he maintained for five years, offering his own perspectives and discussion with commenters.

Woods was considered by many to be a "paper" architect in that his projects were primarily realized in illustrations and other representational mediums. He acknowledged that many of his designs were not intended to be built in the physical world, instead promoting a philosophy of speculative and critical projects that challenged the definitions of architecture and the built environment.
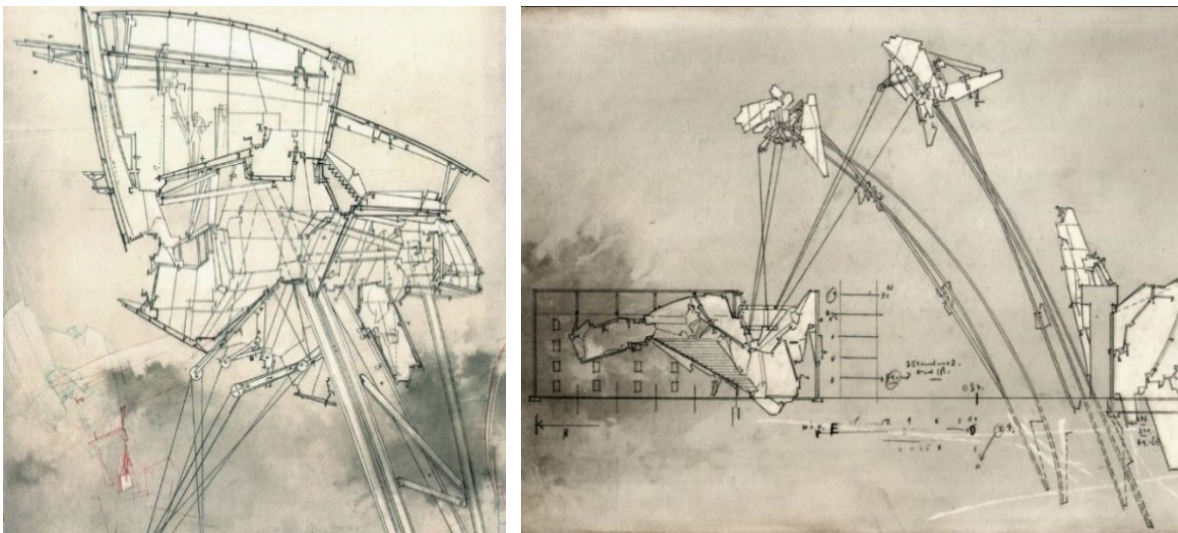

Figure 3. Lebbeus Woods, *High Houses*

In her overview of the 2014 exhibition, *Lebbeus Woods, Architect* at the Drawing Center in New York, Aida Miron summarizes the impact of Woods:

> …Woods's vision challenges institutional pedagogies and disrupts
> conventional architectural practices with its radical experimentation,
> uncompromising questions of architecture's relation to politics, and
> powerful imagery, while also exploring the phenomenology of light,

human perception, and architecture as an instrument for
transformation. (Miron, 2014)

Woods was outspoken in his assertion that his sketches, drawings, and models were themselves an embodiment of architecture. The design, he argued, does not need to be built to constitute the definition of architecture. Woods moved to New York to establish his own practice focused on engaging architecture in his own conceptual and philosophical perspective. He actively pursued his own mode of investigational and theoretical architecture until his death. (Becker, 2014)

Bryan Cantley

Bryan Cantley is the founder of Form_uLA, an experimental design studio in Los Angeles that focuses on architectural research and experimentation. He is known for his unique visual style and focus on process and methods in developing design drawings. Several of his works are in the permanent collection of the San Francisco Museum of Modern Art. His works have been featured in exhibitions at UNCC, UCLA, the Bartlett School of Architecture, SCI-Arc, and many other institutions (Martinez, 2018).
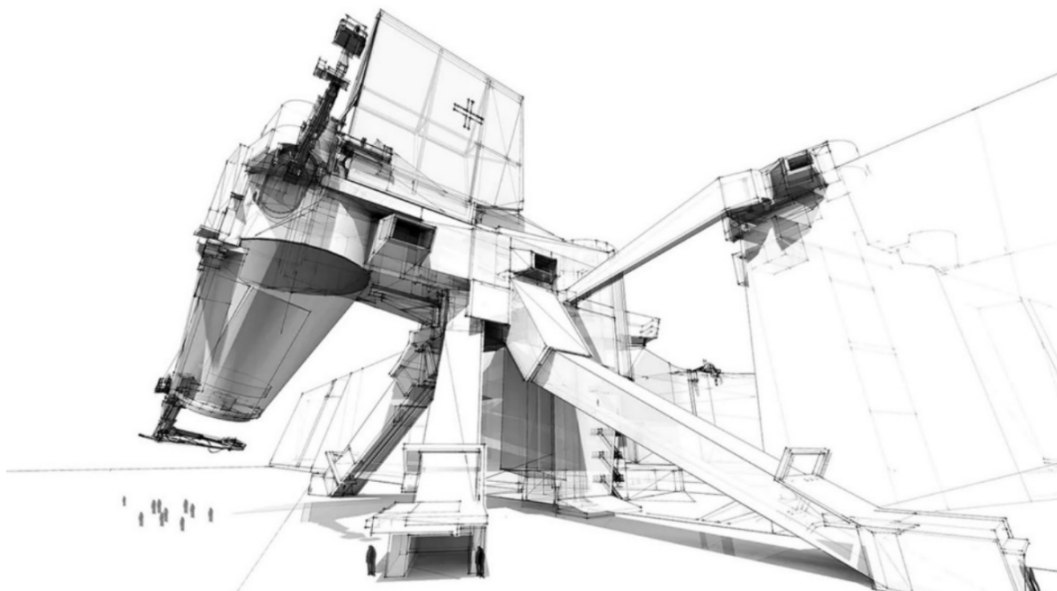

Figure 4. Bryan Cantley, *CSUF Sentinel,* 2013

He has dubbed his multiple processes of drawing as 'hybrid-drawing' and 'Mechudzu', a combination of mechanical and kudzu named for the invasive species of Japanese ivy that infests the landscape of the Carolinas. His 2011 monograph of the same name, *Mechudzu* provides insight into his process, projects, and defines mechudzu as a "weed that grows wild on the body of our mechanical culture, luxuriating in its ability to draw energy from those forms, spreading quickly and choking off each single organism as it continues its sprawl" (Betsky in Cantley & Epstein-Jones, 2011). His expansive body of work takes aim at the representations of architecture (plan, elevation, section, diagram, model) as the site of construction of meaning. His speculative machines taking on measures of his consciousness in producing the drawings themselves. Inspired by the agricultural equipment of his childhood, his practice is a recursive and self-reflective inquisition of his own architectural process and how 'drawings' are constructed in the mind of the architect.

NEIL SPILLER

> What drives some architects to make drawings or models of architectures that are clientless and therefore unbuilt or currently unbuildable? First, the commercial world of architecture is a world of value engineering, of committee consent, and limited material palette. This world is highly legislated, and therefore often normative, and often having lost its lifeblood— ARCHITECTURE."
> (Spiller, 2013)

Neil Spiller is Hawksmoor Chair of Architecture and Landscape and Deputy Pro Vice-Chancellor of the University of Greenwich in London. He is best known for his expressive techniques and his drawing series *Communicating Vessels* in which he explores the "impact of twenty-first century technology on the discipline of architectural space and materiality." (Spiller, 2016) The project is an ongoing, decades long engagement with speculative process and critical design. His focus on new technologies and methods of hand-drawing presents an engaging perspective of architecture through intense graphic expression.

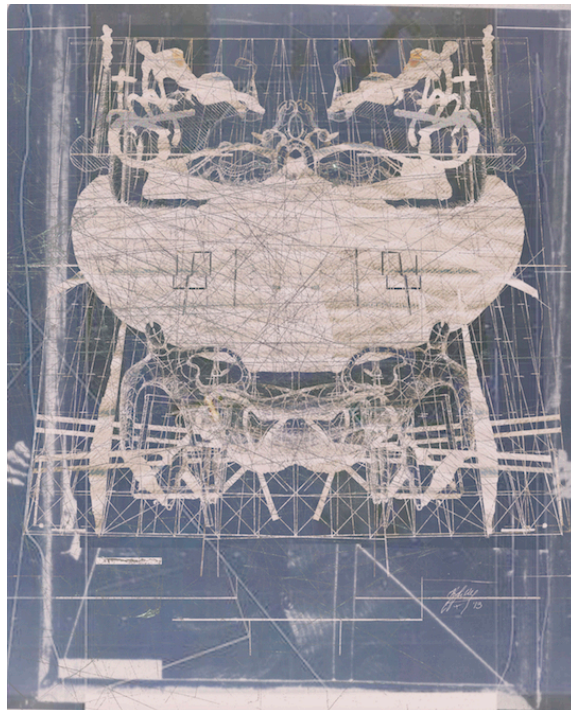Figure 5. Neil Spiller, Royal Garden (Final Stage after Solidification)

Figure 6. Neil Spiller, Albumen Garden: Stage 2 (Translucent)

Dan Slavinsky is an architect and graduate of the Bartlett School of Architecture at University College London. The Bartlett is world-renowned for the compelling illustrations and expression of student work. In 2010, Slavinsky's thesis entitled In *Arcadia at the End of Time* explored, through speculation, the potential effects of relinquishing control over architecture to a hybrid bio-architectural system of growth and decay. His illustrative renderings present a striking and original take on diagrams and concept images, expressing both the intent of the thesis and an artistic impression of his architectural process. His captivating illustrations are notorious in circles of architectural drawing, blogs, and Pinterest even though Slavinsky remains in relative obscurity. His works demonstrate the media impact of speculation and image as a method to expand the cultural conditions of a discipline.
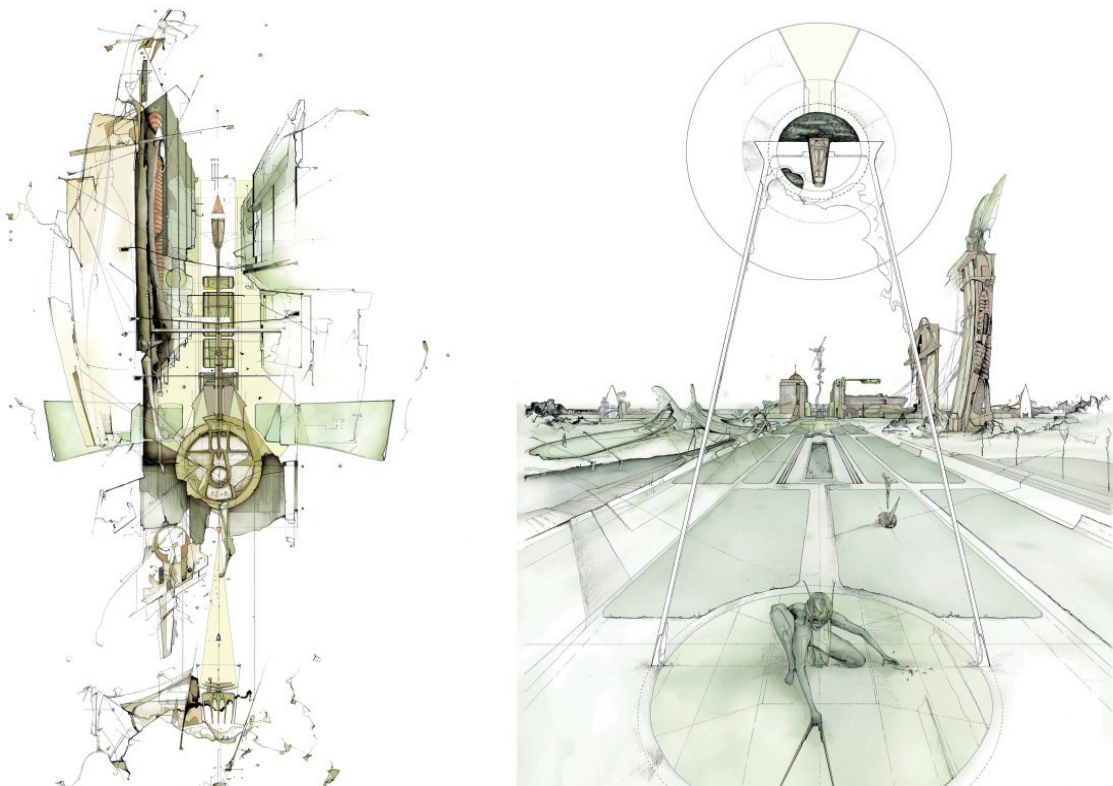
Figure 7. Dan Slavinsky, Scenes from *Arcadia at the End of Time (2010)*

CHAPTER III: METHODS & PROCESS

Leedy and Ormrod (2010) state that qualitative research should be used when you need to describe, interpret, verify, or evaluate something...to understand the nature of certain situations...to gain new insights about a particular phenomenon. For these reasons a qualitative method seemed the most appropriate to understand, interpret, and analyze how speculative design may be used to encourage a creative and conceptual expansion of the interior design process.

In the first stages of this research, I used designer precedent and auto-ethnographic approaches to analyze the methods of speculative design employed by successful critical practitioners and examined my own experience through the design process. The auto-ethnographic portion took the form of a narrative sketch journal and self-analysis of my perspective and experience throughout the entire process of creation and reflection.

Through the analysis of designer precedents, I developed a list of strategies and goals for the next stages of the project based in active making and experimentation through studio-based projects. This aspect of my thesis employed a grounded theory approach that attempted to test, observe, and record the results of multiple methods of speculative design for the purpose of developing and understanding of how it might be used in the development of interior design. Following the documented process of late architect Lebbeus Woods, I intended to explore "transdisciplinary experiments...in drawings, notebooks, loose sketches, collages, physical constructions, scale models, a full-scale drawing, and fragments of texts..." (Miron, 2014) to understand their effects on ways of knowing.

Heuristics: The Self as Site

After beginning the process, I was introduced to the process of heuristic inquiry. According to Clark Moustakas (1990) the question that accompanies heuristic inquiry is

"one that has been a personal challenge and puzzlement in the search to understand one's self and the world in which one lives." He further elaborates on the principles of heuristics:

> Heuristics is a way of engaging in scientific search through methods and processes aimed at discovery; a way of self-inquiry and dialogue with others aimed at finding the underlying meanings of important human experiences. The deepest currents of meaning and knowledge take place within the individual through one's senses, perceptions, beliefs, and judgments. (Moustakas, 1990)

Heuristic research is established around six phases according to Moustakas:
1. Initial Engagement
2. Immersion
3. Incubation
4. Illumination
5. Explication
6. Creative Synthesis

The phase of initial engagement is to realize or identify a topic or question of distinct interest. During this phase, "the investigator reaches inward for tacit awareness and knowledge, permits intuition to run freely, and elucidates the context from which the question takes form and significance." The next phase, Immersion is rather self-explanatory. The investigator immerses themselves in the concept and lives the question, taking in all possible information to inform the inquiry. The third phase, Incubation, is a critical phase where the researcher sets the question aside to reflect. The question becomes like a seed, undergoing "silent nourishment, support, and care that produces a creative awareness of some dimension of a phenomenon or a creative integration of its parts or qualities." From this seed emerges the fourth phase, Illumination. Illumination is the natural emergence of new knowledge and greater understanding post-reflection. Following this is the fifth phase, Explication, where the investigator dives deeper into these revelations via processes of focusing, indwelling, and self-searching for a more complete understanding of the meaning, nuance, and any latent connections to other concepts or intuitions. The sixth and final phase, Creative Synthesis, is the culmination of the inquiry. With a mastery of the knowledge informing

the illumination and explication phases, this new meaning or understanding of the experience can be expressed in creative forms such as a narrative, poem, illustration, or performance. (Moustakas, 1990)
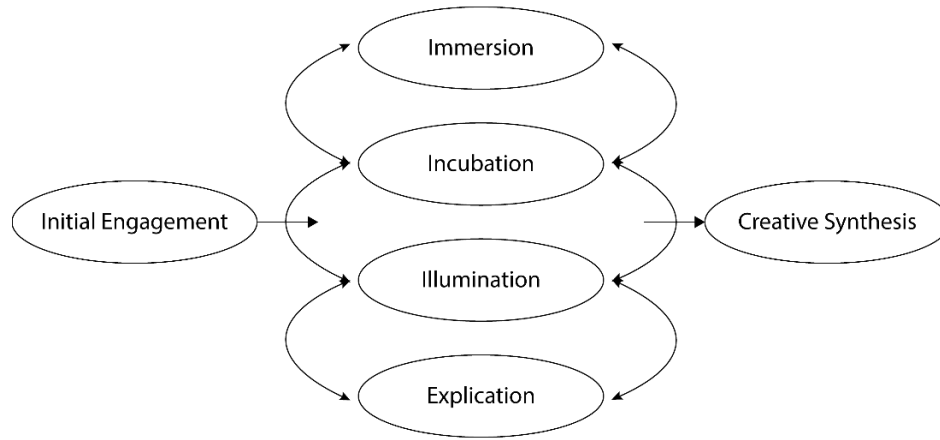
Figure 8. A diagram of the Heuristic research process based on
Moustakas' Six Phases

As shown in Figure 8, the heuristic process is not necessarily linear as the phases may appear to be. In my experience through this process many phases were cyclical, branching, and recursive. Each new experience can become a new input for differing lines of inquiry. In my creative process, this was most noticeable with the need to occasionally set a project or series of explorations aside for the ideas to incubate and crystallize before returning to the drawing board. Many of the explorations were layered with new knowledge acquired along the way via reading, media, and teaching.

> Behavior is governed and experience is determined by the unique
> perceptions, feelings, intuitions, beliefs, and judgments housed in
> the internal frame of reference of a person. Meanings are inherent
> in a particular world view, an individual life, and the connections
> between self, other, and world. (Moustakas, 1990)

When beginning my research, I was completely unaware of the concept of heuristic inquiry but after its discovery I realized that I was attempting all along to construct a nearly identical research method out of a combination of mixed methods, auto-ethnography, and grounded theory. While it feels potentially wrong to disclose this as a scholar, it seems right to include this admission here. In its own way, my method of

inquiry naturally evolved speculatively and heuristically. First, by just starting using an assumed method, but then diverting and transforming in direction and method as I gained new information and knowledge. The resulting process I followed in my inquiry was intuitive and rooted in self-reflection. Indeed, the goal of heuristics to discover that which is not yet known to the self. It is speculative and in being so, reveals the raw nature of the design process is as I believe it should be, a heuristic inquiry informed by sources and research but *not governed by it*.

The rationale of this thesis began with a self-perceived deficiency of my design process. I felt that I didn't think like I was supposed to; my approach differed from how I had been instructed to approach design and its production. My process was 'wrong'; I was uncertain of my identity within design and had no clear answer as to why I engage with interiors. I felt that something was off, but I could not articulate what it was. This internal crisis, my sense of interiority, and understanding of interior became the focus of my inquiry. Speculative design methods were critical in establishing a site for the inquiry; an alternate world space - an internal site where I sought to engage and immerse myself in exploration, process, and discovery.

The body of work presented here draws on my experience with common design techniques, programs, and methods and their use as primary tools of process or production. As extensions of my designer's mind, nearly every stage of the process involves a combination of drafting, drawing, modelmaking, photo manipulation, or computer-aided drafting (CAD). Inspired by the legacy of Lebbeus Woods and current works of Bryan Cantley I began my inquiry and process by using technical drawing, a technique I was comfortable and skilled in. By engaging with familiar techniques, I would be free to engage with my intuition unhindered by a focus on the medium or methods of creation. It is important to preface the process expressed within this document followed a distinctly non-linear cyclic timeline. Many series, stages, and varied explorations were carried out in parallel as each informed the other or diverged into a new branch of inquiry.

Genesis

> *The first steps into my own process began without direction. I pushed away the thoughts of what I should draw. I needed to put pencil to paper and let my hand guide me to the first creation. Arbitrary lines connect, intersect; Curves and shapes begin to divide the negative space. The lines coalesce into a mechanical figure, vague and without purpose. This new construct, trapped within the frame of the margins, seemed to be frozen in place; its own function remaining elusive.*

There are few items more intimidating than the blank page. A blank page is pure potential, awaiting the mark of the author to provide it purpose. The 24th of August was a fateful day; the beginning of a project that, at the time, had no clear directive. I had set my goal to engage with the design process to develop my own ways of knowing and working but still did not know where to start. Within the course I was teaching, IAR 202, my colleagues and I began the semester with remedial drafting exercises to make up for the students' previous semester, cut short by the COVID-19 pandemic. Taking inspiration from the exercises given to the students, I taped down a piece of 11x17 printer paper to a makeshift MDF drafting board. The paper had been folded in half, providing an 8.5 x 11 workspace from which I was determined to start.

Intimidated by the surface in front of me, I began with techniques I was familiar with. I employed basic drafting techniques with templates and a straight-edge ruler. By engaging with familiar systems and process, I could distance myself from distinct authorship. I had no agenda aside from marking the page.

I established a half-inch graphic margin across each edge of the page and using a T-square, triangles, circle templates, and protractor I began to mark the page. I cleared my mind and let my intuition take the wheel, placing lines tasked only with demystifying the blank page.
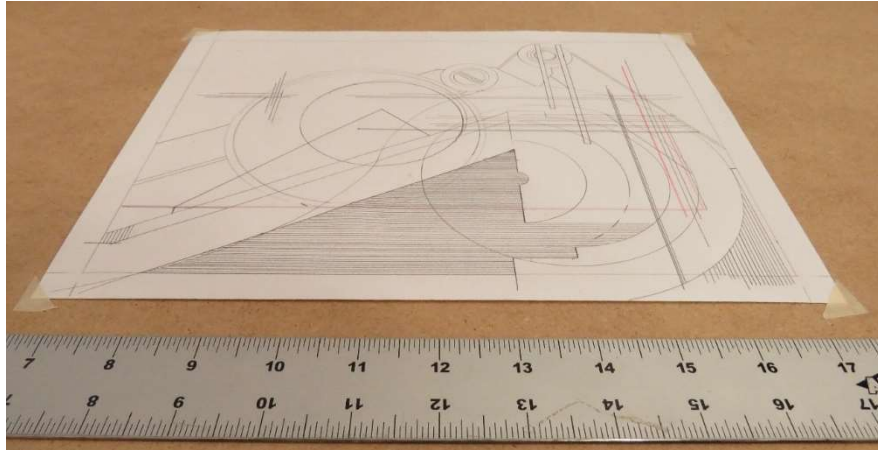
Figure 9. *First Draft* mounted to board
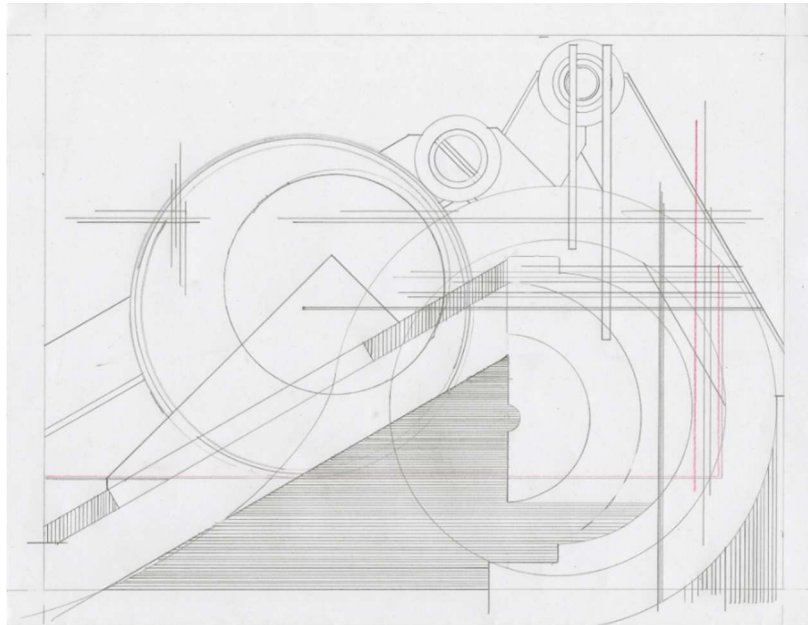
Figure 10. *First Draft*

The resulting composition is a suggestive figure; a section cut through an unknown mechanism. The use of technical drawing techniques presents an abstract character within a familiar context. Heeding once more to intuition, I grabbed a handful of sketches I had nearby; process work from previous projects, drawn on trace-paper. Overlaying the trace, I noticed points of connection: Common nodes and coincidental alignments between the old and new compositions and elements.

I began by re-evaluating the drafted lines of the construct before me. Connecting lines & defining boundaries. My next discovery was a harmony of visual information. I overlaid a technical sketch, done previously, for a reciprocal piston-actuated interior construct. To my surprise, the technical sketch became a suggestion of the internal mechanisms, a planetary gear driving the process of creation. Drafting conventions transform into trusses and plates, arbitrarily defining internal space and descriptive annotation. All at once, these unrelated marks become a collective. By combining freeform explorations with existing process drawings, I have experienced twice now a thrilling uncanny…residual information presenting echoes of consciousness.

The use of trace overlay in spatial design is commonplace. It is the site of alteration and expansion of information, a tool for analysis, ideation, and critique. When applied to something indeterminate that has not been identified as a structure or for a purpose, I found that the overlay altered the relationship I had to the image; the image had no constraints outside of its medium. The overlays used in my early explorations were sketches, diagrams, and other representative drawings of structures and mechanisms: images with intent. I found by layering them over or under these images of coincidence their purpose and intent was multiplied; they were now free to represent something else; something more.
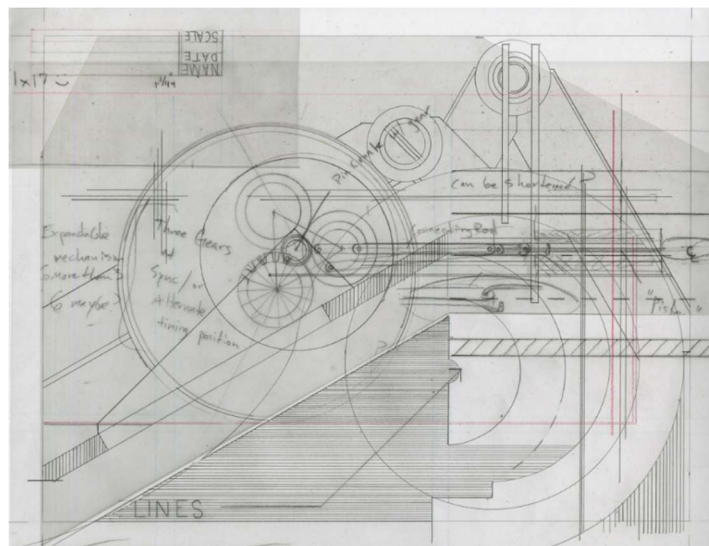
Figure 11. *Mind Engine #1*, Overlay

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> *Does spontaneity negate intent?*
> *I have no clear vision for what might emerge from this. I simply let*
> *my mind and my hand collaborate on an evolution of line, shape,*
> *and relation. The intersections are not always praiseworthy or*
> *exciting. The process does not always produce winners, but it*
> *provides layers of experience. I notice myself gaining momentum in*
> *the joy of experimentation; trying something and not knowing if it*
> *will turn out. Each ideation combined gives me more layers to*
> *compile and mix rather than focus on producing a specific*
> *composition. Each composition is an assembly of others. Each*
> *piece providing a new context from residual information.*

The overlay process in Figure 11 was achieved through digital layering and compositing. I wanted to ensure that each piece maintained its structure and scanned each part, rearranging the pieces to match the positions I had tested physically. The methods of experimentation grew exponentially in a transition to the digital. As I began to virtually interrogate the various ways to layer this information, I found myself testing each component to see what new meaning might be expressed with different settings and combinations.
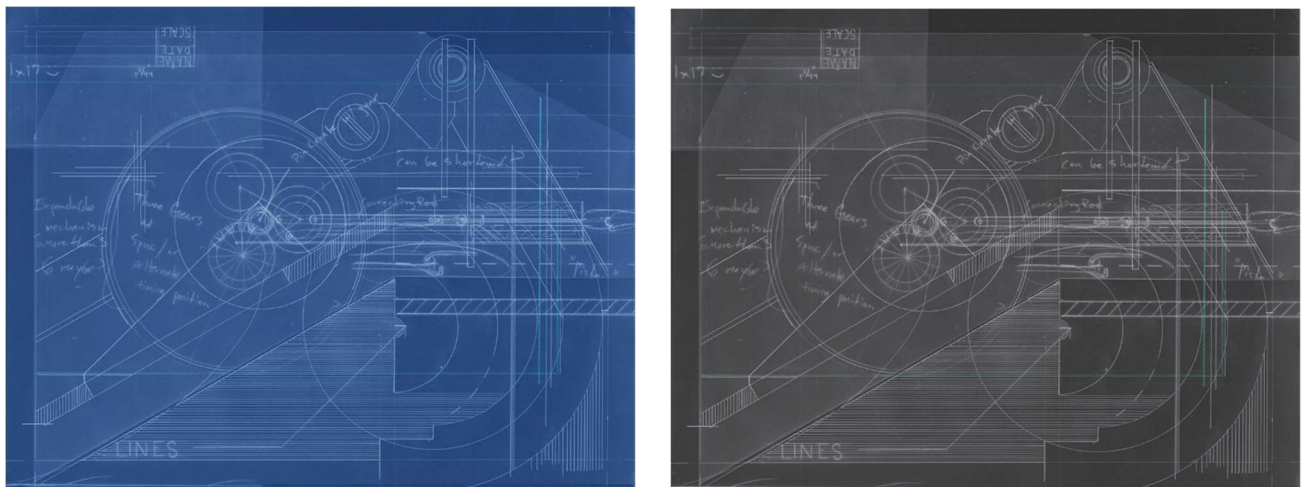
Figure 12. Blueprint (left) and Photonegative (right) editions of *Mind Engine #1*

What these tests reveal is not simply a change of hue and value; it is an evolution of the potential of the image. The likeness of the translations to blueprints and photonegatives

constructs a false-history or function. It is during these explorations that I began to identify the impact of the image, suggested histories, and narrative. The images serve as a speculation on the structure of my creative process. This set of explorations would become the origin for the Mind/Mirror series shown later in this document.

The next stage of experimentation, growing from my use of residual sketches, took aim at exploring the residual boundaries of material cutouts, the interior space within these sheet materials; Leftovers, waste, and scrap material. I was uncertain as to why I had kept these records of previous projects until now.
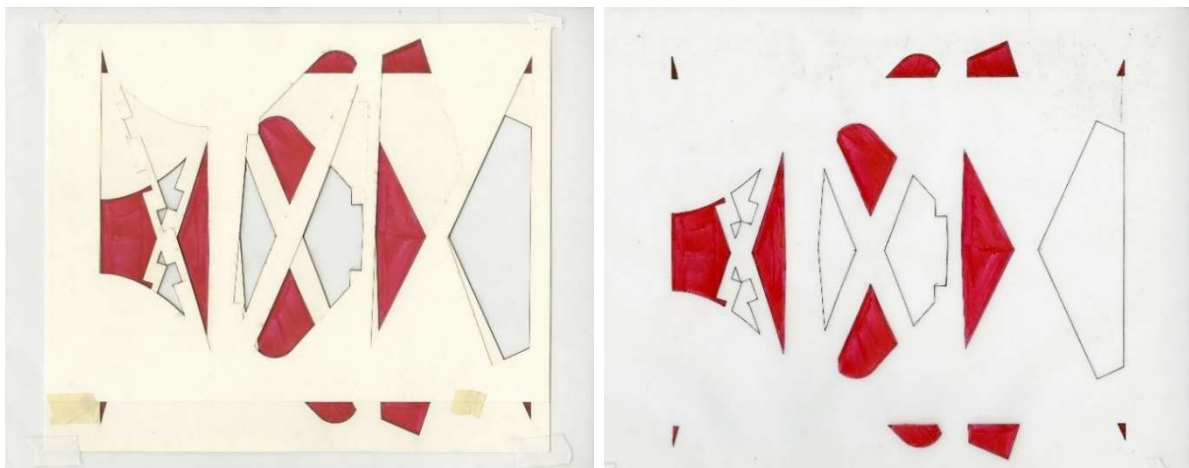
Figure 13. *Window*, overlaid intersections (left) and resulting composition (right)
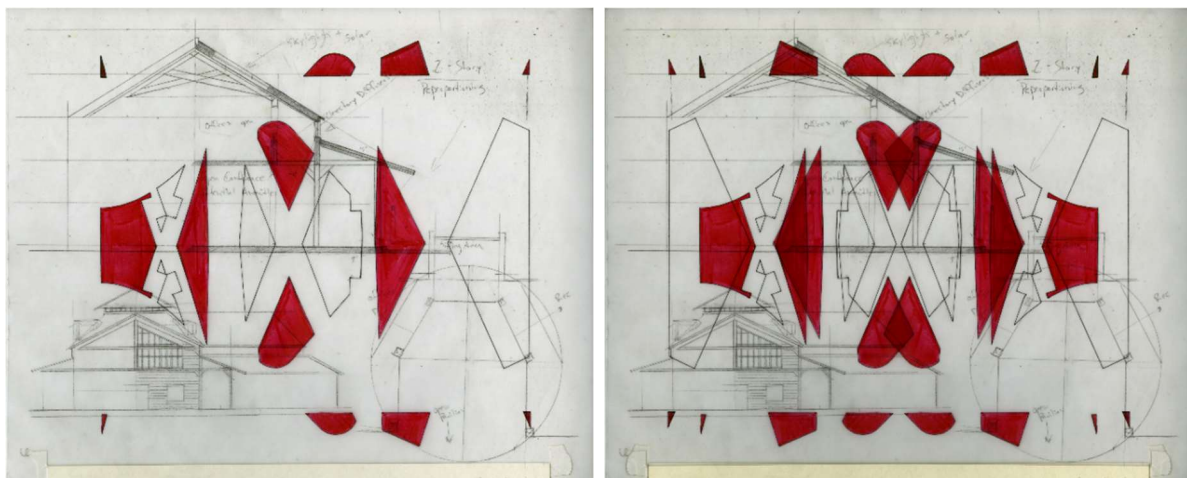
Figure 14. *Coincidence, Single and Mirrored Overlays*

The internal structures, shapes of interest and intent from another context, became a new internal space for my thoughts. This aspect of residual process, templates, and the adaptive reuse of pre-determined boundaries evolved to become a central concept of my creative process. I could use external 'frames' of reference to construct my internal frames of reference, represented in each composition. It was at this stage that I began to understand the meaning of interiority more directly through my work as each boundary, template, residual trace, and sketch began to reflect fragments of my intuition, some fragments still unclear even to me.

REFLECTION #4

> *I am beginning to find my rhythm in process and stream of consciousness. I am excited to draw; I am considering compositions in my idle. I am beginning to sense a creative drive rising within. I have discovered a breadth and finality in my process and some comfort in letting my ideas flow onto the paper as they come and spur on new explorations.*

Within a few weeks of beginning my new routine of visual inquiry, I noticed my thought process physically evolving as though the entire structure of my mind was undergoing renovations. In subjecting myself to this process of immersion and unfettered development, I was able to directly alter my ways of knowing and engaging with my thoughts and their manifestation through design. It was at this point that my scattered concepts began to coalesce into three main branches; categories of work developed around their own primary inquiries.

Synthesis

#1 RESI.DNS | Residence + Residue

To reside means 'to stay', often referring to a location or space. Residence expands to the primary place one stays. Residue becomes what stays when the rest is gone. I am intrigued by the connections between these words in relation to residential design. The

RESI.DNS series was born out of an interest in the growing culture of mobility within the residential concept representing a redevelopment of the American dream to reflect the preference of social and physical mobility in a culture of rapidly increasing economic inequality and rising costs of housing. Many young families, unable to afford a house, are electing to grow their roots on wheels. Mobile homes, converted school buses, and trailer-bound tiny homes; the freedom to travel and work from anywhere, in theory.
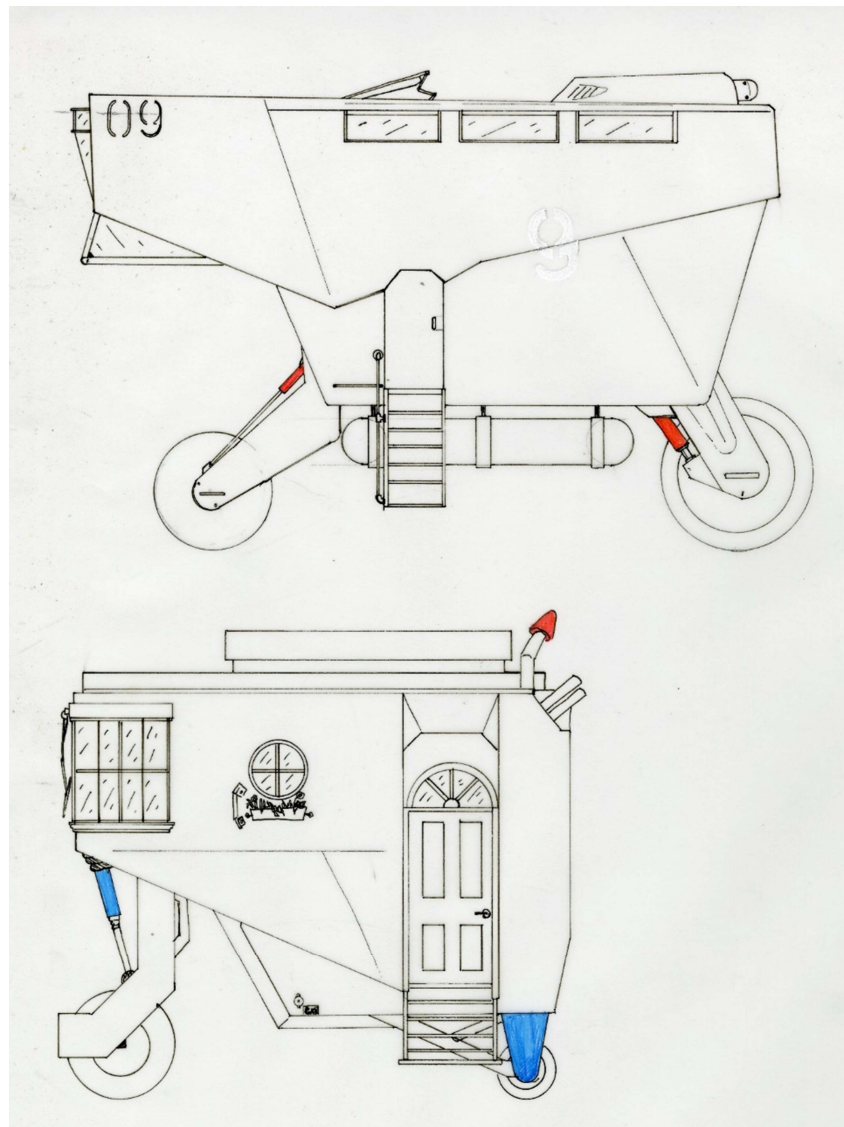
Figure 15. *Daily Drivers,* Mobile Homes Series
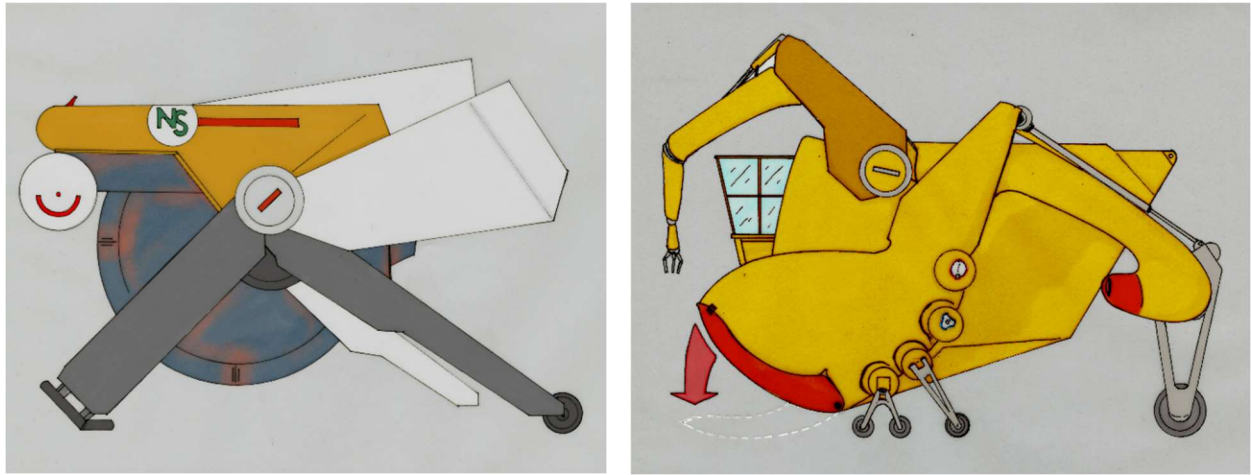
Figure 16. *New Normal*, Mobile Home Series

The catalyst for the series shown in Figures 15-19 was the growing attraction during the COVID-19 pandemic to pack up and live a decentralized nomadic life. What began to emerge was the central question: What might interior residence look like outside of architecture? I took the famous expression of Le Corbusier 'the house is a machine for living in' to a literal extreme as the mobility became the focus of living during a time of restriction. Gone are the days of needing a home and a car; why not have two-in-one?
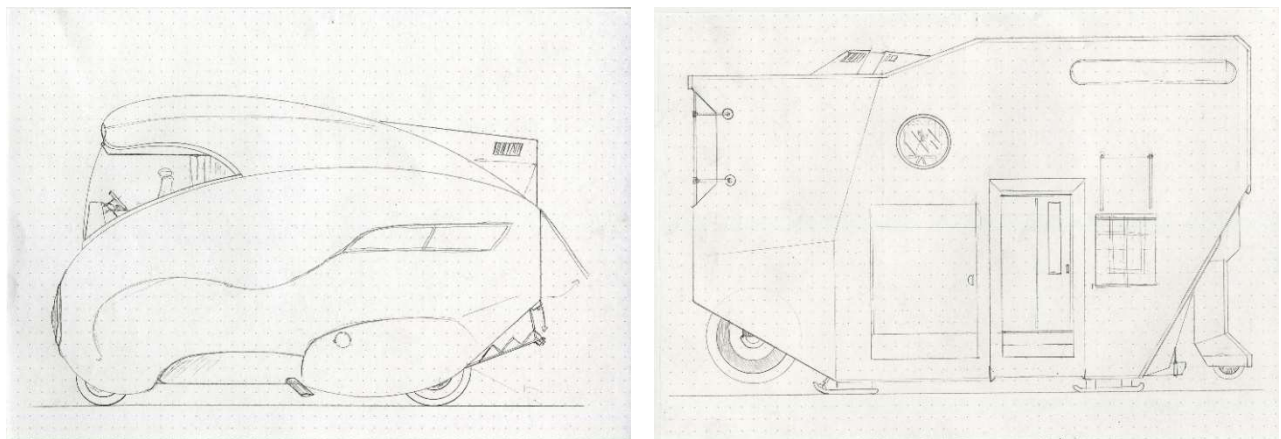
Figure 17. *Retro* and *Utility*, Mobile Home Series
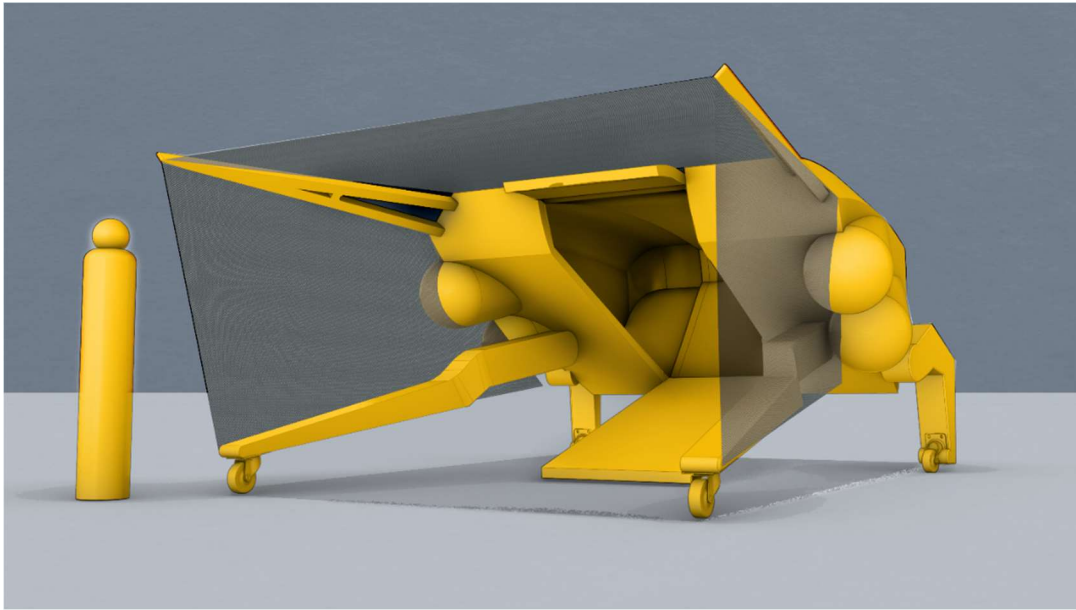
Figure 18. *Camper*, Mobile Home Series

I began to imagine what life might look like if mobile residence was the standard. Would we have as many models of home as we have cars? Would homes have badges and distinct manufacturers with reputations and price-points? Would we still live as we do now, with a separate kitchen, half-bath, and master bedroom? Would we need architecture anymore?
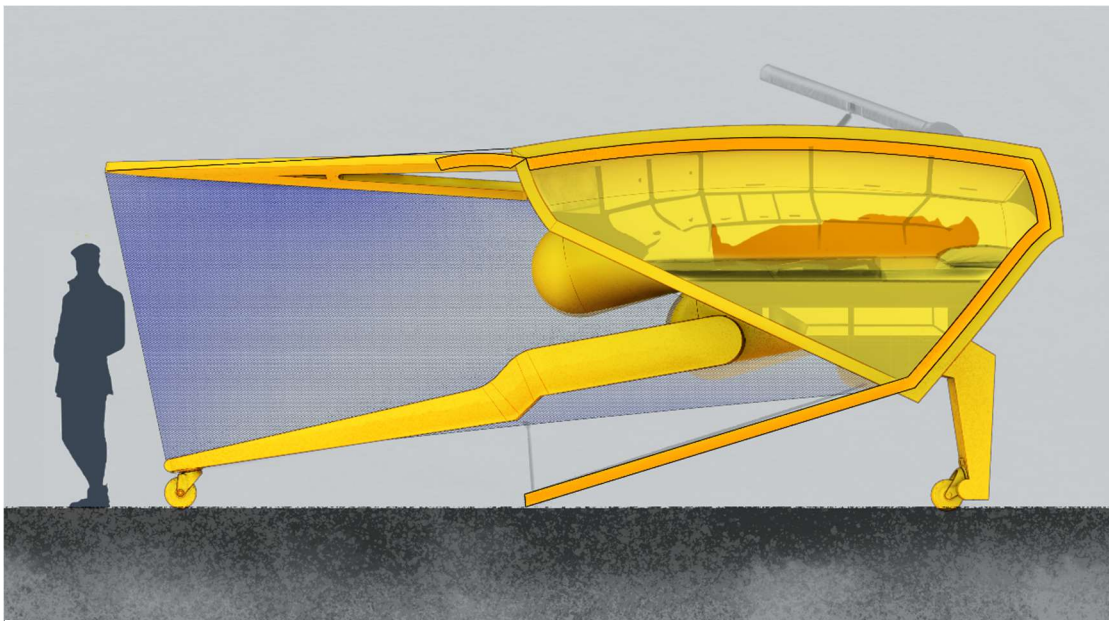
Figure 19. *Camper Section*, Mobile Home Series

Another side emerged in a series of drawings focused on those left behind in an expansion of the narrative speculation. The crises of climate change, public health, and financial instability spurred a dramatic shift in social structures leading to an accelerated urban flight and decentralization of communities. While many within a middle-class could afford to divest from static residence, lower-class residents were relegated to inhabit cramped and centralized conditions imposed upon them. As the upper echelons of society fled to their havens of security, much of the population would come to inhabit the structures left behind in their wake. RSDUs, or Residential Social Development Units, were intended to facilitate the relocation of displaced families into these abandoned structures. These communities were close-knit and swiftly forgotten as the upper class of denizens retreated to safety in their gardens of paradise. With the removal of oversight, many of these communities expanded and repurposed these environments to meet the needs of their residents.

REFLECTION #5

Residue and resident both share the root word "reside" meaning to stay in place. The lines between resident and residue are dangerously thin.
Who stays and what remains?

As I journeyed further into that barren plane, I found in the sand fragments and traces of ideas that had come and gone.
Some fragments, small enough to hold, I recovered and placed within the hold of my garden. I wondered what these scraps of material might add to my process.

Residue is a word meaning "what remains after the main part is gone".
Smudges on the glass, crumbs on the table. Just leftovers.

I encountered the remains of many gardens [of paradise] in my travels that had been abandoned, their bodies adorned with all manner of forgotten things, pieces leftover; Traces of history, lost in time with no one to tell their story.

I recorded every structure I encountered, dead cities and Gardens full of life. Maybe these barren cities could tell me more about the creation of the Gardens.

I noticed that many elements within the structures bore resemblance to the materials I had found, buried in the sand. Their interior edges, outlines, and profiles suggested there may have been a blueprint, a template for their construction. The reclaimed materials leading to a reclaimed identity of the structure before me.

And, to ensure the accuracy of my record I utilized their edges, already defined, as I cataloged their features.

The first residual structure in my record appeared incomplete; Unfinished, as a mere prototype for the earlier gardens I had encountered. (Figure 20)
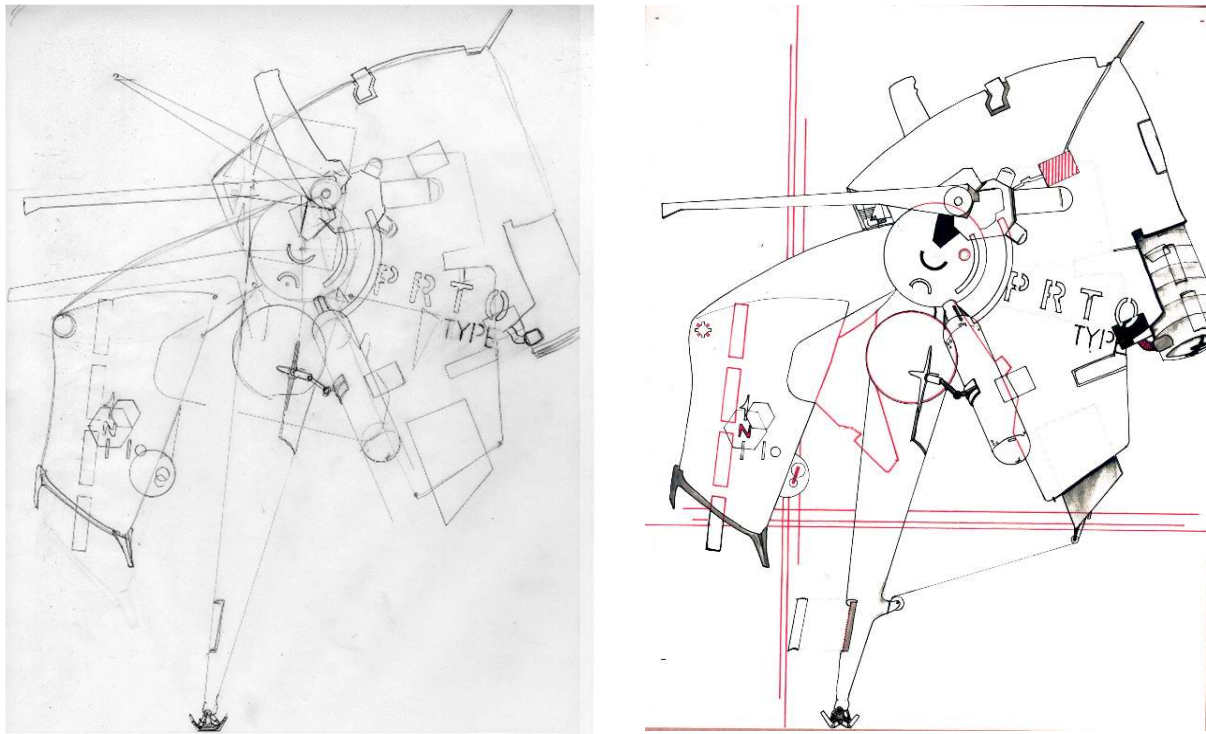
Figure 20. *Prototype 00-N 14,* RSDU+Eden series

Another appeared quite the opposite. An amalgam of materials, lashed to the structure of a long-forgotten Eden. All semblance of the original, absolutely obscured by the addition of material. (Figure 22)
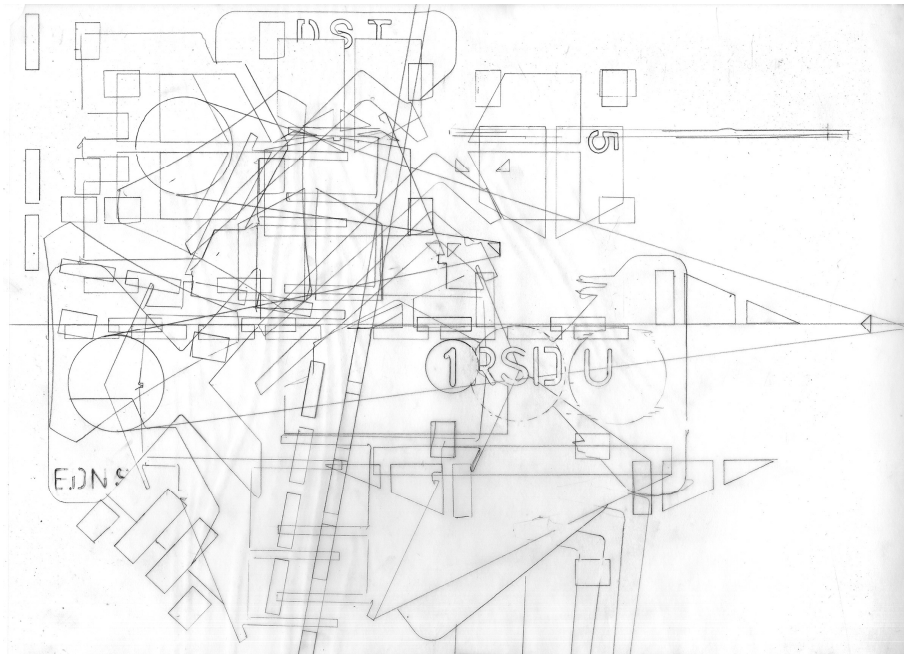
Figure 21. *RSDU Unit 1 Draft,* RSDU series
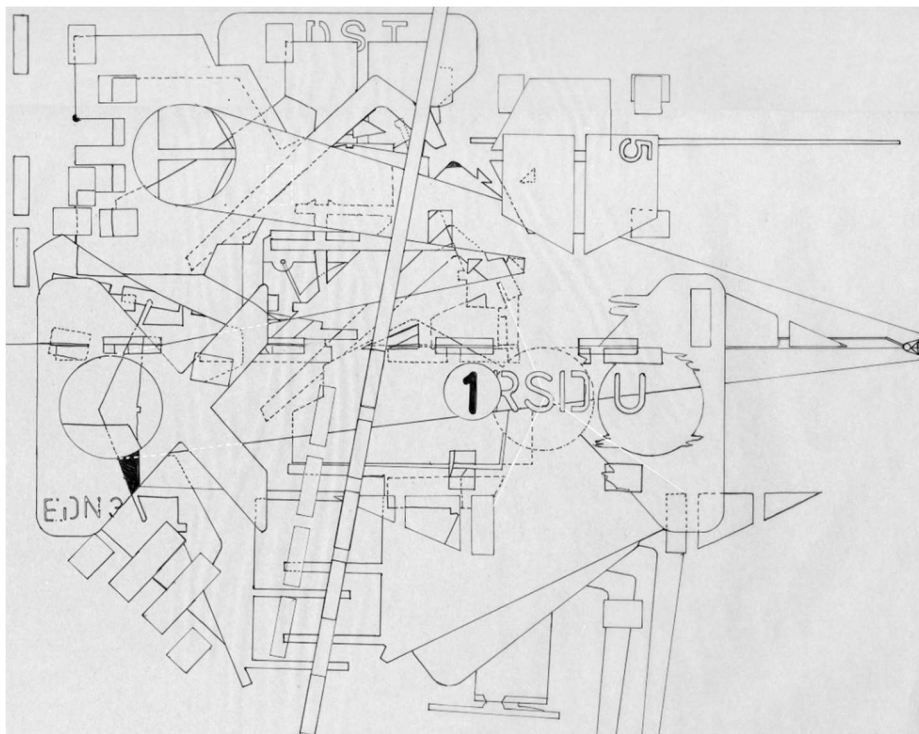
Figure 22. *RSDU Unit 1,* RSDU series

As I completed my record of its remaining composition, I swore I saw movement between the panels of material woven into the frame.

I felt a presence, a figure observing me from behind the armored shell. I noticed groups of figures, gathering on terraces, watching me from afar.

I felt within I should be moving on. This place was not for me.

At each site, not far from these structures, I came upon dozens of abandoned machines. Each one bearing covers; careful structures to shelter them from the wind and the sand.
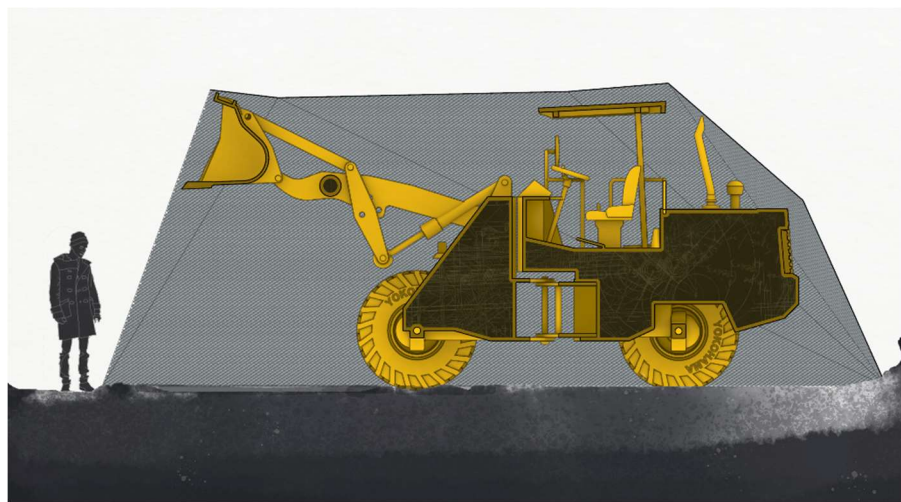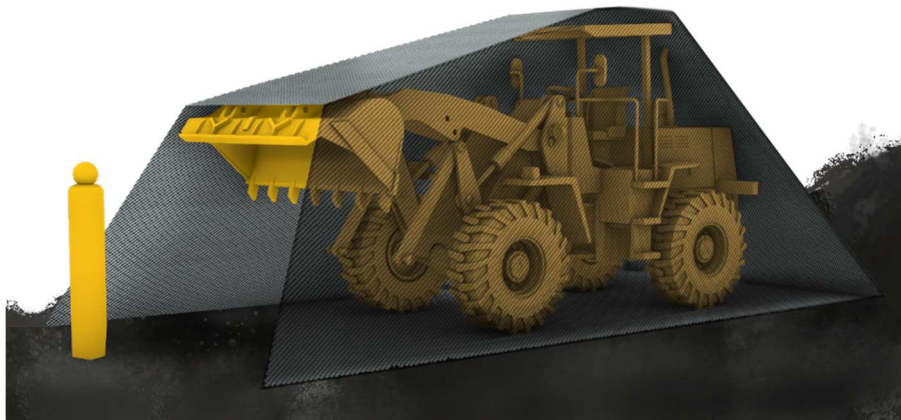
Figure 23. *Rustic Industrial #1,* RSDU series

I wondered if they might, like my own little garden, provide shelter and residence for travelers.

I noticed traces within, Signs of use, signs of life, tracks in the sand.

As the gardens before them, they remained lifeless, but nonetheless sheltered life beneath their cloaks.
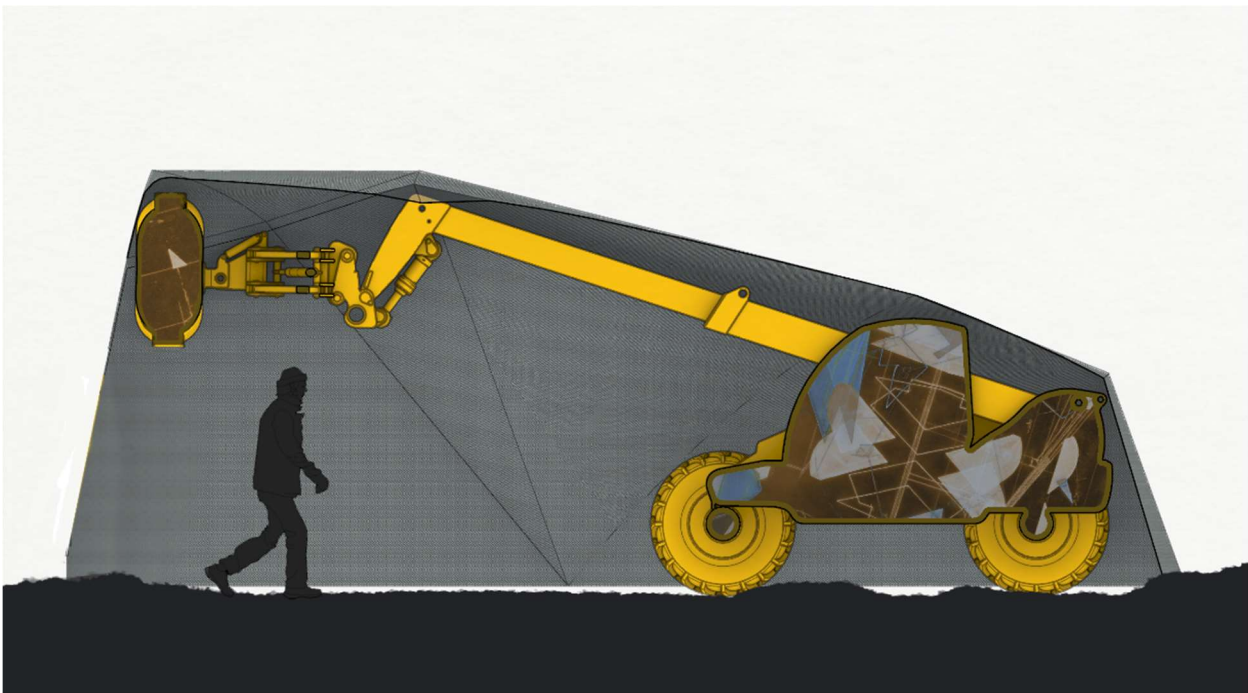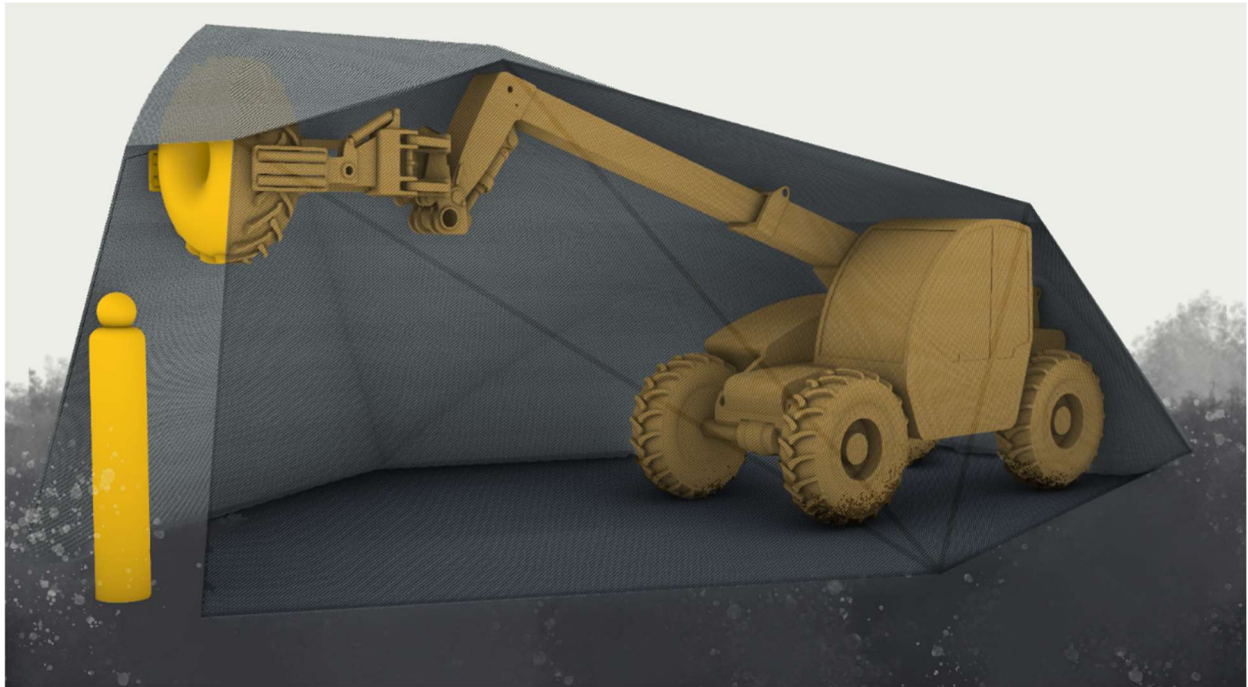
Figure 24. Rustic Industrial #2, RSDU series
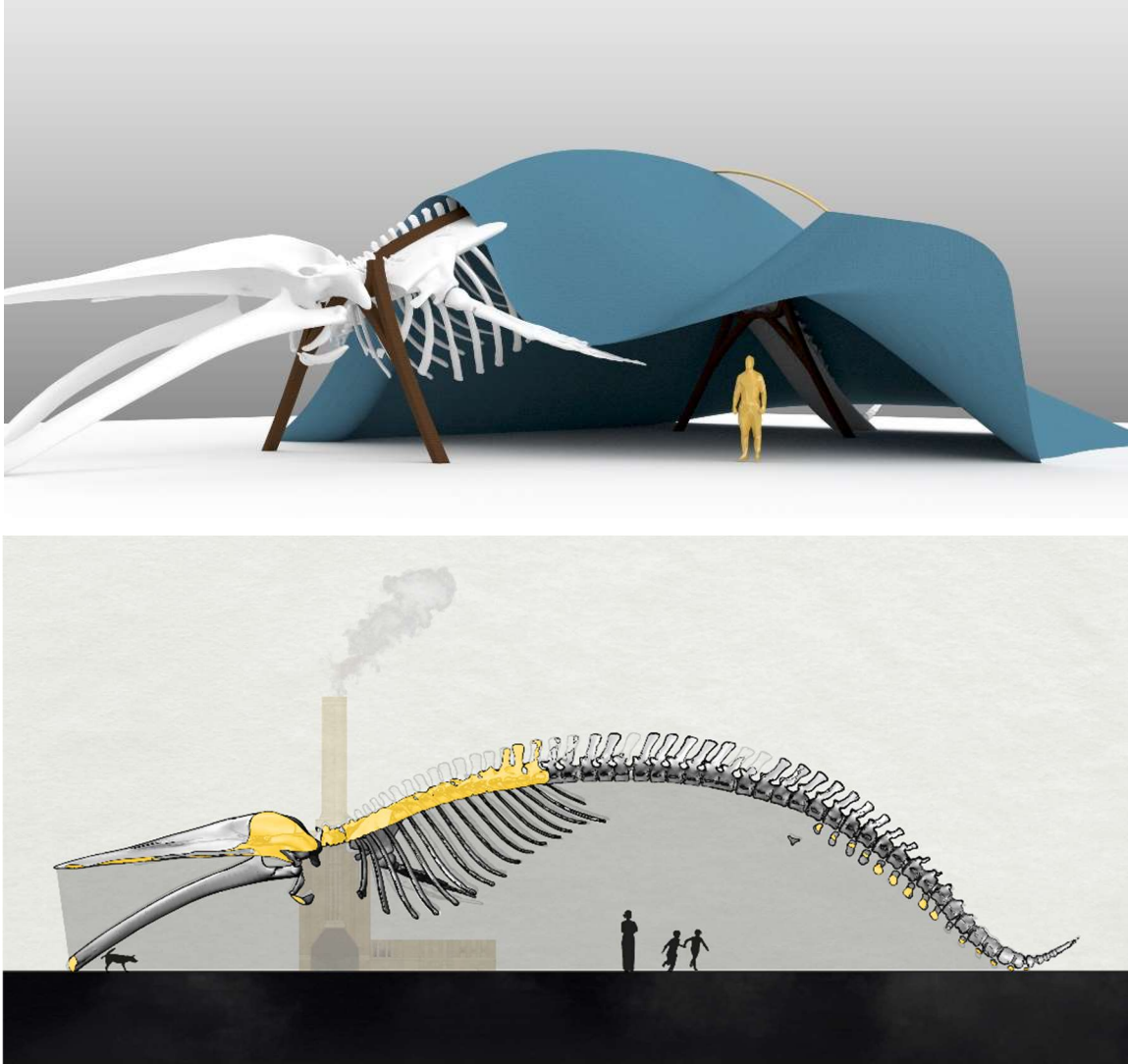
Figure 25. *Jonah's Cabin,* RSDU Series

*The last remnants I encountered came from a garden of water; its
body, dried up and swept away by the wind.*

*Might I become as the air within its absent lungs? Filling it with
breath and life?*
Who built this garden? How did it grow?

I imagined the new ways of living that might emerge when our sins finally catch up to us. Will territory, boundary, and invisible divisions remain? Silent interiors of exclusion. Will we continue to fight over claims to our own patch of dirt? When our property lines have all but faded away, who will draw the new lines? Should they be drawn at all?

These works take aim at the negligence of structures of residence; how long has the value of an empty apartment been greater than a human life?

The series' contained within *Residence + Residue* each began with a focus on new ways of living and experiencing the interior. Through mobile structures and a reconceptualization of the 'house as a machine for living in', I found myself also considering the negative effects of our current ways of life. Even with a removal of the conventional architectural condition, energy and resource consumption, inequality, climate change, waste, and more are still present. In reflection, many of the themes expressed in these speculations are subconsciously reflective of my frustrations with the industry of the built environment in its present state. In commendation of my process, these works were not created with the intent of critique; they simply emerged as an intuitive and conditional response to observation. It is here that speculative design can become a conduit for critique and a deeper expression of interiority for practitioners.

#2 E.DNS

REFLECTION #6

(from IDEC 2021 Virtual Annual Conference Presentation script)

*Eden, the garden of pleasure; paradise on Earth. To reside in the
Garden was a pure and privileged existence, contingent on
obedience to a higher order, Discipline of the mind.
But who had built the garden? How did it grow?*
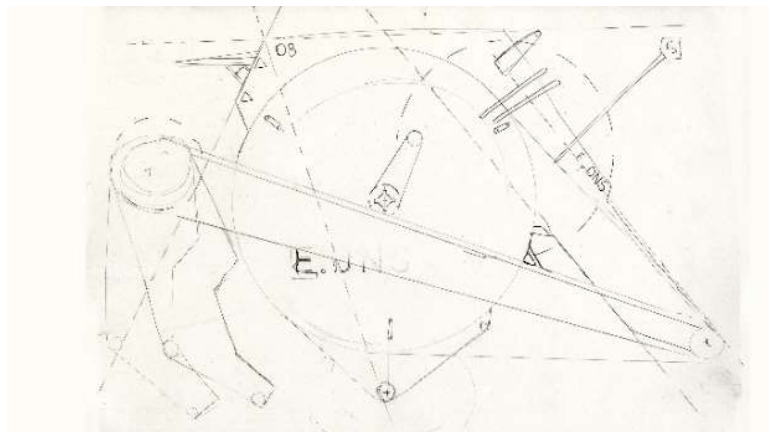
Figure 26. *E.DNS 08 – Composition sketch,* Eden Series

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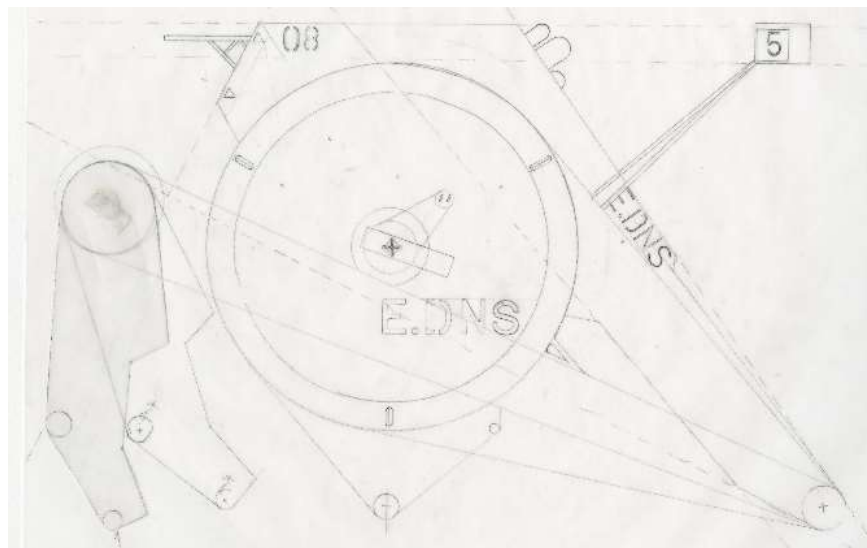
Figure 27. *E.DNS 08 – Composition draft*, Eden Series

Did it one day emerge, like myself, from incubation? All I knew was it had appeared before me, silent and ethereal. I set out to record this vision in line on paper. In observation, I committed to discover the secrets within; hidden somewhere between the lines I committed to the page. At first, I knew nothing, save for the letters engraved on its face. 'E.DNS' Naturally, I called it Eden.
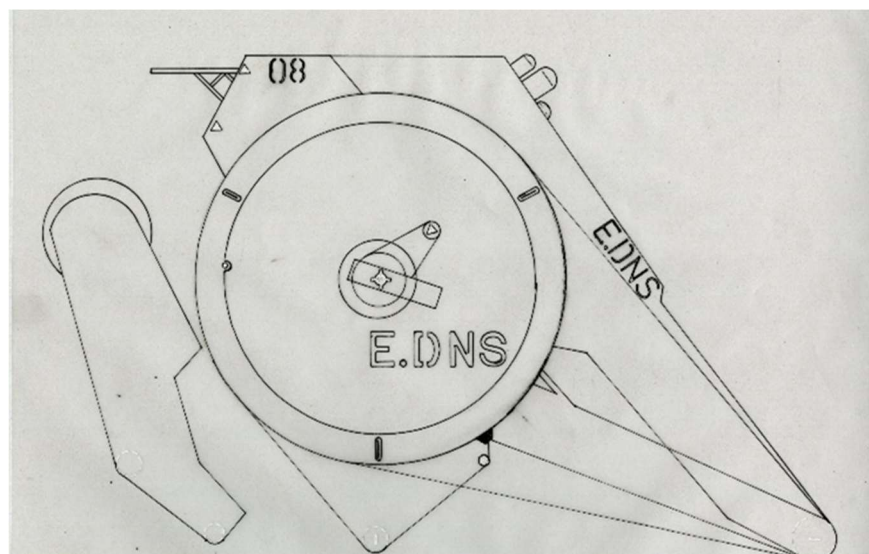
Figure 28. *E.DNS 08 – Data Trace #1,* Eden Series
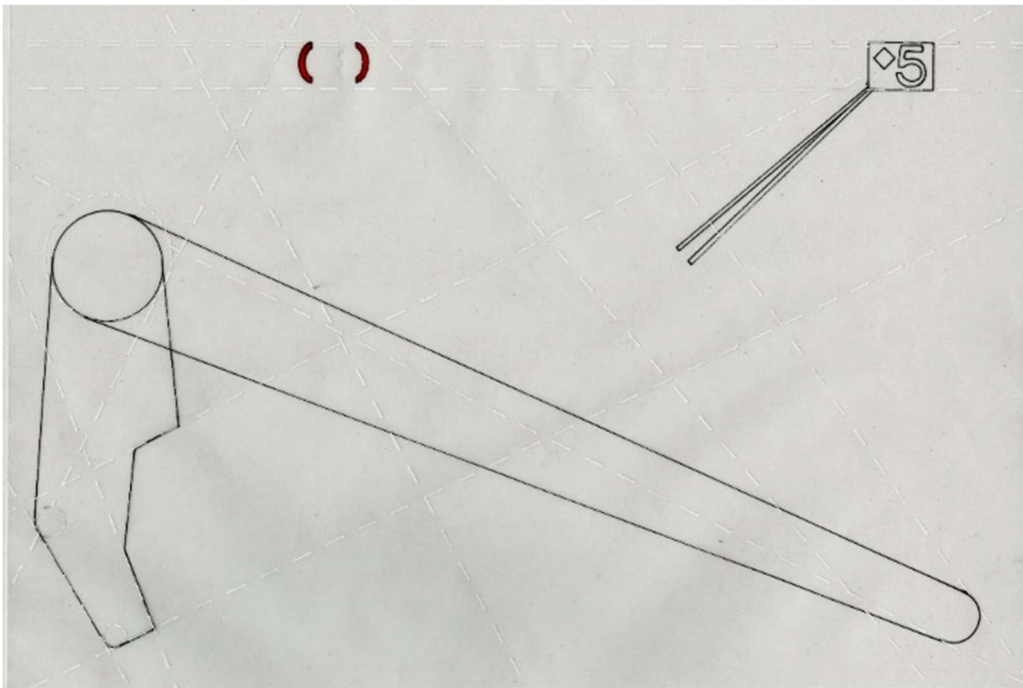
Figure 29. *E.DNS 08 – Data Trace #2,* Eden Series
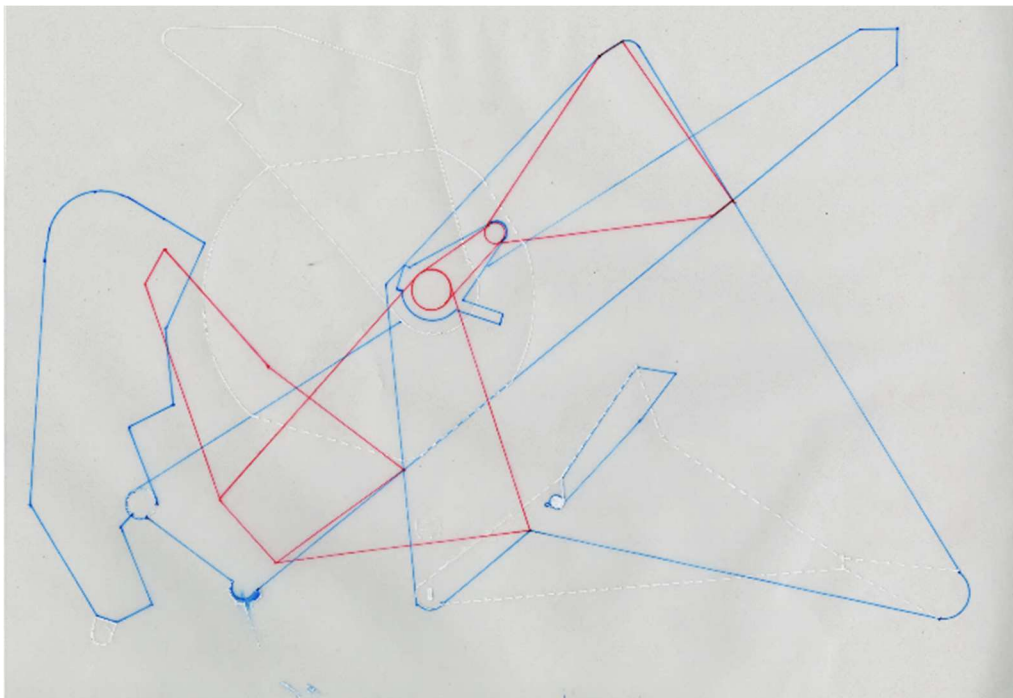
Figure 30. *E.DNS 08 – Data Trace #3,* Eden Series

Despite my analysis, the structure or machine before me was without dimension. Merely constrained and represented by the bounds of my perception. I knew that its scale was, at first, beyond observation.

It might fit in the palm of my hand, or perhaps between the mountain peaks at the edge of the world.

I observed its unwavering form, extracting a handful of layers of connection, searching desperately for meaning and understanding of its purpose.
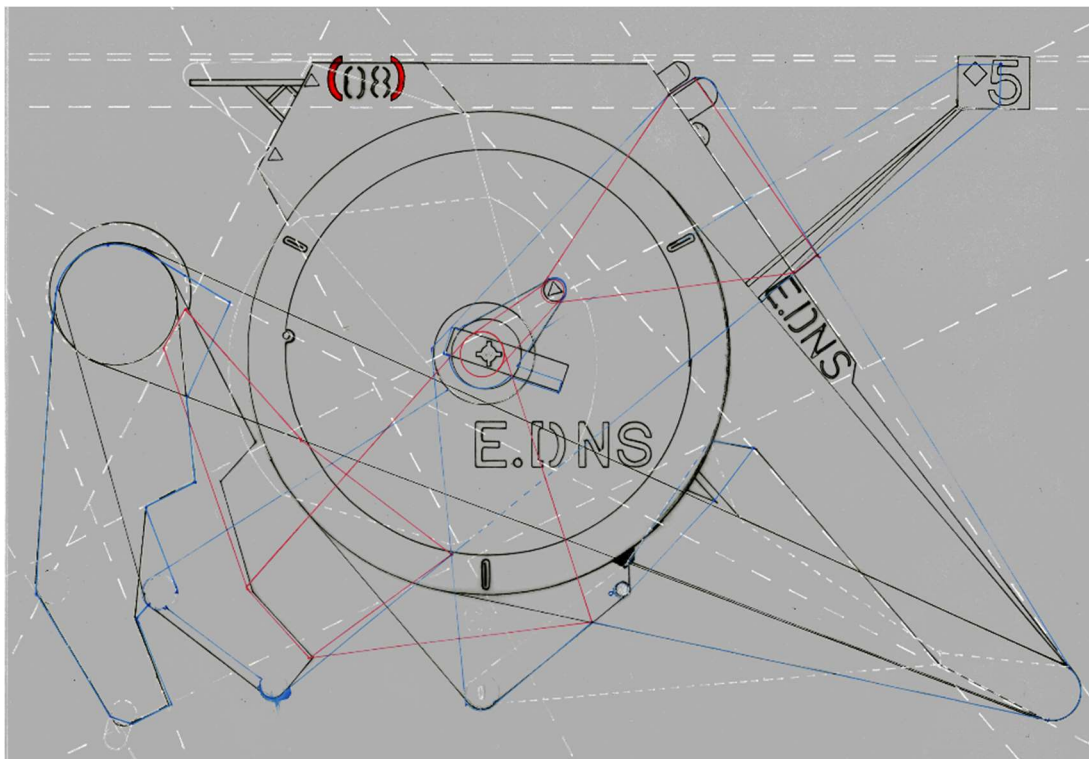
Figure 31. *E.DNS 08 Data Overlay*, Eden Series

Compositing these layers provided a developing image; a hint to the mechanisms that might exist underneath the shell or the mechanisms responsible for its creation.

I began to combine these fragments of information; a catalog of the lines, planes, and edges demarcating the bounds of its volume.
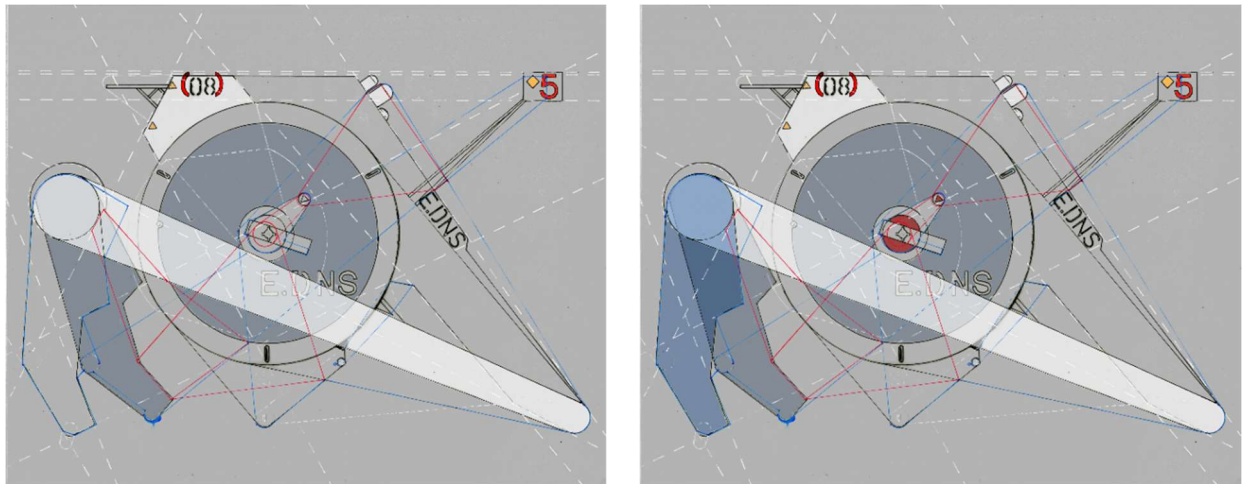
Figure 32. *E.DNS 08 Expansion 1 & 2,* Eden Series
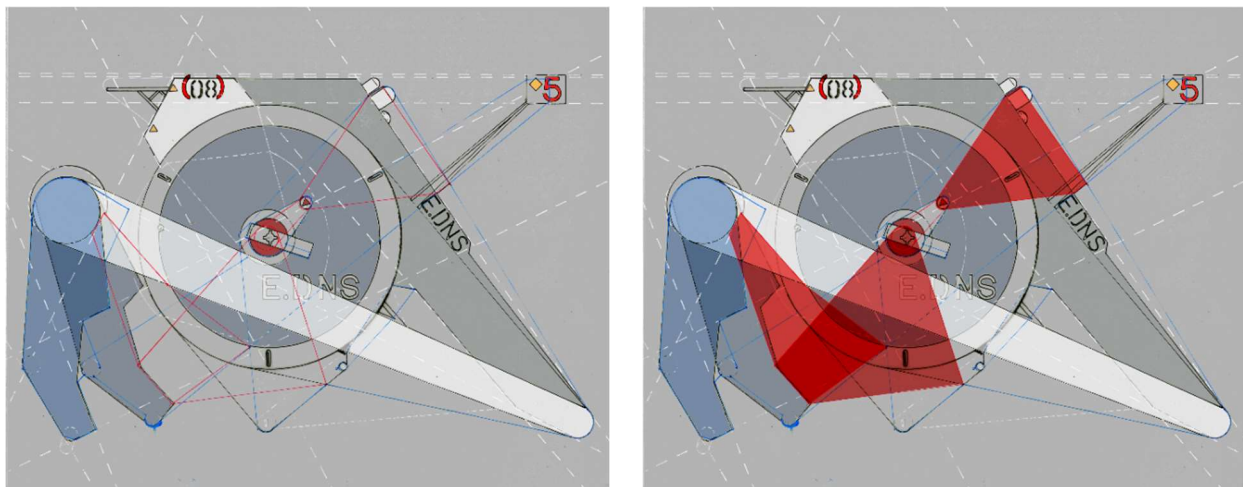
Figure 33. *E.DNS 08 Expansion 3 & 4,* Eden Series

Each composition, richer than the last, still eluded definition. What was its purpose? Was it simply an empty husk? a solid mass? Might it be reclaimed for a new use?

As I pondered these options there came all at once a sensation of life as energy and air surged toward its body. What once lay before me, lifeless, began to creak. Its shell beginning to ripple and multiply; its form expanding, spinning, shifting in place.
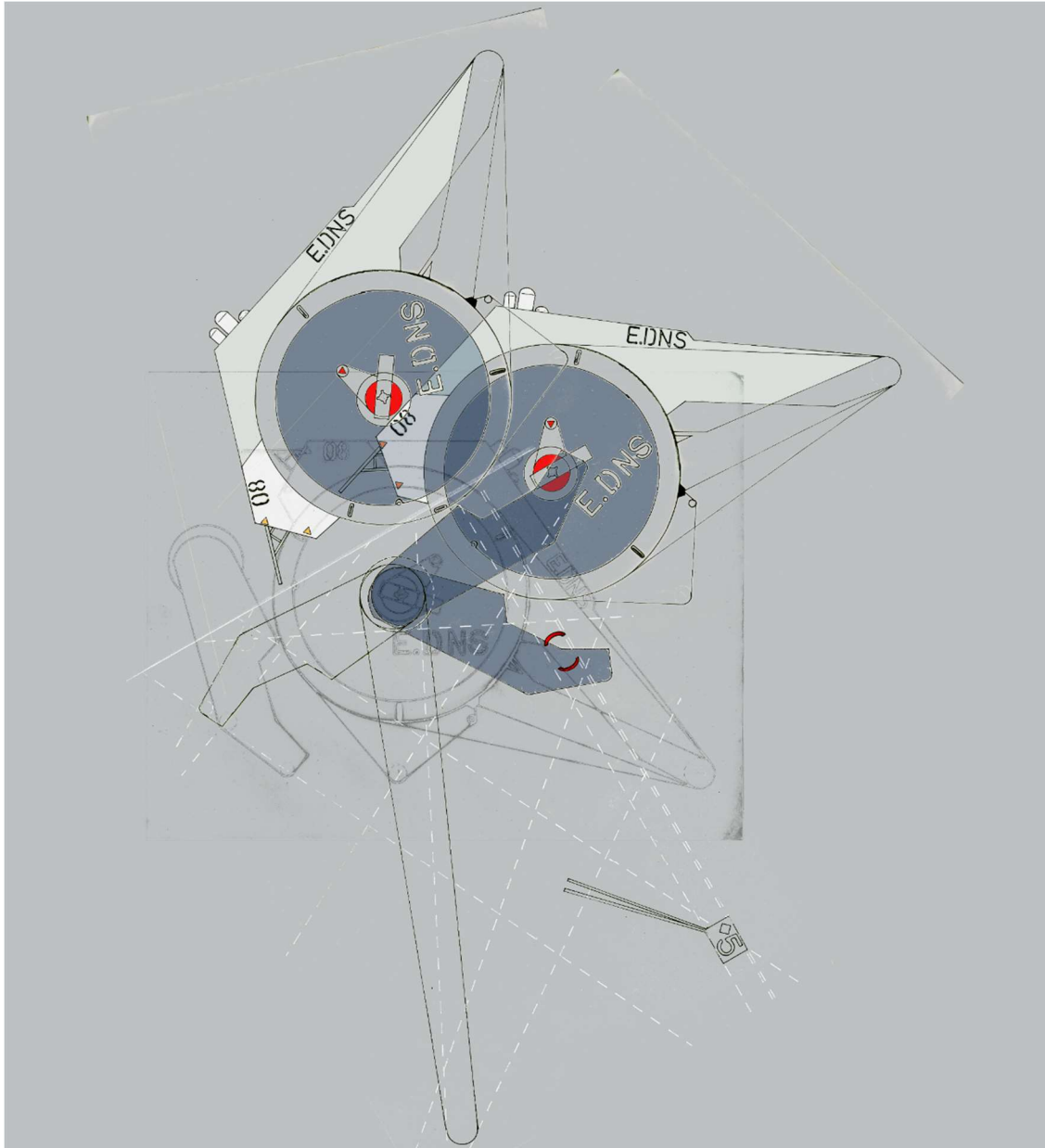
Figure 34. *E.DNS 08 Expanded,* Eden Series

*The previously static mass began to rise up, balancing upon a
central spire. Once again, finding equilibrium, it began to transform
Twisting, rotating; leaving in its wake echoes of a previous
existence as if testing its own temporal bounds; Mirrored bodies of
the original scattered in all directions, disappearing across the
horizon. I focused my attention toward the figures that remained
fixed in place before me.*
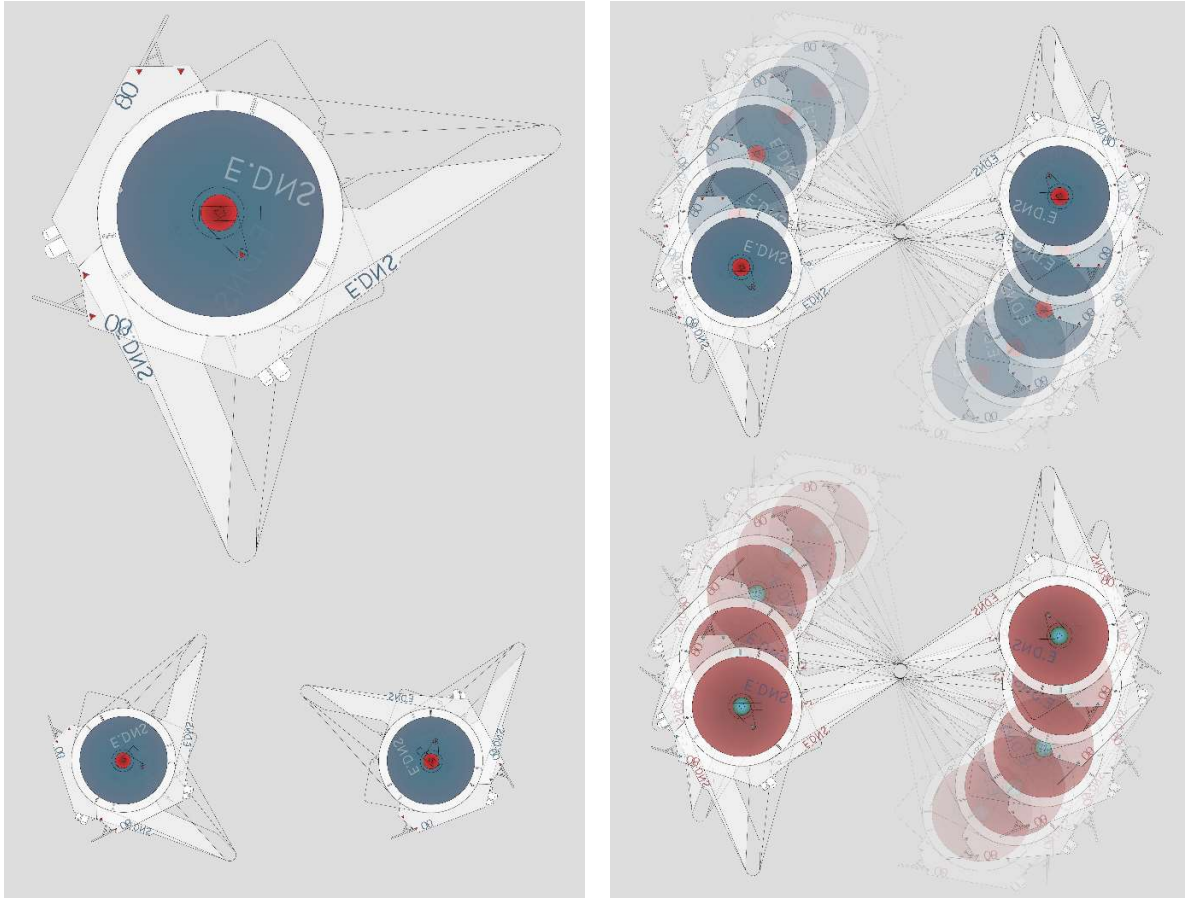
Figure 35. *Spinning E.DNS: Pod and Gemini,* Eden Series

As I witnessed their metamorphosis, I was drawn toward their cold embrace.

Surely, within that armored shell there must be protection, shelter, safety, and isolation from the uncertainty of my present condition. I sought entrance; refuge within the construct before me.

But there was no entry to be found, so I returned to my studies, hoping to discover something hidden between the lines on the page. Having no luck in gaining access to these structures; I began to wonder:

Was I already entombed within the walls of the Garden? Was I retreating from the doubt and insecurity I felt in pursuing a process, fiction, and the unknown? Was this interior? Did it really count?
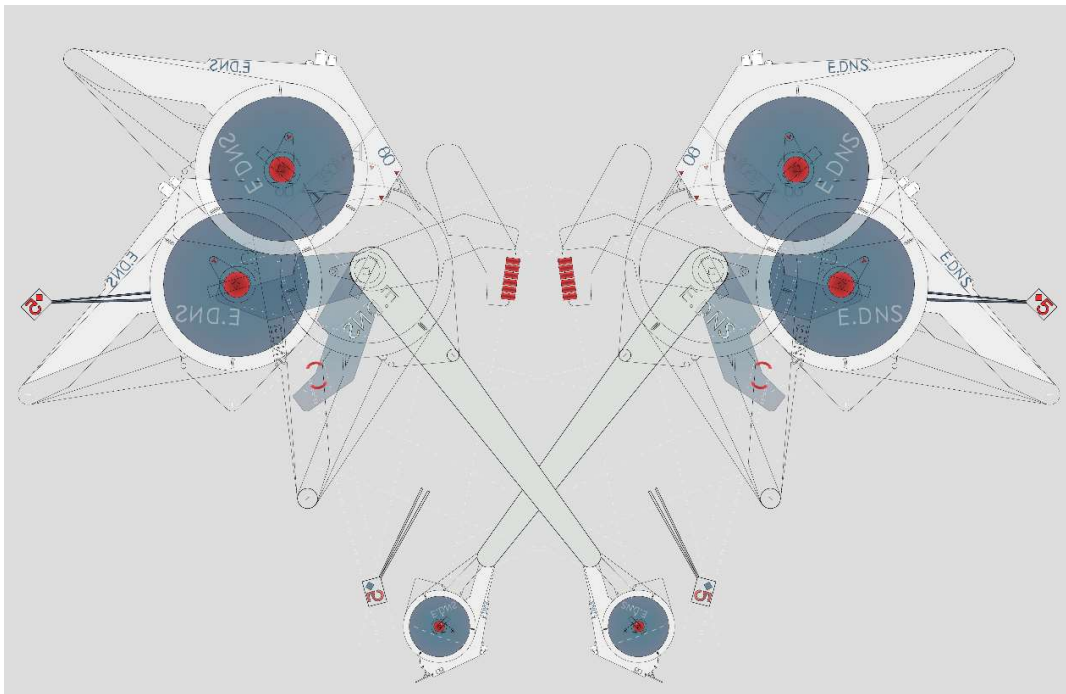
Figure 36. *Narcissus*, Eden Series
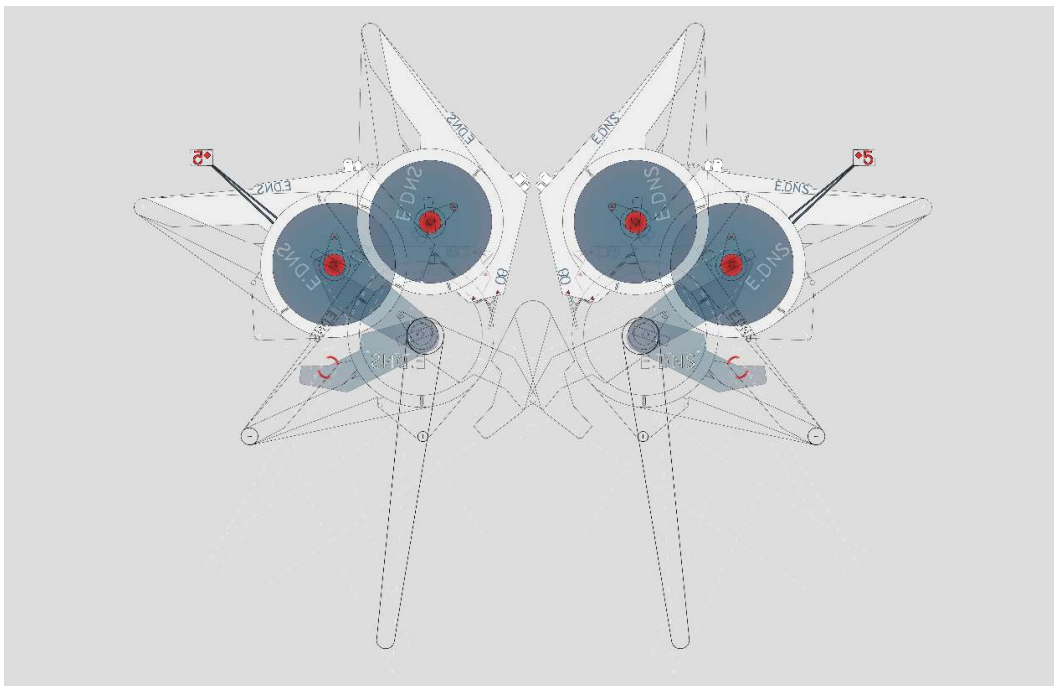
Figure 37. *Icarus*, Eden Series

In search of answers, I resolved to develop the form and dimension of my subject to model the essence of its condition. Just as the lines I had drawn from the first Eden, I leapt headfirst into recording the first conceptualization that lingered in my mind. It came in layers, just like the drawn compositions, aligned around common nodes.

In my first conceptualizations, the form of Eden had defied gravity; There was no cardinal origin, save for the plane of its existence on paper and on screen. As it now sat in front of me, the presence of gravity imparted an altogether unexpected preference of orientation. It had obtained a new equilibrium.
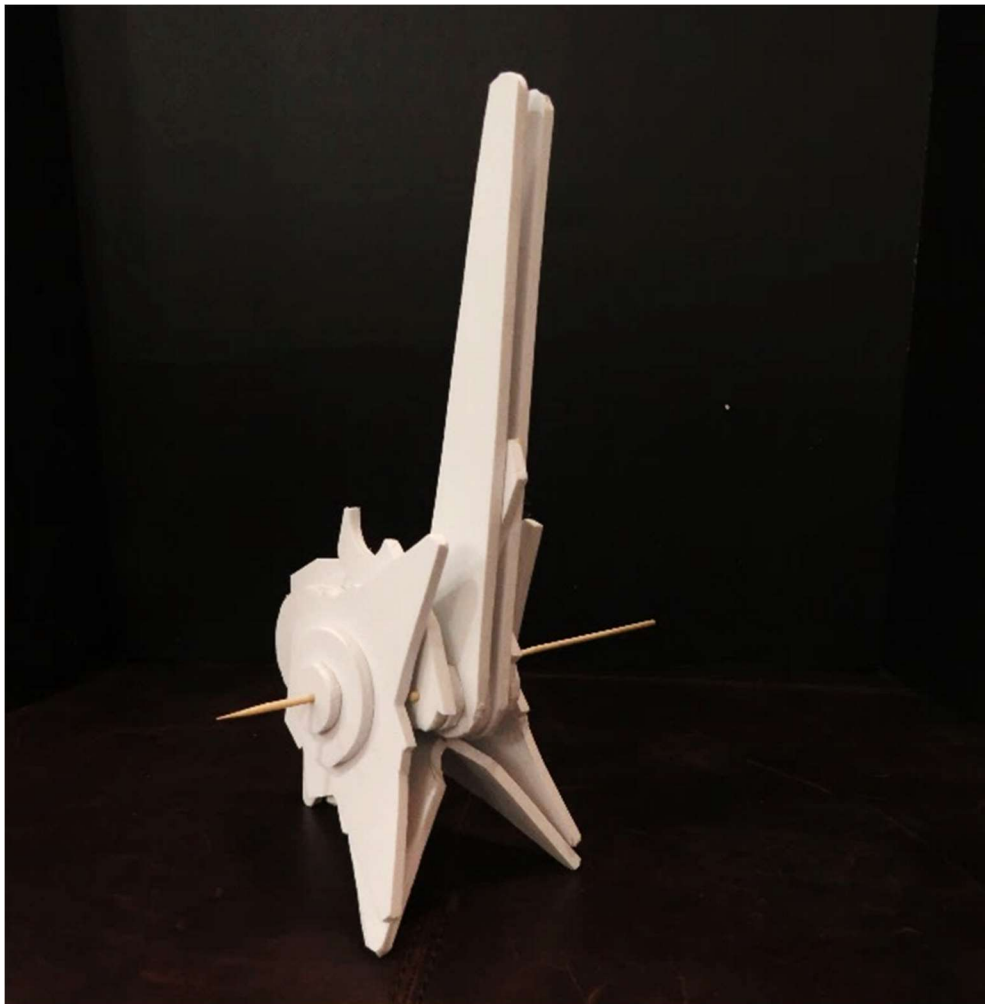
Figure 38. Sketch model of *E.DNS 08*, Eden Series, ¼" foam sheet, 4" x 12" x 14"

Figure 39. Sketch model of *E.DNS 08*, Eden Series, ¼" foam sheet, 4" x 12" x 14"

As I turned over the model in my hands, Eden slipped from my grasp, pulled down to the surface in front of me.

As it came to a still, anchored by that unseen force, it began to grow. It first rose to meet me as my equal.

No longer had it met my gaze before it rose again, towering above me threefold.
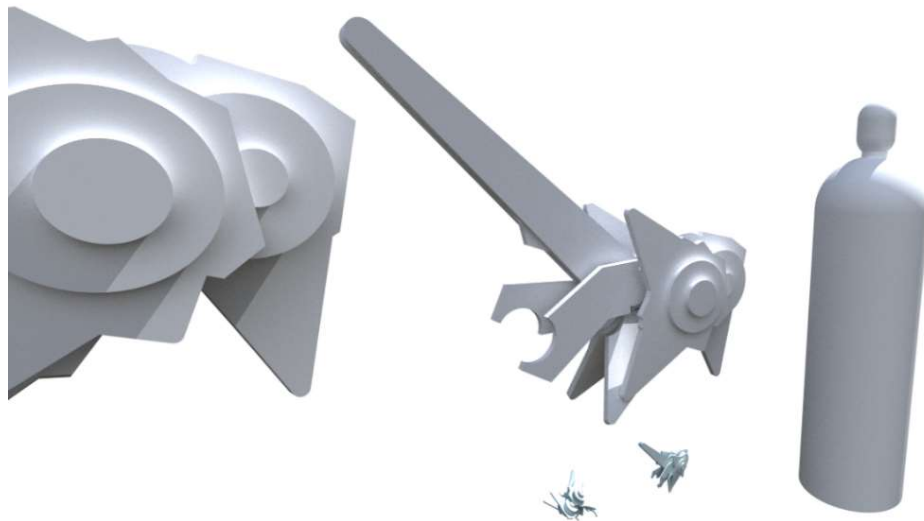
Figure 40. Digital sketch model (Cropped) of *E.DNS 08 Multi-scale*, Eden Series
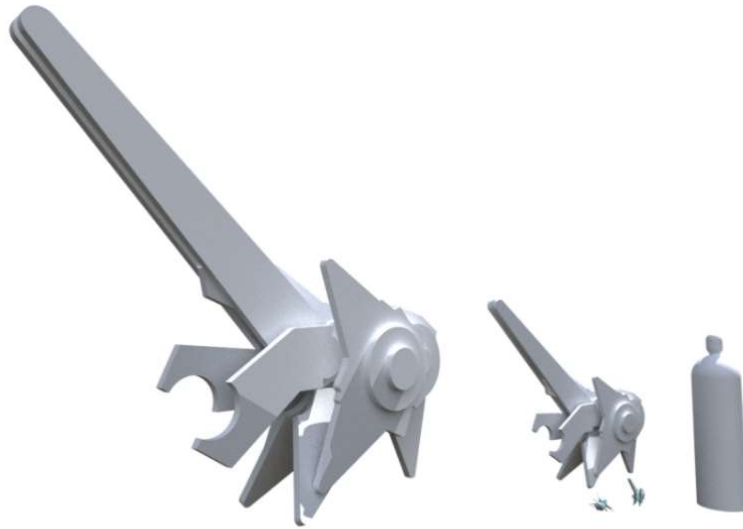
Figure 41. Digital sketch model (Full) of *E.DNS 08 Multi-scale*, Eden Series

I imagined draping a cloth over its mass, employing its body as shelter from the world.

It again began to shift, only now constrained by the nodes I had identified in the speculation of its construction.
Limbs swung in controlled arcs and spun freely around invisible centers of rotation, mapping out a range of motion.
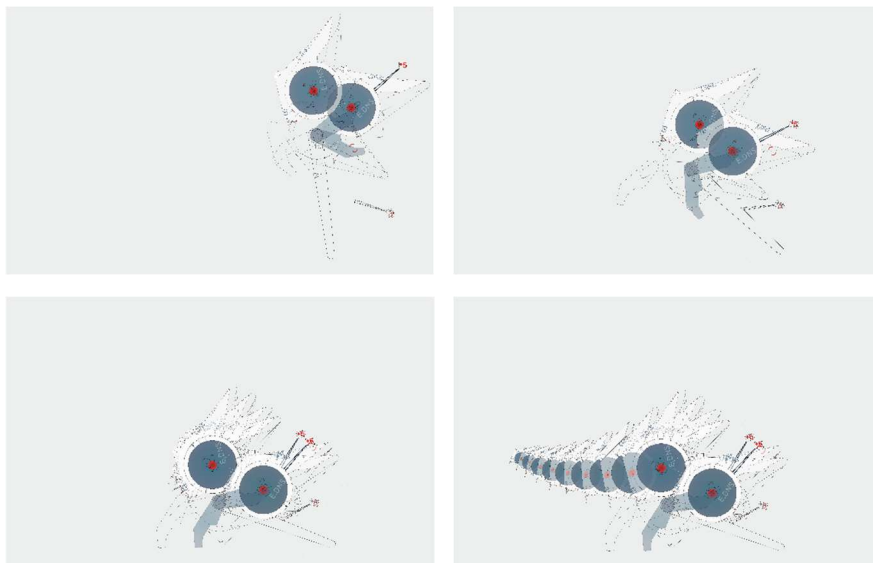
Figure 42. Still frames from Animation - E.DNS Expanded

Yet again, before I could even finish my thought, it had risen high above me, now casting a shadow upon the landscape that captured me where I stood.

As the structure or machine before me ceased to grow, it began to rise; lifting up as it had before to once more defy that unseen force.
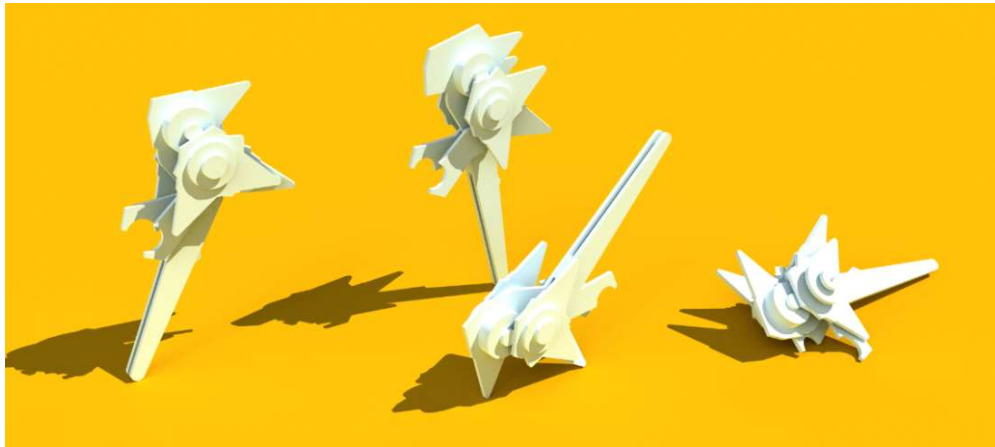
Figure 43. *Lifecycle -* Model iterations on *E.DNS 08,* Eden Series

Suspended above me, its movements slowed; each shift becoming progressively labored before silently coming to rest upon the landscape. As a shipwreck upon the sand.

The silence of its fall, ethereal and unnerving; a sense of grace.
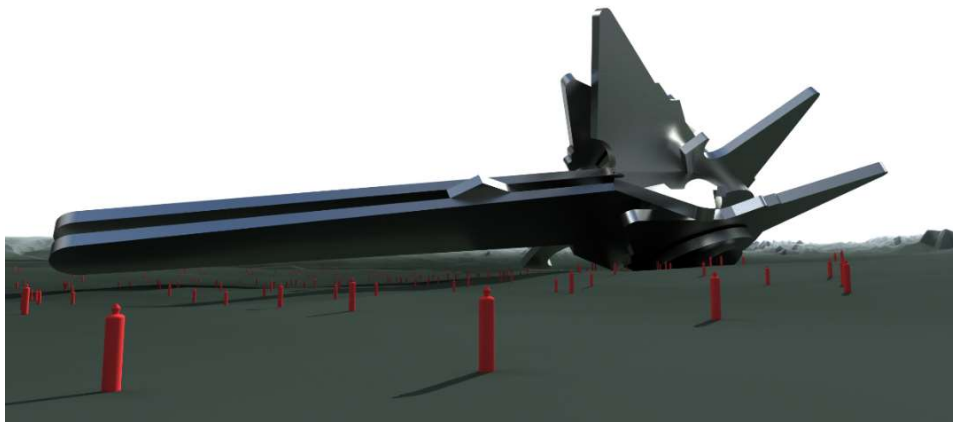
Figure 44. *Stranding – E.DNS Crash Site Documentation 1,* Eden Series

Torn from my focus, I noticed the figures clamoring around me; gravitating toward the lifeless body anchored to the earth.

The figures began to gather beneath its motionless limbs, finding shelter from the sun and some pleasant conversation.
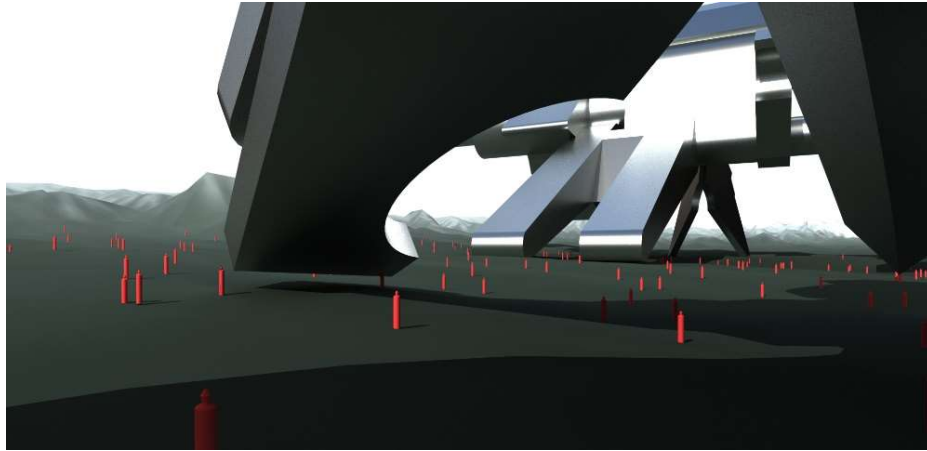
Figure 45. *Stranding – E.DNS Crash Site Documentation 2,* Eden Series

With its shadows cast upon the landscape as the lines I had cast upon the page, hope was lost to uncover its motive, I remembered the mirrored forms that had escaped across the edges of the horizon…
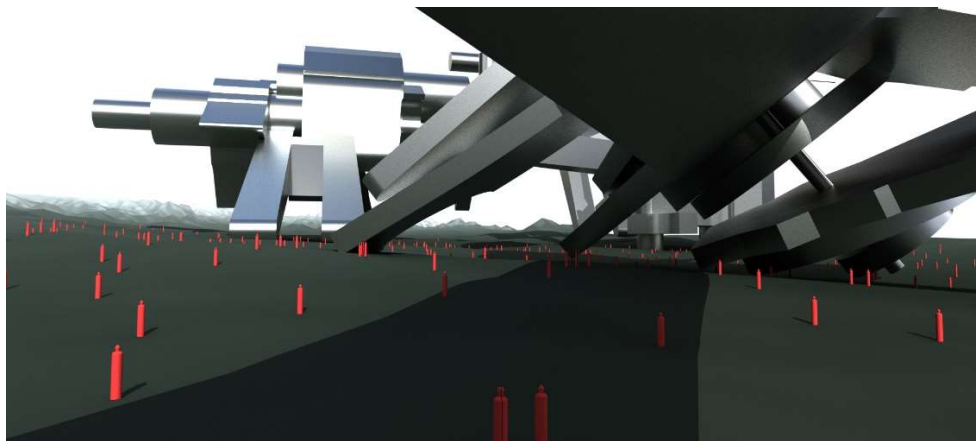
Figure 46. *Stranding – E.DNS Crash Site Documentation 3,* Eden Series

Had they too come to rest?
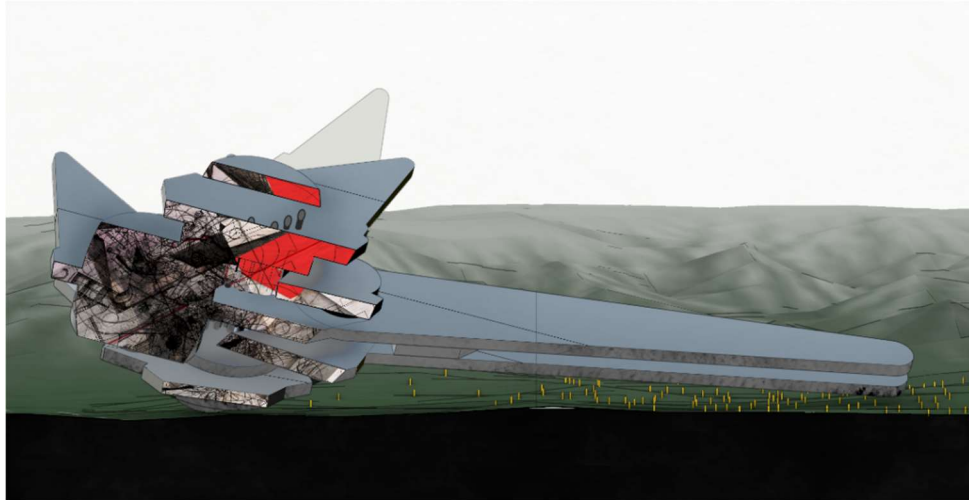
Figure 47. *Stranding – E.DNS Crash Site Section*, Eden Series

I set off in search of the other fragments of Eden, hoping that one might provide the understanding I pursued in my observations.
It was not long before I encountered some children of Eden, their forms betraying their origin. The first, like its progenitor, had come to rest but retained life.
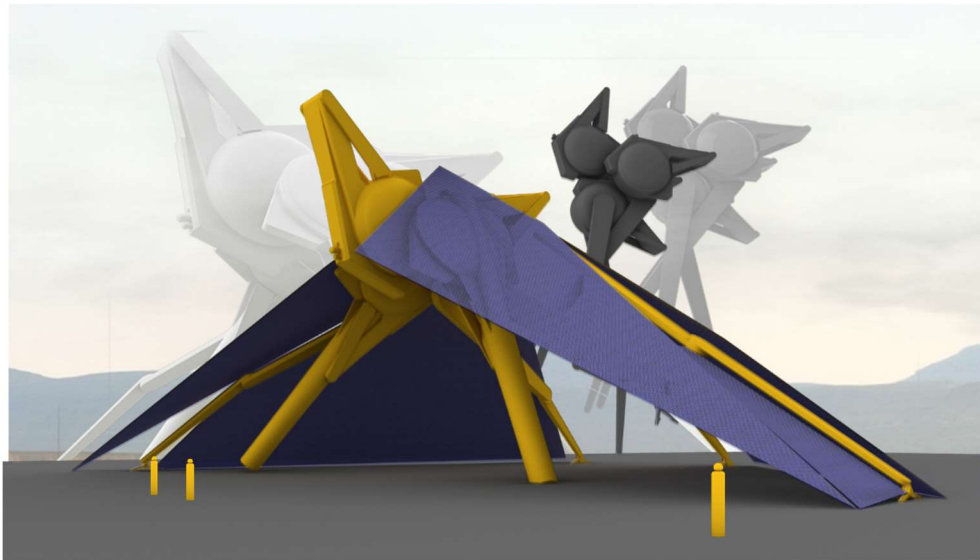
Figure 48*. Landing – E.DNS 08 Shelter*, Eden Series

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It offered the same shelter as the first garden, but freely given as charity to those who dared to reside beneath its massive frame.
Another wandered nearby; restlessly meandering across a distant horizon as tiny figures buzzed around its feet.
I observed the first structure before me. Like its origin, I found no entry and no answers, only further questions.
Who made this garden? How does it grow?
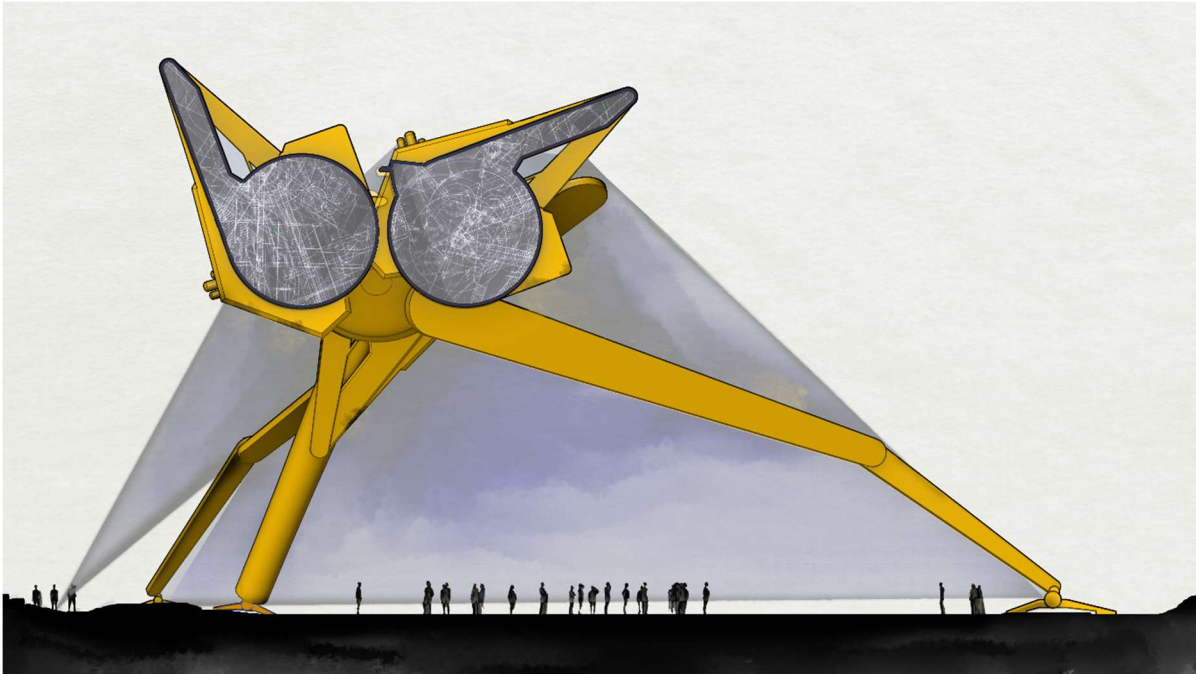
Figure 49. *Landing – E.DNS 08 Shelter- Section*, Eden Series

I thought: Perhaps, it is I who built the garden and now find myself lost between its walls.

These figures of refuge, each a fortress protecting from the uncertainty outside their influence, might they also be 'prisons, constructed of conventions and illusions' that we return to with predictability? (Taylor, 2006, p.342)

Or perhaps I am merely standing at the Garden gates, barred from entry.
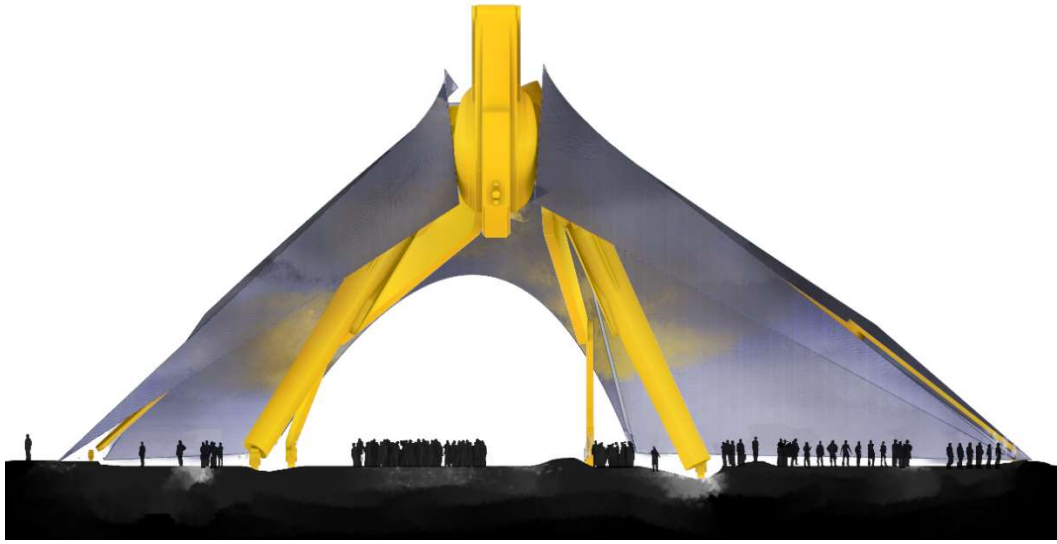
Figure 50. *Landing – E.DNS 08 Shelter – Front Elevation*, Eden Series
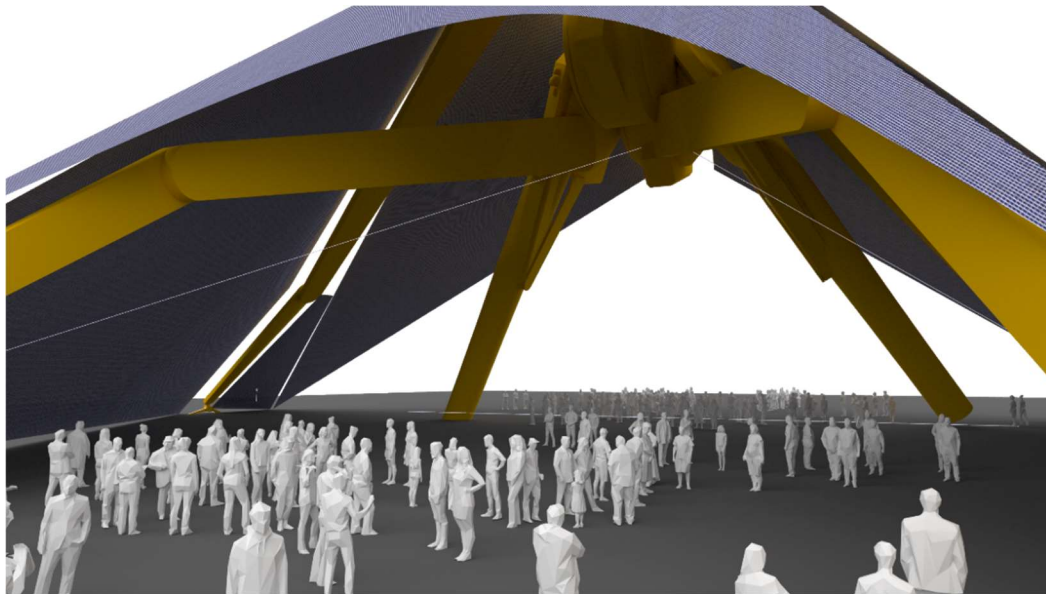
Figure 51. Landing – *E.DNS 08 Shelter – View from Below*, Eden Series

The Eden series (E.DNS) began as a humble sketch with four randomly selected letters. I had just purchased a template for lettering and, wanting to try it out, I sketched out a quick composition following the techniques established at the genesis of my explorations. (Figure 26, p.49) The primary driver remained intuition, letting my mind and my hand work together without inhibition. I began by enlarging the sketch from a

piece of 6" x 9" sketchbook paper to a sheet of 11" x 14" heavy trace paper. It was not a 1:1 translation but a proportional interpretation based on the relationship of elements and nodes used to construct the original sketch. It was an evolution of the original.

The emergence of each of these iterations was the natural product of a recursive process of translation. Drawings produced by hand drafting techniques were scanned into the computer; digitized in a new interior space. The drawings were edited, composited, reconfigured, and traced with vectors. The new versions could then be printed, returning home trapped to the bounds of the paper. I had attempted to develop a model within the digital space by tracing over one of the compositions. I struggled with the first digital translations of what I imagined the form of the E.DNS character to be. (Figure 52, below)
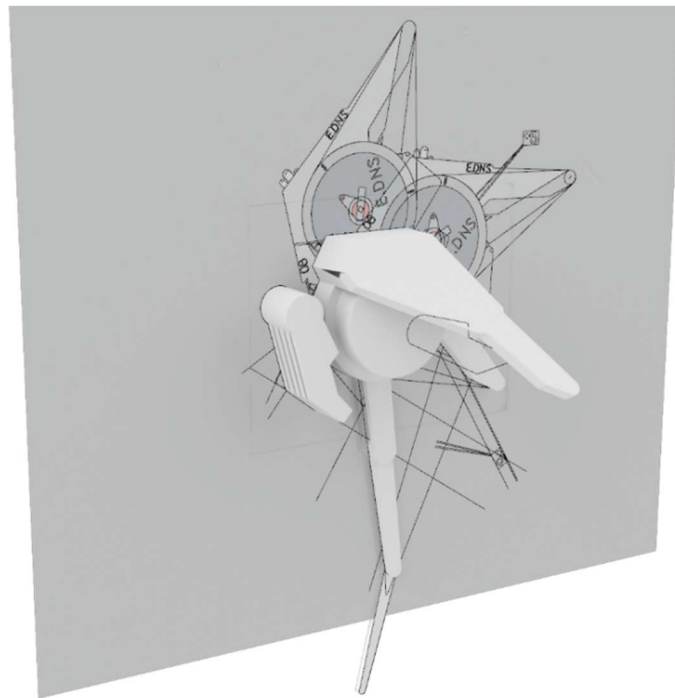
Figure 52. Early digital model and tracing

The sketch model (Figure 38,39) was produced spontaneously as I found myself stalled in the process. Using printouts of the compositions, I traced rough profiles into ¼" craft foam sheets and began to stack and layer section-slices to build up the form.

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Connection points, nodes, and pivots were attached by a bamboo skewer axle to simulate the range of motion that I imagined the construct to possess.

Figure 53. Still from recording – scale modelmaking process
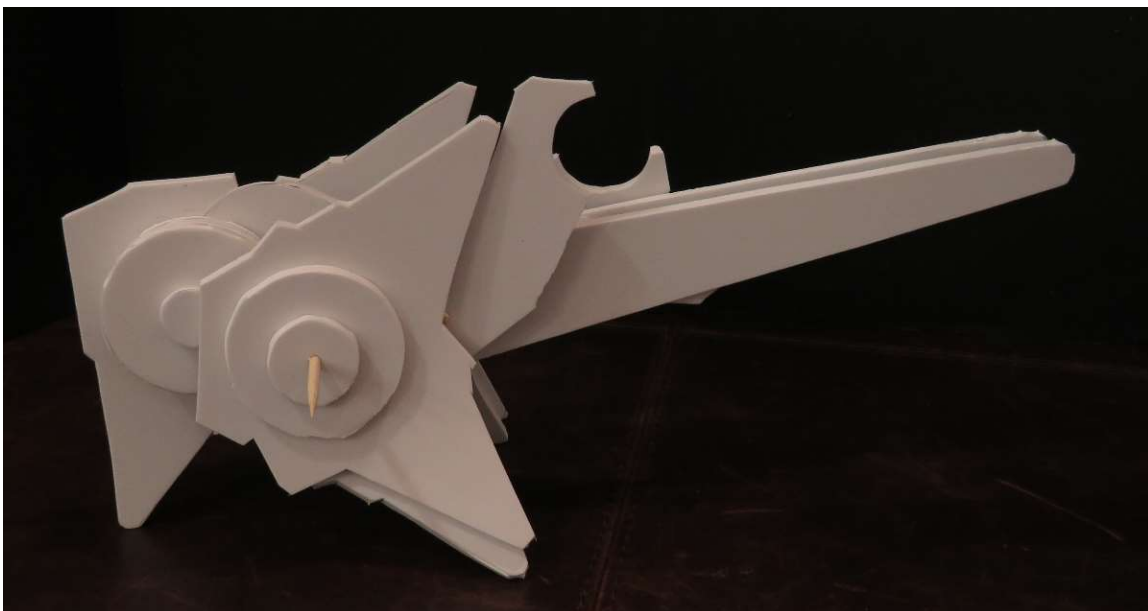
Figure 54. Assembled sketch model, ¼" foam sheet, 4" x 12" x 14"

Figure 55. Stills from recording - Measuring sketch model for digital translation

In a continuation of hybridizing analog and digital process, I disassembled the sketch model to measure its components. I carefully measured and reconstructed the sketch model to scale within Rhinoceros 6, a CAD and modeling program. By digitally replicating the model I was now able to translate and reproduce any physical manipulations of the desk model. The digital format allowed me to visualize the model at desk, room, and structural scales. I could evaluate the relationship this figure might have to viewers or occupants at each scale. Additionally, I could explore methods of construction with real material to potentially achieve a scale construction of the model.
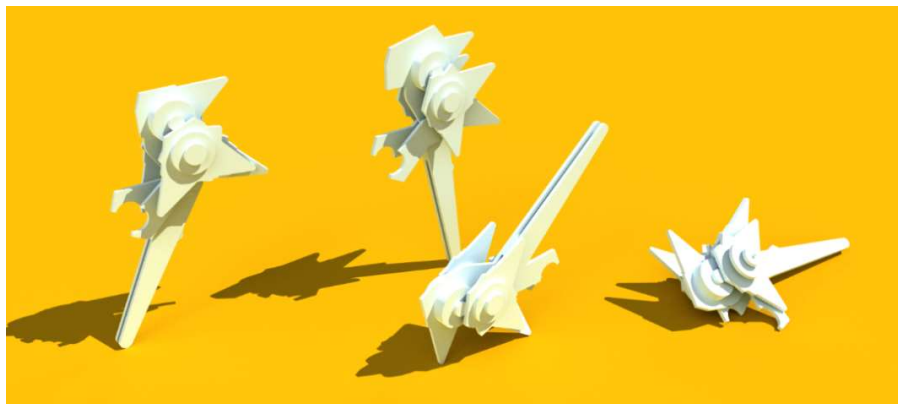
[Figure 43. *Lifecycle - * Model iterations on E.DNS 08]

It is my intent for future development to explore these concepts at larger scale to better understand how they might be experienced as an intervention of shelter.
The E.DNS concept revolves around an internal generation of entities and structures as caretakers. These figures provide shelter, warmth, protection, community out of free

will. They cannot be owned or directed; they go where they are needed most. They emerge as a reaction to a centralized and authoritarian provision of architectural space.

The explorations shown here emerged from a single sketch shaped by intuition. There are a number of sketches for E.DNS, other constructs and machines awaiting a similar development. Each figure supports a continually developing internal narrative and alternate world space where the urban and the architect are absent, and the environment is a collective of boundary conditions mediated by machines and connection with others.
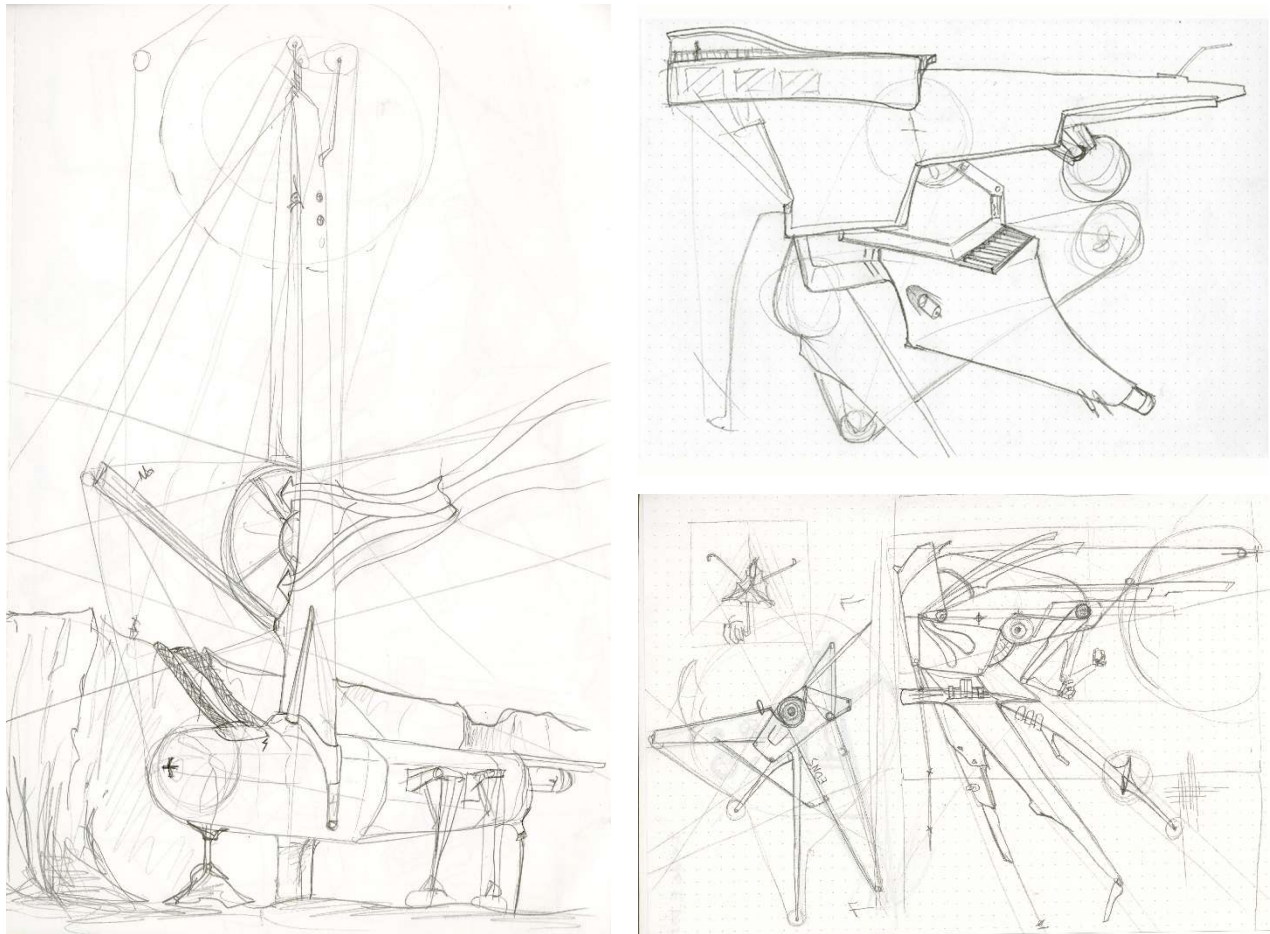
Figure 56. *Various sketches for future E.DNS*, Eden Series
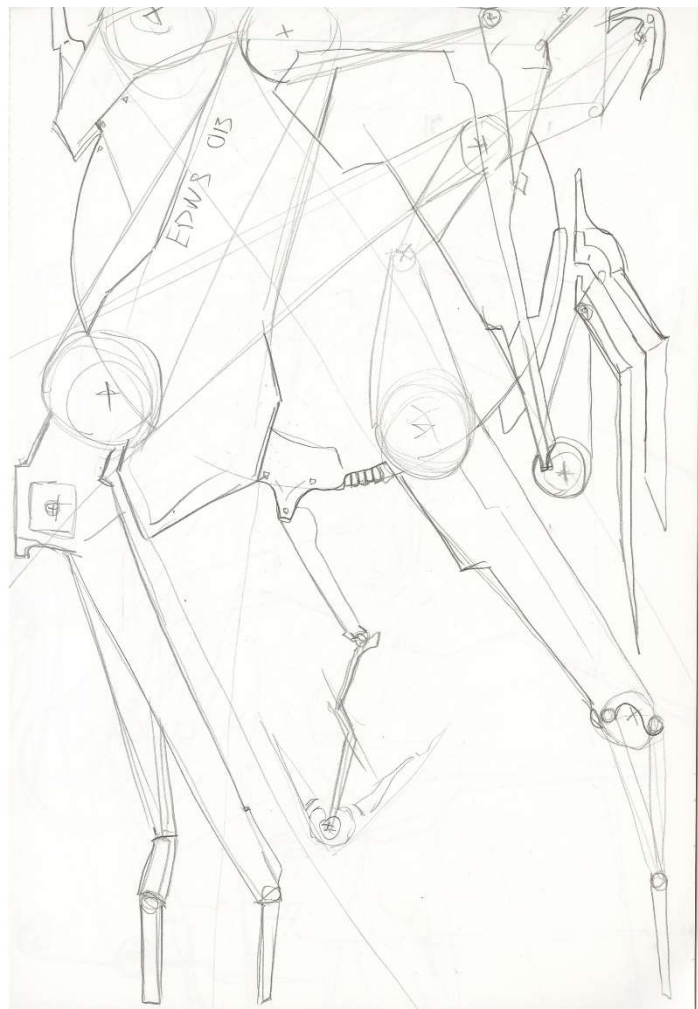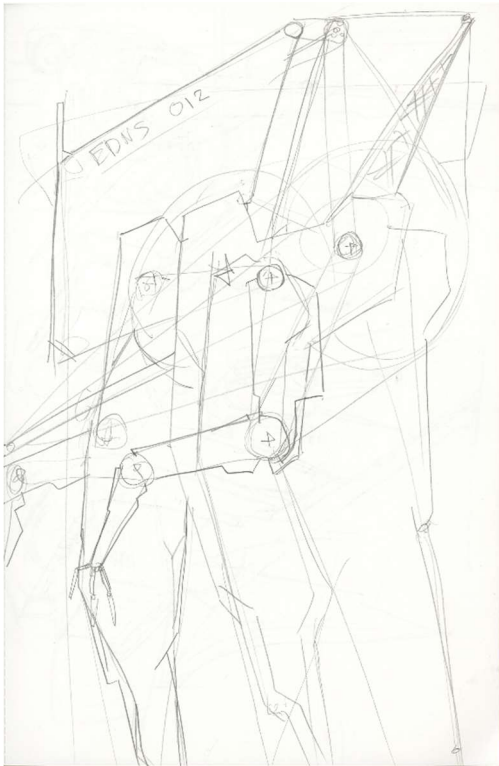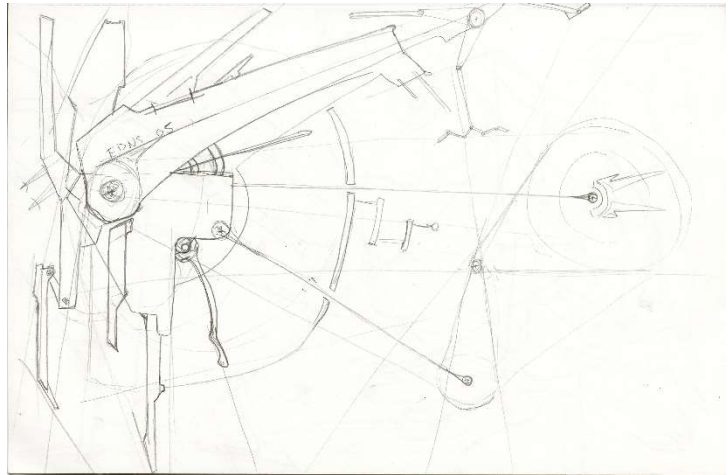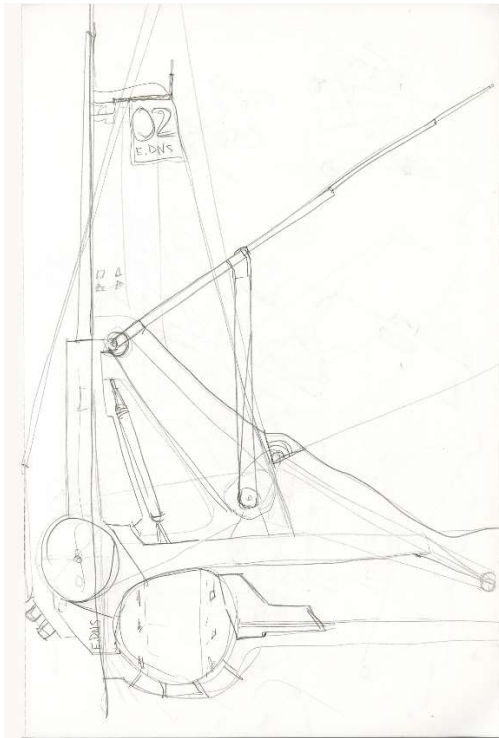
Figure 57. *Various sketches for future E.DNS cont.*, Eden Series

REFLECTION #7

(from IDEC 2021 Virtual Annual Conference Presentation script)

Having at last come to the edge of perception, I looked within, at last, to observe and record the mechanisms responsible for the creations I had encountered.

Each time I peered inside, a new image revealed itself; Each record capturing a small fragment of the core of the machine.
Glimpses in time, each image contained a single, infinitesimal sliver of the mechanism's history and purpose.

Each sliver was stitched together revealing impossible connections, unknowable functions, and a sense of existence beyond my observation.
My records, once again, provided no answers, only questions.
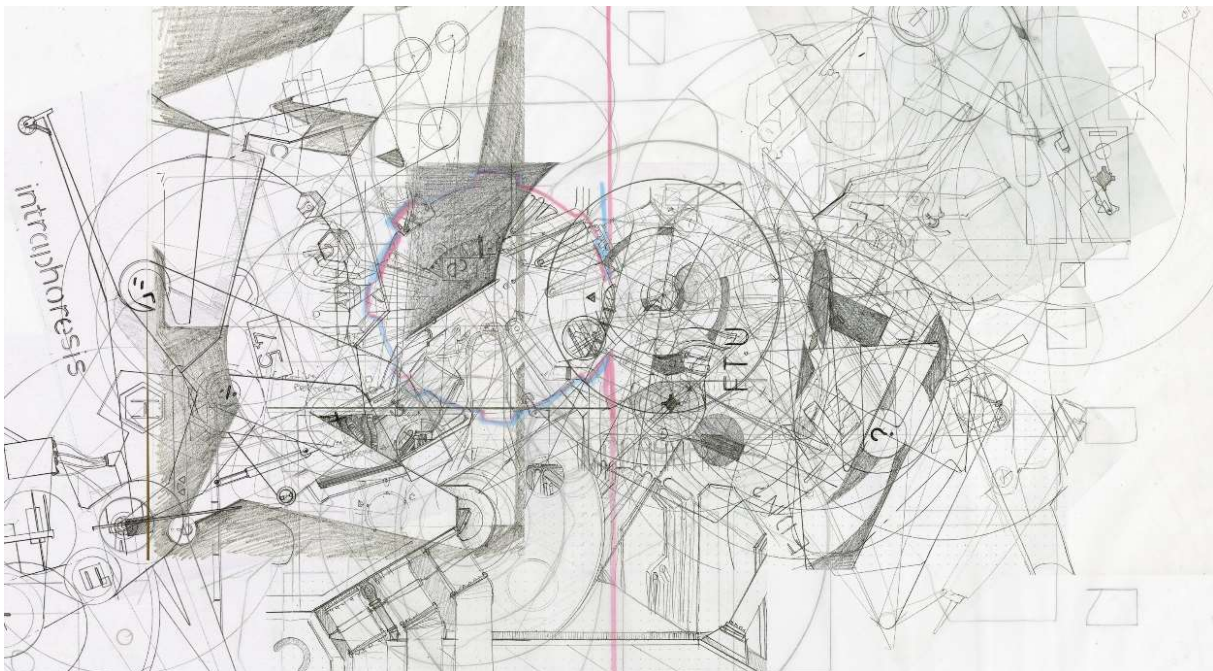
Figure 58. *M-Turbine #1,* Mind/Mirror Series

So, how can one capture a process that is so intimately entangled with one's existence? Wrapped up so completely in the interior of the mind and the soul?

I realized, as I pursued and reflected upon my own process in action, that speculations are not just attractive, self-indulgent fantasies; They are the necessary foil to the realities of construction, practice, and the built environment.

They are experiments of interior culture and the individual, searching for meaning in a discipline of indefinite multiplicity.
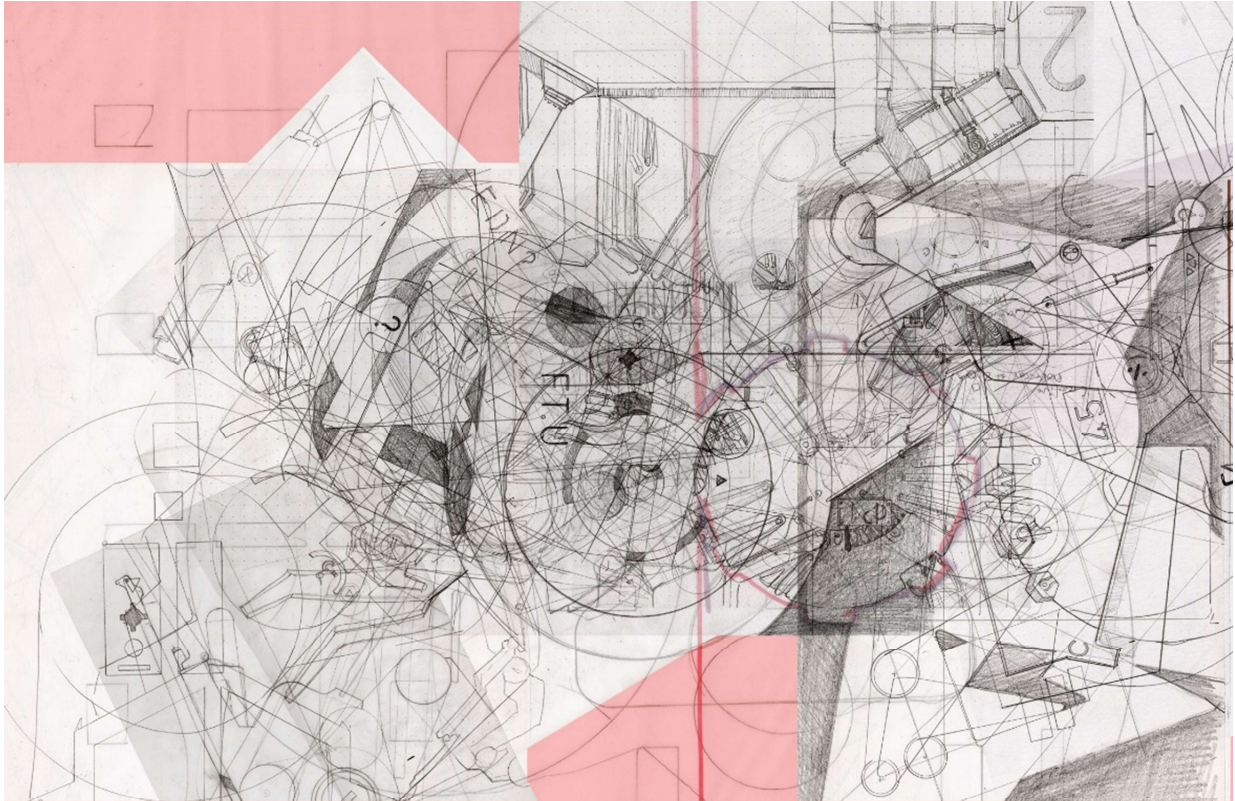
Figure 59. *M-Turbine #2*, Mind/Mirror Series

These drawings have come to chronicle my thoughts; Each drawing capturing a small fragment of my interior process.

The narrative threads were central to challenging my own concepts of environment through speculation on the meaning of residence in a number of abstract contexts.

The speculation began as one of flight, motion, distance, and escape surrounding the events of this pandemic that interrogated my own preconceptions about how we discuss residence and existence in world plagued by inequity.
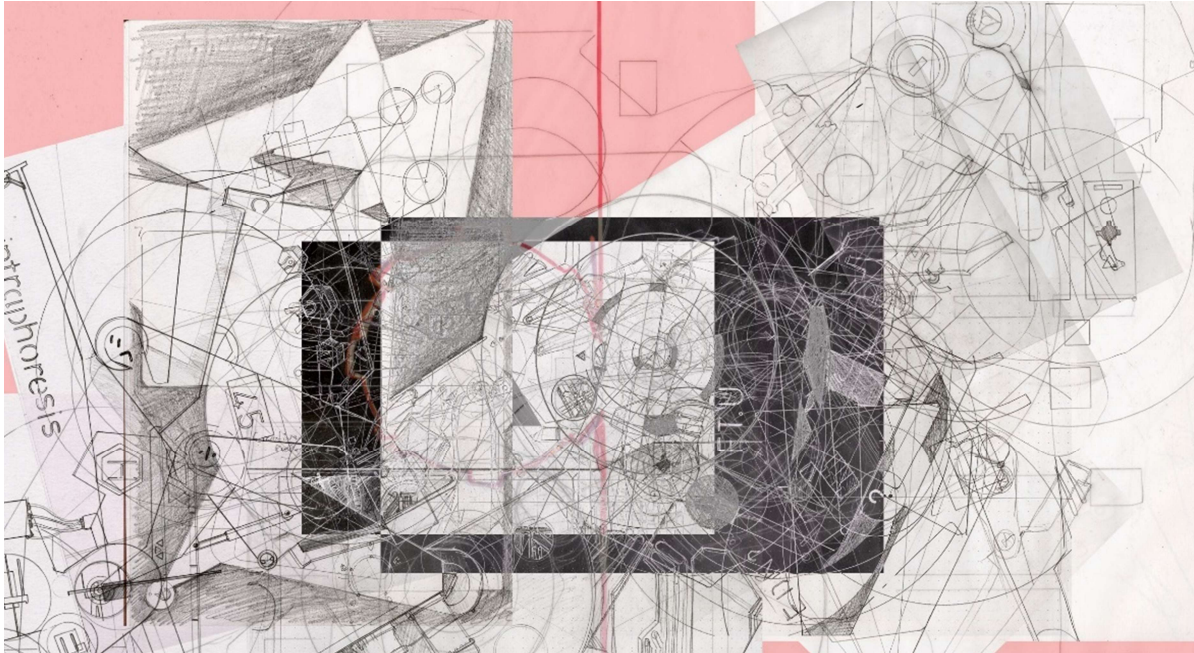
Figure 60. *M-Turbine #3,* Mind/Mirror Series

What role do we play, as designers, in the propagation of inequality for income, housing, and social mobility?

As more than ever, denizens of our country and those around the world are forced to find shelter outside of the limited scope of our practice.

Concepts of residence in design are historically privileged; a rendition of existence that is not attainable for most.

So, when we speak of residence in design, are we designing THE residence as object or designing FOR residence?

What I have presented here today is the interior of my process; Fragments of myself that I might propose to you all as a peek inside my mind.

In conclusion, I ask once again … are these interiors?
I think so, but I'll let you know.

What does it mean to live inside your head? What would it look like? Would there be rooms? Furniture? When I looked inside, I saw assemblies and impossible machines. The Mind/Mirror series is a chronicle of my creative thought process: sections and

elevations of my interior machines. They are records of how my mind naturally operates during the creative process. They are shaped by intuition, as in the series before, and were the breakthrough element for my understanding of what interiority really means.

REFLECTION #8: *WHY*

It's about process, not product. Illustrations of self.
Like sheets in a drawing set, no single page can capture the truth.
A paper space. An interior fiction. The speculations laid in pencil
and pen present individual slivers of the truth of the full vision.
These glimpses into the truth of self are constantly shifting, never
'final' in the traditional sense.

Designs, by intuition, are never finished. They are simply released
or submitted.

Perhaps that is where the conviction of definition is missing; Since
these various drawings are reflections upon the self, I have not
encoded their meaning on a personal level. I am only just beginning
to find the intersections of these drawings with facets of interiority.

The dialogue between the viewer and the drawing presents the
visual narrative through stages, moments, & realizations.
Drafted space provides reference to details to view the whole
picture. But in translation to real space, the whole picture is
distorted as other hands lay themselves upon the work, adding their
own minute varied alterations captured in that instant.

Being in a creative profession allows for a wide variety of self-
realizations from pure logic to pure creation. How one presents or
discovers that realization of interiority is unique between the
technical processes and the creative or generative ones.

It is a visual encoding of the creative process in action.

Sketches are kept loose and non-committal to let the ideas breathe on the paper. Once set in Ink, that idea is captured, even in a single form.

There are many strings of inquiry. Many need time to sit and develop, returned to at a later time or left as a sketch, undeserving of the elevation of development.

In these ways, the sketches are a catalogue; a journal of thought captured in stroke and shade. They are assemblies of intuition, made up of spontaneous parts which suggest further function, even outside of typical bounds.

What emerges is a plan for the self - shaped by interiority. (Self)-Construction Documents? or are they as-built?
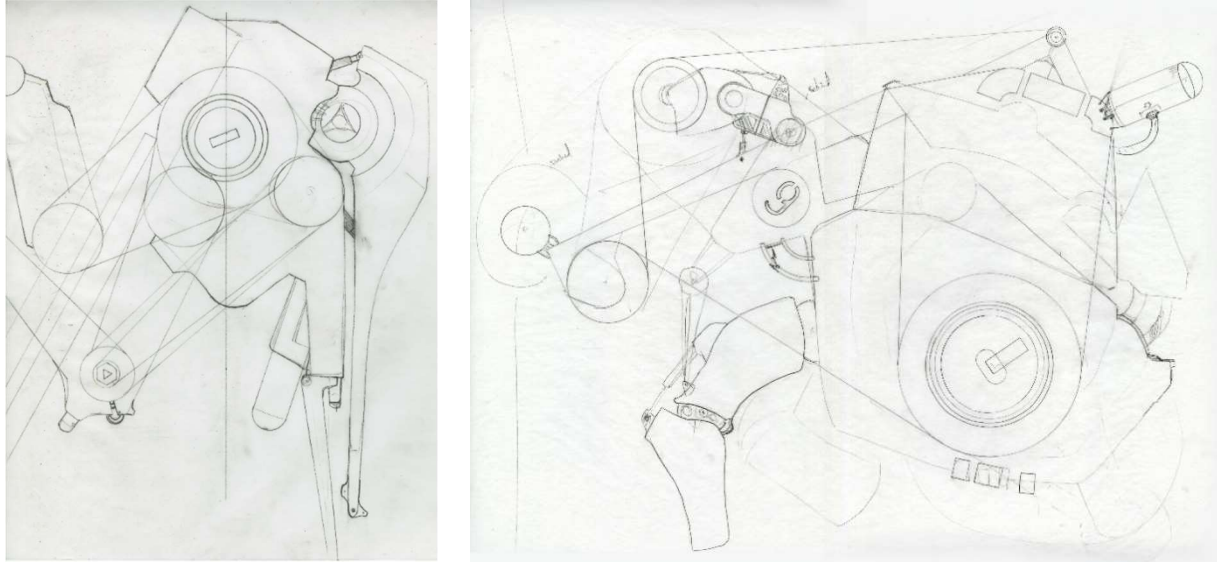
Figure 61. *Assembly #1 & Hand of God,* Mind/Mirror Series
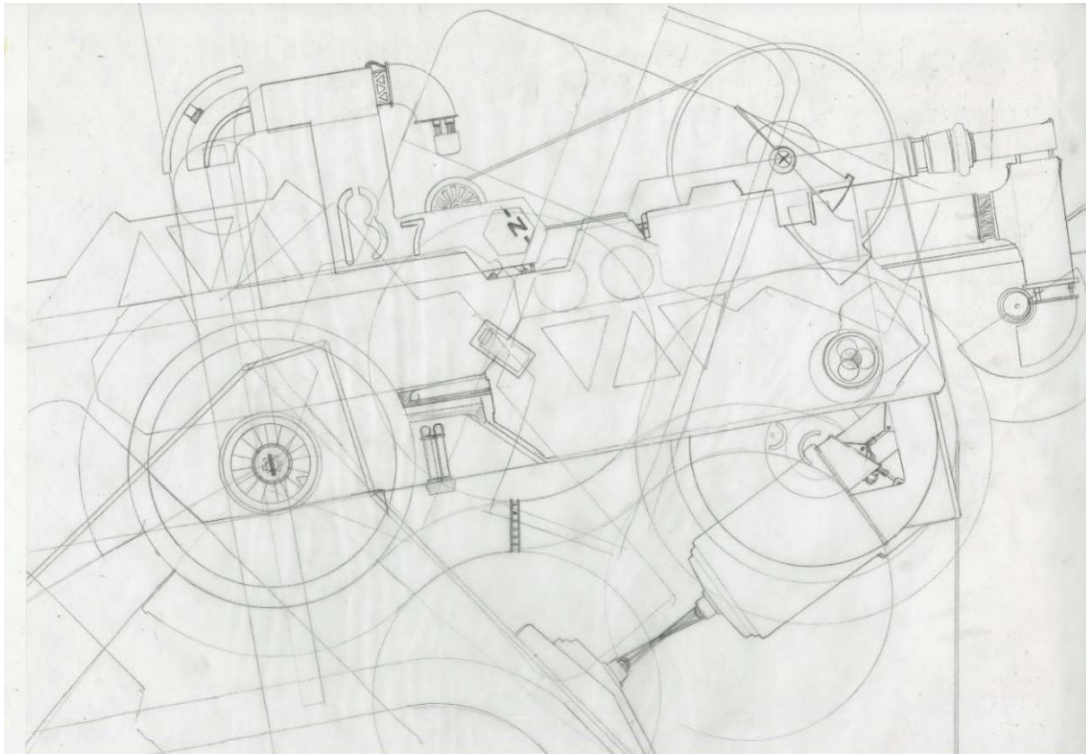
Figure 62. *Input Processor Beta Seven*, Mind/Mirror Series

Inter. "To bury or lay to rest"
Internal. "Within" Buried within.
Internalize. To bury within.

There is a suggestion in these words of depth. A depth to the internal that is reflected in parlance by "deep down" and "buried inside of you."

Exter- | prefix. meaning "on the outside, outward"
Inter- | prefix. meaning "between, located between, occurring between"
-ior | suffix. comparative.

When broken into their constituents, the exterior and interior have a rather interesting relationship. The exterior is definitive, located. It is

the opposite of interior, inside. But the interior is not just "inside." It lies "between". Between 'Us' and an exterior.

How can I speculate the between? The liminal space and interiority are dense and elusive. Are these explorations there yet?

As I ponder, I realize that the true nature of process and intuition are direct reflections of the interior self. The frustrations which led me to pursue my practice were possibly the result of an interior misalignment between what I long for "deep down" and the compromise I was being influenced to make. I had partially compromised my motive process and my interior, buried inside, could not abide.

I do not yet understand what my process or interior means, but I am beginning to glimpse their reflection within my work.
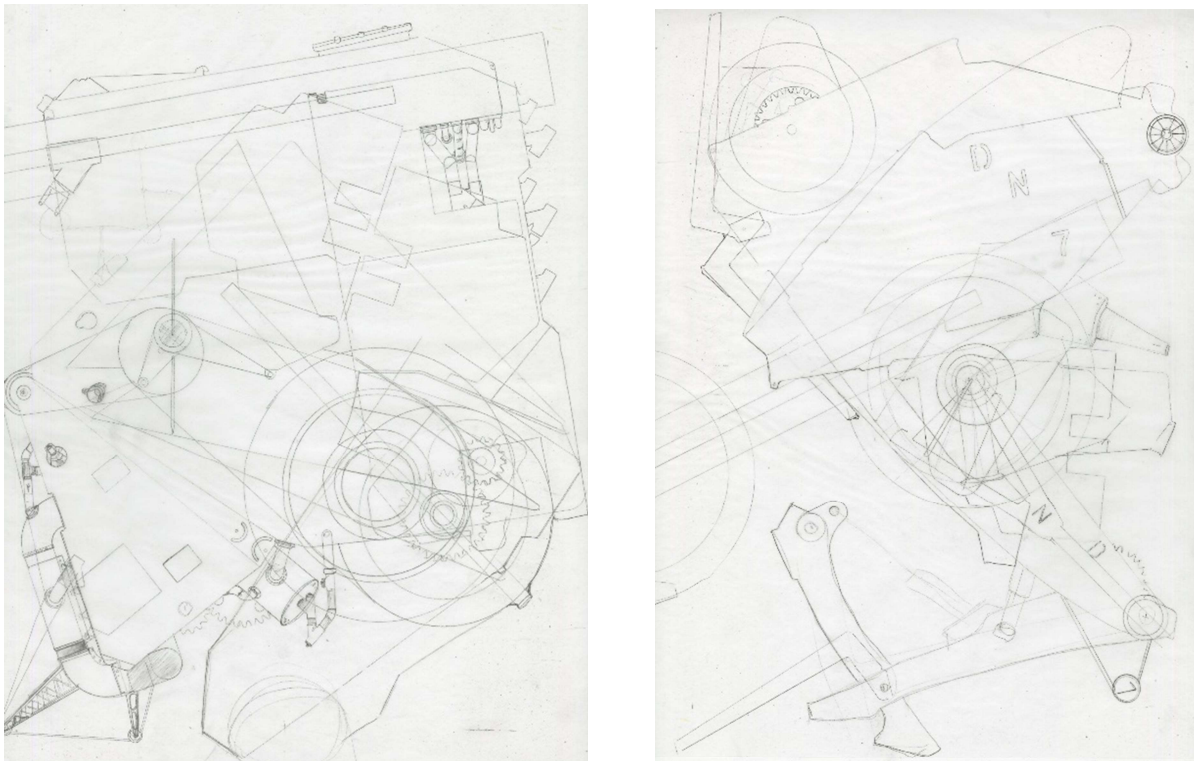
Figure 63. *Exhaust Frame (left) & Transfer Valve DN-7 (right)*, Mind/Mirror Series

When I sketch or create the template drawing, I am providing the framework, the potential events to transpire. These drawings, like diagrams, suggest possibility.

When I engage the pen, and trace my template, I allow my intuition to decide the order of elements in the space. I capture a single presence of mind.

When I intuit completion, it is separated from the template and becomes a suggestion on its own. One possibility among dozens that might be extracted from the template base. One layer of an indefinite structure.
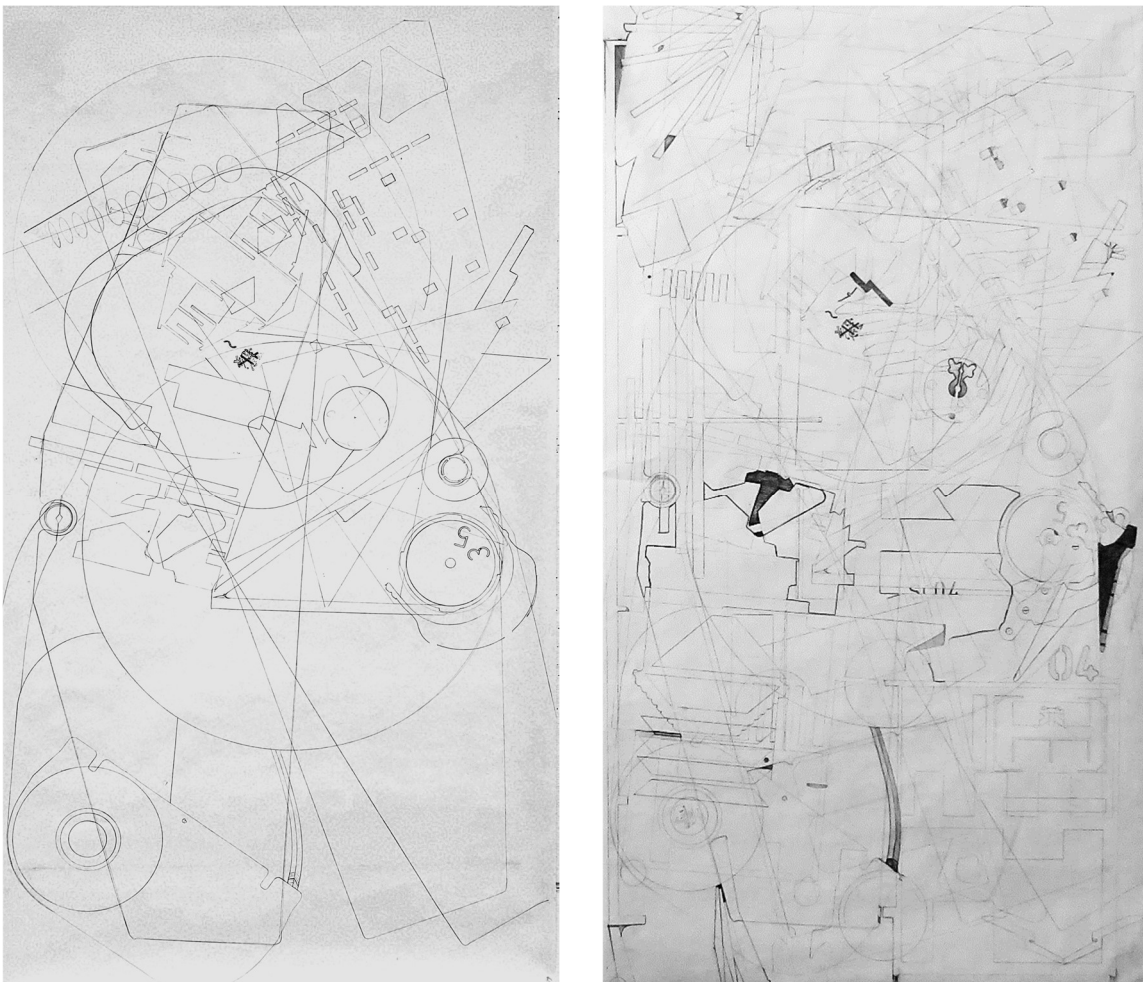
Figure 64. *Wall Assembly - 3/9 to 5/1*, 30" x 60", Mind/Mirror Series

Maybe it becomes even more than that. Each suggestion, each new layer, becomes a single reflection of the interior dimension. Regardless of whether the suggestion is distinctly spatial in nature.

In this, the artwork reflects the artist, the design reflects the designer, either to others or to the self. The more events, actions, artifacts that are extracted from intuition the clearer the image becomes.

Many of the assemblies that represent my process are recombinant compositions composed from series of smaller drawings done by hand, scanned, and layered to represent the common nodes and potential connections they are structured around.
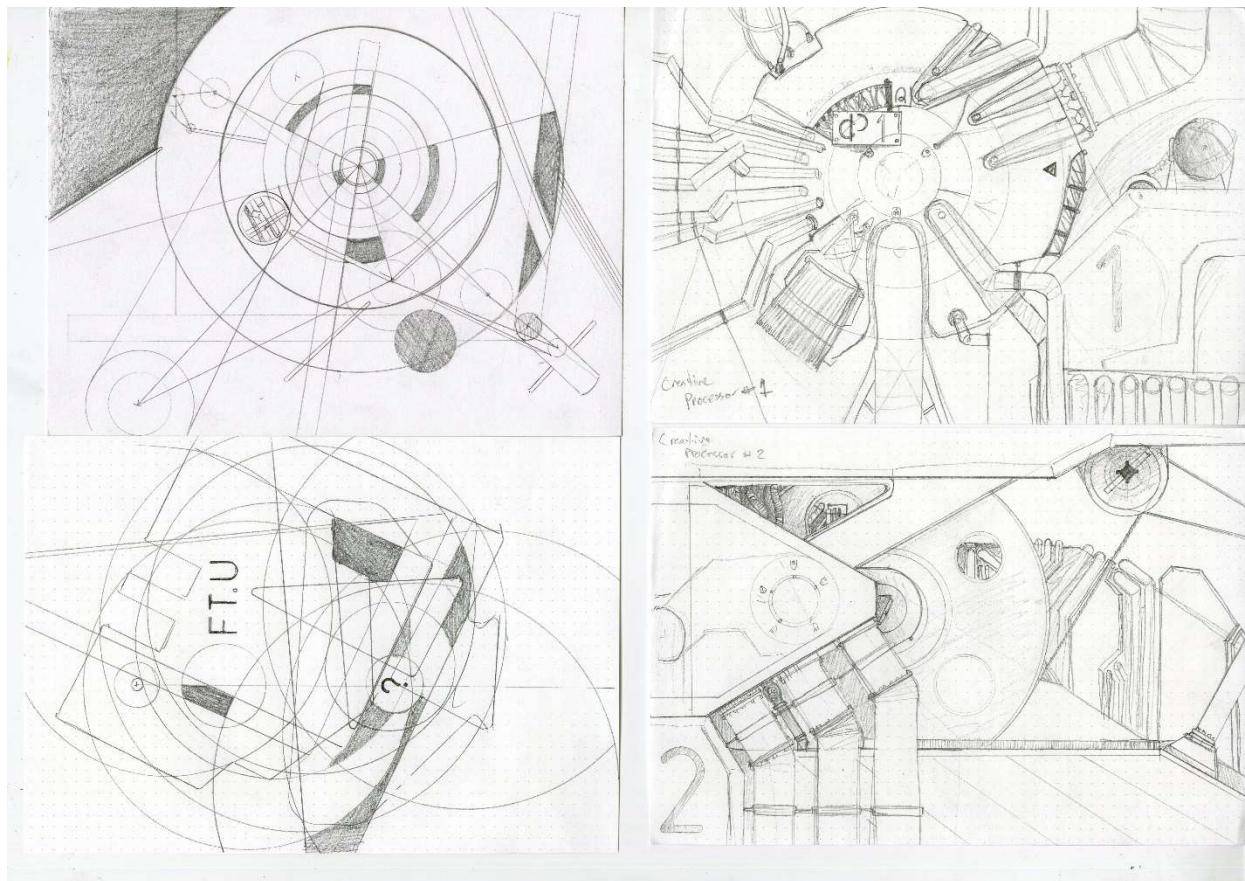
Figure 65. Components for Mind Assemblies, Mind/Mirror Series

The resulting compositions became abstractions of my attempts to reconcile each of the divergent threads of interest informing my work. Mechanical assemblies, architectural

space, materials, student work, reading, theory, video essays, video games; every piece of input in a given day or week. These elements informed my daily intuition and veins of thought and were then translated through my process; cemented within the boundaries of a page and becoming component fragments of expression. The assembled compositions (Figure 66) were attempts to construct a complete visual concept from the smaller fragments. In this way, they perform as a mirror, reflecting states of mind and fleeting thoughts during the creative design process.
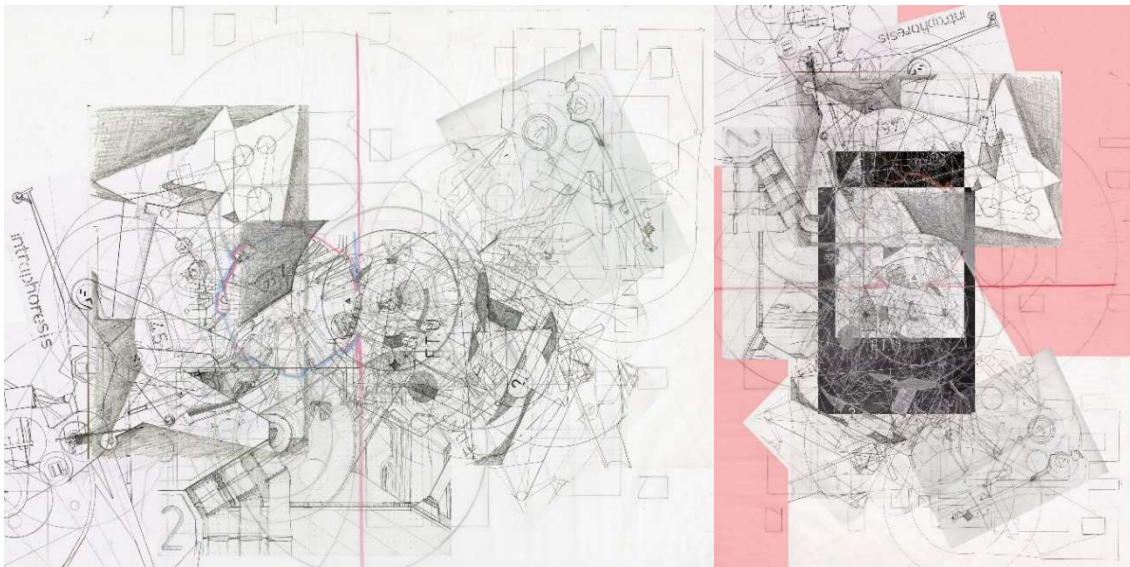
Figure 66. *M-Turbine 1 & 3*, Mind/Mirror Series

The boundaries of thought, just like those of space, are often relative. What is included or excluded becomes dependent on how the information is filtered. Who determines where the edge is? Who decides what is allowed and what is not? The process of arranging and layering each component became a practice of alignment and selective exclusion. I experimented with layer states to express the boundary conditions contained within each piece of the assembly; each component has its own jurisdiction (its own interior) inherent in the digital format. As manifestations of thought, each concept comes with context that occupies an immaterial space.
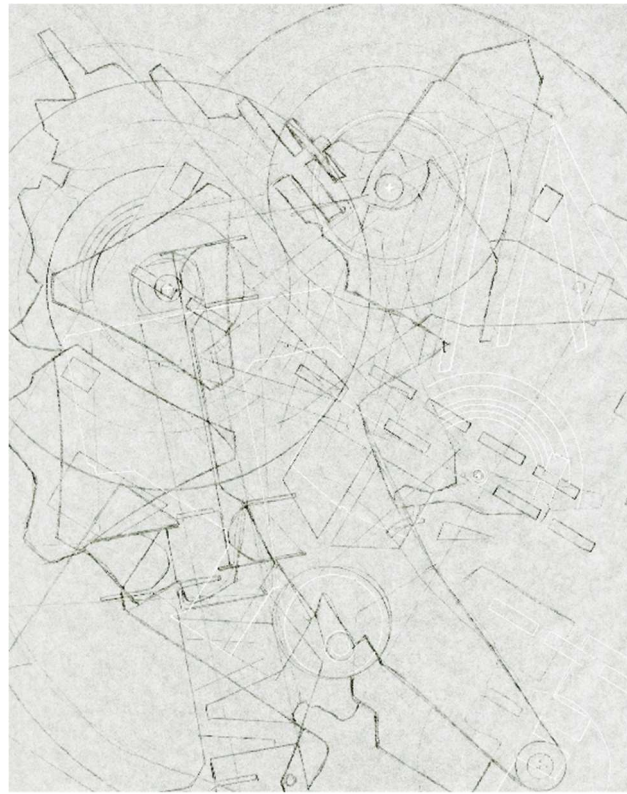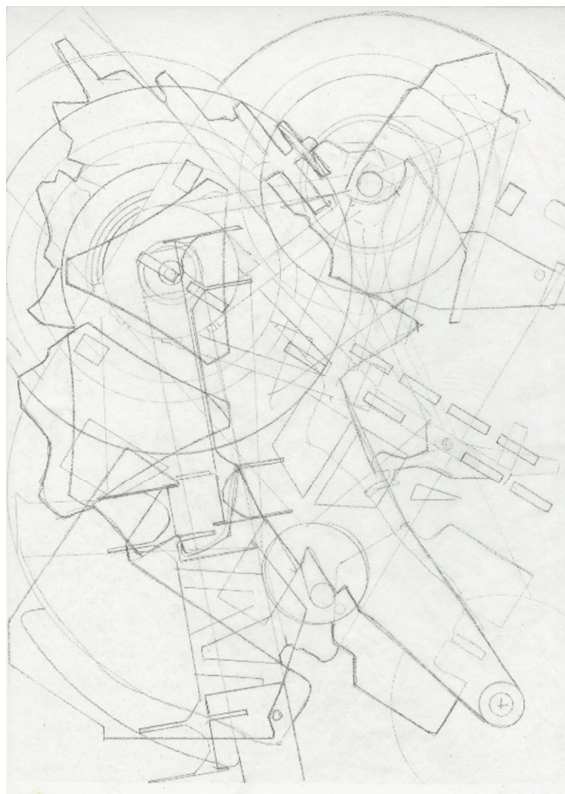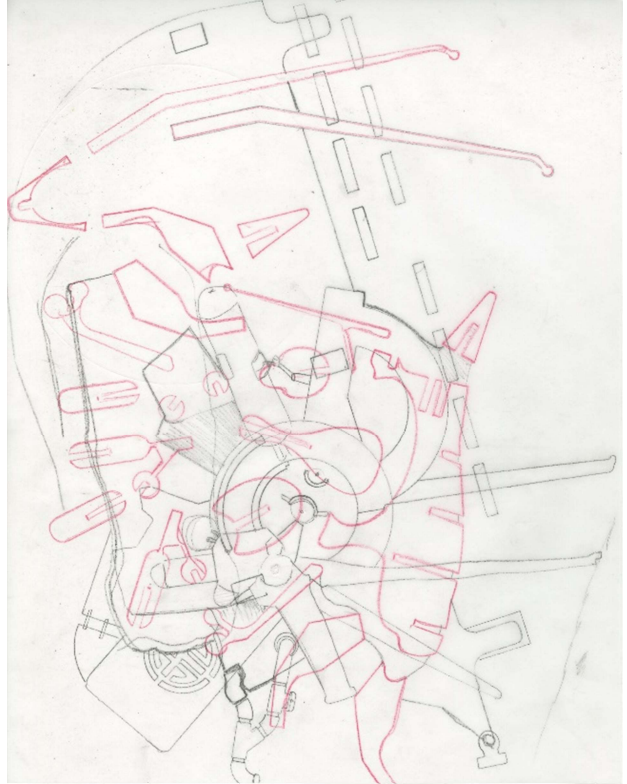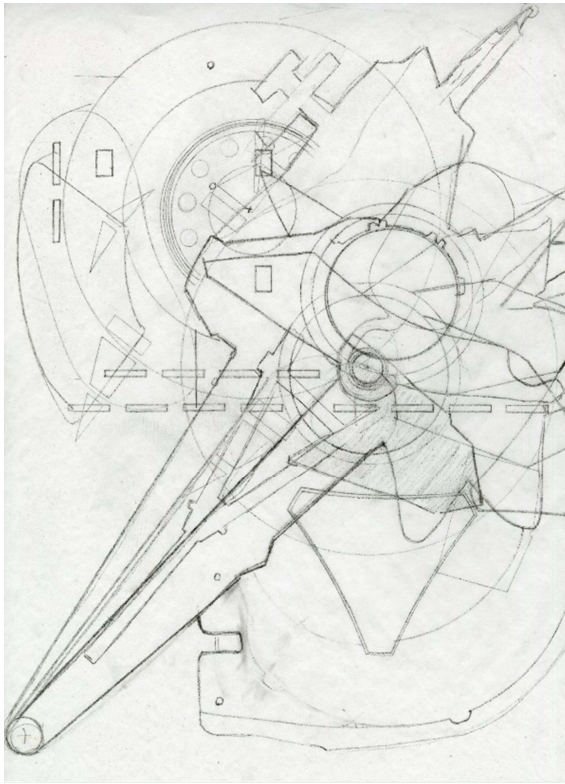
Figure 67. *Expansions – Shadow assemblies and Bio-machines*, Mind/Mirror Series
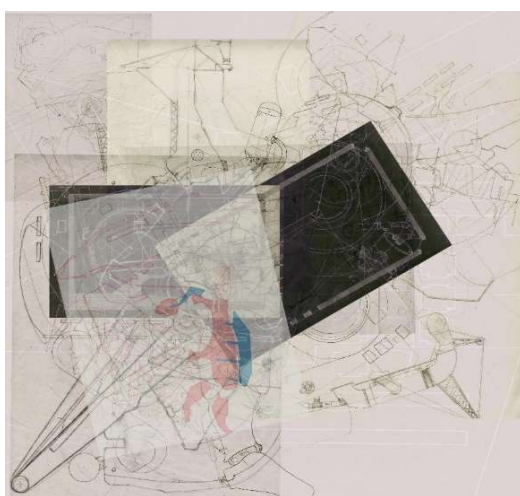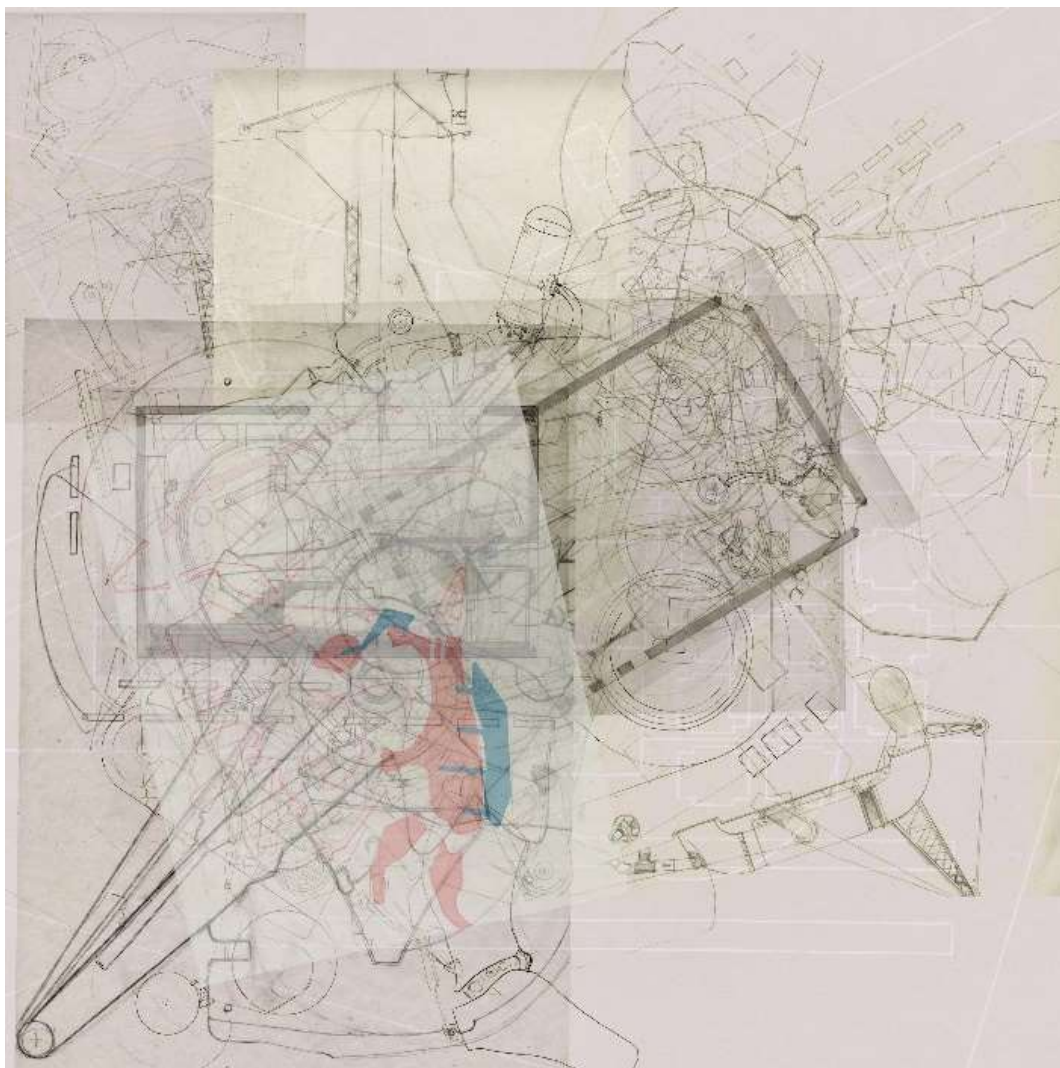
Figure 68. *Advanced M-Turbines 1-3*, Mind/Mirror Series

A sub-series of Mind/Mirror emerged from a collection of small compositions (Figure 69, 4"x6") authored while attending the 2021 IDEC (Interior Design Educator's Council) Virtual Annual Conference in March 2021. These micro-compositions are a creative processing of the scholarship and ideas presented.
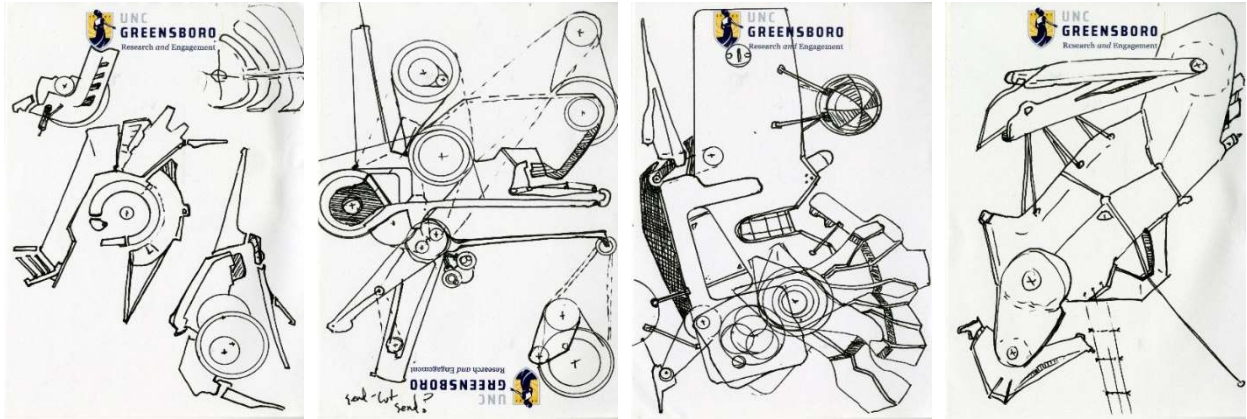
Figure 69. *Micro-assemblies from IDEC*, Nihilo Series

Nihilo in Latin means 'nothing' and is part of a philosophical expression attributed to Parmenides: *ex nihilo nihil fit* meaning 'Nothing comes from nothing'. It is a saying with a high level of multiplicity. It could mean that 'doing nothing begets nothing' or the sense that 'everything comes from something'. I believe that it fully captures the essence of the design process; it necessitates action and iteration to produce understanding as well as the underlying concepts of interiority as a reflection of our intuitive inspirations. Everything comes from something; Nothing comes from nothing.

The series of explorations for Nihilo revolve around a more figural set of assemblies. The mechanical figures, like the preceding series, are collections of smaller concept components with suggestive functionality. Building from the E.DNS and Mind/Mirror series, these figures are speculations on the form of the process of absorbing and synthesizing new information and making connections to existing concepts. They contextualize the mind as a vehicle for expanding and revising our ways of knowing.
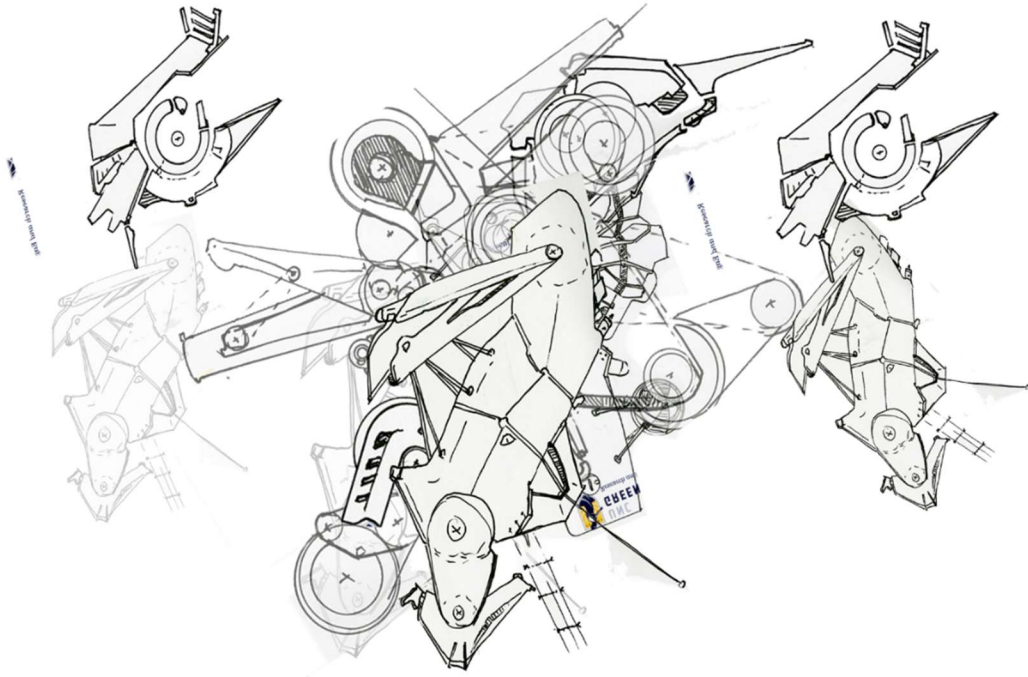
Figure 70. *Nihilo Assembly #1*, Nihilo Series
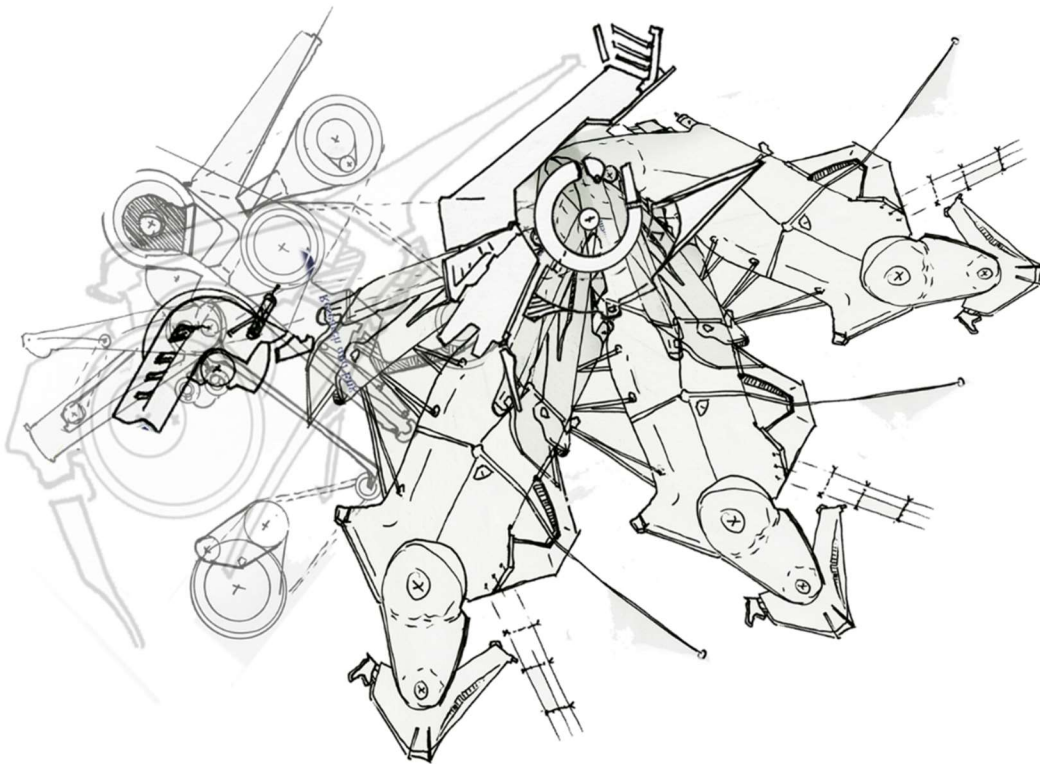
Figure 71. *Nihilo Assembly #2*, Nihilo Series

Terminus – Exhibition and Dissemination

PRESENTATIONS

The resolution for this thesis is the presentation, exhibition, and dissemination of the body of work. Disseminating the work presents a contextual shift from private to public to elicit reaction, response, and recognition. Prior to a physical exhibition, the core works previously shown were presented at the 2021 IDEC Virtual Annual Conference. IDEC, the Interior Design Educators Council, hosts regional and annual conferences for the presentation of design research and pedagogy. The presentation of my thesis narrative and creative works was awarded Best Presentation in the category for Creative Scholarship – Design as Idea. The work and the narrative were well received by my peers and represented an encouraging validation of my work as relevant interior research. The presentation marked a critical point for organizing my thoughts and reaching the heuristic stage of Illumination & Explication to develop the connective narrative linking each of my branches of inquiry.

Figure 72. Title Slide for the IDEC Presentation

Additionally, I presented a version of the presentation for the UNCG 2021 Online Graduate Showcase which features research from many graduate programs within the university.

Figure 73. Title Slide for Graduate Showcase

EXPANDED BODY OF WORK

Over the course of developing the presentations and exhibition, my creative process was ongoing. Having established the conceptual and contextual narratives for the three primary branches of my work, I began to dive deeper into each series with what had been illuminated by explorations in the other two. The lines between series began to blur as their characteristics were infused within my process. The inquiries that defined their scope remained stable, but my approach had become more diverse.

The centerpiece of this expansion of work, and of the exhibition itself, was the continued development of a model of *E.DNS 08* (Figures 27-33) as the central figure and primary catalyst of my work. The model evolved as I continued to speculate on its functionality, mechanisms, and interior accommodation. The result is a roughly 1:200 scale model of the construct represented.
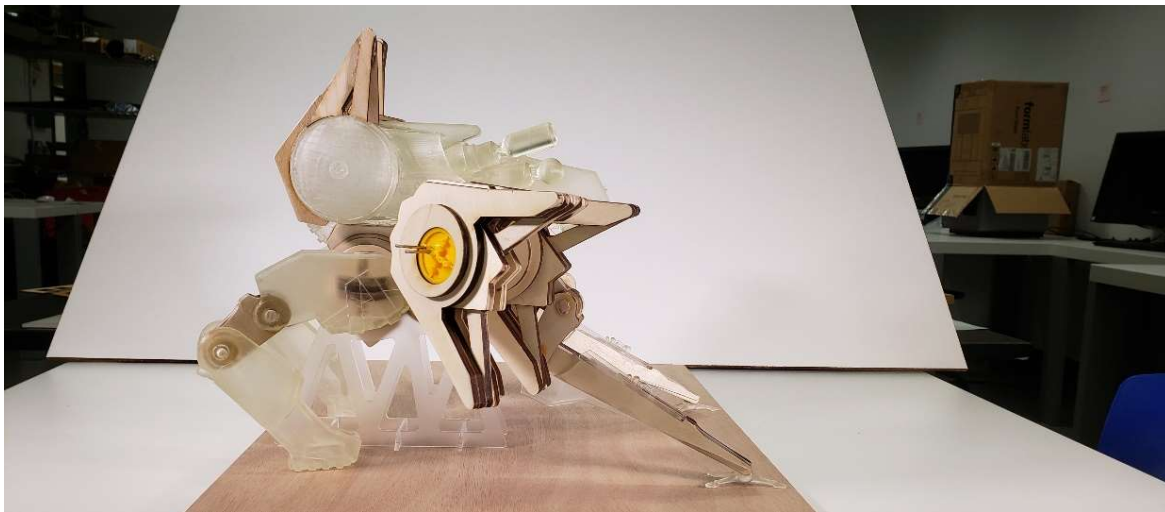
Figure 74. *Model of E.DNS 08-E-03 [Deployed]*, Eden Series

Figure 75. *E.DNS 08-E-03 Deployment Documentation*, Eden Series
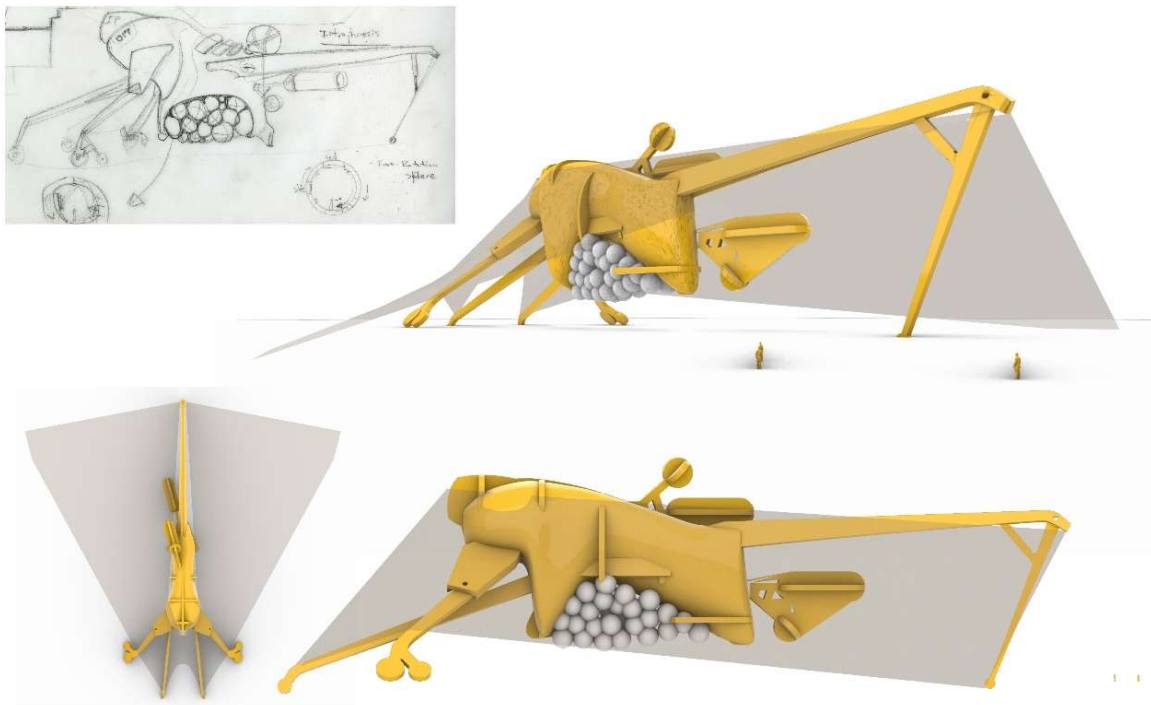
Figure 76. *The Landscape Motel 017*, Eden + Residence Series

Figure 77. *Motel 017 Scale Model*, Eden + Residence Series
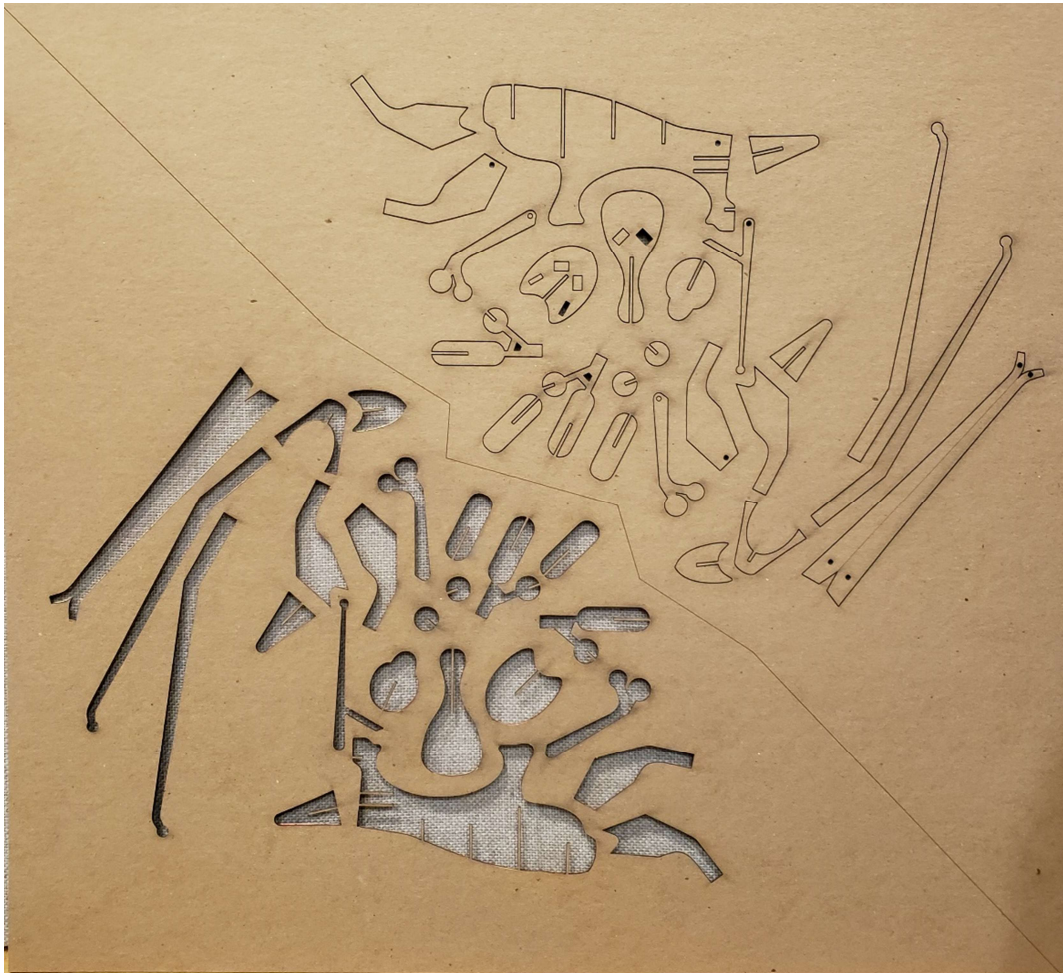
Figure 78. *Motel 017 - Nest*, Eden + Residence Series
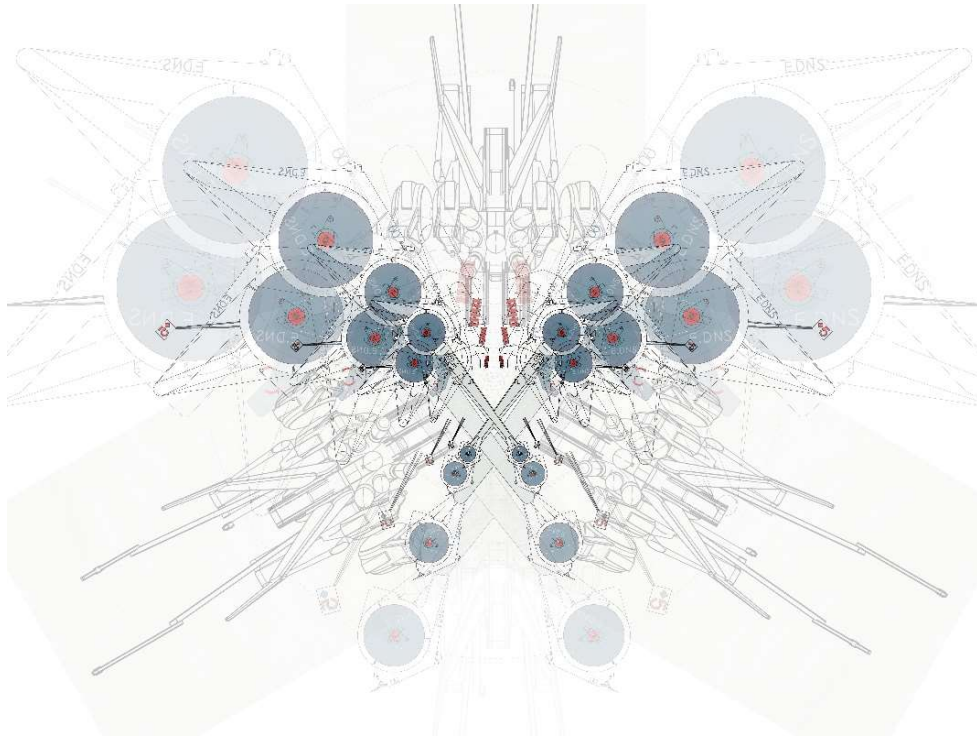
Figure 79. *Garden Path*, Eden Series
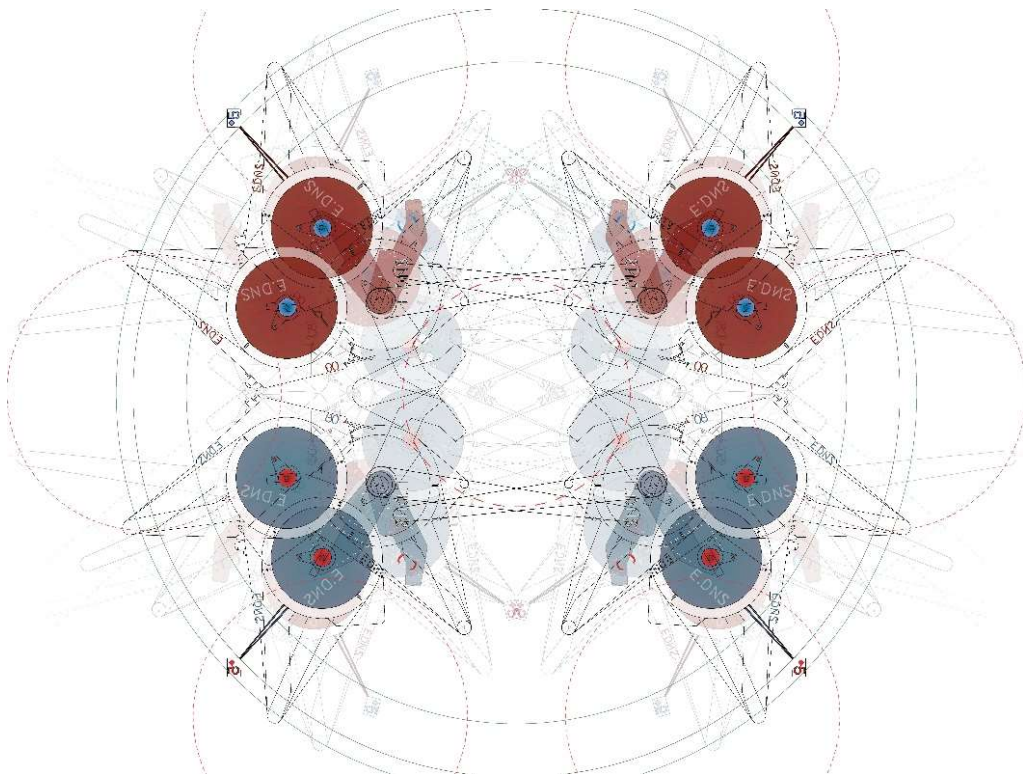
Figure 80. *The Garden Gate*, Eden Series
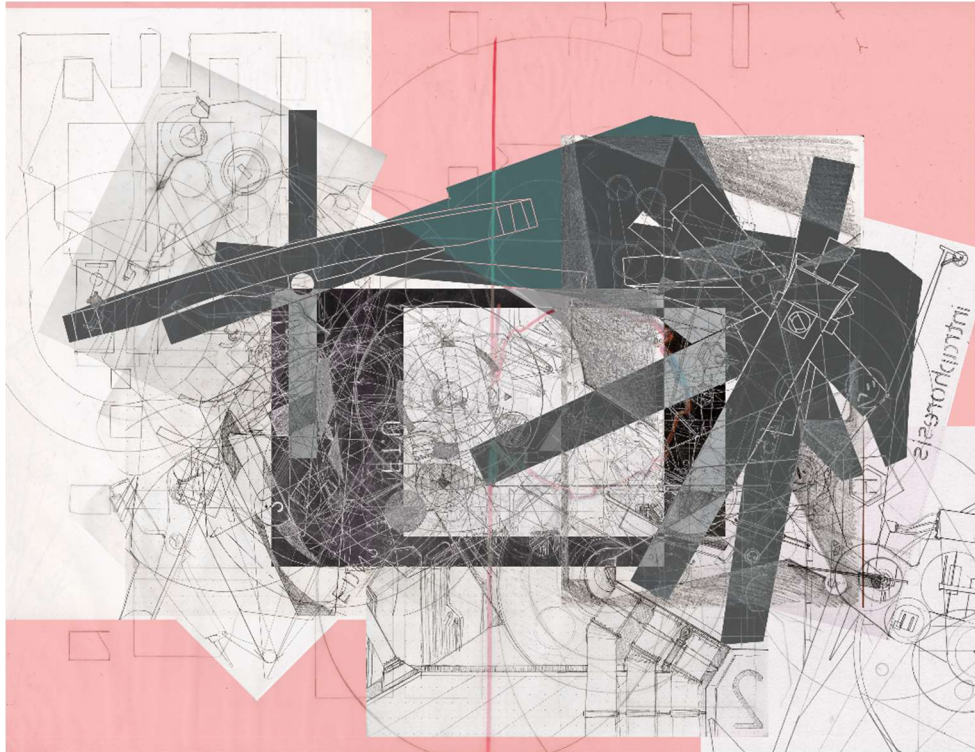
Figure 81. *Embrace*, Mind/Mirror Series

Figure 82. *M-Turbine #4*, Mind/Mirror Series
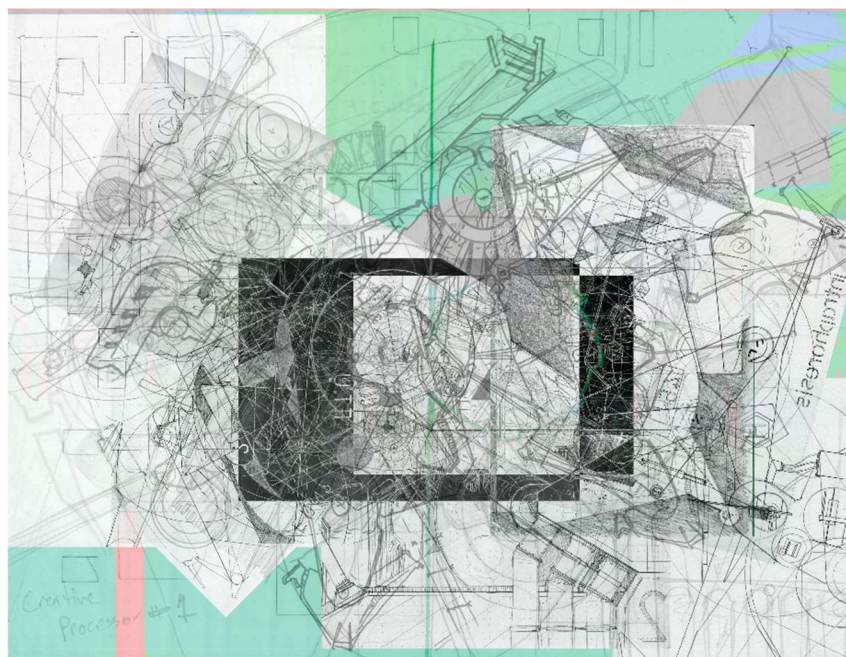
Figure 83. *M-Turbine #3 ver. N*, Mind/Mirror Series
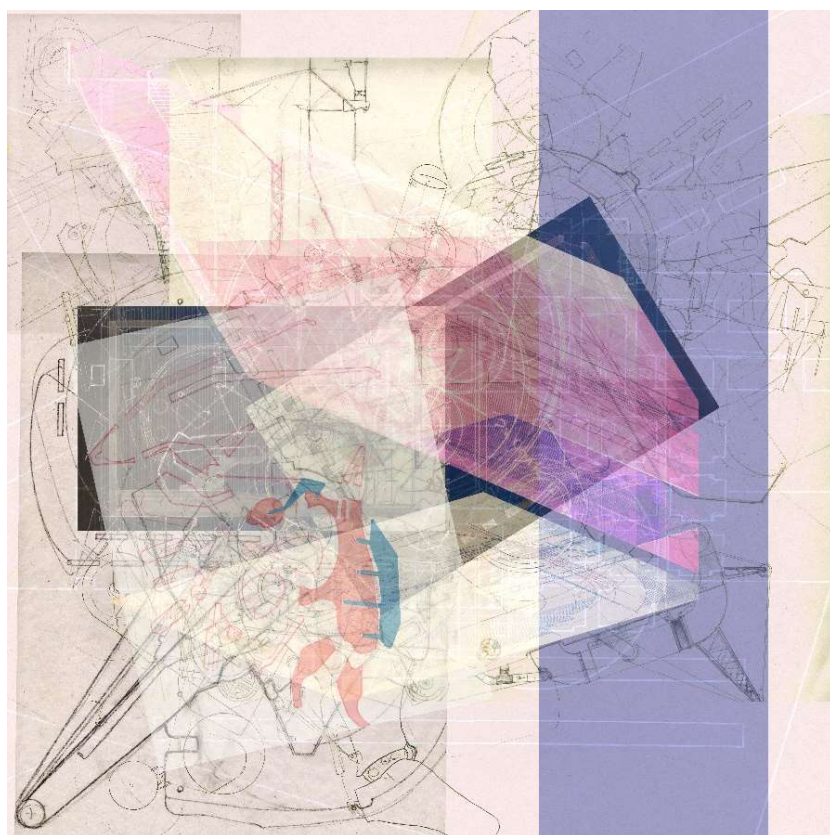
Figure 84. *S-Engine*, Mind/Mirror Series

Figure 85. *S-Turbine Re-processor*, Mind/Mirror Series
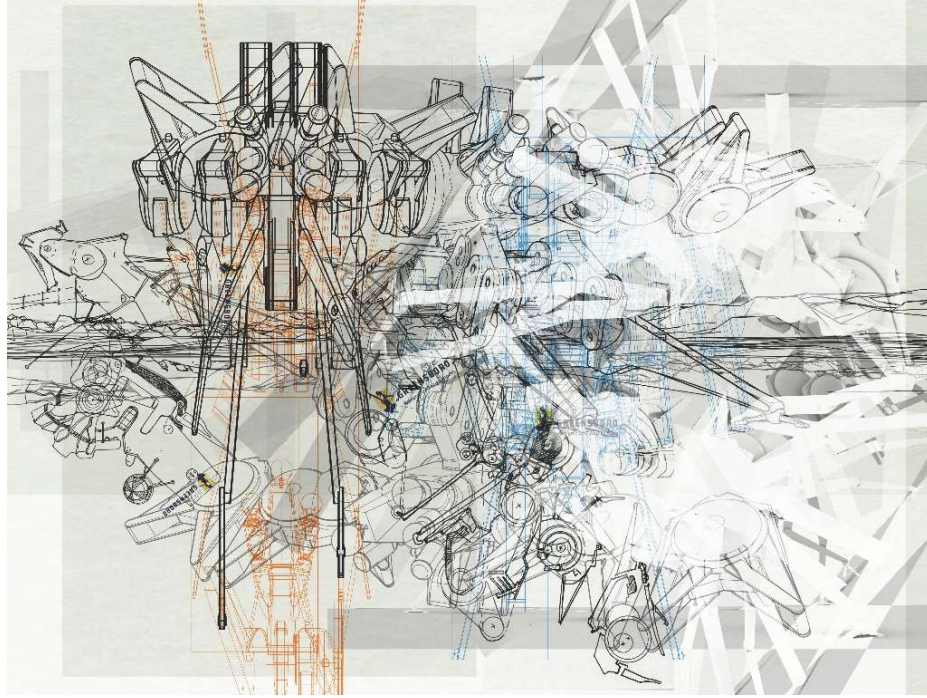
Figure 86. *Nihilo #3-Scattered.* Nihilo Series
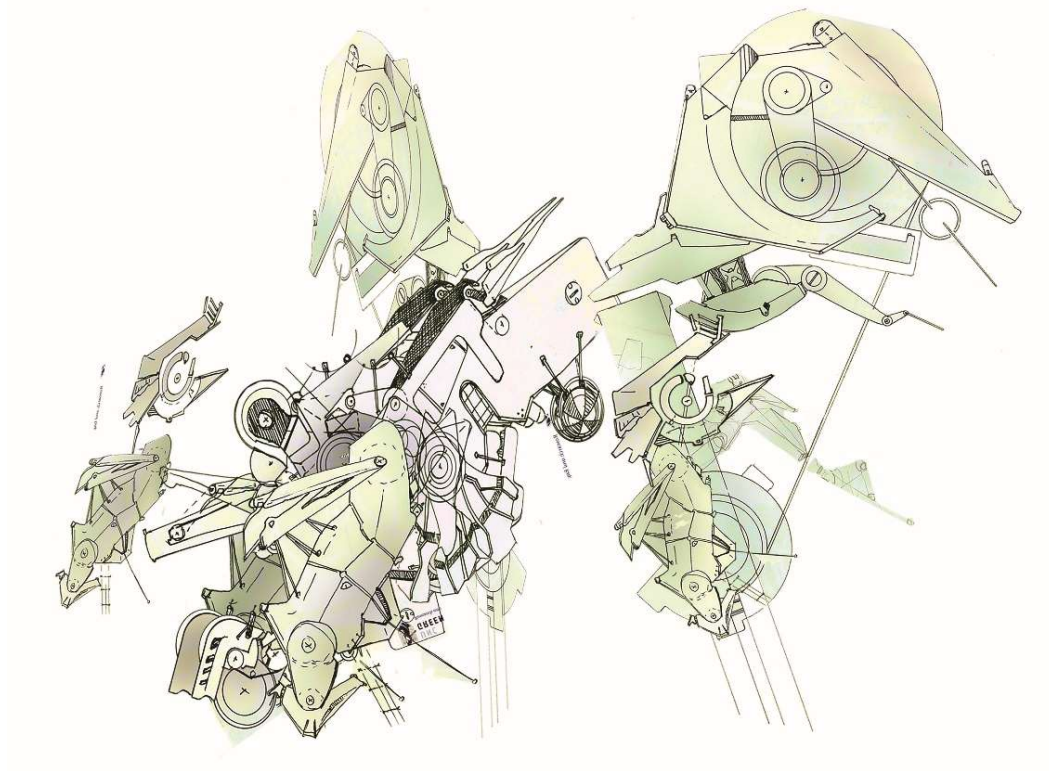
Figure 87. *Nihilo #4*, Nihilo Series
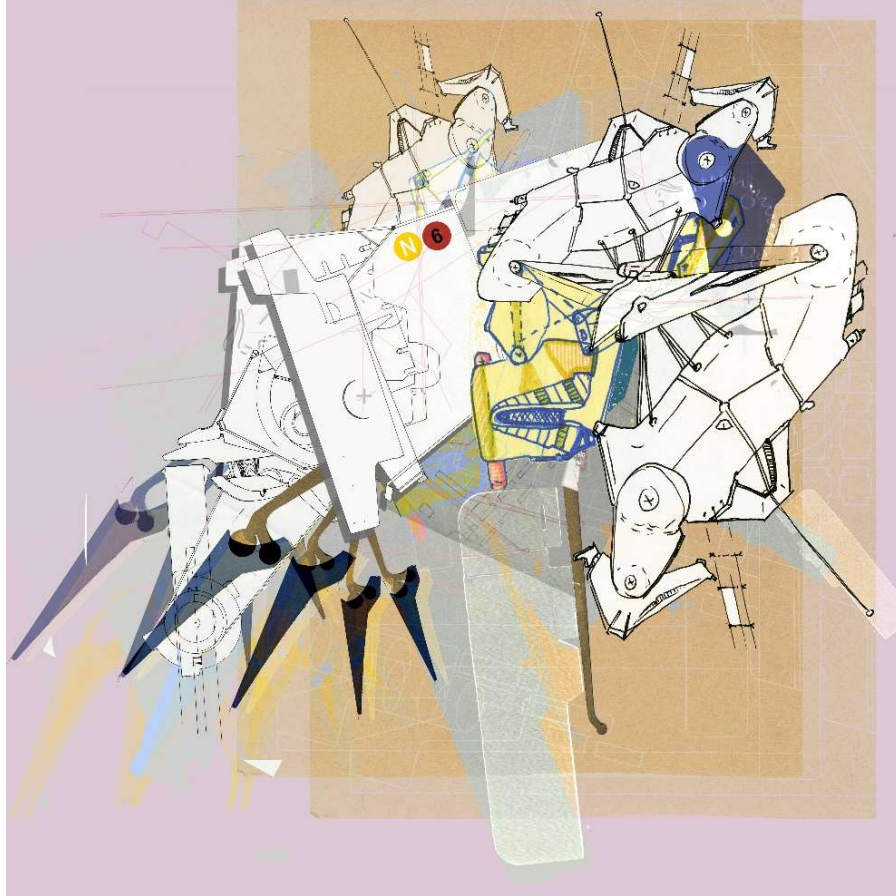
Figure 88. *Nihilo #5 - Ark*, Nihilo Series

Figure 89. *Ex Nihilo Nihil Fit*, Nihilo Series

The culmination of this thesis was a comprehensive self-curated exhibition of my process and expanded body of work. Several additional compositions were developed during the exhibition design and added to their respective series. The exhibition was installed in May 2021 in the lobby of the Gatewood Studio Arts Building at UNCG. Limitations of the COVID-19 pandemic and time constraints prevented a traditional exhibition opening. Instead, the exhibition was open to the public, promoted on my personal social media and by the UNCG Department of Interior Architecture social media.
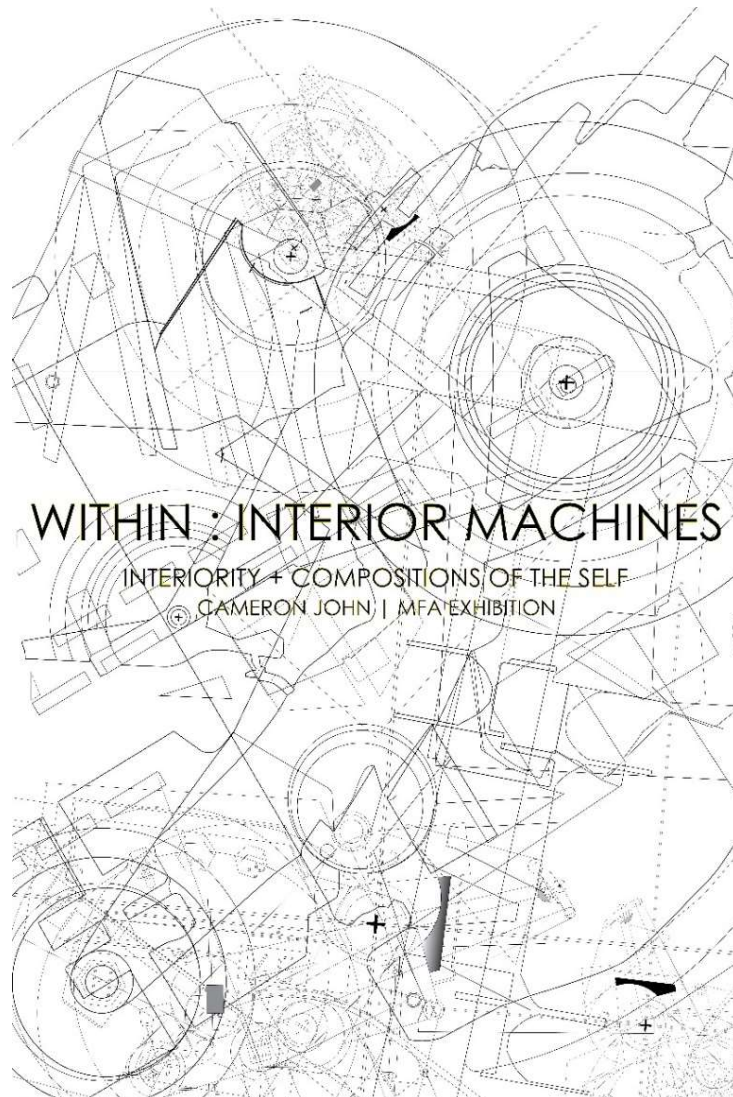
Figure 90. *Within : Interior Machines,* MFA Exhibition entry signage

The initial design for the exhibition was a simple arrangement of movable gallery walls. The works would be arranged around a central pedestal with scale models and a circular path of travel. Animations, video, and other projections would be shown on the back wall to accompany the print and model works.
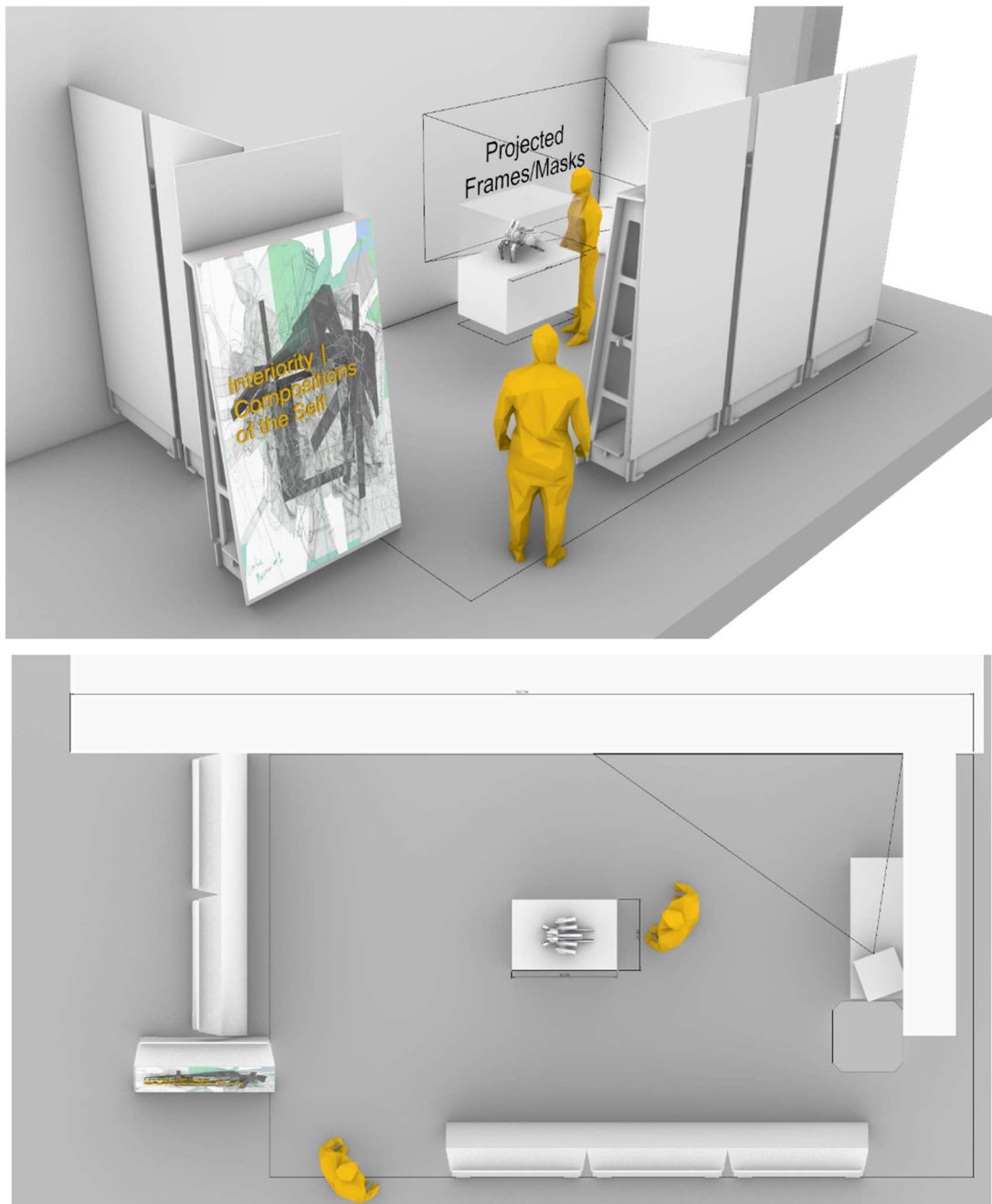
Figure 91. Initial exhibition design

While the arrangement was still being finalized, the first task was to design and fabricate the movable gallery walls to enclose the space for the gallery. Existing gallery walls within the building were lacking for the intended exhibition experience. The walls were additionally intended to serve as configurable presentation and pin-up space in the department studio spaces following the exhibition. The primary constraint set for myself was for the walls to be easily reproducible with minimal waste material and to require a single sheet each of ½" and ¾" plywood. The components were laid out to be cut on a 3-axis CNC router with minor finishing and assembly afterwards. The first prototype had a significant problem with tipping due to a narrow wheelbase and high center of gravity.
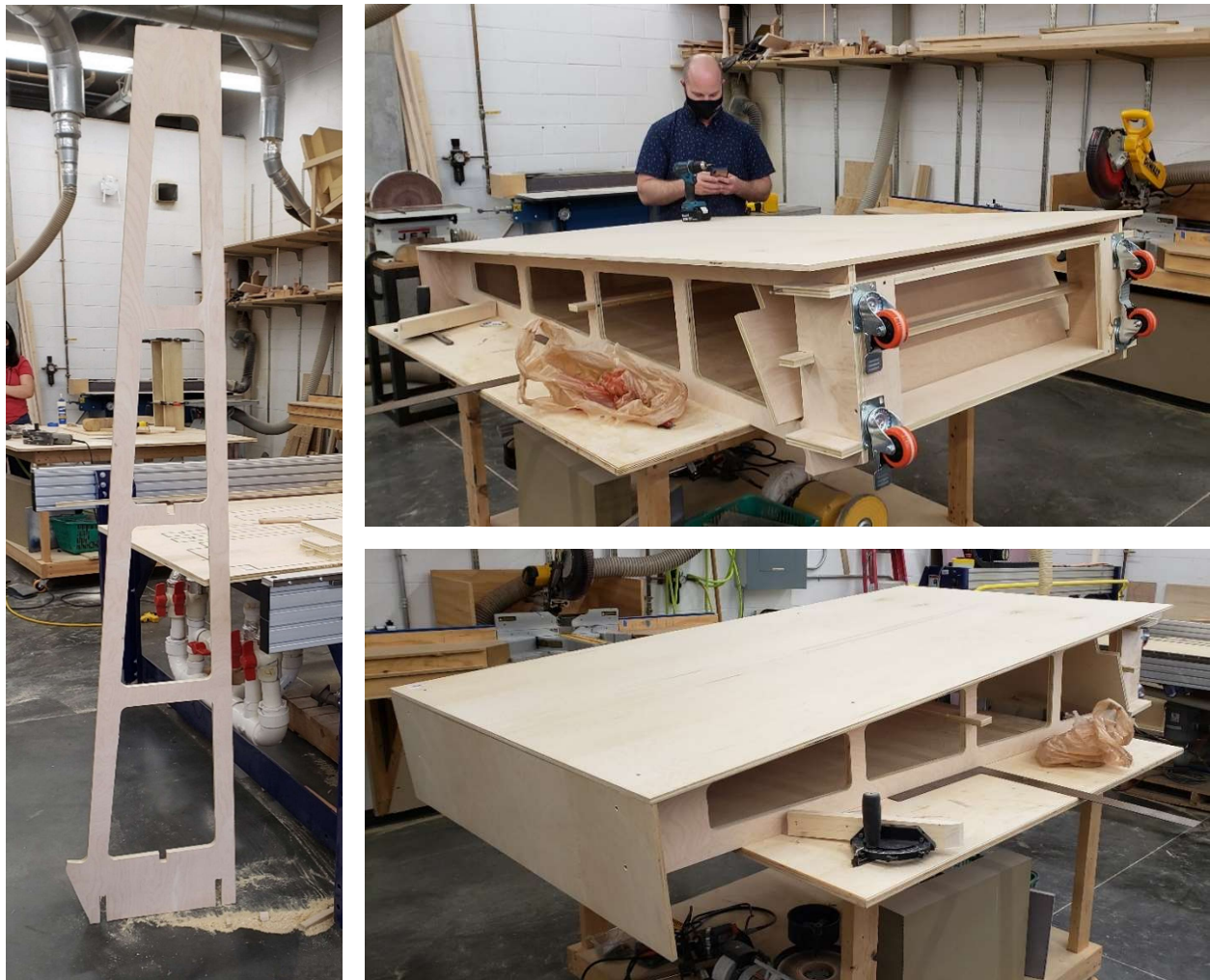
Figure 92. Test assembly of the first prototype, assisted by faculty Matt Jones

With a short timeline, the walls were quickly redesigned to adjust the center of gravity, double the wheelbase, and further maximize the material usage.
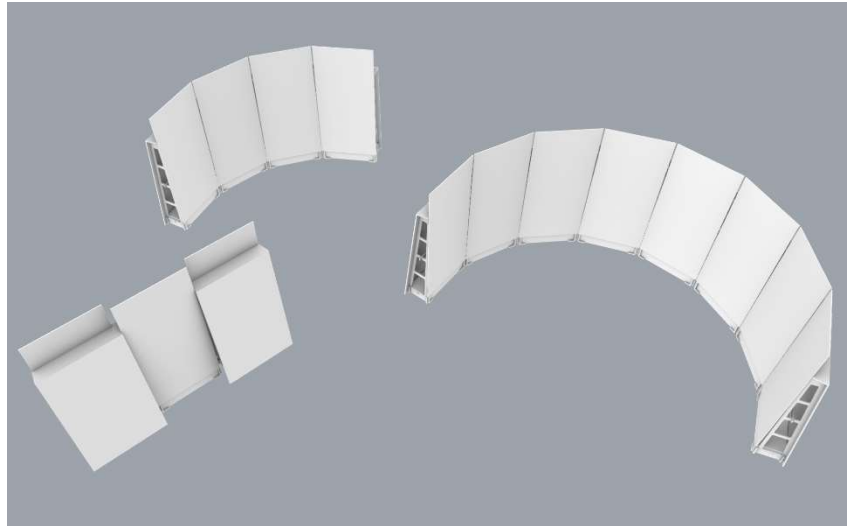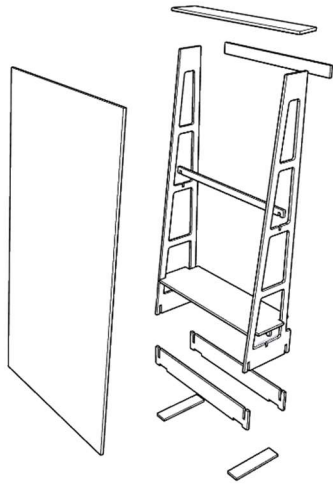
Figure 93. Gallery wall revised assembly and functional arrangements
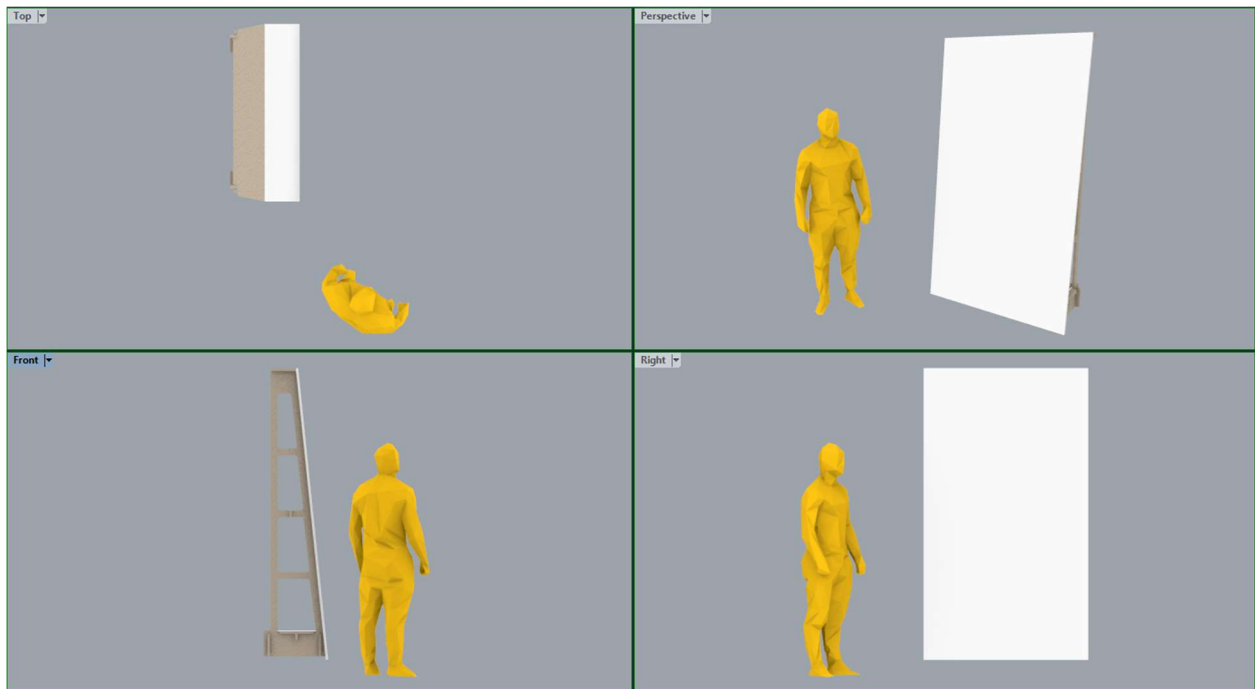
Figure 94. Gallery wall scale reference for proposal
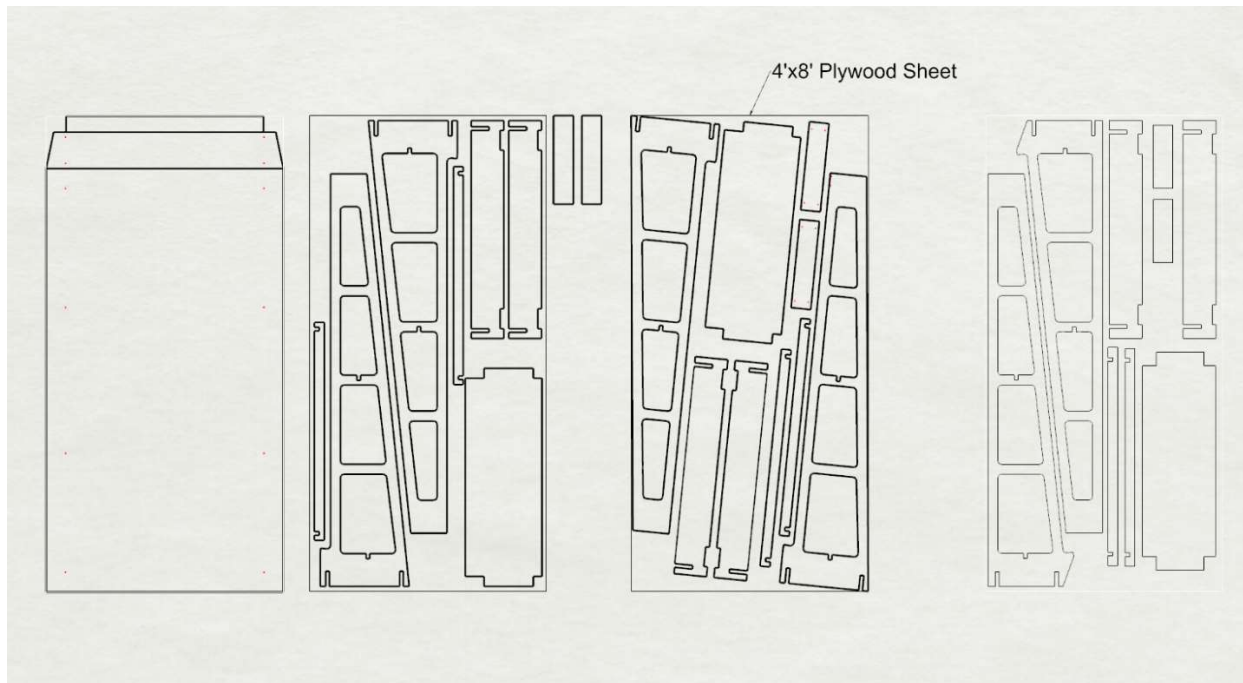
Figure 95. Testing layouts to fit a complete wall on a single 4'x8' sheet of plywood
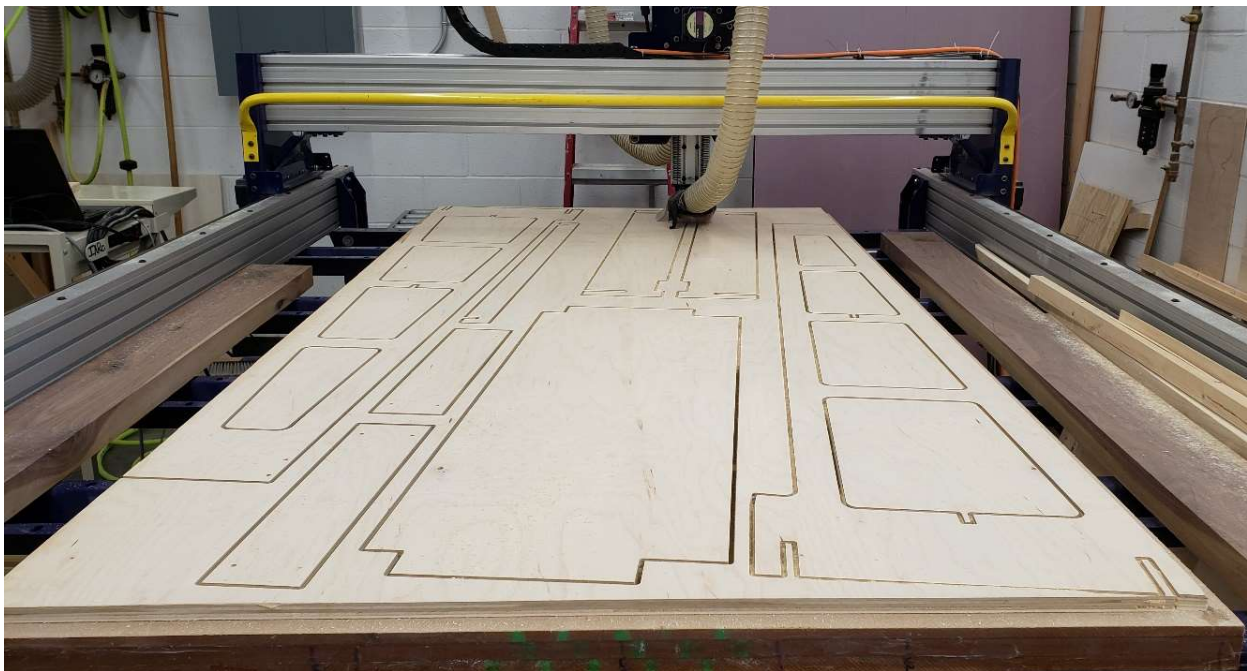
Figure 96. 2nd Gallery wall prototype on the CNC

Figure 97. Gallery wall construction stages

Production of the prototypes was assisted by woodshop supervisor, Sebastian Lindquist and Academic Professional Matt Jones. Over the course of approximately two weeks, the pieces for each wall were cutout on the CNC, finished, and assembled. Each wall stands around 7'-6"; A total of six walls were built for the exhibition and as a first run of gallery walls to be used in the department studio environment.

Figure 98. Fully assembled gallery walls

The criteria for consideration of the walls for future use were mobility, utility, storage, and visual appeal. The use of 4" heavy-duty locking casters make the walls very easy to reconfigure and setup. The lightweight design enables the walls to be carried, if needed, by 1-2 people. The space between the ribs on the backside of the panel are intended to be fit with shelves to provide storage or presentation space. A ledge at the base of the backside provides support for removable sheets of pinup materials like foam or fiberboard.

My goal for the exhibition was to form a pocket of space where visitors could 'step inside of my mind', my work, and process. The space would be isolated but with a single opening, prompting visitors cross the threshold and enter with intent.

Figure 99. Gallery walls installed in the Gatewood Studio Arts Building lobby

My original layout (Figure 91) of the walls proved to be awkward when arranged in person. The mobility of the walls allowed me to test various configurations in-situ to discover a physical organization that aligned with my intentions for the exhibition experience.
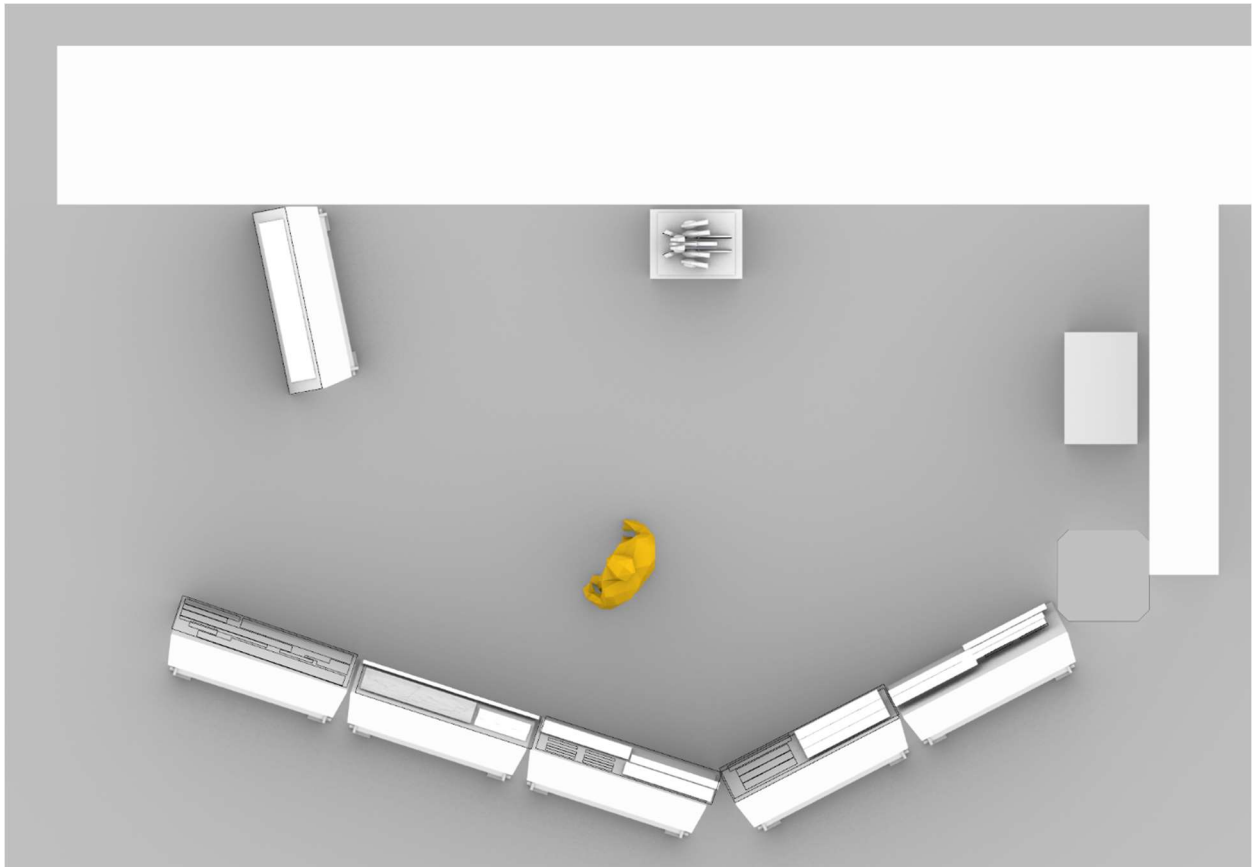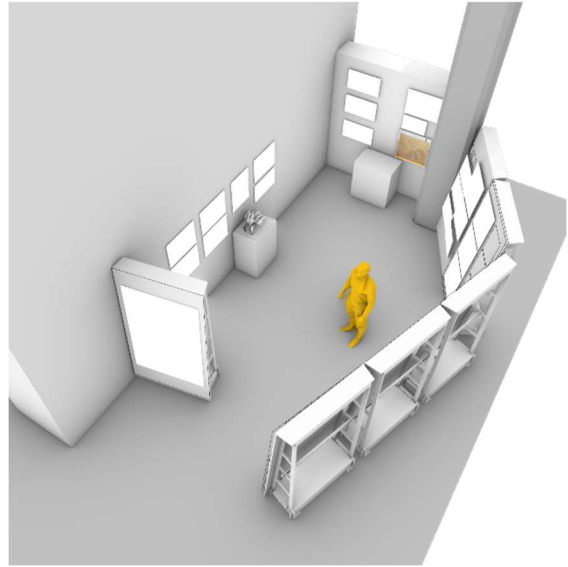
Figure 100. Finalized exhibition design

Figure 101. Exhibition entry
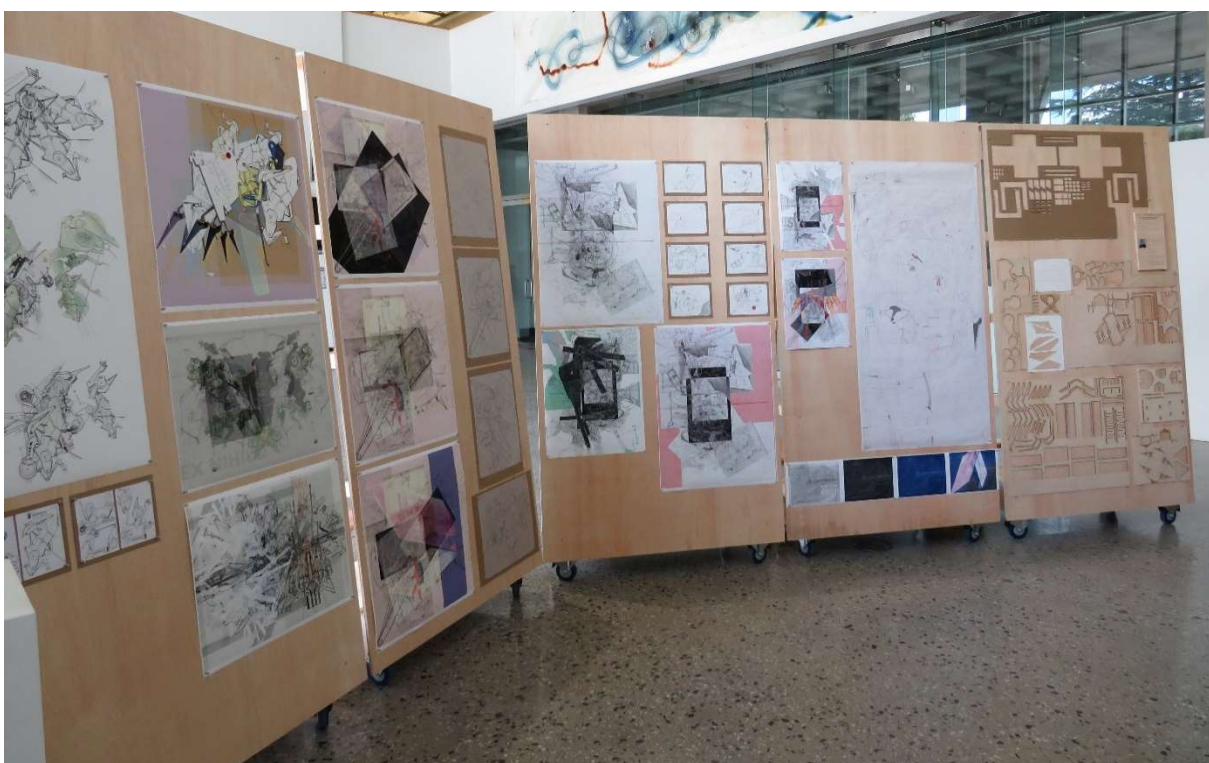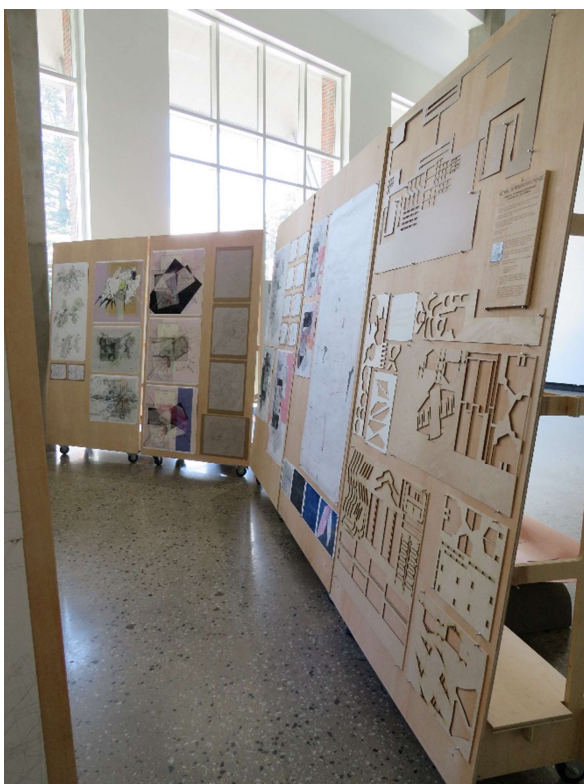
Figure 102. Exhibition documentation – Interior and visitors

Figure 103. Exhibition documentation – Interior, Mind/Nihilo Series (right)

Figure 104. Exhibition documentation – Back wall, *Eden*/*Residence Series*

Figure 105. Exhibition documentation – Interior, *Eden Series with Model*
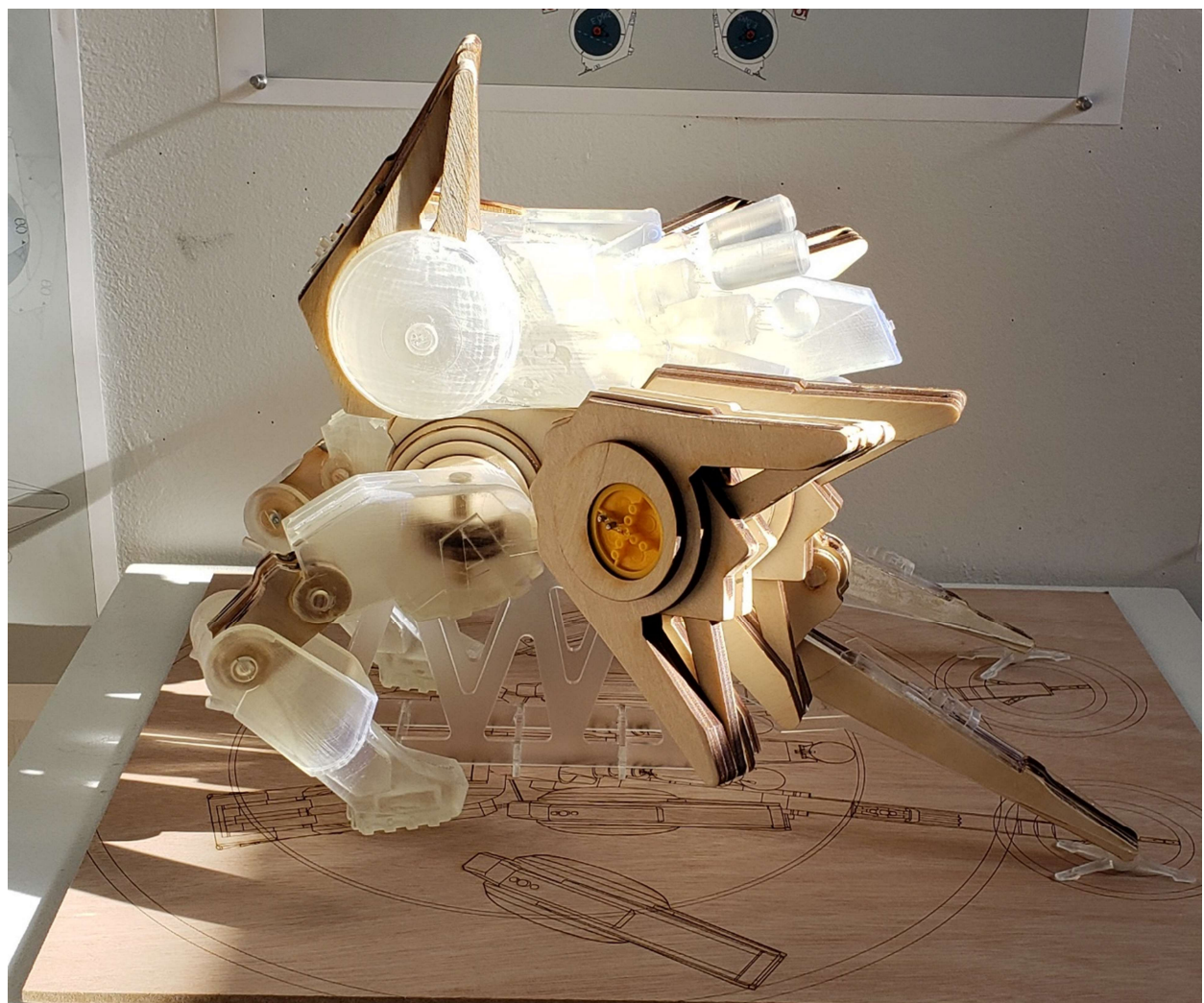
Figure 106. Exhibition documentation - Model, *Eden Series*

CHAPTER V: BEGINNING / CONCLUDING - SPECULATIONS

When I initiated this design research process, I had no idea where it might take me and, in many ways, that is the key element of this work. In the words of Kyna Leski, I am still caught within the 'storm of creativity'. While it may seem antithetical, I still cannot rightly explain where this thesis begins and ends; the edges are blurred and the boundaries uncertain. That is intentional. These explorations began as an interrogation into the process we develop to design interior space. It naturally developed into a deeper exploration into the meaning of interior as it relates to the design of built spaces and the human occupation of that space. This line of inquiry necessitated a broader definition supported by interiority; interior space defined by boundaries, both physical and immaterial. The boundaries we experience personally, within industry, and within society set the stage for the next evolution into a reflective examination and critique of my own interiority and broader definitions of interior space.

At its most basic, the interior is simply the 'condition of being inside'. This thesis allowed me to peer inside of many things, most notably myself, my work, and my position within a discipline. It allowed me to understand that interiority exists in the boundaries that we construct personally, socially, and professionally. The personal revelations about my own interiority that have been gained through this process allow me now to speculate about interiority at larger scales; for myself and for my profession. My interior vision could not be translated through the conventional; This inquiry has enabled me to engage with a speculative world space, outside of reality and time, to ask more questions; to dig deeper and seek greater understanding of whatever problem that is presented to me as a designer or as an individual. In exhibiting the work, I found that the exhibition presented the same context as each image, composition, and model within. A fragment of my process to step inside of.

This thesis has been a mediated process of expanding definitions, understanding, and ways of knowing what an interior and interiority is. In many ways, it became a record of 'unlearning' the interior. Its purpose, I hoped, was to help open the future of

environments, encourage agency in the determination of interior identity, and to bring with that an emancipation from the conventional. I wished to know if we, as a discipline, have constructed our own boundaries by means of our disciplinary rules and systems or if they had been imposed by external and immovable forces. I wanted to know if our limits were truly bounded by the impenetrable real, the concrete, and the solid. In many ways, I still wish to know the definitive answers to these questions.

What I found instead of answers were illuminations of a mechanism, a process, to phase through those boundaries of self, society, discipline, convention; to challenge the edges and intersections of their influence. Through illustration, sketching, modelmaking, drafting, printing, construction, reflection, deconstruction, sleepless nights, and restless mornings I came to know how the limits of my own interiority were personally constructed. This process enabled me to move beyond those self-imposed limitations and redefine my worldview. The revelation therein also allows me to propose that the profession of interior design has also constructed its own limits. Although seemingly imposed by outside forces, it has chosen its boundaries, and in some ways clings to them, as I did, to gain identity and legitimacy. I now know what it means to push beyond those limits assigned to myself and can now clearly imagine what my profession might gain from doing the same.

It is clear to me that what happens when we deconstruct the various boundaries that contain and restrain us and push out beyond those limits, we find moments of creativity that exist outside of the box. Within that creativity is the potential to re-imagine the world in new and different ways - allowing the dreams of a new interior and ways of living. At a time when the world is facing seemingly insurmountable problems, previously unimaginable, it seems that speculative design methods could be the key to creating unimaginable solutions to those problems. I see that speculative methods have the potential for pushing interior designers and architects into a new level of solution making and problem solving that will make them invaluable in constructing our future worlds.

I will continue to follow the lines of inquiry I have established within this thesis. I must continue. The goal remains to open the door to a broader expression of interior within our profession, discipline, and society. Even understanding the magnitude of his influence, I am committed to follow in the footsteps of Lebbeus Woods:

> "…people see it [my work], they think about it, they take it seriously. At least some people do.…This is something we have to fight for on a continuing basis so we can't relax, you know, we have to continue to work…to try to create the conditions under which people can express their ideas." (Woods, 1998)

Each day, I have come across new artists, designers, books, and influences that help me better understand my own process and position. I am not alone; there are others who experience process and see the world in a similar way across several disciplines.

While this thesis, as a product, is concluding I feel that this is just the beginning. The work is not done. The intent of the work was to discover an interior process from which to engage with space and its design. In continuing my research, I hope to engage with additional philosophical frameworks and interact with students to further explore how process is discovered. I hope that my work inspires and opens the door for others to engage with a critical framework, to challenge their environment, and to imagine alternate trajectories. Trajectories for the discipline and profession of interior design to innovate, experiment, and evolve.

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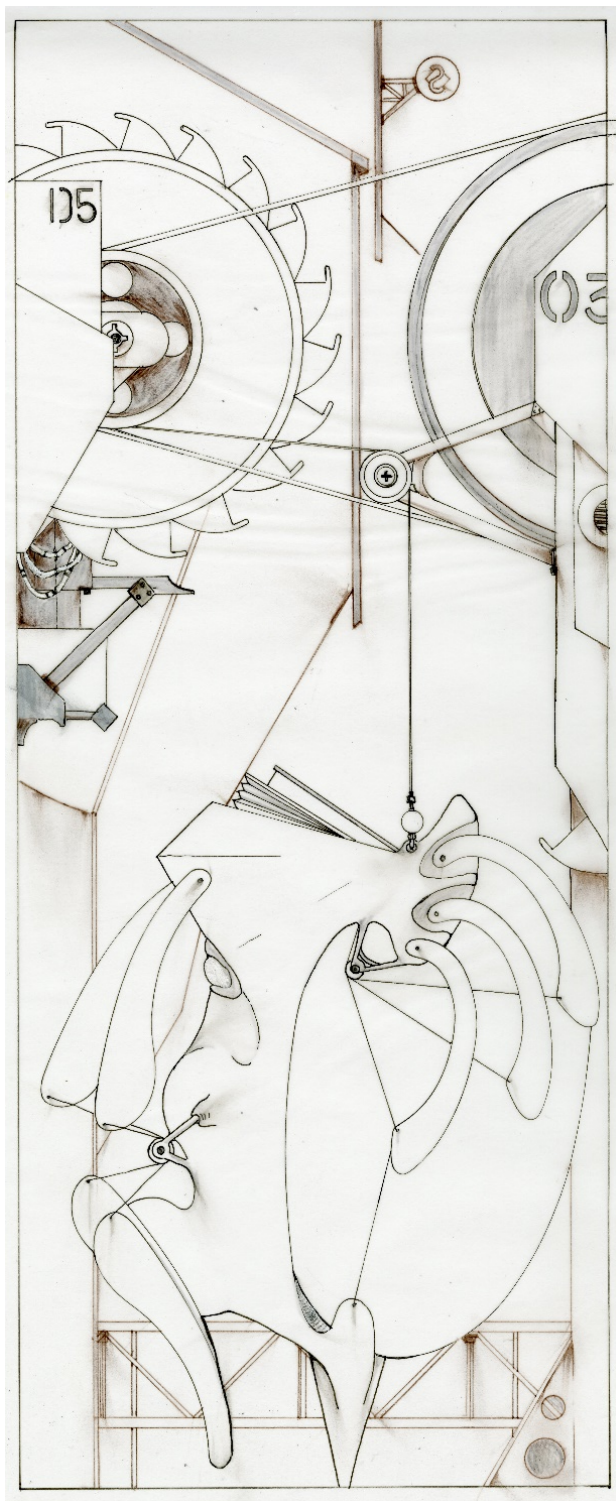
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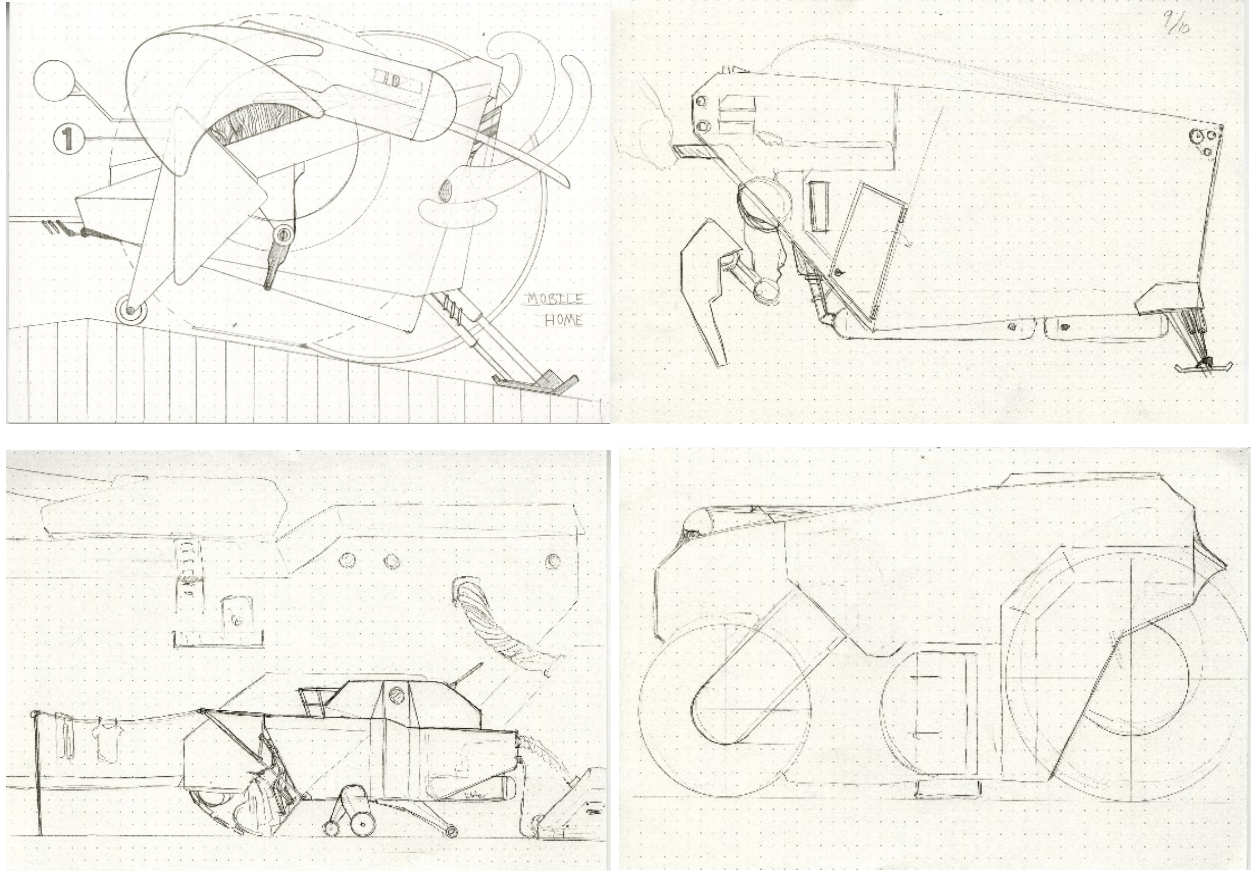
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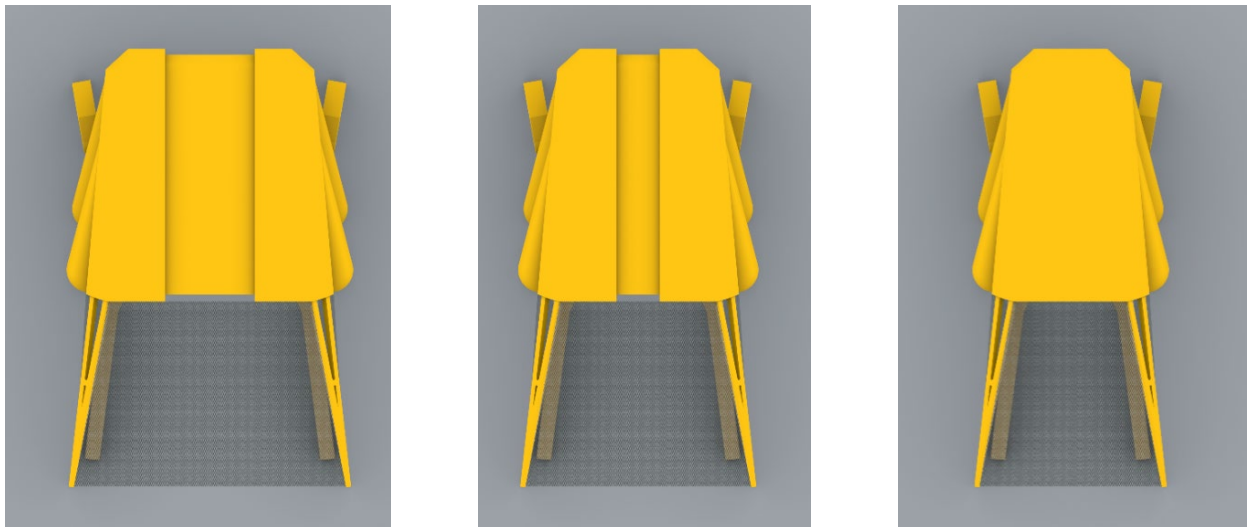
Top views of *Camper*, demonstrating expansion feature, Mobile Homes Series

Laser-cut model of *Motel 017*, Parts (above) and Assembled (below), Residence Series
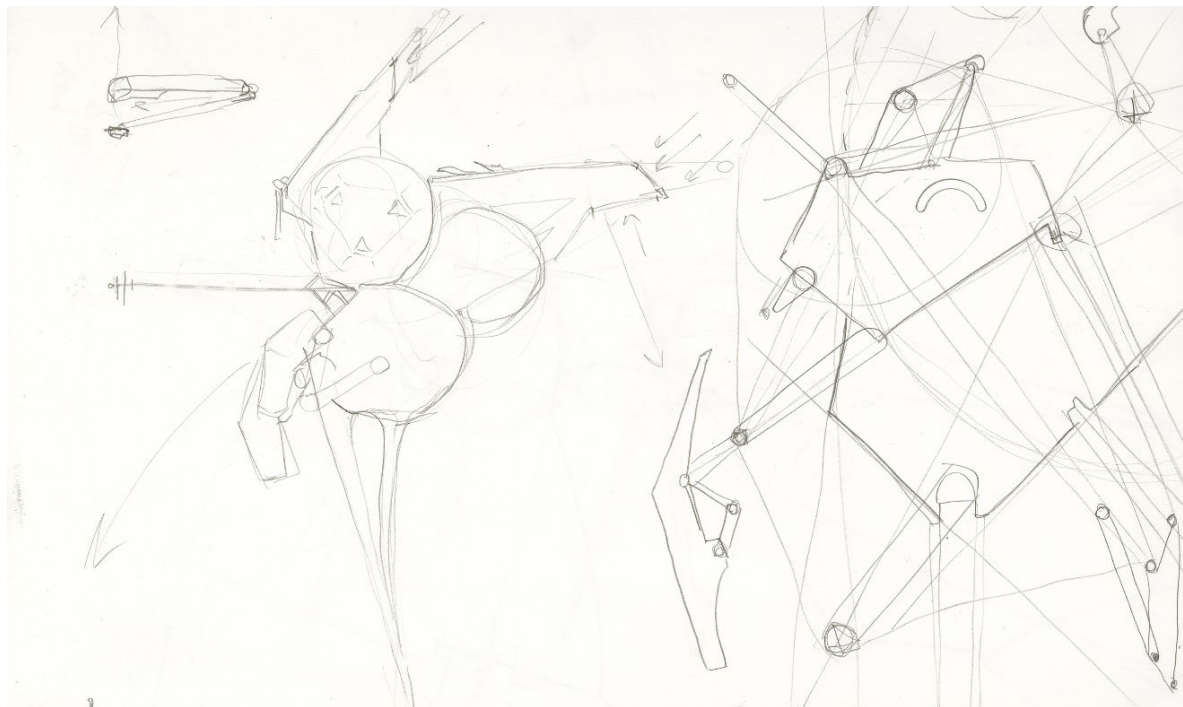
Early Sketches for *E.DNS, Vault, and Motel 017,* Eden + Residence Series
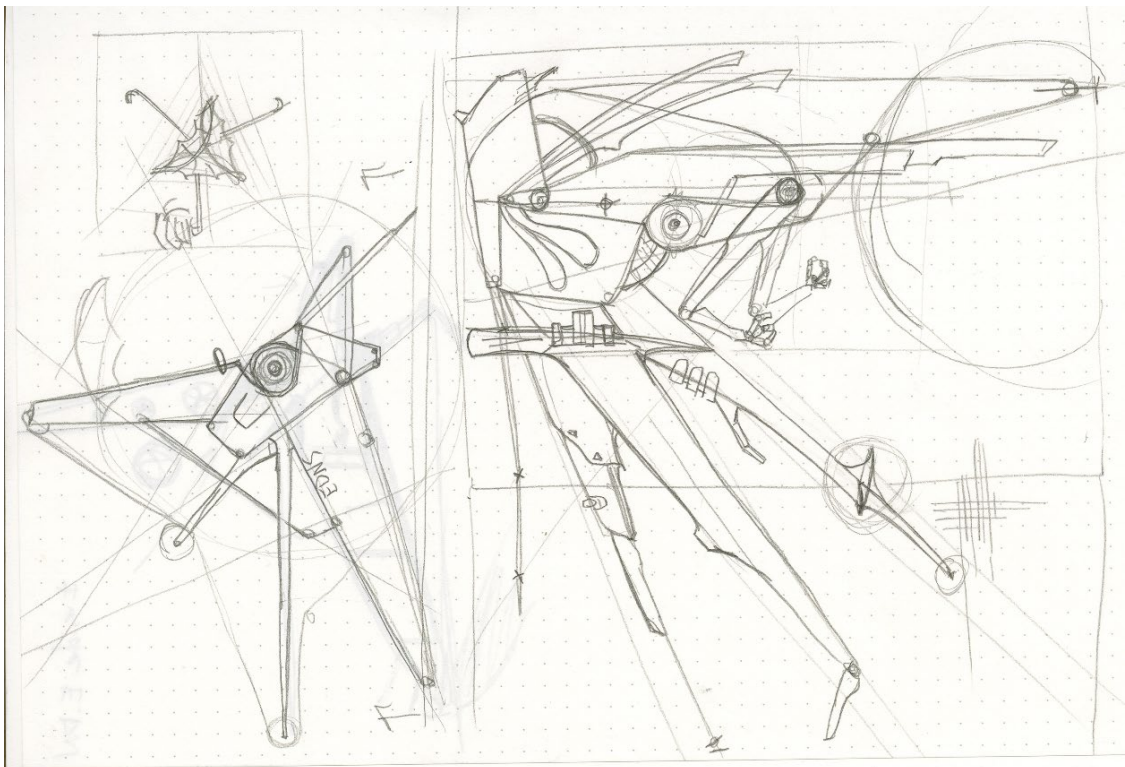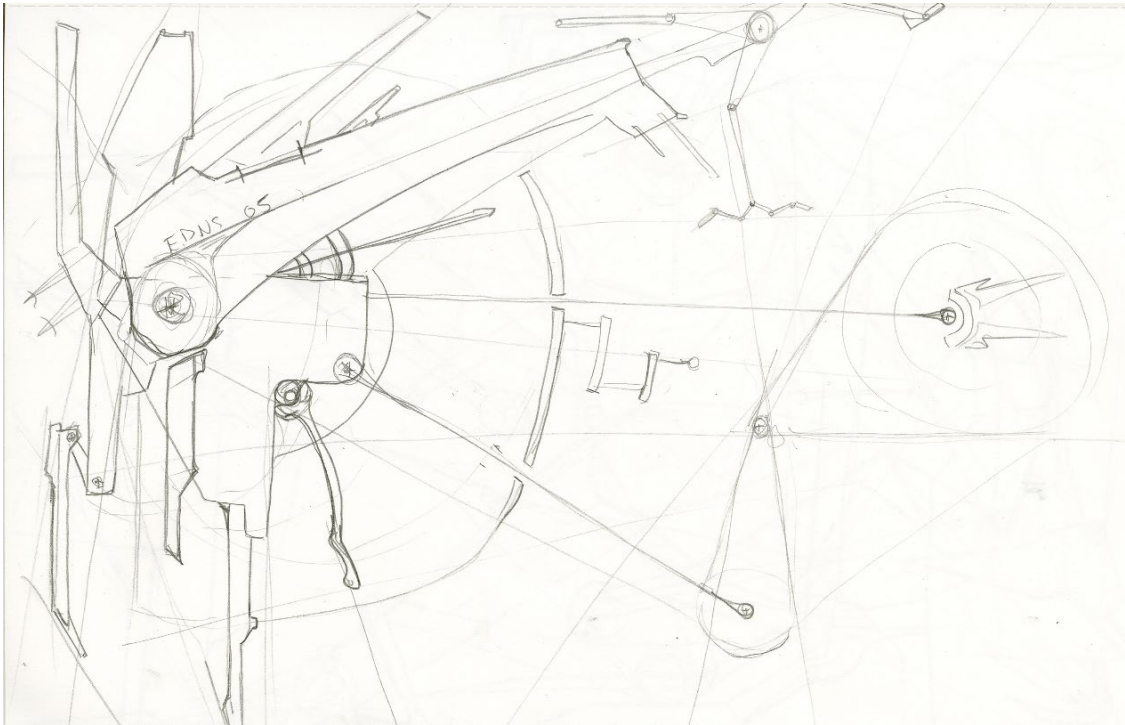
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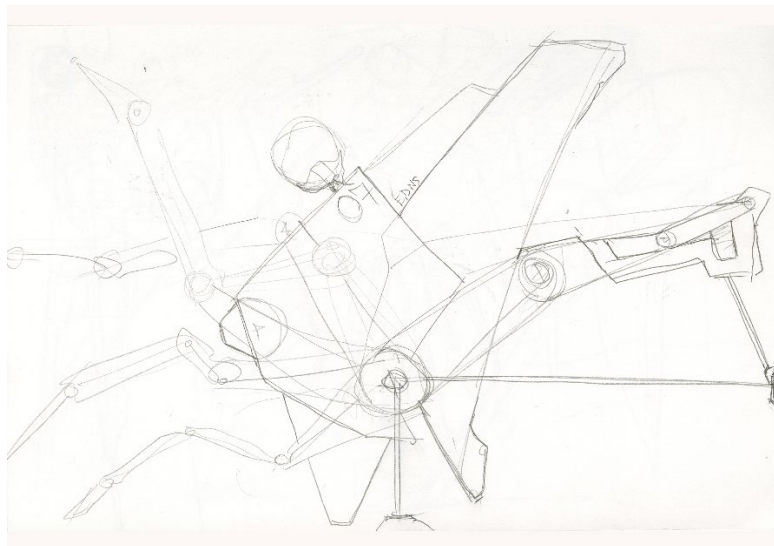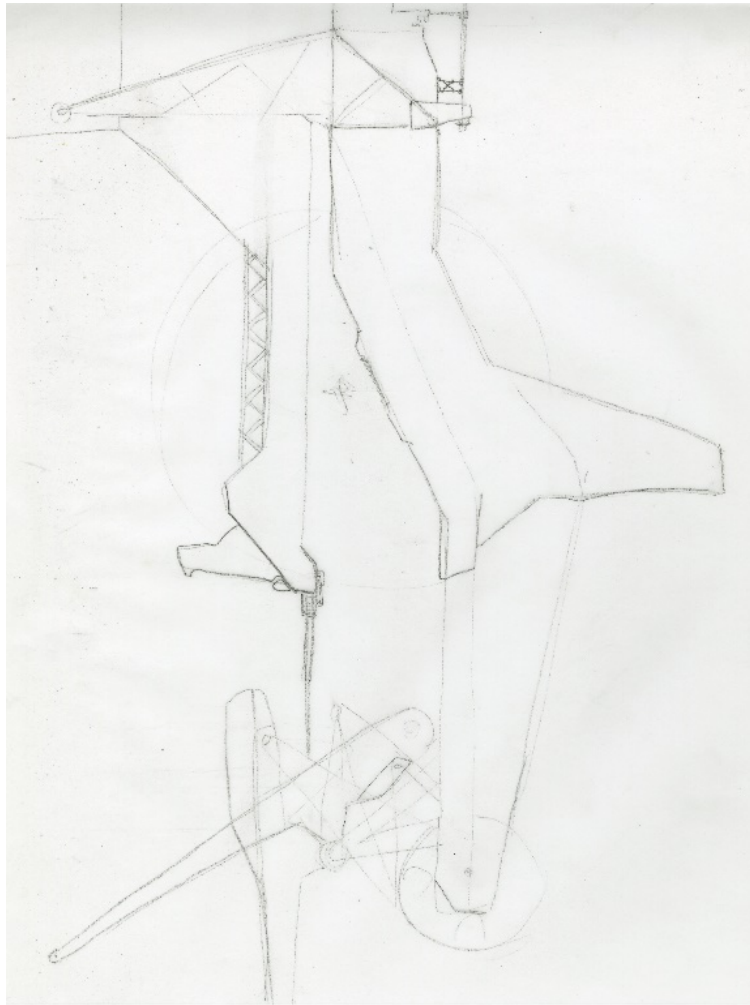
Waystation (top) and *E.DNS 07* (bottom), Eden Series

Platforms, Exploratory sketches for *E.DNS and Residence*
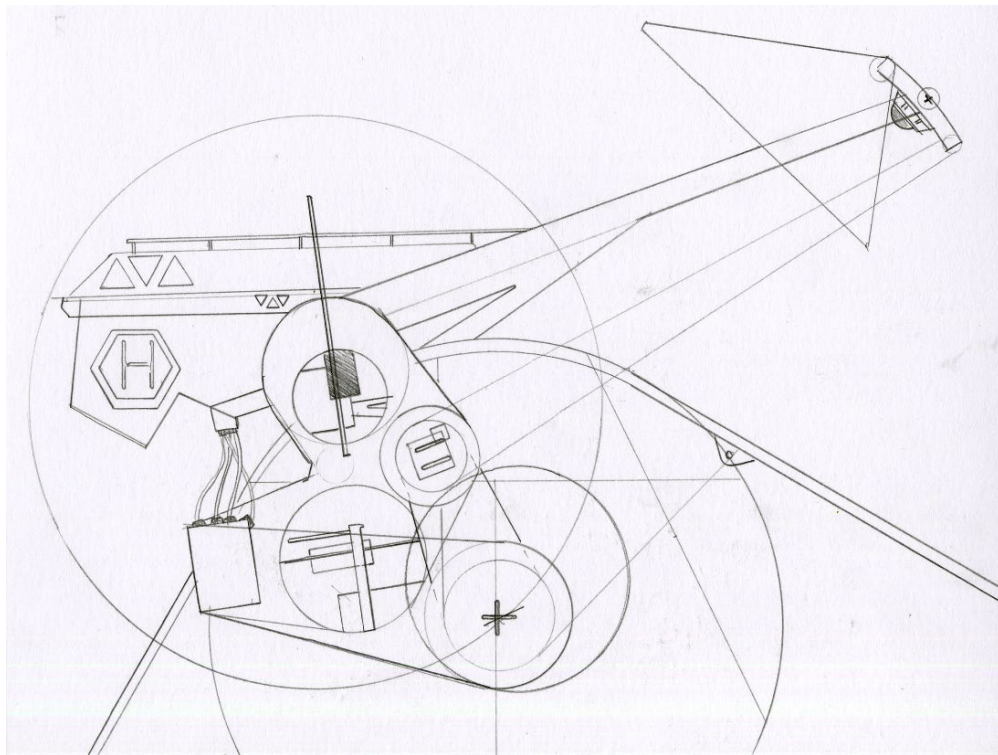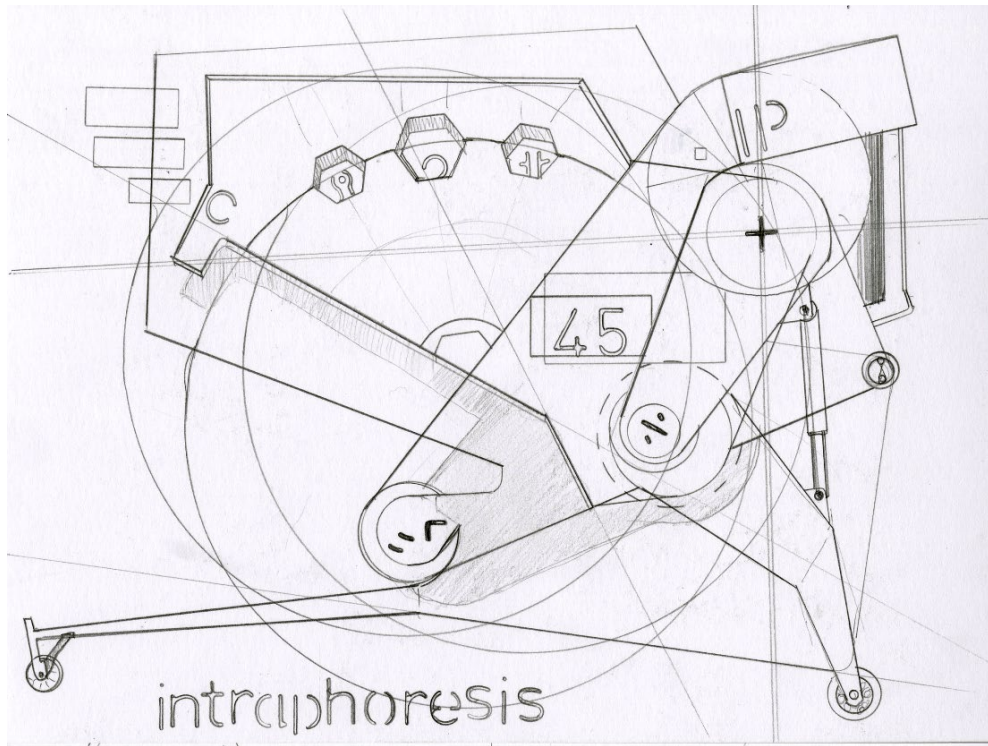
CIP-45A 'Intraphore' (above), CIP-HX2 'Anchor' (below), Sketches from Mind/Mirror series

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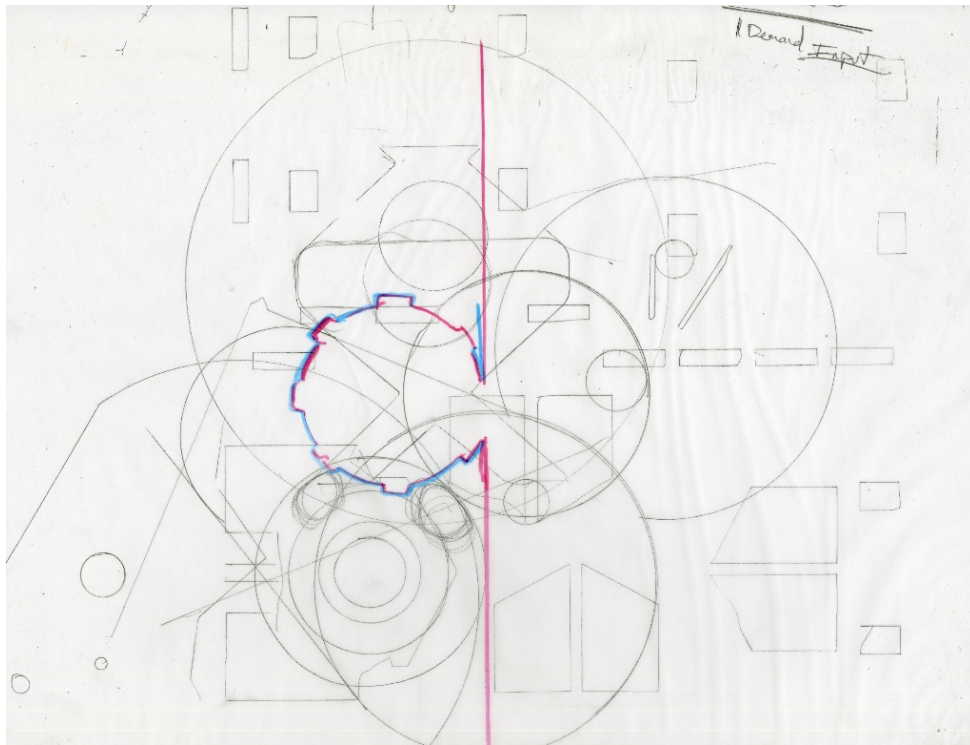
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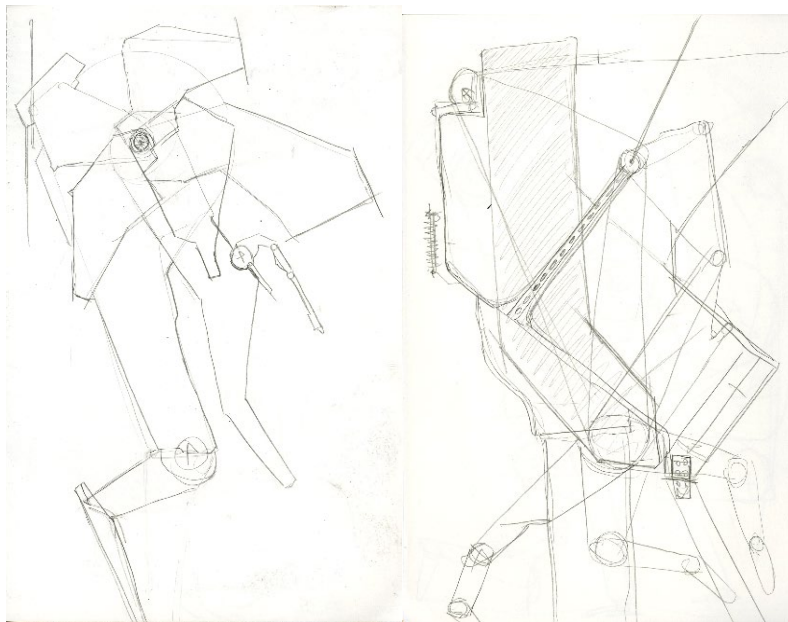
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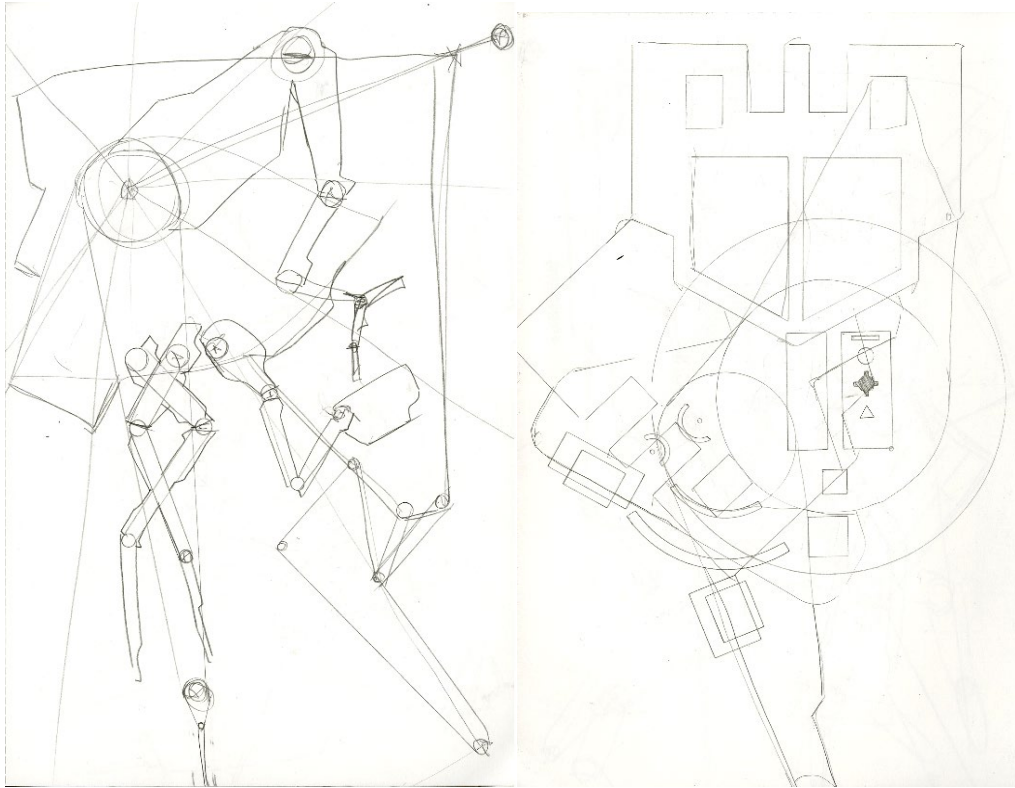
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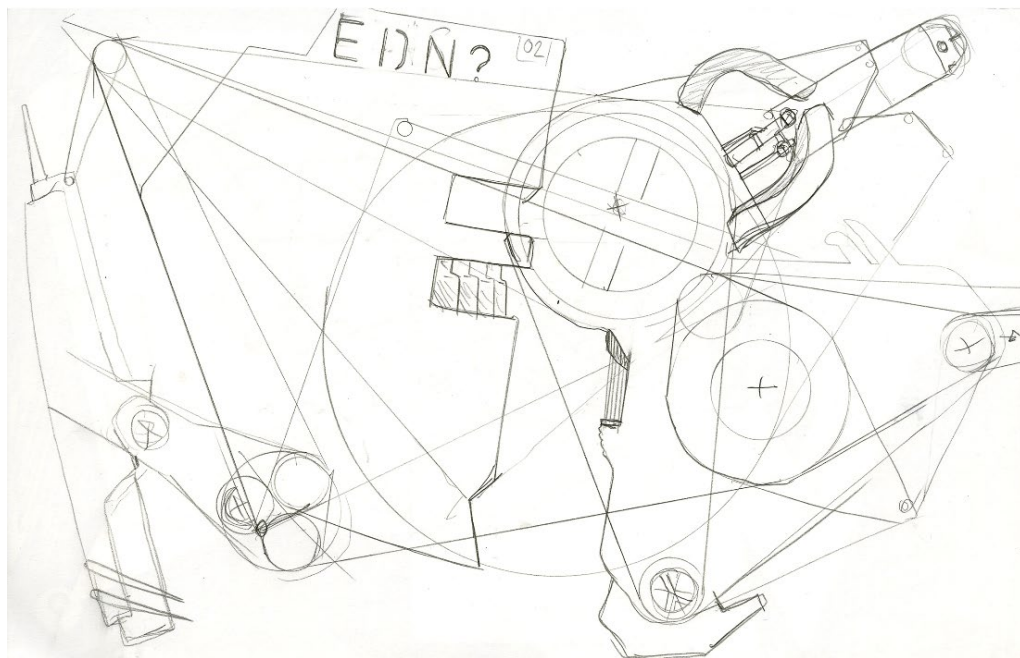
C.INQ "Inquiry II", Sketch forMind/Mirror series
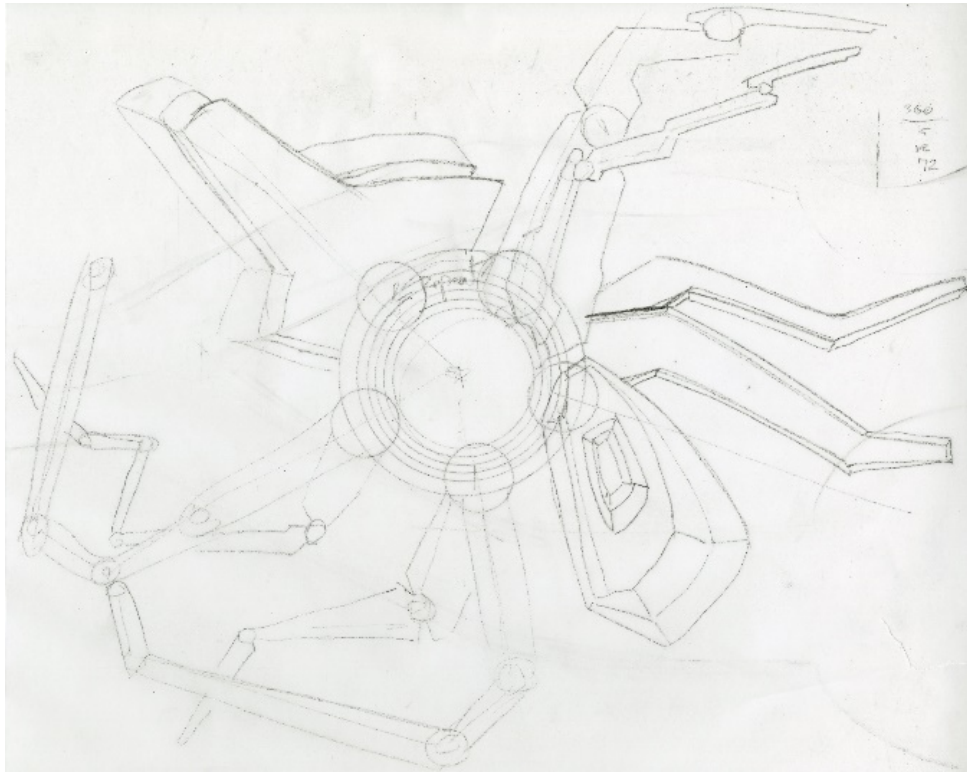
Nexus, component drawing for Mind/Mirror series
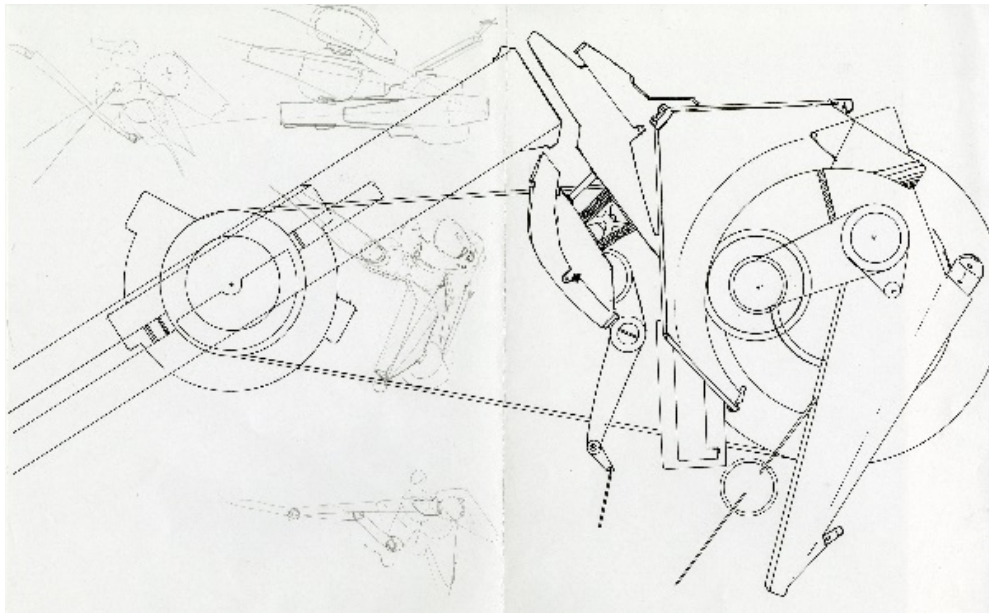
Crane, component drawing for Mind/Mirror series
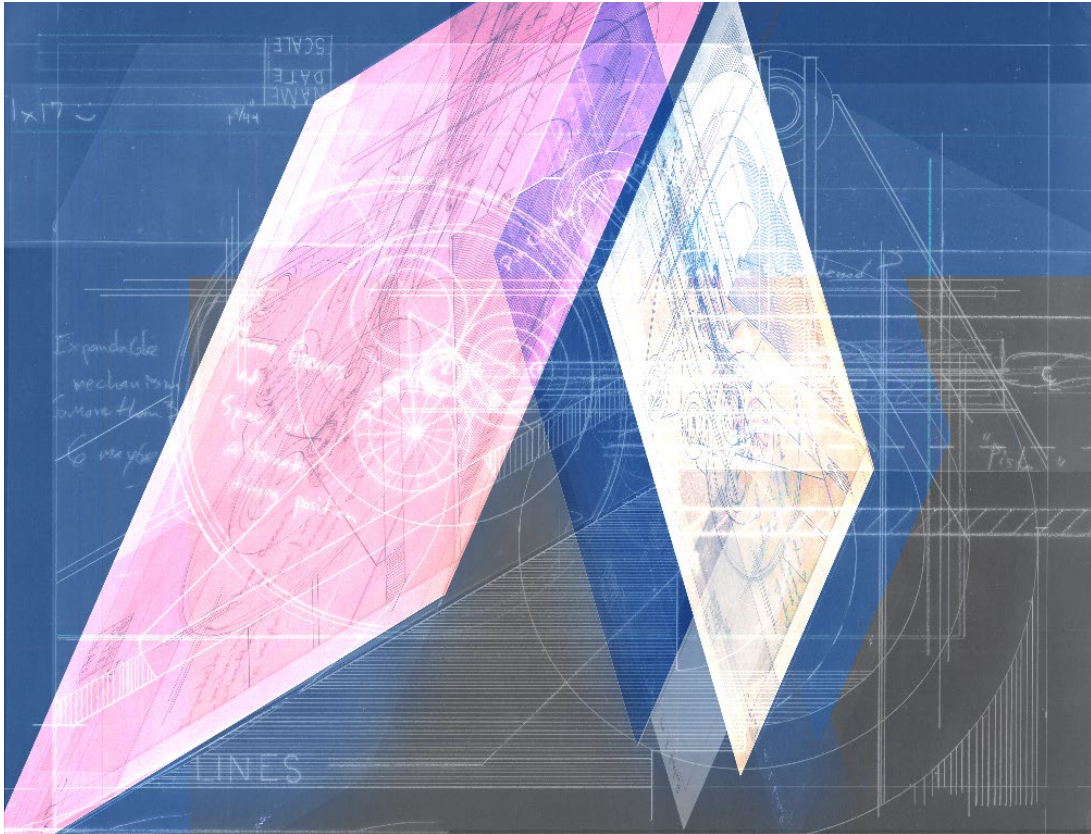
Mind Engine S, Mind/Mirror Series

Mind Filter #1, Mind/Mirror Series
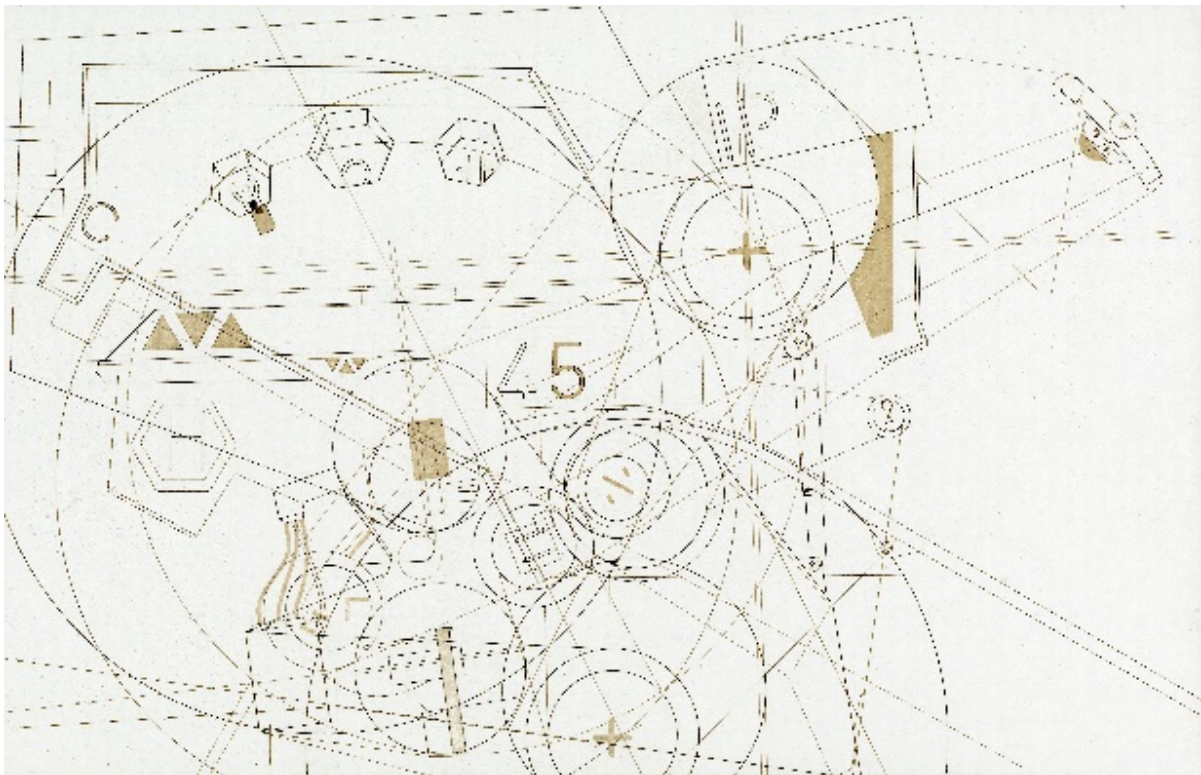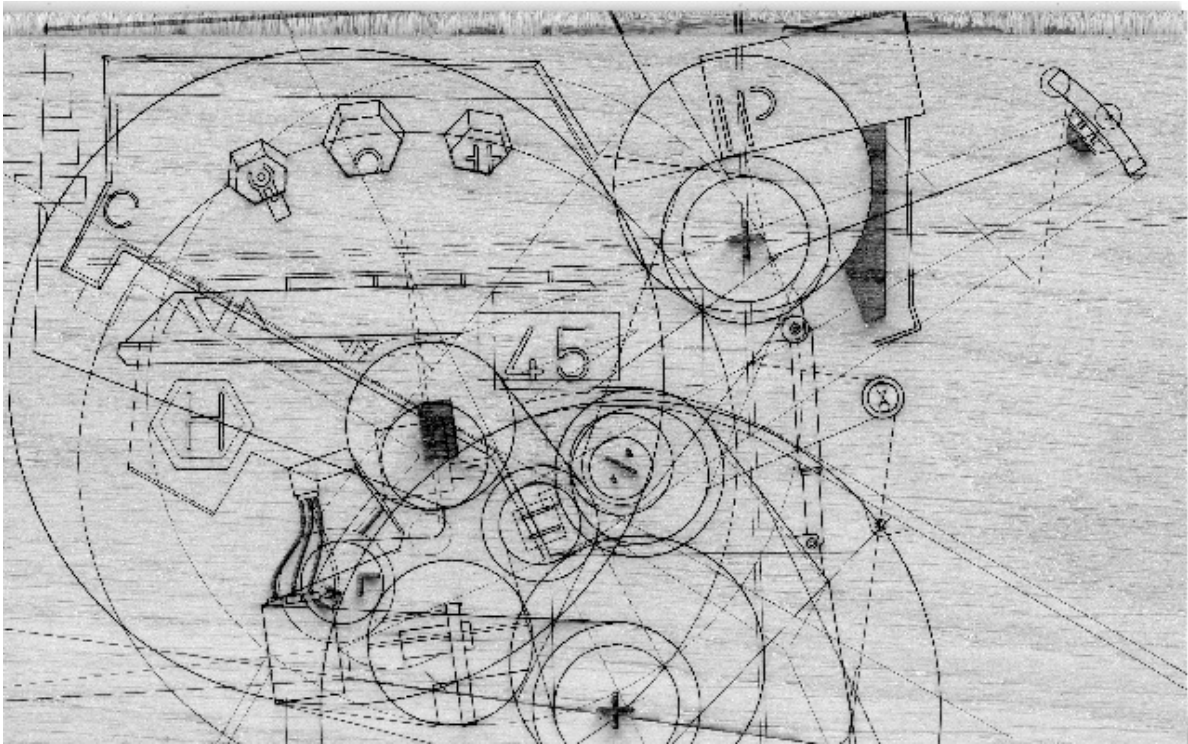
Laser etching tests from vector trace of *CIP-45A 'Intraphore',* Mind/Mirror series
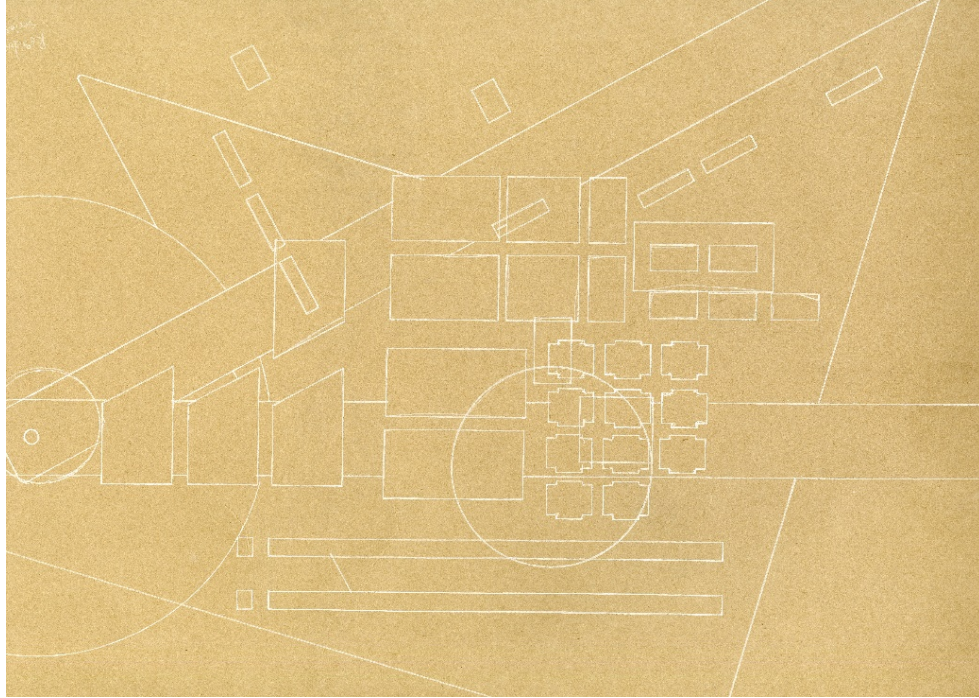
Site 03, component drawing for Mind/Mirror series
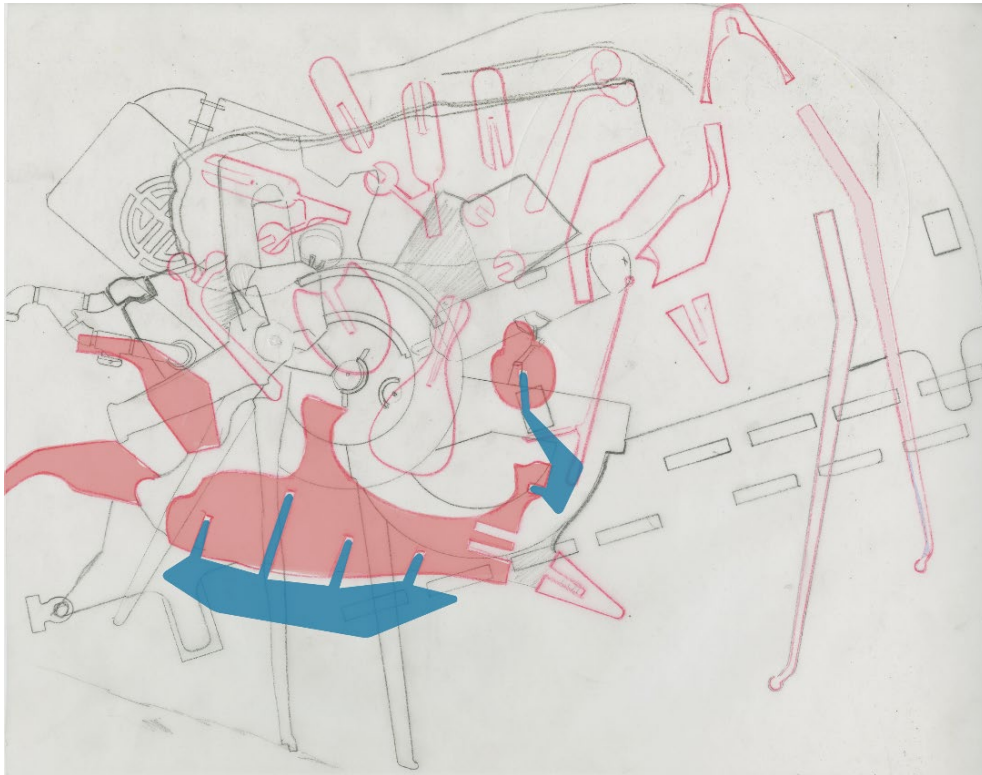
Crawler, component drawing for Mind/Mirror series
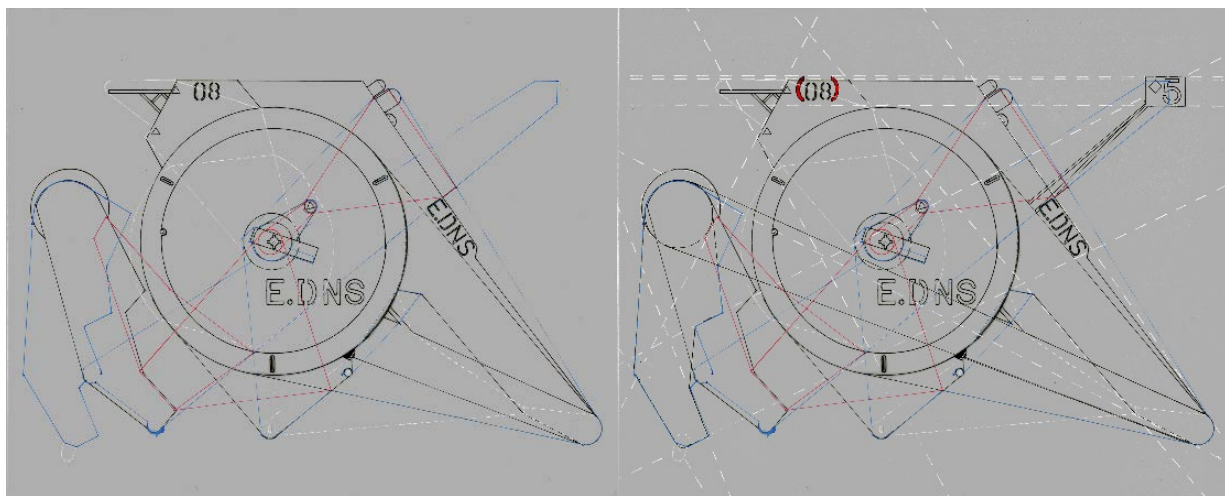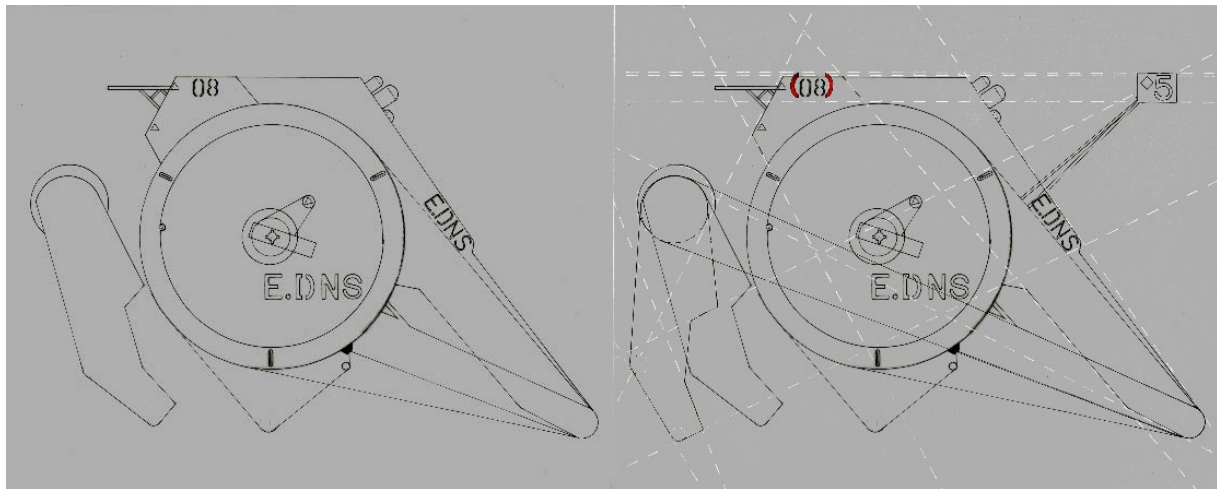
E.DNS 08, Overlay 1-4, Eden Series
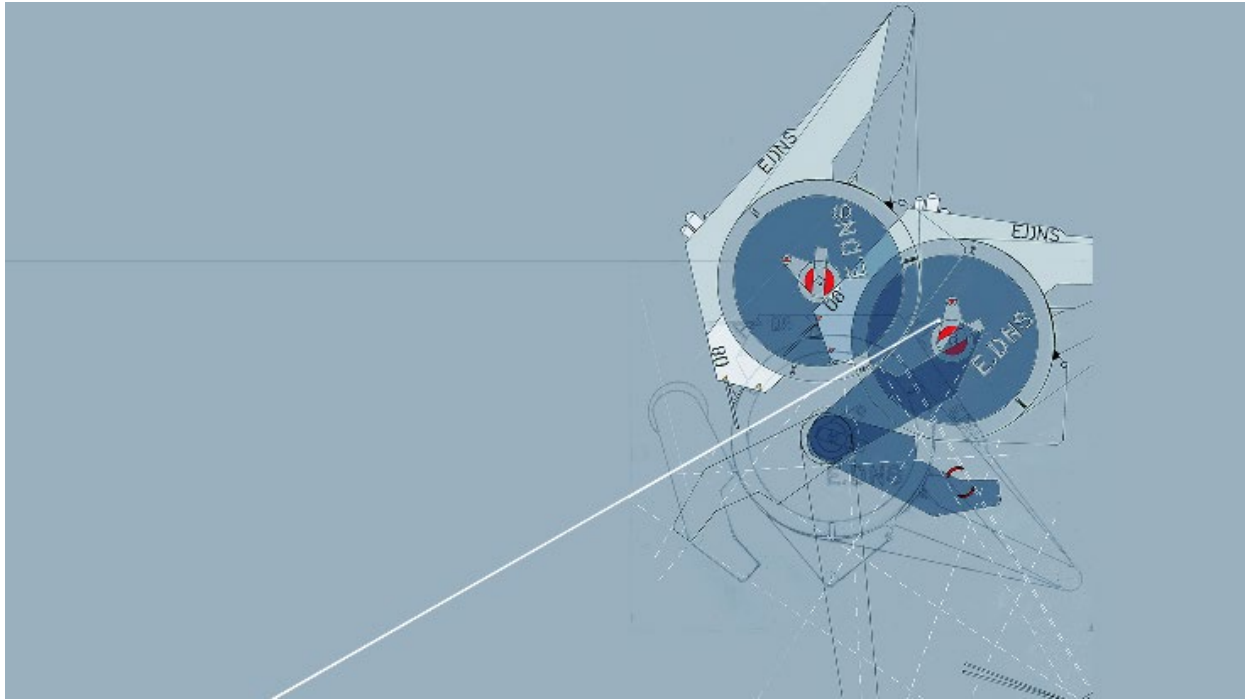
E.DNS 08 Expanded, variant color explorations, Eden Series
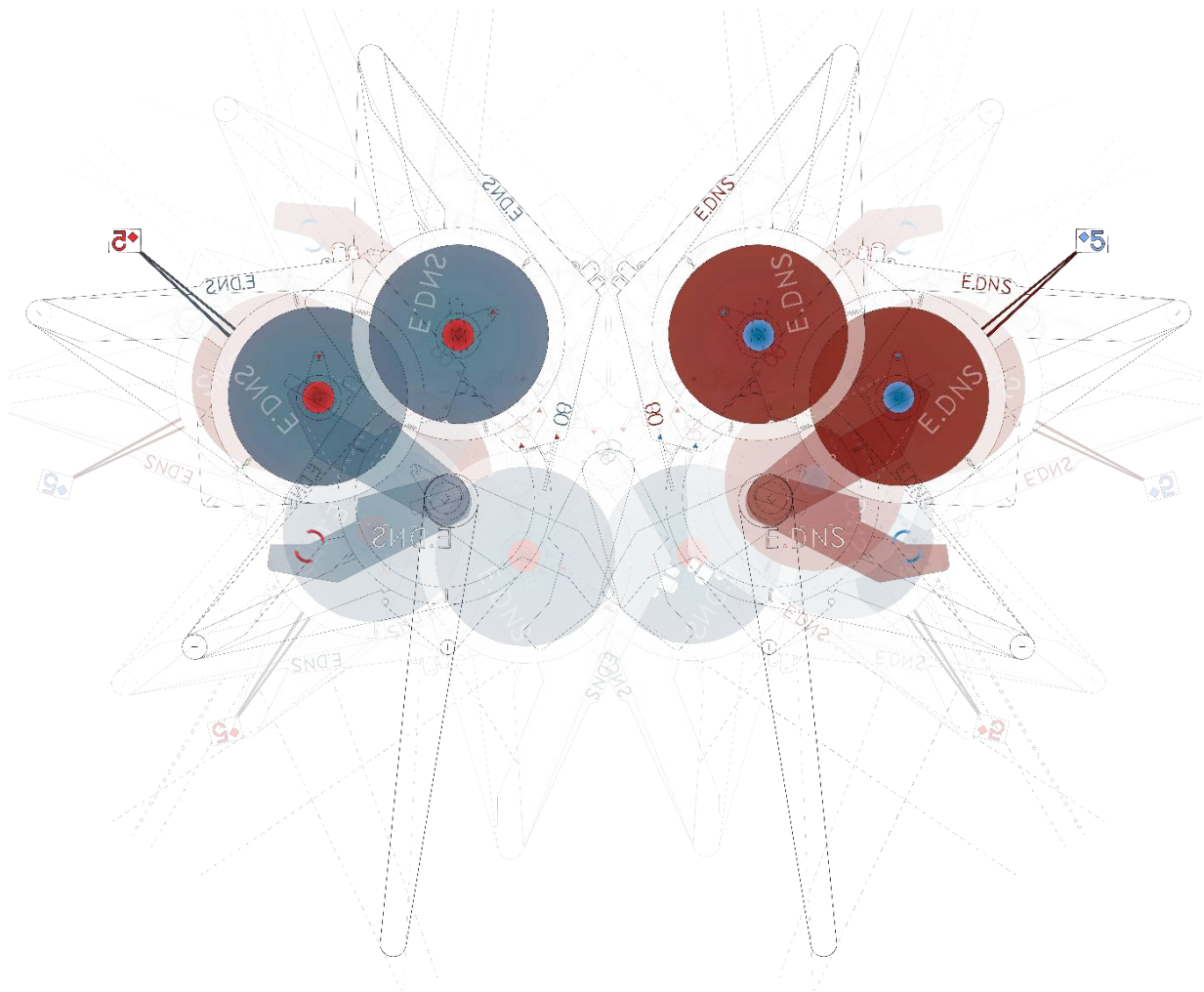
Arachne, Eden Series
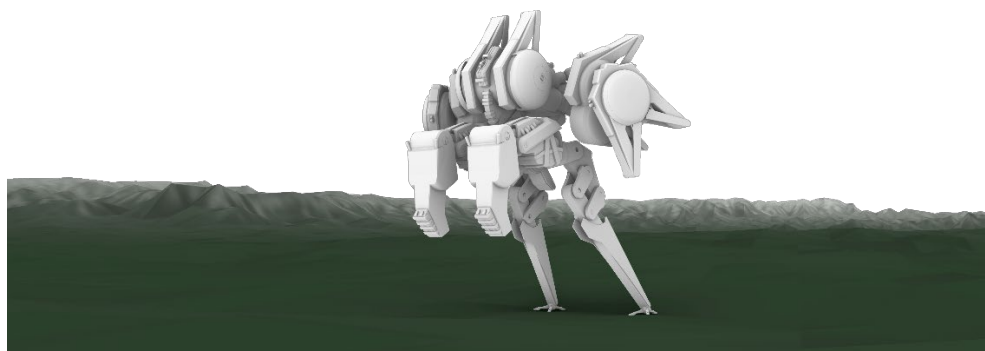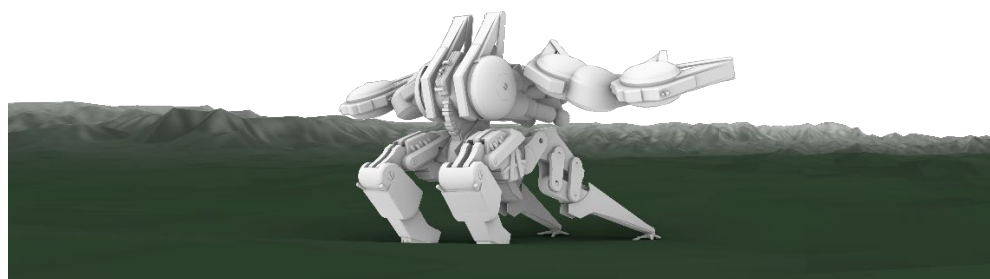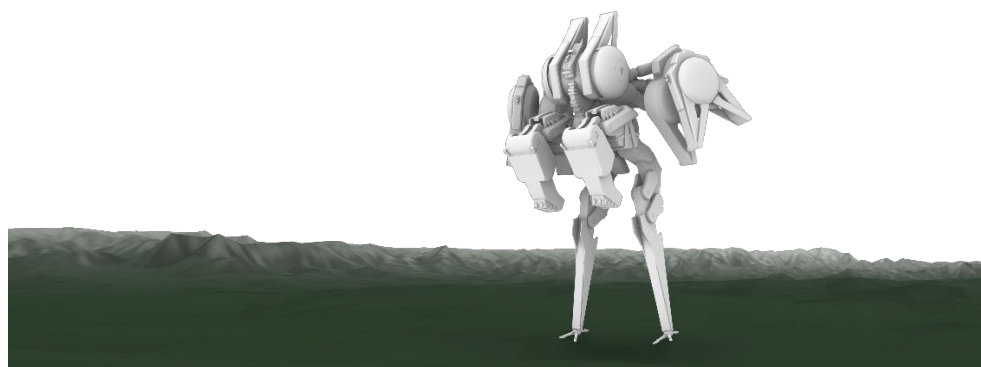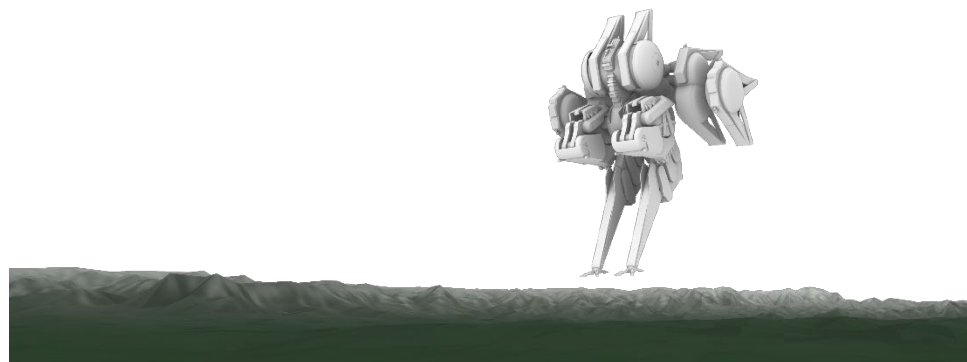
Still frames from test animation for *E.DNS 08* Deployment Sequence, Eden Series
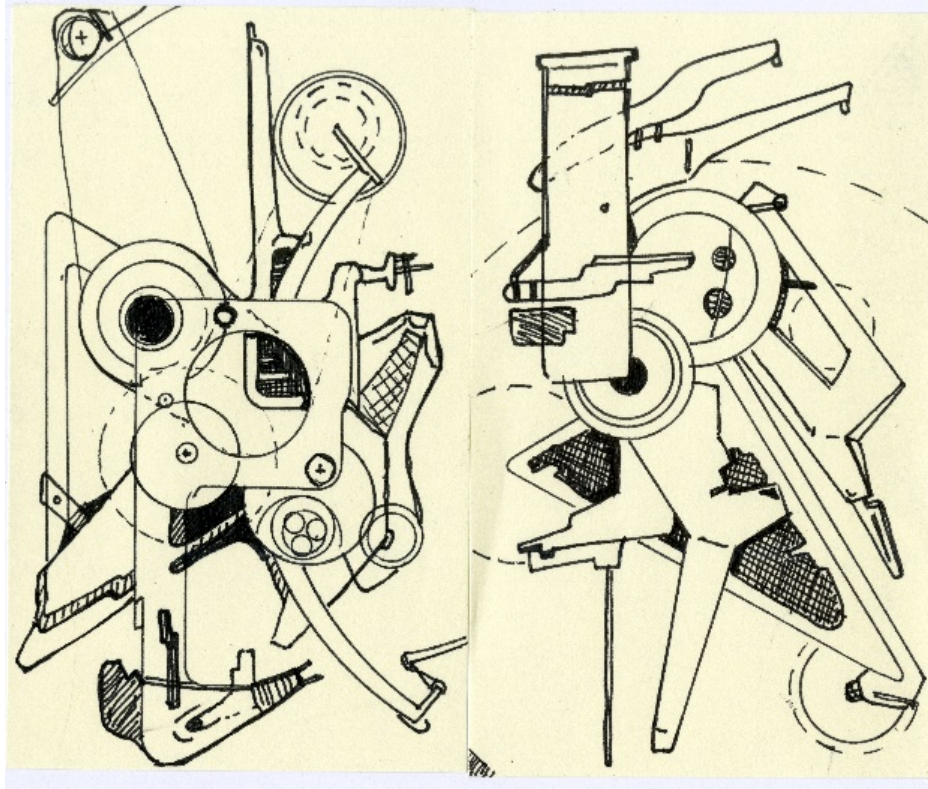
Nihilites, expanded components for Nihilo Series
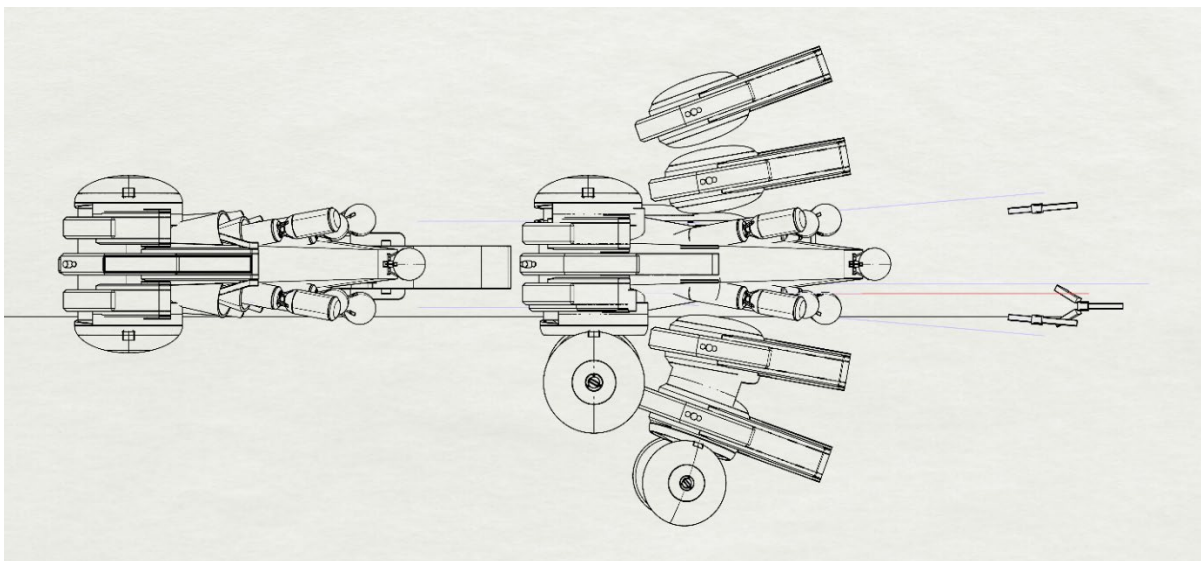
Top view of 3D model for E.DNS 08 [Deployed]; Component drawing for *Nihilo #3-Scattered.* Nihilo Series
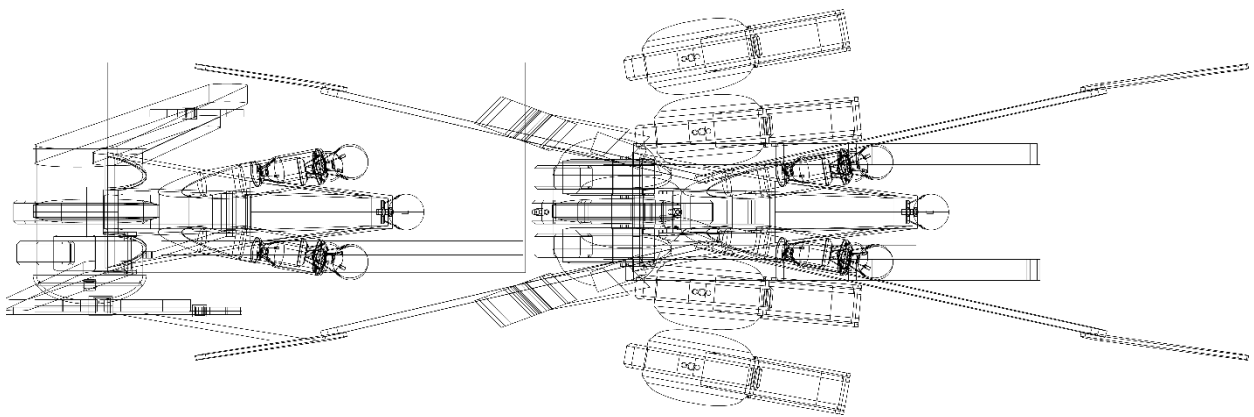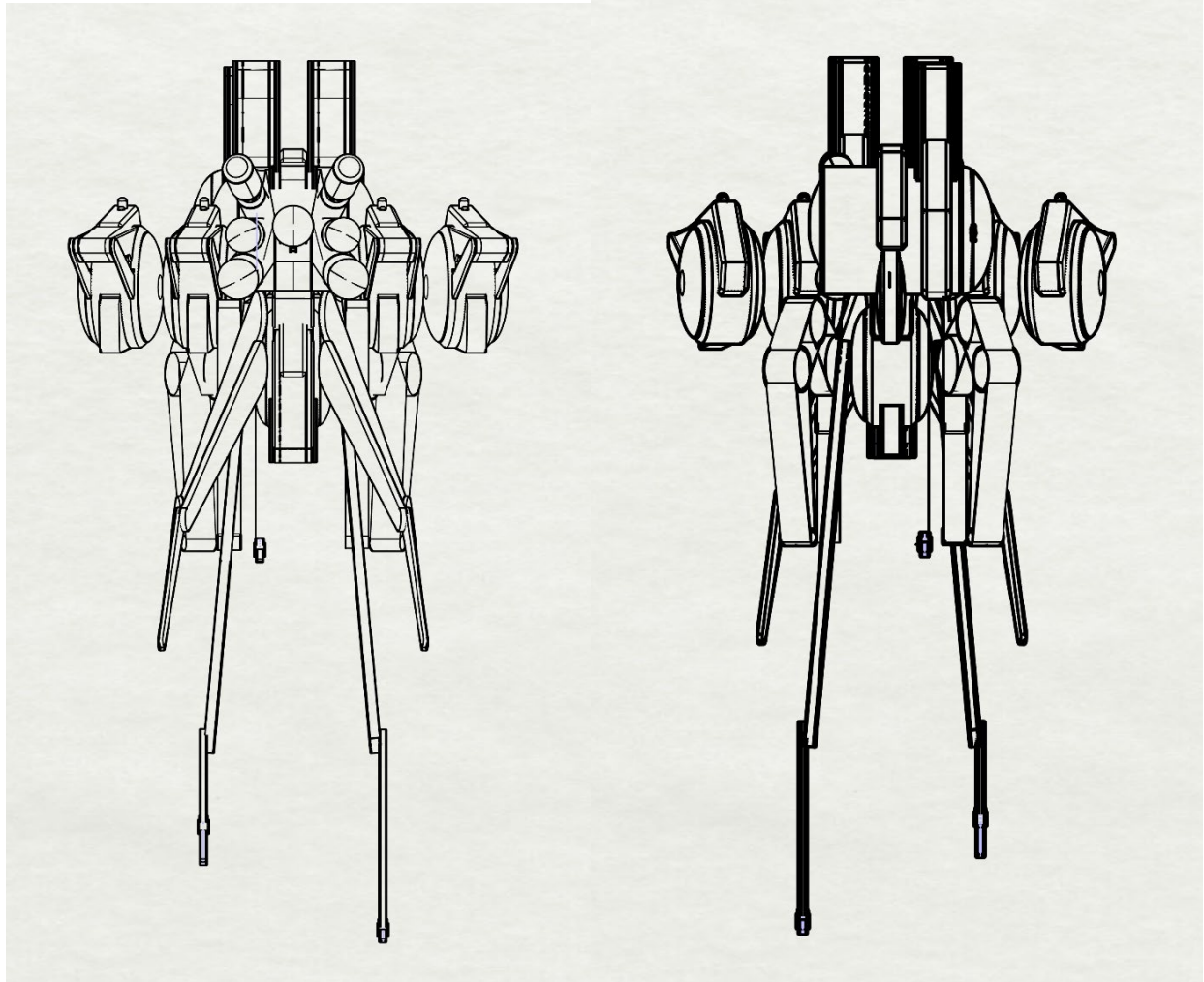
Early extracted views of 3D model for *E.DNS 08 [Deployed]*; Component drawings for *Nihilo #3-Scattered.* Nihilo Series
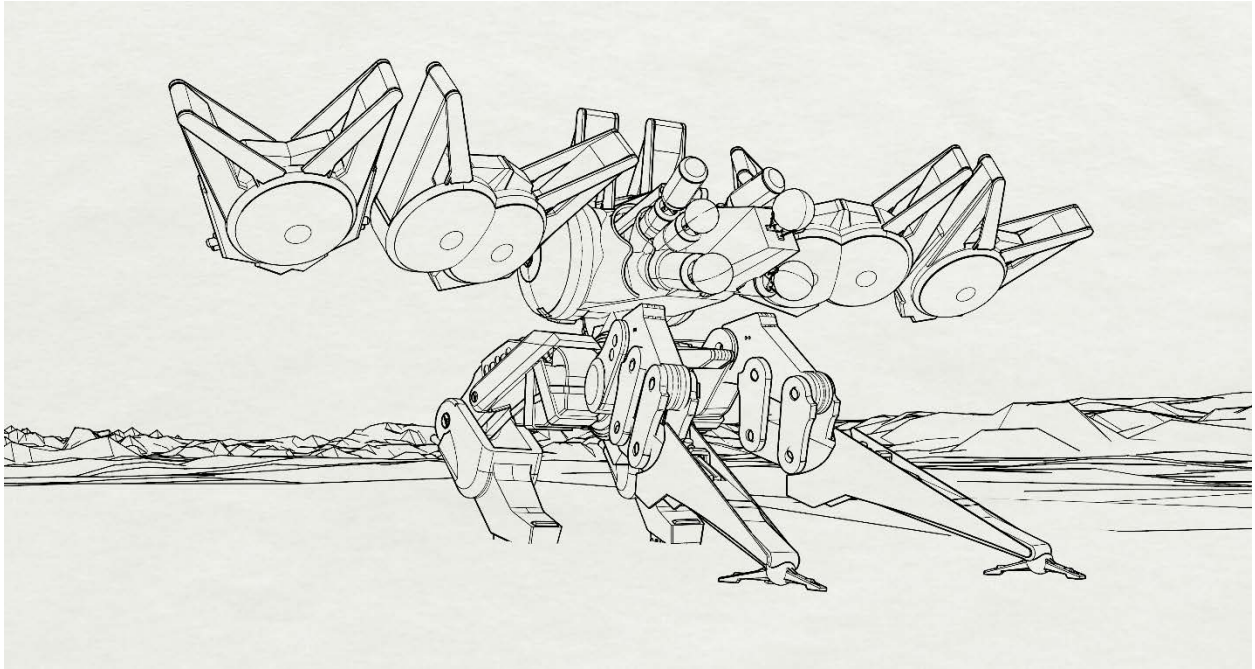
Linework drawing extracted from *E.DNS 08* test animation, deployment sequence complete
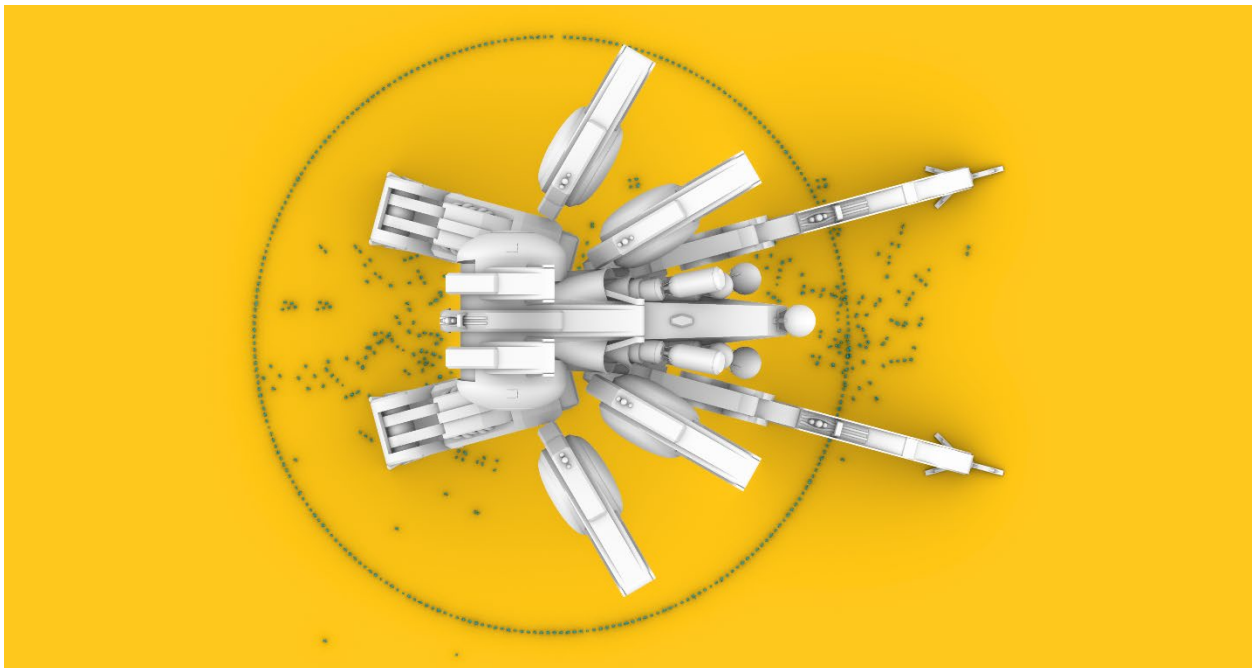
Site aerial view for *E.DNS 08 [Deployed]*
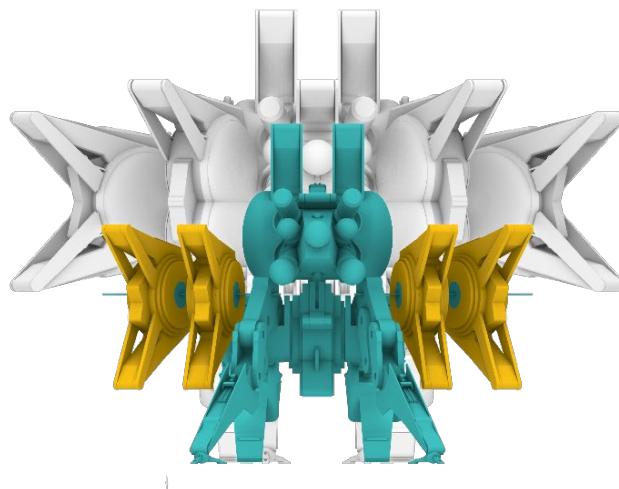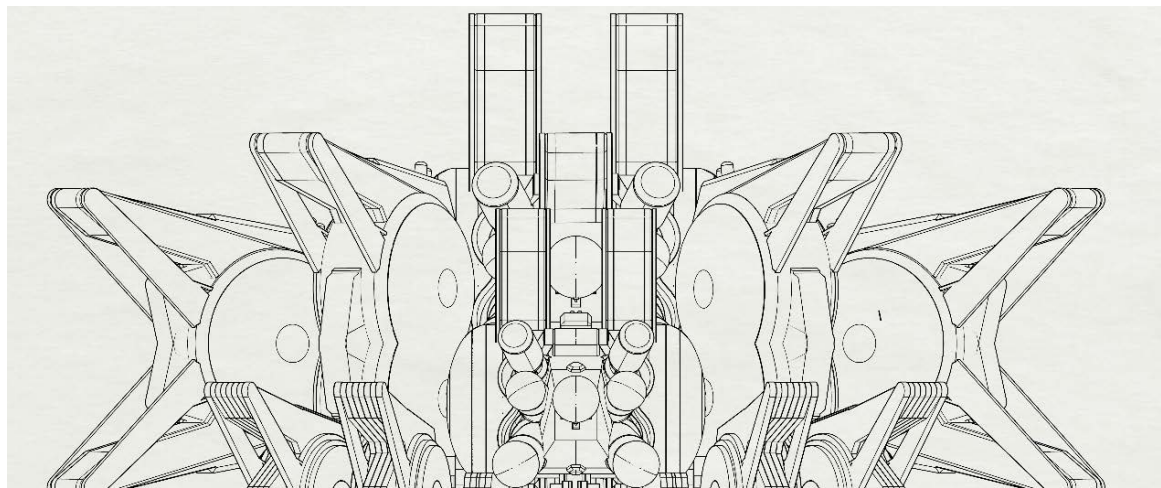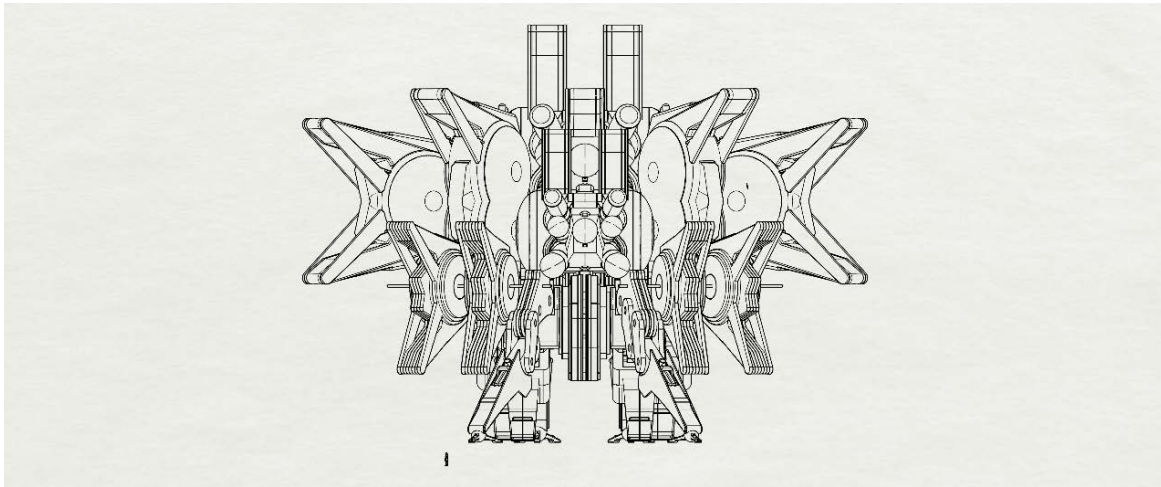
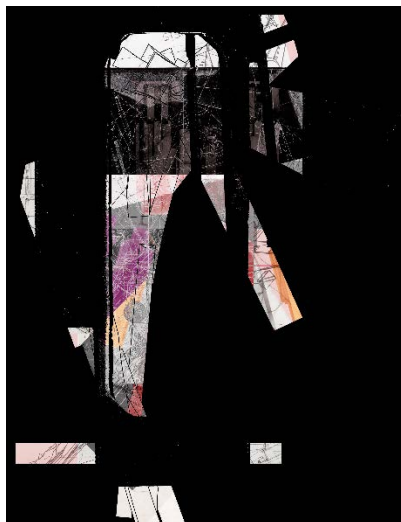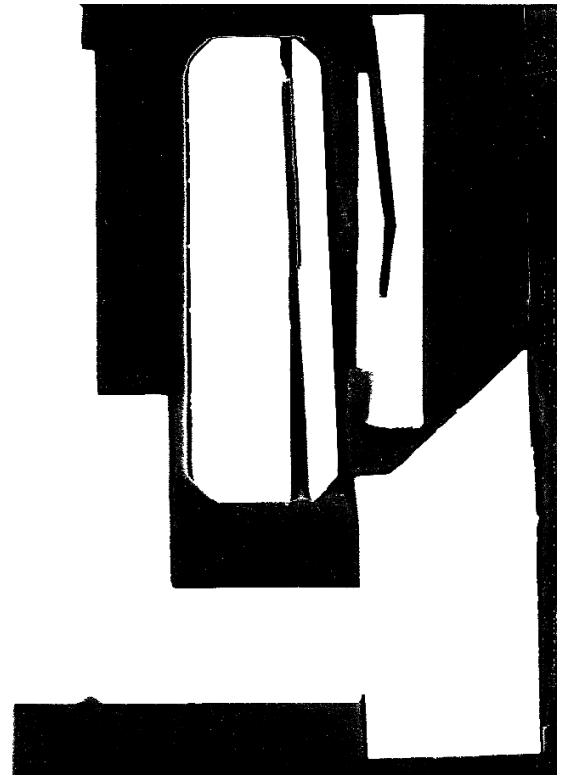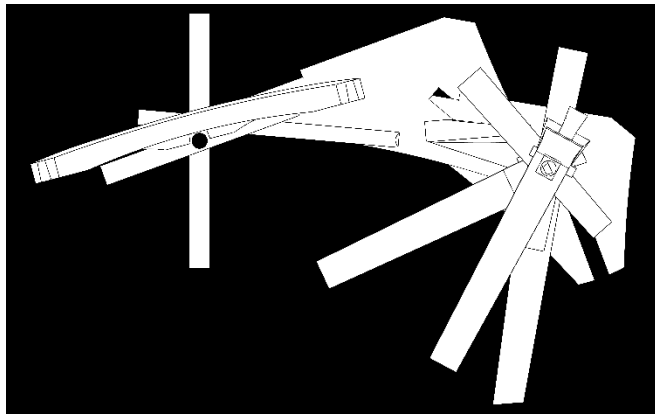Images of *E.DNS 08 [Deployed]* 3D model, scale comparisons, Eden Series

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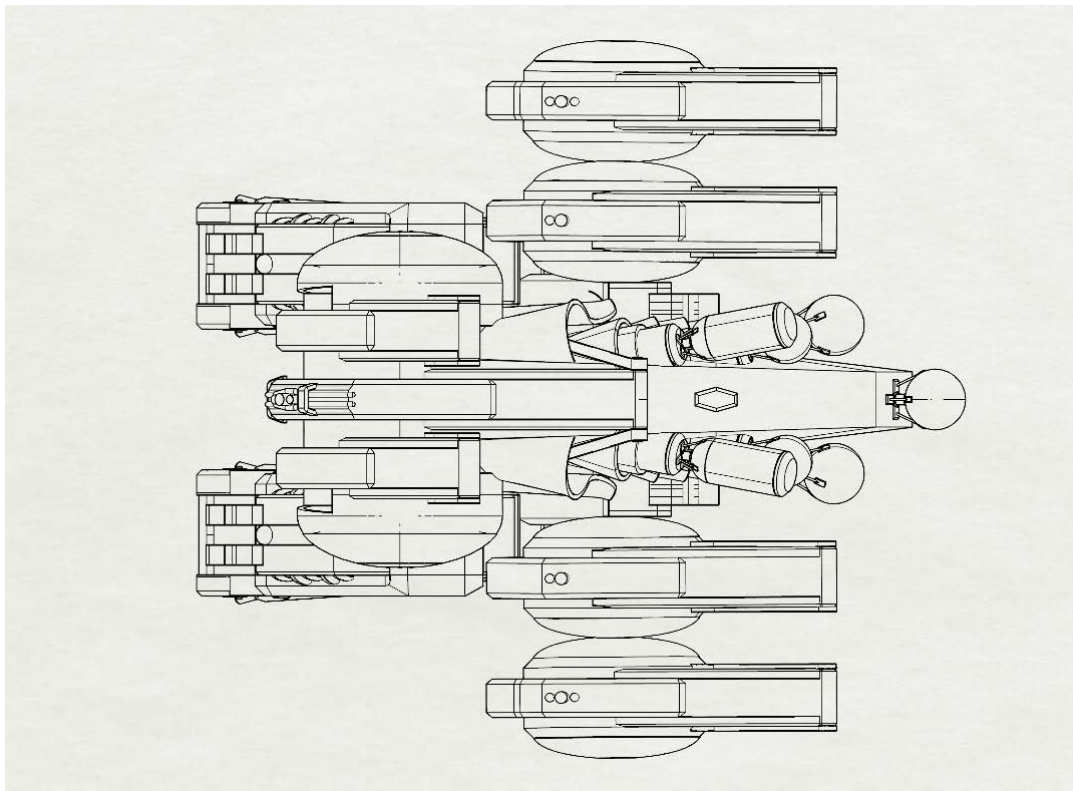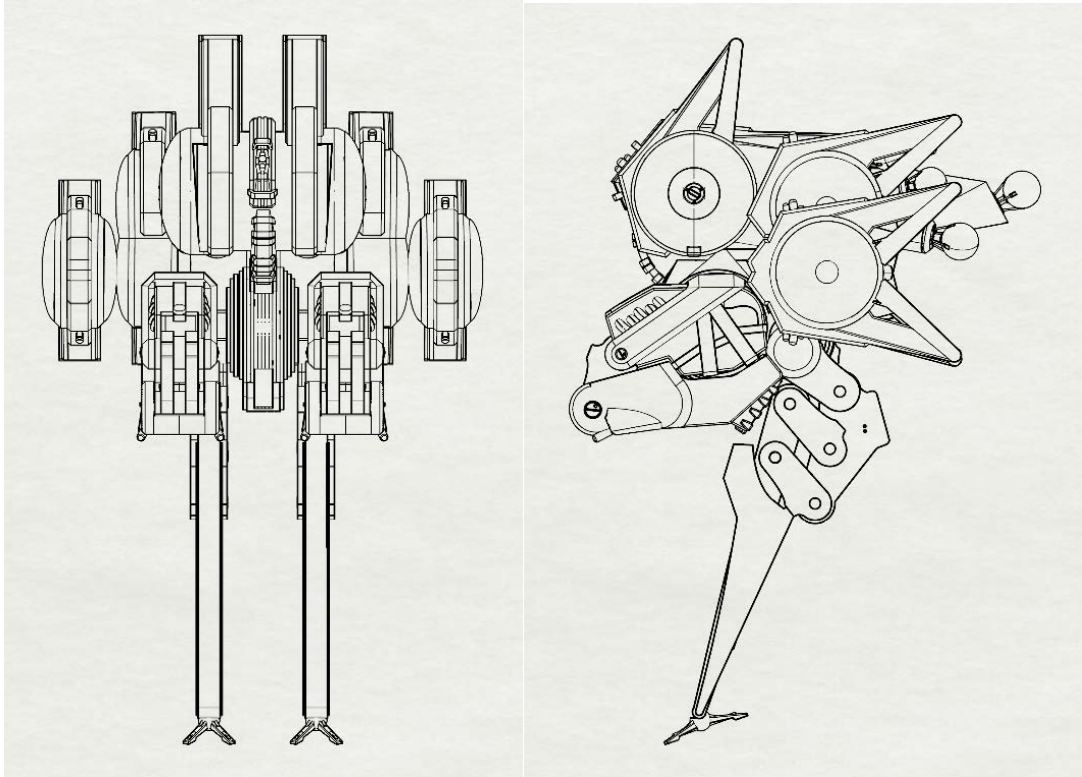
Images of *E.DNS 08* Pre-deployment configuration, Eden Series
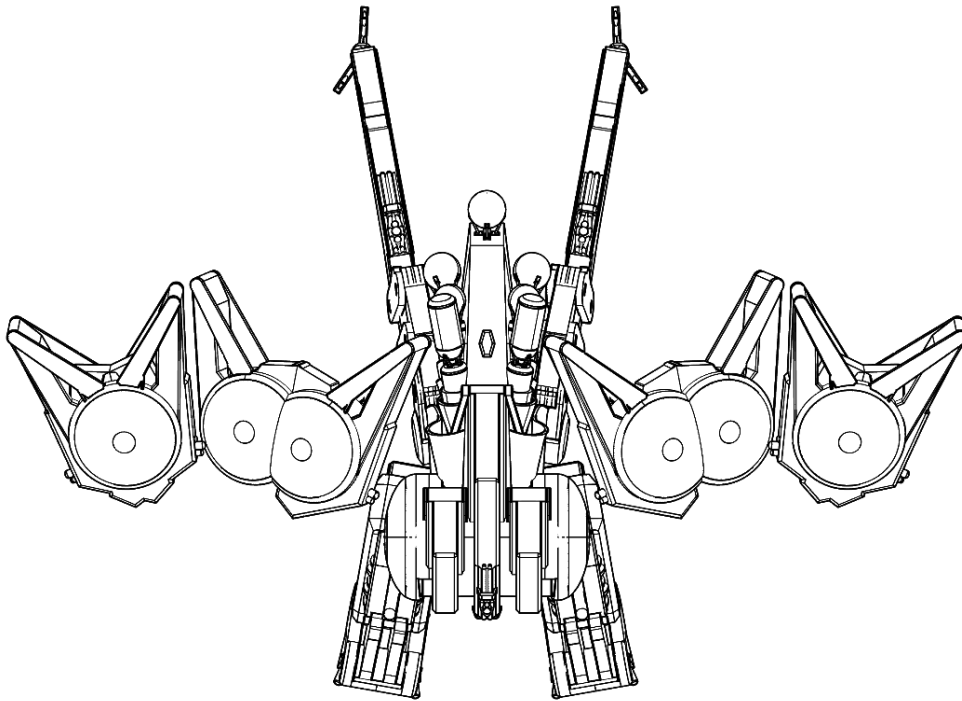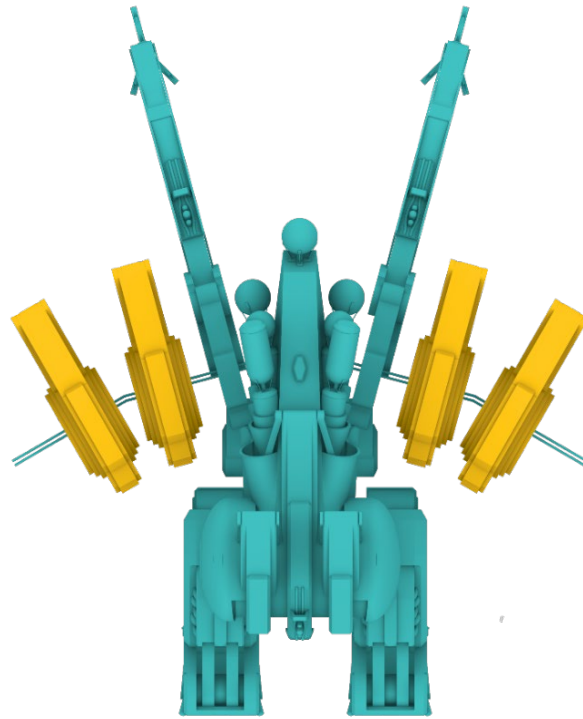
Images of *E.DNS 08* deployment configurations, Full (top) and Expanded (bottom),
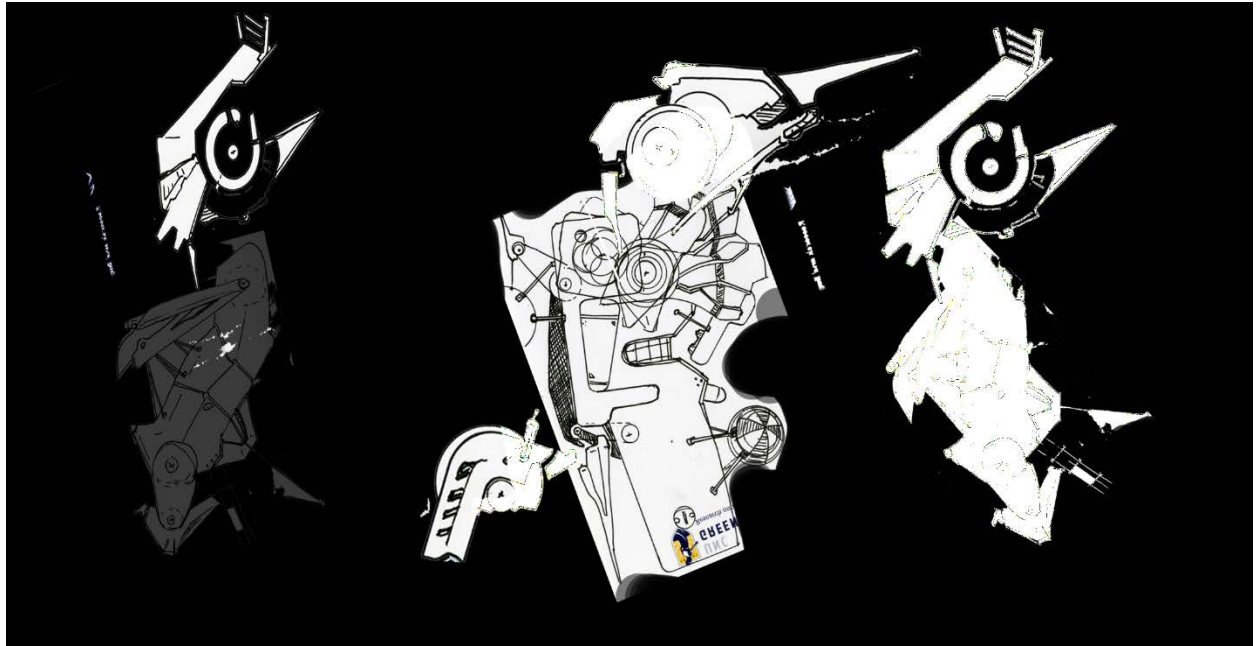Eden Series
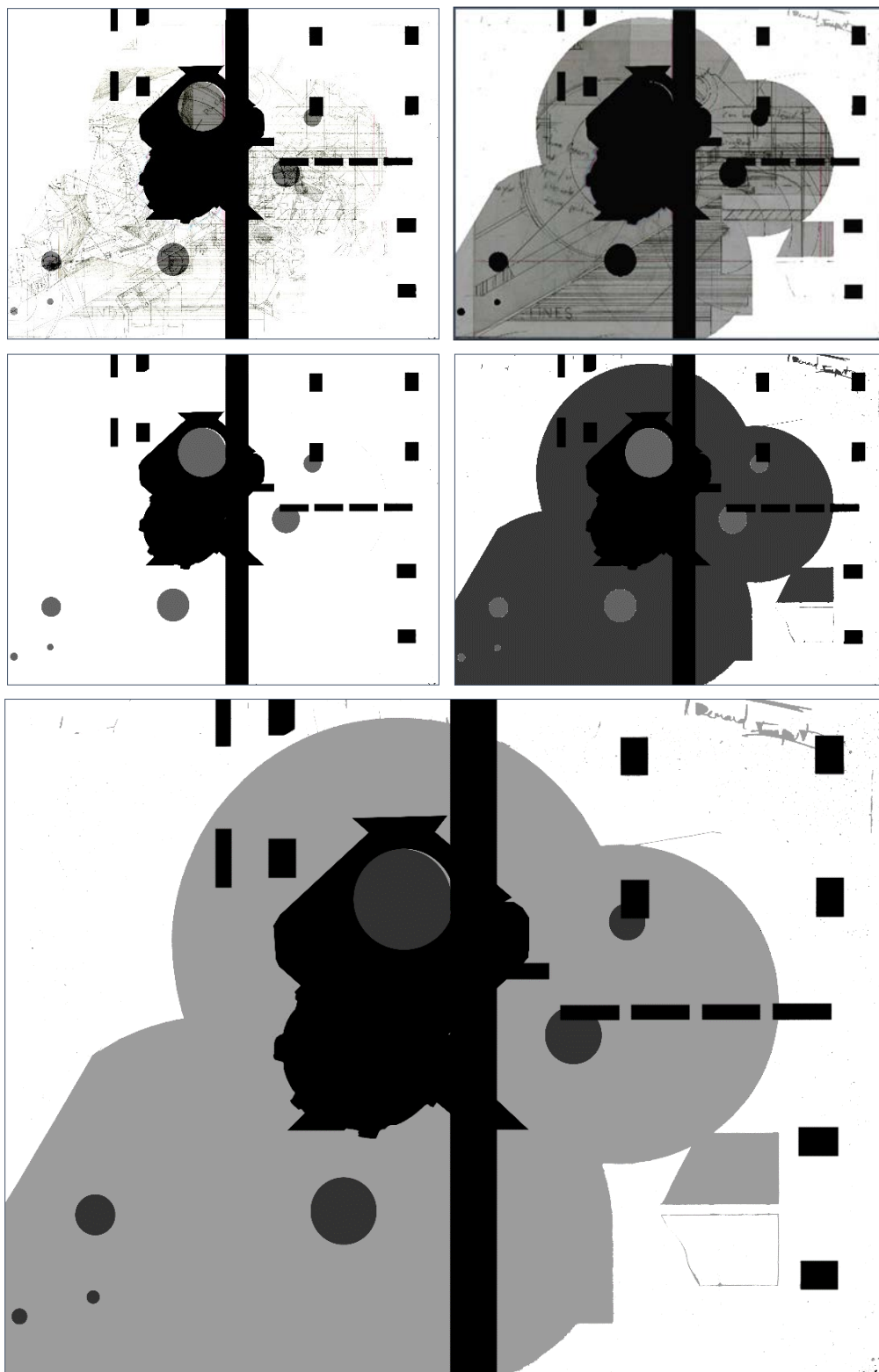
Test frames for projection masks in early exhibition design, Mask Series

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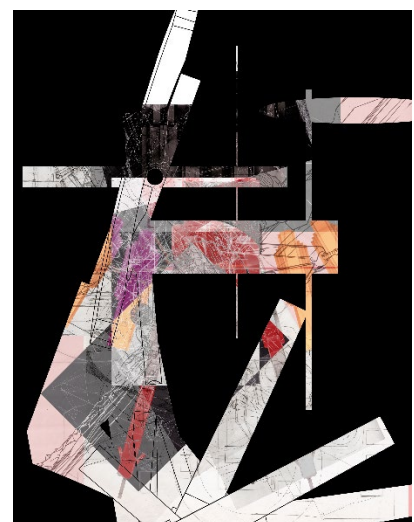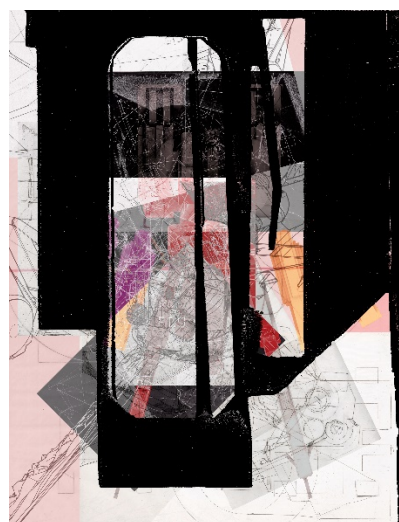
Test compositions for projection masks in early exhibition design, Mask Series

Nest B+W; Test frame for projection masks in early exhibition design, Mask Series

Test compositions for projection masks in early exhibition design, Mask Series