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Architecture as Drawing:
Representational Space Architecturally Transformed

A thesis submitted in partial fulfillment of the requirements of the Honors Program of the Department of
Architecture in the School of Architecture, University of Arkansas.

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Spring 2012

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“Poets make poems, painters paintings, and musicians music. Architects, however, do not make architecture; they make drawings and models of it – representations meant to direct the development of something conceived into something constructed.”

-David Leatherbarrow, “Showing What Otherwise Hides Itself: On Architectural Representation”

Introduction

Drawing in the Mexico study abroad program within the University of Arkansas Fay Jones School of Architecture, during the summer of 2010, meant any notion of the drawn artifact, the precious art piece, or the perfect line was discarded. The abstract drawings created in that summer were informed through nonlinear processes, graphical intentions erased from the face of the paper and drawn over multiple times, with the end result never fully realized from the beginning. Ideas that a drawing could be considered finished were replaced with others that considered a ‘finished’ drawing merely as a layer of graphite meant to be erased and continually reworked. Drawing, introduced as a process of artifact production for the majority of many architectural educations, reintroduced itself as a creative tool for both spatial manipulation and creation; space defined by the lines, tones, and textures created with graphite and conté on paper. The act of drawing no longer presented itself simply as a means of displaying a final architectural work, ‘re-presentation’, but rather was emphasized as an origin point in architectural creation, a means of ‘representation’ in which drawing and architecture are inseparable.

Discussions with artist Thom Mills during the time in Mexico revealed the idea that the drawn world created itself through observations of real world relationships. Furthermore, as these relationships were visibly rendered, one could continue to graphically build upon them, making decisions within the reality of drawing that might ultimately affect the built world. Architecturally speaking, decisions about a building are formed through the transformative processes of drawing, erasing, and redrawing, meaning while a built work resides in the real world, its origin exists in the world of lines, tones, and texture—the ‘drawn world.’ A fascination with this fabricated universe and its relationship to architectural creation has engendered this thesis investigation, in order to understand how this space, created through the act of drawing, transforms itself into architectural space, into an architectural work.

This thesis examines how the intentions behind the drawing process are assimilated into the creation of space and architecture, emphasizing that drawing may serve not only as a tool of visualization, but also as a tool of conception. In particular, this thesis seeks to understand and define

how an architectural idea might stem from the act of drawing, rather than a drawing being created for the purpose of an idea; architecture formed from the relationships found within a drawing without those relationships already having been architecturally defined. Drawing, whether by hand or computer, is a known form of architectural representation. Specifically, drawing is most commonly used as a means for communicating an idea, allowing an architect to provide visual cues of one's thinking, as well as enabling one to provide visual representation of the proposed architectural work. When considering drawing in this utility, it is not necessarily the manner of creation, but rather serves as a means of re-presentation. Various architectural writers, including Juhani Pallasmaa and Robin Evans, have questioned the idea of drawing as purely representational, implying that the act of drawing is of more benefit to architecture than mere visual re-presentation.¹

In order to determine the connection between drawing and architecture, this thesis considers that both lie in a separate reality, but are somehow metaphysically linked through the process of drawing itself. Drawing and architecture are both visual mediums, and it is through drawing that one may understand an architectural work before it is ever built. As a result, it may be understood that drawing plays more than a visual role in architectural creation, allowing for discovery and transformation of the concept before the construction process, as referenced in the writings of David Leatherbarrow.² Delving further into this idea, there is an effort to understand the methods of the drawing process, and how certain techniques might create spatial relationships that are subsequently transformed into an architectural work, all while remaining in the theoretical world of representation, of drawing. Although drawing and architecture exist within separate realities, there is an effort to understand how the foundations of a built architectural reality rely upon, and are ultimately conceived within, the reality of representation. Furthermore, there is the question of how this relationship asserts the validity of theoretical architecture as an essential component for understanding the realities of the built world.

Within the realm of drawing and architecture, the overarching aim of this thesis is to gain insight into architecture as a drawing, and what an architecture created through means of transformed spatial drawings necessarily implies. The value of such knowledge lies in the discovery that perhaps architecture may be founded upon theories meant to reveal truths about spatial creation that built architecture does not directly address; such theoretical foundations are found within the work of Douglas Darden.³

Discussions of space, light, void, and mass are inherent when speaking of architecture, yet as revealed through the drawing process introduced by Thom Mills, those same attributes may be applied when considering the relationships of a drawing's various marks and tones. There is a space within the page, and an exploration of that space through this thesis will inevitably lead to a better understanding of how a manipulation and transformation of the 'spatial page' serves as a transitional tool between idea and building, drawing and architecture.

This thesis is initially focused upon the creation of a drawing formed through the use of surrealist techniques, and later positioned around a transformation of that drawing into an architectural work. The drawing itself serves as an exploration of the spatial page, a study in conté, watercolor, and graphite primarily concerned with the spatial relationships between the various marks and tones on the page, derived from the spatial characteristics of a studied object, with no initial regard for the resultant architectural work; there is, however, a certain regard for how the drawing is developed, with great intention in discovering, and defining, the process by which the final drawing will construct itself.

It is from this study of the idea in which the drawing is both product and creator, working in tandem with the architect in the reality of representation wherein all space is, perhaps, initially created, that this thesis then warrants as its contribution to current discourses and practices on drawing as architecture. Specifically, the thesis is primarily concerned with building a method, a method which, at the conclusion of the thesis semester, might be critiqued and situate itself within discussions about drawing's role in architectural creation. The final drawing will stand as a testimony to the validity of the method built, and display the evident success and failure that might be achieved when architecture is created from an origin point within a different reality from which physical buildings, architecture, are not initially thought to derive.

Finally, there is, upon completion of the thesis project, potential for an architectural work that is not merely the result of a transformative drawing process, but is inevitably the drawing process itself, a theoretical work clearly blurring the boundary between the reality of representation and the reality of the built world; and, one might say, between art and architecture. Thus, there is knowledge to be gleaned from this project, if one is to fully understand the importance of the relationships between drawing, architecture, and the creation of architectural space. Writing from a perspective of intentionality, this

thesis aims to undermine contemporary notions of the drawing as architectural re-presentation, and to solidify a particular drawing process, or method, as architectural representation, architectural creation, and, ultimately, as architecture itself. Such solidification, an assertion that all architecture begins on the page and exists within the page, then begins to have ramifications on the whole of the architectural field. One is left to consider, given the findings of the thesis project, what a symbiotic relationship between architecture and drawing, process and product, might mean to the future development of architectural space. Furthermore, this thesis leads to further speculation as to the origins of space, and in its transformation, how it is different from space that is architecturally defined; consequently, drawing as a contributing factor to this transformation must be considered as well, establishing this project's importance in understanding how this contribution, how drawing, is ultimately responsible for the creation of architecture.

Literature Review

While drawing serves architects as a transitional tool from idea to building, the very process of drawing allows one to explore spatial experience and transformation without leaving the theoretical world of representation for the reality of the built world. There is an underlying effort to understand the methodology of drawing as it relates to space creation and its subsequent transformation into architecture. Consequently, knowledge of this transformative process helps to understand theoretical architecture's validity as it applies to the emotive response, despite its elusive role in the physical world.

As an investigation, this thesis has relied upon a variety of sources found through the University of Arkansas Library Catalog and the Avery Index of Architectural Periodicals by means of keyword searching, particularly those related to drawing topics such as theory, transformation, and methodology. Specifically, phrases such as "architectural representation," "drawing and space," "transformative drawing," and "drawing in architecture" were used to refine returned searches in order to find sources that referenced both architecture and drawing as subjects. Further exploration for possible sources meant an evaluation of bibliographies and reference lists located within articles and books established as relevant to this thesis focused upon the methodologies of drawing as a transformative process in the creation of

space. Sources found in this manner were then searched for with the help of the Avery Index, or if necessary, were obtained through the University of Arkansas Interlibrary Loan.

As this literature review focuses on the role of drawing in architecture, it is best understood by studying the individual components that serve as the foundation for the relationship between drawing and architecture. More precisely, the review of sources dissects this relationship into four areas of understanding: (1) the purpose of drawing in architecture, (2) drawing's role as 'space-maker' in architecture, (3) the link between built reality and representational reality, and (4) the role of building (drawn or built) as it serves emotive function.

Leatherbarrow stated, "Poets make poems, painters paintings, and musicians music. Architects, however, do not make architecture; they make drawings and models of it – representations meant to direct the development of something conceived into something constructed."⁴ While still general in its terminology of process, Leatherbarrow alluded to the actions taken when drawing. He also questioned the reliance on rather typical architectural drawings (plans, sections, and paraline projections) as the best means of architectural representation, alluding to the possibilities of greater spatial relationships, and developments, in the creation or discovery of new marks made while drawing.

From a different standpoint, Filiz Öngüç identified several purposes of drawing, specifically its use as a representational method of perception, emphasizing the human place. In its encapsulation of perception, drawing must capture the individualistic experiences of place, suggesting representation is not a flat idea, but a spatial one. Considering Öngüç's statement, "The belief that drawing is architectural thinking releases us from the otherwise constricting grip of perceiving it as nothing more than a tool of visual representation," it becomes apparent that the purpose of drawing extends beyond a visual explanation of form.⁵ However, neither Leatherbarrow nor Öngüç fully considered the role representational reality may or may not have in relation to the reality of the built world. That is, both suggested the dormant potential of drawing as a powerful architectural descriptor and exploratory tool, but gave little thought to the idea that, perhaps, drawing occurs at the inception of an architectural work, assisting in its creation as well as its representation.

Evans, however, defined drawing as the intervening medium in architecture, allowing one to work on an architectural project directly.⁶ Yet, the mystery of the transformation of drawing to building eluded

Evans, which caused him to question this relationship and the role drawing plays within the physical and representational realities of architecture and the world. Evans' work helps to define the thesis further, serving as an explanatory link between architecture and drawing and their subsequent realities, and giving cause to the purpose of architectural drawing aside from purely aesthetic functions. Reading his essay provides justification to search for the link between drawing and architecture, to discover how intertwined both truly are. Evans implied that the built world is constructed through the world of representation, an implication that gives this thesis momentum to find answers to its questions about the relationship between drawing and architecture. This particular chapter allowed for the theoretical consideration that perhaps space does not only exist in the physical sense, but also in the representational sense. In short, Evans depicted scenarios in which the architect never truly touched his work at all, implying that architecture is only ever really worked on within the space of the drawing, the space given to representation:

"Bringing with me the conviction that architecture and the visual arts were closely allied, I was soon struck by what seemed at the time the peculiar disadvantage under which architects labour, never working directly with the object of their thought, always working at it through some intervening medium, almost always the drawing, while painters and sculptors...all ended up working on the thing itself which, naturally, absorbed most of their attention and effort."⁷

Inevitably, such explanations lend great importance to the idea of drawing as a conceptual tool in the creation of architecture. Contrary to Evans' statements, however, this thesis intends for the architectural thought to occur after a drawing has been made, in order that the final work may originate and be produced from within this representational space. In relation to the term "drawing," as discovered with the other sources, particular drawing techniques and methodologies are not discussed, but rather are substituted with "architectural drawing" as a general topic of conversation, a point to be addressed and articulated upon within this thesis.

Pérez-Gómez and Pelletier investigated the link between the built reality and representational reality, examining how the latter came into being and how the former results from the "reality" of architectural drawings. There exists the notion that drawings may become "works" in and of themselves, and Gómez uses this observation in his study of architectural representation.⁸ An understanding of this link between building and representation proves useful in describing how architectural representation occupies a space of its own, not real or unreal, but of a reality independent of the physical. Rather, the

work identifies theoretical projects as important based upon the philosophical questions they ask in regards to space and architecture. As mentioned regarding previous sources, however, Gómez leaves much to be desired in his explanations of specific, transformative drawing processes beyond that of the plan, section, and perspective.

Drawing serves as the extension of an idea, and consequently as an extension of the architect who produces that idea. Pallasmaa explored the notion that the hand is the link between mind and image, and its resultant power in the creative process, particularly the process of architectural creation. The value of the hand is emphasized as an underrated tool forgotten by contemporary culture, but necessary to the salvation of the unity of mind, body, memory, and creative work.⁹ Pallasmaa's understanding of the creative process by means of the hand is important, as it specifically ties into space created through hand drawing, a process to be employed in this thesis in order to understand the role of representation in architecture. Furthermore, Pallasmaa's argument stresses the reality of truth created by the hand, as opposed to the existing world of fiction, which is necessary in understanding the reality of the world contrasted against the reality of representation. This source is particularly useful, as it justifies hand drawing as a means of space creation while emphasizing drawing as an important component of architecture; both are key concepts central to this thesis.

Pallasmaa's source further emphasizes that, while all of the sources acknowledge a connection between drawing and architectural space-making, the methodology of drawing transformation is considered as the "process medium" by which architectural space is created. In fact, regarding this thesis, none of the sources specifically speak to transformative drawing as the means by which representational space is made. As a response to drawing as an unspecific term, a thesis objective is made by which the methodology (process) of drawing transformation is established as the means (medium) by which space is created on the page and inevitably manipulated into architectural space.

Darden rephrased architectural canons and created architectural works that never leave the space of representation, as they all exist as objects on a page. As a result, Darden explored the interstitial space, created by Evans' "intervening medium," through graphite on paper; architecture was created within the reality of representation.¹⁰ Darden's work implies an interpretation in which one might see the drawing as object, yet consequently ask: is it a drawing of architecture, or architecture as a drawing?

Furthermore, Darden's explorations question the essence of drawing itself and the fascination with drawings and their representational world more so than the built structures they depict. Despite these questions, this source stands more as a graphic tool, with very little text upon which to build a theoretical stance around the issue of representational drawing and the space it occupies within architecture. However, his architecture elicits an emotive, somewhat introspective, response. "The buildings are an admission of rhetoric, not knowledge. Instead of solutions, they offer allegories. By these means, architecture can be seen for what it is; never its own sufficient subject, nor its own sufficient end."¹¹ In effect, Darden's work stands as an example for the products of this thesis, yet whereas Darden revealed the final outcome of his drawing process, this thesis emphasizes that the process is as important as, perhaps more important than, the final architectural work. The 'spatial context' of Darden's work is hidden beneath the final layer of graphite, while an objective of the thesis maintains that the transformation of the drawing and its resultant space will remain evident; the graphical layers of transformation within the representational world will be revealed to the very end.

Methodology

Creating an architecture within the reality of representation assumes an understanding of drawing as a conceptual tool by which architectural space is made and manipulated. Such creation is a process which aligns itself most closely with the paradigm of deconstructivism, a point of view that seeks to reveal hidden assumptions. Specific to this thesis, there is an effort to understand how an exploration in drawing can manifest itself into architectural creation, and to possibly reveal that the relationship between architecture and drawing is not merely a matter of representation; there is the idea that drawings have a significant role in the creation of architecture, aside from drawing serving as the primary tool by which one sees un-built architecture. Furthermore, such research inevitably attempts to reveal that it is through drawing and its transformation that architecture is created, and that perhaps architectural space resides more permanently within the representational reality than it does in the 'real world.' Given that architects spend much of their time working on their architectural works through drawing, it is also reasonable to assume that perhaps all architecture, drawn or built, is real; perhaps the only delineation between theoretical and real lies in the physical tangibility of a built work, but then even this may be a matter of

representation. Still, these questions seek to reveal the truths behind representational reality and the reality of the built world, with the deconstructivist view serving as the door through which assumptions about architecture and drawing will be challenged.

Researching these architectural statements requires a methodology that is less intent on gathering specific facts and data and more focused upon the unexpected result, especially those results that arise from the very act of drawing itself. Surrealist techniques involve freedom from aesthetic and moral self-censorship, a removal of conscious decision-making, and a basis in the unconscious. Surrealist techniques are the most efficient methodology to use given a thesis that intends to discover how architecture is created when its origin is not architecturally defined. Specifically, the surrealist technique is a design strategy that allows freedom of exploration in which direction is nonlinear and the results are unknown and unpredictable, meaning that the drawings will be directed by each move of the hand, with no 'final image' set as the end goal. Knowing this, one must understand that the end of this research begins with the creation of a drawing, and that the drawing's spatial implications will only be realized after a transformation into architecture. That is, while the discoveries made in the execution of this thesis cannot necessarily be determined presently, there is an idea that what knowledge reveals itself lies in the transformative drawing processes. The research is made as the drawings are made, for the drawings are the research.

Although the surrealist technique involves exploring unexpected relationships and surprising juxtapositions, identifying how these relationships arise becomes rather ambiguous as such a methodology identifies very few factors to consider in the creation of each drawing. While this vagueness is to be embraced, the rules set forth by which the drawing is constructed must provide the means for nearing an end result. Indeed this freedom from a linear approach will be controlled through the prescription of a set of rules, to be agreed upon by myself and the thesis chair prior to the start of the thesis semester, which will help determine how the drawings may or may not be constructed. Thus, this methodology's strengths will be used in terms of the unknown result and use of randomization to create unexpected relationships, yet will be strictly monitored through delimitations in order that more important decisions related to the drawing's creation might remain the focus. Consequently, insignificant factors such as initial paper size will be predetermined, and the broad characterization of surrealist techniques

will be minimized in favor of specific tactics intent upon revealing the relationships between drawing and architecture. Moreover, the unpredictability of the end result occurs through highly defined processes, yet the rules remain consistent and do not change. Strategically, the application of these tactics will be applied over the course of a year, through a series of phases having started in the summer of 2010.

Phase 1: Mexico: Summer 2010

A study of drawing techniques was conducted for ten weeks in Mexico during the summer of 2010, where the idea of *pentimenti* and an exploration of creating tonal space with conté were featured as core components of the curriculum. More importantly, the conté drawings were conducted as observational drawings of architectural components (i.e. door, stair, and wall) and buildings, yet emphasis was placed on an abstraction of these components, and to study the space between architectural forms, with little regard for photorealism.

Phase 2: Independent Study: Spring 2011

Drawing with watercolor, conté, graphite, and sandpaper will be the primary tactic by which this thesis project produces drawn work. The chosen medium will be applied to the same paper, one 22" x 30" sheet of 140lb Fabriano Hot Press Watercolor Paper, over the course of the semester, reinforcing the idea of graphic layering, or *pentimenti*. This term refers to a technique involving a layering of images so that previous drawings might have a relationship with and even inform decisions being made in new drawings. Such a technique is synonymous with the strengths of the surrealist technique, as the unexpected juxtapositions are fully realized as new drawings are made upon the old. This technique is important to the idea of representational space, as the layering of images implies the institution of depth to the page, a 3-dimensional characteristic of space that is important in the transition to architectural space. As the 2-dimensional medium creates tones, lines, and textures, the layering of the *pentimenti* allows for the creation of drawn space, which, when combined with narrative, gives direction for transformation into architectural space and form.

The rules for drawing construction will be established in the Spring of 2011, and presently consist of the following:

- Each drawing will only use watercolor, conté, and graphite as a medium, as well as the void, which may be achieved through cutting, excessive erasing, or sanding of the paper. Of the watercolor colors, only sepia and Payne's gray will be used.
- Sandpaper is an acceptable erasing tool.
- Photo-documentation will occur at least every time the paper is cut, and whenever a significant amount of medium has been applied to the paper (the latter to be defined within the context of each drawing).
- Cuts and additions will be determined by their contribution to the overall spatial composition of the work. As each drawing has not been started, it is difficult to determine the exact number of cuts and additions to be made, as development of the space on the page is necessary to evaluate this determination.
- Any additional paper added will have edges and cuts perpendicular to the original edges of the paper, although the size and amount of paper added is on the basis of each individual drawing and its compositional needs.

Each drawing will have a different subject. The chosen objects were selected for their inherent, perhaps 'architectural,' orders, yet geometrical complexities that have been manipulated by time. Thus, similar to the drawing's expression of chronology in the implementation of layering through the *pentimenti*, each object signifies the chronology of time through elemental manipulation. The objects are: (1) Log, (2) Wasp nest, (3) Rock fragment, and (4) Bone fragment (Figures 1-4).

The last condition of this independent study will be a written summary discussing the discoveries and implications found within the transformative drawing process pursued over the course of the semester. Written work will be supplemented with photo documentation of the final four drawings, which will serve to outline the rules developed in the creation of the spatial drawings. More importantly, as all of the drawings are meant to be combined into a larger composition, the outcome and exact means of this process is to be determined within this 'thesis addendum' following the completion of the drawings in May of 2011.

Phase 3: Thesis Semester: Spring 2012

A narrative will be applied to the final drawing, a combination of the four into a larger compositional whole, with the goal of giving the drawn space architectural direction. This narrative, found by opening to a random place within *Poems for Architects: An Anthology* and selecting a poem from the even-numbered page, will then be randomly assigned to each drawing.¹² Choosing the narrative at random is made in line with the surrealist technique, and removes any bias or subconscious manipulation of the drawing that might result from personally creating the narrative; thus, any architectural intentions are diverted until after the initial space has been created, after which unexpected juxtapositions are emphasized in the union between drawing and poem. Stoner's book has been chosen due to its architectural language and prose, additions to this process necessary to architecturally transform a spatial drawing that initially has no conventional notion of built doors, windows, and walls. Furthermore, Stoner's language serves as a compliment to the visual language of the drawing, a relationship in which the architectural elements described in the poem may be allowed to enter a dialogue with the drawn elements; thus, as an example, a void in the drawing might be transformed by way of the narrative into a window, door, or some other architectural element with similar spatial qualities. Defined program will not be considered an architectural generator; importance lies in the overarching architectural idea of the poem, and program may only come following development of this idea. That is not to say the resultant works will not be realistically feasible, but holding to the ties of program and its particularities as it relates to building type do not align themselves with the surrealist technique, and the subconscious visual association made with program terms such as bathroom, kitchen, and bedroom are to be avoided in order that the imagination instilled within the initial drawing might be maintained.

Following the narrative selection, the semester will be used to refine the drawing into an architectural work, not unlike the work of Douglas Darden, who uses drawing and architecture as an exploration of narrative. Darden rephrased architectural canons and created the resultant spaces through drawing, within the reality of representation.¹³ Unlike Darden, however, the drawings will initially be created free of any architectural intentions, as the true architectural work will not be realized until after the narrative is assigned. Yet, in reference to the questions posed by his work, there is intent to understand how the spatial drawing becomes architecturally real, why Darden's works are, perhaps, recognized as

'real architecture' yet remain in the reality of representation, and how a drawn work ultimately becomes architecture despite its exclusion from the built world; thus, inevitably, resulting in the drawing as architecture, and architecture as drawing.

¹ Robin Evans, "Translations from Drawing to Building," in *Translations from Drawing to Building and Other Essays* (Janet Evans and Architectural Association Publications, 1997), 153-193.

² David Leatherbarrow, "Showing What Otherwise Hides Itself: On Architectural Representation," *Harvard design magazine* (Fall 1998): 50-55.

³ Douglas Darden, *Condemned Building* (New York: Princeton Architectural Press, 1993).

⁴ Leatherbarrow, "Showing What Otherwise Hides Itself: On Architectural Representation," 50-55.

⁵ Filiz Öngüç, "Revealing the Sense of Place in Architectural Thinking," *The Fifth Column* 7, no. 4 (1990): 29-31.

⁶ Evans, "Translations from Drawing to Building," 153-193.

⁷ *Ibid*, 156.

⁸ Alberto Pérez-Gómez and Louise Pelletier, "Mapping the Question: The Perspective Hinge," in *Architectural Representation and the Perspective Hinge* (Cambridge, Mass., and London, England: The MIT Press, 1997), 2-87.

⁹ Juhani Pallasmaa, "Emotion and Imagination," in *The Thinking Hand* (United Kingdom: John Wiley & Sons Ltd, 2009), 131-139.

¹⁰ Darden, *Condemned Building*, 9.

¹¹ *Ibid*, 9.

¹² Jill Stoner, ed., *Poems for Architects: An Anthology* (San Francisco: William K Stout Publishers, 2001).

¹³ Darden, *Condemned Building*, 9.

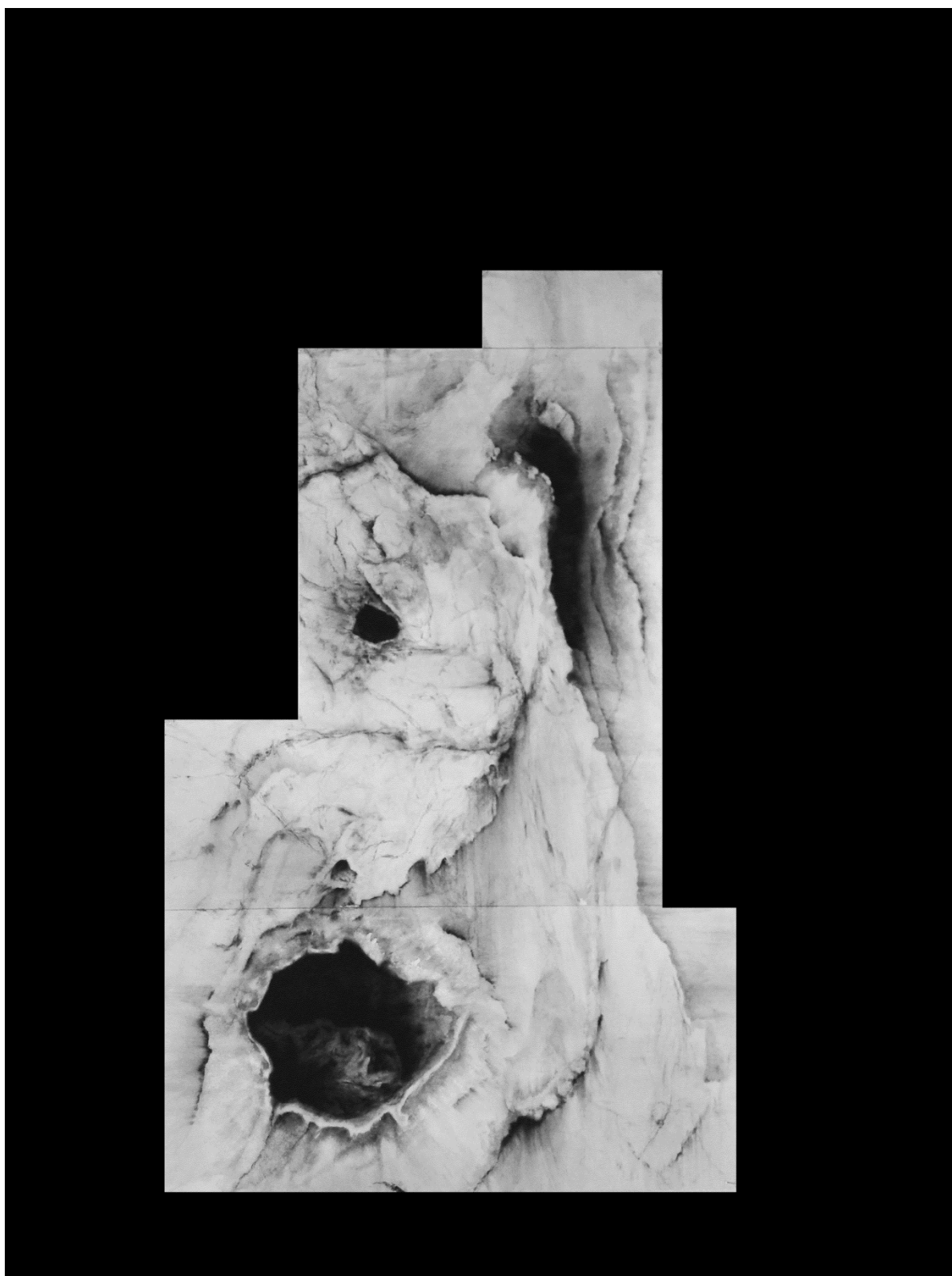


Figure 1: Log. The black background is not part of the drawing. Horizontal orientation (with right side of this page treated as the bottom). Black and white photograph, color not shown. Original size: 22" x 35".

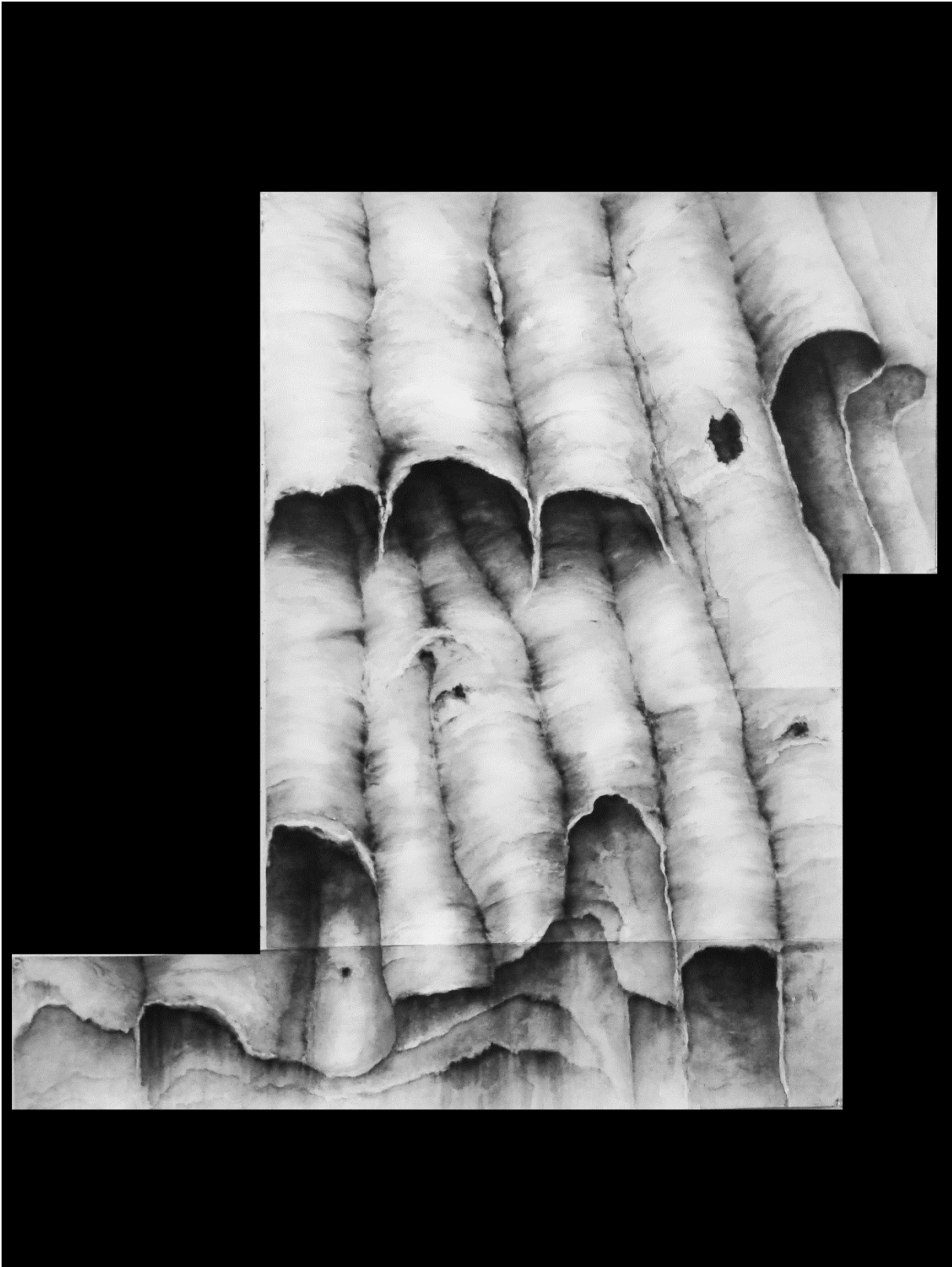


Figure 2: Nest. The black background is not part of the drawing. Vertical orientation (as displayed). Black and white photograph, color not shown. Original size: 30" x 26.5".

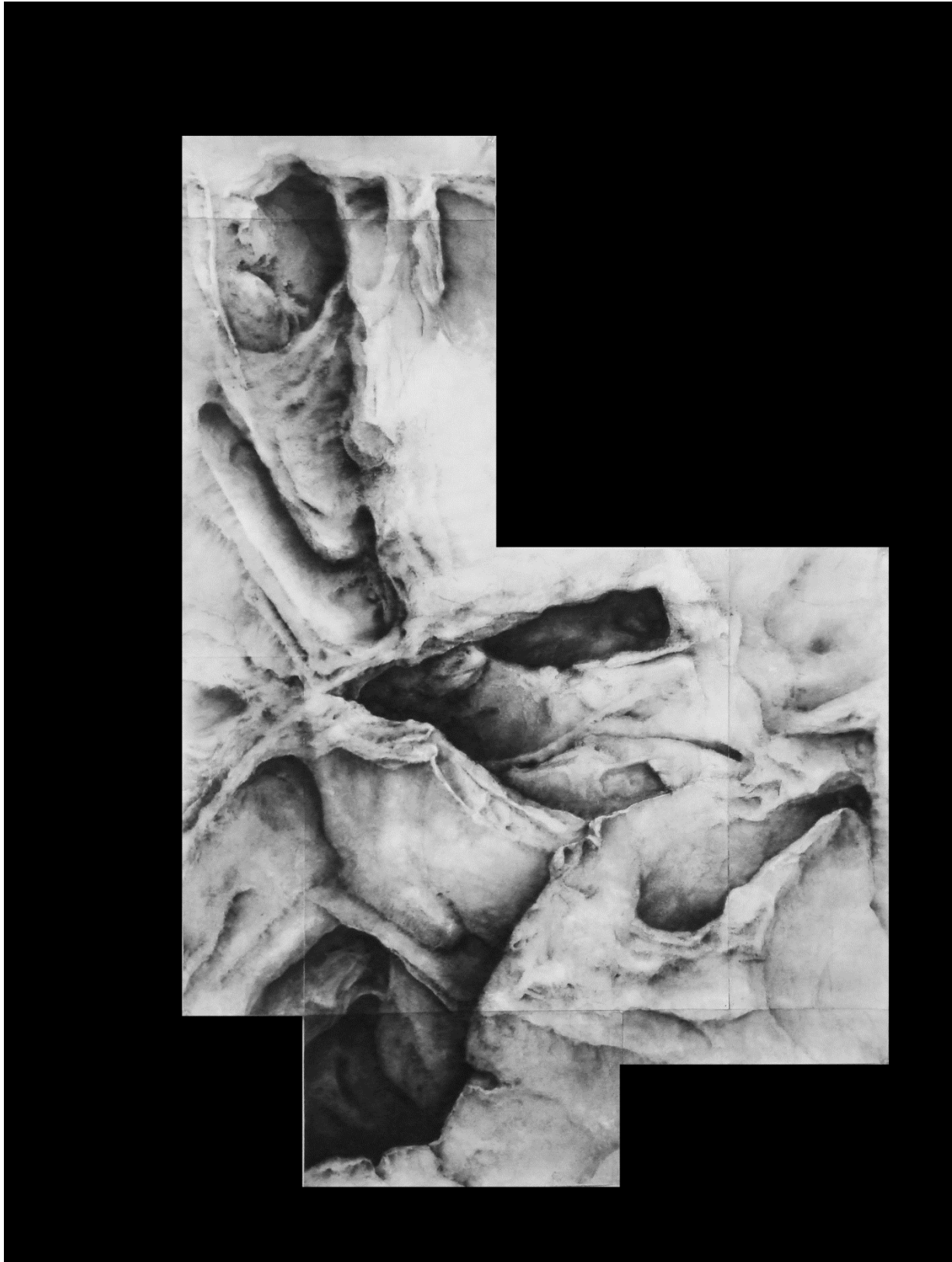


Figure 3: Rock. The black background is not part of the drawing. Vertical orientation (as displayed). Black and white photograph, color not shown. Original size: 38" x 26".

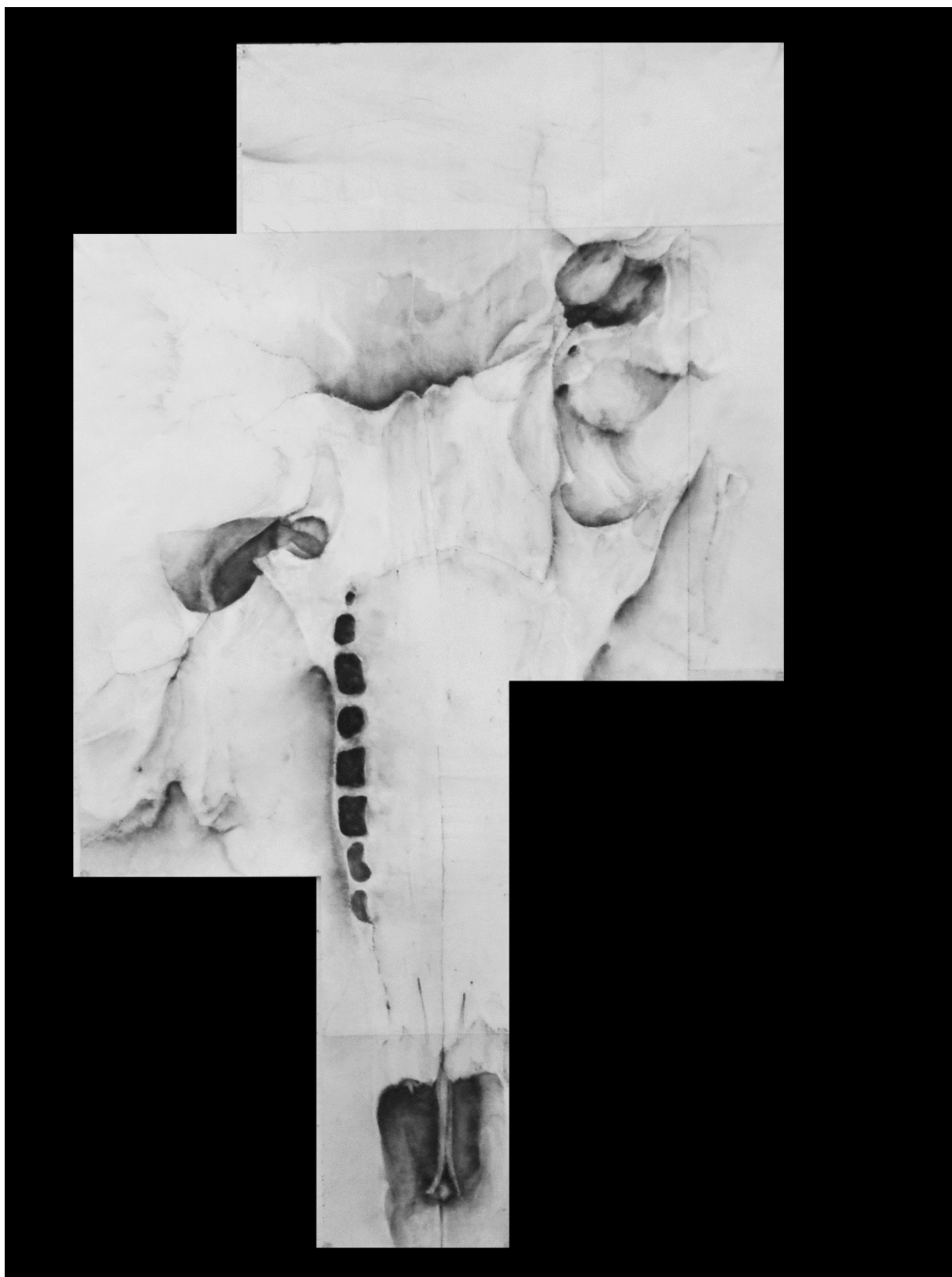


Figure 4: Bone. The black background is not part of the drawing. Vertical orientation (as displayed). Black and white photograph, color not shown. Original size: 41" x 25.5".

Appendix 1:
Independent Study – Findings and Conclusions
Spring 2011

Introduction

The surrealist technique, in its implementation, is meant to inform the architect, the artist, as the drawing is created; more importantly, the surrealist technique is a design strategy that allows freedom of exploration in which direction is nonlinear and the results are unknown and unpredictable. This independent study served not as a systematic approach to space-making, but rather emphasized spatial creation that was indeterminable, and how the drawing itself could begin to inform the architect of how the space might conceive of itself, and how indeterminate marks might then become significant in ways not initially anticipated. Within this process, there was the idea that the object might allow one to start the drawing by providing a subject, after which the lines, tones, textures, and 'space' of the drawing would provide further direction in the development of the drawing. Given these descriptions, the four drawings created over the course of the independent study serve not only as products of an ongoing process, but as a phase in the overall scope of the thesis project by which one may be informed, through these drawings, about how to develop the project further despite not knowing the end result. The completion of the independent study, ending with a critique and discussion (from here on 'the end discussion') of the final four drawings and the drawing process itself, consequently led to a reassessment of the processes to be carried out during the thesis semester; in regards to the thesis project previously proposed, conclusions about the evolution of the drawings are certainly similar in scope, but different in execution.

Arriving at a Process

The definition of the exact methodology, the processes by which the drawings would be combined and then architecturally transformed, is, perhaps, the most indeterminate aspect of the thesis as it has currently been proposed. Objectively, the independent study focused less upon photorealistic development of each drawing and more upon how, when drawn, the individual elements of each object were spatially linked and, when combined and juxtaposed, how those elements might have enhanced the spatial composition and created new spaces; results that, when examined, were true to the nature of the object studied. Yet, for one who has not also studied and drawn the objects, it may be hard to critically examine these intuitive notions of spatial manipulation and juxtaposition. Furthermore, the relationship between elements is not always as obvious to the observer as to the participant, regardless of how well

the drawing conveys a sense of the object observed. Within the end discussion, therefore, the further development of the drawing process was understood as a necessary component to the continuation of this thesis project, giving reason to the drawings' creation beyond observational documentation while allowing for the drawing process chosen to begin growing architectural roots of both an intuitive and analytical character.

The reviewers saw each drawing as inherently different in its study and representation of surface, texture, volume, and space, resulting in conclusions that an amalgamation of the four drawings, a combination into one whole, would undermine those relationships founded within each individual drawing; relationships that, when analyzed, could prove more useful in the development of space and its architectural transformation than the results achieved through a literal combination of drawings. Indeed, the four drawings are very different, and a reconsideration as to their physical combination was fundamentally necessary in order to understand not only how the objectives stated within the thesis proposal might then build upon, be informed by, the decisions made within this independent study, but also how one might begin to more appropriately define the processes by which the final composition may be arrived at.

The drawings were, initially, to serve as the framework for the larger spatial composition to be developed over the course of the thesis semester. Yet over the course of the independent study it became increasingly harder to justify, to determine, how the four drawings might 'fit' together; the end discussion was particularly enlightening, suggesting that any attempt to combine the four drawings might only destroy the discoveries within each object found through drawing, erased in an attempt to facilitate the combination of log, nest, rock, and bone. Thus, given any shift away from combining and redrawing on top of the original four studies, the framework needed to be adjusted so that it could contribute to future space-making and once more assert itself as the foundation by which the new spatial page might develop itself within the thesis semester; more specifically, it became clear that one needed to understand in what capacity, other than physical manipulation, the four drawings might be used in the creation of 2-dimensional space that would then be architecturally transformed.

Clarity was achieved following completion and discussion of the four drawings, albeit in the form of a new process that parallels, but is not the same as, the previous goal of combining the four drawings

into a singular composition. Rather, this phase in the thesis' development serves as a spatial-template to be analyzed and studied, observations which might then be used in the construction of a composition *based upon* but not *made of* the four drawings; that is, the four drawings will not be used as *literal* components of the spatial composition to be developed within the thesis semester. The drawings will, instead, be studied and diagrammed themselves in an attempt to clarify the relationships that were observed and then drawn. Specifically, in constructing each drawing, the juxtaposition of each object's spatial elements often times created new spaces not found within the object but that were nevertheless indistinguishable from the drawn elements that more closely resembled observable forms; examples such as this necessitate that analysis of the drawings be the next step, to not only reveal this logic of space creation, but also to identify those characteristics, both spatial and formal, that when drawn aided in the established identity of each object.

The revised thesis project, then, based upon the discoveries made within this independent study, is not unlike a project pursued in the earlier years of architectural education. Like the second year studio in the spring of 2009, in which paintings were analyzed and diagrammed, and in which those diagrams were then architecturally transformed into a house, this thesis project takes a similar approach to the creation of space and the construction of spatial relationships. Whereas the paintings were created by a different artist than the student diagramming and making the house, however, this thesis has the aim of understanding and defining what the spatial and architectural implications are when both the 'painting,' the object drawings, and the resultant architectural space—the architecturally transformed, spatial composition created in the thesis semester—are created by the same artist, or architect. Furthermore, through diagramming the four drawings, the thesis sees the addition of a phase that, while the drawings analyzed are intuitive creations, is itself, perhaps, more architecturally rooted in the analytical; such a problem, as it were, was identified in the initial thesis proposal, in which a project of purely intuitive process is perhaps more difficult to critically evaluate than that of a more systematic, one might say analytical, approach.

Intuitive + Analytical

In regards to process, the drawings may be seen as artifacts of intuitive decision-making informed by personal observations of the spatial characteristics of each object—the log, nest, rock, and bone. However, for one to critically evaluate this decision-making, and for one to understand and use the spatial logic learned through these initial drawings in the creation of another, larger drawing, an analytical component, an intellectual interjection, is necessary. The initial thesis proposal was missing such a component, one which would allow for greater judgment and critical evaluation of the decision-making established in the intuitive construction of the drawings; that is, the objective of the diagramming serves as a ‘putting into words’ of the intuitive processes defined by the particular drawing technique involved with *pentimenti*, and with the particularities of space-making identified within each object.

The diagramming of the four drawings intends to bridge the gap between the intuitive and the analytical, one that was not initially addressed when a physical combination of the four drawings was intended. In doing so, the diagramming allows for an interpretation of each drawing unique to the object drawn; an analysis allows for the development of a spatial language dependent upon the space created within the page. Each object, each drawing, has its own ‘words and phrases’ that account for its differentiation, both spatially and formally, from the other three. Resultantly, the combination of drawings is then reliant upon this developed spatial language, and its recombination and juxtaposition of ‘words and phrases’ to create the larger composition—now an entirely new drawing instead of using the same paper on which the four drawings already exist. However, ‘new’ is used to explain that the paper upon which the drawing is started is in the same state, new, as the other four drawings were before marks were made; the creation of the drawing itself, however, is determined by the language derived from the translated drawings, and thus is not ‘new.’

Addressing the Narrative

The first project proposal was an architectural thesis in absence of program. As a result, it was initially necessary that the spatial composition use a written narrative to aid in the architectural transformation of the space, as the architectural dialogue, from Jill Stoner’s anthology, might then inform some of the decision-making used to transition the space into an architectural domain. However, given

that the diagramming reveals its own language, a space-making dialogue derived from each drawn object, it becomes unnecessary to choose words randomly from a published work; the narrative is found to be embedded within the process, derived from the drawings analyzed, and is thus more synonymous with the architectural transformation of space that is to occur within the thesis semester.

The creation of space without program was, perhaps, not the real issue with the initial thesis proposal. Rather, there was the question that if program was not used, how was one to critically assess, examine, and evaluate the creation of space and the individual space's relationship with the overall spatial arrangement. The end result, the final product, is not made any more clear in its imagery, but the methods, the processes, used to get there are becoming increasingly more defined; the diagramming becomes the analytical poetry by which the larger composition will architecturally develop, and helps to identify the spatial components and process of space making that, when used in the architectural development of the spatial page, are susceptible to stronger, better criticism than pure intuitive processes that ever only remain in the realm of the subjective.

Revised Goals

The independent study is not viewed as an end goal, but rather as the initial phase in the larger, speculative search that is the thesis project. A continuation of study is expected to continue throughout the summer and into the fall semester of 2011, in order to build upon the discoveries previously made while also maintaining skills that will be necessary for the drawing techniques to be used in the thesis semester. The goals for the time leading up to the thesis semester, as well as practices that will be used within the spring semester of 2012 have been established:

- ***Analytical*** - Diagramming and analysis, of both form and space, of the four drawings individually. It is important to note that any image within the photo-documented process of the drawing may be diagrammed, and that more than one image from each drawing will be studied (not just the final image). By diagramming more than one photo in the series, the analysis covers the entire scope of the drawing, allowing for possible revelations about space creation and development that may prove useful in creation of the final spatial arrangement.

- ***Intuitive*** - Experimental drawings, perspectives drawn in the same *pentimenti* technique used over the course of the independent study, that give an impression of what one might experience after having entered the space of each drawing. A strong criticism within the end discussion was that the drawings were all primarily taken from the observable position, in that the spaces drawn did not necessarily put the viewer *in* the space. These drawings not only allow for the continual development of the drawing skills acquired over the course of the independent study, but also serve as a different means of analysis, perhaps more intuitive, that allows for one to create *speculative*, spatial drawings based upon the parameters established within the initial four drawings.
- ***Analytical + Intuitive*** - Experimental combination (i.e. overlays) and juxtaposition of diagrams from different drawings in preparation for the construction of the larger composition during the thesis semester, in which the spatial languages, derived from each drawing, will be used in tandem to develop the final drawing.

The Spatial Composition

The final composition, or the spatial composition that will be architecturally transformed in the thesis semester, will be arrived at through the same drawing techniques of *pentimenti* as used in the independent study. Its construction differs however, as stated previously, in that it will start on the same size sheet of one 22" x 30" sheet of 140lb Fabriano Hot Press Watercolor Paper, and this same sheet will be used for the entire semester; additions and subtractions will be made to the paper following the same guidelines established in the independent study and thesis prospectus. There remains the notion that the drawing will inform itself throughout its development, although the spatial logic (spatial language) identified through the diagramming of the four drawings will certainly be held as the initial rules by which spaces are made, and by which the relationships between spaces, in regards to the larger composition, might be established.

Architectural transformation must also be addressed, for its meaning has changed in conjunction with the changes made to the process following completion of the four drawings. As a phrase, 'architecturally transforming the spatial composition,' as it previously applied to the combination of the

four drawings, was meant as the transition from the drawings as object studies into a holistic drawing that was more reminiscent of architectural space; space that might, perhaps, be inhabitable. However, given the analytical irritant, the diagramming serves this same transitional purpose; it is simultaneously relying on the intuitive nature of each drawing's creation, yet providing structural rationale for the spatial and formal moves made, and it is in this transitional phase that the thesis project, and the spatial drawing, begin to become architecturally defined despite the lack of program.

Furthermore, there is the underlying idea that as the drawing develops within the thesis semester, as paper is added and subtracted, the piece might start to grow past the relatively small borders present in the initial four drawings (all approximately within a 2'x3' area), and begin to define space that is of a size relatable to human occupation—perhaps, then, more characteristic of architectural space. One could assume, for instance, that if the drawing grew to a large enough size it, were someone to face the drawing from six inches away, might then fill that person's peripheral vision and become spatially occupied, as it were, despite the medium's 2-dimensional limitations. Of course, the final size cannot be predicted, nor the image of the final composition. One may assume, however, that given the findings and conclusions established within and at the end of this independent study, the thesis is heading towards a future that is, on the one hand, of a more determinable, analytical, and architectural character, and on the other, of a less predictable, but more exciting, nature given its intuitive origins.

The Final Drawing

The remaining issue of clarification is that of the final product, or the final drawing that serves to mark the end of the thesis semester. Although it may be hard to dictate what the final drawing will look like, the intentions behind the creation of the drawing, the process by which it is created, become increasingly concretized. The drawing will be of a size far larger than any of the four drawings created within the independent study, and as stated previously, will be of a size that when viewed, is of a scale reminiscent of spaces that might have the potential for human occupancy (such a scale would likely reach dimensions of 8' x 8'); the drawings created in the independent study were limited by their size, with spaces meant more for the hand than those meant for the human body. The drawing will begin on the same size sheet of paper of the original four, but the addition of paper and the scalar change in drawing

strokes will aid in the understanding of architectural space and its creation, as the space drawn is then more architecturally characteristic in its relation to the body. As a drawing, then, the final work seeks to be a 2-dimensional drawing that might be occupied in 3-dimensions, if only visually, but through this visual occupation begins to address assumptions that visual occupation is no less valuable than physical occupation, and that both forms of occupancy are valid means of experiencing space, of experiencing architecture; in doing so, as stated in the original proposal, the final drawing might then stand as a valid architectural work despite its apparent intangibility, again emphasizing differences between representation and representation.

As a work, the drawing will be an architectural transformation of spaces initially similar to those drawn in the independent study, but, using the analytical processes derived from the diagramming, inevitably different due to its application of light, shadow, mass, void, and surface being grounded more in the realm of architecture than 'general space.' The subject of the drawing, however, is as yet undeterminable, although it garnered much debate in the end discussion; it may be an architectural landscape with a single construct, such as a column, or the drawing might be in the image of a threshold, a drawn 'doorway' that is spatially defined yet also alludes to the spaces beyond. Regardless of subject, the term 'architecture' is kept vague so as to prevent allusions to the construction of a building; the goal of the thesis project is not to create an architectural work that might then be programmatically defined, but rather to result in a drawing that is defined by the spatial languages discovered within the drawing process; the final drawing will most likely have an abstract character, yet it will stand as a testament to the process and serve as a physical work that might then be evaluated for its architectural space in contrast to the original drawings and analyses used in its creation. The resultant image may not look like a familiar building typology, the drawing might not even resemble a building, yet the spaces, or space, to be viewed are hoped to spark a discussion that drives at the meaning of architecture that is created through drawing as opposed to architecture that is merely represented; in the end, a drawing that is architecture.

Appendix 2:
Drawing as Research – Thoughts and Inquiries
Fall 2011

“When modern or contemporary architectural drawing engages in its most speculative expressions, it wages an attack upon the prosaic representations that form the monotonous world of most architectural production. The practitioners of this contrary discipline of speculative drawing engage in a profound delineation of human space and experience and embrace an array of existential and architectural concerns unallied with the imperatives of building.”

-James Williamson, “Cosmopolitan Architectures: Notes on Drawing”

Introduction

The continued investigation of the drawing processes of this thesis has generated further insight regarding the possible outcomes of this thesis proposition; conversely, continued speculation on these various possibilities has necessitated that the thesis maintain growth in both clarity and revision given the approaching application of research in the Spring of 2012. That is, the Fall of 2011 culminated in a manner of thinking that re-emphasized drawing not only as a means of representation, but as an important means of visual research. This thought process was reinforced through additional writing in the Summer of 2011, as demonstrated in Appendix 1, but more importantly was communicated most clearly in the studio setting of the Fall semester of 2011. While neither Visiting Professor Peter Rich nor Associate Professor Korydon Smith suggested the use of this thesis’ particular drawing process, they did continually reiterate drawing as crucial to the documentation and analysis of place, architecture, and architectural space.

Rwanda Studio – Thesis Connections Through Drawing

Although of a dissimilar structure concerning project context and content, the means of graphic representation used throughout the Rwanda Studio over the course of Fall 2011 proved meaningful in that it reconfirmed the use of the hand as an important aspect in the creation of architectural space. While not constrained to the same medium as is used in this thesis project, the use of graphite powder and pencils both in Rwanda and in the local studio setting not only provided a strengthening of the connection between mind and hand but also fostered a renewed sense of confidence in hand-drawing as a useful tool in the representation of architecture and architectural space. In particular, sketching on site in Rwanda required a loose hand able to process what was seen and then able to distill the elements of that space, very quickly, onto the page; the hand was the filter through which space was analyzed and then drawn, not unlike the ways in which the four objects’ space was analyzed and then used in the creation of

a spatial drawing. Such drawing communicated the quick translation of thought that occurs when the tool becomes an extension of the arm, hand, and mind, and its usefulness in a process that values quick and intuitive decision-making.

One might make reference to the fact that drawing architectural objects, the houses and topography of Rwanda, is inherently different from the visual study of specific objects and the transmission of findings into spatial drawings; both are linked, however, by more than the hand which draws both the architecture and the architectural space. As stated, the hand is the filter through which investigations of both form and space are communicated, and this filtering process is not any different when one either draws a building, or the space contained within the building; in reference to the process proposed within this thesis project, an understanding of a building of architecture, its spatial and formal rules, is necessary to the understanding of the space it may contain, just as an understanding of the object was necessary in the construction of the spatial drawings inspired by log, nest, rock, and bone; in each case, drawing served as the means by which these rules are extracted and then reused. This methodology was reiterated in the analysis of the vernacular architecture found in Rwanda, and provided the architectural foundations by which the final project proposals were built upon; that which was to be learned had to be drawn as, similar to this thesis, the drawings were the research and the research was in the drawings.

Demonstrate vs. Speculate

This thesis proposal differs greatly in its research in comparison to the Rwanda studio, however, in the origins of its architectural space. While the final product in the Rwanda studio was a house typology, derived from an analysis of the vernacular architecture studied while abroad, this thesis proposes a product that is void of any true architectural precedent. That is, although there is a desire to create architectural space, the underlying intent of the spatial drawings created in the spring is not to *demonstrate* an adherence to the spaces of a particular architecture or architectural space, but rather to *speculate* on the architectural and spatial characteristics that arise in a drawing that lacks an architecture of origin.

The goals of the thesis proposal therefore, as informed by the findings of the Rwanda studio, are then aimed at producing speculative, spatial drawings that give credence to theoretical space and architecture without a definitive building as the established goal. Although, there lies the possibility that the space created on the page will 'claim' its own architecture, with a set of rules that delineates the means of spatial construction and space-making, as identified through diagrams and analysis of the original drawings.

Diagramming Through Drawing

Although originally conceiving of the diagramming process as a series of digital, graphic overlays on top of each original drawing, created in the Spring of 2011, these measures currently exist as a series of conté studies instituted by the hand. Instead, the diagramming of the four drawings has developed into a process involving gestural drawings that distill the drawn three dimensional forms and spaces to their basic components; components that are necessary for the creation of drawn space and which consist of spatial rules extracted from the studied objects.

Using a two dimensional mode of representation in the diagramming phase, namely using lines and basic shapes in an attempt to connect points found within a drawing, was not conducive to rediscovering the means by which each drawing was initially constructed. That is, in the study of each object, a series of rules revealed itself in each object; this rule-set, while defined by the object, defines the perception of space in and around the object as well as defining the construction of drawn space within the page. For example, in one instance, the drawing of the wasp nest, the combination of two different elements created a distinct space; one element, the "arch," is juxtaposed against another, the "surface-plane," to create the three dimensional space of the cylindrical volumes that provide the structure for the nest; individually, each element is understood as two dimensional, and it is in their union, in the union of all the marks of the drawing, that the page may then take shape as a spatial drawing (Figure 5).

Diagramming Through Bookmaking

The Fall of 2011 provided a number of opportunities for bookmaking, with this thesis proposal serving as the specific content. As books, the idea of visual communication was paramount in the

structuring of content and the balance between text and image; the four drawings created in the Spring were the primary images used in the creation of three books, consequently leading to the process of bookmaking as an alternate means of diagramming the drawings. Each bookmaking project allowed for the juxtaposition of the four drawings, an early intent of this thesis proposal that was discarded in favor of preserving the original drawings as reference material for the larger, final drawing. Given the digital context of the bookmaking process however, the four images could be manipulated —cut, copied, and multiplied— with the previous goal, each drawing's pieces coming together to form a larger composition, easily realized. Combined with the complex folding patterns of the books, variations on the possible combinations were multiplied, allowing for adjacencies of drawn marks and space that referenced both the similarities and differences found within the spatial rules used to create each drawing (Figure 6).

Aside from enabling a deconstruction and combination of the four drawings, the dimensional constraints of each book meant that particular spaces within each drawing were often identified as prominent focal points around which the drawing was created; that is, these spaces were evident as having been specifically created with the rules extracted from observations of the object and were thus deemed spatial moments worth further investigation, as explained previously in reference to the wasp nest (Figure 5).

Spring 2012 – Drawing Processes

The main component of this thesis to be carried forward prior to the start of the Spring semester of 2012 is the continued development of a series of diagrams for each of the four drawings: (1) Log, (2) Wasp nest, (3) Rock fragment, and (4) Bone fragment (Figures 1-4). As demonstrated in the initial diagram of the wasp nest's "arch and spatial plane," a more varied set of spatial rules, or moves, is necessary for the construction of the larger drawing. In other words, there are at least three spatial moves to be found within each of the four drawings: (1) arch and spatial plane, (2) shallow void, (3) deep void (Figure 6). Not all of these 'spatial typologies' have been diagrammed, a step that will be crucial to the development of the larger drawing in the Spring; thus, identification and development of these diagrams will continue via gestural drawings in *conté* as will research into the discovery of further types (spatial rules). As further discoveries are made, Appendix 2 will grow to accommodate these changes in both

information and direction, with the direction of the final work proving more determinable as the diagrams progress; given that the final work will derive from these diagrams, they need to be completed in order for one to begin to realize the potential outcome of the drawing.

The larger composition, as discussed in Appendix 1, still emphasizes an architectural transformation of spaces initially similar to those drawn in the independent study, albeit using the analytical processes derived from the diagramming. As it stands, the subject of the drawing remains the space, as this thesis project aims to be a speculative venture into the realm of architectural space and drawing's role in its creation and development. Ultimately, this work intends to initiate questions as to the origins of architecture, and the page's, the drawing's, relevancy to the birthplace of both architecture and space; it is within the mind that architecture is, perhaps, first conceived, but it is on paper, where the idea is seen, modified, and transformed, that architecture achieves the legitimacy necessary for its construction.

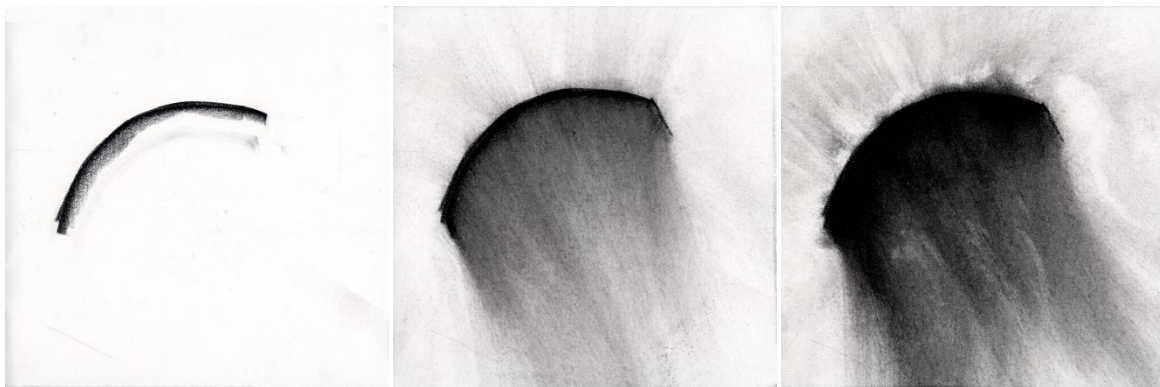


Figure 5 : Drawing Diagrams. A diagrammatic series exploring the process through which the arch and spatial plane combine to make a spatial drawing. As an individual element, the arch, on the left, is a two-dimensional object on a two-dimensional plane. Joined with the spatial plane (middle image), the two elements create a component capable of achieving three-dimensional characteristics despite its occupation of a two-dimensional plane, the page.

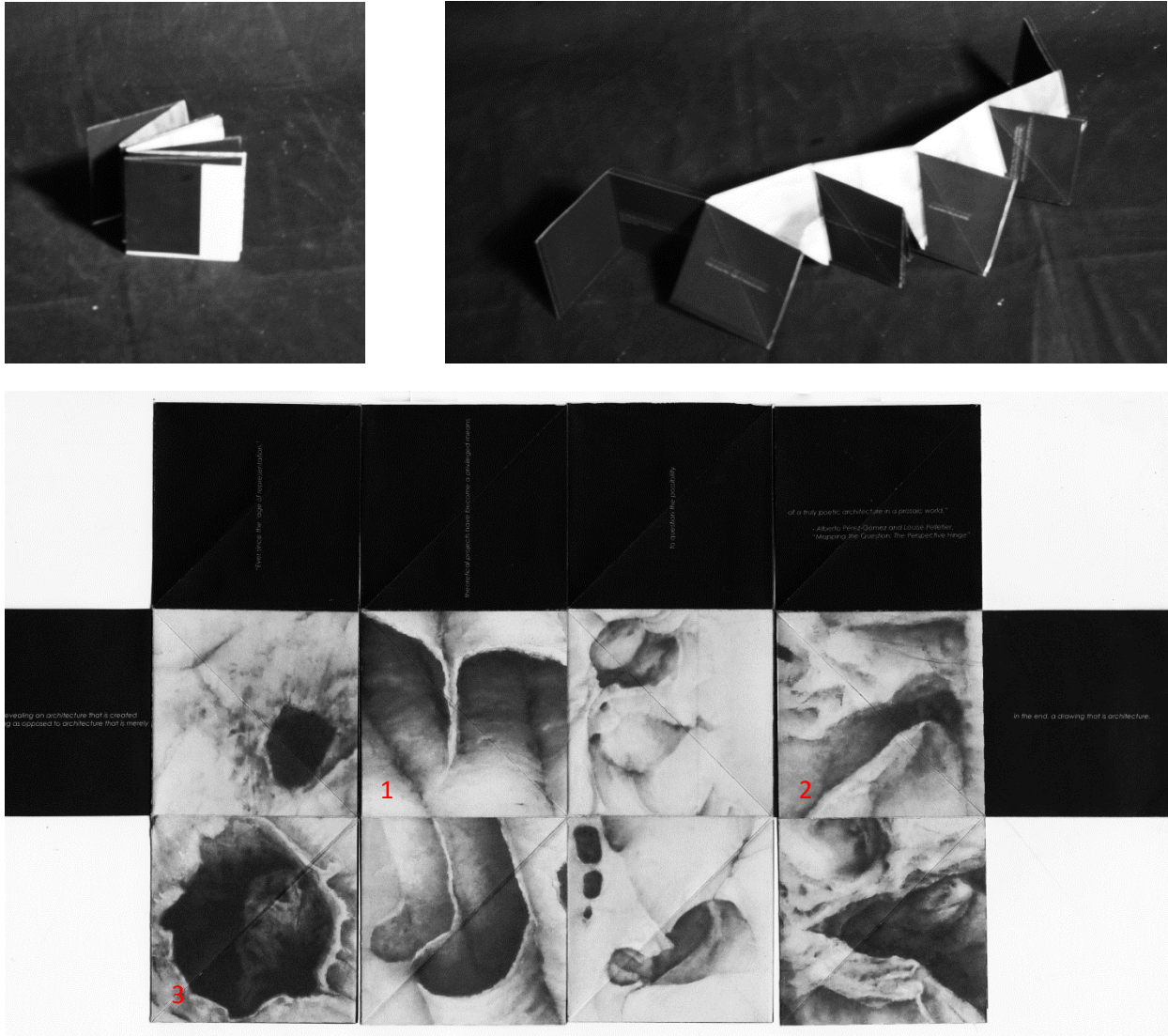


Figure 6: Unfolding Book. The first book in a series of three, accordion format. This book juxtaposes specific spatial moments, taken from the original four drawings, against each other in order to determine the possible variations achieved through 'random' spatial combinations. Three of the spatial typologies identified thus far for diagramming purposes are: (1) arch and spatial plane, (2) shallow void, (3) deep void. (red numbers for picture only, not a part of actual book)



Figure 7: Accordion Book. The last book in the series, accordion format. This book again selects specific spatial moments taken from the four drawing, this time with an emphasis on the juxtaposition of void and its use in connecting each of the six images to create a singular composition.

Appendix 3:
Thoughts on Drawing – 5 Ideals
Fall 2011

Introduction

This thesis project was motivated by the premise that a drawing could take on architectural meaning beyond its initial performance as a re-presentation of an architectural idea. Initially, there existed the goal to create a drawing that was architecture. In the creation of a process wherein the drawing is the research, however, there comes an understanding that a drawing may never be literal architecture; although, the means by which the drawing is created might be architectural, or at the very least, speak to ideals which are fundamental to the creation, to the process, of architecture itself.

While initially enamored with the idea of a large-scale spatial drawing, the process developed over the course of this thesis transformed into a working method that has more to say about core architectural values and less about the finality of a product. The act of drawing no longer presents itself simply as a means of displaying a final architectural work, a re-presentation, but rather is emphasized as an origin point, an evolution of process which may then be used in the formation of architecture and architectural space (Figures 8-11).

While the final drawing is, in itself, not architecture, the processes by which drawings are, and this drawing was, constructed reinforces lessons which are more deeply connected to the design and spirit of architecture than one might initially perceive.

Process > Product

The '*drawing as product*' has always been forfeit to the '*drawing as process*' and, despite allusions to this fact in the writings preceding the making of the drawing, the end product was initially thought necessary to establish deeper connections between drawing and architecture. However, such connections were already establishing themselves through the evolution of making—the transformation of process. The end continued to describe itself as indefinable, unknown, and, in many cases, a concept never to be reached; the final work, conceived through the process of drawing, erasing, and redrawing, has existed in many '*states of finishing*' but never in a '*finished state*' (Figure 14).

There comes the realization that, in regards to this thesis, process was equitable to product, and, in the end, the process is perhaps more important than the product; or, rather, a product is only as genuine as the process that informs its creation. Considering the relationship between drawing and

architecture, the means by which the former is created is fundamental to the conception of the latter—the process of drawing reveals, more than any other factor, the means by which the architect might construct the building which is initially born on, in, and of the page.

Drawing Process = Creation of Architecture

As has been the case over the course of this thesis, much of the making was intuitive. Yet, it was through making, through drawing, that the intuitive process was more efficiently structured with ordered principles. The rules set up within the original prospectus provided the basic framework for the construction of a drawing. While developing the work, an adherence to, and a questioning of, the rules established allowed for a flexible drawing system that proved helpful in the decision-making later in the process. For example, maintaining perpendicular edges when adding paper facilitated the making of the larger drawing, as the pieces available were already of a geometry that the individual pieces might be perpendicular to one another (Figures 12, 13).

An existing rule thus proved a solution rather than a detriment, yet in the end, it allowed for larger questions to address the work; in particular, speculation about the frame of the drawing, and its erratic nature in contrast to the ‘regular’ frames used in the presentation of the work, brought about discussions regarding drawing the spatial implications associated with the edge condition. Such a discussion might never have come about without pursuit of this thesis topic, and while a ‘right’ answer was not chosen, the drawing elicits responses that might prove more beneficial to the field of architecture than this thesis alone; that is, while the thesis, in its pursuit of drawing as a critical component of architectural creation, seeks to contribute its findings to the architectural field, the questions it asks are far more important than the answers it produces.

That is, a method was created through which drawing might be used as a tool of conception in the creation of space and architecture; the latter two ideas are not physically rendered, but the drawing process created around this thesis enables one to ask critical questions of each in regards to their relationship with each other and to their relationship with their means of creation. Specifically, ‘*drawing as architecture*’ might be less valuable a phrase than ‘*process as architecture*’, where the former still retains its connection to product while the latter speaks to drawing and its true value to architectural creation.

Architectural Ideals

Implicit in these conclusions on process are architectural ideals that, once identified, are thought to both apply to the reality of representation as well as the reality of the built world—thus, one might use a similar process in the conceptualization of a architecture, as these ideals are fundamental to both drawing and building. They are:

1. *The Importance of the Hand:* Drawing by hand brings the architect, the creator, closer to the ideas and marks transcribed on the page. Rather than work by means of a computer, *crafting* the drawing necessitates a more methodical work-flow, as every piece of paper, every mark is thought about before it is incorporated into the larger whole, before it becomes a member of the structure that is the larger composition. The hand is the conduit through which the mind engages work, true in both the drawing and construction of form and space; the sense of craft imbues itself into the work, as one becomes conscious of the consequences of necessary decision-making

2. *Necessity of Decision Making:* Given that the final drawing was constructed within the latter half of the semester, the work, much like a building, was dependent upon a process of quick decision making. The removal of error is embedded within the drawing method developed, given that any mark may be erased, sanded, or cut away entirely. Thus, a multitude of decisions ended as dust rather than components of the final drawing, yet they were necessarily made so that the 'right' marks might be discovered; in architecture, the first idea is not always the best solution to a problem, where time and iterative studies are necessary to reveal that which best meets the s. Drawing is the tool of conceptualization that allows for the active pursuit of iteration while, as discovered within this process, understanding how time is a factor in the evolution of an idea, in the evolution of architecture and space.

3. *Embedded Sense of Time:* Architecture is forever linked to time; materials degrade, colors fade, light penetrates while shadows recede, and every building takes shape through an evolution of stages known as construction—all bow to time. Not only has this thesis project,

through photo documentation of the work, demonstrated a change in form over time, but also it has revealed the importance of time as it applies to spatial experience. As seen in the photos the space changes over time and, with it, so too does one's perception of that space. This is a factor often overlooked within the built reality, as many buildings exist as static representations of an initial idea. The beauty of the process found in this thesis stems from the fact that ideas change, time changes, and space might change. Architects need to be aware, need to ask questions, of how their buildings might change, or at the very least, how their buildings might become as active and alive as the shadows that dance across their surfaces.

4. *Malleability of Architectural Ideas (Open System)*: The process discovered over the course of this last semester provided an open system of drawing as well as an open system of thinking not only about drawing, but about architecture. The malleability of architectural ideas is often lost to the built reality, a world given to rules and regulations that, for the most part, never existed until they were created. A rule of architecture is no more a creation of the mind than a drawing is a creation of the hand, yet the latter is perceived as a more liberal pursuit than the former. However, as has been demonstrated within this drawing process, one might use the rules within a found system to the benefit of the project—rather than see sanding as purely a destructive, erasing process, it was transformed into the giver of light, used as a tool to *add* to the space just as easily as it might *subtract* from the space. The same mindset might be applied to architecture, wherein the rules of building might be rethought, reconfigured (much like the drawings were cut up and rearranged), to the service of a better architectural solution; within a process of liberation, there are no problems, only answers.
5. *Part to Whole*: A drawing, like a building, is a composition, a collection of parts brought together through organization, whether ordered or disordered. The construction of the drawing surface from the pieces of former drawings only furthered this point, calling into question the usual practice of building construction. All of the marks on and all of the joints of the paper work in unison to give presence to the space created; each piece might stand on its

own as an individual work or space, yet its incorporation into the final drawing betters the larger space to be experienced when moving towards and around the drawing. As a discussion about architecture, then, one must consider the building as a composition, and see every component as serving the whole, and see every element as a contributor to not only the form of the building but the experience of the space.

This thesis has not reached an ultimatum, a final decision, about the relationship between drawing and architecture. Stated differently, this thesis has identified drawing, and the development of a drawing process, as a useful tool in conceptualizing architecture, yet it does not assume that the process set out in the prospectus and utilized over the course of the semester as the only means of addressing this relationship. Furthermore, although existing as a spatial composition, the final drawing has become more of a means to think about architecture in terms other than space, rather than specifically serving as the sole answer to architectural creation. In fact, this thesis asks many more questions, and relishes the search as a means of discovering how the drawing and architecture might be related; how creating a drawing process might enhance the critical eye of the architect, might enable the architect to actively re-engage with *making*, and might ask the architect to re-assume the role of skeptical decision-maker—to make the unknown known through action.

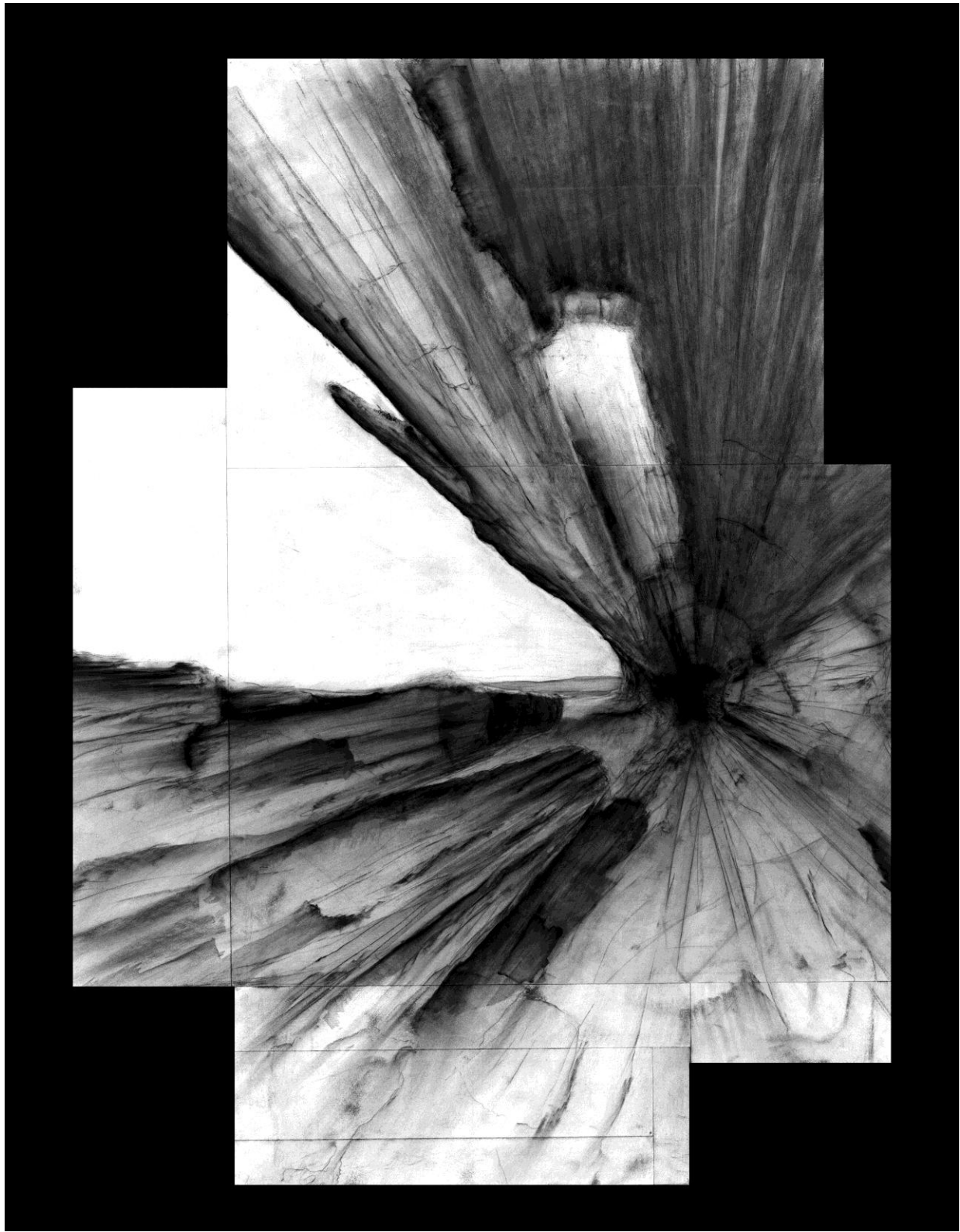


Figure 8: Log Perspective. Perspective as imagined within the object of the log. Vertical orientation (as displayed). Black and white photograph, color not shown. Original size: roughly 3.5' x 3'.

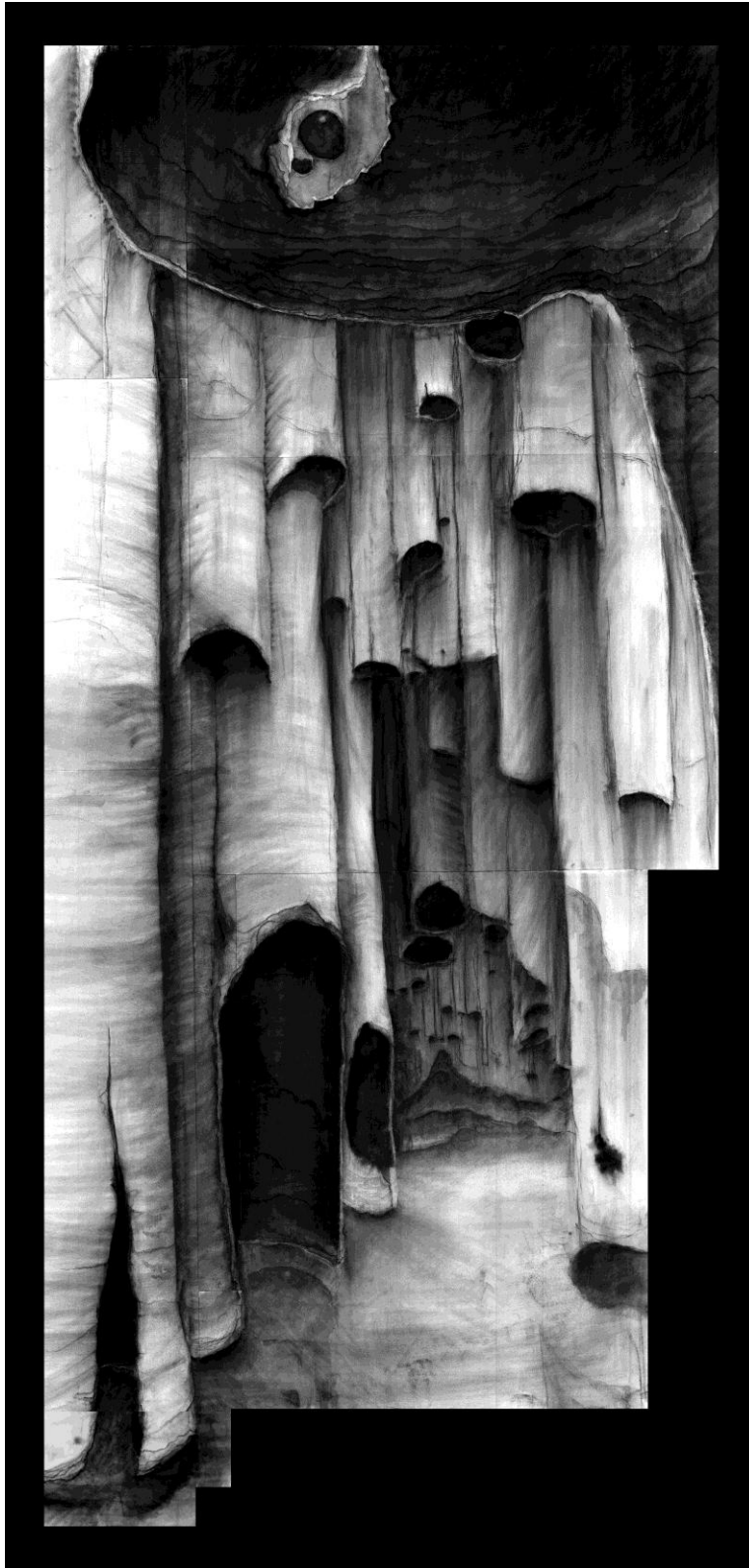


Figure 9: Nest Perspective. Perspective as imagined within the object of the nest. Vertical orientation (as displayed). Black and white photograph, color not shown. Original size: roughly 6' x 3.5'.

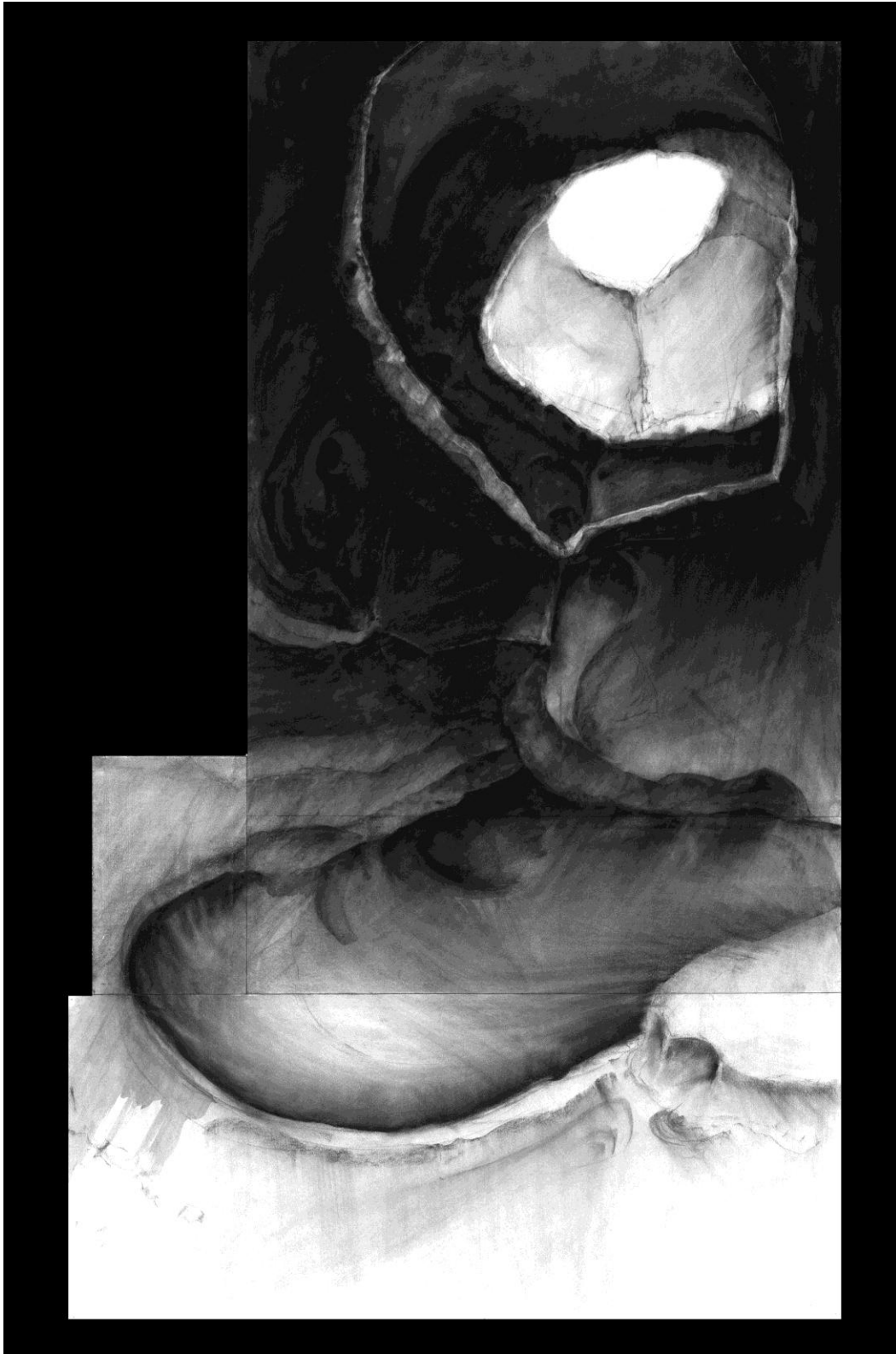


Figure 10: Rock Perspective. Perspective as imagined within the object of the rock. Vertical orientation (as displayed). Black and white photograph, color not shown. Original size: roughly 4' x 3.5'.

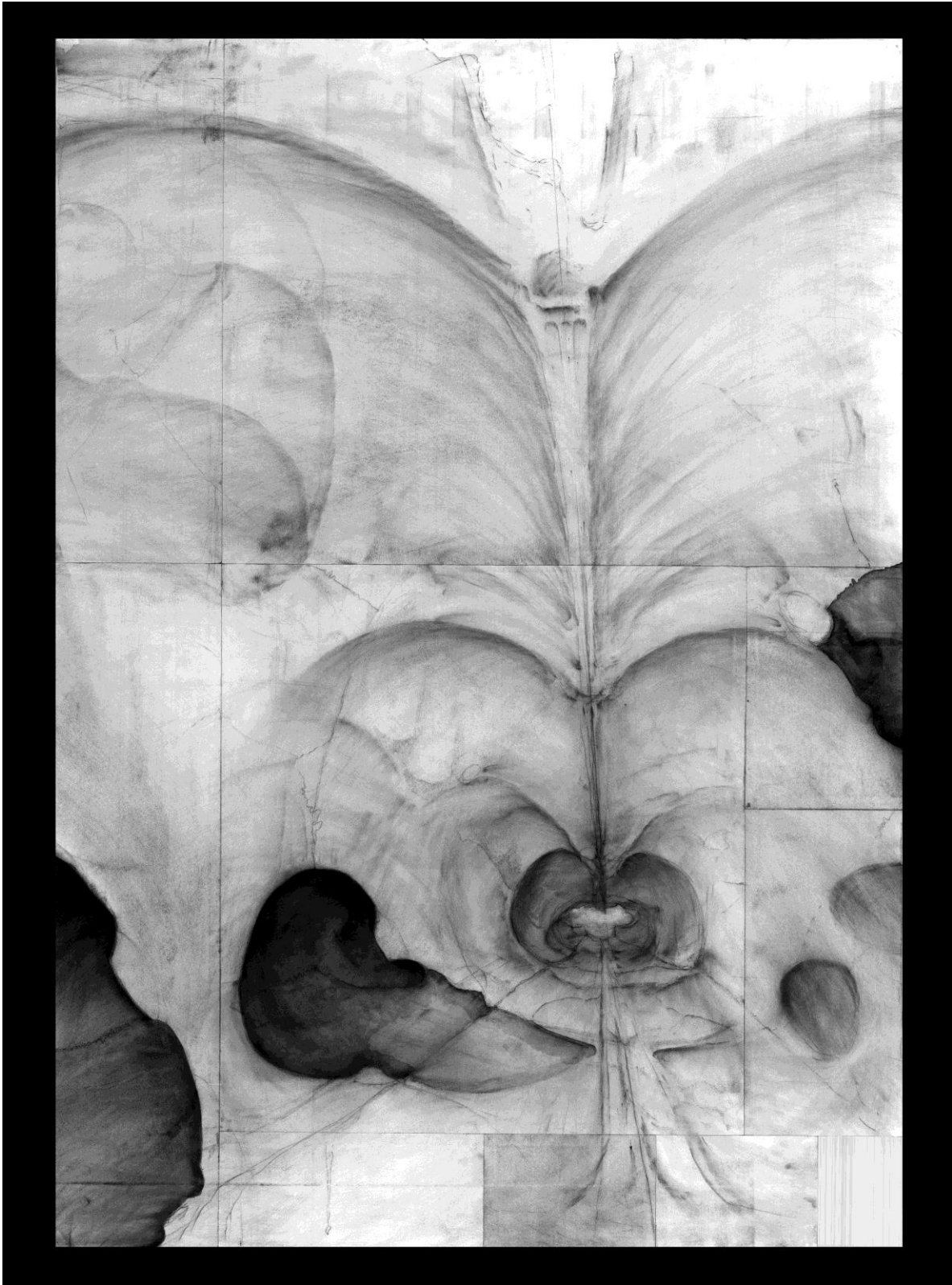


Figure 11: Bone Perspective. Perspective as imagined within the object of the bone. Vertical orientation (as displayed). Black and white photograph, color not shown. Original size: roughly 2.5' x 3.5'.

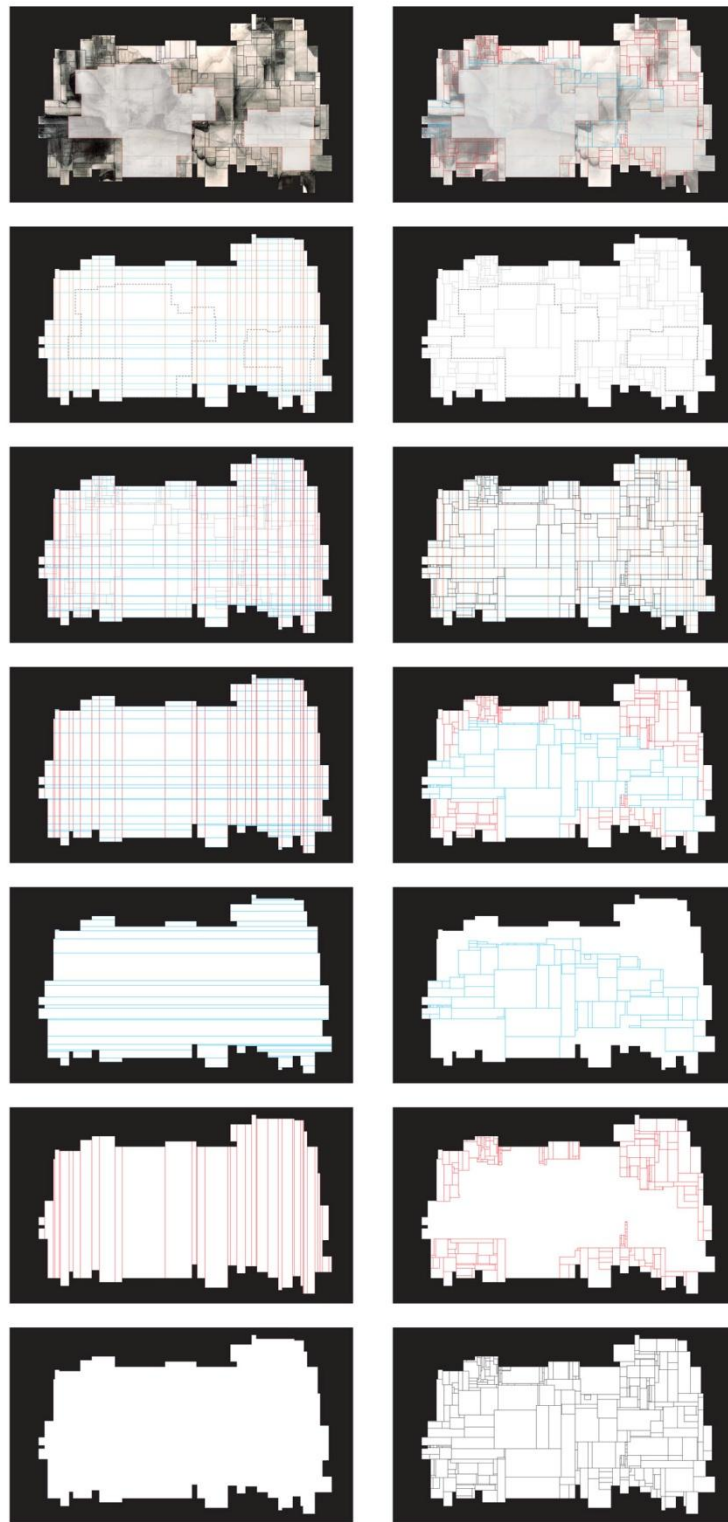


Figure 12: Final Drawing Diagrams. Diagram of drawing mid-development. An analysis of the pieces of paper, their joints, and the joints relationship to the drawn space.



Figure 13: Final Drawing Photo Sequence. Drawing as it developed over the course of the semester, beginning with the cutting and reassembling of the drawings in figures 8-11.



Figure 14: Final Drawing. Final drawing phase. Horizontal orientation. Original size: 6' x 12.5'.

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