

The background is a complex architectural collage. It features a dark, semi-transparent rectangular area in the upper half containing the title. Below this, there are various architectural elements: a wireframe model of a building on the left, a stone wall with a window on the right, and a central area with a railing and some foliage. The overall aesthetic is modern and layered, with various shades of gray and white.

The Heterotopia of Architecture

By Dustin DiNicola

DEDICATED TO MY FAMILY, WITHOUT WHOM I WOULD
NOT BE WHERE I AM TODAY

MAY, 2018

"Art, be it painting, literature, or architecture, is the remaining shell of thought. Actual thought is of no substance. We cannot actually see thought, we can only see its remains. Thought manifests itself by its shucking or shedding of itself; it is beyond its confinement."

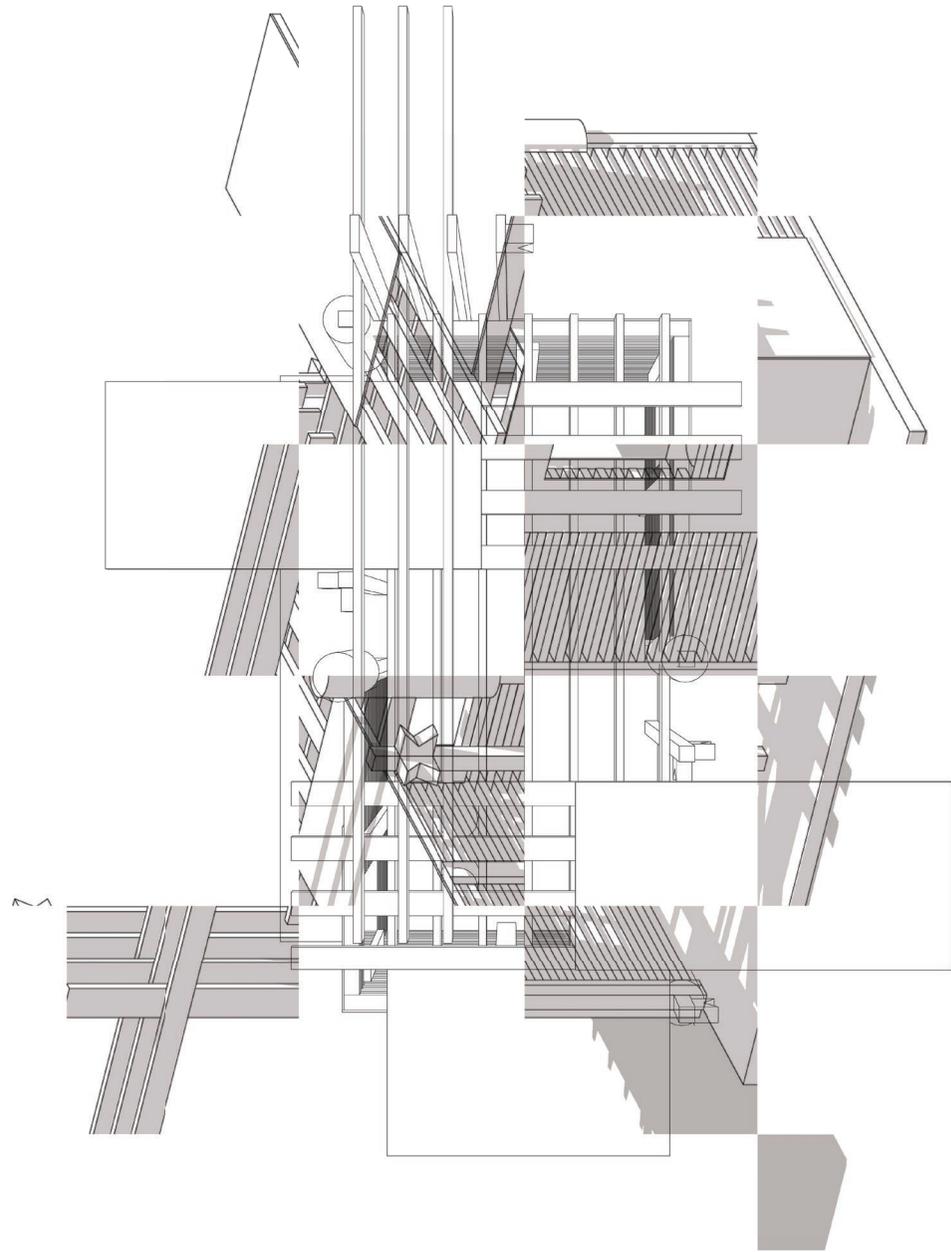
- John Hejduk -

ABSTRACT

While it is common for an architectural thesis to culminate in the production of a building, this thesis takes a different approach. Rather than the production of a singular building, **This thesis seeks to defend the argument that such a thing as a heterotopia of architecture exists and within this heterotopia there exists a language of representation, the language of architecture.**

Through the course of the exploration of this heterotopia, a series of objects were created in conjunction with what will be referred to as the matrix of the heterotopia of architecture. This matrix serves as the basis for understanding the heterotopia as well as the language.

At times the argument for this thesis can be self-referential, and seemingly fold in on itself. This is a result of the hypothetical nature of the project. **While all of the hypotheses provided are based on research of architectural approaches and a critique of methods, they are still hypotheses and as such should not be taken as truth outside of the thesis. In short, this thesis is best described as a metaphor for the future of the architectural field and the next epoch.**



-collage of a realistic configuration from a pre-determined kit of parts-

INTRODUCTION

This thesis posits that such a thing as a HETEROTOPIA OF ARCHITECTURE exists and that this heterotopia traverses the space between architectural artifact and idea. The function of the heterotopia of architecture is not solely the production of architectural artifacts [buildings]. Rather it is a unique field which favors process over finality, ambiguity over clarity, and forced concentration over fleeting amusement.

Within this heterotopia there exists a language of architecture which acts as the vehicle for communicating an object's position relative to artifact and idea. This representational language simultaneously embodies idea and artifact and as such takes center stage. The Matrix then can be thought of as a map of the position of an architectural object.

Ultimately, the metaphysical implication of an architectural object within the heterotopia is not its idea nor is it its artifact, but rather it is its point in an entropic state; its location within the matrix. In statistical mechanics, entropy is related to the number of configurations that a thermodynamic system can have when in a state as specified by some macroscopic variables and assumes for simplicity that each of the microscopic configurations is equally probable. Implying this idea on the heterotopia of architecture illustrates that Idea has infinite possibilities for configuration while artifact has only one. This notion is the basis for the physical explorations of the matrix.

TAXONOMETRIC CONFIGURATION - WHITE ON BLACK





INTRODUCTION

Essentially, this thesis does not focus solely on the production of an architectural artifact or idea, but rather on defending the notion that the heterotopia of architecture represents a point in an object's movement and that the representational language of architecture conveys this location much like a map does. This language of architecture naturally alternates between SEEING and SAYING and as such this thesis mirrors that metaphysical arrangement.

Alternating between seeing and saying proves to be the most effective means for exploring the functions and features of the language of architecture and its unique effect on the position of an object relative to the matrix. The research and production that accompanies this thesis illustrates that such a heterotopia and language exist and explores their implications on the process of design and the heterotopia itself.

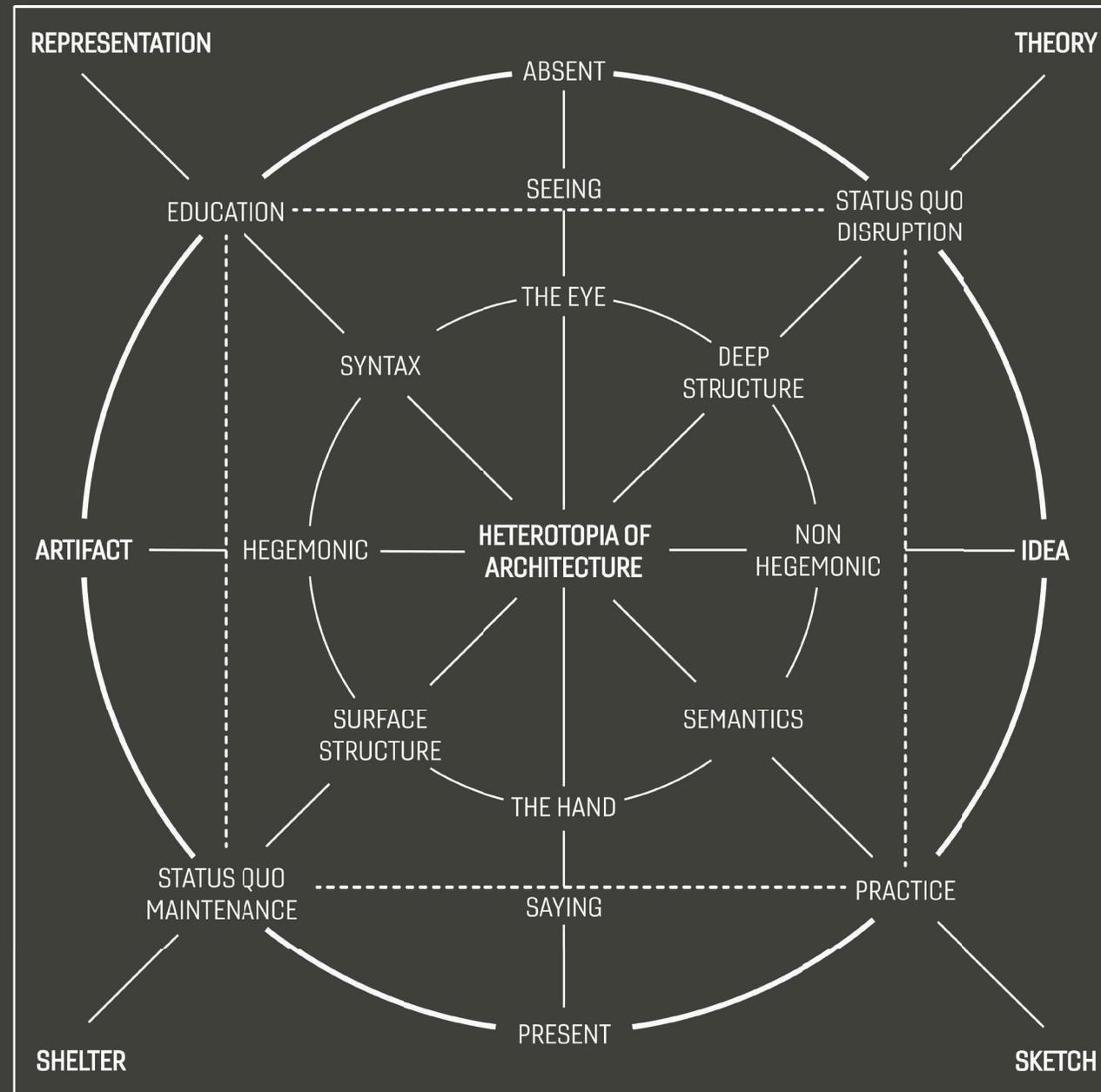
These intentional dichotomous relationships lend themselves to locating an object in space and impose a set of gravitational fields on the matrix. These gravitational fields are easily represented in moving animations but prove more difficult to express in two-dimensional form. The gravitational fields begin with the dichotomous relationship between idea and artifact. These two constructs served as the basis for the rest of the matrix.

" Transparency means a simultaneous perception of different spatial locations. Space not only recedes, but fluctuates in continuous activity. "

- Colin Rowe & Robert Slutzky-

MATRIX

Explanation of the Matrix



Matrix:

Noun.

(a) An organizational structure in which two or more lines of command, responsibility, or communication may run through the same individual

If taken by themselves, idea and artifact present a very simple linear arrangement with the heterotopia occupying the space between them. In this case, the artifact is the physical manifestation while the idea is the metaphysical driving force and the heterotopia is the ideal state in which the object embodies both artifact and idea simultaneously.

As for artifact, the definition that should be used throughout the course of this thesis is as follows; "Something observed in a scientific investigation or experiment that is not naturally present but occurs as a result of the preparative or investigative procedure". In both the field of architecture and this thesis "the preparative or investigative procedure" is the design process, or rather when

an object is simultaneously artifact and idea. The artifact is derived from this investigative procedure and the idea initiates it.

Regarding idea, the definition most suitable throughout the course of this thesis is as follows; "a transcendent entity that is a real pattern of which existing things are imperfect representations". Oddly enough, the word idea is derived from the Greek "idein" meaning "to see". Idea can be thought of as the archetypal or perfect form an object can take. It is here that the heterotopic qualities of the dichotomous relationship present themselves. The heterotopia of architecture is simultaneously the embodiment of the ideal and the imperfect; it contradicts itself.

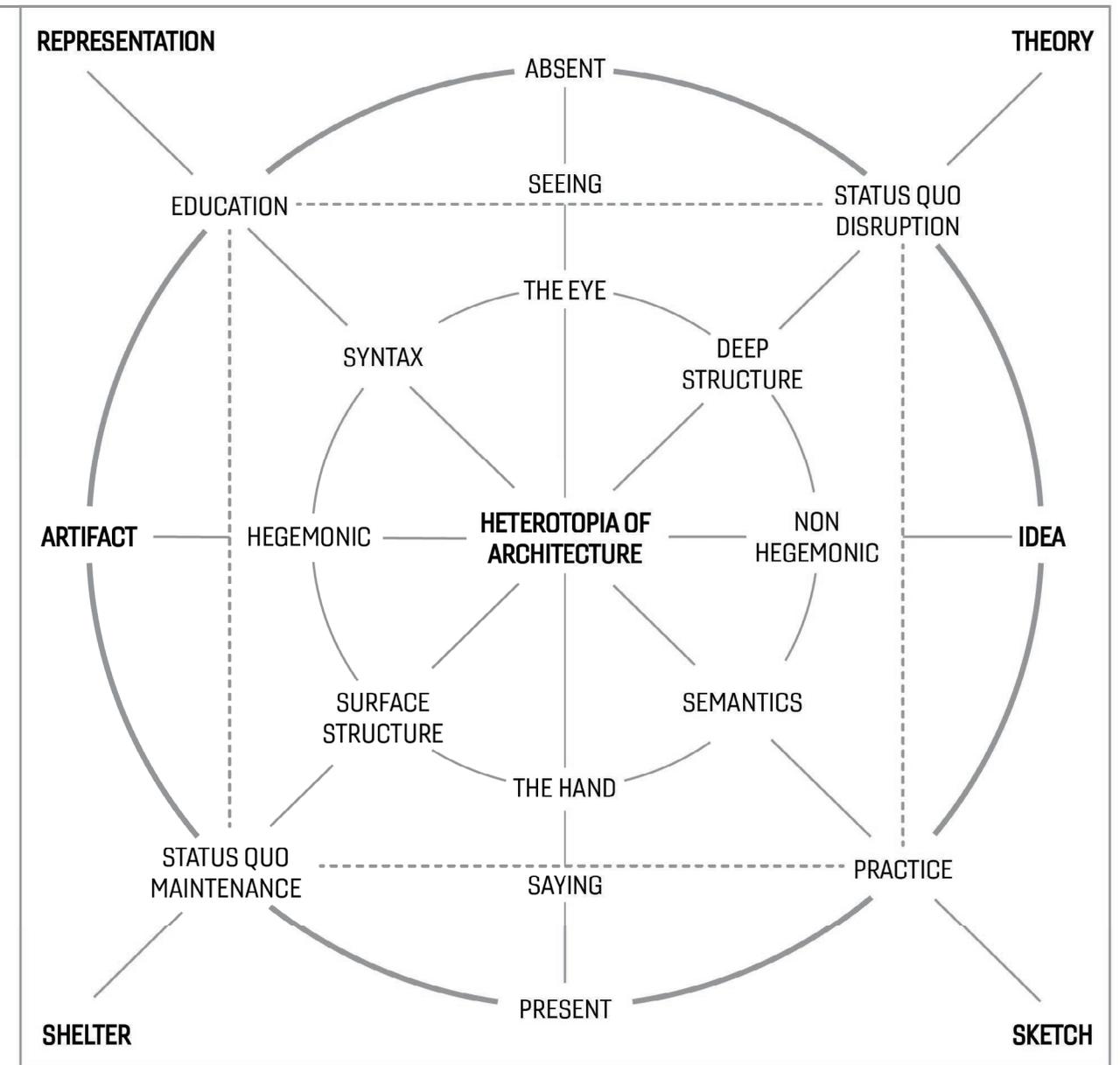
Explanation of the Matrix

The linear arrangement of artifact and idea is further complicated with the addition of hegemonic and non-hegemonic conditions. The definition of hegemony that is most applicable is as follows; the natural hierarchy which presents itself when like elements are combined into a single state. Conversely, a lack of hegemony would be a lack of imposed structure.

As an object traverses the space between idea and artifact, it concurrently is presented with issue of its own hegemony. The closer an object is to idea, naturally the less hegemony it has, and vice versa. Of course, it is possible to have aberrations of this metaphysical arrangement, such as an artifact without an imposed structure, but highly uncommon in architecture and near impossible in the built environment. This near impossibility arises from a tendency to impose a

perceived structure on an object when none may exist. The imposition of a perceived structure is a trait common of post-modernism and created the fertile ground from which post structuralism arose.

The traits hegemonic and non-hegemonic, create a sphere of influence around the heterotopia in which syntax, semantics, deep structure, surface structure, the eye, and the hand all have influence. The dichotomous relationship of the eye and the hand are more straightforward in the sense that it is easily understood, during the "preparative or investigative procedure", the eye and the hand work in conjunction with one another. Less straightforward are the dichotomous relationships of syntax and semantics, and deep structure and surface structure.

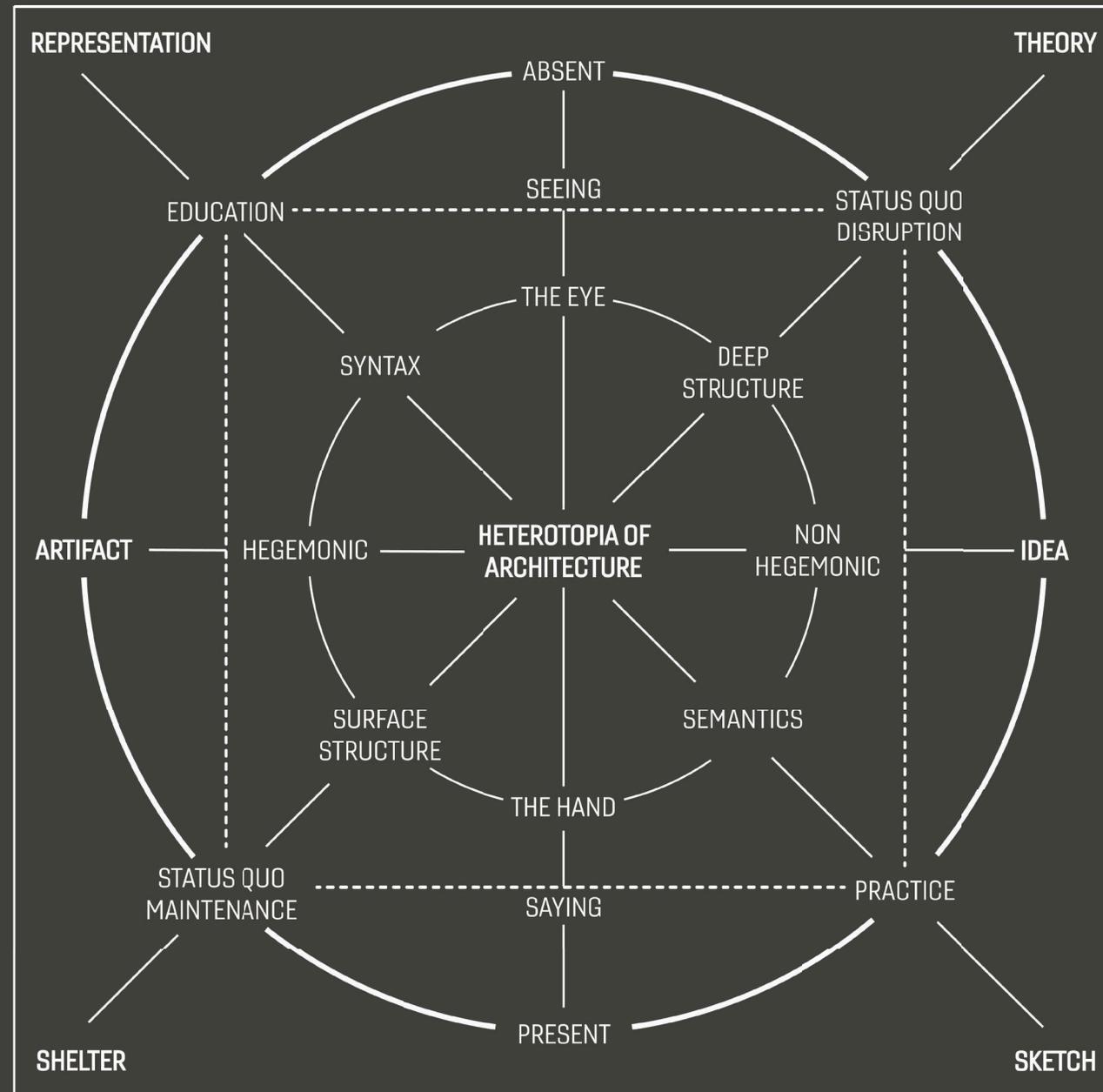


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In Linguistics, syntax is defined as “the set of rules, principles, and processes that govern the structure of sentences in a given language, specifically word order and punctuation as well as the study of such principles and processes.” If we apply this construct to the field of architecture, it presents itself as the study of the arrangement of the parts or pieces of an object and that arrangement’s relationship to its hegemony. Put simply, the syntax is how the object comes together and the dissection of that arrangement. On the other hand, semantics is defined as the linguistic and philosophical study of meaning. Again, applying this construct to the field of architecture allows for the exposition of the syntax, or the understanding of the complex arrangement of an object.

Deep structure and surface structure are two ideas first conceived by the notable linguist Noam Chomsky. “The deep structure of a linguistic expression is a theoretical construct that seeks to unify several related

structures” says Chomsky in his book *The Logical Basis of Linguistic Theory*, while the surface structure is the numerous configurations a structure can have. In terms of architecture, much of the critique of the built environment revolves around the organizational methods employed not only programmatically but formally as well. Entropy again begins to present itself with regards to the numerous configurations a structure can have through surface structure.

This sphere of influence is framed by the overarching characteristics of the business end of architecture: status quo maintenance, status quo disruption, practice, and education. Practice and education could take center stage and present themselves in a linear fashion similar to that of idea and artifact, however for the purpose of this thesis, they are cursory; merely entropic states that a person might find themselves in. Some architects confess to being heterotopic-ly in a state of both concurrently.

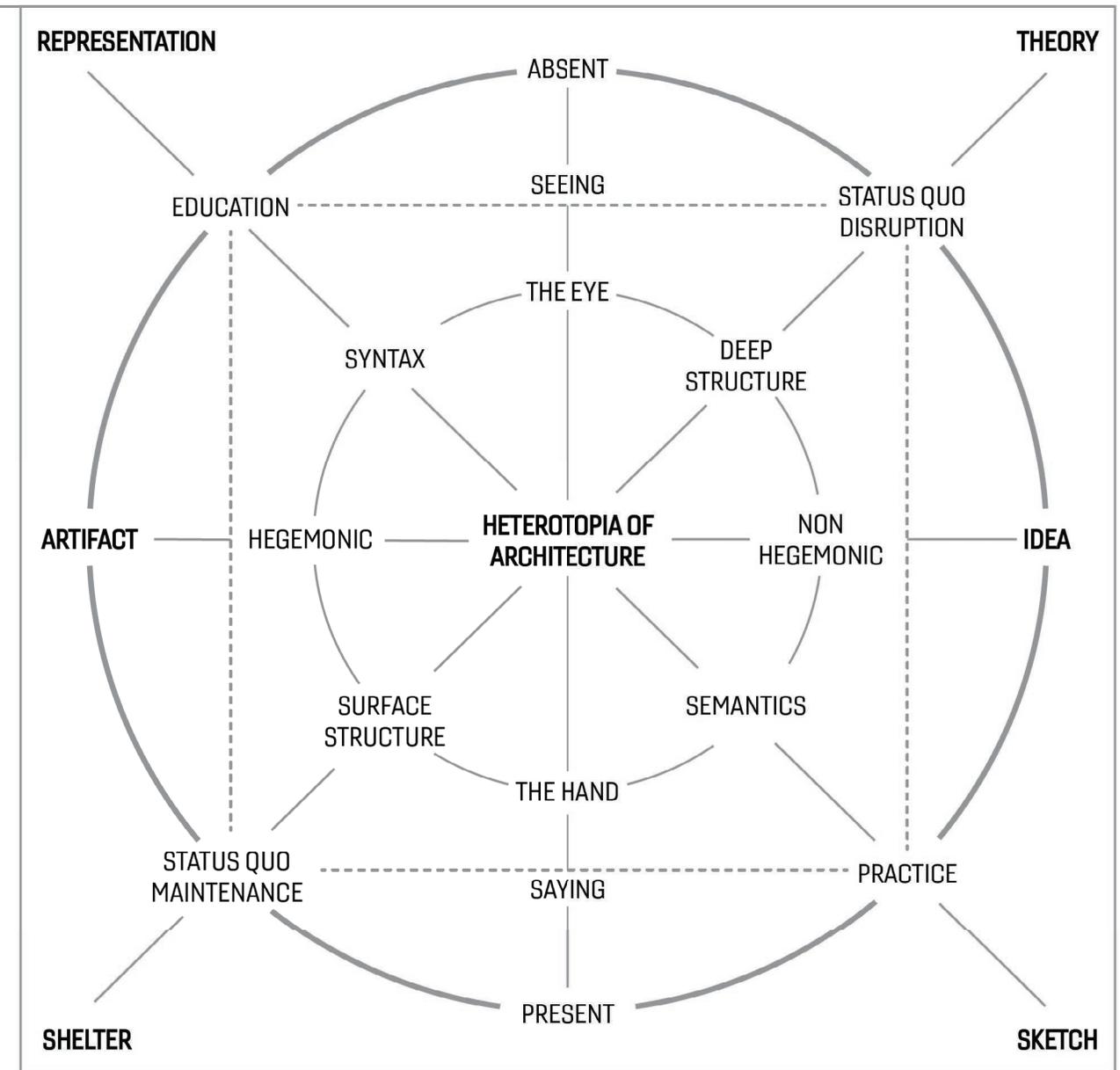
Explanation of the Matrix

Education and practice, and status quo maintenance and disruption are both dichotomous when taken by themselves however both groups have a dichotomous relationship to one another. The status quo is a direct result of the steps taken by both student and practitioner. If for example both student and practitioner veer toward status quo disruption, the heterotopia naturally becomes less hegemonic and more anarchic. Similarly, if both the student and the practitioner veer towards maintenance of the status quo, over time the heterotopia naturally becomes more hegemonic and stratified.

As mentioned, the tools of both the practitioner and the student are seeing and saying. For this thesis, SAYING is the action of exploration and

self critique while SEEING is the action of researching and comprehension. Any effective form of the heterotopia simultaneously researches, critiques, explores, and comprehends that which is represented. Any piece of architecture within the heterotopia is both absent and present; it is both critical of itself and dislocated from itself concurrently.

These dichotomous relationships all occur within the frame of theory, shelter, representation, and sketch. This frame is one of many that the heterotopia can be seen through and each change made to the frame will have an equal and opposite effect on the heterotopia. This matrix is best thought of as a freeze frame image of a kaleidoscope.



Matrix:

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" Architectural space is born from the relationships between objects or boundaries, and from planes which do not themselves have the character of object, but which define limits "

- Pierre Von Meiss -

HETEROTOPIA

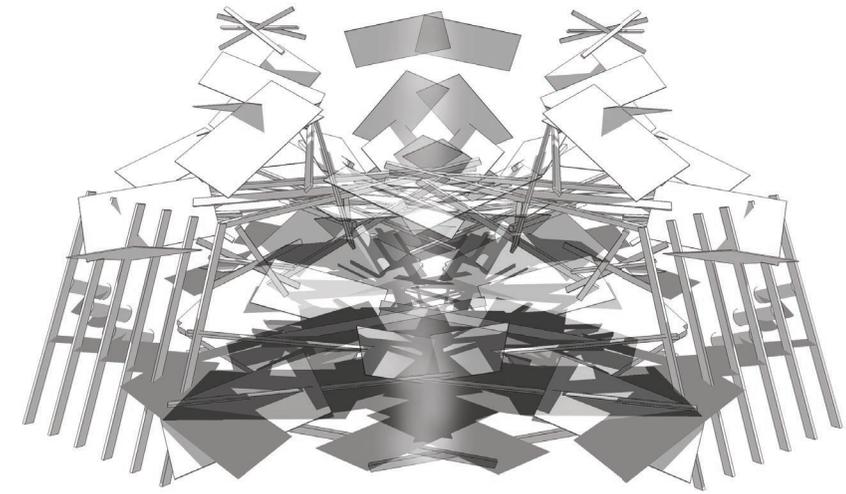
Heterotopia

The idea of heterotopia was taken from the article "of other spaces: utopias and heterotopias" by architectural theoretician Michael Foucault. In his work, Foucault describes a heterotopia as "a place of otherness" and expands on this idea with the example of a mirror.

-Read Quote-

Foucault goes on to expand on the criteria of a heterotopia in the following pages of his article, however for the purpose of this thesis the comparison Foucault makes between the heterotopia and the mirror is the point of critical importance. Foucault describes the mirror as both a utopia and heterotopia; a contradiction. If explored on a deeper level, one can see the application to the field of architecture and the design process. As we design and engage with the investigative procedure we locate the unlocatable. We transform idea to artifact. This transformation is the peak of the heterotopia of architecture. It is the simultaneous action of ideating and representing; the object is mapped and created in conjunction with one another by regime heavy tools like plan, section, elevation, and perspective. The objects existence on the page functions almost exactly as the mirror does.

It represents an object or location within that object which both exists and doesn't exist. Its quality of existence on the page, self-referentially describes its nothingness. Its physical actualization in the built environment solidifies its artefactual existence and the impossibility of its members to take on any other form than what they currently are. Its hegemony is concrete and its semantics are definite. Its syntactical structure lacks entropy. Accepting the notion that the object on the page is both real and unreal unlocks the possibility of its final artefactual form and allows for the possibility of new syntactical structures impossible in the built environment.



"I believe that between utopias and these quite other sites, these heterotopias, there might be a sort of mixed, joint experience, which would be the mirror. The mirror is, after all, a utopia, since it is a placeless place. In the mirror, I see myself there where I am not, in an unreal, virtual space that opens behind the surface; I am over there, there where I am not, a sort of shadow that gives my own visibility to myself, that enables me to see myself there where I am absent: such is the utopia of the mirror. But it is also a heterotopia in so far as the mirror does exist in reality, where it exerts a sort of counteraction on the position that I occupy. From the standpoint of the mirror I discover my absence from the place where I am since I see myself over there. Starting from this gaze that is, as it were, directed toward me, from the ground of this virtual space that is on the other side of the glass, I come back toward myself; I begin again to direct my eyes toward myself and to reconstitute myself there where I am. The mirror functions as a heterotopia in this respect: it makes this place that I occupy at the moment when I look at myself in the glass at once absolutely real, connected with all the space that surrounds it, and absolutely unreal, since in order to be perceived it has to pass through this virtual point which is over there."

- Michael Foucault: Of Other Spaces -

"what I seek is a permanent opening of possibilities"

- Michael Foucault -

SEEING

Seeing

As mentioned, this thesis builds on the work of great architects and theoreticians. The works of these architects and theoreticians that are critical of post-modernism, lend themselves to the expansion of the heterotopia. Research and comprehension of the following quotes lent themselves best to the development of the heterotopia of architecture.

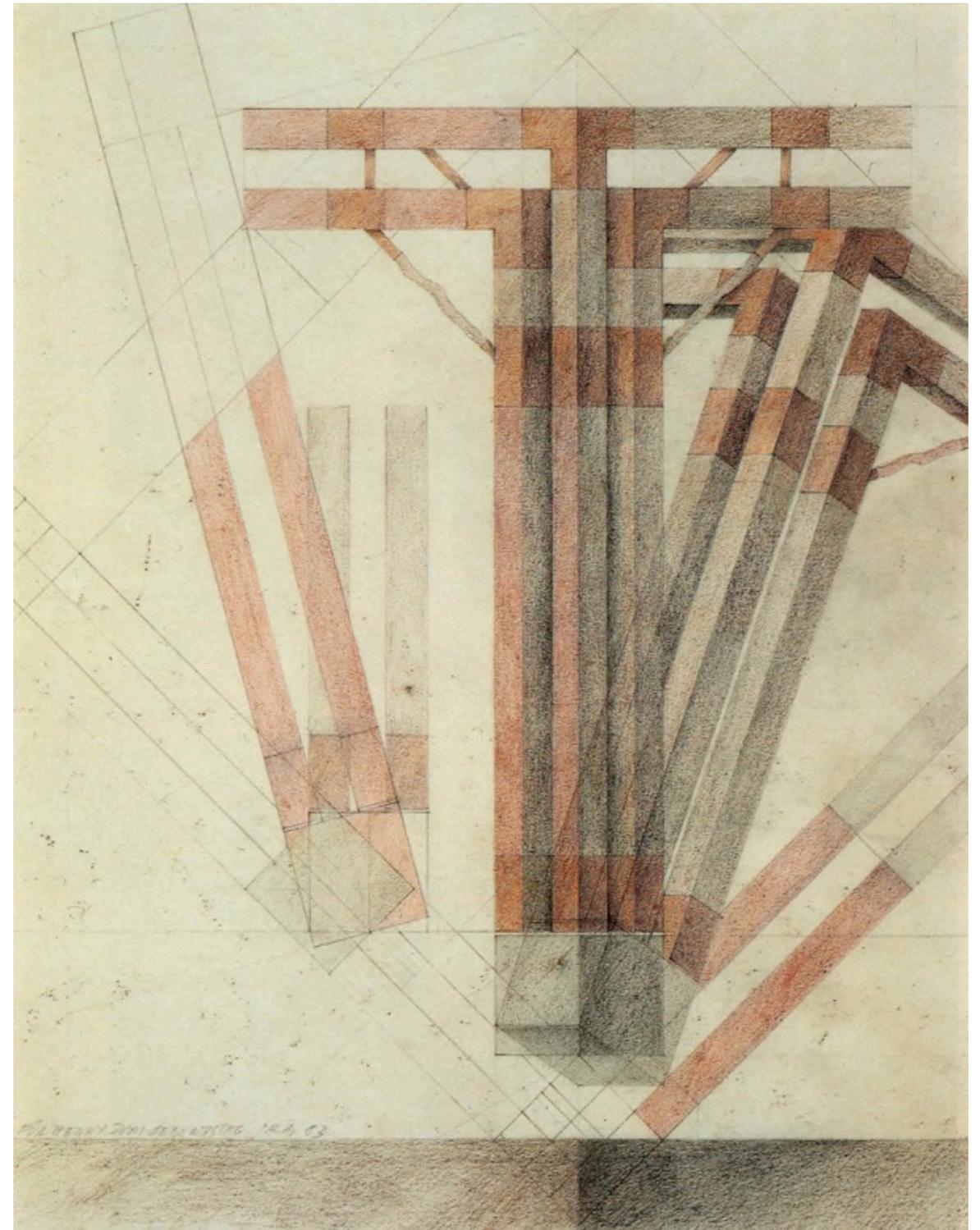
Raimund Abraham in an article titled "The Anticipation of Architecture" In the book "Education of an Architect" by John Hejduk, writes:

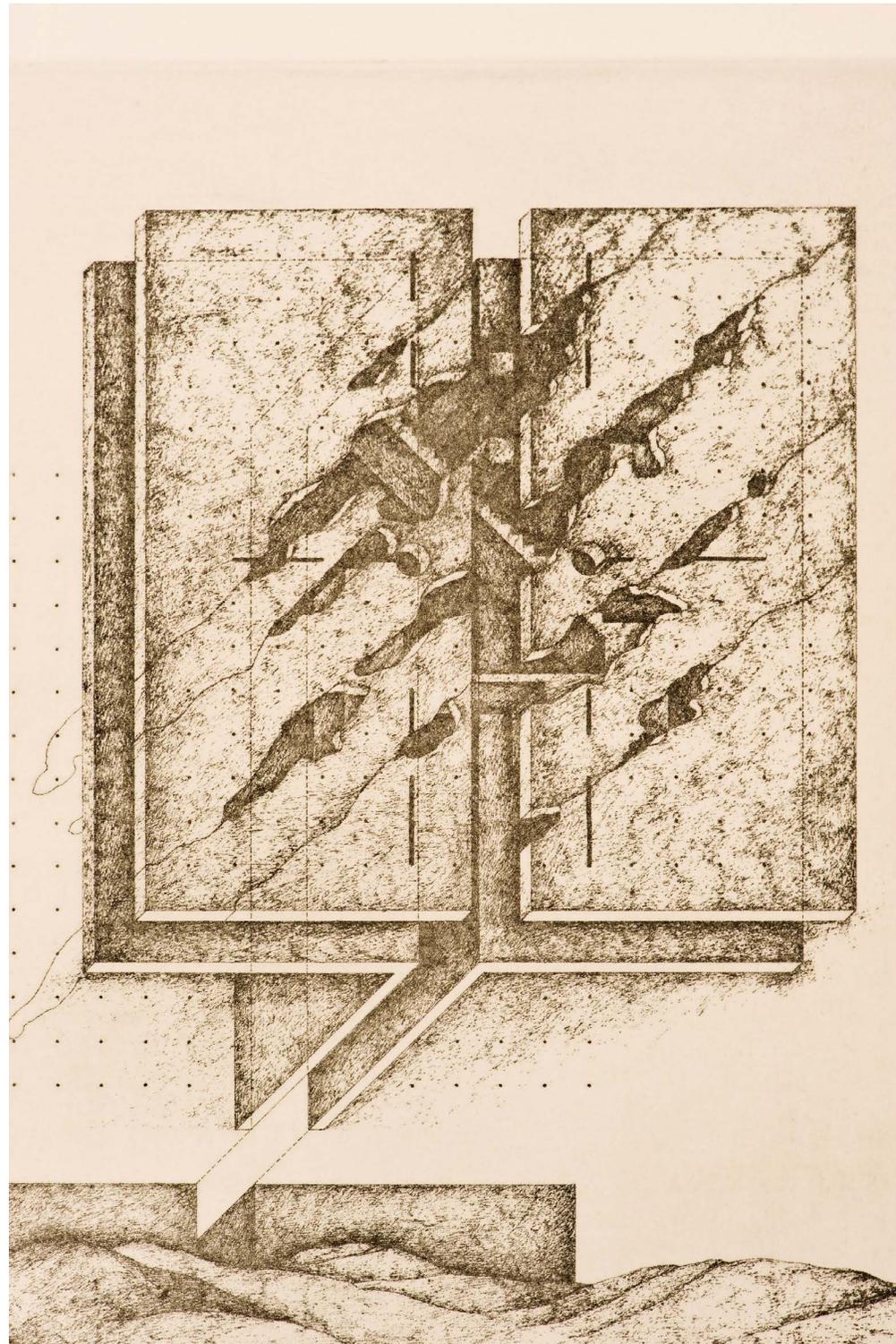
"Theory is the mechanism to search for the universal quality, the "ideal" as a condition of radical clarity in the anticipation and making of architecture... to draw architecture or to build architecture is ultimately the manifestation of the translatability of a poetic text of metaphors into architectural form."

"The possibilities toward a vision of architecture are infinite. It is the role of theory to question and confront the infinity of the imagination with the limits of the discipline of architecture. Written architecture, drawn architecture, built architecture. The illumination of enigmatic bodies."

He alludes to the notion of "the ideal", a construct discussed early on with regards to idea, the right anchor of the matrix. This ideal and its exploration furthers the field. "To draw architecture or to build architecture is ultimately the manifestation of the translatability of a poetic text of metaphors into architectural form". To Abraham, the language of architecture is not merely prosaic but rather poetic in nature. This poetic linguistic form can be seen in a number of his works and drawings.

Raimund Abraham, House For Euclid - Corner Detail @ Estate of Raimund Abraham





Seeing

The syntactical and semantical implications and possibilities of a poetic linguistic structure far outweigh the possibilities of a prosaic one in so far as they allow the creator to delve into the semantics of an object without being overly concerned with the syntactical structure it takes. Abraham goes on to say about drawing:

"a drawing for me is a model that oscillates between the idea and the physical or built reality of architecture. It is not a step towards this reality, and in this respect, it is autonomous. However, for me there must be latent some anticipation of the physical reality and its commemoration of the idea. In this sense, an architectural drawing can never be rendered. On the contrary, it [must] be constructed so that it reveals the ideal of the syntactic form through the medium of lines, in much the same way it [must] anticipate the sensuality of the material through the layering of color."

The critical portion of this quote is the first sentence where he describes the drawing, or the investigative procedure, as an object which on its own is autonomous; an object which oscillates between idea and built reality [artifact]. Abraham highlights the importance of the latent anticipation of a physical reality. This latent expectation and anticipation is not far from what was described as "locating the un-locatable"

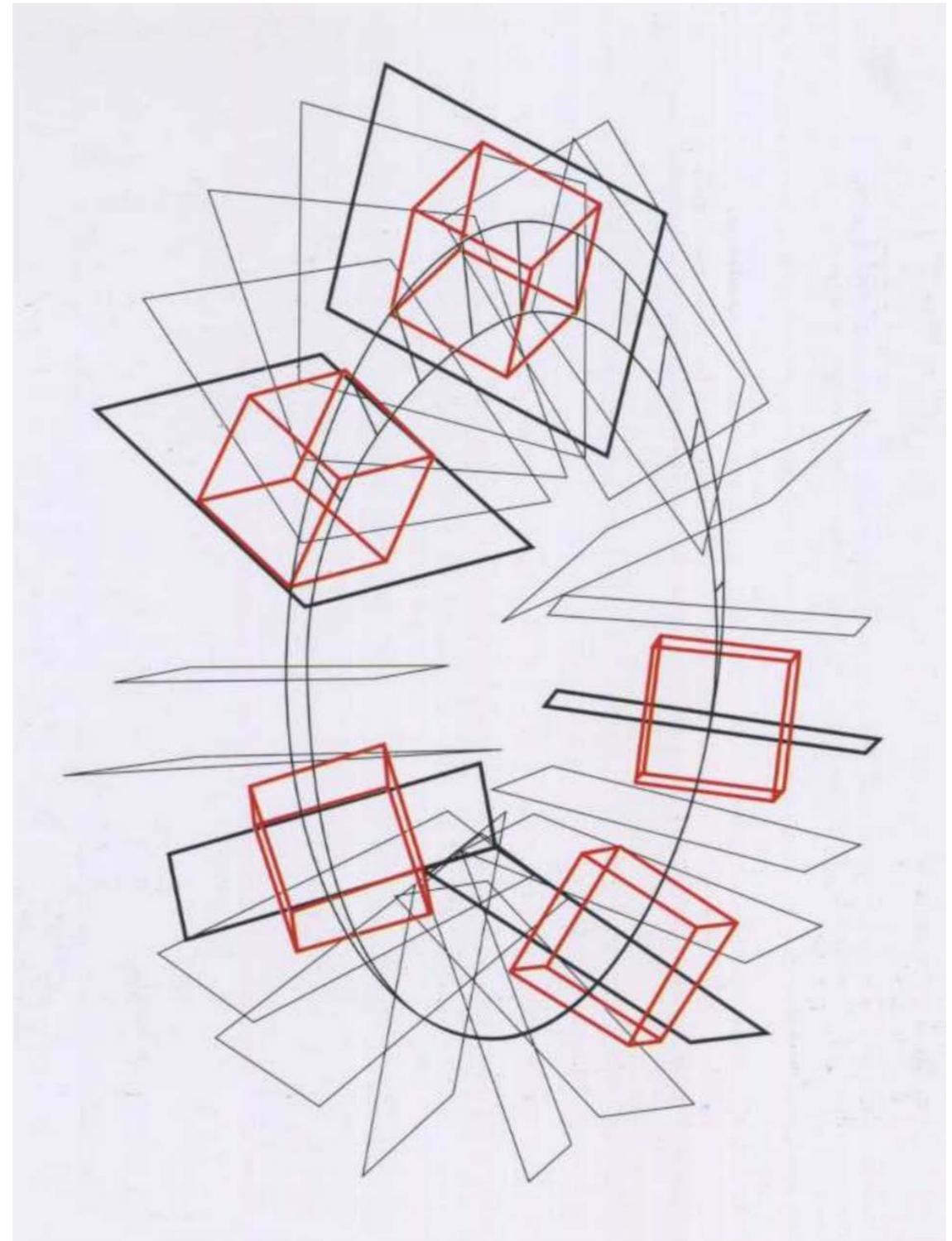
Seeing

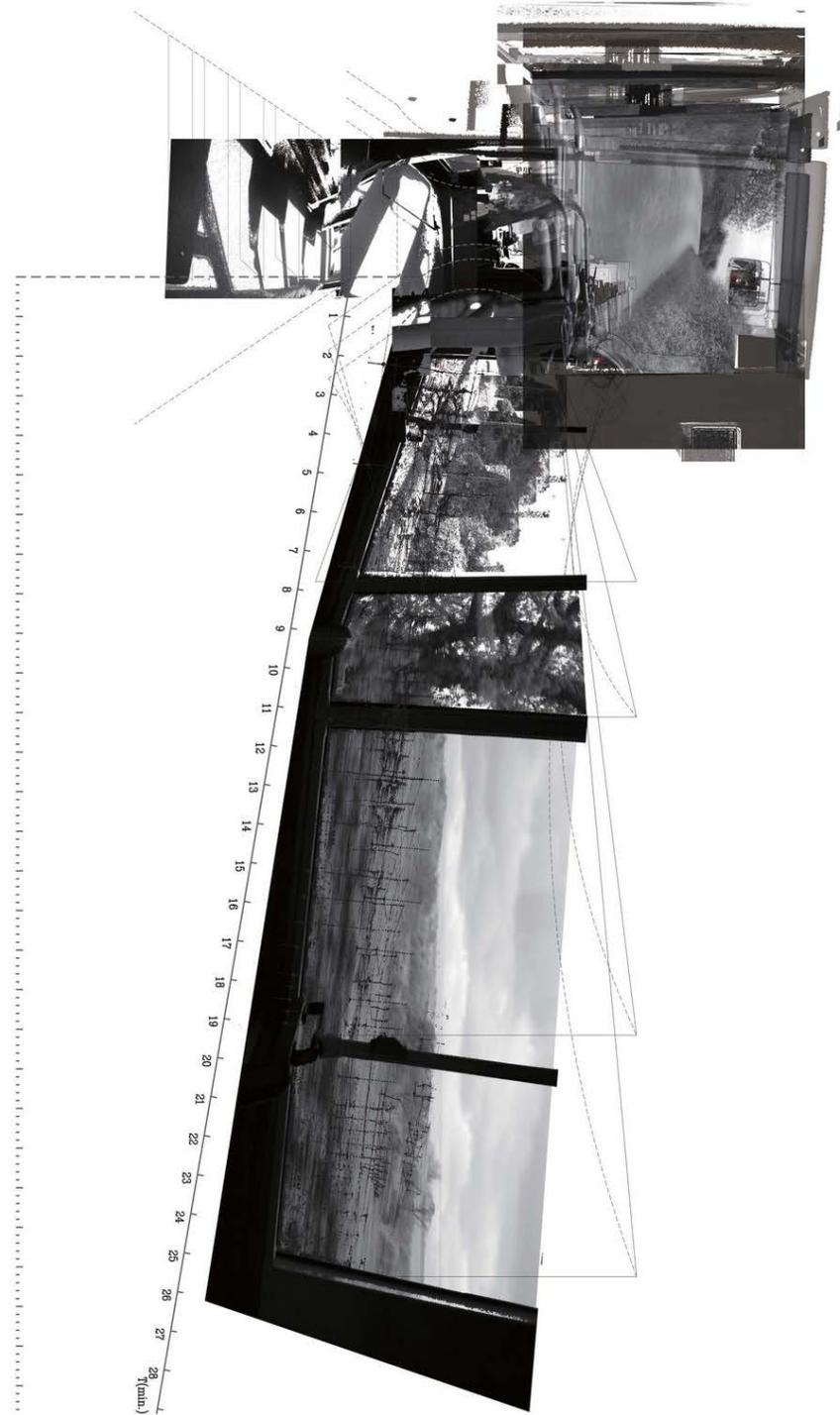
Peter Eisenman used the idea of dislocation in a lecture he gave in 1986 at the Irwin S. Chanin distinguished professor of architecture lecture series. He remarked:

"The difference between architecture and any other activity is that it does not dislocate itself from reality to simulation but from reality to reality. This seemingly nonsensical or even tautological statement contains for me the essence of the idea of critical practice ... To be critical, architecture must be at a distance from itself and yet within its own boundaries. It must dislocate institutions and to that end it must dislocate its own institutions. Architecture is distinguished from all other professions because its metaphysic begins with a physical imperative; the necessary physical presence of shelter. Shelter cannot only be in the mind; ultimately shelter must include construction. Therefore, architecture has a mandatory condition of presence."

For Eisenman, the heterotopic qualities of architecture lie in its metaphysical realm and the requirement of a critical architecture to "be distant from itself, and yet within its own boundaries". He goes on to explain the heterotopic idea of metaphysics dealing with absence typically but in the case of architecture, the metaphysical implication is something which is inherently present. To deviate for a moment, it is imperative to give definition to Eisenman's use of the word institution. Institution in this respect does not refer to a society or an organization but rather an established law practice or custom. It can be understood then, that when Eisenman notes the importance of "dislocating its own institutions" it's reasonable to assume he is referring to the regime heavy techniques of representation. The representational institution of architecture has been largely unchanged and its regime like characteristics contributes to its own senescence. In a post-structuralist architectural environment, the representational tools of the last epoch will be hopelessly unequipped at describing the terrain [intentional spelling] of the future.

Peter Eisenman, design sketch for the Max Reinhardt Haus





Seeing

With regard to terrain, Ricardo Scofidio writes in his work "conjugation", also from the book "Education of an Architect" by John Hejduk:

"the future, despite persistent denials, can be charted by the objects we intend, in the next moment, to make. Its projection exists in that moment of hesitancy. To make, not as the mindless production of a machine unable to proscribe its own perpetual motion, but as a mental construct. The cerebral terrain is an ideal topography. It is the only landscape capable of sustaining the construction of logical incongruities."

The "cerebral terrain" described is like that of the heterotopia: a terrain which favors process over finality, ambiguity over clarity, and forced concentration over fleeting amusement. Scofidio elaborates by noting the importance of avoiding "the mindless production of a machine unable to proscribe its own perpetual motion". If we assume the machine is the post-modernist approach and its inability to proscribe its own perpetual motion is its debilitating flaw, then this new cerebral terrain provides the basis for understanding a place in which logical incongruities [heterotopic qualities] present themselves. This cerebral terrain might be best explained by Spanish architect Ignasi de Sola-Morales' theoretical construct Terrain-vague. Though Sola-Morales uses terrain-vague to explain our understanding of the urban city, its principals offer undeniable connotations to the notion of the heterotopia. "Forces instead of forms, the incorporated instead of the distant, the haptic instead of the optic, [and] the rhizomatic instead of the figurative" all imply a single sided heterotopia.

Seeing

Elizabeth Diller comments on the idea of a single sided heterotopia in her article "Architectonics". She writes:

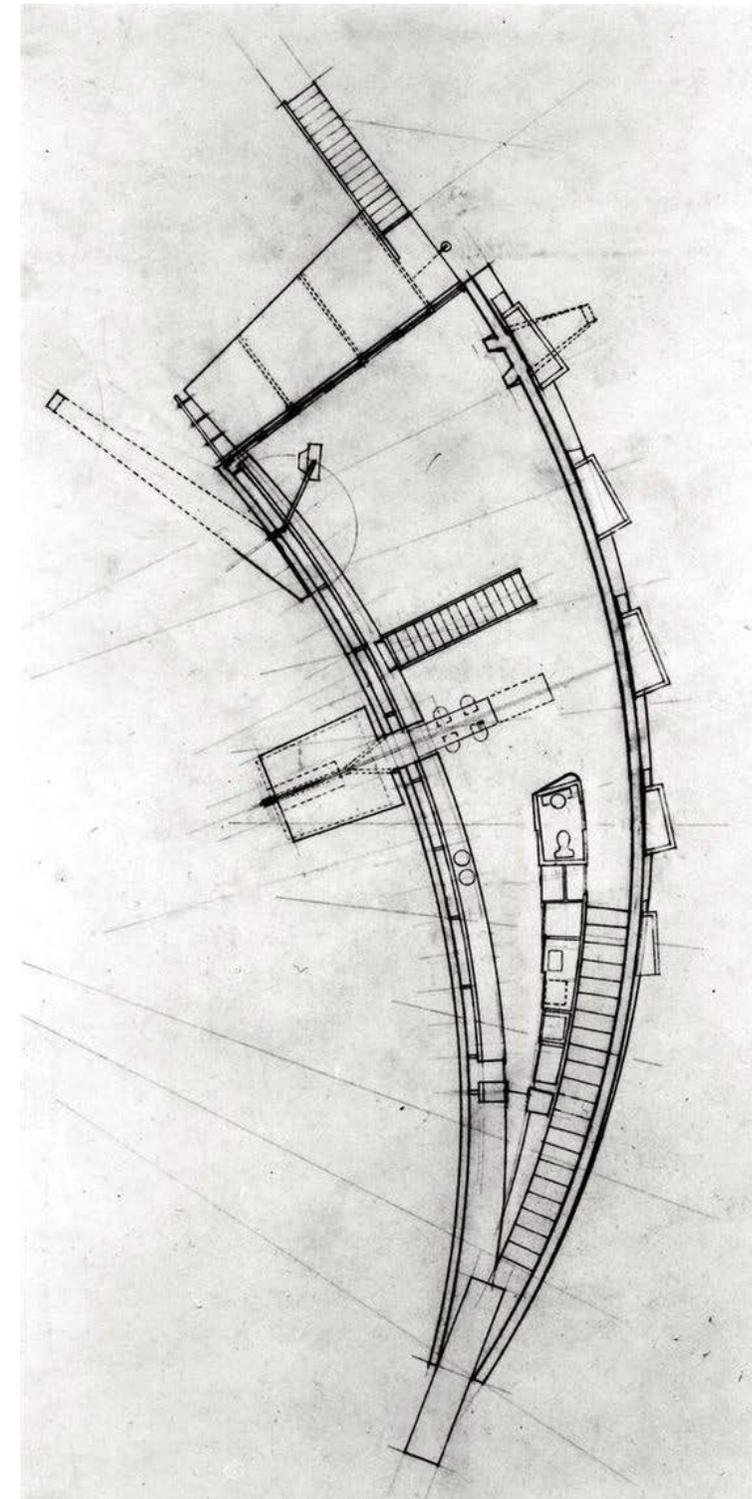
"why is the condition of equilibrium identified with sanity?"

"certainly culture, in its intolerance of the eccentric and the unresolved, has appropriated symmetry, the simplest of all equations, as the image of stability and therefore, power. 'A' symmetry and 'dis' equilibrium are by inflection, aberrant. Only ideals are named."

"vertical and true are synonymous. To be oblique is to veer from plumb as well as from candor. However, a deviation reaching the horizontal restores truth; to be honest is to be 'on the level'. Social and spatial ideals are shared"

The intolerance of society toward "dis-equilibrium and 'A'-symmetry", proves the necessity of the heterotopia. Veering from verticality and truth implies a veering toward the oblique. This move toward the oblique is not different from a status quo disruption. As practitioners and students veer toward the oblique, it then becomes the status quo. The status quo moves in much the same way that a pendulum swings. In the case of the heterotopia, the status quo moves in three dimensions much like a marble orbits inside a cone. As the marble moves it leaves an elliptical line on the surface.

Diller Scofidio Slow House Floor Plan

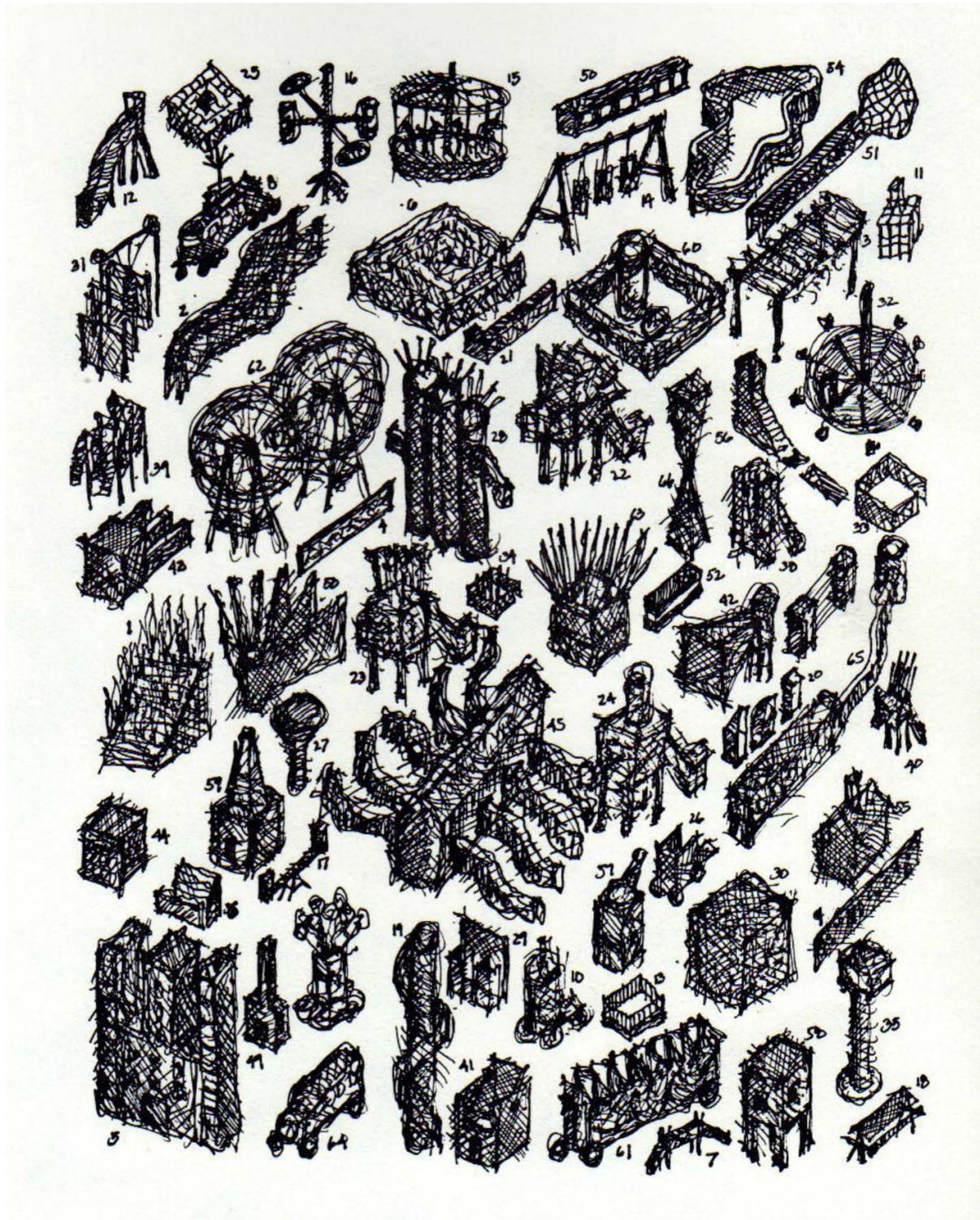


Seeing

John Hejduk in his article "Evening in Llano" writes:

"There is the possibility of a vision of architecture that might be interpreted as a fabrication. During its construction it disappears, it clarifies as it uncovers, it reveals as it erodes, it celebrates as it captures, it pronounces as it closes, it crosses over. The method is severe; architecture is filtered through the parallel disciplines of painting, literature, and medicine. It is an elliptical method and it is incremental. In the end, it is biological/androgynous and is in search of the female. It is unrelenting."

His remarks mirror the arrangement of the dichotomous relationships of the heterotopia and expands on a terrain which folds and unfolds simultaneously not different from the images produced by a kaleidoscope. "during its construction, it disappears" relates directly to the removal of idea and the transition to sole artifact. Once the object climaxes at the peak of its simultaneity it begins its rapid decent to the pit of architectural history. This is not in any way an attempt to smear the importance of a historical architectural library but rather to highlight the fact that the amount of time an object remains an artifact increases the chances of it being forgotten. It is only in rare cases and after a significant portion of time that an artifact becomes so enamored it is inducted into architectural canon. The most kitsch example of an enamored artifact would be the acropolis.



Seeing

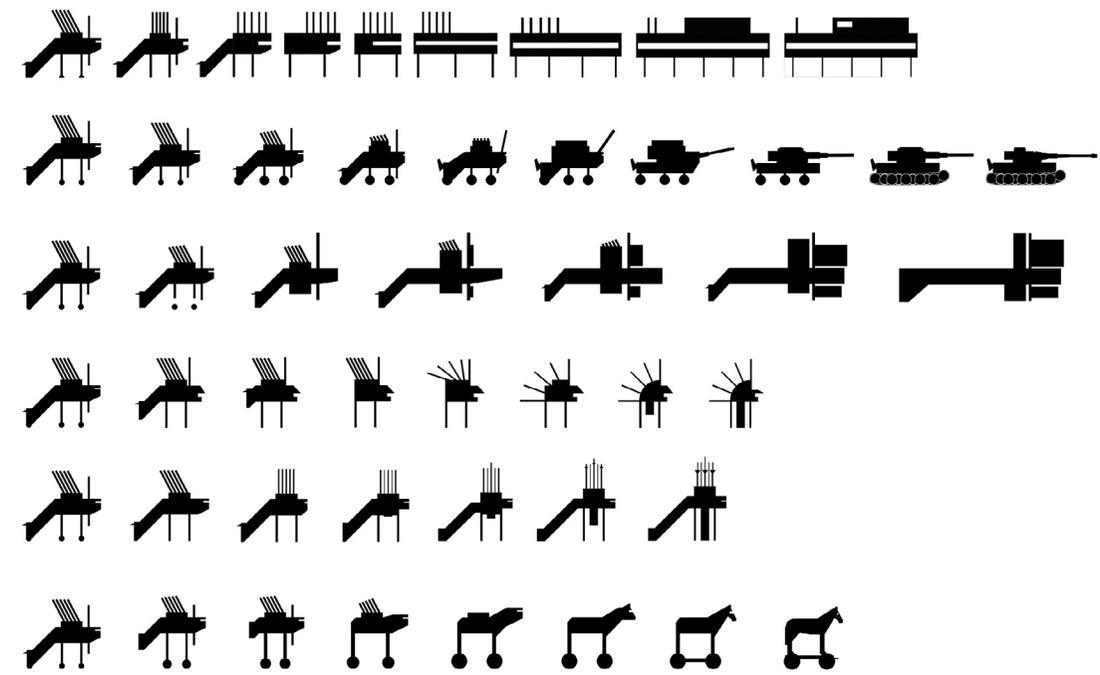
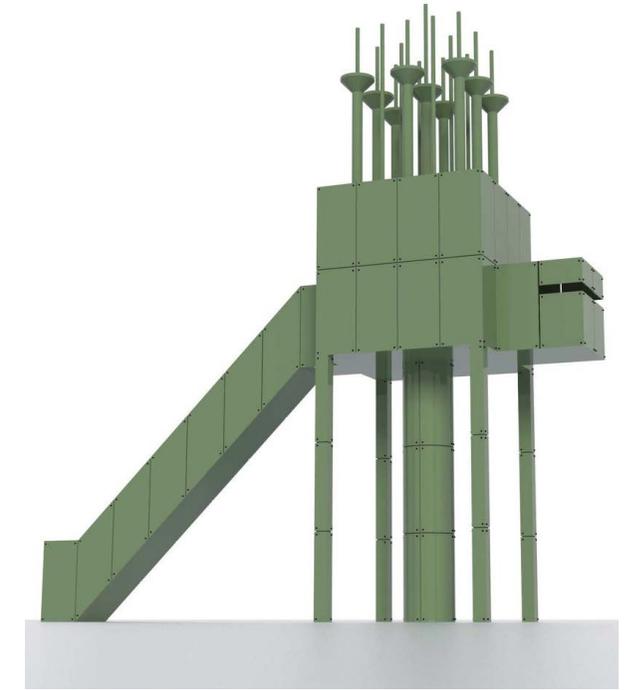
John Hejduk played an important role in the understanding of the various forms of the representational language. As mentioned earlier when discussing Raimund Abraham, the representational language took the form of poetry. This poetic approach is similar to that of Hejduk's however, Hejduk's style might be classified more appropriately as poetic narrative. This narrative pedagogy would become the driving force for his teaching at The Cooper Union School of Architecture and influence many of the scholars quoted above. In his book "Soundings", Hejduk intimately portrays himself; he makes clear his intention to juxtapose the technicality of architecture with the expression of feelings like desire and fear, ambition and anxiety. To the untrained eye his work would be considered purely artistic, but as Abraham said, "there [is] latent, some anticipation of the physical reality".

While his sketches evoke a syntactical structure uncommon of the built environment, the semantics of built works like Studio for a Musician or House of the Painter are undeniable. One project in particular that deserves attention, is his piece "Security Transformations". In it, he addresses what can be understood as an objects entropic state, in this case, his model called "Security". In each instance, the model progresses to transform into another distinct object: Villa Savoye, a military tank, Wall House 2, House of the Painter, House of the Musician, and the Trojan Horse. Of all the qualities of the works of Hejduk, the most endearing would be his treatment of the drawing as architecture. This treatment makes it possible to consider the edge of the page or frame, as the site of the drawn object; the location of an object which is un-locatable.

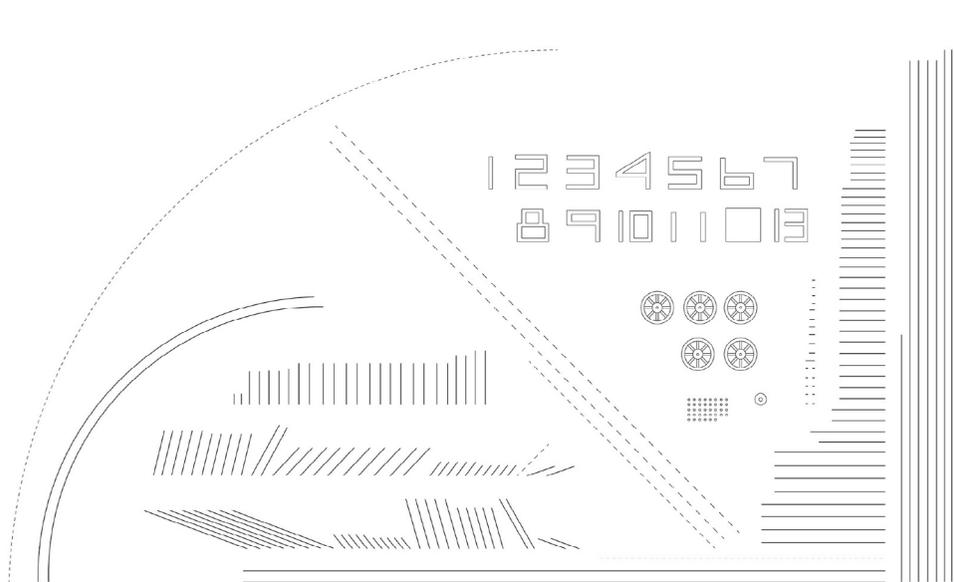
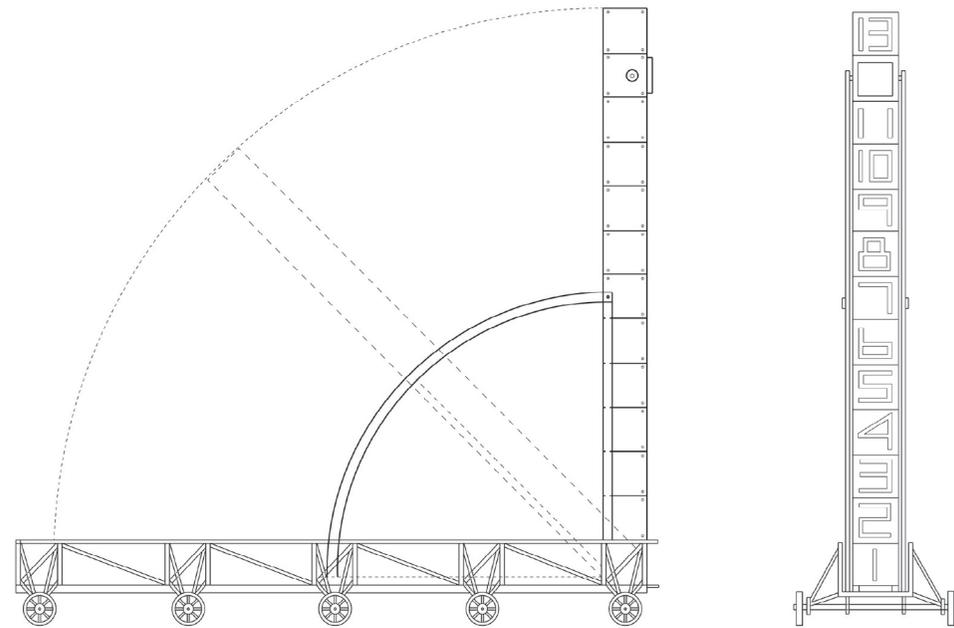
Hejduk, Studio For a Musician



Hejduk, House of The Painter



Hejduk, Security Transformations



Seeing

Second would be his taxonomic [intentional spelling] representations in which he both constructs and deconstructs an object simultaneously. In his *Collapse of Time Line Taxonomy* he intentionally juxtaposes the whole and pieces and is deliberate in the deconstruction to represent the singular line as it was used in the composition. He distinguished which object can be simplified to line and which cannot; numbers and wheels are represented as a whole in both composition and taxonomy.

Oddly enough, Hejduk's career has heterotopic implications. Many categorize his work into two distinct phases, the syntactic and compositional era in which he produced works like *Wall House 2* and *Kreuzberg Tower* and *Wings* and the later narrative and gestural era in which he produced objects like *House of The Suicide* and *House of The Mother of The Suicide*. It is not impractical to assume that both era's informed one another. Ignoring for a moment each era's position in time and the notion that one proceeded the other, an argument could be made that both occurred simultaneously. Hejduk himself was the character he designed for, a character of his own invention; each design and investigative process suited him at the moment and much like his objects were built on wheels, his work "moved from place to place in a ritualized geographic performance" in the words of Zac Porter.

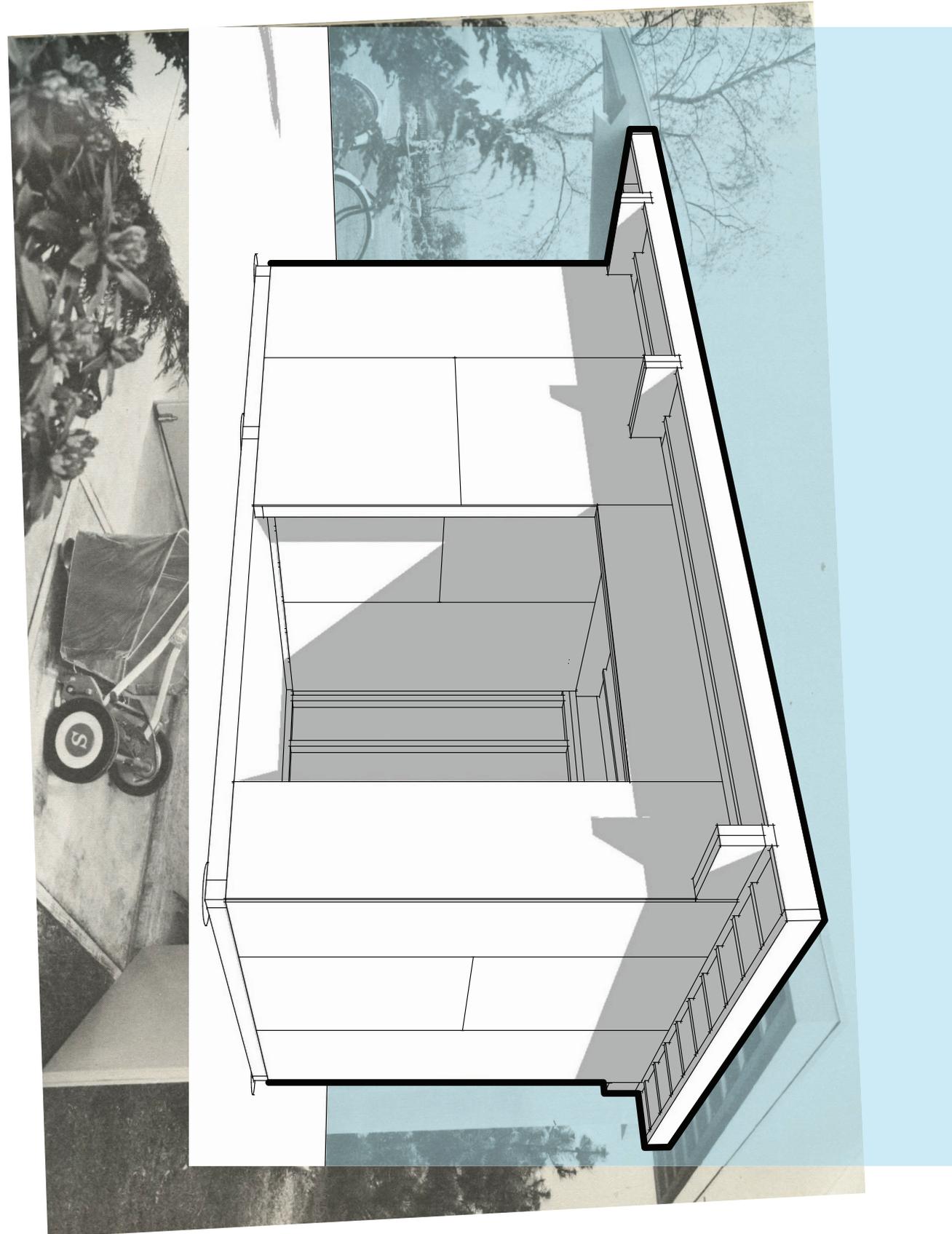
Hejduk's taxonomic approach would come to be the basis for the saying part of this thesis.

" A wall is not violated by window penetrations but is totally interrupted by glass: program functions are exaggeratedly articulated into wings or segregated separate pavilions. Even 'flowing space' has implied being outside when inside, and inside when outside, rather than both at the same time "

- Robert Venturi -

SAYING

Saying



The preparative and investigative procedure discussed in the explanation of the matrix of the heterotopia, can be understood at this point as SAYING. When we design, we use our vocabulary and our understanding of the language of representation to convey complex ideas and organizations. This form of speech and language allows an infinite number of both artifacts and representational methods.

In conjunction with exploring and understanding the implications of SEEING in the previous section, SAYING was explored through several sketch problems, The first of which explored artifact through taxonomy; a method inspired by Hejduk.

In contrast to Hejduk's approach, the primary focus of the first sketch problem relied solely on formal deconstruction and omitted the narrative undertone of designing for an imaginary user. Each of the next five artifacts were derived from a catalyst which was taxonofied and reconstructed. The selection of a catalyst presented several interesting questions. Of these questions, the one which offered the most interesting exploration was as follows.

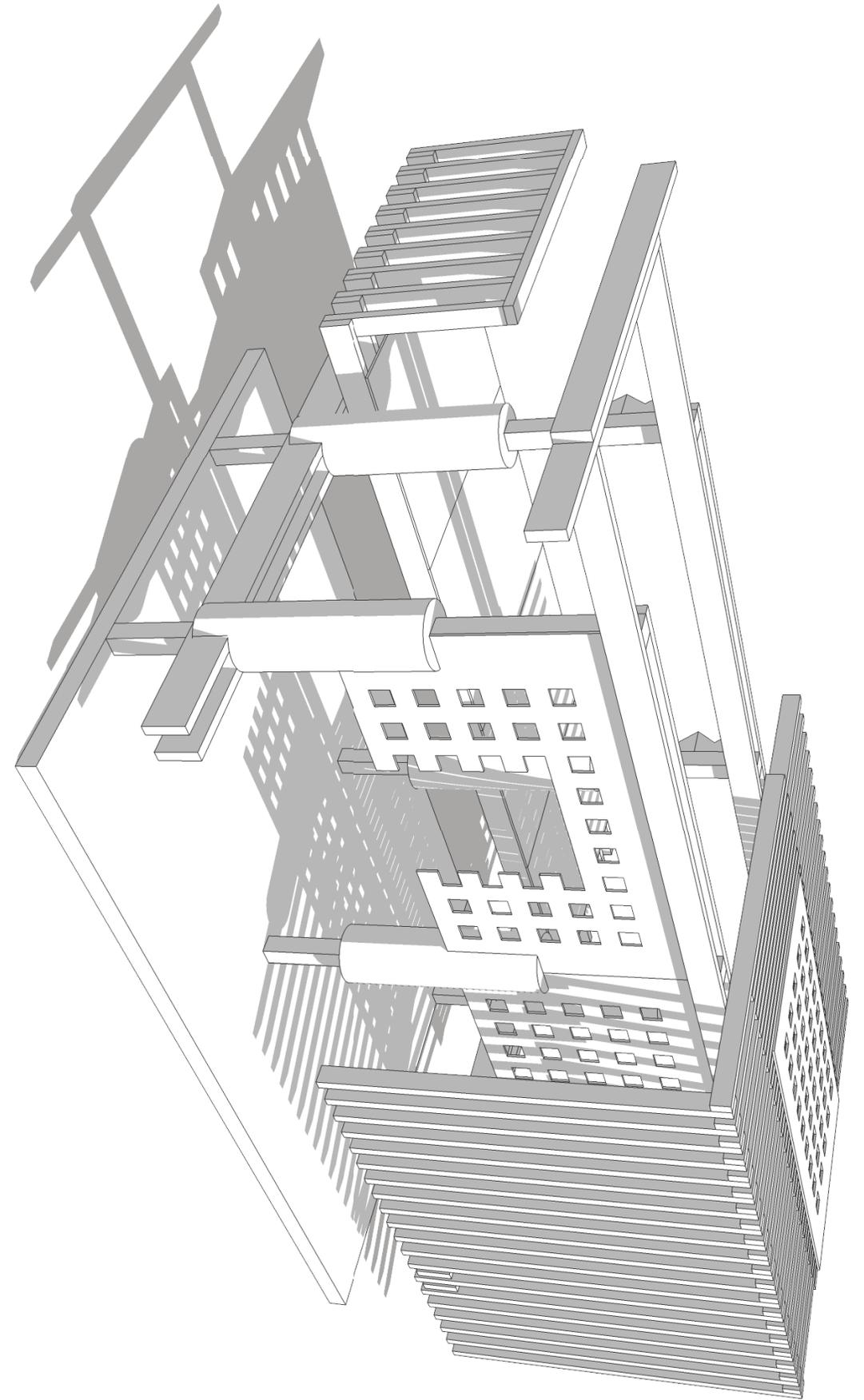
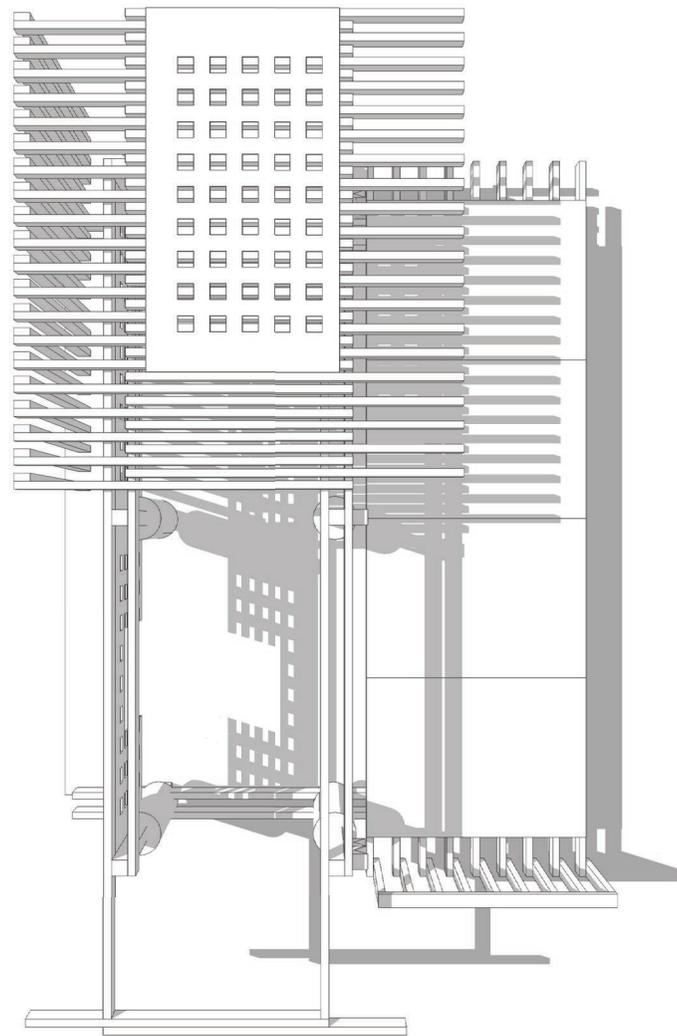
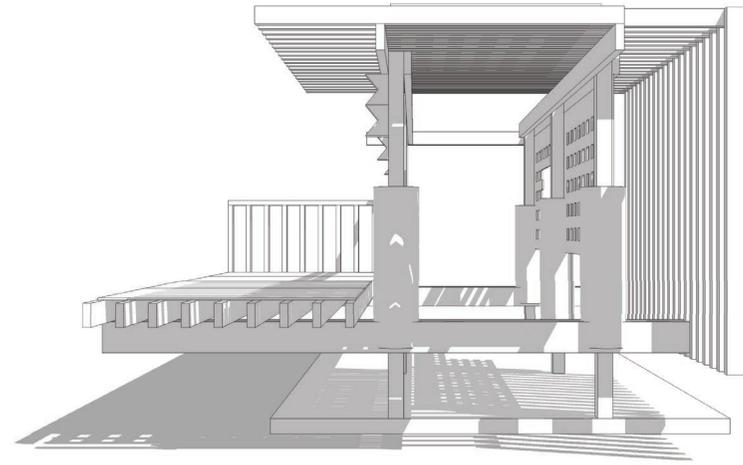
Will any artifact allow itself to be manipulated and understood or are there more intrinsic attributes which need to be understood before the approach of taxonomy proves itself an effective means

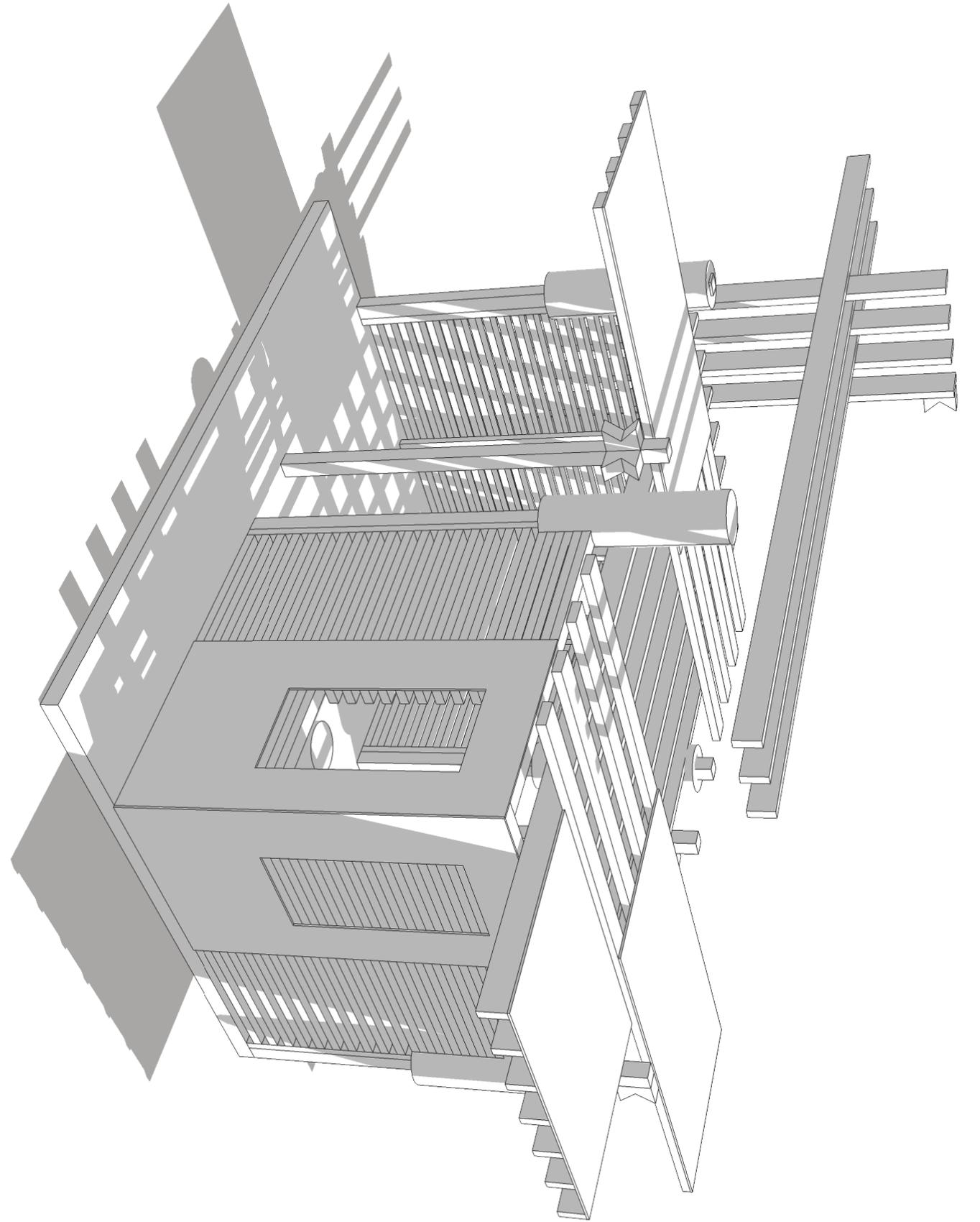
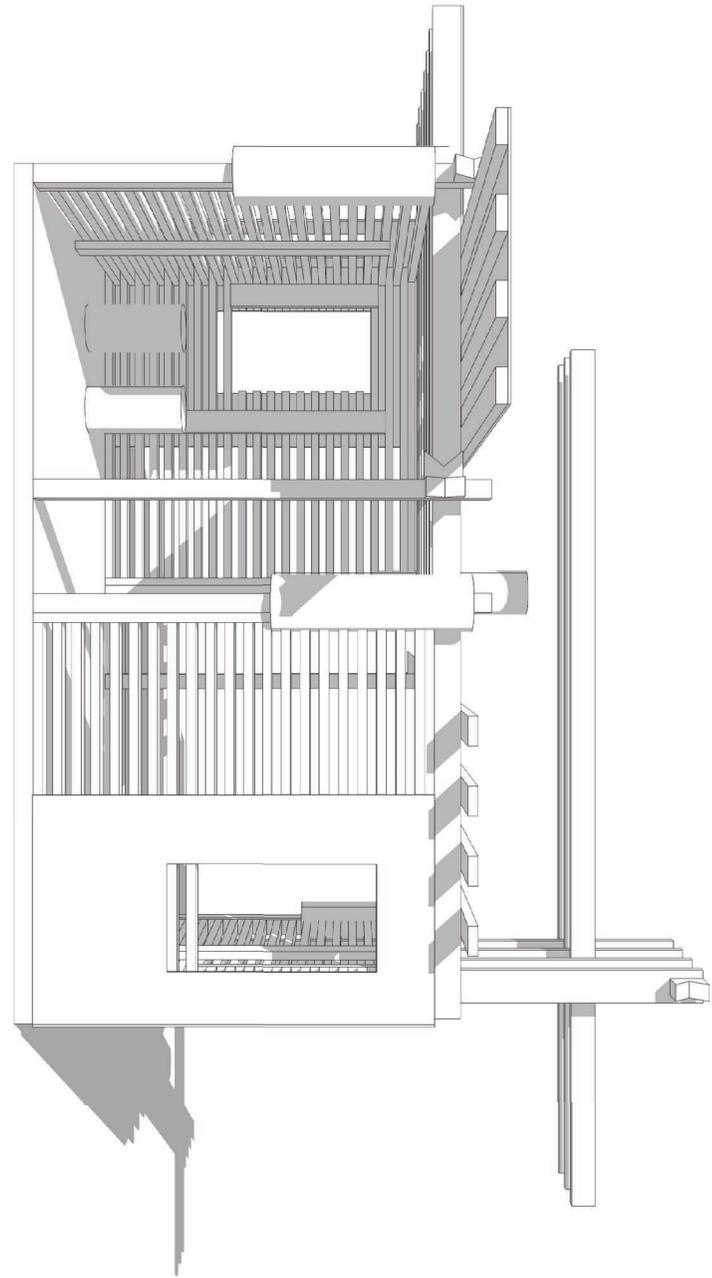
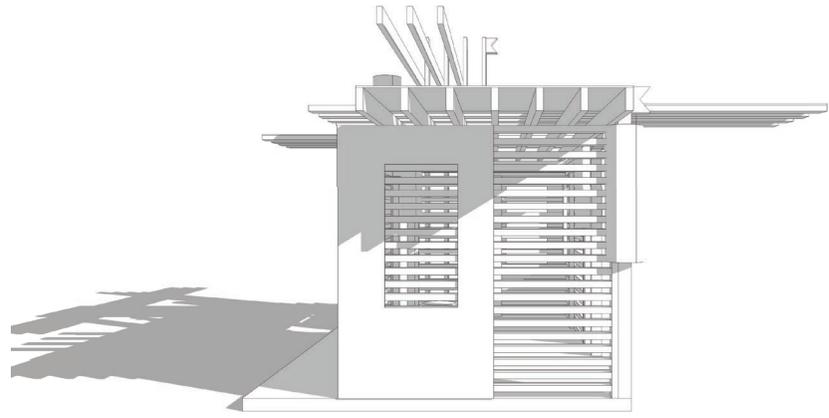
of design? If it is the case that a random artifact will not suffice, what criteria must be applied to the selection of artifact for taxonomy? Are those criteria present in all artifacts?

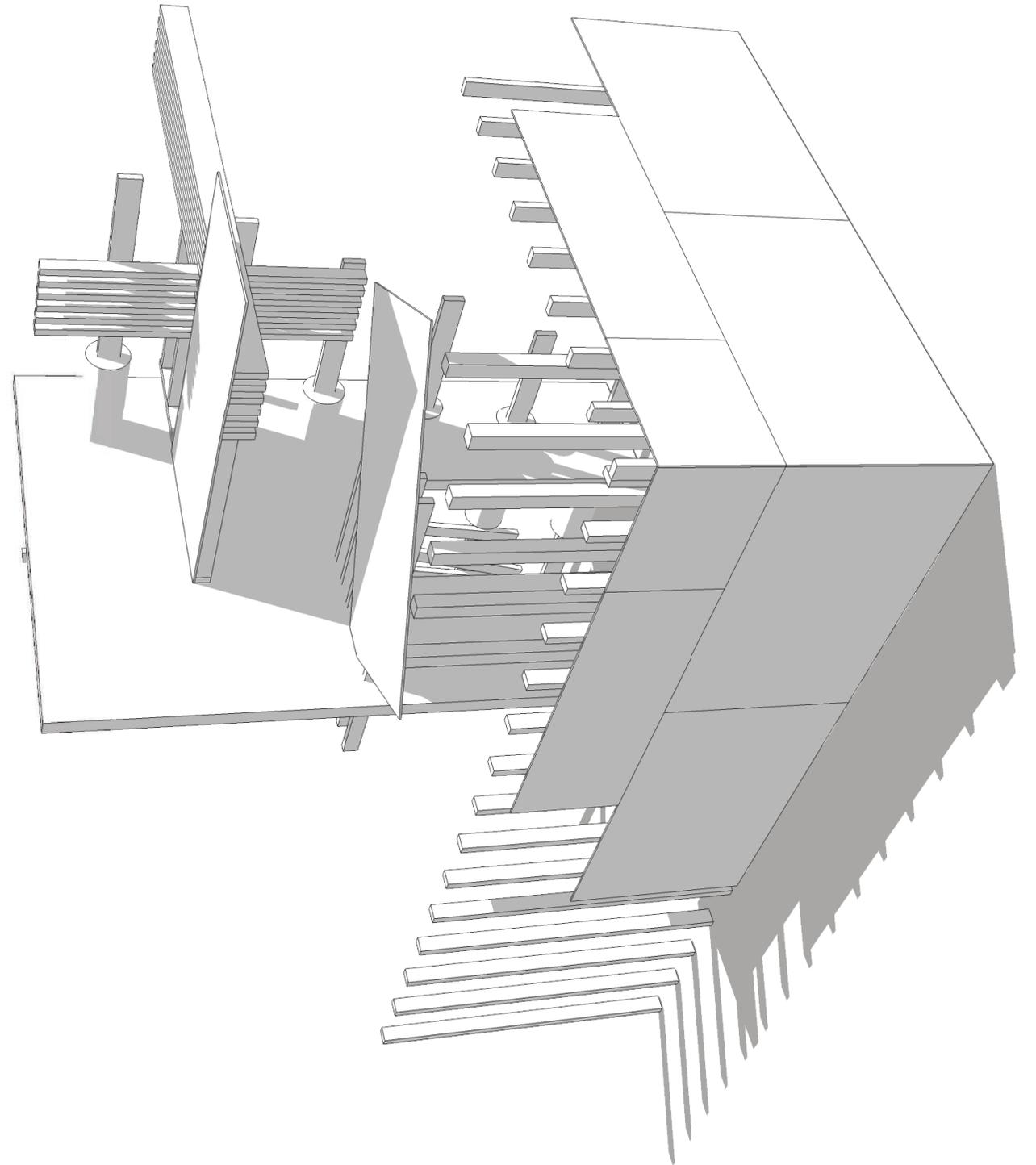
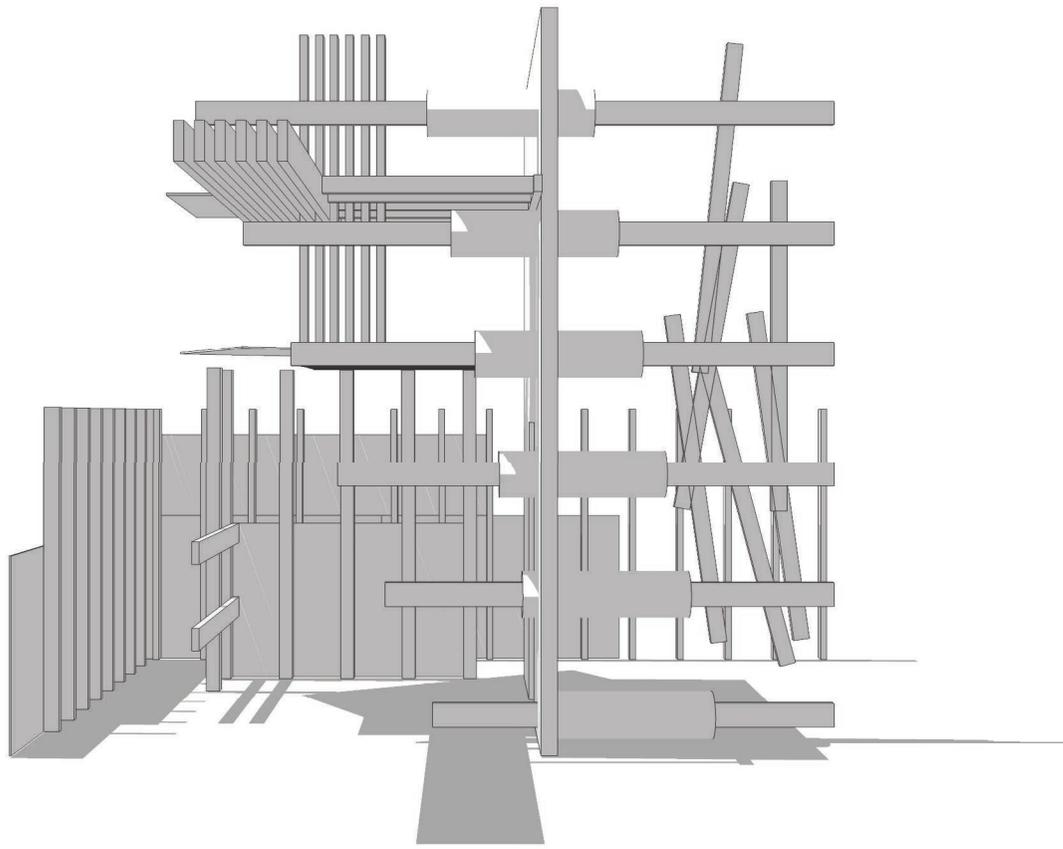
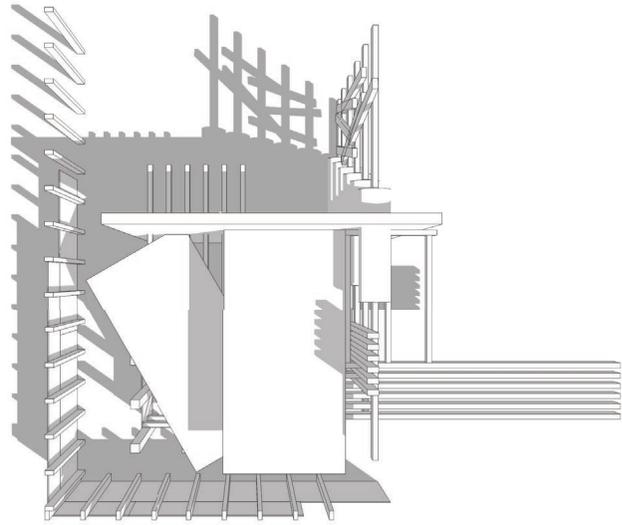
The selection of an architectural object that had been lost in time proved interesting with respect to the heterotopia. A design for a garden shed from a 1960's popular science publication was selected due to its lack of focus and ambiguity. There was the possibility of this architectural object being both everywhere and nowhere simultaneously. It was not encumbered with a ridged place within the matrix and as such would allow for an interpretation to fit the means of exploration.

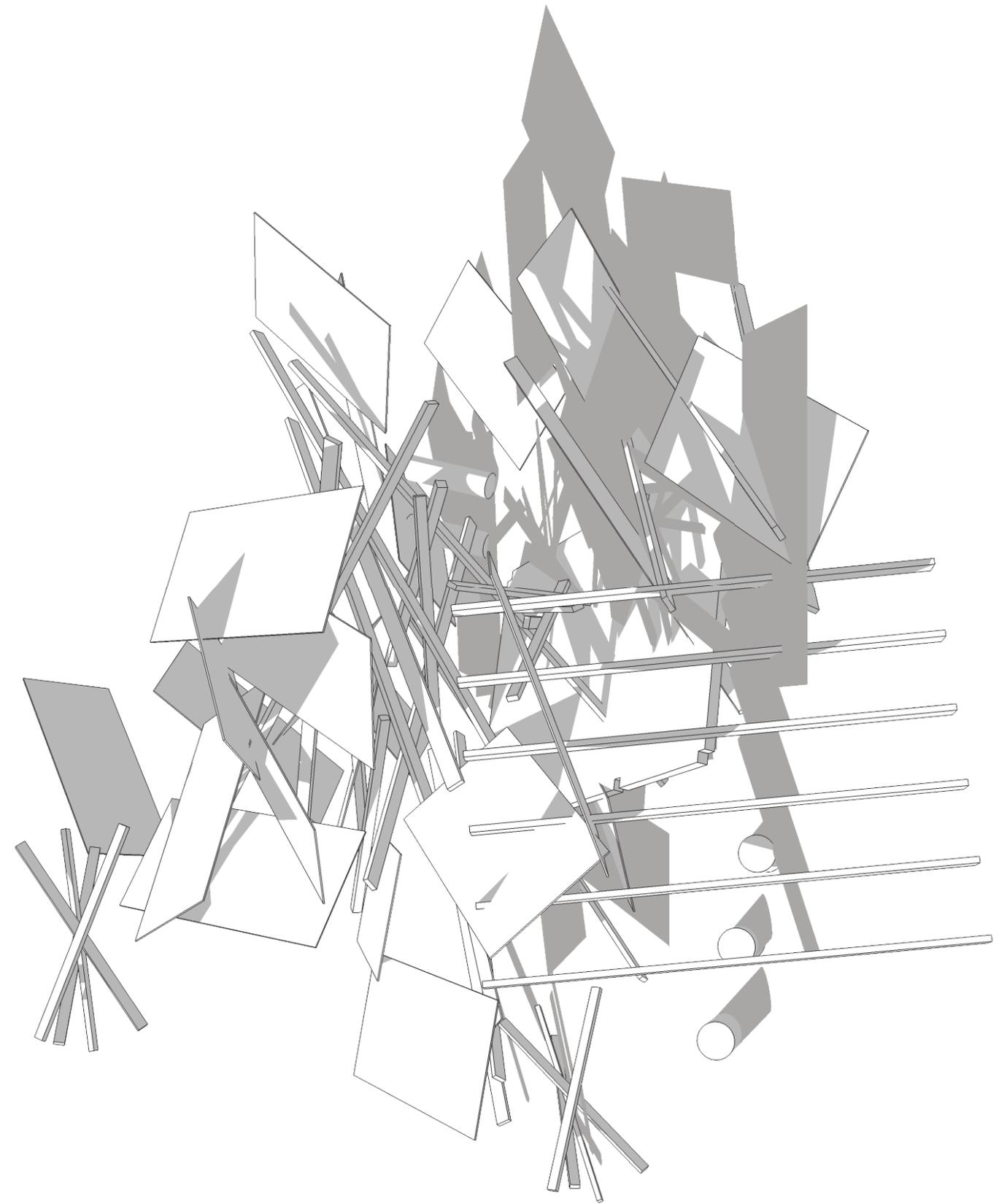
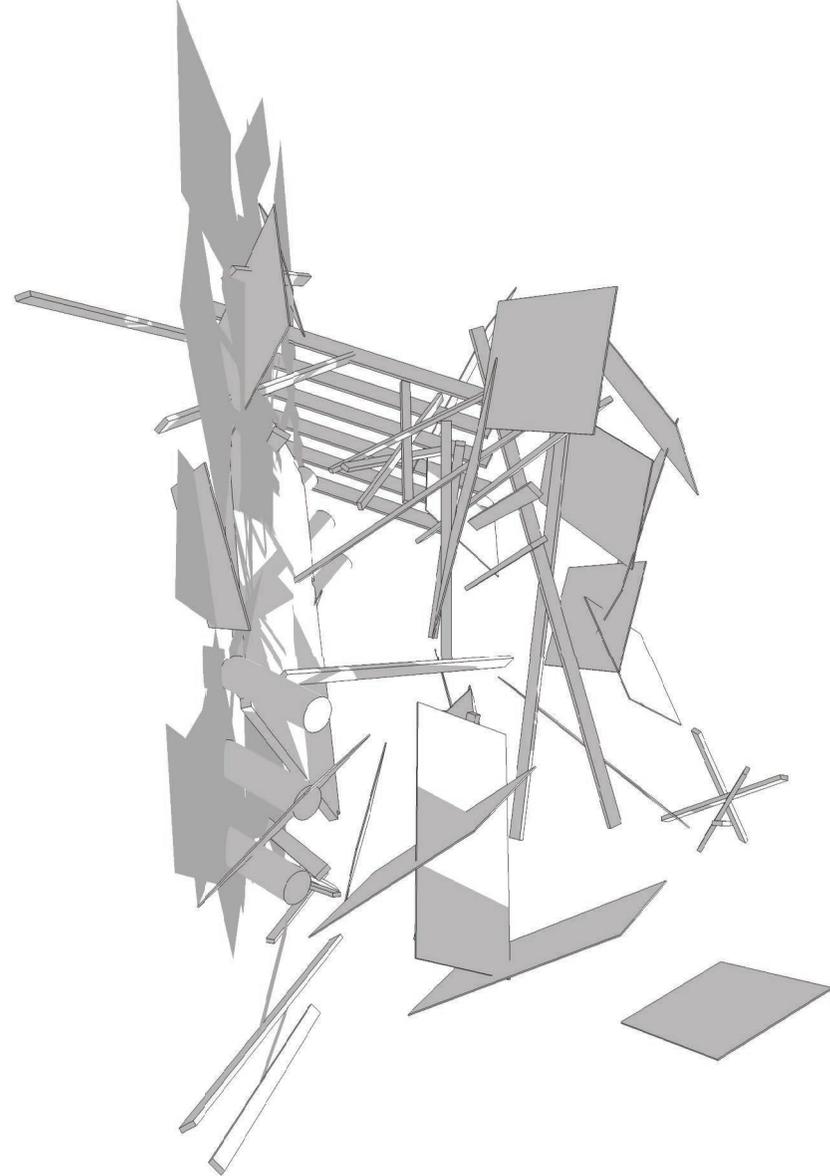
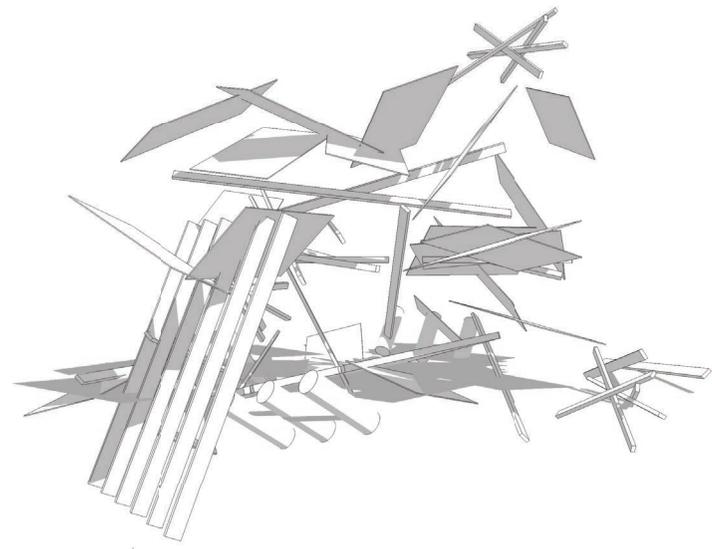
a base model of the catalyst was created digitally using contemporary construction methods as the "anticipation of a physical reality". The object was then disassembled with the intention of reducing it from a well-organized sentence to a simple arrangement of words. What remained was a kit of parts with an entropic destiny. As different configurations were created the reality of the built environment began to float about the matrix landing on the side of artifact at times and idea at others.

Each of the next four configurations were derived from the taxonofied elements of the original catalyst









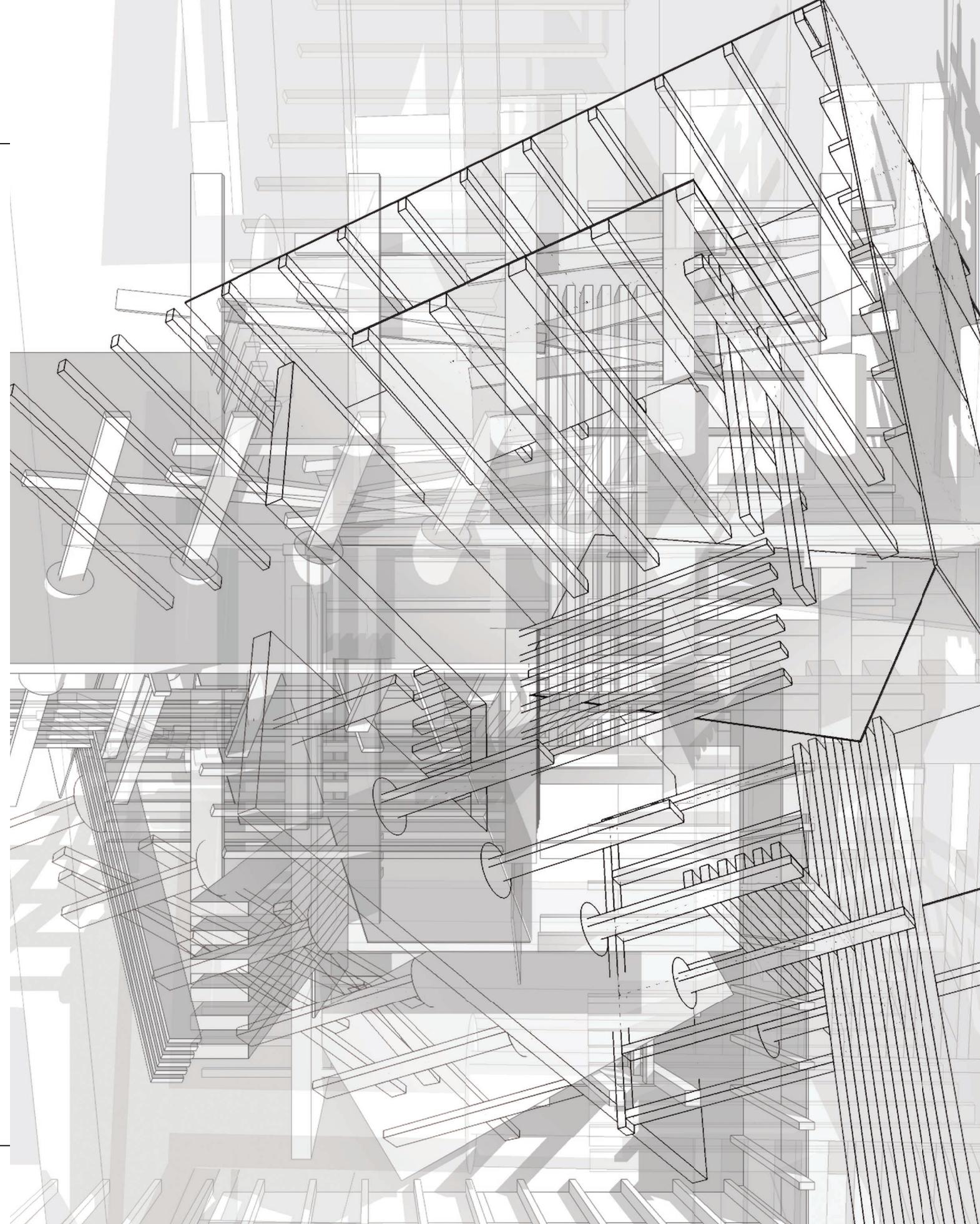
Saying

One of the ideas cultivated within the sketch problem that would serve the rest of the explorations was the intrigue of moving from artifact to idea. It became apparent through exploration that the process of the preparative and investigative procedure relies almost exclusively on a one directional journey that begins at idea and culminates in artifact. This one directional journey limits not only the productive capability of the field but also proves it near impossible to have any sort of constructive discourse which reflects on the field and its perpetuation.

Through self-critique of the created artifacts, it became apparent that these objects were losing their meaning as a result of the forced journey from artifact to idea. What began as a search for intrinsic characteristics became a Lego set of infinitely meaningless constructions. Treating the method of connection between taxonomic pieces as a constructed punctuation left a sentence of only periods and commas. The removal of the imaginary user unintentionally removed the essence of the object. It became purposeless.

A catalyst with so little architectural flexibility proved to be too static to withstand the rigor of the reverse journey from artifact to idea. However, the ability to understand and explore this reverse journey is one that has presented itself prior to every major period of architectural history therefore it must be the case that every architectural period shares some characteristics which allow them to relate to one another.

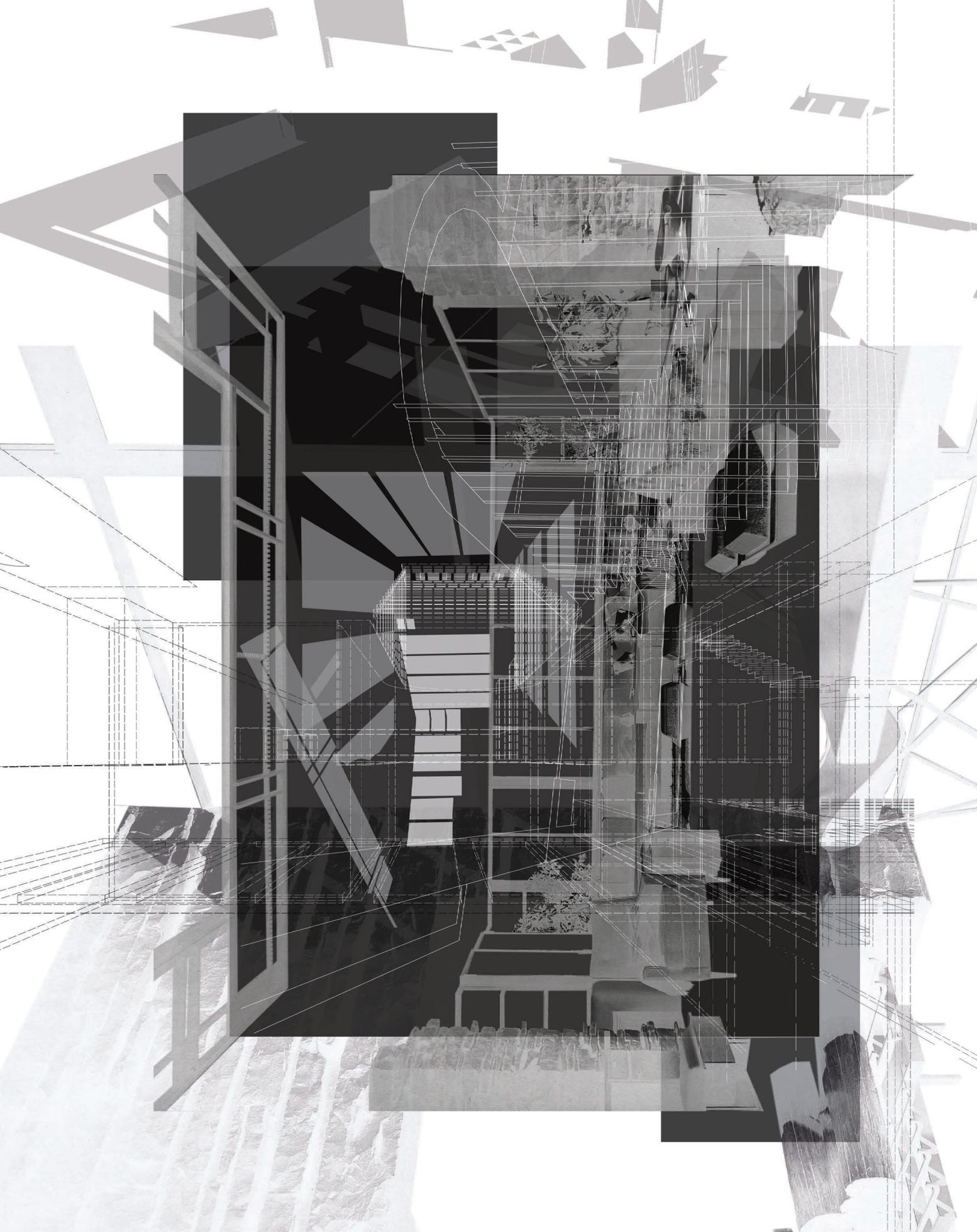
This statement served as the basis for the final explorations of the thesis. The language of architecture which functions through representation (drawing in particular) has remained largely unchanged for thousands of years. The same tools that Michelangelo used to represent St. Peter's Basilica, Frank Lloyd Wright used to represent falling water, and furthermore those same techniques are largely being taught in architectural universities around the country at this very moment. A method which has stood the test of time such as this must have deeper implications than simple visual ques.



"We are all affected by Le Corbusier, Frank Lloyd Wright, Alvar Aalto, and Mies van der Rohe. But no less than Bramante, Borromini, and Bernini. Architecture is a tradition, a long continuum. Whether we break with tradition or enhance it, we are still connected to that past. We evolve."

- Richard Meier -

LANGUAGE



Language

Of all known languages in the world, linguistic scholars separate each of them into two distinct categories: Natural Languages and Constructed Languages. The distinction between the two of these categories is that natural languages develop over time and through use while constructed languages rely on a set of predetermined rules which were developed before the language was ever spoken. An example of a common natural language would be English.

The English language did not originate from a predefined set of structures and systems before its first use, but rather it came from an amalgamation of Celtic, Germanic, French, and Latinate sources. Over the course of thousands of years, the English language morphed and changed through its use across Europe and the Americas. This is in stark contrast to the language of computer programming which is based on mathematical principals; an example of a constructed language.

the famous linguist M.L. Samuels writes on the subject,

"The mere fact of isolation or separation of groups that accounts for all simpler kinds of [linguistic] diversity. Complete separation,

whether through migration or geographical or other barriers, may result in dialects being no longer mutually intelligible; and thus, if there is no standard language to serve as a link between them, new languages come into being. Lesser degrees of isolation result in what is known as a dialect continuum, a series of systems in which those nearest and most in contact show only slight differences, whereas the whole continuum, when considered from end to end, may show a large degree of total variation. Dialect continua are normally "horizontal" in dimension. They occupy a region in which fresh differences continually appear as one proceeds from one village to the next; but in large towns they may also be "vertical," i.e. the different groups belong to different social strata in the social scale."

If for a moment we use this linguistic property of natural versus constructed and apply it to the field of architecture, it becomes apparent that one is much more fitting than the other. Long before Vitruvius wrote his ten books of architecture, human beings were constructing not only shelter but cultural icons. In much the same way that English developed via the merging of various tongues and dialects, architecture was perpetuated through its use and dialect continuum.

Language

Constructed languages and natural languages share the common bond of relying on some set of criteria which dictates their form and structure. While the criteria of constructed languages varies from language to language, the characteristics of natural languages are the same across the board. Amongst a long list of these characteristics, linguistic scholars across the US and UK have come to some agreement on eight minimum characteristics that must be present for a language to be considered a natural language.

To support the premise that architecture in its most reduced form is a natural language, (a language of representation that revolves around drawing), one must begin with an understanding of the formal criteria which make up a natural language. The eight characteristics to the right were taken from three linguistic scholars, George Yule, Jean Aitchison, and Graham Williamson and each of their respective publications, "The Study of Language: Fourth Edition", "The Articulate Mammal: An Introduction to Psycholinguistics", and "Social Use of

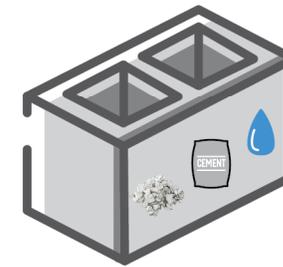
Speech and Language".

To use a previous reference, Vitruvius' Ten Books on Architecture prescribed in detail the use of different architectural elements. In a single sentence, Vitruvius was able to describe the only things that architecture was dependent on: "...order, arrangement, eurythmy, symmetry, propriety and economy". At a certain point in time, the language of architecture diverged from this centralized common understanding codified in ten volumes and moved towards a decentralized multivalent vernacular via its dialect continuum. The point at which this divergence took place is for architectural historians to determine but the importance in terms of this argument is the understanding that at some point it did occur.

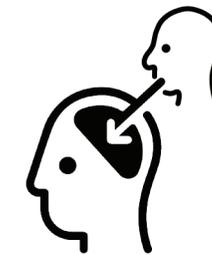
Linguistic scholars like Noam Chomsky agree that a natural language (separate and distinct from a constructed language) is comprised at minimum of the following characteristics: arbitrariness, duality, systematicity, structure dependence, productivity, displacement, specialization, and cultural transmission.



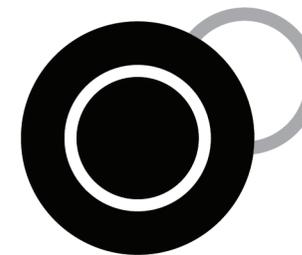
Structure Dependence



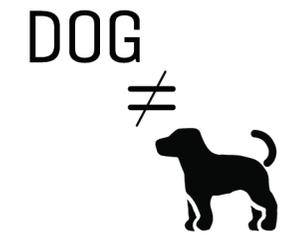
Duality



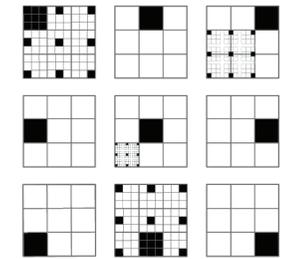
Cultural Transmission



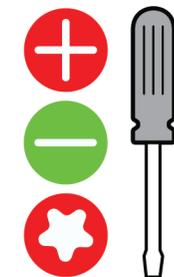
Displacement



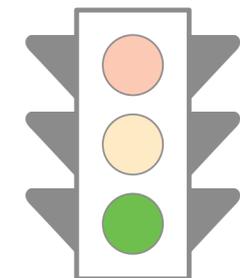
Arbitrariness



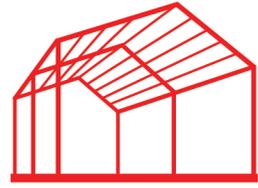
Productivity



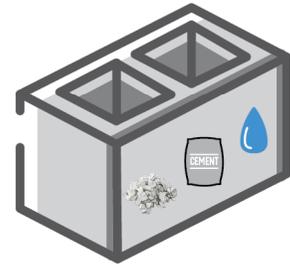
Systematicity



Specialization



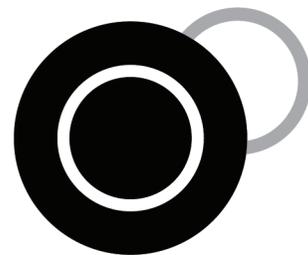
Structure Dependence



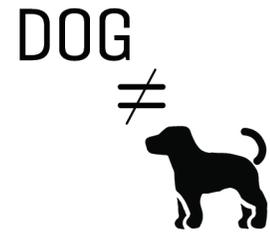
Duality



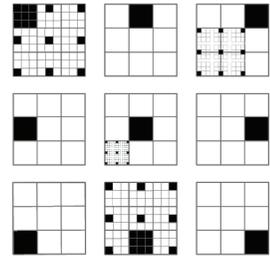
Cultural Transmission



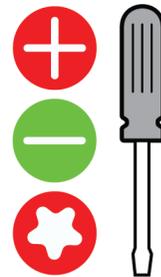
Displacement



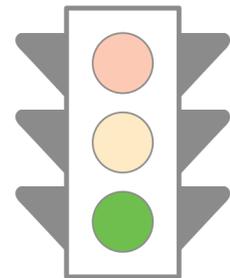
Arbitrariness



Productivity



Systematicity



Specialization

Language

Developed overtime and various in its applications, the English language prescribes to a set of rules that were uncovered after much exploration and not developed prior to the use of the language. It would not be a stretch to draw a line between the definition of a natural language and vitruvius' Ten Books on Architecture. No critical piece of architectural theory or taxonomy existed prior to the construction of places of repose and it is always the idea which proceeds the artifact. **That is not to say that regressing from artifact to idea is impossible. In fact, it is this motion of reducing artefactual objects back to idea which has perpetuated the field of architecture for thousands of years.** This form of movement would come to be one of the representational methods of exploration mentioned earlier.

If we accept that architecture mirrors the idea of a natural language then it follows that it also has the characteristics of a natural language.

The first of these characteristics which has an undeniable relationship to architecture is that of structure dependence. In linguistics, structure dependence refers

to the notion that grammatical processes do not rely solely on words or even groups of words but rather, on an underlying structure which can be recognized by native speakers as effective or ineffective. For example, the purpose of a statement will dictate its structure such as the distinction between asking a question and giving a command. The difference in structure between the sentences "the dog is gone!" and "is the dog gone?" is completely reliant on the purpose of the sentence. This is not different from architecture. The purpose of a building typically determines its makeup such as its structural system, façade, and so on. On a more basic level, it can be said that a building cannot stand without a structure supporting it. This would be the most basic understanding of structure dependence.

In conjunction with structural dependence, systematicity is the set of rules which governs the combinations of elements that are acceptable and those that are not. This can be seen in the sentences "dog the mat the sat on" and "the dog sat on the mat". A native speaking individual would immediately realize the first as an incoherent jumble of words [cont.]

Language

while the second is a sentence which prescribes to the rules and structure dependence of the English language. to relate this characteristic to architecture, one could look at classical architecture and see how the entablature relied on an extremely ridged construction of the architrave, frieze, and cornice. Any derivation from the accepted structure of the entablature wouldn't be recognized at the time as effective even prior to the systematic nature of the entablature being classified by Vitruvius. This again reiterates the "natural" characteristic of architecture.

Language also relies on a duality. This duality represents a system which is built on at least two levels, for example words and sentences. The minimum two levels can be described as the primary and the secondary. In the case of language, a primary level would be the sentence and a secondary level would be the word. This is a structure which can be compounded at various levels. To reuse the previous example, the primary level would be the entablature and the secondary level would be the architrave, frieze, and cornice. This duality directly relates to the systematicity and structural dependence that language requires. This duality can be seen in multiple locations throughout architecture

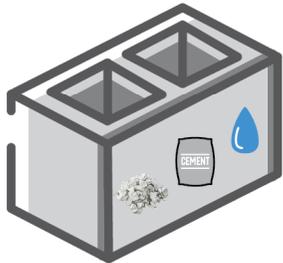
including but not limited to, the individual raw materials which compose a single building material like water, aggregate, and Portland cement combined to create concrete as well as the multiple floors and vertical circulation methods which combine to create a high-rise building.

in addition to these, the characteristic of Productivity allows a language to create an infinite number of meaningful utterances. This ability to continually produce original objects at its core describes architecture. While language can produce never before spoken sentences with no end in sight so too can architecture produce new and unseen objects. These sentences and objects are unencumbered by structural dependence, systematicity and duality and yet succumb to them. This productivity can simply be described as the furthering of the language or of architecture. The infinite possibility of creation necessarily implies that it is never ending.

The inherent infiniteness of possibility requires the possibility of transmission for continual perpetuation. Cultural transmission to a new group of native speakers may be the most critical of all the characteristics of both language and architecture.



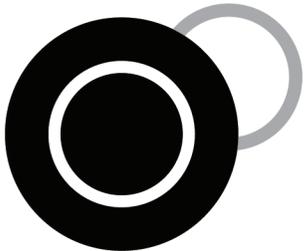
Structure Dependence



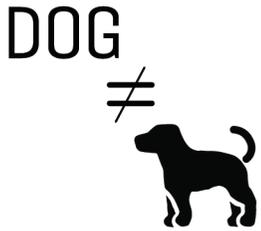
Duality



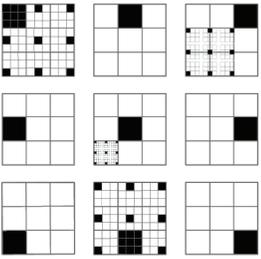
Cultural Transmission



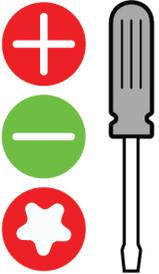
Displacement



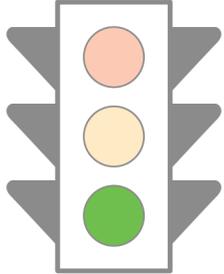
Arbitrariness



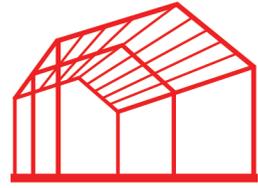
Productivity



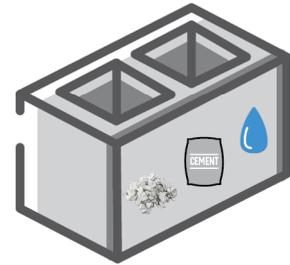
Systematicity



Specialization



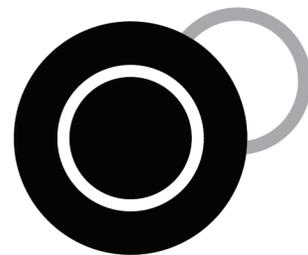
Structure Dependence



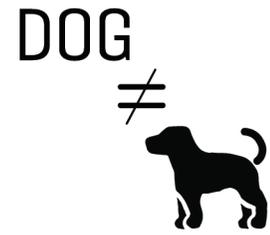
Duality



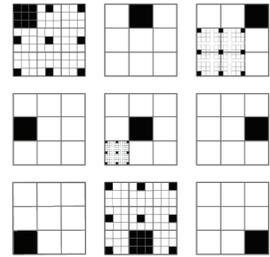
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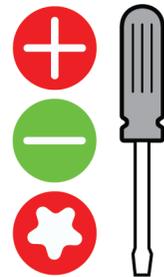
Displacement



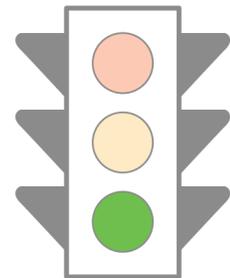
Arbitrariness



Productivity



Systematicity



Specialization

Language

The mortality of the human race coupled with the infinite possibility of productivity requires that a language has the ability to be learned. Curiously the coupling of cultural transmission and productivity is what suspends both architecture and language in limbo and allows it to be constantly in flux. to reference the matrix, the object is free to move about the frame and receive influence from all of the dichotomous relationships.

Furthermore, language shares with architecture the characteristic of specialization. Both have the ability to stand in for action. In language, the ability to utter the phrase "stay away" allows the speaker to convey to another individual that which does not have to be acted out. In architecture, the vice versa is true. A building can physically convey its closedness and is then understood by an observer without ever speaking a word. Historical bastions are superb in terms of the characteristic of specialization. Its jagged edges and circumscription with heavy walls convey nothing but "stay away".

Hand in hand with specialization comes displacement. Just as language and architecture have the ability to stand in for action they also have the ability to reference objects which are not present. This ability

allows a conversation to take place about a person who is not present just as it allows a building to reference the suffering of Jews during the holocaust [the Jewish museum in Berlin designed by Libeskind] without that suffering being present.

Finally, the last critical characteristic of language, arbitrariness, refers to a languages reliance on a symbol system. This can easily be described by pointing out that the word dog and an actual dog have absolutely no relationship. The word dog functions purely as a symbol to stand in for the object. This of course, is true in architecture in some respect. The raw materials which combine to create concrete have absolutely no relationship to the ideas of importance or permanence and yet whether discussing the pyramids or ancient Greek temples, stone and concrete stand in as symbols of importance and intentional permanence [yet another example of imposing a perceived structure]. This is true, not only of concrete and stone but of a majority of other materials as well.

If it is the case that architecture shares these eight characteristics with natural language, it must then be true that they can be found in the representational methods used to describe and critique artifacts; the language of representation.

"Imperfect knowledge, incomplete assessment of feedback, limited memory and recall, as well as poor problem-solving skills result in a form of rationality that attains not optimal decisions but more or less satisfactory compromises between conflicting constraints."

- Manuel DeLanda -

*ARTIFACTUAL
EXPLORATION*

St. Peter's Basilica

Artifactual Exploration

Charles Jencks writes in his book "The Language of Postmodernism",

"...An architects primary and final role is to express the meanings a culture finds significant as well as elucidate certain ideas and feelings that haven't previously reached expression. The jobs that too often take up his energy might be better done by engineers and sociologists, but no other profession is specifically responsible for articulating meaning and seeing that the environment is sensual, humorous, surprising and coded as a readable text. This is the architects job and pleasure, not, let us hope, ever again his 'problem'."

It is evident from this statement that he is not only referring to the architects of the postmodern movement but all architects in general. The responsibility of "articulating meaning" can be seen inherently across generations of architects. This responsibility would lead to the selection of two culturally different buildings across two distinct time periods for artifactual exploration by means of the characteristics of language.

The first of the two artifacts selected was St. Peter's Basilica and Piazza. An artifact with such rich history and fame seemed to be an adequate choice. The selection of an artifact this time around had

to be one with enough connotation that its meaning wouldn't be lost in the process of moving from artifact to idea via a method of eidetic imaging. The artifact also had to be flexible enough to fit instances of all eight characteristics.

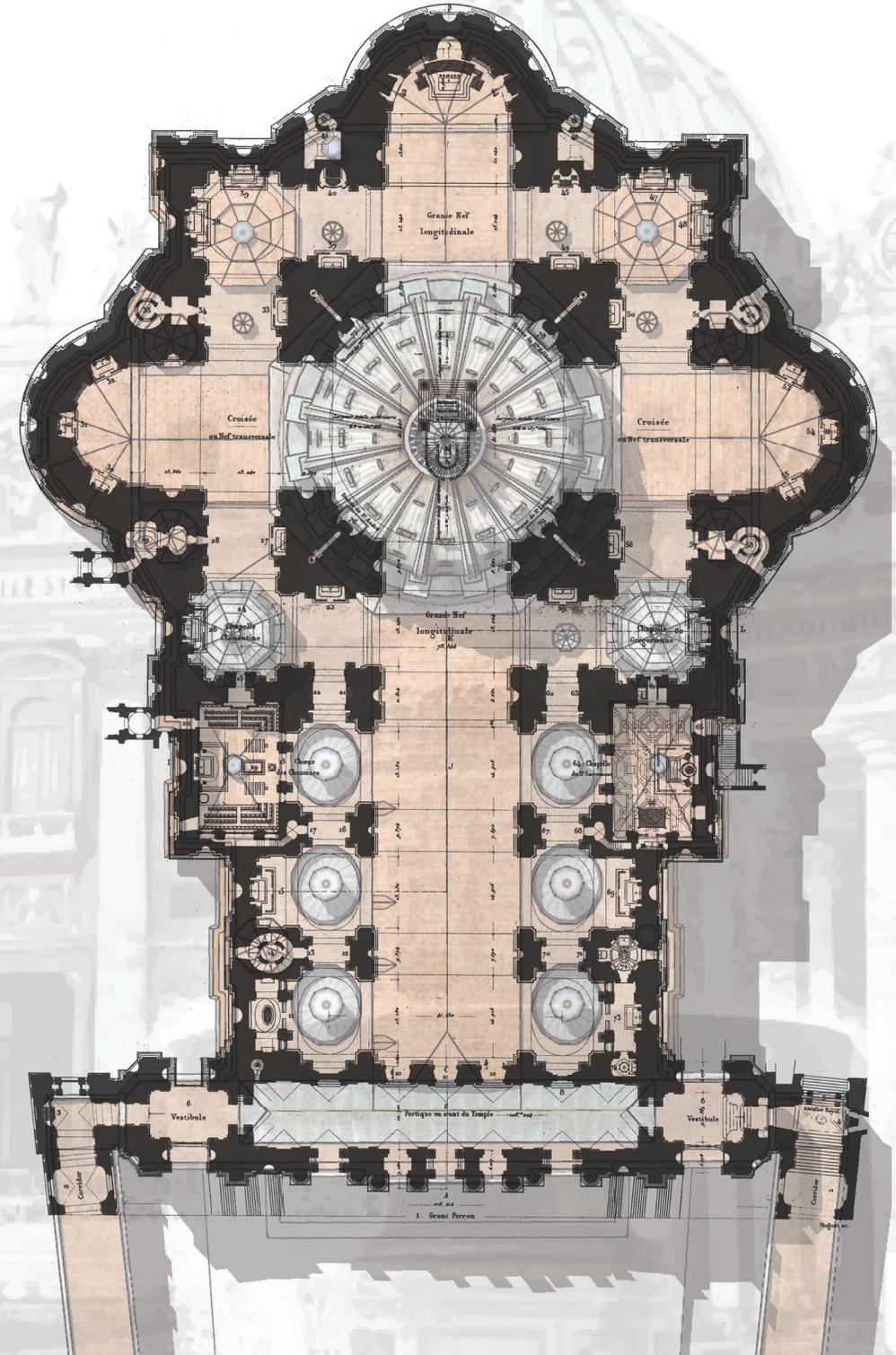
Manuel DeLanda writes in his book "1000 Years of Nonlinear History",

"Human languages are defined by the sounds, words, and grammatical constructions that slowly accumulate in a given community over centuries. These cultural materials do not accumulate randomly but rather enter into systematic relationships with one another as well as with the human beings who serve as their organic support."

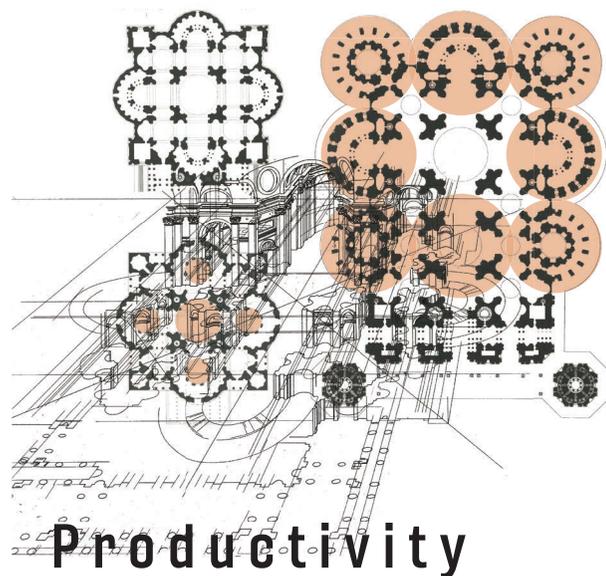
With this in mind it makes sense to say that St. Peter's, constructed during the height of the renaissance following the rediscovery of Vitruvius' Ten Books, was the epitome of architectural thought within its sphere of influence.

The process of dissection began at a macro scale with the examination of the building as whole through plan and section and then focused to a micro scale by the inspection of photos and detail drawings.

St. Peter's Basilica and Piazza



Artifactual Exploration



The process of dissection began with the compilation of several source documents including, sketches, photographs, drawings, and diagrams. These documents were then combed through to get a better understanding of the building with the intent of locating at least one instance of each of the eight characteristics. Once it became apparent that a characteristic was present, **the process of eidetic imaging was implemented to create a snapshot of that specific characteristic.** The first round of eidetic images was rather simple compared to the final eidetic images which became much more complex. The simplicity of them stemmed from the need to be able to both recognize the components which make up the characteristic as well as the characteristic's implication on the artifact as a whole.

The first characteristic that immediately jumped off the page was that of **CULTURAL TRANSMISSION.** As mentioned this may be the most important of all the characteristics because without it the others would be meaningless. In terms of St. Peter's, one could make the argument that the purpose of the entire building is cultural transmission, however searching for a smaller scale implication, the intentional placement of the baptismal font just beyond the narthex nearest what is referred to as the Death Door (so named for its use in funeral processions) became an apt subject for inspection. This juxtaposition mirrors the belief in Catholicism being born into new life through baptism and

death. Furthermore, the nature of baptism and its importance as a sacrament compounds the idea of its intentional placement at the entrance of the church and the furthest point from the altar.

STRUCTURE DEPENDENCE was another characteristic which jumped off the page. The massive size of the dome (the tallest in the world even to this day) would certainly require a feat of engineering genius being constructed so far before modern construction and engineering advances. Additionally, the sheer size and weight of the building would require thick monumental supporting walls and even further reinforcement to counteract the outward thrust of the arched and coffered ceilings.

The dome also became a great example of **ARBITRARINESS.** The implication of creating the world's tallest dome at the center of the Catholic church has connotation of power written all over it and yet nothing about its construction inherently represents the power of The Catholic Church during the height of the renaissance and long after.

The **PRODUCTIVITY** of the artifact lies in its baroque plan. The implication of using geometry to carve out the spaces required of the cruciform plan allows an endless possibility of organizations unencumbered by the rigor of the requirements of renaissance churches.

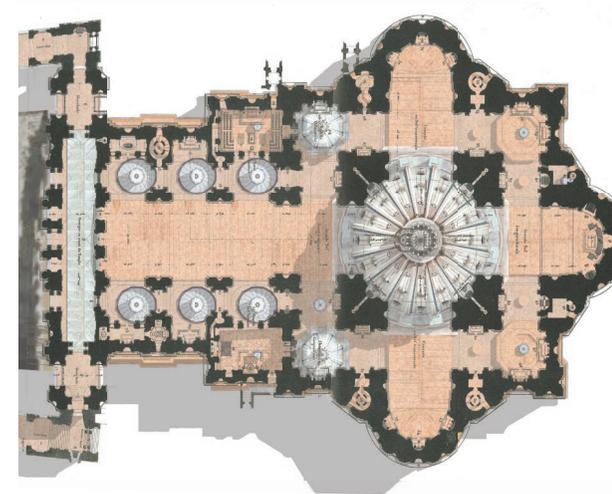
Artifactual Exploration

These renaissance churches share the quality of being strictly regulated through **SYSTEMATICITY**. The cruciform plan which begins at the narthex and leads into the nave flanked on either side by aisles and radiating chapels, continues to the crossing at the center of the transept and beyond it the chancel within the ambulatory. This structure is one that is very rarely modified. The narthex never contains the crossing and the ambulatory is never immediately beyond the narthex. This ridged construction and organizational method is the perfect example of the systematicity functions in language. Common sentence structure in the English language dictates that adjectives always precede the noun that they are referring to, (attributive adjectives) and if they are predicative adjectives they must always follow a verb.

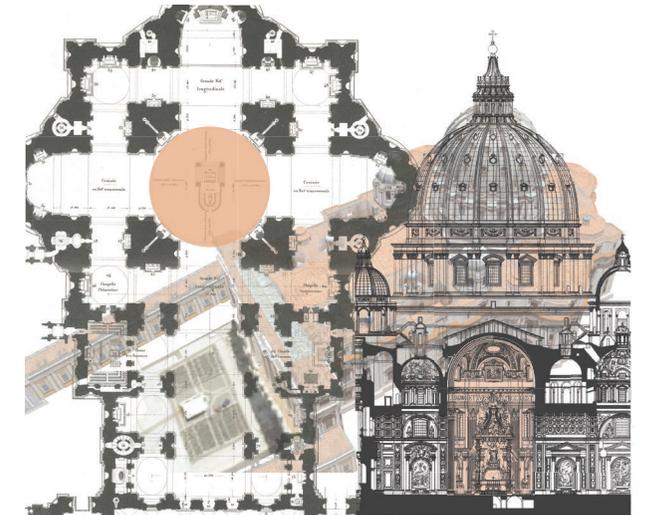
In the case of St. Peter's, a minor derivation from this standard occurs at the placement of the altar. In standard cruciform plans, the altar is placed just beyond the crossing of the transept however in St. Peter's the altar is located directly in the center of the crossing beneath Bernini's Baldacchino and is separated from the nave in the traditional form of several steps. The location of the altar serves the artifacts **DUALITY**. Its placement signifies both the visual center of the nave as well as the symbolic center of the faith. In addition to this, the altar is located directly above the necropolis and the tomb of St. Peter as well as being directly beneath the height of the inner dome in both plan and section.

This visual center is compounded by the forced perspective of the colonnade leading from the piazza to the narthex and the altar beyond. The cant of the inner walls of the colonnade toward the center of the artifact stands in for the physical procession one makes from the Via della Conciliazione to within the nave via **SPECIALIZATION**. This procession is marked by the obelisk which shares the visual center of the basilica as well as acting as the spatial center of the piazza which surrounds it.

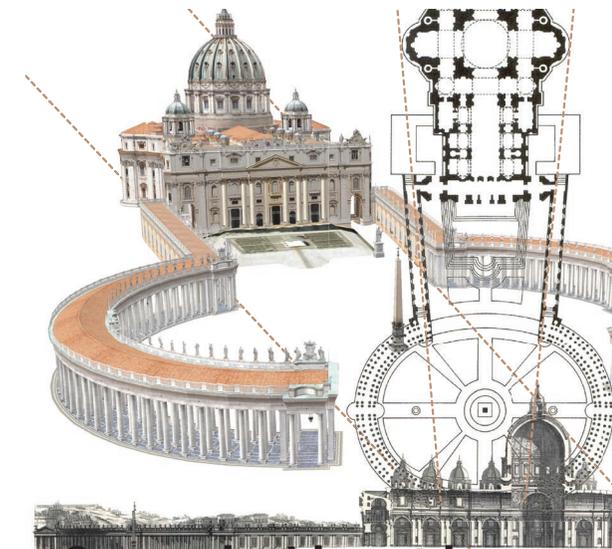
In keeping with the dissection of the piazza, not only does its forced perspective highlight the procession into the basilica but the almost complete circumscription of the piazza by the curvature of the colonnades references the arms of the mother church via **DISPLACEMENT**. The geometry of piazza surrounding the obelisk entices the action of congregation and collection prior to the entrance into the basilica. It was common practice in the renaissance for laypersons to prepare themselves for entry into the holy space within the confinement and care of the arms of the piazza. Of course it is the case that many more examples of the characteristics exist within the artifact itself but is it the case that the artifacts position in time make the characteristics readily identifiable? Can these same characteristics be extracted from a modern building which is not so culturally loaded and if these characteristics span generations of architectural works what does that say about the premise that the language of architecture, the language of representation, exists.



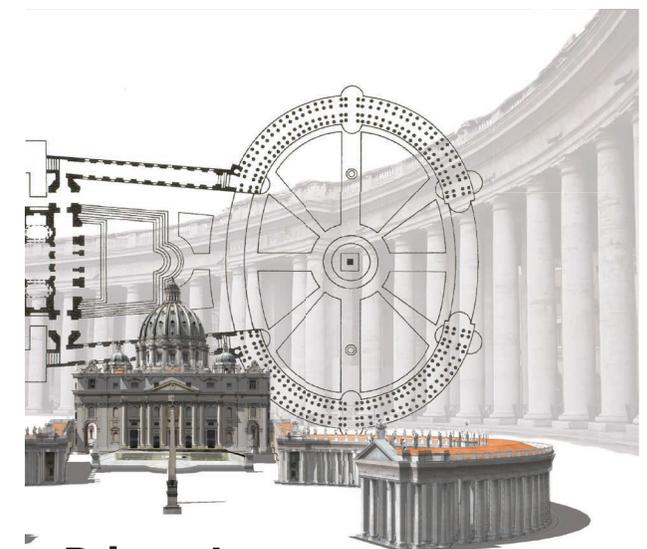
Systematicity



Duality



Specialization



Displacement

"Thought engenders thought. Place one idea on paper, another will follow it, and still another, until you have written a page; you cannot fathom your mind. There is a well of thought which has no bottom; the more you draw from it the more clear and fruitful it will be"

- George Augustus Sala -

*ARTIFACTUAL
EXPLORATION*

Falling Water



SPECIALIZATION

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Artifactual Exploration

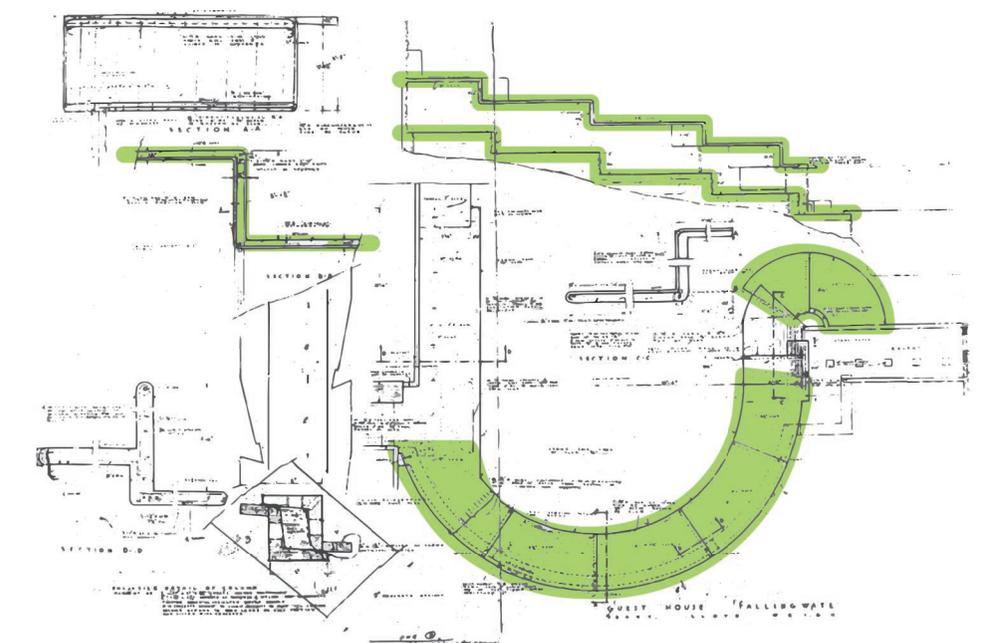
The selection of an artifact from the modern era would now be subject to criteria which were not present in the selection of the first artifact. The building would again have to be well-known in order to avoid the debate of whether the artifact could actually be considered a piece of architecture. It would have to be from a single author with a large enough body of work to facilitate a cross-comparison between similar artifacts. If it was possible to extract individual characteristics from a single artifact than it could be true that individual architects develop their own form of subconsciously implementing these characteristics in their works via a multivalent vernacular. When applying all of these criteria only one building stood out as meeting all of them. Falling Water by Frank Lloyd Wright in Bear Run, Pennsylvania may be the most iconic example of usonian architecture.

The search for the characteristics within Falling Water diverged from the process that was used previously in St. Peters. Because each of the characteristics had presented themselves so easily, the goal in Falling Water would be to look extensively at only a handful of characteristics. The ones that presented themselves immediately as the most interesting were: Specialization, Displacement, Duality, and Cultural Transmission. These would be the

characteristics which took me through the end of the semester and as such culminate this book.

Specialization in the case of falling water presents itself through the action of literal falling water. It's no surprise that an architect like Wright, so enamored with nature, would choose such a visceral action to represent formally in several locations. This can be seen most prominently in the covered portico which leads from the main residence down to the guest house. While the stepped pattern and form of the roof covering adjust to the elevation change from house to house the simultaneously mimic the terraces of the main house and the waterfall effect that gave the house its name.

In addition to formal statement of the covered walk, the material selection for the entire house is also indicative of the moving water. The rough cut stone facing references the erosion that takes place when water comes into contact with stone while the smooth terrazzo like flooring in the main living room of the house references what one might expect the floor of a lake to feel like; smooth and free of impediments. The discovery of these qualities made it clear that as one dives deeper into the meaning of each characteristic individually the more they begin to overlap onto one another.





DISPLACEMENT

Artifactual Exploration

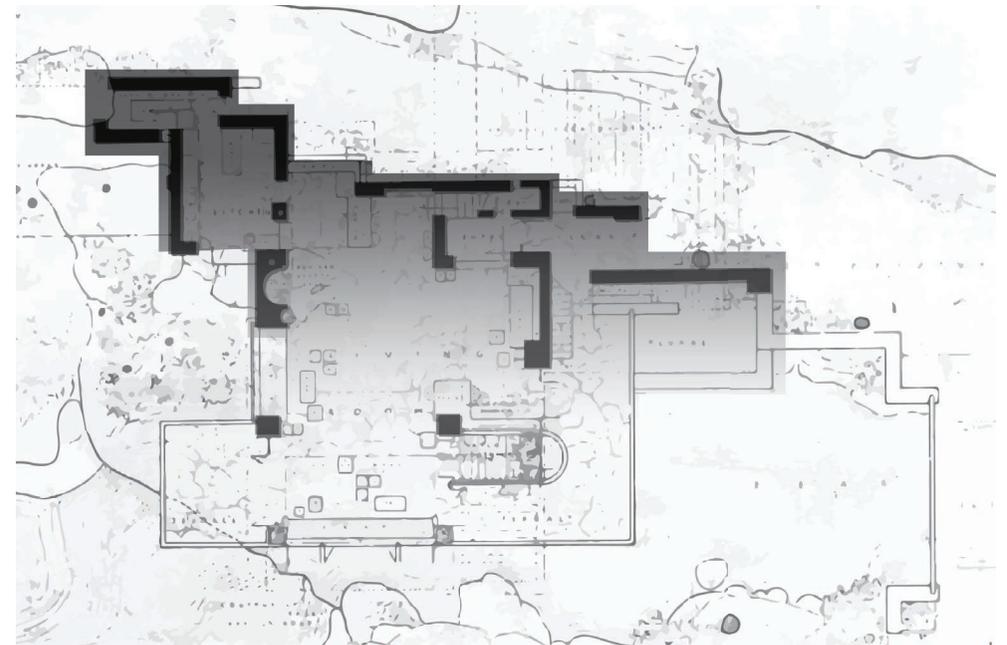
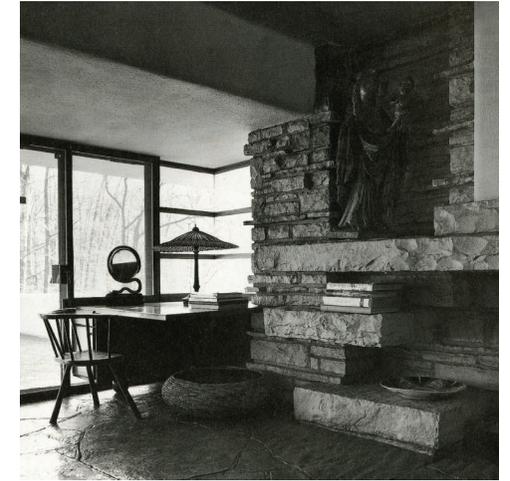
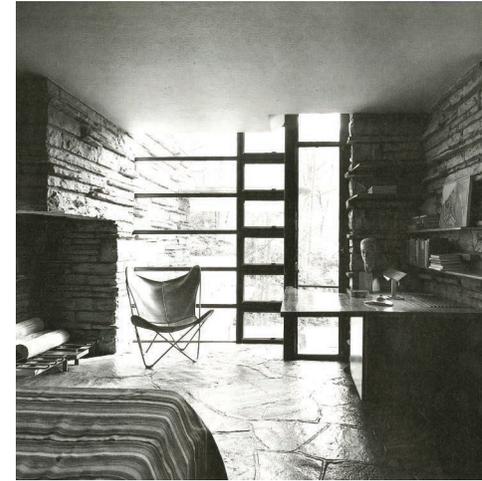
Those familiar with Falling Water know that Wright's intention was to create a piece of architecture which was wholly integrated with nature. This vision stemmed from his understanding of the human being as a truly wild being that craved the freedom of the natural environment. This is evident when we look at the sprawling scenic windows and terraced levels. A deeper look at the source material for the construction of the building shows something interesting. In both plan and section, it can be seen that the house comforts the occupant with the feeling of the "cave wall" at their back. The comfort and security of shelter within nature.

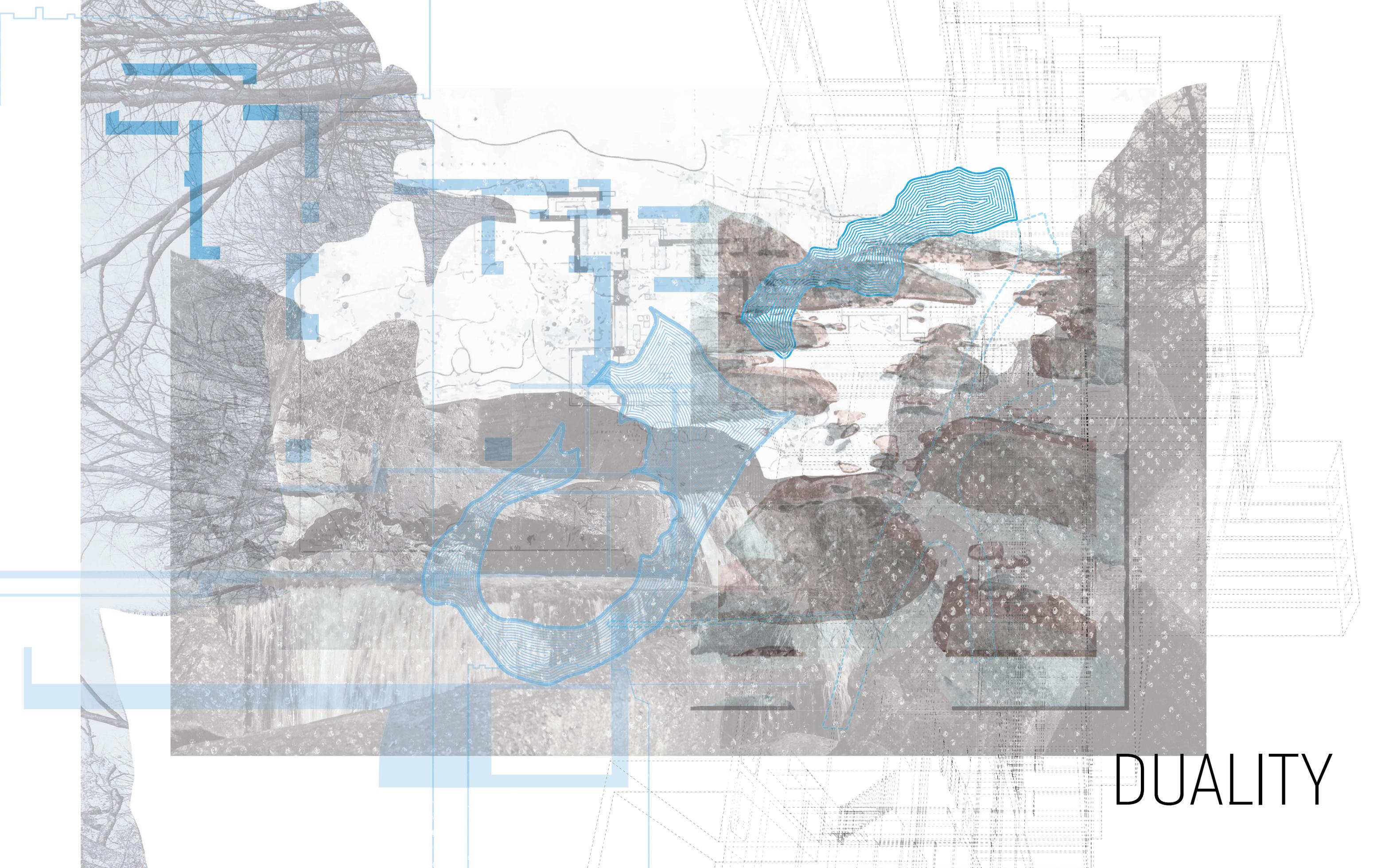
While Wright intentionally creates a space, which allows the occupant the openness and involvement with the natural environment, he simultaneously references natural shelter which is ever present. His method of achieving this goal is in stark contrast to Philip Johnson's Glass House in which the comfort of seclusion can only be found within the bathroom. As mentioned, the overlap of separate characteristics begins to present itself. While the rough cut stone functions as a way of referencing the action of moving water it also begins to

literally mimic the interior of a cave wall. The material choice for the wall is now operating on two distinct levels: the level of displacement, and the level of specialization. Without allowing the study to fold in on itself, this is the exact definition of the next characteristic; Duality.

The images to the left highlight the perspective views from various places within the building which reinforce the notion of the cave wall at our back. The diagram beneath the images was composed from Wright's original drawings of the main floor plan. It can be clearly seen from this diagram the change in organization as one moves closer to the flowing water below. Even the penetration of light into the space is counteracted by the depth of the individual areas.

To reference duality again, the displacement of the cave wall is reinforced in both plan and section. A lateral section cut through the three main floors of the house begin to show the same qualities which were achieved in plan. The solid cast walls counter the light and open window structure towards the nature reserve the building is built within.





DUALITY

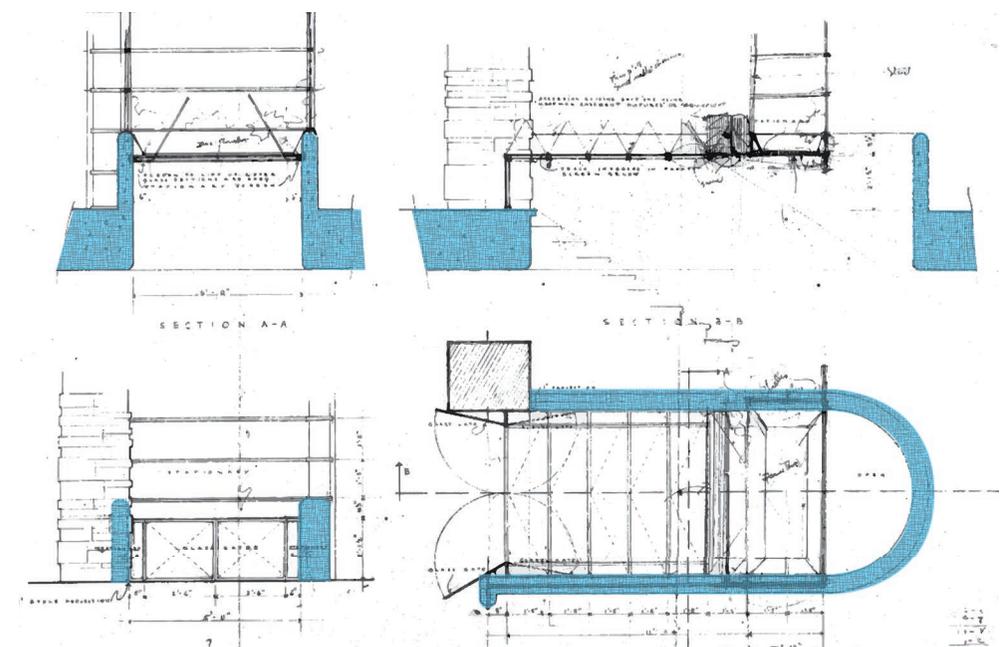
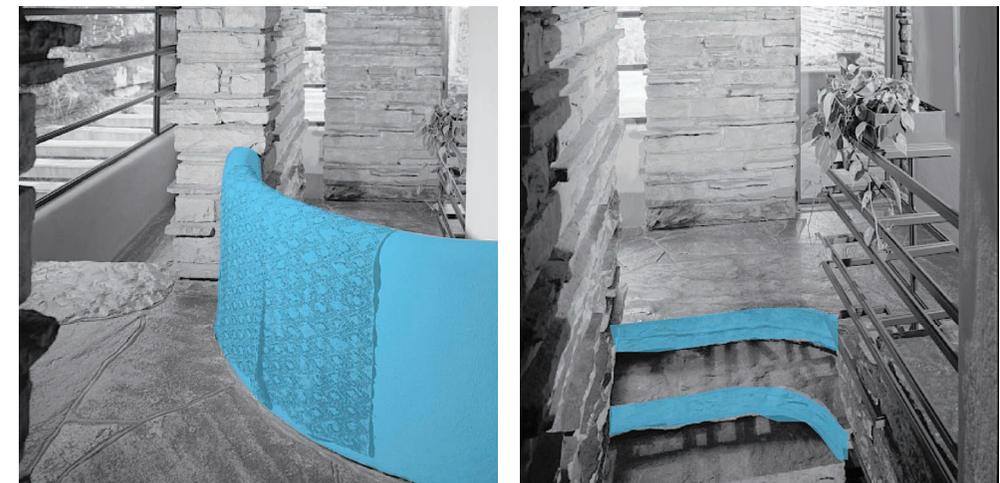
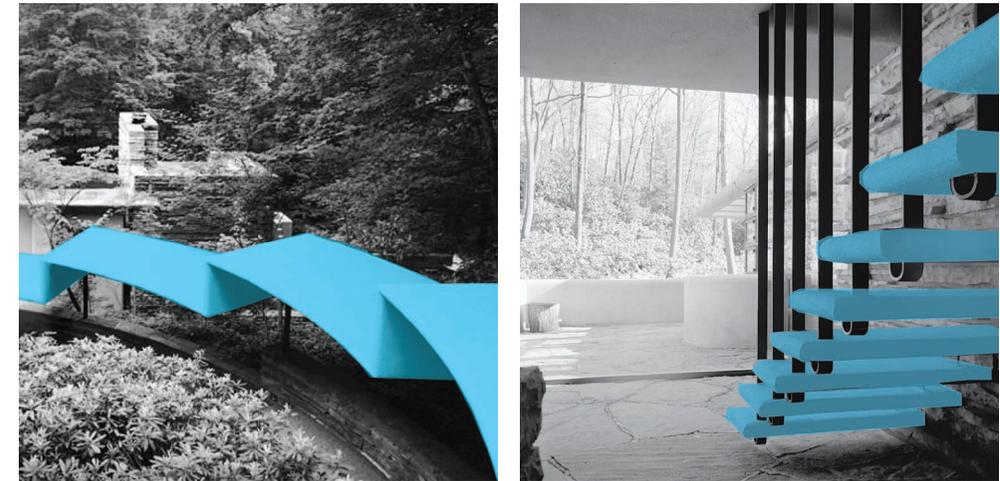
Artifactual Exploration

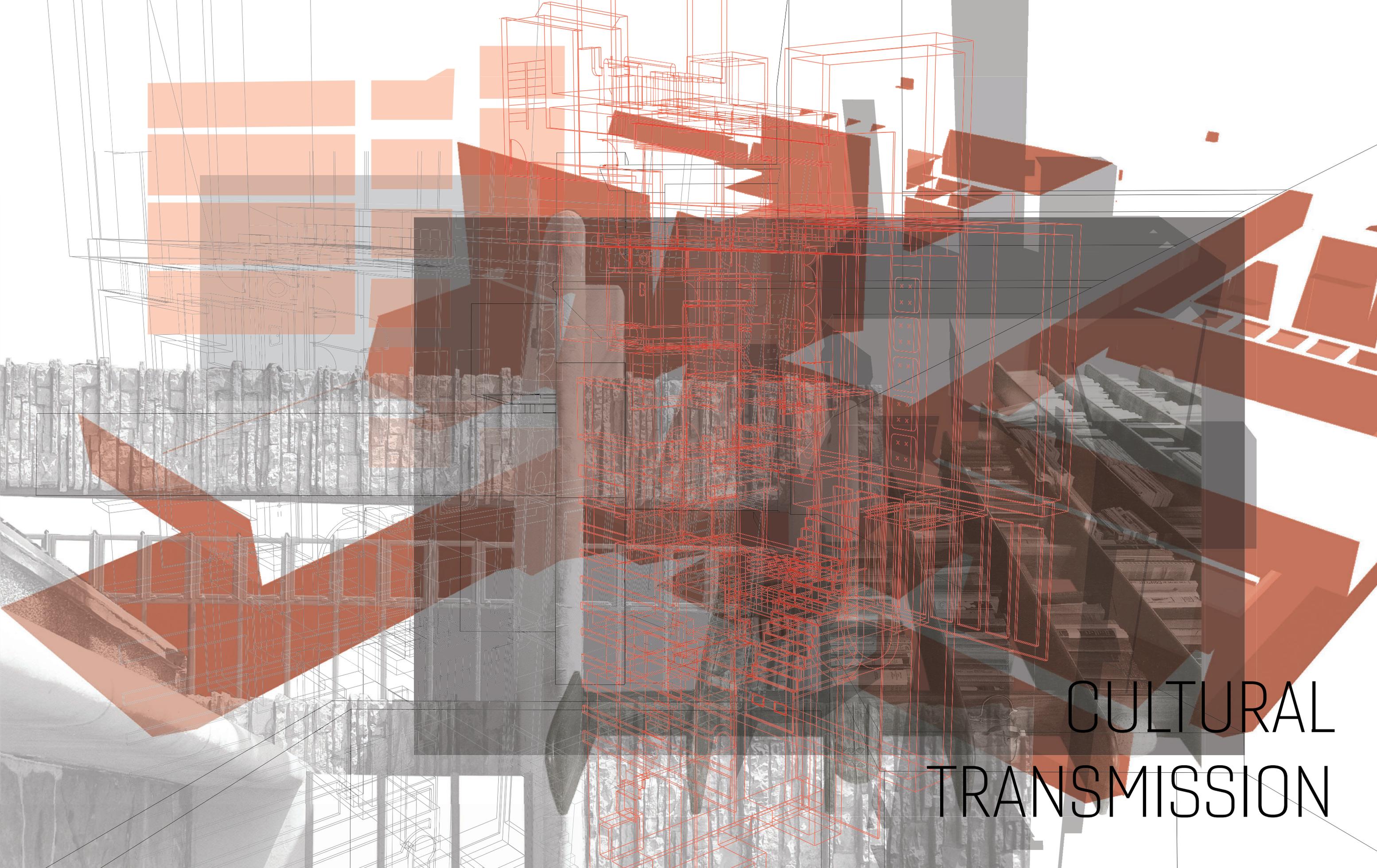
As mentioned in the previous sections, duality is a rather flexible characteristic. This flexibility can be seen in several locations within Falling Water however none more prominently than intentional curvature of several surfaces with the home. In language, duality refers to the requirement of the language operating on at least two distinct levels. In the case of falling water, it became the case the three or more levels could be deciphered. The diagram beneath the photographic examples is one location which highlights these distinct levels. The diagram was again composed from Wright's original drawings for the building and his intentionality and attention to detail can be seen within the detailed drawings of the hatch which leads to the staircase descending to the river.

Wright specifically calls out in three separate locations the intentional curvature of the stucco knee walls. The observer is confronted immediately with the large rounded wall which continues beneath the floor to create the ceiling of the staircase. On the main floor, the knee walls which support the garden and section off the space of the hatch from the rest of the living room could very easily have flat

tops, but the roundness is carried through again. This can be seen in the section. In floor plan the termination of the knee wall is handled the same way. The roundness of these individual aspects is not contained to this section of the residence but rather it presents itself in a number of other large and small-scale details.

The same portico roof which was used in an earlier example succumbs to the ridged structure of the curvature. One begins to wonder what specifically is gained by the curved form instead of the rectilinear one. We know that the 90-degree angle is not a geometry which presents itself naturally in nature but rather is a construct of human ability. When we take this bit of information coupled with Wright's intention to create a home ingrained with nature it only makes sense that he would take steps to remove the rigidity of the 90-degree angle and replace it with something much softer. In addition to this understanding of the square form, it wouldn't be a stretch to reference again the intentional specialization of falling water. Because water erodes stone and the hardest of surfaces, it makes sense to think that the water itself has eroded the rectilinear surfaces.





CULTURAL
TRANSMISSION

Artifactual Exploration

The importance of Cultural Transmission noted in previous chapters is not lost on Wright within Falling Water. If we think deeply about the application of cultural transmission to architecture, what are the tools the we as architects specifically use to communicate such deeply held understandings? What are the ways that we ensure a clear and concise understanding of our motives not only to our users but inevitably to architectural historians? One of the answers to these questions is ornamentation.

It may not be lost on us that the modern movement is notorious for the removal of ornamentation. The hallmark architects of the modern movement wouldn't be caught dead designing a building in the fashion of St. Peters. So did ornamentation vanish all together in the modern movement? Well in the case of Frank Lloyd Wright, no. This is obviously not to suggest that Wright is decorating his buildings with caryatids that belong in gothic churches, but what are the specific examples of his intentional cultural transmission?

For one, the importance that Wright places on the hearth, not only in Falling Water but in a number of his other residences, signifies his understanding of it

to be both the visual center of the home as well as the communal center of the home. Within Falling Water, this is achieved via the swinging armature which houses the cauldron. In addition to being painted in a vibrant Cherokee red (a trademark of Wright and another example of ornamentation), it is the sole use of the spherical form throughout the entire building, a possible reference to the curvature used in other locations through the building.

Additionally, the hearth is one of the few places within the house and the only place on the main floor that allows the protrusion of the actual stones from the site to pierce the residence; Possibly the most primal of all locations with the home, the protection of the cave wall from the elements of nature seated at the location of warmth and sustenance. In both of the fireplaces of the home, the grille is adorned again with Cherokee red paint.

Each of these four characteristics begin to reference one another in way that is undeniable to refute. In summary, the application of the characteristics of language has presented itself as a renewable form of critique for anyone interested enough to look.

