



# THE BEAUTY OF BECOMING

## ARCHITECTURE AS A TELEOLOGY

END (*telos*): “The completion toward which anything tends, and for the sake of which it acts.”

*Aristotle, 1999.*

MARIA SAUVAGEAU

DESIGN THESIS

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THE BEAUTY OF BECOMING  
ARCHITECTURE AS A TELEOLOGY

A Design Thesis Submitted to the  
Architecture and Landscape Architecture  
of North Dakota State University

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In Partial Fulfillment of the Requirements for the Degree of  
Master of Architecture

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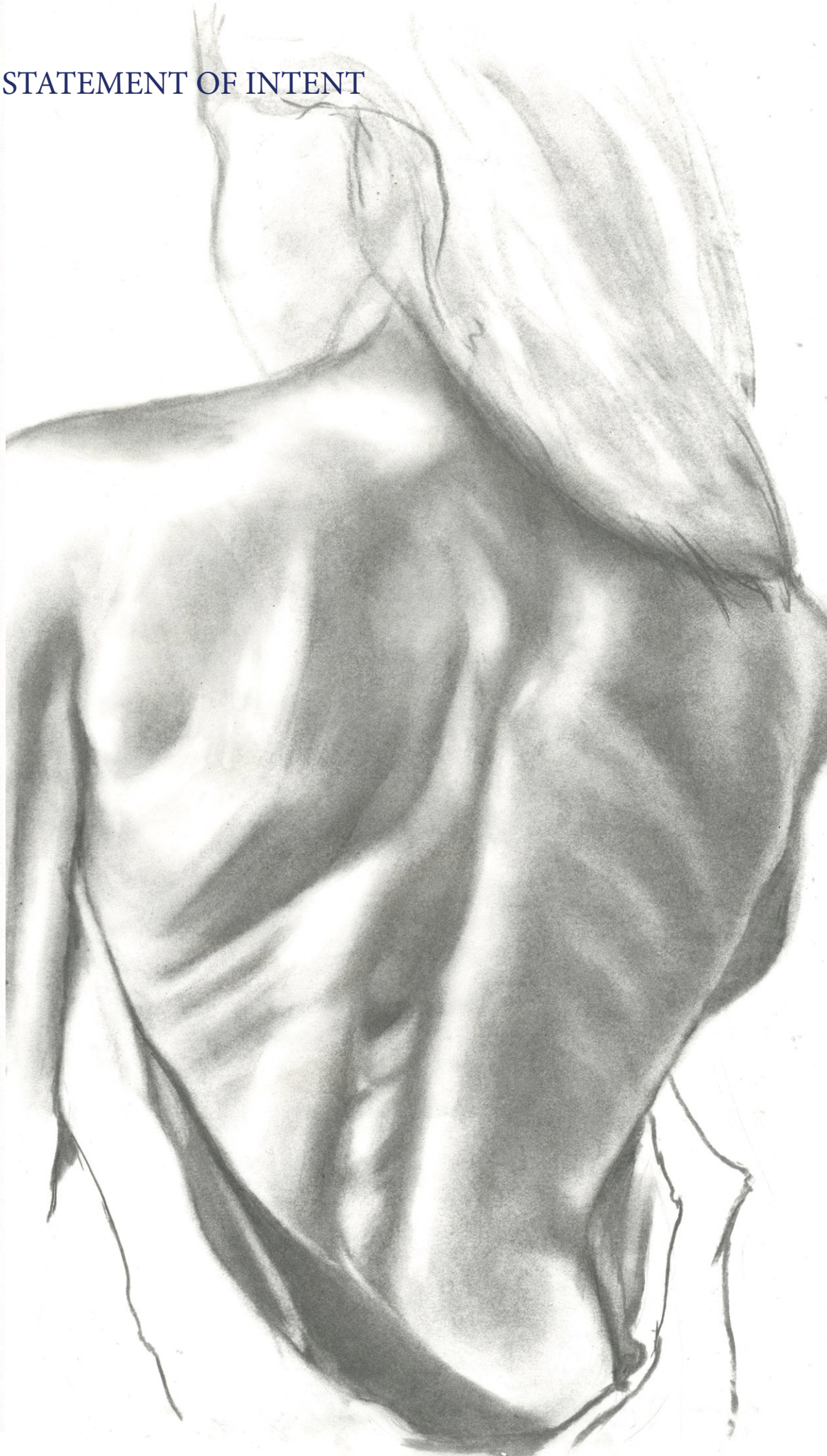
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SOI STATEMENT OF INTENT



# SOI STATEMENT OF INTENT

ABSTRACT This thesis is an attempt to clearly and simply recourse the history and the activity of architecture to the fundamental “natural order” with which one comprehends the world, and which forms the individual’s enduring knowledge of things. This recourse will be done in order to lay out the proper grounds for understanding the relationship between thing and thought. It is a relationship which is fixed on the contention that one’s ideas can become realized within things (architecture). These things can stand independent of the creator and yet remain the full-bodied communicant; they are the *reality* of one’s ideas. It is a theory which stands against the claim that reality is dependent solely upon human constructs.

KEY WORDS Metaphysics, Knowledge, Beauty, Aesthetic Taste, Communication

PROJECT TYPOLOGY The typology chosen for the exploration of this thesis will be a museum which houses historic artwork and artifacts. Although the content of this thesis pertains to the act of designing in general, this particular typology is chosen for the relevance of the objects within. The idea which brings about a creation is present within the thing itself. It persists throughout history and does not die with the creator.

# SOI STATEMENT OF INTENT

PROBLEM  
STATEMENT

Can architecture be known by an observer or resident without the use of conventional symbolism?

# SOI STATEMENT OF INTENT

CLAIM An observer or resident, in the act of obtaining knowledge about a work of architecture, need not obtain this knowledge by means of conventional symbolism.

PREMISES Human beings have an ability to know and communicate the innate formal causes of natural things.

Knowledge is obtained through the realization of the formal cause of a thing. The formal cause is apprehended through the particular way in which it organizes and changes the material of a thing in order to fulfill its purpose, or end (teleology).

Architecture is an artifact. Artifacts can imitate nature. Formal causes are inherent within all natural things, and are defined through their “thinghood” or “essence”. It is what makes something what it is, and nothing else. Architecture, as seen through its analogical relationship to nature, therefore also inherits its intelligibility by means of a formal cause, which is implemented by the designer.

Conventional symbolisms, in being generally accepted referents to real objects, things, or concepts, do not possess real knowledge, and are not the vehicle through which true knowledge is obtained. It is though, a way in which knowledge can be communicated from one who knows to one who does not.



# SOI STATEMENT OF INTENT

## THEORETICAL PREMISE/UNIFYING IDEA

Knowledge is dependent upon the formal cause of a thing. Architecture can be designed in order to fulfill a formal cause. People can apprehend the formal cause, and therefore know a work of architecture. This knowledge can also be communicated from one individual to another. Since Conventional Symbolism cannot create the formal cause of a thing, it cannot create knowledge. It can only communicate it as means of a referent to something knowable in its own right. Therefore, a work of architecture can be known in its own right by means of a formal cause, and need not depend upon conventional symbolism.

# SOI STATEMENT OF INTENT

## PROJECT JUSTIFICATION

The contemporary individual, in being faced with an assortment of history, statistics, codes, and pre-fabrications, often loses the ability to grasp what is simply in front of them. Architecture too is losing the logic of parts and wholes. It is losing the ability to define its own purpose. It is losing the ability speak of any reality at all. Rather, designs are often created with an attitude of “it is all relative”, or designs are created in order to fulfill any purpose but that to which they are primarily used for. Such disorder within one’s environment inherently becomes displeasing, incoherent, and meaningless. Therefore, by adopting a teleological methodology toward architectural design, the designer will be able to once again regain the order and sense within their designs, while still utilizing their creative intuitions.

PROPOSAL



# PROPOSAL

1. CAUSE: "The source of responsibility for anything. It thus differs in two ways from its prevalent current sense: in always being a source...rather than the nearest agent or instrument that leads to a result, and in referring more to responsibility for a thing's being as it is than for its doing what it does" (Aristotle, 1995).

2. (Lacey, 1976)

## NARRATIVE:

Take the time to look at something and ask the question, "why is this the way it is?" At the moment when one may discover the answer, one may also realize how intimately it persuades a realization of the way one is, because this activity produces a fulfillment within the person. Or perhaps, it produces the knowledge of a fulfillment. It is the fulfillment which is urged forth from all things by their formal cause<sup>1</sup> and is affirmed in their end, or purpose.

The individual's realization of a thing's purpose also creates a fulfillment in the self though, for the act of knowing is a fulfillment of the human being. It is what the human is made to do. *Knowledge therefore draws man and things together by means of their purposes, and their urge toward becoming.*

The human artifact, in its most basic definition, is simply a object which has been changed in a material way due to human action. Most created things can be called artifacts. They are an amalgamation of natural things which have their own sense and order with the human intellect which molds and forms these natural things into the realization of a new idea. Anyone dealing with artifacts therefore must be unavoidably concerned with knowledge and what is knowable.

This way of knowing, which takes on an activity much more like a finding than a creating, seems to be at odds with another very human activity, that of forming and applying symbolism. Conventional symbols<sup>2</sup>, such as words have the ability to communicate knowledge, but knowledge is not created by nor dependent upon these symbols. Rather, conventional symbols are dependent upon the notion that things have a universality: they have

# PROPOSAL

3.(Flood, 2010)

4.METAPHYSICS: "...tend(s) toward the building system of ideas...along with a method for taking hold of whatever can be known...the study of being as such (Reese, 1980)." "Metaphysics also borders on ethics and aesthetics. It asks where values are grounded in the nature of things, or contribute to the cosmic process, and what kind of reality is possessed by works of art and the things that make them up (e.g. the figures in a painting)..."(Lacey, 1976)

5. Natural reason is the mother of knowledge, and therefore it is the kernel of a fulfilling human activity (Lacey, 1976), which is what this thesis is after.

a stable and definitive nature that can be known through the object itself, without the aid of socially agreed upon symbolism<sup>3</sup>. In this light symbolism is very useful and necessary for communication. It is only when this situation is turned around, and the symbols are viewed as the validators of reality, that reality itself becomes crumbly, and the door is opened wide for the creator to become nothing more than an articulator of nonsense. It is only by properly comprehending *why* something is the way it is in the first place that one can find the ability to reason out why something ought to be this way, rather than another way.

This thesis, beginning with a metaphysical<sup>4</sup> account of things in their simplicity, but then expanding out and comparing these ideas to those either branching or breaking from this tradition, is really only a search for the larger picture of reality. It is the necessary starting point from which to view and evaluate architecture as a piece of reality. For to leave these questions buried, and instead to become an architect of the modern orthodox seems somewhat criminal in a world which loses most of its natural reason<sup>5</sup> down the slippery slopes of one's own intellectual apathy. Most of which is conciliated through an over-dependence on conventional symbols.

# PROPOSAL

1. The architecture, in the particular way that it is designed, will necessitate a particular set of actions-it will require human action in order to fulfill the purpose of the architecture. The architecture will not do the thinking for those who maintain it, but rather will engage much thought and care by those who run it.

2. CURATOR: from the Latin word *curaturae* meaning “care, attention; superintendence” (Traupman, 1995)

## USER/CLIENT DESCRIPTION:

The museum will be used by two different groups. The first group will be the student body and general public. Their interaction with the space will be limited to the public spaces, and their intent upon entering the space will be to view the works within, as well as attend any public events sponsored by the museum. The museum will have a capacity of 120 visitors at one time. This is done not only because the museum will be small, but also because the museum will be designed in order to “slow down” the effects of time, therefore the heating and cooling system will not be able to circulate large amounts of fresh air at one time. Since the site is located in a university setting, parking spaces will be limited and the general public will utilize the parking lots already laid out.

The Clients who own/operate the museum will have a very particular and fully developed role. Much of the architecture will be designed in order to compliment the activities of those who will keep the museum. The main theme of this thesis will imply the need to create not only a thorough description of what the architecture will do, but likewise to create a thorough description of the activities of those who work there<sup>1</sup>. The museum will have a total of eight employees. There will be one official curator, though all employees will be “curators”<sup>2</sup> in a way. There will also be one building manager/maintenance. There will be two security guards/receptionists on staff, and the final four workers will assist the curator and building managers. There will be five parking spaces allotted for workers.

# PROPOSAL

## THE MAJOR PROJECT ELEMENTS:

The major project elements will include a large entrance/lobby with a security desk/coat check. This will lead into two levels of display areas. There will be public restrooms available, as well as a space allotted for a gift shop/coffee shop. Finally, there will be a large meeting room used not only by the workers, but also available for use by the public. The exterior public spaces will consist of an outdoor patio/garden as well as adjacent parking spaces.

The private spaces available to the workers will include three offices: one for the curator, one for the building manager, and one large sub-divided office for the other workers.

There must be large hallways in the working spaces to allow for easy moving/removal of all pieces. There must also be large empty work spaces available. There will be a large unprotected storage space. A freight elevator and loading area will also be required.

Finally and most importantly, there must be a protected vault which maintains a steady temperature and humidity, as well as the proper lighting and fire protection. This is done in order to provide the best conditions possible for material preservation.

# PROPOSAL

1. UsGenWeb Archives  
(Uploaded Image). (1999-2008)  
*Minnesota 1, Map 33*. Retrieved  
Oct 6, 2010 from:  
<http://www.usbusarchives.us>

## SITE INFORMATION:

In the search to find the proper soil to plant the “seed” of an architectural design, it became apparent that the most important aspect of the site depended upon the social soil to which it would be planted, and the culture which would be able to feed and sustain a small scale museum.

It soon became apparent that a museum which was small and existed outside of a system not supported by a government or college program would be questionable. St. Catherine University in St. Paul, Minnesota is therefore the chosen site for this thesis.

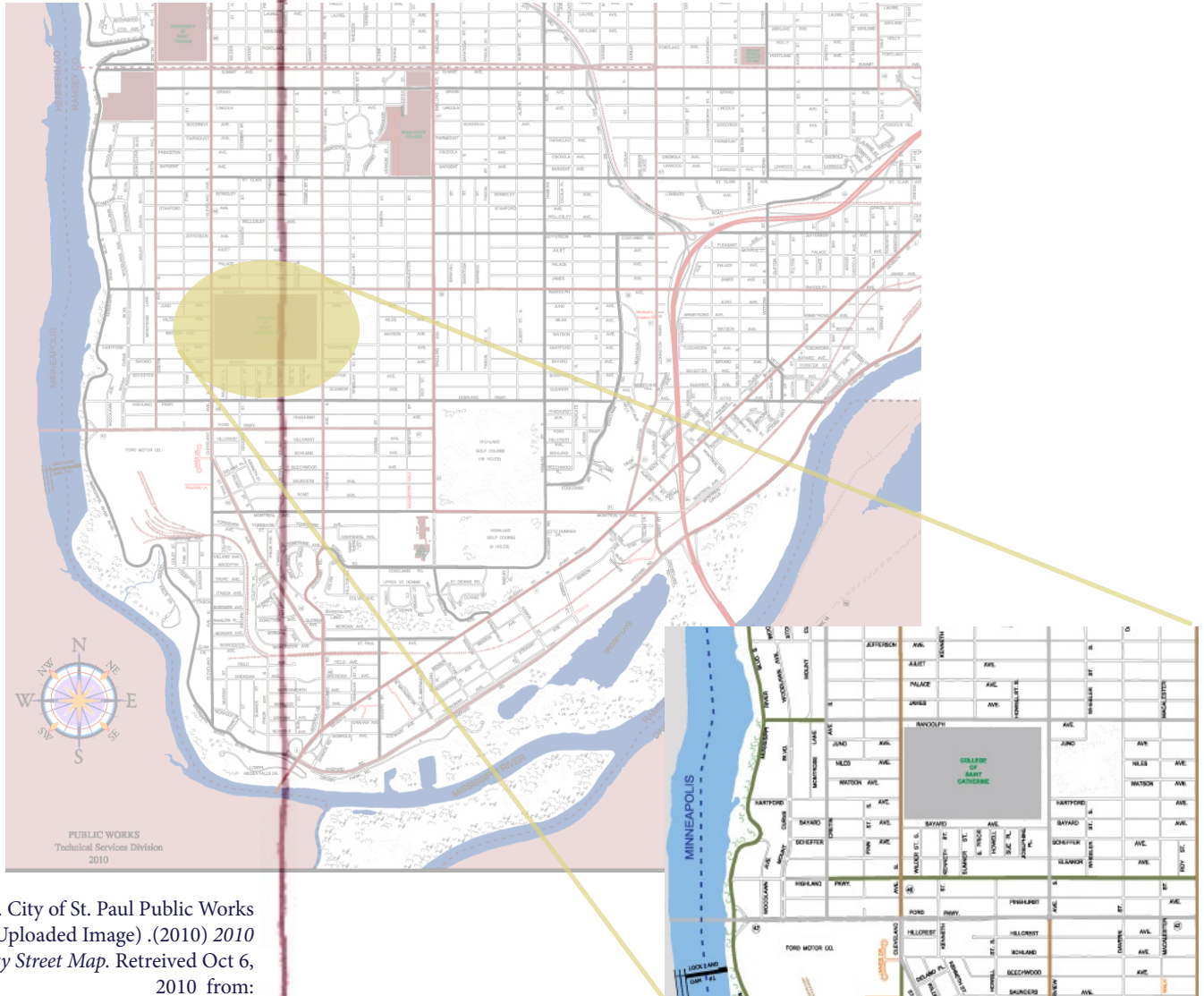


fig. 1



# PROPOSAL

## SITE INFORMATION:



2. City of St. Paul Public Works (Uploaded Image) .(2010) 2010 City Street Map. Retrieved Oct 6, 2010 from: [www.stpaul.gov/documentview](http://www.stpaul.gov/documentview)

Located in the Upper Midwest, the city of St. Paul is steeped rich in tradition and history. St. Catherine University has participated with and added much to this history.

The University is located in the heart of St. Paul, placed within the southern cup of the Mississippi River. Its exact location is  $44^{\circ}$  N. and  $93^{\circ}$  W. It is at an elevation of 920 ft.

# PROPOSAL

## SITE INFORMATION:

Located on the corner of Randolph Avenue and Cleveland Avenue, St. Catherine University campus consists of 35 major buildings and facilities, including a theatre, art gallery, library and chapel.



Fig. 3,4

3. US Geological Survey (2010).  
*Google Map*. Retrieved Oct 6,  
2010 from: [www.googleearth.com](http://www.googleearth.com)

4. University of St. Kate  
(Uploaded Image).  
*stcatherinemap.pdf*. Retrieved  
Oct 9, 2010 from:  
[www.stkate.edu/pages.  
aboutstkates/pdf/colleges/  
stcatherinemap.pdf](http://www.stkate.edu/pages.aboutstkates/pdf/colleges/stcatherinemap.pdf)

There is no facility on campus yet which acts as a museum and preservation center for historic artifacts. This campus also contains quite a few pockets of free space which could be used to place a museum.



Fig. 5

5. University of St. Kate  
(Uploaded Image) Retrieved Oct  
6, 2010 from:  
[www.stkate.learnhub.com](http://www.stkate.learnhub.com)

6. Isaac (2009)

St. Catherine University (formerly the College of St. Catherine) was founded in 1905 by the Sisters of St. Joseph of Carondelet. It is an all women's college, and it offers both liberal arts and professional educations. It has both graduate and undergraduate programs.<sup>6</sup> This particular campus was chosen for these main reasons. It is not only an environment which is attuned to tradition, philosophy, and art, but it is also in need of a museum. Being a relatively old University founded by a religious order, it holds not only the artifacts of the University, but also the artifacts accumulated by the founding order.

# PROPOSAL

## PROJECT EMPHASIS:

This project, prompted by questions of knowledge and the value of one's knowing, seeks to take an idea and prove its validity and reality through the design itself. In this process, certain ideas must be explored and tied back to the main thesis. The three main areas of emphasis will be as follows:

1. The relationship between different theories of knowledge and architectural design trends.

This thesis will look to prove much of its point through the use of examples taken from history. Architectural forms will be evaluated and pulled parallel to the philosophical trends prevalent during the time of their creation.

2. The difference between sign and symbolism, and how they are used in architectural drawings.

Architectural drawings, being not the architecture itself, yet possessing something of the reality which the architecture will possess, contain an interesting mixture of the architect's idea, conventional symbolism, and inherent logic. They are the architect's form of communication, and questions must be asked in relation to what one can know about a design from an architectural drawing.

3. The relationship between physical form and the client's activity within the architecture.

Natural things grow and maintain their order through their own nature and their own self-direction. Man made things, or artifacts, do not maintain nor organize themselves. How do the architect and then the client "activate" the architecture into being what it ought to be?

# PROPOSAL

## PLAN FOR PROCEEDING:

### RESEARCH DIRECTION:

Research will begin with the philosophical history which supports the theoretical premise. Concrete examples will then be sought within the history of architecture, art, and industrial design. Technical research will finally be integrated as needed to implement the ideas formulated by the previous research. The technical research will be conducted in regard to site, typology, and environmental control strategies.

### DESIGN METHODOLOGY:

The design methodology chosen for this thesis will be a mixed method, Quantitative Qualitative Approach. Qualitative data such as direct observation and archival searches will be used, as well as quantitative data such as scientific measurements from instrumentation will also be used. The final outcome of the research will be expressed in the form of both graphics and writing.

### DOCUMENTATION OF DESIGN:

The heart of this thesis will focus on the development of a design from an ideal form to a cohesive and material whole. All drawings and models relating to this process will be documented in a portfolio as well as electronically. This documentation will have along the description of design questions and intentions attached.

# PROPOSAL

## PLAN FOR PROCEEDING:

### WORK PLAN

The work plan will consist of three different phases. The first phase will be research and synthesis of these ideas with concrete examples from case studies, life experience, and past studio projects. From here a clear point of departure will be developed and the design of the museum will begin.

Every week during the design phase, a question will be asked, and an answer will be proposed. This answer will be tested through an actual part of the design- be it within the form, the control systems of the building, or in the way the drawings will be done. This question and the subsequent answer posed will then be compared to the findings within the design portion done that week. All of these ideas will be documented and organized into a whole.

Once the entire design is completed, it will be reviewed critically from the beginning to end. This thesis design is not intended to be a discussion which ends with the completion of the design, but rather it will be scrutinized to see what made sense and what did not make sense, and what did and did not match up to the theories which it was built upon.

# PROPOSAL

## PREVIOUS STUDIO EXPERIENCE:

### 2nd Year

Fall 2006: Assistant Professor Stephen Wischer

-House for Tea

-Boat House and Rowing Club

-Dwelling for Twins

Spring 2007: Assistant Professor Bakr Mourad Aly  
Ahmed

-Montessori Elementary School

-Prairie Dance Academy

### 3rd Year:

Fall 2007: Assistant Professor Cindy Urness

-Center of Excellence: Think Tank

-Cranbrook Academy of Art Addition and  
Renovation

Spring 2008: Associate Professor Steve Martens

-Science and Technology Museum

-Curling, Lawn Bowling, and Indoor Garden  
Facility

### 4th Year:

Fall 2008: Associate Professor Darryl Booker

-Mixed-Use High Rise Facility

Spring 2009: Assistant Professor Stephen Wischer

-Train Station, Hotel, and Residence

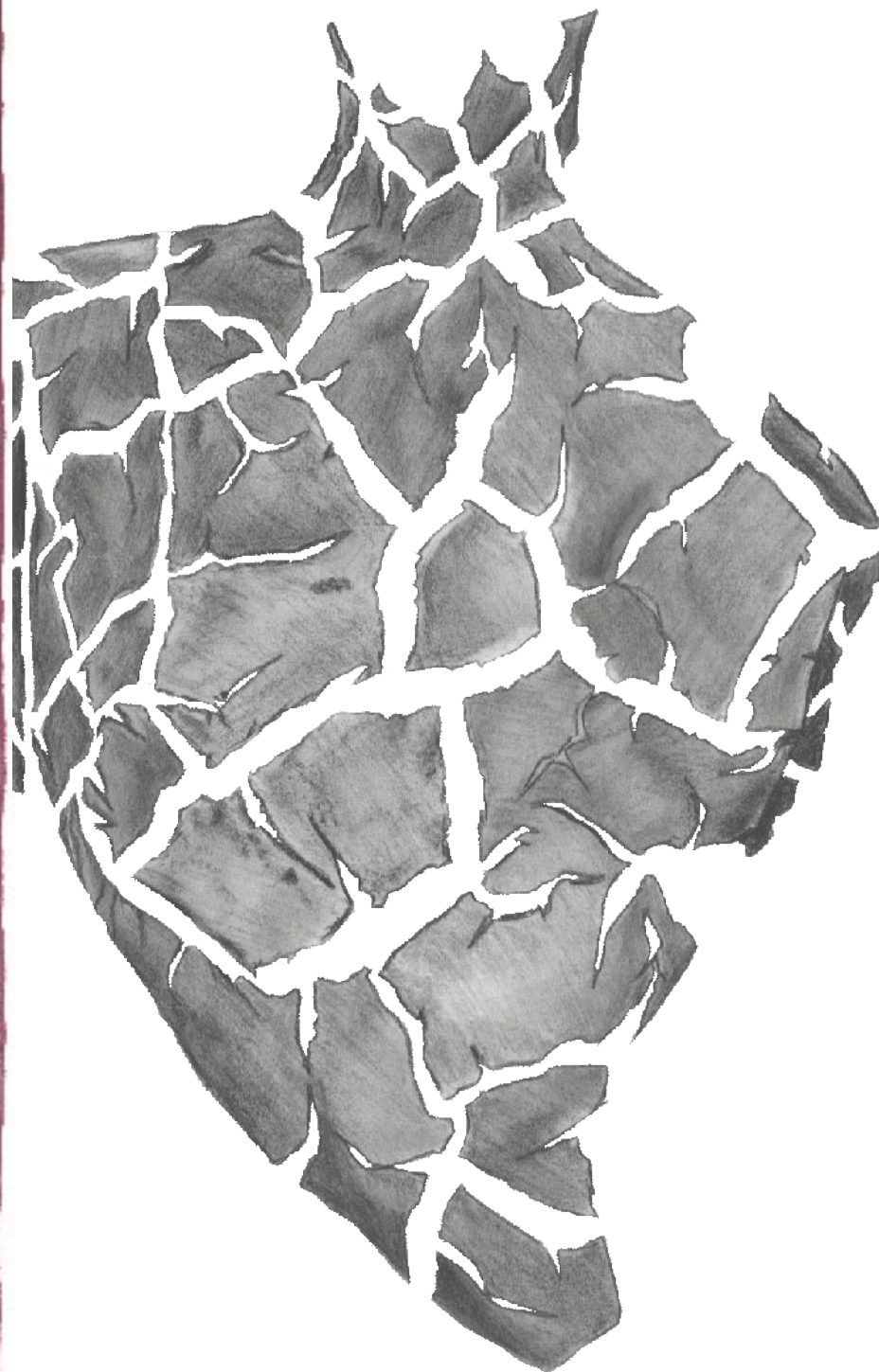
Composite

### 5th Year:

Fall 2010: Assistant Professor Mark Barnhouse

-Water Resource Station

# THESIS PROGRAM





### Knowledge, Value, Creation

The granted we take it for, all these things, and this world, is it a granted of necessity? Would human minds not be set out on an endless wild goose chase if all experiences presented themselves as new-if all was appreciated, wondered at, sought out and questioned? Would all not be perplexing and incommunicable if there were no such thing as convention? Possibly, for in a way the things in this world simply are and they can be accepted and communicated as such. It is communication itself which depends upon something steady, a standard which all have access to and which all can somehow agree upon.

To take the world for granted then, is a quasi reasonable solution and could be considered the primary necessity of the human being if it were not for the fact that humans themselves are not only receptors, but are also the sources of activity and of creation. Humans are becoming responsible for more and more of “what is”. An individual is the author of their own actions, ideas, as well as their art<sup>1</sup>. They are a chooser, yet the unavoidable repercussions of these choices cannot be chosen, and therefore these choices “imply responsibility”<sup>2</sup>. *There is no such thing as a mute act*. It is this very awareness of freedom with consequence which is at the heart of most modern anxieties, as the human “is a being condemned, so to speak, to create”<sup>3</sup>. It is this responsibility, these unavoidable repercussions of creation which seem to imply the need to peel back the granted and to to know what it is that one is doing and making. More importantly though, it reveals a need to have a reference from which to know what one ought to be doing and how one ought to be making. For in being responsible for one’s art, one is unavoidably confronted with the question of what makes a making good?

This thesis is therefore an attempt to unpeel the natural sense of granted which man takes the world and the things of this world. It is done in order to lay down a solid ground for responsible and ethical creation. By understanding how natural things are, how they come to be, and the values and knowledge which are imbedded in these happenings, one will be able to understand also the way making is, how it comes to be, and the values and knowledge which are also imbedded in these happenings.

1. ART (*techne*): “...know-how that permits any kind of skilled making...” (Aristotle, 1999)

2. (Chaput, 2008)

3. (Wojtyla, 1981)

### The Basis of Knowledge: Thinghood

Before one may be brought to a level of understanding with which they can successfully turn to answer questions in relation to making, and in particular to the question of making architecture, one must begin with the question of knowledge as a whole. This is more particularly a question of what is, and how one can possibly comprehend what is. It is a two-fold question, directed not only at the object which can be known, but also at the individual who apprehends the object. The answer to both questions converges with the notion of essences or thinghood, which constitutes a reality shared between the object and the individual.

This matter must be unfolded slowly, beginning first with a solid examination and explanation of the *thinghood* of things. As Joe Sachs explains, thinghood is **“The way of being that belongs to anything which has attributes but is not an attribute of anything else, which is also separate and a this.”**<sup>4</sup> This definition helps to outline a few prominent features of all things. It is a combination of three different ideas which must be pulled apart and explained separately.

Starting from the latter and moving to the former, it seems quite reasonable to explain thinghood as “separate and a this”. This statement is meant to mark the difference between parts and wholes. Thinghood belongs rightly to objects which are whole in themselves, such as a whole dog, or a whole person, it cannot necessarily be attributed to a part of a whole, such as a hand, or a paw. These parts always “belong” to something else. They do not make sense nor do they work properly without their relation to the whole. A hand cannot exist independently of the whole person. These attributes do have a stability and a knowability due to their universal<sup>5</sup> nature, but they do not maintain the independence of a whole necessary for thinghood.

This brings to the front the next part of the definition, which states that thinghood “belongs to anything which has attributes but is not an attribute of anything else”. Not only is a part such as hand an attribute of the person, but all accidents<sup>6</sup> are also considered attributes. Quantities and qualities are also attributes. These first two parts of the definition are rather intuitional, and are grasped naturally by individuals when they perceive things. Things are naturally seen as

4. Sachs, 1995

5. UNIVERSAL: “Any general idea, common property, or one-applied-to-many. It is never separate and can have no causal responsibility, unlike the form, which is a being-at-work present in things, making them what they are.” (Aristotle, 1995)  
(See Appendix for further explanation of universals)

6. ACCIDENT: Properties of a thing. It does not make a thing what it is, but can be added to or removed from the thing without affecting its substance. For example, one’s hair can be red or black. Either way one is still who they are. One can have a long nose or a stout one. This does not affect their humanity.

wholes independent of other things. This is quite clear. The first part of this definition though, is where much more attention must be given. Not only is it the more abstract portion of the definition of thinghood, but it expresses the heart of the metaphysical question, and will be the loop which this string of thought will be passed through over and over again. The definition of thinghood begins with the words: “The way of being that belongs to anything”. This statement implies a very important notion. **Thinghood is a way of being.** This means thinghood cannot be understood without the knowledge of the activity of a material. This is because in order for anything, even a rock to be what it is, it must not only have, but must sustain its thinghood. It must remain in activity.<sup>7</sup> At first this may seem counter-intuitional. To begin with, there are many things in this world which seem to be doing nothing, such as a piece of metal, or a clump of dirt.

The word activity, in relation to being, takes on a different light than most notions of activity. Typically the word activity seems to imply movements done by things, not within things. For example, some of the activities of a bird would be to fly, to pick at worms, or to squawk and caw in the early hours of the morning. Although these activities do reveal thinghood in a way, as a possibility of action which their way of being possesses, these activities do not define thinghood. At this point in time the word activity must be seen first in relation to the activity which all birds share, which is their natural course of growth and development from little egg to full-bodied bird.

It is this “unconscious” activity which is brought forth within all things by nature’s impetus which must be pursued at this moment. It seems confusing at first, for how can the immutable identity of thinghood be sustained by a constant activity, a constant state of change? It is because being is always a becoming. The little sprout of a spruce is still known to be the same thing as the towering spruce above one’s head, because that is what the seed is going to become. They are not different things, but they are at different moments on the same track moving toward the same end. Aristotle, in his *Physics*, explains this being as a becoming toward its end as “what it keeps on being in order to be at all (*to ti en enai*), and must be being at work (*energia*)...”.<sup>8</sup> Once again, thinghood is the way of being of anything.

What is this activity though, and why is it important in relation to knowledge? It is important because it is through the observation of

7. Aristotle, 1995

8. Aristotle, 1995

the relationship of the form of the thing to the activity, that the “way of being” reveals to the observer what the thing is. A thing is not necessarily known by how it looks, but rather by how it is, how it develops, and what it does in order to be what it is “informs” the thing to look the way it ought. necessarily known by how it looks, but rather by how it is, how it develops, and what it does in order to be what it is. All these things “inform” the thing to look the way it ought.

Things are known by their own movement toward the promise of what they will become. In a way then, knowledge is the apprehension of a promise of fulfillment which all things possess, as well as an observation of their pull toward that fulfillment. It will later be explained how these conclusions were reached, but the important part to realize at this point is that this *doing*, this activity which is particular to every kind of thing, is a movement which is ordered to a goal, and therefore orders the growth and physical form of the thing. Thinghood is a documentation of nature’s<sup>9</sup> process of making. It is this same way of “making”, which the person can in some ways also participate. As a creator, the person can become the movement of things, ordering them and making them into what they are.

### The Order of Things

It may be important at this time to elaborate on how natural things are ordered, or how this “impetus of nature” works within things. Aristotle, beginning with his observations recorded in his *Physics*<sup>10</sup>, deduces that the way natural things change must be ordered by four causes. These causes are as follows:

1. Material Cause
2. Formal Cause
3. Efficient Cause
4. Final Cause

The material cause of a thing is simply what the thing is made of. Take for example, a chair. Say it is made of wood, this is the material cause of the chair.

The formal cause is the shape of the thing. A chair would have a shape which would properly support a human body sitting upright. Along

9. NATURE: “The internal activity that makes anything what it is.” (Aristotle, 1995) This internal activity is not only the impetus for motion, such as one billiard ball striking another, but it is what continually guides the motion and growth of a thing, like a train set on a particular track.

10. This book, also referred to as natural philosophy, is devoted to Aristotle’s observation of material being (the world as observed by one’s senses), and focuses on the way which natural things change. The word physics in this sense refers to a part, or “field” of being.

11. It is very important to note how he ties both the shape of a thing and the workings of a thing into the same cause. This is very important and will be addressed later.

# THESIS PROGRAM

## THEORETICAL PREMISE

with the formal cause being the shape of the thing, he also states that it is how the thing works<sup>11</sup>. For example, this chair is possibly a rocking chair, which would then move back and forth by the gentle coercion of the foot. The curved form of the base would allow for the chair to work this way.

The efficient cause is the productive agent of the thing. This could be nature, or a human being, such as a sculptor, builder, potter, etc. In the case of the chair it would be a carpenter. The final cause is “that for the sake of which”<sup>12</sup> anything is.

The final cause of a chair is to be an object for one individual to sit upon. For Aristotle, the final cause is the most important of all the causes. This final cause is often referred to as the object’s “end”, or its *telos* (teleology). It is this cause which maintains an object’s identity. It is also through this cause that the thing will find its fulfillment. It is the final cause which is the most important for Aristotle because he believes all of the other causes act with a certain unity or conformity to the final cause, as it makes a thing what it is. For example, notice how similar the final cause and the formal cause of a chair are:

Final cause of a chair is to be an object for one individual to sit upon.

Formal cause of a chair is a shape which can properly support a human body as it sits upright.

It can be seen from this example how the formal cause, which is the shape and the way which something works, is set up in order to fulfill the final cause. Although this particular example already jumps into the realm of man-made things, and not natural things, it can be seen how any animal or plant seems to have a particular way of being, and the form of that plant or animal complements that way of being. This relationship between final and formal cause will be taken up later as the backbone for understanding the relationship between the form of an artifact and the use of that artifact. The four causes, especially the final cause of a thing is a way of knowing what a thing is, because these causes are what makes the thing what it is in the first place, they are the source of the thing.

12. Aristotle, 1995.

In reflection upon these ideas, one will see there are certain

implications to these notions. One must first take a closer look at what it means for something to be a cause, and to have a cause. Causality *affects* matter. It molds it into a particular form. Physics, which is the observation of material change therefore is the observation of the material affects of causality. Causality itself though does not seem to be found in the domain of the material. Physics can only show how things change, it cannot ever fully deduce the source of this change, nor the holistic meaning of this change. It can only go so far, it can only say so much. This also means one cannot point to causality completely in a sensible way. It is an important realization, to see that for the material world to present itself in the way it does, there must be more to reality than what meets the eye. It is this open door which leads Aristotle into his *Metaphysics*<sup>13</sup>.

### As Physics Ends, It Also Begins

At the time of Aristotle this possibility that there is more to reality than what can be pointed to in a physical realm was a given. The idea of the reality of ideas was no new idea. Aristotle's predecessor and teacher Plato developed a metaphysics which states there are two completely different domains of reality. There is a true reality, the world of ideas, and there is an impression of reality which is the reality as experienced through the senses. This reality which one sees and touches is only like a shadow of an image cast upon a wall. It is a *mimesis*<sup>14</sup>, a second rate-version of the ideal reality which one must cut through in order to comprehend the real<sup>15</sup>. The important part to which must be pointed out is that the "ideal" reality which Plato suggests does not have a face in the world which one experiences. The object in one's hand is an imitation of an ideal reality. One must therefore "reject" the concrete within one's experiences and rather transcend these experiences in order to reach the real-the purely ideal.

Aristotle, in his *Metaphysics*, rejects this split between the physical object and the ideal object. He produces instead a hyle-morphic theory of the relationship between the ideal and the physical. The object in one's hand contains a physical as well as an immaterial reality. **There is no reality without both the physical and immaterial.** They are separate, yet interdependent. For example, the apple in one's hand is an apple, it is not a copy of an ideal apple, nor could it be real without its physical existence. The apple which exists in the physical

13. "The term 'metaphysics' is used in the broad sense by all those who realize that, alongside the modes of knowing proper to the positive sciences, there is room for a mode of knowing that cannot be reduced to positive science but which nonetheless leads to necessary and universal insights and therefore must be called 'scientific' in an entirely different sense of the term."

(Luijpen, 1965).

"First, contrary to the sciences, metaphysics endeavors to arrive at an understanding of the more general structures of reality... Secondly, contrary again to the sciences, metaphysics endeavors to express the reality of the subject who creates and pursues the sciences." (Luijpen, 1965). Metaphysics therefore, is naturally the proper vehicle in which to understand this two-fold question: What makes things be? What allows the intellect to know the being of objects?

14. Reese, 1980

15. Plato, 1944

# THESIS PROGRAM

## THEORETICAL PREMISE

is the complete reality of that apple, the immaterial form itself is not sufficient enough to be called completely real. Nor is the word “apple” simply a label applied to random objects in order to sort them out in one’s mind. The thing has an identity independent of human consciousness. This identity is shared with all other things of the same sort. All apples contain all of the information needed to communicate its identity to an individual, yet ironically enough, this “identity” does not die when the apple rots to dirt. Every apple that ever existed or ever will exist will take part in the same identity, the same essence. So how does an apple fully possess an identity which persists after its physical destruction? The object must have a reality within both the physical and immaterial domain, but their realities must depend upon each other. The object cannot not be real unless it contains both a physical matter and an ideal form. From this Aristotle goes on to explain how this works, which is through an *entelechy*<sup>16</sup>.

A good example of how this problem presents itself is given by the artist Joseph Kosuth in his exhibit entitled “*One and Three Chairs*”. By placing a photograph of a chair next to a folding chair next to a definition of a chair, he looks to make a point that reality is a Platonic illusion. Reality does not exist in any of these “chairs” but rather in the mind alone. The only problem with this notion though, is that one can only sit on one of these chairs. Is a chair really a chair if one cannot sit on it?



Joseph Kosuth, *One and Three Chairs*. 1965. Museum of Modern Art, NY  
Retrieved from [www.moma.org](http://www.moma.org) 12/07/10.

16. ENTELECHY: “...the formative principle in which purpose and cause unite for a final end.” (Runes ,1959). In other words, the entelechy is a realization of a completeness in growth, or becoming. It is the knowledge of what something is meant to be, and the apprehension of the movement, or causality of that thing fulfilling its end.

# THESIS PROGRAM

## THEORETICAL PREMISE

It may be necessary to re-capitulate thus far what has been discussed and pair these ideas down to what is most important. There are four causes which affect things. Of these, the two which are most relevant to thinghood are the formal cause and the final cause. Aristotle believes the formal cause is drawn out in order to fulfill the final cause. The only proper way to understand the final cause is to realize that although it is the end, it is what begins everything, since all is dependent upon and related to the final cause. Joe Sachs, in his commentary on *Aristotle's Metaphysics* explains this by stating: "Every being consists of material and form, that is, of an inner striving spilling over into an outward activity. Potency<sup>17</sup>, and being-at-work<sup>18</sup>, are the ways of being of material and form." The final cause is the promise which coaxes the sprout from the seed, pulls the butterfly from its cocoon, and is felt in the human person as the urge for completeness, for beauty, and for understanding. It is the urge which brings persons to greatness. When one points to these urges, the internal pulls which oneself can easily acknowledge and lay claim upon, it begins to create a valid point that there must be something which all things are set out to become, there must be an end for the sake of which one yearns, for why else would there be a yearning?

To accept all of this though, you have to agree that the world, and the things within this world are guided by principles and ideas which are only fully realized in the physical thing. These ideas, immaterial yet independent of the individual intellect, reveal themselves as the causes of not only physical attributes and the ordering of parts to a whole, but also as the guide to the generation and development of that thing, which develops and grows in order to be and finally to stay that thing. The essence or thinghood of a thing are both the beginning principle and the end point. What begins, begins for the sake of its end. An essence then, is not only the fundamental and guiding principle behind the why and how of its parts, and its materiality in general, but it is also the principle feature which all individual things share in order to be called the same thing. It persists through time, and it is what is communicated to all individual intellects. Therefore ideas do not exist as creations of the individual mind but rather the intellect relates to and becomes "compatible" with reality and the ideas within reality.

17. POTENCY: "The innate tendency of anything to be at work in ways characteristic of the kind of thing it is: the way of being that belongs to material.

A potency in its proper sense will always emerge into activity when the proper conditions are present and nothing prevents it." (Aristotle, 1995)

18."The end and completion of any genuine being is being at work..." converges into being-at-work-staying-itself."

Being-at-work-staying-itself (*entelecheia*): "A fusion of the idea of completeness with that of continuity and persistence." (Aristotle, 1999).



### Artifact is Imitation

Having now explained the relationship between the intellect and natural things, it is possible to understand the analogous relationship which artifacts are intended to have with the things of nature, and which they must have in order to communicate an idea in the same way a thing of nature does. To begin with though, it may be important to state the difference between natural things and artificial things. Natural things are compelled toward motion from within, they are their “own sources of motion”.<sup>19</sup> Artifacts require an outside source of motion, they require an artisan to “inform” the object, to make it what it is and to bring about the formal and final causes. This is because they have different *arche*<sup>20</sup>. The only cause which is purely natural in an artifact would be the material cause, for the matter of artifacts is always borrowed from natural things which have their own causes and sources of motion. With this said it becomes clear how the creation of an artifact-although primarily dependent upon the artisan, is never a “pure” creation. Although the artisan does have to choose materials which already exhibit the natural qualities which they are looking to bring into play within their own creations, the way in which things are made, the causes which make an artifact and a natural thing are the same four causes. This is why one can use examples of the four causes of a chair as an analogy in order to help one understand the four causes within nature. The intellect appeals to these four causes in both natural and artificial things. It is for this reason that it is important to create and design in such a way as to fulfill these four causes, most especially the formal and final, because it is this which the intellect appeals, it is this which allows one to gather the essence from a thing. It is from this which knowledge is built.

### The Good, the Bad, and the Happenstance of the Ugly

The metaphysical viewpoint laid down specifically by Aristotle not only reveals the relationship between things and thought, but not so coincidentally also leads to the revelation of values in relation to these things and more particularly their ends. The metaphysical point of view is the scope which one can positively and objectively determine what is good and bad. By understanding things as being on this route to completion, this motion toward the fulfillment of what something aims to be, it seems fair to claim that if one can intuit what something

19. Aristotle, 1999.

20. ARCHE “sources of generation” (Aristotle, 1999), “principles of action in a causal sense, and principles of demonstration.” (Reese, 1980).

ought to be, one would also be able to intuit when something is not that, or when something is lacking. Aristotle calls this lacking a privation. A privation is basically the same as an incompleteness. It is a deficiency. For example, persons are typically healthy and well, when one is sick with the flu and therefore lacks the ability to do anything but lay in bed, they are suffering from a privation. They are not how they ought to be. A privation may be due to a temporary condition, or it may be a permanent one, such as a dog with only three legs. Most dogs develop four legs, therefore one with only three would obviously be lacking something that ought to be there. To be quite honest though, all things in the world are lacking. There is not one thing which is exactly what it aims to be. Nothing is completely perfect, for nothing can quite meet its end. All is simply on its way. How then is this end even intuited, if there is no fully actualized prototype to match things of the same essence to? That is a new conversation in itself, and therefore one will be allowed to simply wonder to themselves.

Privation is exposed within the thing's movement from potency to actuality. Potency is defined as:

“The innate tendency of anything to be at work in ways characteristic of the kind of thing it is; the way of being that belongs to material. A potency in its proper sense will always emerge into activity when the proper conditions are present and nothing prevents it.”<sup>21</sup>

This is juxtaposed with actuality, which is simply a fulfillment of the potency. Potency is closely related to the modern idea of a *potential*, for it is an activity which the thing is capable of doing simply by its essence, but it is different from the idea of potential in the sense that potency will be actualized if nothing prevents it, whereas potential is more of an idea of a something that could happen, not that will happen.

Different things have different ends, therefore they have different potencies. For example, an apple cannot think. It never will be able to, for it is not a potential which its essence can ever actualize. A person on the other hand, only actualizes its potency through rational thought. Aristotle's “Metaphysics”, by being able to intuit a potency and the actuality of that potency within things, allows one to evaluate something and say “this is doing what it is supposed to do”. One can also see when something is missing, “this tree is lacking something” or “this cat seems off”. All things which have the same essence, have the

21. Aristotle, 1995

same identity, and their goodness can be measured in relation to their essence. Likewise the physical form of the thing, in being ordered by this essence, exposes what is good or bad in a physical way. The physical form of a thing can then be called good or bad, but only in regard to the physical domain of this value. which a small portion of a value spread over all domains of being.

The metaphysics of Plato idealizes essential forms in such a way that there is no room for differences. Aristotle does not. Plato's thought made no room for the particular thing itself to become good in relation to anything in its environment. As is seen in nature though, this cannot be the case. It is only by understanding the flexible relationship which essences have to the physical form of things that one can see that what it means for something to be "good" in one situation does not mean it is good in another. A tree leaf, for example, changes its physical form from one climate to the next. The edges of leaves from tropical climates usually have smooth, or "entire" edges, as well as a smooth and waxy texture. This makes it perfect for shedding precipitation and moisture build-up. Leaves in colder climates though have very different qualities. They have leaves with toothed margins and rough skin.<sup>22</sup> Rather than being bound to the form of a particular leaf, in order to be or remain a leaf in its particular environment, it has to change its physical form.

One can also take this notion of fulfillment as being what is good and the lacking of the fulfillment as being what is bad and tie it into human creation. It is this way which will be focused on throughout the rest of the thesis. Just as all natural things have an essence which forms its identity, artifacts also have at least a quasi-essence, which communicates its identity. This artifactual essence always has its end tied to the human being. The person takes *things* and makes them personal. In this light, the fulfillment of that object, its goodness or badness must always be seen as it relates to the person, and more particularly how it relates to the end of the that person. Artifacts are the means to an end which is not in themselves, but in the human. Take a chair as an example. It is an object made for one individual to sit on. Not only does the quality of the chair depend upon a certain durability, but it depends upon a usability in relation to a particular individual and a particular 'way' of resting. A chair made for a child is good for a child, not for an adult. A soft plush chair is good for reading, not very good for avoiding sleep.

22. Levin, 2006

Due to this, the value judgments about artifacts must inherently carry with them a solid understanding of the human person. There is no other way one can determine an artifact's true end. If one does not know what a person ought to be, how can one know what something made for a person ought to be? This is also what allows the creation of an artifact to be freed from the somewhat "functional" and engineered movement of nature. It is this which opens up the creative act and brings it to the realm of art, and the apprehension of beauty. *It is only because the human end requires a fulfillment of wonder and interior depth that artifacts can become preserved from brute functionality.* The human being finds its end in contemplation<sup>23</sup>. What this implies is that although brute functionality may in some ways serve nature best, as nature does nothing in vain<sup>24</sup>, it does not necessarily serve the human end in the best way. It is through the question of aesthetics that these two ends expose themselves in unity, that of the object and that of the person.

In order to fully develop and defend this thesis, it will be important to cover the impact of the metaphysical viewpoint on questions relating to aesthetic judgment. Anna Teresa Tymienieka asserts this when she states: "The metaphysical qualities play a salient 'aesthetic' role in the work of art. 'the polyphonic harmony', Ingarden says in summary, is 'precisely that 'aspect' of the literary work of art which, together with the metaphysical qualities (which come to be revealed in a work of art) that makes the work a work of *Art*.'"<sup>25</sup> It is only because art possesses and expresses a metaphysical reality that it can become a *complete* beautiful experience.

Having primarily covered Aristotle's conception of metaphysics, it seems proper to also dive into aesthetics through his account of poetics, which is derived from his metaphysics. As said before, the metaphysical viewpoint allows things to be seen in virtue of what they promise to be. It is this very idea of a promise, or rather a notion of how a reality could pan out, which creates the fundamental position for art. As stated by William Reese, "In the *Poetics*, Aristotle advanced the idea that a work of art is an imitation of the possible or probable, not of something actual only, thus expanding Plato's doctrine of imitation (*mimesis*)."<sup>26</sup> He later goes on to explain that the way in which beauty deals with reality is through the essential and the universal, not through the particular, which is a job left to the historian.

23. CONTEMPLATION

(Theoria): "To know is not to achieve something new, but to calm down out of the distractions of our native disorder, and settle into contemplative relation to things that are already ours."

Aristotle, 1995.

24. Aristotle, 1999.

25. Tymienieka, 1962.

26. Reese, 1980.

He states “Aristotle’s expansion of the criterion for beauty in fact stressed unity in variety, an organic unity with no inessential features.”<sup>27</sup> It is this possibility and this universality which one is transfixed by. All experiences of art make sense in their own particular and unique way, but they all makes sense in relation to the same universal truths which they point out.

### Conventional Symbolism

In having first dealt with the knowledge of things in direct relationship to the individual, it is possible to speak of the way this knowledge is communicated between two individuals. Although art and artifacts do communicate themselves directly to others, there is a way of communicating the knowledge about these objects without their actual presence. Through words and their formation into language, the essence of something can be communicated. This communication is called articulation (*logos*), which is explained as “The gathering of speech of the intelligible structure of anything, a combination of analysis and synthesis...It can refer to anything that can be put into words...or to the words into which anything is put.”<sup>28</sup>

Words and language, although always being subservient and dependent upon the reality of the things to which they refer, are important and necessary in order to communicate knowledge from one individual to another (a more detailed explanation can be found in the appendix). It must be accepted that the knowledge which is sought out rigorously through the contemplation of an actual thing can often be communicated clearly by another individual through a simple definition. There is a clear value to words, and also to symbols<sup>29</sup> in general. *This value is only in relation to the thing itself, and does not create or replace the reality of the thing.* For example, by referring to a dog as an elephant it does not make that dog an elephant, it just destroys the validity of the word and makes everyone confused.

27. Reese, 1980

28. Aristotle, 1995.

29. “In religious thought and practice, symbols are commonly regarded as sensuous representations of a transcendent reality. In systems of logical and scientific thought the term is normally used in the sense of an abstract sign.” (Reese, 1980).

# THESIS PROGRAM

## THEORETICAL PREMISE

Summary:

The metaphysical viewpoint, differing from the typical materialist<sup>30</sup> mindset, supposes there is more to reality than what can be tested, prodded at, and exposed through a physical verification. This is because Aristotle, through his study of physics concluded there must be more to reality than what physics alone can account for. Although metaphysics has seen its fair share of criticisms and barely utters a word within the educational context of this generation (which will be explained in the historical context of this thesis), there is far too much about the experiences in one's life which points to the sensibility of metaphysics.

One may not be able to "prove" the validity of metaphysics by scientific standards, but without the possibility of metaphysics the most important questions drawn from one's own experiences become prey to the verification process of scientific standards. Understanding and intelligibility become transformed into descriptions of material behavior or abstract mathematical formulas which have no true necessity or cause. Without metaphysics the reasonable bridge to the unseen is completely circumvented. One is then asked to take on much of their experiences either as an act of faith or with uncertainty and doubt.

Metaphysics is this bridge which exposes the knowledge relationship between the person and the thing. Things have an individuality, and yet they have an identity which can be shared by other things. This identity is stable and universal, yet it can only be fulfilled through the particular. This identity, this essence or thinghood, is exposed through the growth and development of the thing. This development is induced by the four causes. Of these the most important is the final cause, which necessitates the formal cause. It is the final cause which defines what a thing ought to be, and the

30. MATERIALISM: "Any set of doctrines stressing the primacy of material over spiritual factors in metaphysics, value theory, physiology, epistemology or historical explanation."  
Reese, 1980

# THESIS PROGRAM

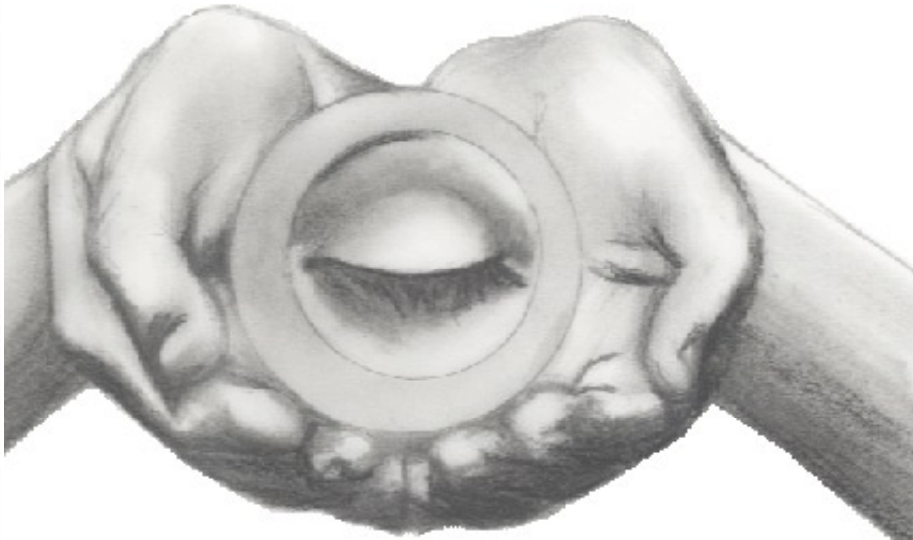
## THEORETICAL PREMISE

subsequent lack or fulfillment of that particular thing. It is in relation to the final cause that one can create values and ethical judgments. It is in relation to the final cause that one can determine if they are using things in relation to how they should be, or how they were set up to be by their own natures. When the final cause is lost and the end is no longer in sight, all one is left with is qualities and quantities which can be manipulated and used to whatever end the human being finds useful.

This orderliness and causality which is found in nature can also be mimicked within the artifacts created by the human person. When human creation does mimic the creative order within things, it also mimics the communicability which natural things offer to the human intellect. Therefore, in order to create an artifact, and in particular an architecture which is communicable in itself, it is important to design it in within a metaphysical context. This metaphysical context is one which allows the formal, efficient, and material causes to become subservient to the final cause, as it is with nature. If the architect mimics the intelligible structure of nature within their work, the purpose of the architecture, or what it is, will expose itself. This purpose will also expose any lack or fulfillment within the architecture. It is this lack or fulfillment which will correspond to the apprehension of beauty and ugliness.

Although layers of conventional symbols may be added to or drawn from the form of the architecture itself, it will not be necessary to use these symbols in order to communicate what the work of architecture is once built.

**THESIS PROGRAM**  
TYPOLOGICAL RESEARCH





# THESIS PROGRAM



Daylight Museum: Exterior View



Entry to Museum



Interior View of Museum

## TYPOLOGICAL RESEARCH

### Case Study #1

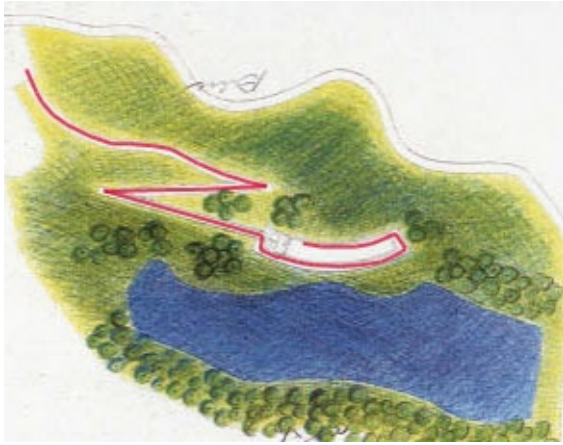
#### Daylight Museum

Located in Gamo, Shiga, Japan, the Daylight Museum designed by Tadao Ando was completed in 1998. The museum is dedicated to Japanese Artist Hiroki Oda. This artist worked primarily after the war in conditions that lacked the necessities such as water, gas, and electricity.

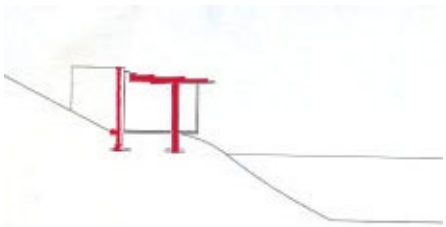
Due to this, he could only create his work using natural light. This inspired Tadao Ando to design the museum in a way that would light the works using only natural daylight, "...thus making the building harmonize with the life of the artist."<sup>1</sup> In order to do this, light is brought in from skylights in the arched ceiling. The layout of the museum is very simple, consisting of a long curved hallway which the artwork is exhibited. An exterior hallway runs parallel to the actual museum.

Like three of the four case studies examined, this museum is designed by Tadao Ando, and is located in the same region of Japan. I wanted to eliminate all possible variants for these case studies in order to expose how the environment of the particular museum, be it for a certain artist, or a specific area of study, can produce very different forms of the same idea or typology-museum. Therefore what is uncommon with the other cases is always who or what this museum is built for. This particular museum is built in order to pay homage to Hiroki Oda, and this is done by displaying the work in a way which is consistent with how he created the work.

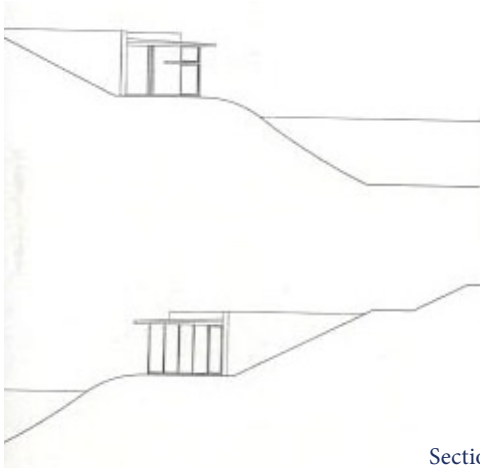
# THESIS PROGRAM



Site Plan and Circulation Path



Structural Analysis



Sections



Elevation

# TYPOLOGICAL RESEARCH

This project is a response to the environment, society, culture, and politics by one simple choice; to use daylight. The reason Tadao Ando chose to use daylight is because that is how the artist *had* to work, it references a specific time in Japanese culture, one which was impacted by war in such a way that it lost the typical comforts of life. The lack of artificial light in the design becomes a metaphor for the poverty and the lacking which affected the entire culture of that time, both physically and spiritually. It implies a sense of helplessness as all of the amenities which the human creates can be so easily taken away.

## Design Analysis:

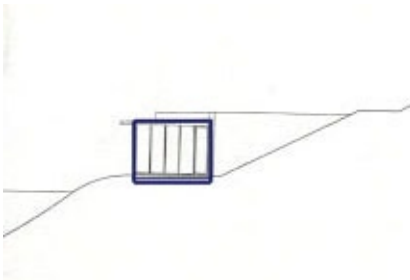
As stated earlier, the design is based upon the use of only natural light in order to design the museum. This intent informs the structure, the mass, circulation and geometry of the gallery. In order to direct the right amount of light into the gallery, the architect designed an arched concrete wall which balanced the roof structure upon itself in the shape of a T. This allowed the roof to be pulled away from the other wall. This also informed the mass and geometry, for everything had to be oriented toward the sun, taking on the arc of the sun path, and stretching out into a channel in order to allow light to reach every part of the museum. The individuals visiting this gallery circulate from the outer hallway into the inner gallery in a back and forth motion. Although both the gallery and the adjacent hallway are symmetrical to and mimic each other, the gallery takes precedence due to its larger size. This hierarchy also instills a sense of procession and destination.

# THESIS PROGRAM

## TYPOLOGICAL RESEARCH

This particular case study shows a design which bases its intent upon the content of the work within, as well as the time and culture where these works were created.

This case study, aside from making a contribution in conjunction with the next two case studies, also makes a contribution to the theoretical premise in a particular way. With its simplicity of form and spaces, it creates a clear and easily understood relationship between the intent of the architect and the form which instills this intent. While larger works of architecture in being so complex usually lose their intelligibility in this sense, the simplicity of this structure brings about a purity and unity. These are ideas which will be attempted within this my design thesis, in order to clearly communicate a knowledge.



Plan to Section Study: Inverse

# THESIS PROGRAM

## TYPOLOGICAL RESEARCH

### Case Study #2

#### Shiba Ryotaro Museum

The second case study, also designed by Tadao Ando is located in Higashiosaka, Japan. It was completed in 2001. The museum is designed as a memorial to the Japanese writer Shiba Ryotaro. It is placed next to the writer's house. The museum is lined from head to toe with the books which the writer collected. The walls are three stories high, and run parallel to each other. "What the design seeks to do is to create a space that will materialize Shiba's theories and simultaneously provide a home for the extensive collection of books he amassed."<sup>2</sup> Aside from two levels dedicated primarily to the books, the museum also houses an auditorium in the basement level. The main level and first level are tiered back, exposing the large walls as whole units as they terminate into a large stained glass wall.

Again, this museum is designed by the same architect, and is placed in the same region. It also bears a large formal resemblance to the daylight museum, in its curved corridor shape. Ironically enough though, these two museums seem to create very different impacts. The daylight museum gives its meaning within a subtle stream of light, where the Shiba Ryotaro museum uses the repetition of the same simple object over and over again in order to create an overwhelming and monumental impact.



Shiba Ryotaro Museum: Entry



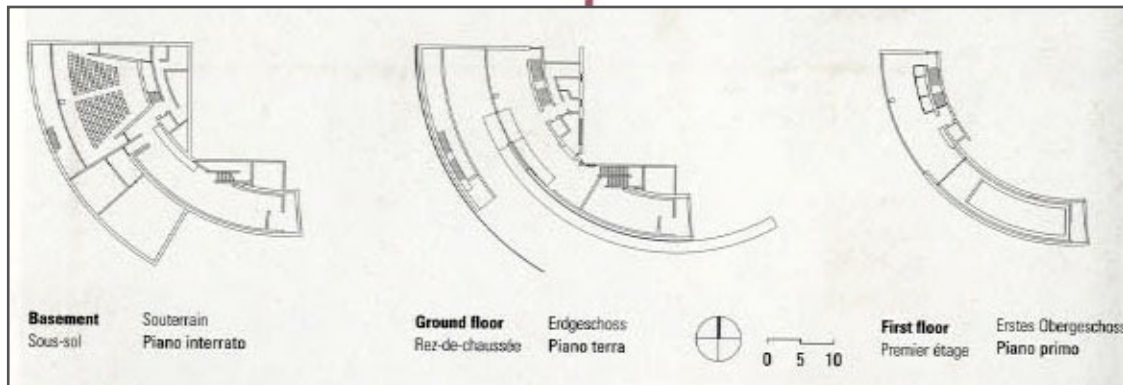
Interior View Glass Window

2.Asensio, 2003

# THESIS PROGRAM



Interior View



Floor Plans

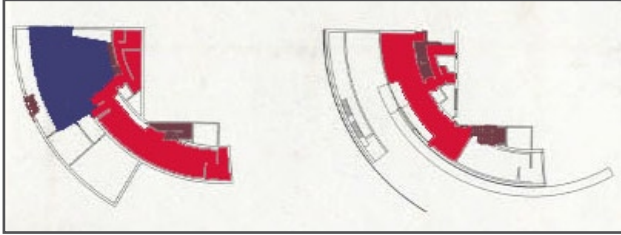
## TYPOLOGICAL RESEARCH

Although this museum does not respond to the environment through the meaning of the museum itself, which is concentrated on the exposition of a large quantity of books, there are subtle ways in which the architect uses the environment in order to express this idea better. He sinks the entire museum down one level, as if trying to show the large amount of books as a weight which sinks into the ground. He also chooses to channel all of the natural daylight through one large stained glass window which is sandwiched between the two large book walls. In an act of “monumentalizing” the collection of this writer, the architect is trying to pay homage to, and monumentalize the writer himself. He is trying to stamp his place into society and a particular moment of culture within that society.

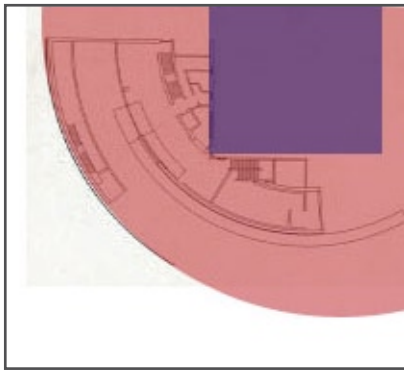
The museum bears most of its structure within the same two walls which house the books. Intuitively this is the most practical, as they bear the most weight themselves, and they have the shortest distance between them for the roof to span. The only natural light is brought in by the three-story stained glass window at the far end of the museum.

The massing is done in such a way as to juxtapose the large book walls with the emptiness of the space within, and this is complimented by the thin glass walls which fill-in the rest of the walls, as well as create the protected entry for the museum. In viewing all three plans together, it is rather easy to

# THESIS PROGRAM



Three main elements: Museum, circulation, and auditorium



Basic Geometries



View toward tiered first and second level

## TYOLOGICAL RESEARCH

understand the elevation and sectional elements present within the building, as they are pretty simple and straightforward. The circulation within the building occurs within stairs which burrow through both of the book walls. There is also a thin walkway which lines the outer walls on the first level, allowing better access to all of the books. The geometry of the building is quite simple. From the plan it looks like a circle which has been quartered, and a square subtracted from the center. The main focus of the museum is the museum space itself, as it is opened up for all to see and spans all three levels. The auditorium seems to be present more for the sake of utility than expression, and the stairs are tucked away as to remain unobtrusive and follow the form of the rest of the building, creating a part to whole relationship between the stairs and the rest of the museum. The use of repetition is strong within this design, it is what makes it what it is. It is not the use of a typical architectural element which creates this repetition, but rather the books are used in an architectural way, creating the appearance at first of being almost like a wall treatment.

This case study shows the relationship individuals have with their artifacts. They are not merely devices of utility, but they are “humanized” in a way which elevates them above the objective and into the realm of symbolism. After this research, it is understood that it may be important to expand the theoretical premise in a way which address the personal meaning which artifacts bear.

# THESIS PROGRAM

## TYOPOLOGICAL RESEARCH

### Case Study #3

#### Forest of Tombs Museum



Forest of Tombs Site



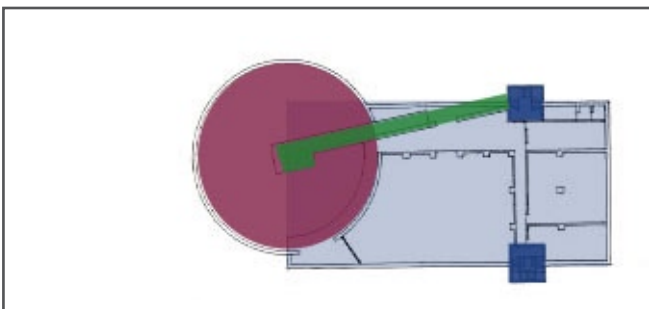
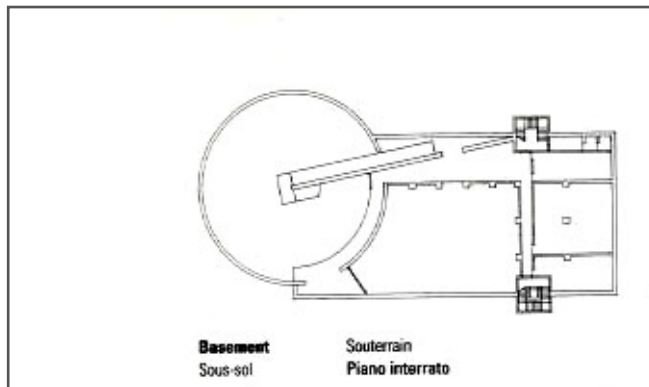
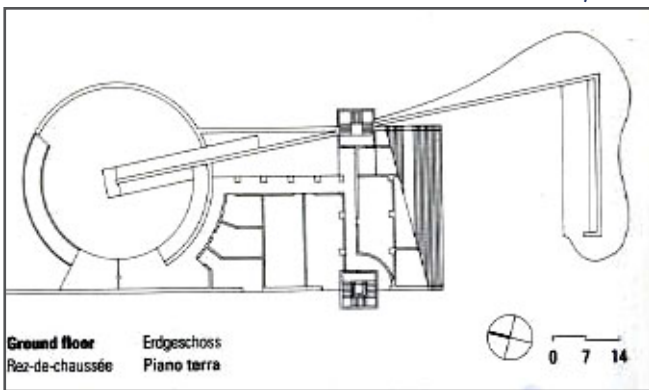
Exterior View

The Forest of Tombs Museum, designed by Tadao Ando is located in Kamoto Kumamoto, Japan. It was finished in 1992. The museum is dedicated to the Iwabarū burial mounds which are located in this particular region of Japan. The burial mounds bear much historical and cultural significance for the people of Japan, and the museum seeks to pay homage to the ancestral roots which are housed at this site. The museum, set at a distance from the tombs rather than being placed amongst the tombs creates its meaning by creating a distance, an openness, and an emptiness. This openness and emptiness is mimicked through the entry, which is formed by a large plateau which rests on top of the building, creating an emptying overlook toward the graves. The circular courtyard within the building also translates this emptiness through its stark materials and lack of decoration. The museum consists of display areas for the artifacts, as well as the courtyard, plateau entry for viewing, and L-shaped circulation wall which pierces through and connects all of these other elements.

# THESIS PROGRAM



Entry View



## TYPOLOGICAL RESEARCH

This case study bears much in common with the two previous studies, including similar compositional elements like sweeping curves and simple undecorated building materials. This design attends to a much different meaning from the other two though, and is expressed through the architecture. Where the daylight museum expressed itself in subtle poverty, and the Shiba Ryotaro Museum expressed itself through the use of the monumental, this museum expresses itself through its creation of an emptiness and a distance. One does not experience the tombs first hand, but only look on from afar, like one's relationship to death itself. It seems then that between the three case studies the entire scale from that of nothingness to overwhelming is covered, all by the same architect, within the same region, and serving the same typology.

This study responds to the site by distancing itself from the tombs, realizing their importance and their sacred nature, he decides not to touch, but to simply become an onlooker. This environment is created by the social and cultural practices of the time, meaning the decision to respect a burial mound is a reaction to all three, for the environment *is what it is* due to the culture.

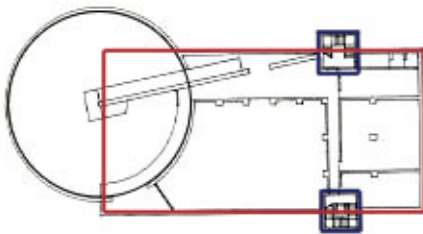
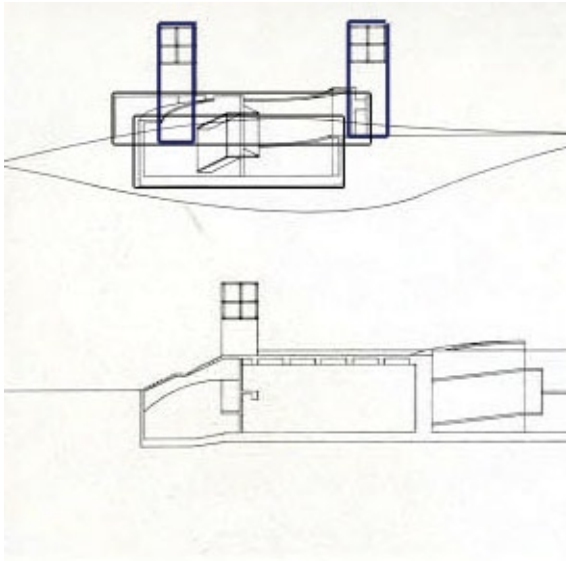
Analysis:

The most prominent element used in this design is concrete, cast on-site. The curved concrete walls and rectangular posts are topped off with glass and steel railings and walls. Natural light is allowed in through these glass and steel "tops". The massing is quite clear, as all the shapes used within this design are quite primitive and they are brought together in ways which maintains the integrity of each element. Of all the three case studies, this particular one requires the most integration of both plan and section in order

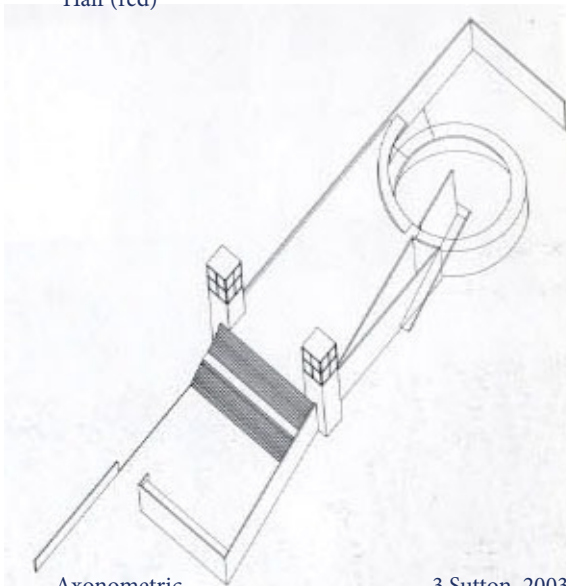


# THESIS PROGRAM

## TYOPOLOGICAL RESEARCH



Plan to Section Study: Inverse (blue) and One-to-Half (red)



Axonometric

3.Sutton, 2003

to understand the circulation system of the building. In some areas, large monumental stairs are used, where other areas use gently sloping ramps to move from one area to the next. The ramps can only be understood through both section and plan. This blatant use of primary geometric shapes creates a hierarchy of procession, as each area is clearly delineated from the next. Although the area which artifacts are viewed is hidden under the ground and becomes somewhat secondary, this allows for the presence and view toward the graves to take precedence, thus the entry is probably one of the most important elements of the architecture.

In conclusion, this particular case study is the best example of the unity of the end of the architecture relating to the human end. Not only literally by its relationship to death, but its relationship to the symbolism and the cultural importance which human beings continually pull from the experience of death. Humans are symbolic creatures, and these symbolisms are developed from universal experiences. This is a great example of the use of symbolism as an instructor to the form of the building. As Tiffany Sutton states, “While public art museums often can at best adopt a laissez-faire approach to therapeutics in times of crisis, part of the continued legitimation, still therapeutic, owes to their success at addressing more timeless human conditions. Representations of them, ideal and otherwise, can be found in individual artworks.”<sup>3</sup>

# THESIS PROGRAM

## TYPOLOGICAL RESEARCH

### Case Study #4

#### United States Holocaust Memorial Museum



The final building analyzed in this case study is the United States Holocaust Museum in Washington, D.C. It was designed in 1993 by architect James Ingo Freed. This museum is designed as a memorial for a particular event in world history. It is geared to preserve a “global” memory, for the holocaust affected and still affects all members of society. If this affect is not direct, then it is through the ethical dilemma which one must ponder. As it is stated, “...the Holocaust is the central problem of the twentieth century and the most important, unanswerable question posed about human nature.”<sup>4</sup>



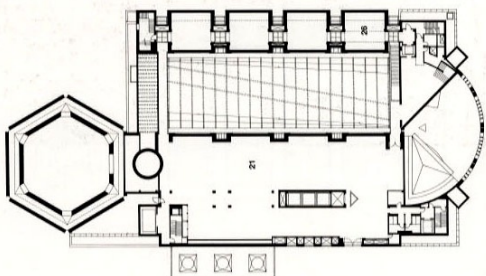
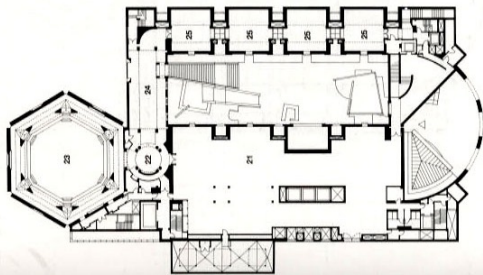
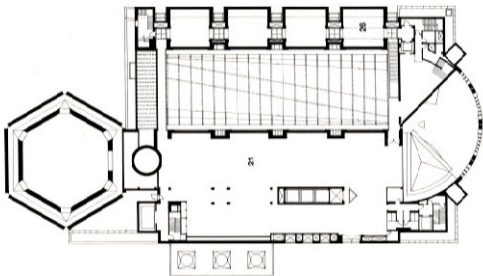
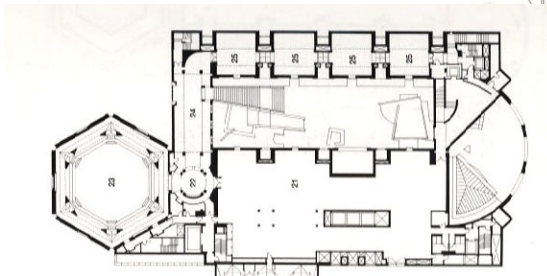
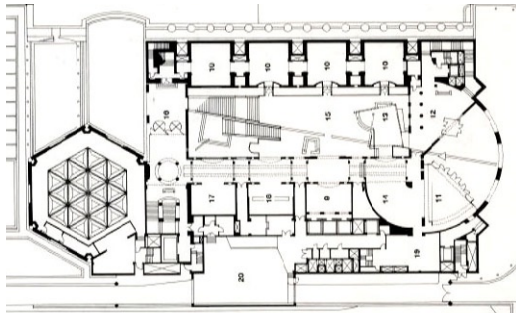
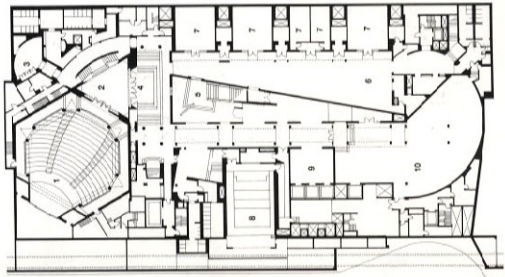
Aside from the typical exhibition spaces and amphitheatres, conference rooms, archive spaces found in most large museums, the Holocaust museum has a few unique elements. In order to address the events and preserve the memory of the holocaust, the architect Freed incorporates some unique elements to design. The first unique element is the tower of victims. It is a three story hallway which is filled from top to bottom with pictures of victims who died in the holocaust. The second unique space is the survivor’s registry room. Finally though, the surprisingly unique circulation spaces within the museum are what make the museum resonate. They are large, empty lobbies and hallways which are detailed with dark grey concrete and cold steel. One could easily be transported to a somber mood simply by wandering lost through the hallways of the museum for a while.



Top: Tower of Victims  
Middle: Interior Circulation Space  
Bottom: Shade and Shadow Detail.

These construction elements are complimented by the stark shadows which these rigid geometries cast upon the interior. One is lost in a sea of grey. For some reason there is nothing more evocative of the emotion of the holocaust, or even to loss in general than the color grey. It is the emptiest color.

# THESIS PROGRAM



(51)

Top to Bottom: Basement to Fifth Floor

## TYPOLOGICAL RESEARCH

In relation to the other case studies, like the Shiba Ryotaro museum, the architect uses the repetition of a common object—this time photographs within the tower of victims to produce an impact. In this case though, the meaning seems to be less symbolic and more tied to the experience itself. To glance at hundreds of faces, hundreds of individuals with their own individual worlds and to know they have all been blotted out seems to create a much different reaction than any wall of books. Like the Forest of Tombs Museum, this one also deals with the nature of death. It therefore unavoidably expresses some of the same characteristics of distance and void, yet there seems to be a bit more anguish to the architecture of the Holocaust Museum.

Unlike the other three case studies, this museum is very large and has a very complicated program. Due to this, it is also harder to understand the relationship of the entire form to the main idea or “essence” of the design. This is quite common in such large designs. Consisting of six levels and close to 40 separate spaces, the design is complex and much harder to understand as a whole.

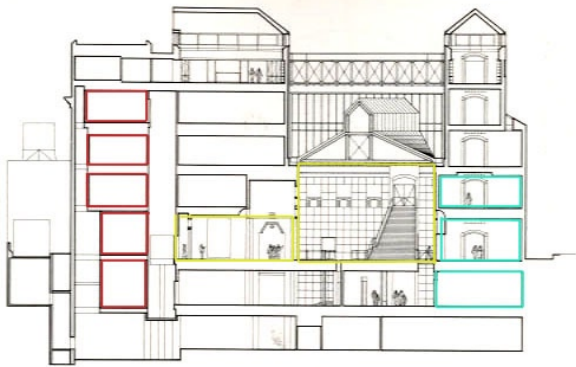
The Holocaust Museum responds to the site by “fitting” in with the monumental feel of the rest of the buildings which it is placed. This is done through its grand entrance which covers a good fifty percent of the front façade. The second way in which the building responds to the environment is in the way it is designed to allow the sun to cast rigid and intrusive shadows throughout the entire museum. The museum is hinged upon making and reacting to society, and more particular to a politic. It is nothing but a very large statement to and of society.

# THESIS PROGRAM

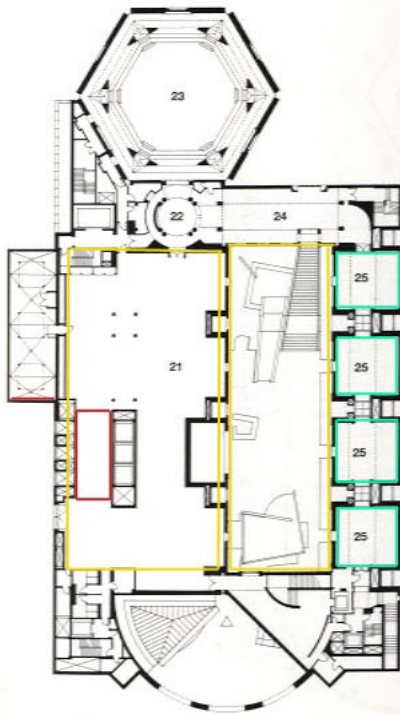
## TYPOLOGICAL RESEARCH

The steel structure and the natural lighting work together within this design to create a unified effect. It cuts apart and dissects an otherwise large empty mass of open space. The circulation within this museum is given an atypical hierarchy to the exhibit spaces themselves, and this hierarchy is expressed in the amount of square footage allotted to the circulation spaces. Along one side of the museum the rooms are assembled with a repetitive geometry both horizontally and from one floor to the next. Along the other side of the building though, the spaces are unpredictable and take on a puzzle-like assortment.

This case is important because unlike the other cases, it shows a thoughtful and powerful response which still successfully fulfills a complex program and the needs of many different visitors. It exposes many of the technical considerations which must be addressed in museum design.



Cross section through Hall of Witness



Second floor

Plan to Section Study: Unit Contained in Whole

### Summary

Museums as a typology are always of interest, for its purpose is always in relation to something outside of itself, something particular. There is no such thing as a “general” museum. The object within determines what the museum is. Even when one compares museums by the same architect and from the same region, they all present themselves as museum in a different and unique way. They also offer a way to evaluate the goodness of a design in relation to its particular purpose. If Tadao Ando had decided to line the daylight museum with thousands of books, it would have made no sense and could easily be called lacking. In this regard one may also take the same outlook toward the way many architects apply style or a “neat” idea into a work of architectural typology which has no relevance whatsoever to the style or idea they are imposing. All four of these case studies avoid using inherited style and rather use the intent (end) of the design itself to generate their forms.

In reviewing these four museums, it becomes more apparent what the purpose of museums are in general. Yes, they store, preserve, and display objects, but why do people care to do this in the first place? What is the value of a museum, what human tendency does it expose? The value of a museum lies in one’s concept of time, or rather of one’s rebellion against time. Humans have an awareness of the passage of time, and the effect this has on the stability of their own lives. Time is a greedy friend, and what it takes it does not give back. People feel a need to preserve due to this awareness. It is an act of self-defence. They know that if they do not take care of things, of tangible memories, these too will be lost to time.

# THESIS PROGRAM

## TYPOLOGICAL RESEARCH

In relating the smaller museums of Tadao Ando to the complexity of the Holocaust Museum, it is apparent how as the program grows it becomes more and more difficult to keep all of the strings “tied together”. Although this theoretical premise may work well for smaller designs, it may be much harder to fulfill complex programs through this intent. Although three of the museums were located in Japan, there were different reactions to the site, especially when the site was the reason for the design, such as the Forest of Tombs Museum. The social context affected the typology of the museum in the sense that the Holocaust Museum, being placed in the heart of a large city, needed to match up to this muscle and become a larger vessel. The population size itself seemed to affect the typology of the museum. Also, it seemed like if there were a greater quantity of visitors there was also a greater complexity of programs. Where more people went, more was offered. This also creates a more intricate development of spatial relationship and circulation, which implies a more complex mechanical system and safety standards.

**THESIS PROGRAM**  
HISTORICAL CONTEXT



The historical context of this thesis will not only briefly explain the development of metaphysics after Aristotle, but it will also be paralleled with examples from architecture as they relate to and question the topic. Not only does the question of knowledge concern philosophers, but it is a fundamental backdrop for artistic creation.

Aristotle to Aquinas:

Prior to Thomas Aquinas, the work of Aristotle had been practically forgotten for hundreds of years, almost lost to the tumults of time. The medieval philosopher Thomas Aquinas translated the works of Aristotle and refined them in a way which would compliment Christian Theology, which was the backbone of medieval culture.<sup>1</sup> The value of this refinement lies in Aquinas' ability to adequately parallel the works of a philosopher who relied mainly upon his own experiences with a theology which presupposed knowledge via "divine revelation".

Aside from expanding upon Aristotle's ideas of *essence* and *existence*, Aquinas also developed the concept of universals into a more comprehensive thought. Although Aquinas did develop Aristotle's theories into something more, he did not seek to contradict most of the things developed within his writings. He was always expanding, rather than contradicting.<sup>2</sup>

1.Flood, 2010  
2.Flood, 2010



# THESIS PROGRAM

## HISTORICAL CONTEXT

Aquinas' most prominent work, the *Summa Theologiae* was finished in 1273 and Scholastic philosophy was also at its height during this time. Medieval architecture was also affected by the same zeitgeist which influenced Aquinas' philosophy<sup>3</sup>. The Gothic architecture of the thirteenth century manifest this union of a metaphysical causal mode of making with the Christian sentiments of the time. Imitating the order of things themselves, Gothic architecture is considered one of the most "authentic" styles developed throughout history.<sup>4</sup>

- 3. Flemming, 2005
- 4. Smith, 1983
- 5. Flemming, 2005



The form of Gothic architecture is determined by what purpose it has. Through an honest use of materials and an unabashed exposition of its structure, the Gothic Cathedral embodies an expression developed from the metaphysical current of the time. A great example of late Gothic Architecture is embodied within the Milan Cathedral in Milan, Italy. Construction began on the Cathedral in 1386.<sup>5</sup> If there were to be any piece of architecture which seems to express an internal urge, or a life of its own, this would be it. It is as if the whole cathedral is caught up in this tension between heaven and earth, pulling weighty stone both upwards and down. It takes on the feeling of incense, as the stone is both rich and light, both bitter and sweet, rolling up to heaven like the prayers within.



### Rationalism

Although there were many different theories and philosophies regarding the question of knowledge between the time of Aquinas and the seventeenth century, the ideas of rationalism had the largest impact upon culture and philosophy. It was an impact that created a breaking point between the current philosophies and the ones developed up to that time. During the seventeenth century, scientific knowledge had developed in such a way as to cause people to “reassess” their place within the cosmos.<sup>6</sup> Geocentric ideals were replaced with the heliocentric relationship between the earth and the heavens. There was also a realization of the mathematical and rational predictability with which the world could be dissected. As William Flemming states, “The rationalism of the seventeenth century was based on the position that at long last the universe could be understood in logical, mathematical, and mechanical terms.”<sup>7</sup>

Of the most prominent philosophers of that time, Rene Descartes (1596-1650) is considered the “representative” of idealism, and “Like everyone in that age, he doubted everything, even his own existence.”<sup>8</sup> Idealism, which flows along the same strain as rationalism, creates a separation between the thing and thought. Instead of insisting that the object itself is the reality which one apprehends, Descartes insists rather that the only thing one knows with certainty is that they are thinking. Therefore, the thought of the thing is the only valid reality. There is no certainty one’s thoughts relate perfectly to the thing one is thinking about. Rather, the conclusion that comes about is that the thoughts themselves are what “create” the reality one apprehends. The idea is the reality, not the thing. All of these ideas feed into, and produce the subsequent 18th century “Age of Enlightenment”.

6. Flemming, 2005

7. Flemming, 2005

8. Runes, 1959

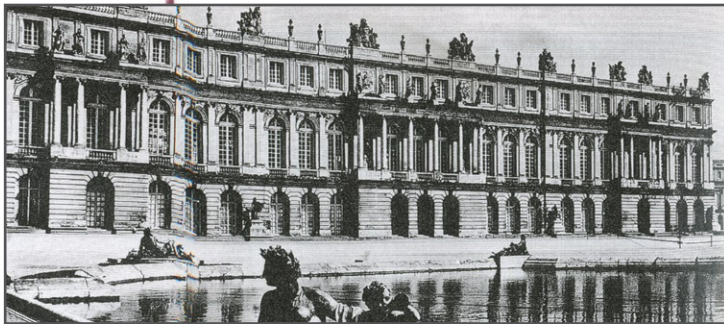
# THESIS PROGRAM

## HISTORICAL CONTEXT

There were many intellectual consequences which occurred due to Descartes's Idealism. One of these consequences was the denial of the possibility of a final and formal cause. Instead, the efficient cause was given prominence, and due to this:

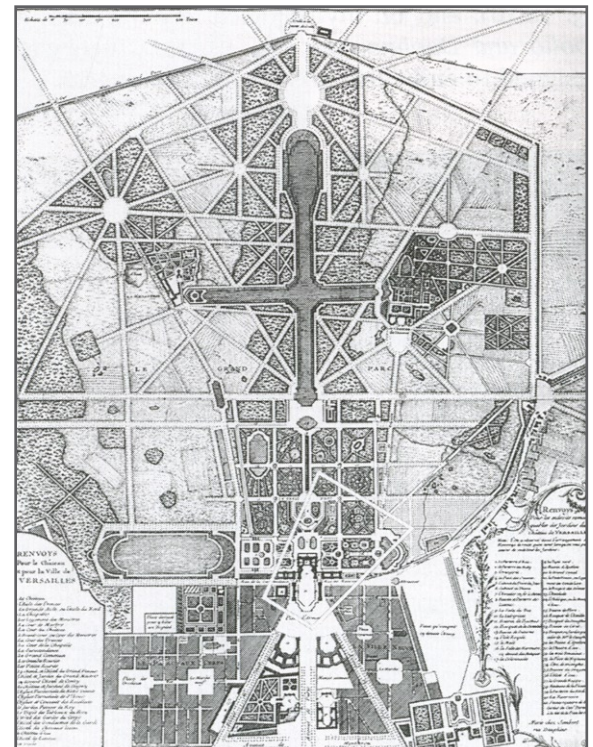
“The goal of power deeply determines what is, and what is not, a proper subject of knowledge and therefore what belongs, and does not belong to a true account of nature.”<sup>9</sup>

The efficient cause, being only a gathering of qualities such as softness, bend ability, or durability is now cut off from the final cause which is what it is originally meant to be used to for, now these qualities fulfill only what purpose humans deems worthy.



Versailles Palace, Versailles, France. (Flemming, 2005)

The architecture of this time also expresses the same rational formality and strictness of rationalism. The Palace of Versailles, built around 1670, encapsulates these ideas of plan-based designs driven by geometric formality and organization. These ideas “symbolized human dominance over nature”.<sup>10</sup> The Palace also stretches out into nature by creating gardens and pathways which have taken a once organic growing system and altered it into to a geometrically patterned out plan of growth.



Plan of Gardens of Versailles by Andre Le Notre, (Flemming, 2005)

9. Waldstein, 2006  
10. Flemming, 2005

Kantian Revolution:

It is Immanuel Kant (1724-1804) who is the next philosopher to make such a significant difference in the realm of this thought as to reveal the dramatic changes in his culture and the society. Eighteenth-century Germany faced the new challenges of Enlightenment, and Kant's ideas were unavoidably affected by these trends toward skepticism and materialism.<sup>11</sup>

The problem of knowledge brought about by the Enlightenment is one concerning the validity of the relationship between one's concept about a thing and the thing itself. Prior to rationalism, it was accepted that there was no need to doubt the relationship between the two. In being unable to remove oneself from this relationship, it seems impossible to verify these relationships were authentic, that these experiences were true. In order to recover from this improbability, Kant resolved to reaffirm the validity of the relationship between what one sees and the thing seen itself as being authentically correspondent. The changes he made to metaphysics, despite his best efforts only seemed to prove rather that one can only know things insofar as they are appearances within one's mind. One can never see the thing itself, but can only experience representations of the thing within one's own mind. Rather than experience going out to meet things, it is recreated within one's own mind. It is an idea which is subservient to the scientific revelations of cognition. This is another step in the "break" between appearance and object which is fully consummated by Idealism.<sup>12</sup>

Kant's philosophies not only held weight upon the questions of knowledge, but he also developed an advanced theory of aesthetics which has made a great impact on theories of beauty and the sublime. Prior to his time, aesthetics directed most of its questions of beauty toward conceptualizing the object itself. It

11. Ameriks, 2000

12. Ameriks, 2000

asked the question of what made something beautiful in itself. Was it the proportion of the thing, or possibly its orderliness which makes it so beautiful? Kant began the question of beauty from the opposite angle though, and asked rather, what it is about the human being which compels the responses of delight and satisfaction from the experience of an object. As he states “The green color of the meadows belongs to objective sensation, as a perception of an object of sense; the pleasantness of this belongs to subjective sensation by which no object is represented, i.e. to feeling, by which the object is considered as an object of satisfaction”.<sup>13</sup> This is a notion which must be considered in relation to human creation- the question of what it is about being human which causes something to be pleasing, to be good? This is the question which will hopefully rescue Aristotle’s overly “functionalist” concept of making from taking the human aspect out of creation.

### Phenomenology

Phenomenology, born from the reaction against the “reduction of scientific enterprise” and the “reductionist program”<sup>14</sup>, seeks to reclaim the relationship between one’s own perceptions and the cognition of those perceptions. It claims that there is no need to be so doubtful of the phenomenon, but “rather, in this process there is a modification, a transformation of the cognitive act without a cutting-off of its roots in empirical perception.”<sup>15</sup>

Phenomenology as a science is just one more means to the ends of knowledge. It is another system, just like metaphysics or idealism, which is developed in an attempt to create the proper framework to investigate knowledge.

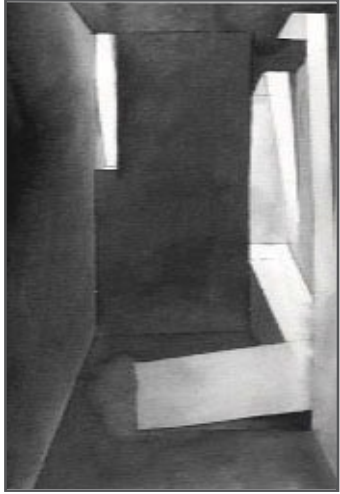
13. Kant, 1964

14. Tymienieka, 1962

15. Tymienieka, 1962

# THESIS PROGRAM

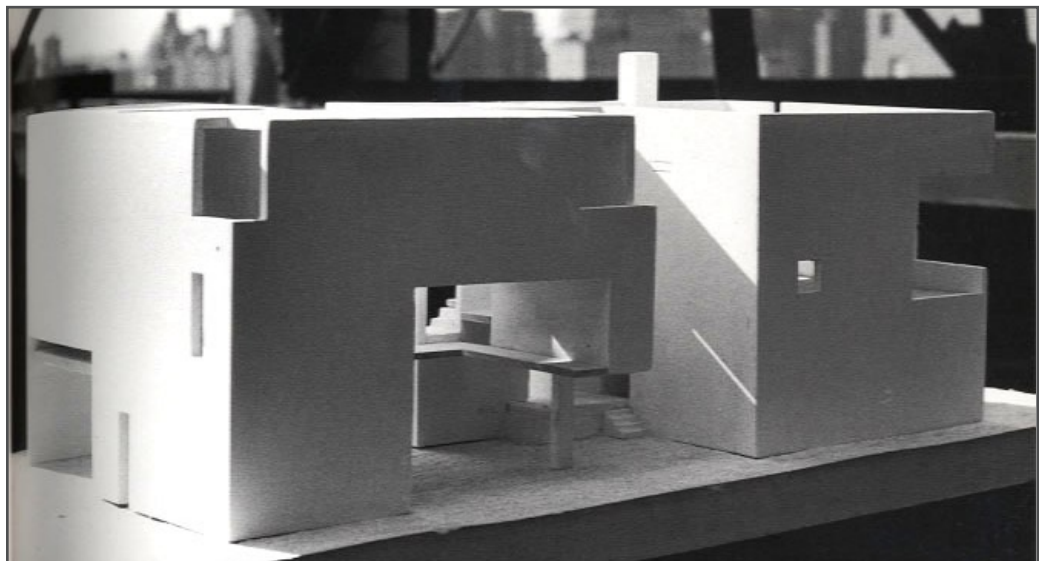
## HISTORICAL CONTEXT



Conceptual Shadow Studies for house in Oxnard, CA. (Holl, 2006)

Edmund Husserl (1859-1938), who is considered the founder of phenomenology, did not develop a system which is necessarily fully-integrated with the metaphysics of Aristotle or Aquinas, but within his system he found that he was looking for the same thing which Aristotle was, this *eidōs*, or *essence*.<sup>16</sup> It is this “link” of the *eidōs* which is held in common between these two philosophies, and therefore is the prominent feature which will bind the seemingly outdated philosophies of Aristotle to the present conditions of today. Phenomenology, in making recourse to this essence, makes it relevant. It does this by making it impossible to understand the philosophies of today without understanding the trunk from which they have stemmed and bear their meaning.

Phenomenology has also made its stake directly into the world of architecture and design theory. Many contemporary architects are referring to phenomenological studies in order avoid stylistic tendencies and to enlighten their own works. Buildings such as the Abrams Residence in California, designed by Steven Holl, work to express the *essential* elements within one’s experiences. The use of light in a particular and focused manner creates a moments of contemplation and searching within the design. Nothing is to be taken simply for face value.<sup>17</sup>



Model of house in Oxnard, CA. (Holl, 2006)

16. Runes, 1959  
17. Holl, 2006.

### Personalism

Phenomenology is one of many philosophies which have taken their course as a rebellion to the effects of idealism. Another prominent philosophy which fights against idealism and which will be drawn from in order to justify this thesis is personalism. Personalism does not take its roots directly in the question of knowledge, but rather in the question of the human being. Personalism creates a framework for ethical judgment and for the relationships which one creates with others.<sup>18</sup> It also creates an understanding of the person which sees them as having value and worth beyond the restraints of utility. Much like the worth of art has nothing to do with utility, the human person does not either. As Karol Wojtyla (1920-2005) states,

“The term ‘person’ has been coined to signify that a man cannot be wholly contained within the concept ‘individual member of the species’, but that **there is something more to him, a particular richness and perfection in the manner of his being, which can only be brought about by the use of the word ‘person’.**<sup>19</sup>

This is a relevant idea for it shines light upon the question of the human end. It is this human *essence* which must be considered fully in order to create an architecture which compliments one’s end. For example, when designing architecture, one always considers the activity within, but from what scope? One who is designing for the sake of utility and work-force efficiency may make design decisions much different from one who realizes there are certain aspects of a human person which cannot be disregarded in order to optimize their work speed. One cannot, even within architecture, disregard the fact that to be human is after all... a *delicate* thing. Just as one does not transport little eggs within a box of nuts and bolts, one may not place another human being in an environment which may do violence to them, even in spirit.

18. Gallager, 1998

19. Wojtyla, 1981

### History of St. Paul and Saint Catherine University

St. Paul was established as a town in November of 1849, where it consisted of about 280 acres of land. It progressed to title of city in 1854. The city took its name from the first church built in the city, which was St. Paul's Church. At the time it was nothing more than a log cabin which was built in 1841 by Father Lucian Galtier, who was also the founder of the St. Paul Mission.<sup>19</sup>

It was at this same time (1851), and called by the same mission, that the Sisters of St. Joseph of Carondelet began settling in the Minnesota Territory. They began their mission work immediately by starting a school and hospital in St. Paul. In addition to this, they also began a school in Long Prairie which would serve the Native Americans in the area. Finally, they also began another in St. Anthony, which is now East Minneapolis. In the year 1905 the sisters founded the College of Saint Catherine. The campus is located on one of the two highest points in Saint Paul, nestled in the cup of the Mississippi. Since then, the college has changed names from the College of Saint Catherine to Saint Catherine's University, and has developed from consisting of only one building to over thirty.<sup>20</sup>



View of Saint Paul, 1865. Photograph by Charles Zimmerman. Retrieved from Minnesota Historical Society: <http://collections.mnhs.org/visualresources>

20. Hurley, 1939  
21. Hurley, 1939



# THESIS PROGRAM

## GOALS FOR THE THESIS PROJECT

### Goals for the Thesis Project

Goals are set in life not only to provide a sense of personal gratification and self-accomplishment when achieved, but they are also set as a response to problems seen and encountered. The goals of this thesis project-be they academic, professional, or personal, all pivot around the idea that what is being done here is a response. It is response to culture and to the academia as it rests right now, not only as a whole but more particularly here at NDSU. These goals have only been realized after spending five years within the walls of this community. They are as follows:

### Academic

As a young freshman beginning college here, I had not expected to be pulled into the education of architecture by means of questions. I had assumed I could assume. I had assumed I would be taught a fixed set of rules and techniques which I could apply in a sure manner. I had never realized that the act of designing is like being placed in the middle of a foreign city left alone to navigate until a safe haven is found (ironically enough, through my architecture studies here this experience has not been left in the world of metaphor).

When one is given a new project, at first just staring at a few sheets of paper as they present themselves like a foreign map, "lost" is the only word that comes to mind. It is this sense of being lost though, and being forced to find a way home, over and over again, that one learns. One learns not only the right route, but one also learns every misstep and short cut-turned scenic view. It is my goal now to create a synthesis of all these routes which I have taken and all the avenues explored in order to draw out a possible pathway. I want to create a thesis which encompasses as much of what I have learned here as possible.

# THESIS PROGRAM

## GOALS FOR THE THESIS PROJECT

### Professional

Although I do have strong views that the academic form of architecture should not be constricted by the demands of the profession, I do feel the academic should be the “experimental station” which helps to inform the profession when it may be sliding off path. After all, you cannot expect the beast to tame itself. My professional goals for this thesis project therefore are to develop a solid theoretical foundation which can be applied in the profession. I want to develop a clear and basic idea of architecture as it should be in all cases. I want to use the fundamental ideas which can be applied to all typologies so that I will be as flexible and useful as possible in the profession.

### Personal

The personal goals for this thesis, which I know will be the goals which keep me up until the late hours of the night and motivate me through all of my missteps, can be summed up in two words: Finish Strong. It is always tempting, when one can see the end in sight to either hurry too carelessly to get there or to let down the reins and meander aimlessly in a sea of procrastination. I hope to avoid those two. I am only seeking to design a thesis which I will look back on and know I had done all I could. I also want to see what I can do.

I would also like to see if the theories laid out in this thesis document actually do what I say they do. I want to test my own ideas and develop new ones from the outcomes. At this point I am still only searching for a good route... although I have a feeling I will always be just searching. Either way though in the end I would simply like to know. Knowledge is after all, a fulfillment of the human condition.

**THESIS PROGRAM**  
SITE ANALYSIS



# THESIS PROGRAM

## SITE ANALYSIS

### Narrative

Situated within the more suburban area of central Saint Paul, Randolph Avenue was surprisingly calm and welcoming on that chilly Saturday morning. I was a bit surprised to find a close parking space next to a rather cozy neighborhood. It was a neighborhood which felt lived in, but in a way which made it homey, not run-down.

The Campus itself was at first rather typical: Large square buildings with stone and brick arranged in strong geometric lines, denoting a sentiment somewhere between sophistication and monumental. They induced memories of the goings on associated within those types of buildings, like the classic absent minded professor clad in khakis, a button-up, and an old corduroy blazer. They were not vain but rather took on an heir of calm self-confidence, as if aware of the knowledge they possessed.

As I passed through the exterior of the campus and entered into the courtyard, I was confronted by a rather monolithic building, which resembled something between a large oak tree and a giant cat paw hovering over one's head. I soon found out this was the O'Shanghnessy Theatre. Simply due to its size and positioning in the center of campus, it was immediately clear what this college valued. It loved the arts.

As I wound down the courtyard of the campus, passing by a well kept landscape, as well as many very friendly squirrels. I soon found myself at the very west end of Campus. At this point, the campus opened up onto a large grass landscape with a somewhat typical false pond right in the middle. Be it artificial and obviously planned in a generic "aww that's nice" way, it still maintained a pleasant feel. To the left, and then directly behind me was the Our Lady of Victory Chapel. It had a very different feel than the rest of the buildings on campus, maintaining its church structure and classic building style. It complimented the rest of the campus though, and in being different it stood out and provided a moment of contemplation. It seemed to be one of the older buildings on campus, suffering from the most signs of distress and wear and tear. The doors also had a healthy aqua green patina, and there seemed to be at least a few renovations and additions to the building.



# THESIS PROGRAM



## SITE ANALYSIS

To the left of the pond was a large wooded area, very surprising to see in the middle of a large city. It was nice to see though. It not only offered a beautiful backdrop and visual cut-off from the rest of the city, but provided for this very interesting moment on the campus. It was this moment bound between the natural environment, nature as imposed by man, and the buildings made by man, that I felt this thesis project would best be explored. This way, I could tuck it into whichever area seemed more appropriate as the design developed, and I could also play with the transition between all three of these areas. There seemed to be the most potential here.



Central Courtyard



### Descriptions, characteristics, underlying abstract ideas

Plan: considering the College of Saint Catherine is a campus setting, there are some prominent features seen on plan which are typical of most college settings. There is a large courtyard in the middle, which most of the buildings are huddled around, creating an enclosure, or “nest” from the rest of the city. Walking paths slice in and out of the courtyard at its sides, creating multiple rectangular walking paths throughout campus. There are also very little roads fit or driving, but still quite a few parking lots.

The circular enclosure which the buildings create around the courtyard also allows for shadows to be cast along the courtyard from all the directions which the sun allows. The material textures perceived from the plan consist of the juxtaposition between the roughness of the vegetation and the smooth paved walkways.

# THESIS PROGRAM

## SITE ANALYSIS



The majority of the campus appears to be relatively flat until one reaches the west end of campus. Here there is a slope which creates about a 10 foot decrease in elevation. It is this area on or around the slope which seems the most interesting and open for development. To the east of this slope there is the library, chapel, and dormitory, all three of which do not exceed three stories. To the west there are no buildings, only trees and the pond. The most interesting shadows in this area come not from the buildings but from the surrounding trees. They seemed to be the strongest shades on the site.



There are 35 buildings upon the Campus of Saint Catherine. Of these 35 buildings, there is one residence hall located on the southwest corner of campus. There is also one library, located directly north of the residence hall. Directly north of this is the Chapel of Our Lady of Victory. The O'Shaughnessy is located directly east of the chapel, on the opposite side of the courtyard. There is also a man-made "dew drop pond", directly west of the library. On the far southeast side of campus there are volleyball courts, tennis courts, a baseball diamond and soccer field. Directly above this is a large parking lot used for events. The buildings, as stated before, create a dense circle around the courtyard, and otherwise are quite sparse.



Shades and Shadows

The light quality at the site is generally quite good. The natural sunlight is allowed to pour a clean white light into most areas due to the courtyard and open areas surrounding the campus. The only areas where light quality becomes questionable are the corridors between buildings. These spaces are generally quite narrow, and allow for little light or warmth to be brought in. Often times these spaces have therefore been designed as mini-enclosures themselves, with artificial lights placed to make up for any lost sunlight.

# THESIS PROGRAM



## SITE ANALYSIS

The campus holds a wide variety of vegetation, ranging from a small deciduous patch of trees on the southwest corner of campus, to tidy perfectly planned patches of plants which appear to be of the *Brassicaceae* family, as they thoroughly resembled cabbages. I found it rather interesting to see these plants in place of the typical “decorative” flowers and bushes used adjacent to walkways and buildings. Their textures did not seem to fit in quite perfectly with the pine trees and grass, but their deep green and purple colors did compliment the campus quite well.

The dew drop pond, just west of the library, is the only visible water feature on campus. It is a man-made pond which is kept up well as all of the pumps and vessels which are required to maintain a human crafted pond seemed to be in working order. There were even ducks floating around at the time of my visit.

The entire site is surrounded by buildings which are about three stories high. Most of the campus does not suffer from the wind. The only areas exposed to direct wind are on the extreme west and north end of campus.

The site shows the signs of human use typical to a college campus. There are those classic short-cut paths which are caused by the constant trampling of grass by students too busy to walk on sidewalks. There is also the presence of charming little hand-painted benches throughout the campus, reflecting those individual human personalities which create interventions within the convention of a campus. People were present at the time of the visit, and they were mostly walking either by themselves or in a group, talking as they passed from one building to another. There was also a group of individuals out at the pond, throwing sticks to their dog, enjoying the fall day.



# THESIS PROGRAM



## SITE ANALYSIS

Upon examining a few of the buildings upon the site, there appeared to be a few types of distress which showed up in multiple areas. There are paved bricks in front of the Chapel of Our Lady of Victory, many of these were cracking and eroding at the edges. Plants and moss were also starting sprout from a few of these spots. This erosion of brick and concrete was also evident in a few other outdoor patio areas and by the walkways which stretched between buildings. Aside from this, the campus was quite clean, the trees and vegetation all appeared to be healthy and well-kept, and all buildings seemed occupied and up to date.

### Quantitative Analysis

The soil in this region of Minnesota consists of sandy, gravelly material deposited by glaciers. Underneath this soil is quaternary deposits up to 500 ft. thick<sup>1</sup>. The college sits atop the city's second-highest hill, in the area now known as Highland Park, and it has an elevation of about 900ft. A majority of storm water runoff drains into the Mississippi River either directly or through the storm sewer systems. The lowest elevation in the city of St. Paul is 687 ft, and is located in the Mississippi River floodplain. The chances of any major flooding anywhere on the site is rather minimal. The greatest concern for the site may be the soil quality, as it is made up of sandy material.

The campus is located in the heart of the St. Paul, and has access to all the necessary utilities. The heaviest vehicular traffic is received from the north, on Randolph Ave. Cleveland and Fairview Ave receive only minor traffic.

College campuses receive a considerable amount of foot traffic compared to other areas within the city. In order to accommodate for this there is an extensive area which is available only to pedestrians. One must walk anywhere within the main "core" of the campus.

1. City of St. Paul Public Works Dept,  
2006



# THESIS PROGRAM

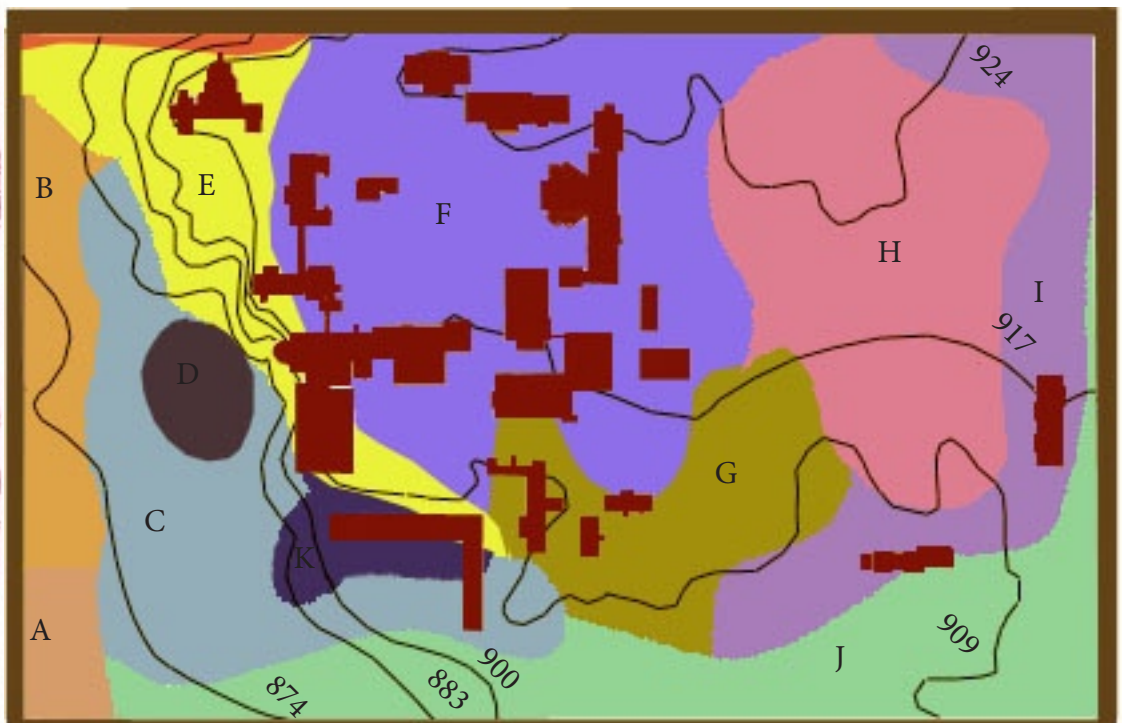
## SITE ANALYSIS



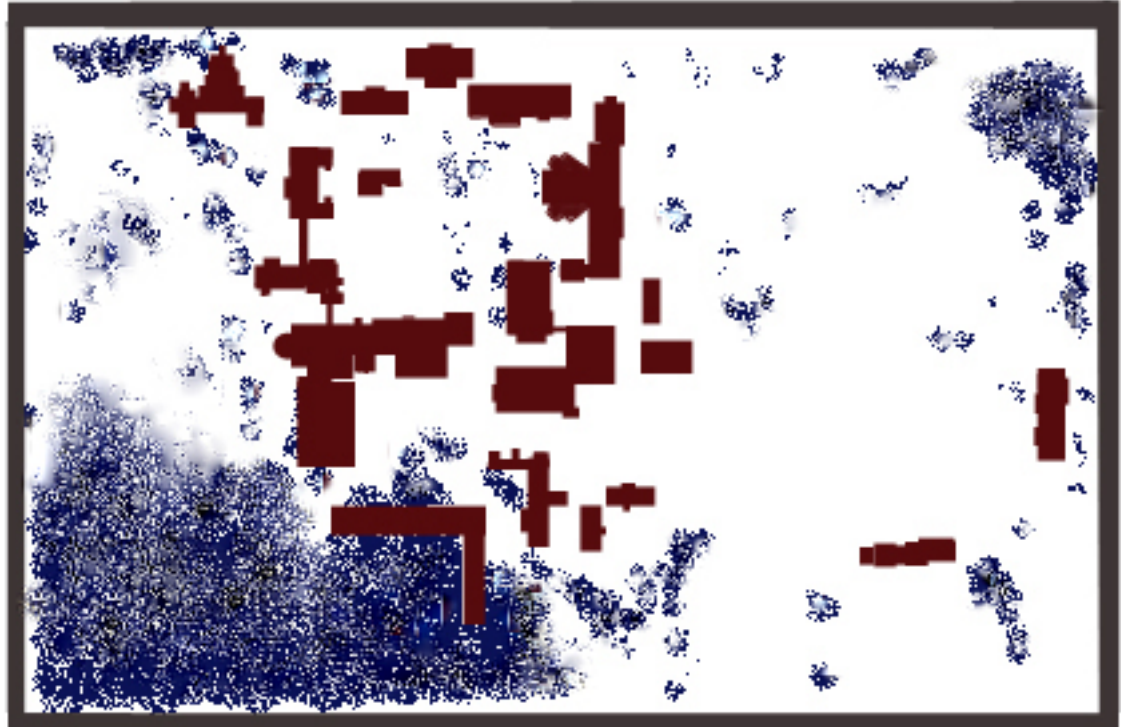
US Geological Survey (2010). *Google Map*. Retrieved Oct 6, 2010 from: [www.googleearth.com](http://www.googleearth.com)

### SOIL AND TOPOGRAPHY

- A-Wauken Complex 3-15% Slopes
- B- Wauken Complex 0-3% Slopes
- C-Udothents, Wet Substratum
- D-Water
- E-Wauken Silt Loam 6-12% Slopes
- F-Wauken Complex 0-3% Slopes
- G-Hayden Fine Sandy Loam 2-6% Slopes
- H-Dundas Complex 1-4% Slopes
- I-Dundas Fine Sandy Loam
- J-Dundas Complex 1-4% Slopes
- K-Bluffton Loam



Soils information retrieved from [www.wesoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx](http://www.wesoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx). Dec 3, 2010  
Topographic information retrieved from [www.dnr.state.mn.us/maps/tomo](http://www.dnr.state.mn.us/maps/tomo). Nov 25, 2010.



Vegetation and Buildings



Paved Walkways, Parking Lots, and Athletic Complexes

# THESIS PROGRAM

## SITE ANALYSIS

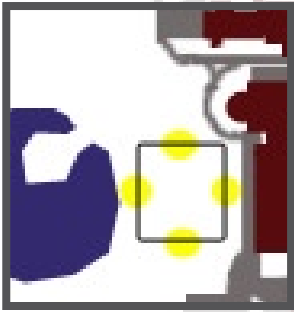


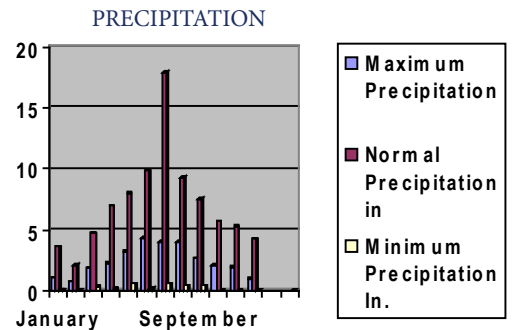
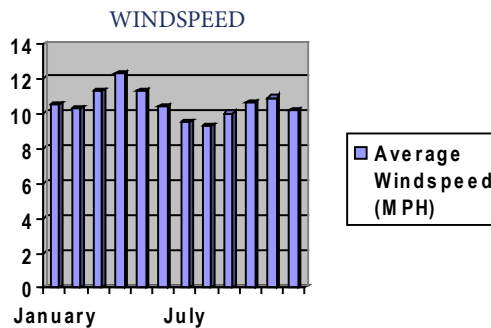
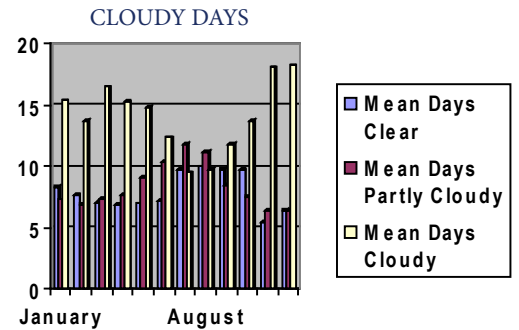
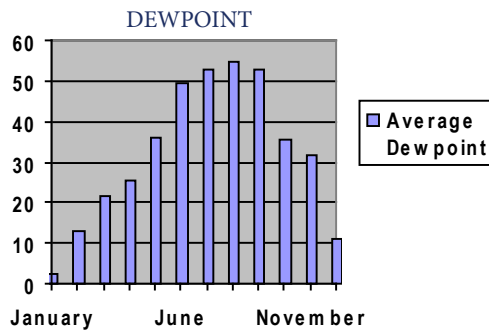
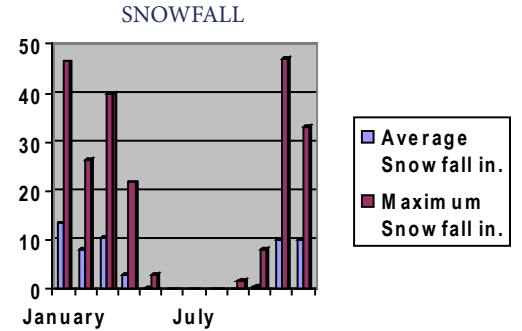
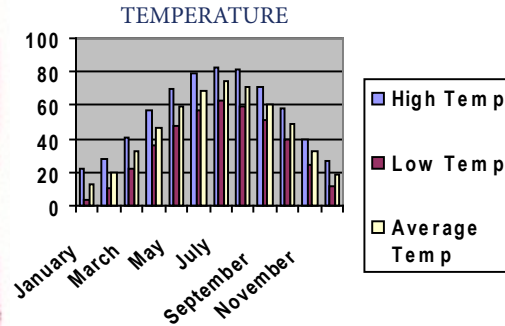
Photo Recon.

# THESIS PROGRAM

## SITE ANALYSIS

### Climate Data

The climate in the St. Paul region is considered humid continental with moderate precipitation. They experience warm and humid summers along with cold dry winters. The total annual precipitation is 27 inches and the average snowfall is 56 inches<sup>2</sup>.



2. City of St. Paul Public Works Dept, 2006

All graphic data retrieved from [www.climate.umn.edu](http://www.climate.umn.edu). 11/28/10

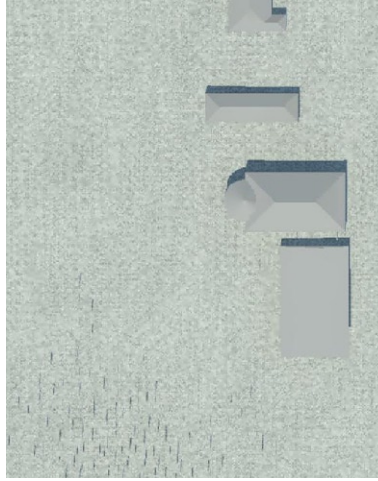
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## SITE ANALYSIS

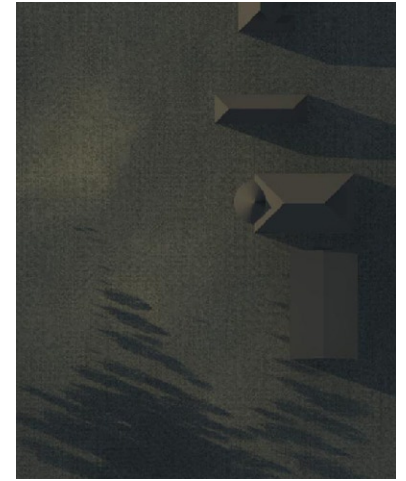
### Sun and Shadow Study



June 1, 8AM



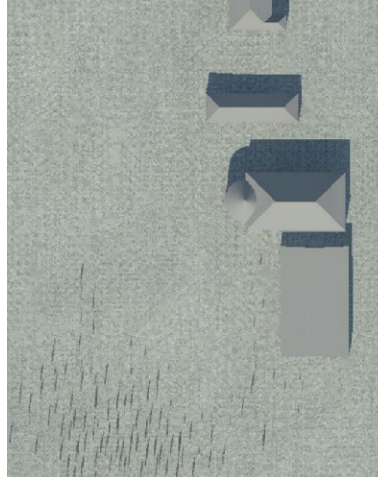
June 1, 12 PM



June 1, 5PM



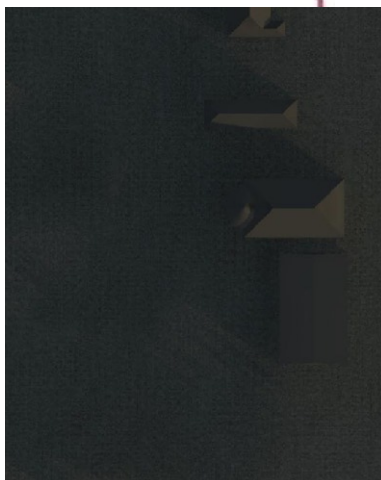
October 1, 8AM



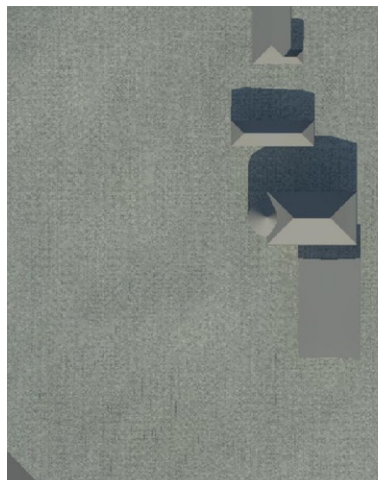
October 1, 12 PM



October 1, 4PM



February 1, 8AM



February 1, 12 PM

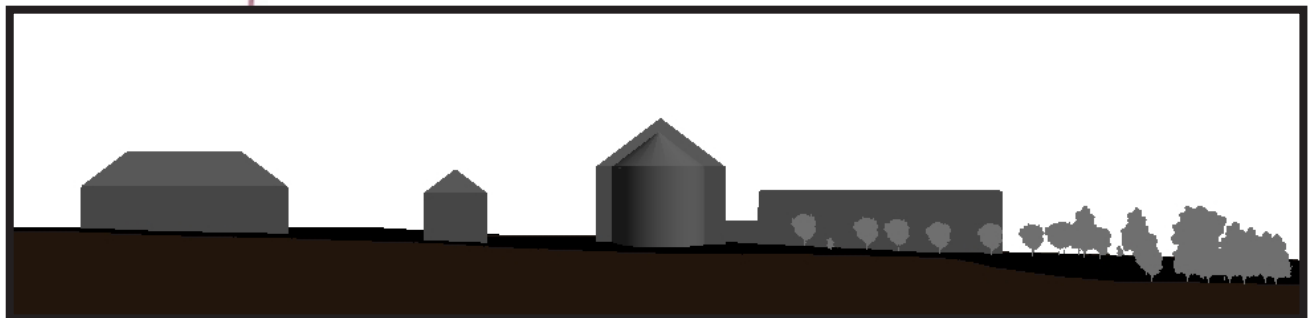
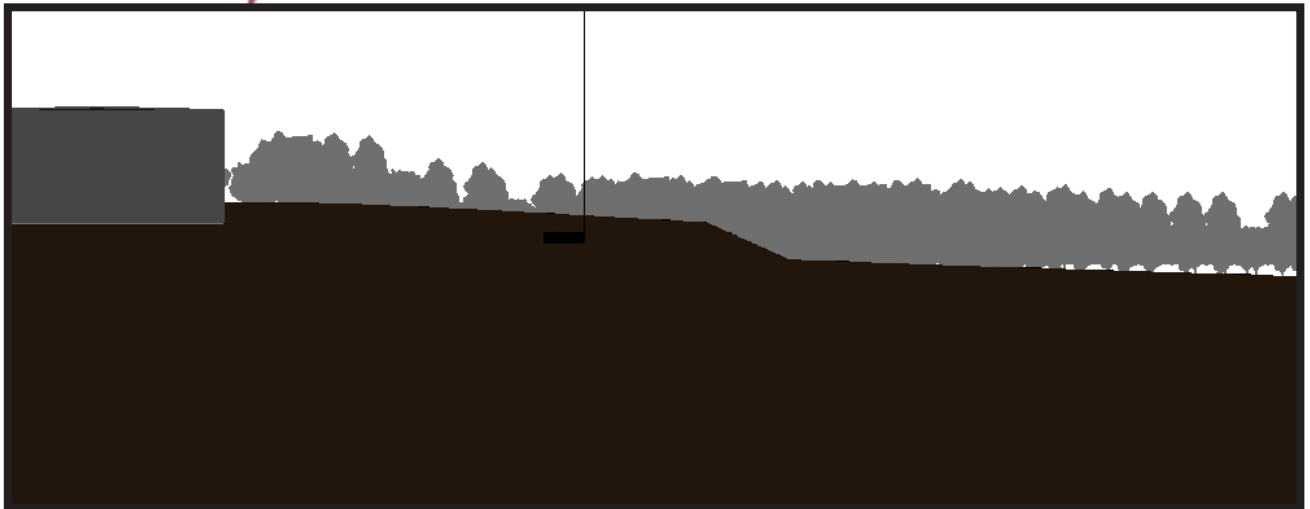
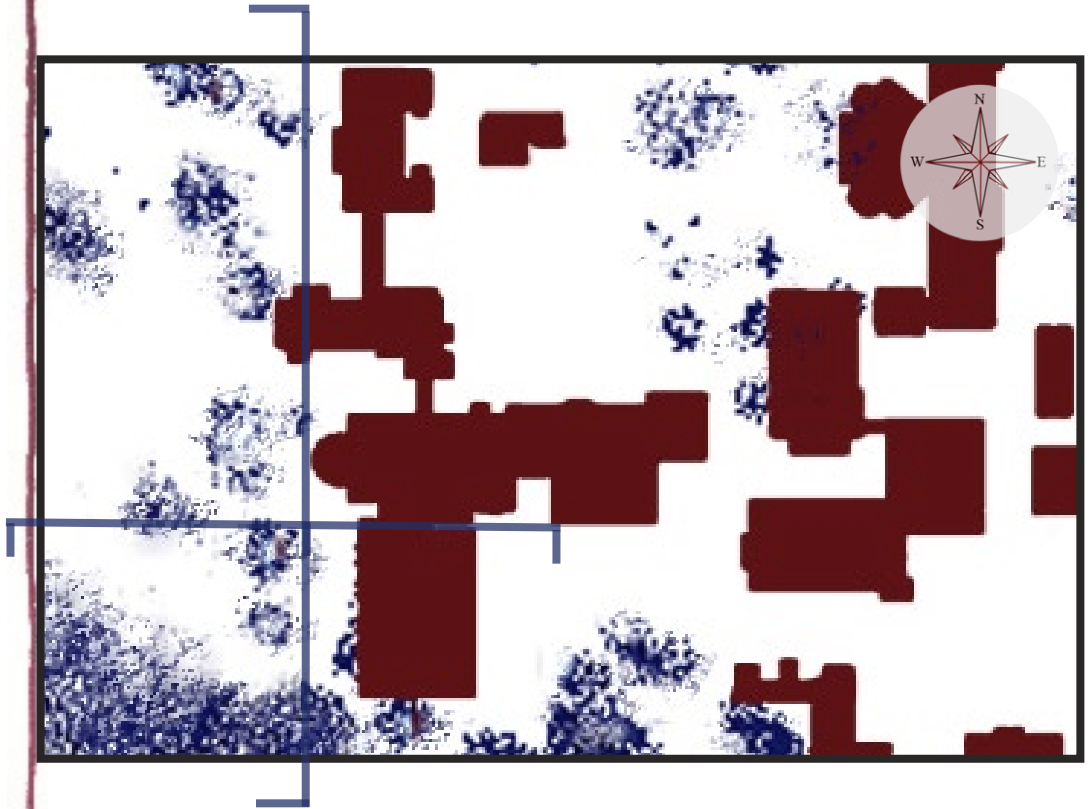


February 1, 4PM

# THESIS PROGRAM

## SITE ANALYSIS

### Plan to Section Studies



# THESIS PROGRAM

## SITE ANALYSIS

### Additional Images



THESIS  
PROGRAM

PROGRAMATIC REQUIREMENTS





# THESIS PROGRAM

## PROGRAMATIC REQUIREMENTS

### PUBLIC SPACE ALLOCATION

#### Entrance and Lobby

600 s.f.

The entrance and lobby need to be large in order to provide the proper heating and cooling transitions required from inside to outside.

#### Security Desk and Coat Check

250 s.f.

This space will be used primarily as a check-point for all visitors.

#### Exhibition Space

2000 s.f. split into various spaces

The exhibition space will consist of mostly temporary exhibits, as this will attract the most return visitors. It will be split into four inter-connected areas all available to the public.

#### Public Restrooms

400 s.f.

#### Gift and Coffee Shop

500 s.f.

The gift shop and coffee shop will hopefully draw students in who are just passing by in order to enjoy a cup of coffee or to study for a while in the conference room.

#### Conference Room

300 s.f.

The conference room will be give priority to the staff, but will also be available for the public and especially for the students to hold meetings or to use as study space.

#### Outdoor Patio and Garden

500 s.f.

This area will be integrated into the existing site plan and will provide the proper transition from the museum to the rest of the community.

# THESIS PROGRAM

## PROGRAMATIC REQUIREMENTS

### PRIVATE SPACE ALLOCATION

#### Offices

750 s.f.

There will be three offices used for the curator, building manager, and one group office.

#### Hallways and Circulation

700 s.f.

There must be enough space allowed in the hallways for the easy transportation of large object and crates.

#### Work Space

150 s.f.

#### Storage

400 s.f.

This space will be used for all non-collection materials, such as pedestals, display cases, and packaging material.

#### Loading Area

200 s.f.

#### Vault

500 s.f.

This is the most important space within the gallery, and must be secure. It will be used for all collection artifacts and artifacts on loan.

TOTAL AREA: 7,250 s.f.

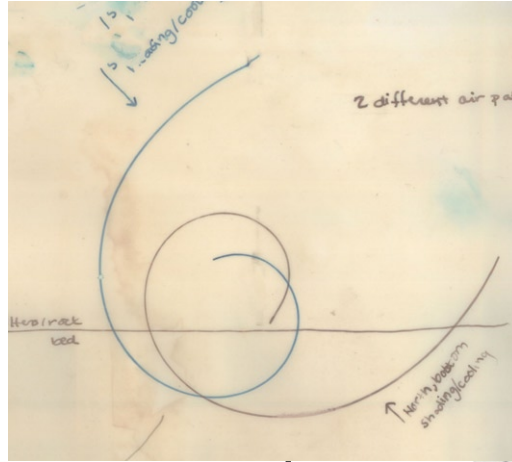
THESIS  
DESIGN

FINAL DESIGN

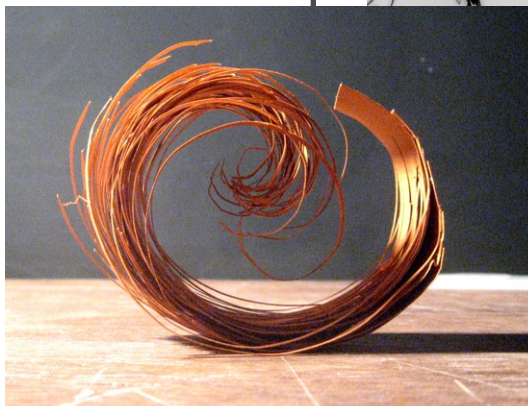
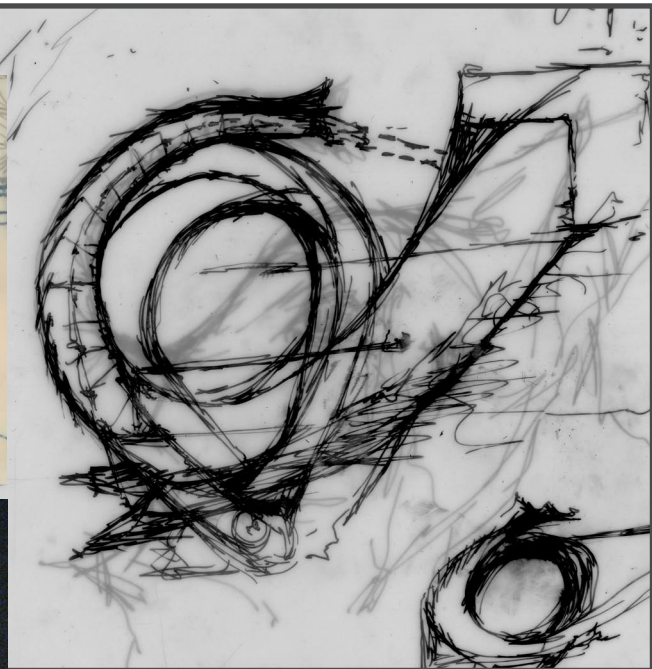
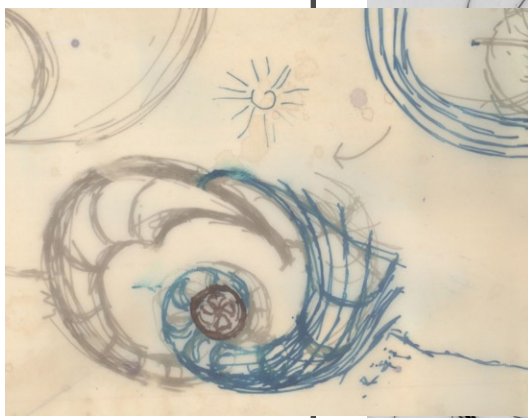
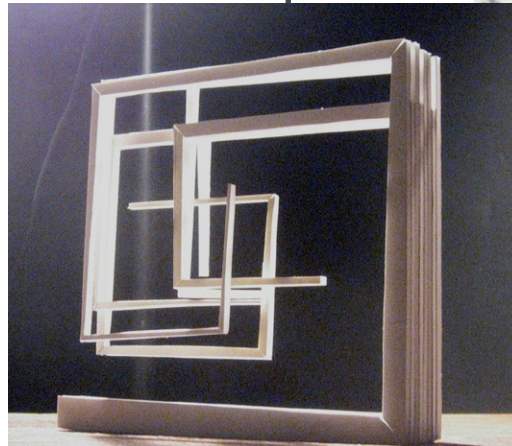


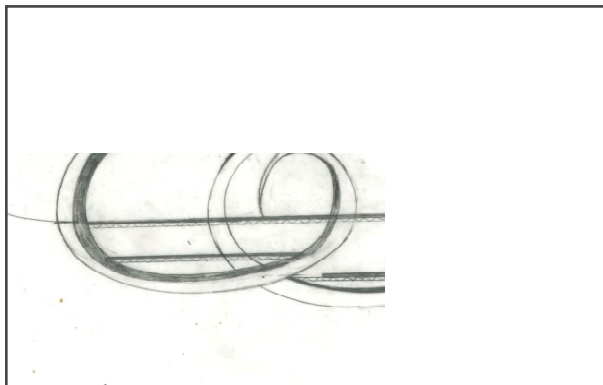
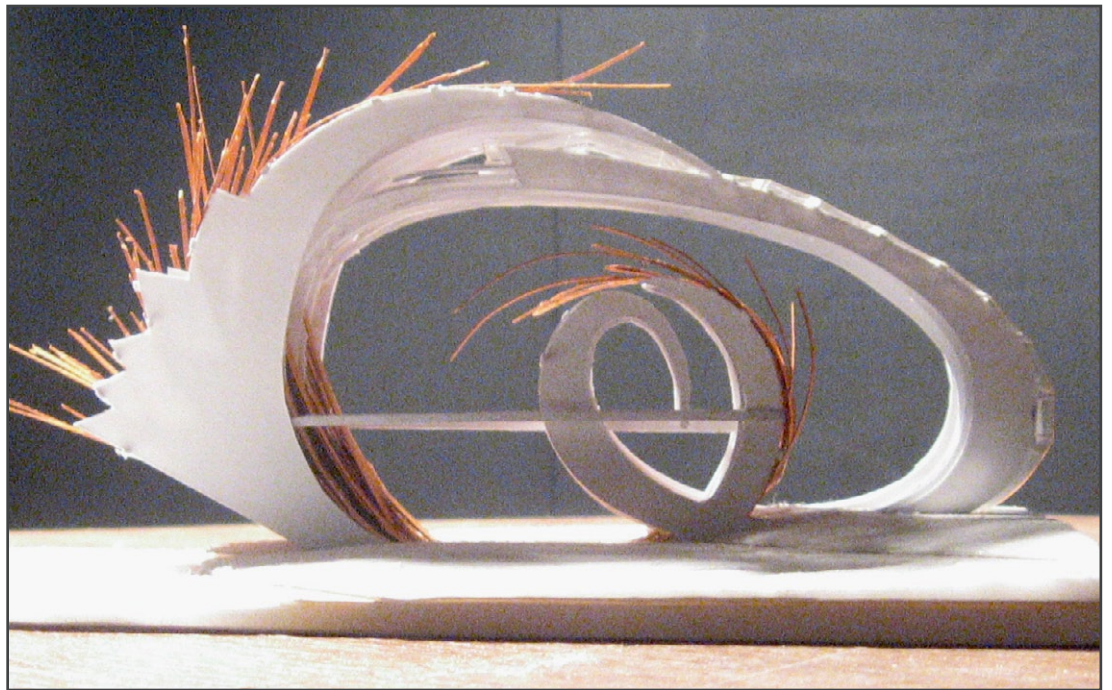
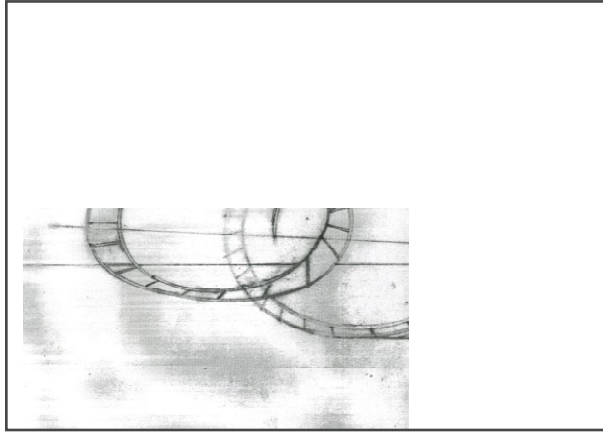
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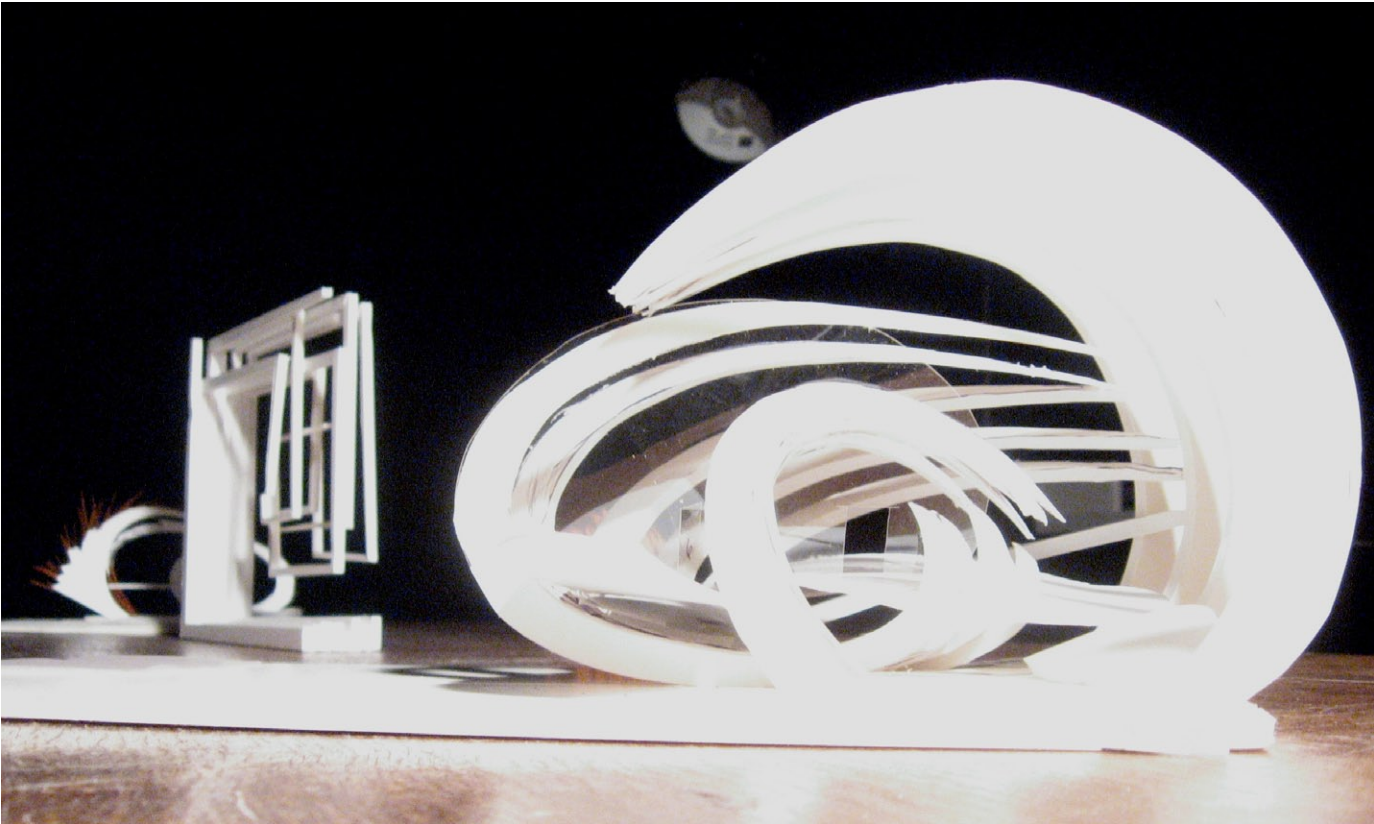
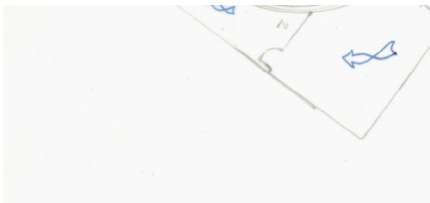
- Spaces** Outside to inside
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  2. Entrance + Lobby
  3. Loading area
  4. Storage
  5. Hallways + Circulation
  6. Gift + coffee shop
  7. conference room
  8. Security desk/coat check
  9. Restroom
  10. Office/Breakroom
  11. Workspace
  12. Exhibition Space
  13. Vault

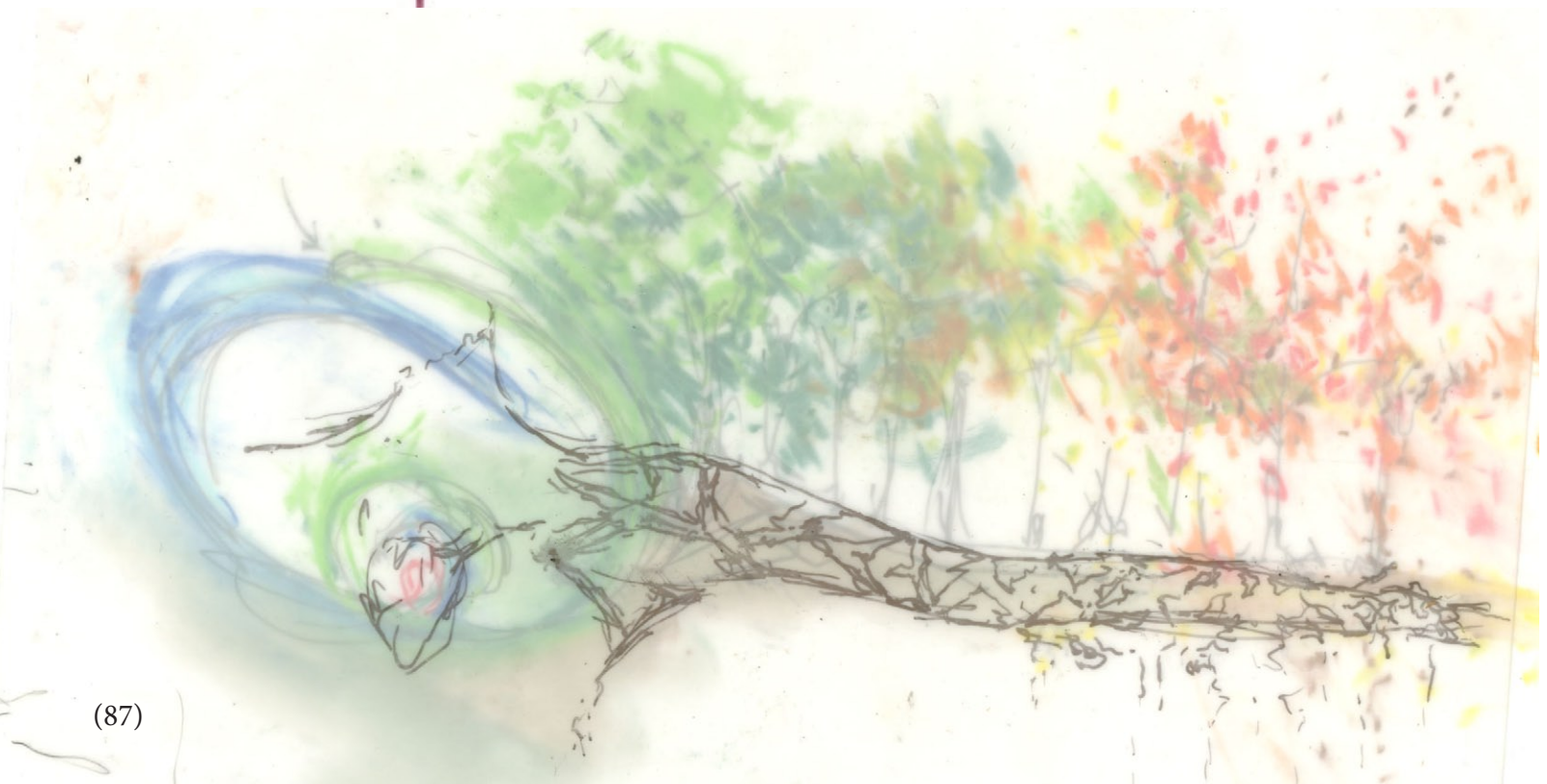
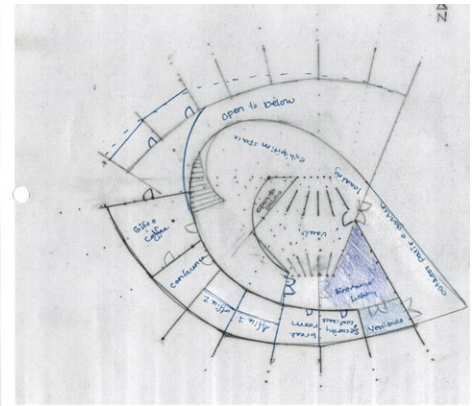
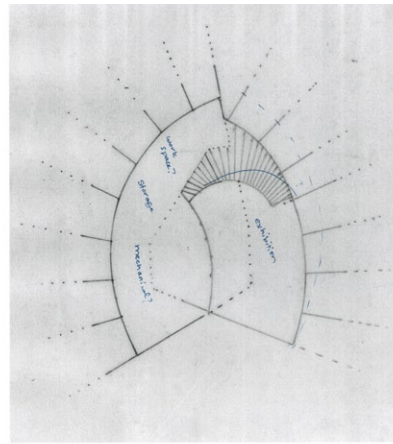


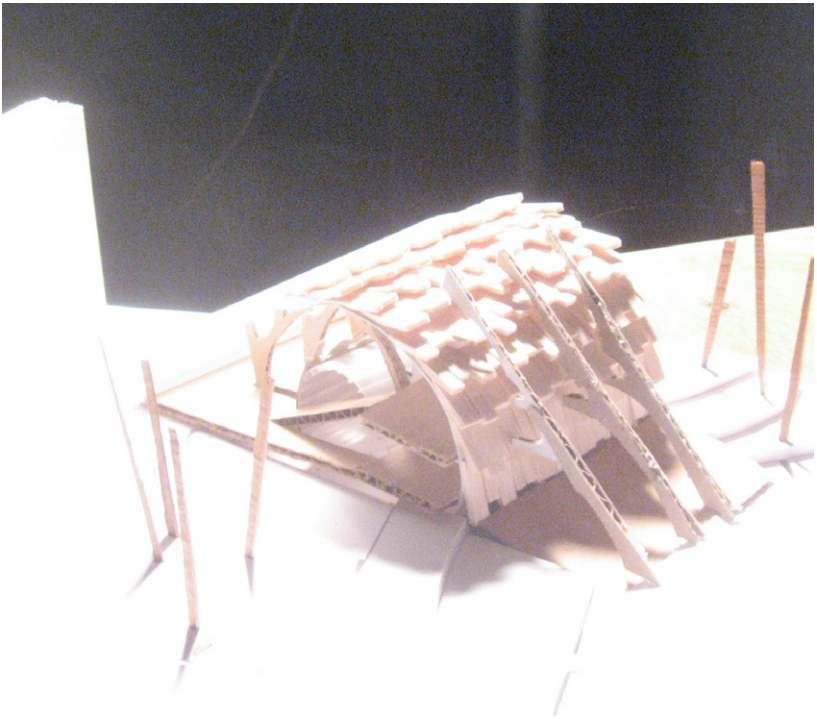
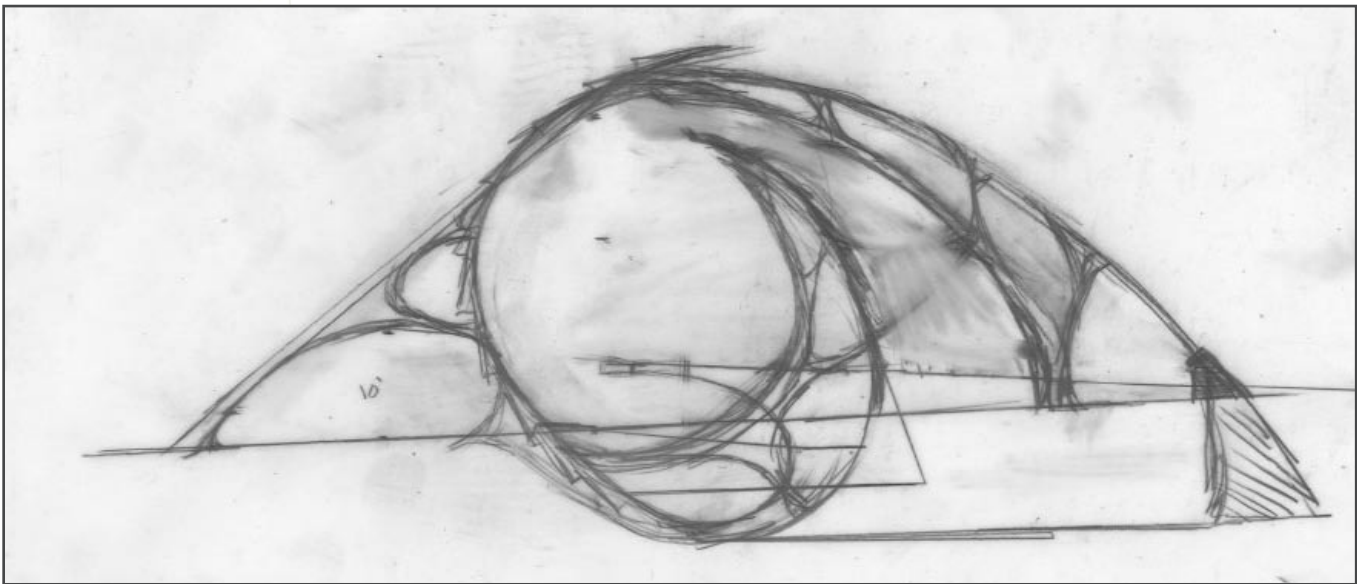


THESIS  
DESIGN

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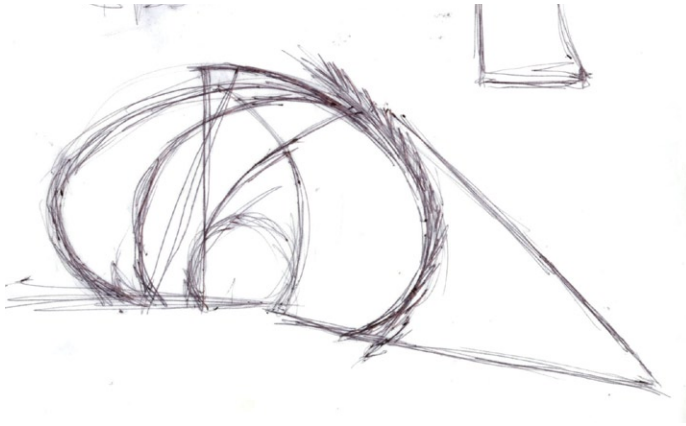






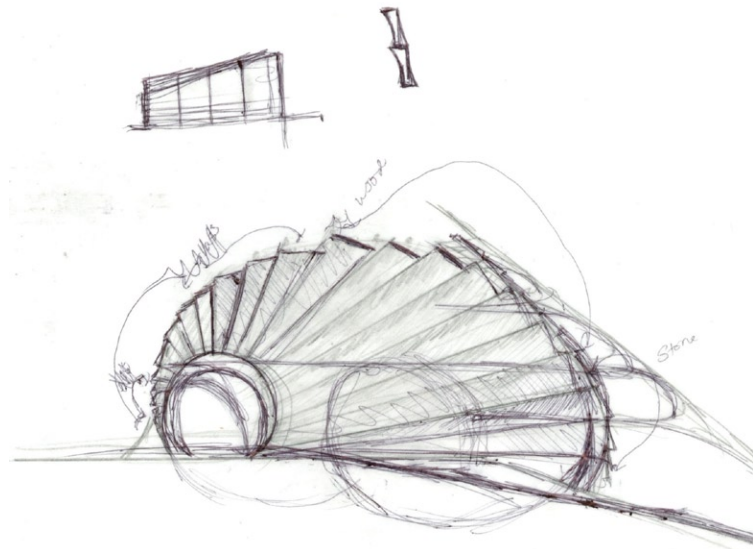
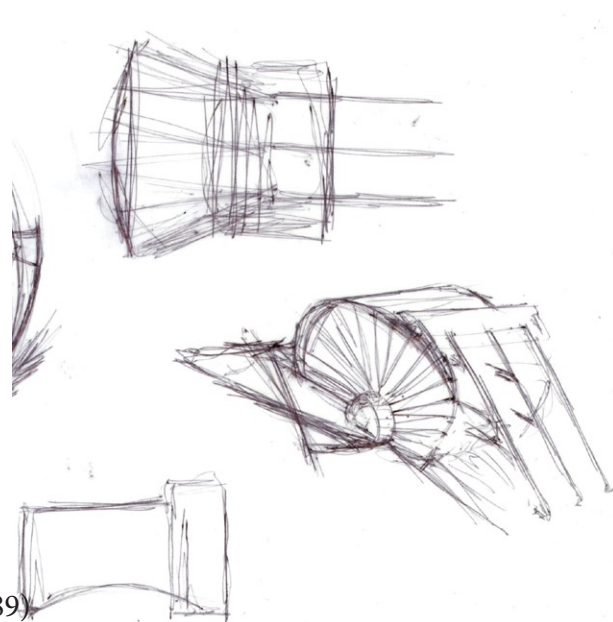
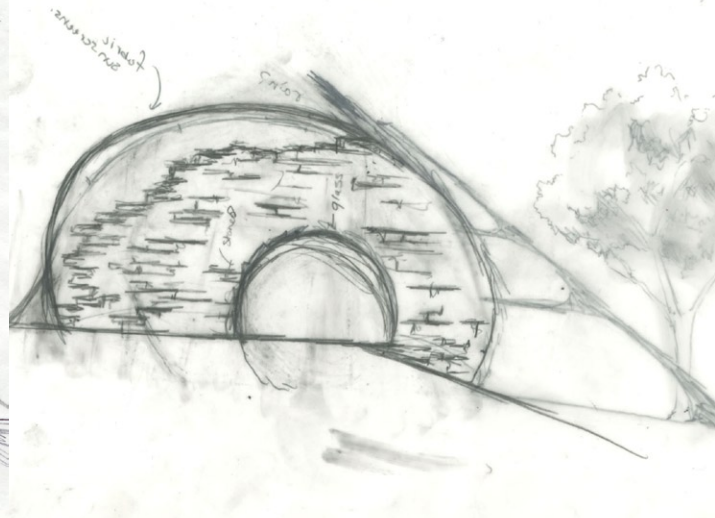
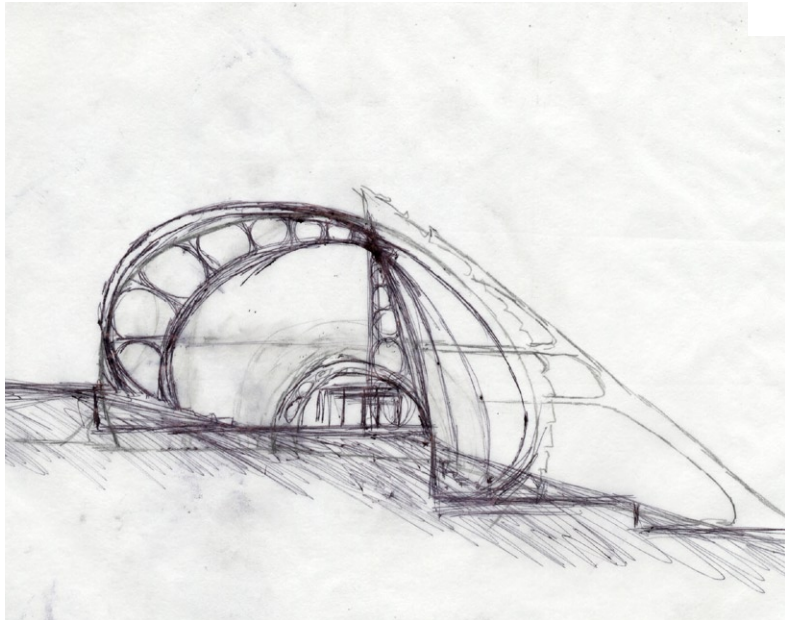
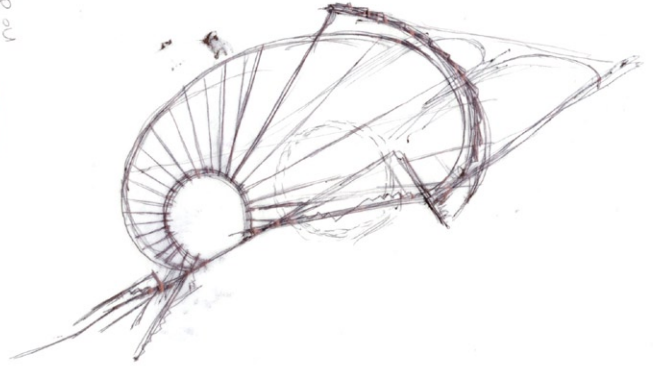
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# PROCESS



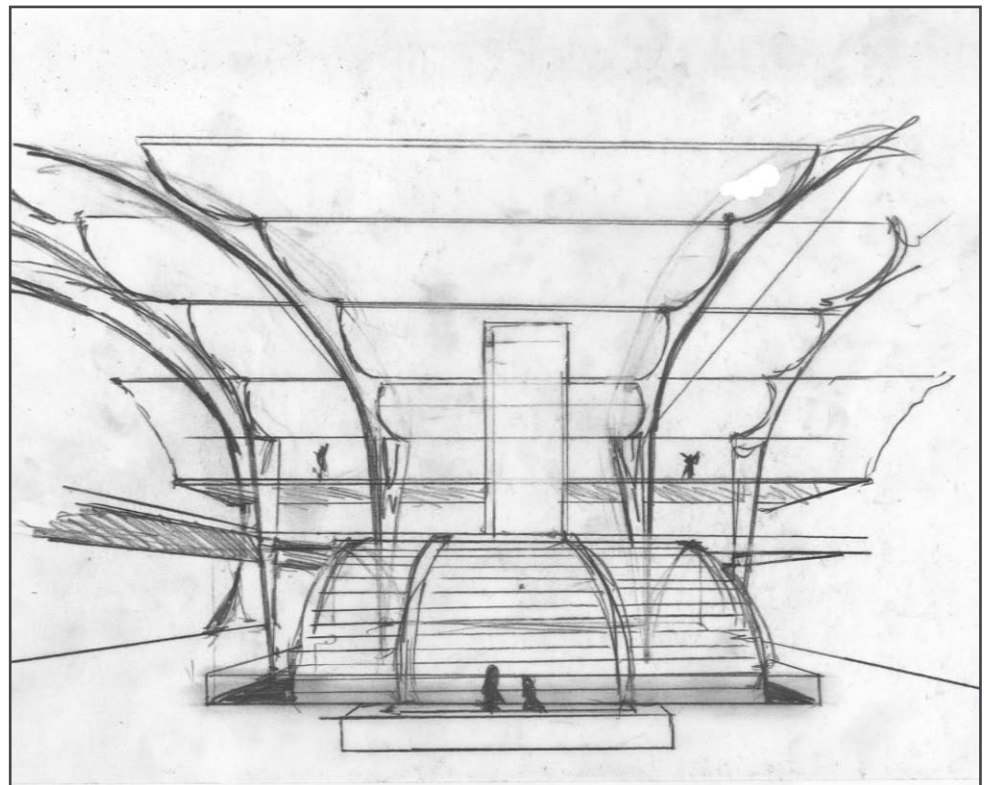
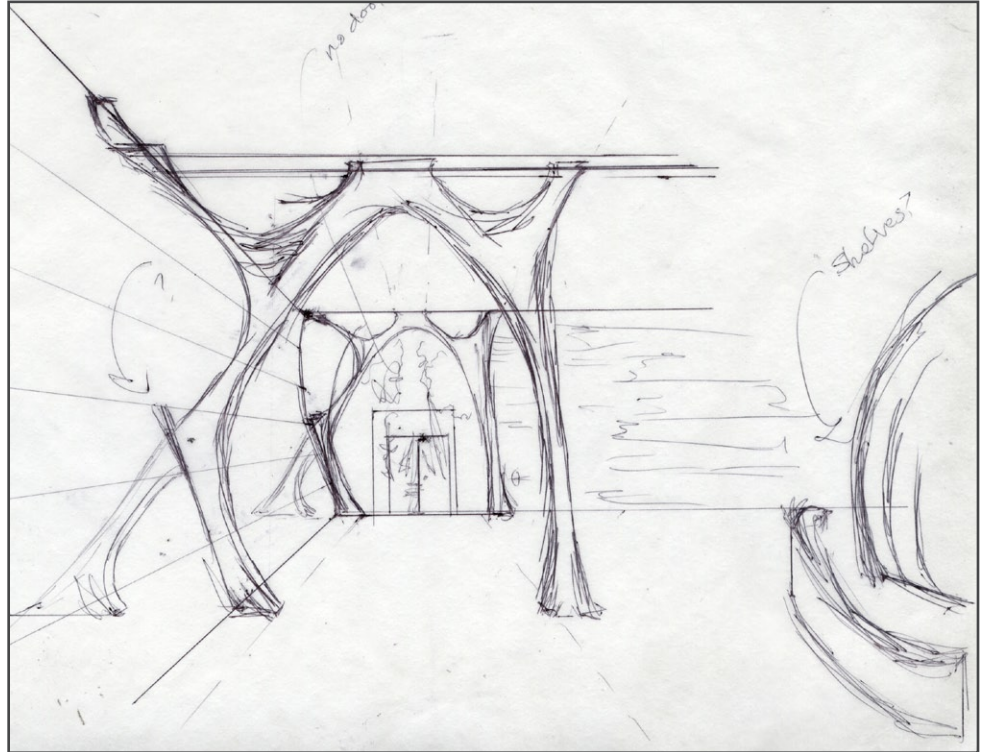
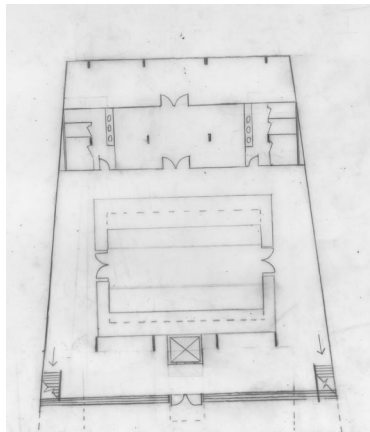
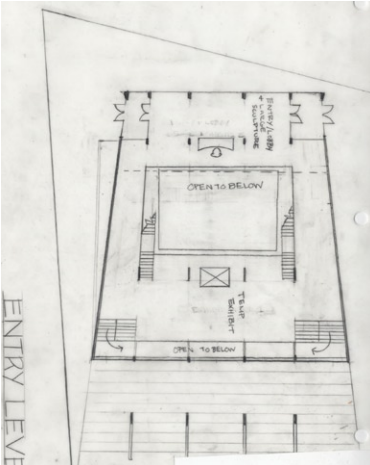
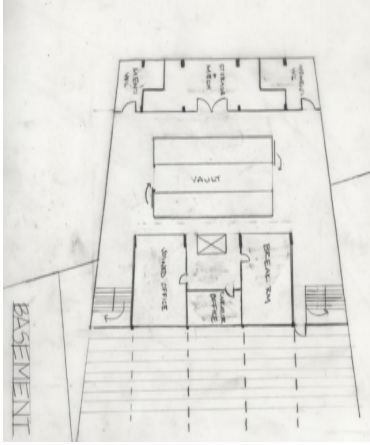
no drywall  
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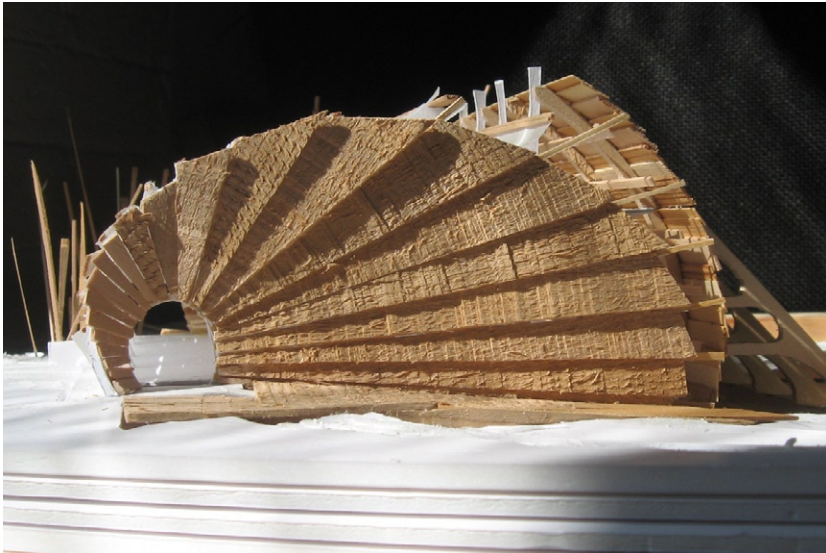
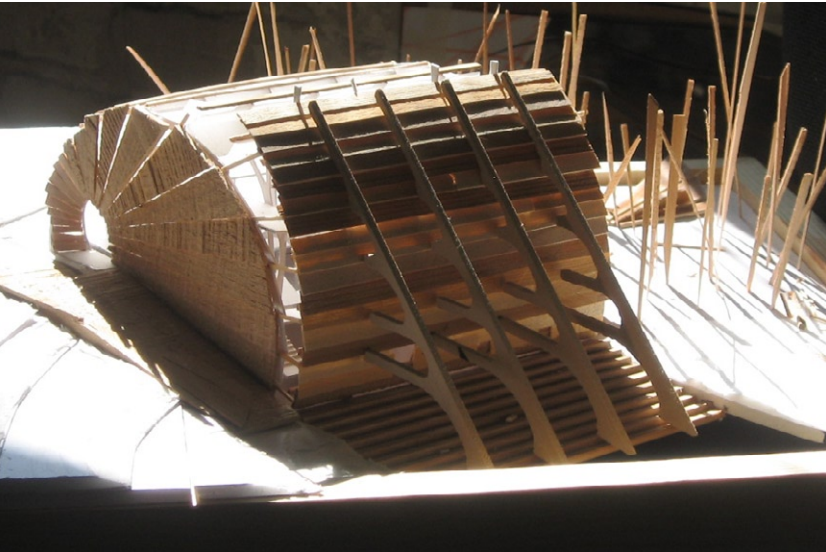
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2. Letters to Kristi, & Ed.
3. Write-up for the house
4. Model for viewing
5. Paper for Seminar
6. Scan Process Drawings
7. Work on layout for drawings
8. Pay for graduation
9. Type Dept-com



# THESIS DESIGN

## PROCESS

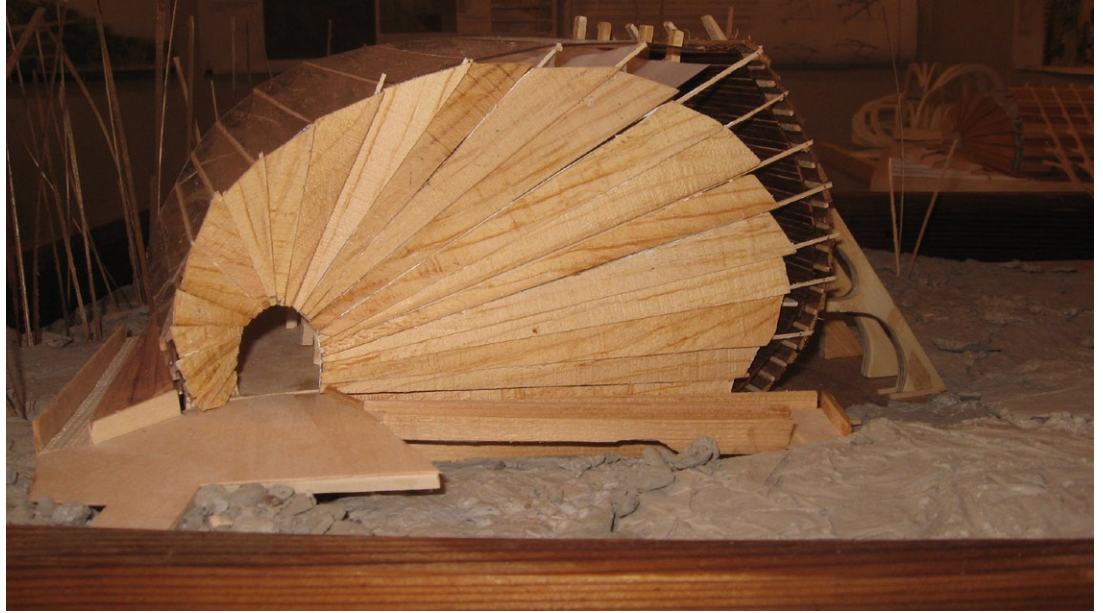


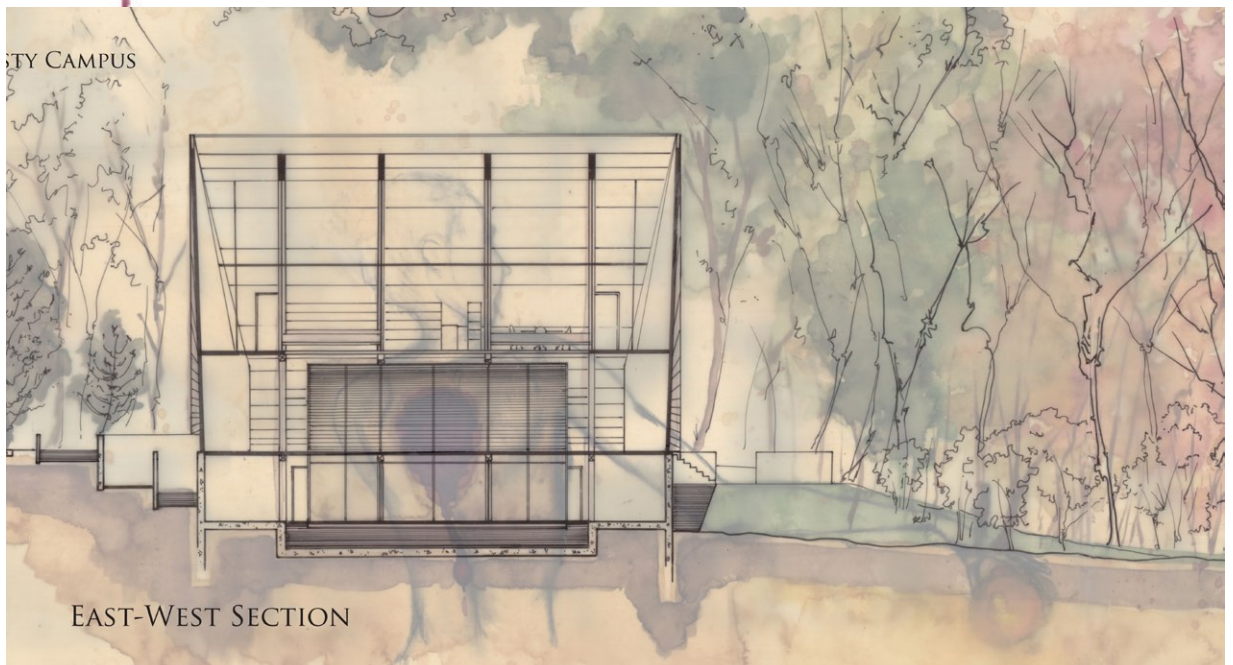
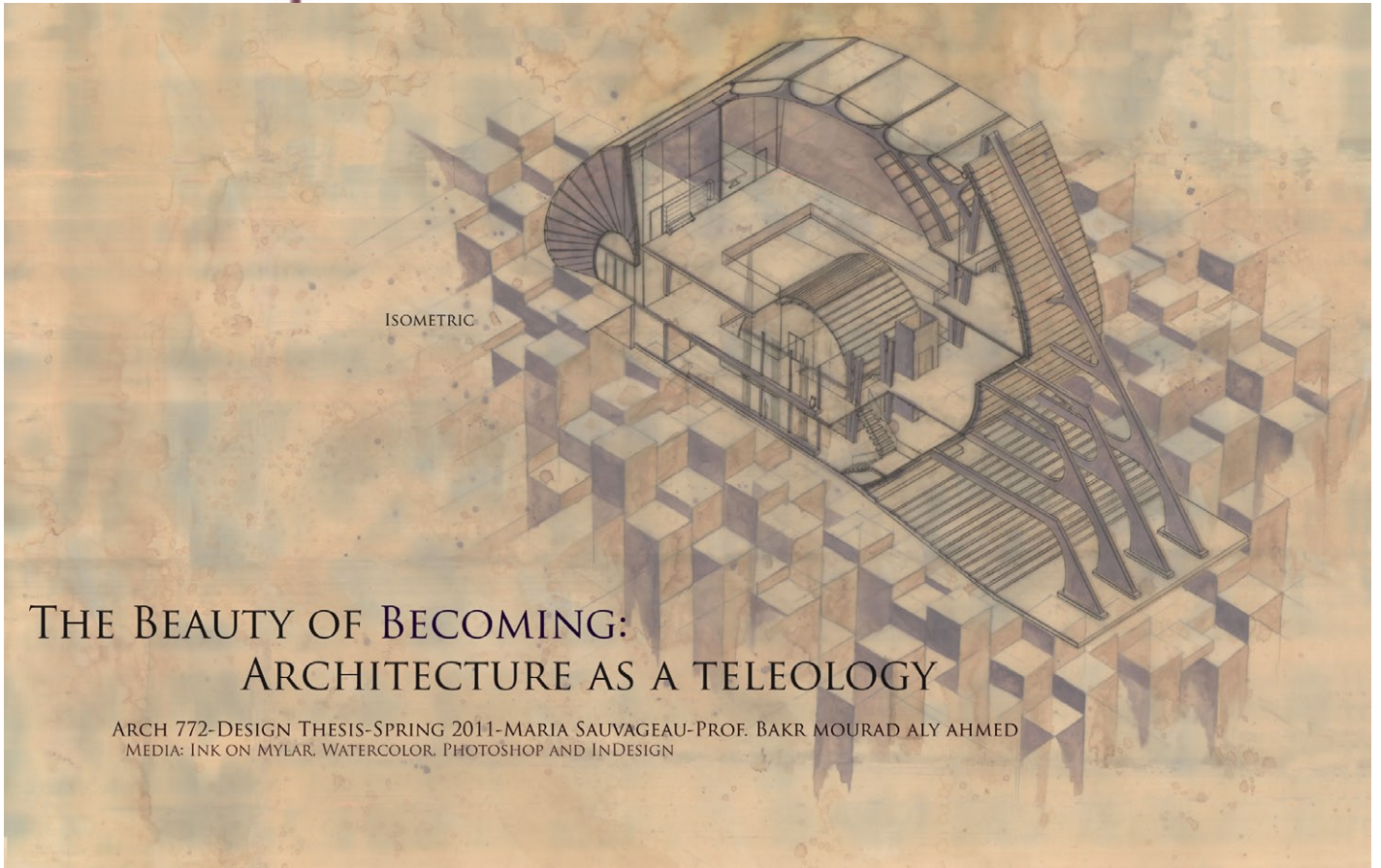




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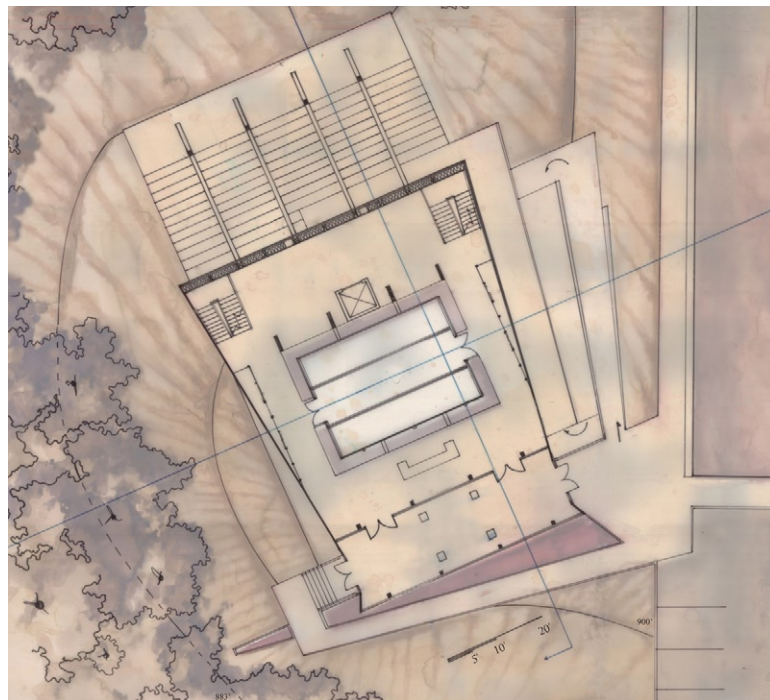
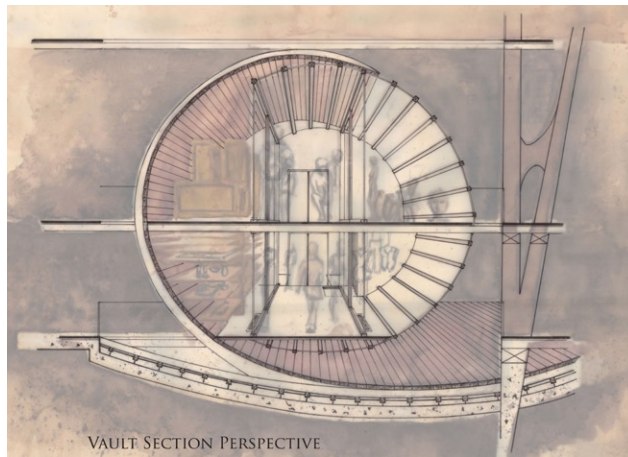
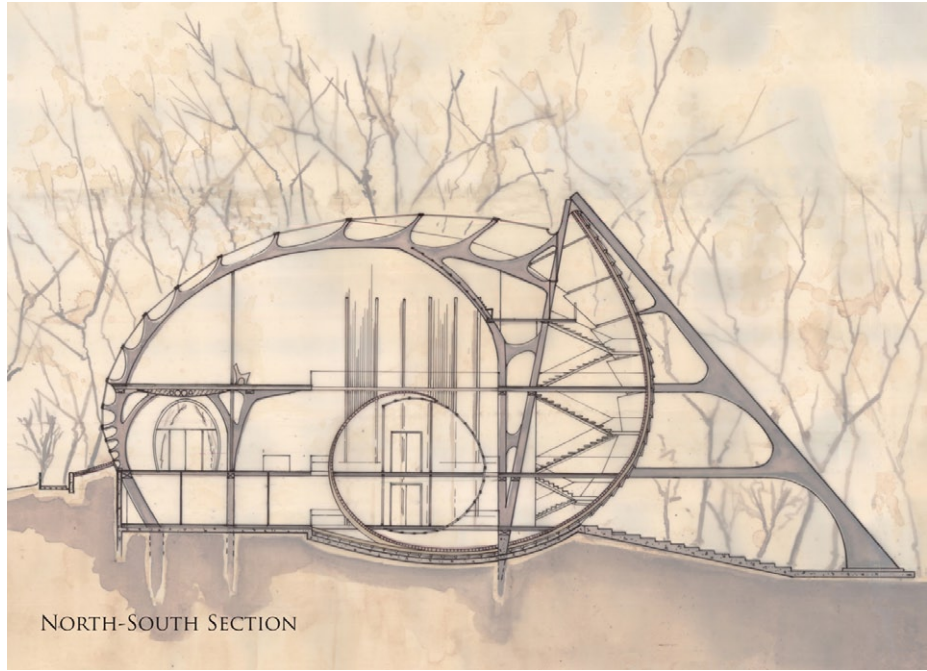
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# APPENDIX

## The Question of Universals, Words, and Representations

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Medieval Philosophy

Dr. Flood

Let's talk about cats. Let's talk about how the houses of friends and family members are infested with them, being lovingly coddled under the pretense of their "domestication". Or think about how they always look out from neighbor's windows for hours, staring at absolutely nothing. Not only do they make their way into people's houses and their respective couches, but their chestnut eyes imbedded into large balls of undifferentiated fuzz never cease to make their appearance onto calendars and greeting cards-all under the notion that such things are the epitome of innocence plus love. Little children even insist upon scratching out barely intelligible representations of their figures onto pieces of paper all while quietly "meowing" to themselves. It is these same drawings which will be unceasingly adored by delusional parents who tack them upon their refrigerators like they are the latest work of artistic genius. It seems quite apparent that cats have lost most-if not all of their natural value as responsible members of the food chain and have rather become simply highly interactive accessories for the home.

What is not clear though, is how is it that this word-cat, or the drawing of a cat, or the cat in the neighbor's window, how these are all cats. Or rather, how is it that all of these things seem to refer to one common idea? And what is this common idea? After a brief review of the cat as word, the cat as representation, and the physical instantiation of a cat, it will become apparent how all three of these must ground their intelligibility in, and must depend upon something else. This something must extend the boundaries of not only the individual intellect, but also of materiality, and time.

This "something" is most commonly referred to as a universal. By looking at all of the ways in which universals are referenced, it may be a bit easier to determine both what universals can and cannot be. Universals are often regarded as being simply words because they are the typical way in which one person communicates a universal to another person. The first step to be taken in this investigation of universals then will be to describe the universal as being communicated through language. Most importantly, it will be shown how a word cannot be the universal, but rather communication itself is hinged upon the universal. Words cannot be universals because they are always replacements. They take the place of something which is not presently there, or they are a way to refer to many common things without referring to each of them individually. For example, the word cat is not in reference to only one particular cat, yet all particular cats can be called this word. The word cat is a symbol for all cats. Just as in the case of one's needing to have the experience of at least one cat before knowing what the word cat means, words themselves cannot be the bearer of their own meaning because words are always dependent upon first having the actual experience to which the word can be tied back to. Words can also become symbols for ideas and notions which have developed from one's understanding of experience, but some sort of experience always seems necessary to build ideas up from.

In this way, words can also refer to ideas which are a synthesis of multiple different experiences, this word is then not found in a pure way within nature, but is a reference for a part or a notion attached to a particular thing. For example, take the



word “ear”. There is no thing in this world which is purely an ear. An ear must always exist physically as a part of something, yet somehow a human being cannot only recognize a cat ear and their own ear to be somehow related, somehow the same type of part, but they realize it in such a way as they are both be referred to with the same word. It is this ability for a word to not only replace a particular thing or experience but also to pick out parts of many experiences and synthesize them into one idea which reveals a bit about what universals must be. The ability to create words which refer to things or ideas which cannot even exist purely reveals that there must be a stability to universals which is beyond materiality.

This explanation still does not explain fully why words cannot be the universal though. One must look out at the way two different languages compare to each other in order to understand this. The way in which words are used to predicate must also be rooted in a trans-cultural understanding rather than a simple act of agreed-upon classification. How else could one language translate so easily into another? Two words, from two completely different cultures can refer to the same type of thing, all while maintaining the relatively same boundaries of what something can or cannot be. For example, the tail of a horse has very few physical qualities which match up to that of the tail of a lizard, if anything a horse tail looks much more like the long hair draping down a person’s back, yet cultures do not “choose” to call the hair on one’s head a tail. The lizard tail and the horse tail are both called tails because they share a similar quality which the hair on one’s head does not. How could all of these cultures consistently categorize in the same way, or rather filter out the exact same quality out of a thing in which to classify it by if it were rooted in their own choice? Basically, the things of this world have many different qualities which can relate one thing to another thing in many different ways, yet different cultures consistently pick the same trait in which to call many things the same thing by. There must be an order and stability to universals which is beyond language and culture. Clear communication from one culture to another depends upon this stability.

Another reason words cannot be the universal is that other forms of communication rest upon universals, such as the act of representation. A representation is a man-made re-creation of an experience or an idea. Think of the child who draws a picture of a cat. The child does an amazing thing by pairing down the visual experience of a cat into a few circles and lines. It is even more amazing that their parents can recognize this drawing as being a cat without even being told. No one needs to tell the child to draw the cat in the particular way in which it did, yet it still communicated the idea as well as a word. This is spectacular because it reveals how the human intellect has the ability to simplify their experiences, even at a very young age. The mind has the ability to disconnect all of the particular details of a thing and find only what is necessary to understanding. This reveals a bit of how it is possible in the first place to de-articulate experiences and find what is necessary for this thing to be what it is, and nothing else. It seems then that it is intellectually possible for persons to apprehend universals, if they do exist. The mind seems as if it is oriented towards this apprehension naturally. The fact that another individual, such as the child’s parents, can see this representation and also know what it is reveals how this reduction of experience into what is necessary must occur in relatively the same way within all people.

Representations also reveal how universals do not die out with cultures, but are somehow timeless. For example, archeologists can come upon primitive cave drawings

such as the ones found in the Indian Bhimbekta rock shelter which date back over 30,000 years. Despite the large time and culture gap between oneself and the point at which these simple drawings were done, they still communicate their ideas effectively without having any previous knowledge of the culture which created them. One can tell it is a representation of a man sitting on a horse, with birds flying around. Universals do not seem to rise and fall with a culture, but are continuously discovered by them.

Does this mean then, that the universal can be understood simply through a reduction of a visual experience? Although a representation is dependent upon and becomes a symbol for a universal, all while revealing the intellect's ability to simplify and reduce one's own experiences in a way which can be communicated effectively to another individual, it does not get to the heart of what a universal is. The limit of a representation is that some universals can be referred to by representation, yet some cannot. A representation is always limited to a communication based upon a reduction of the physical appearance of a species, such as a cat. One cannot for example, effectively represent the universal ear. One knows what an ear is not by how it looks, but by what it does. If someone was asked to draw "ear", it would be impossible. The drawing would always have to be an ear of something. Therefore if universals are dependent purely upon the reduction of a visual appearance or an assembly of parts, then all universals would be able to be represented through a drawing. This is where words have the advantage over, and do better to communicate universals than a simple representation does. They can take the place of ideas not found purely in nature. In looking at what a representation can and cannot communicate, it can be seen how a representation can communicate universals to different cultures in a timeless way, yet it also reveals how representations cannot effectively communicate many universals. Since universals cannot be rooted in words or representations, it is important to look to the final possibility and examine the relationship between a universal and the particular instantiation of that universal. This expression of a universal is different from words and representations because in many ways, the particular and material experience of a thing seem a priori to the identification of a universal. For example, one must at first have seen, or heard, or felt a cat in order to have an experience in which to tie the word back to. Does this mean then, that the universal must exist as a material thing? Does the particular cat create the universal cat? Although man's situation towards things and his accessibility to knowledge depends upon the experience of things in order to understand universals, this does not imply that the thing itself as it exists independently, is the cause of the universal.

In order to understand why the universal in some ways must exist prior to, or in union with rather than being created by a particular thing, it may be important to understand a bit more about how the intellect comprehends universals. Boethius claims that universals are likenesses, they are qualities which are found to be similar between two different things. What is this likeness though? Things can be alike in many ways, yet sometimes this likeness lends them to be called the same thing, while sometimes it does not. As stated earlier, the ear is considered an ear not purely because of what it looks like but more so by what it does. They allow the creature to hear. Another example would be a chair. Something is considered a chair because it is an artifact which is made for one person to sit upon. Even if someone were to distastefully design a chair in the

shape of a cupped hand, people would not say that it is a hand in the shape of a chair, but that it is a chair in the shape of a hand. What something does seems to always have priority over appearance. This likeness then, be it between two ears or two chairs, is dependent more upon the likeness of what it does rather than how it looks. The importance of the appearance of a thing is that it reveals how this or that thing is set up to do what it does.

Therefore in a way, the universal cannot occur after but in the thing itself, because the universal is what it does, yet this doing is not a material thing as much as it is an action done by a thing. Take again the chair, a carpenter does not put random pieces of lumber together and in the after math exclaim "Wow! It's a chair!" The maker must have the idea of the chair prior to making it. The chair simply fulfills her idea. It is the realization of her idea which is the universal. This idea of the universal does not become destroyed when the chair is though. The idea can exist beyond a particular chair and can maintain a pseudo existence as a word or representation. The chair itself though, cannot exist as a chair without this idea.

Through examining the relationship between words and universals, it can be seen how universals are trans-cultural and therefore cannot be the universals themselves, rather many different words can refer to the same universal. Words also reveal how all individuals pick out the same one similarity between things in order to define what it is. The way in which words and representations refer to universals also reveals how a universal cannot be based upon purely material categorizations. Words and representations give evidence to universals as persisting through time. The act of representation also reveals how the mind is able to reduce and simplify experiences into ideas which can be communicated to others. Finally, by looking at the relationship between universals and particular things, it can be seen how the universal is tied to what the thing does, therefore the universal is not purely material, but is the cause and the action of particular material beings. Having come to all of these different conclusions then, it seems as if universals truly exist within reality, as they persist through time, are recognized similarly by different cultures, and material things depend upon them to direct their physical organization.

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Quote about NDSU:

“Built from the soil, it grew so that we could grow better. Be it better crops, better cattle, or simply better people.”