The Architecture of Time
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ONE

THEESIS
Abstract

Architecture, today seems to be most commonly thought of as a snapshot of how it existed at a specific point in time. This point in time is always in the past, manifested as memory. This being said there is very little room for architecture in the “present.” When we think of architecture we are either imagining how it was in the past (be that distant, near-term, or immediate) or what it will be like in the future (even if only one second into that future.)

This concept explicitly states that architecture is always in constant transformation and evolution (or devolution). To this end, architecture and construction are cyclical in a sense. All projects begin life as a whimsical projection of human imagination and evolve/devolve through conception, design, construction, usage, adaptation, and ultimately disintegration. Upon this “final” end, the process eventually begins anew. Never at any point within this process is architecture ever “static” or frozen in time. All architecture is a construction of the past and an enterprise that endeavors into the future. It is built upon our previous knowledge and past ideologies and will constantly be manipulated by forces beyond itself as it moves into the future. And yet the way conceive of our built works tend to fix our buildings in time, which denies both their history and their future.

Both architecture and time constantly change and continually move forward. As time passes, innumerable factors affect the architecture and for that matter everything else in the universe. This ranges from decay, to adaptation, to marking, to destruction and ultimately reconstruction of a new entity. It is therefore impossible to ignore the past and ignorant not to consider the future. So, obviously, architecture that responds and adapts to change is therefore better suited to succeed within our ever-changing condition.

If the architect considers the concept of continual change in the design of space, its survivability will invariably be enhanced to the extent that adaptability is embedded into it. It is the designer’s choice as to how much or how little to incorporate the possibility of adaptation into the design, but in any case we cannot eliminate all vestiges of the past or even the future. All architecture responds to change whether it is intended to or not. This change is also usually cyclical; be that by day, by season, by year, by lifetime, by economic cycle, or by the endless renewal of life and death.

So in the creation of architecture, its cyclical evolution and devolution must be addressed in a real and significant way. Architecture without a sense of progressive time is not architecture, it is simply an illusion. Thus it is proposed that the project will explore the development of space that expresses this evolution/devolution process based on past knowledge and memory as well as an expectation that continual, unpredictable change is inevitably forthcoming.
Thesis Paper

Over the course of the twentieth and early twenty-first centuries, the world has witnessed unprecedented technological advancement. These advancements have had many profound and lasting influences on the global human culture. Interestingly, the improvements to the standard of living have in some ways actually separated us from reality. We, as a society, move at a much quicker pace and have learned to expect instant gratification. As a result, we tend to live for the present while ignoring the future and rejecting the past. Unfortunately, this has led to a society that has become disconnected with the passage of time. Time plays a pivotal role in our lives and to ignore that intimate connection can lead to undesirable and sometimes dangerous situations. Without fully understanding the mistakes of the past, we are prone to repeat them in the future. At the same time, without formulating the likely course of our future, we are restricting ourselves to lifestyles of the present.

As a more general condition, in today’s world of modern technology, architecture is viewed more often through the lens of a camera than it is in person. A photograph of a space is not architecture. It is an image of what that architecture looked like at a certain point in time. Unlike the building captured by the photograph, real architecture is never static. This is how many designers imagine and depict their architecture, as a photograph of a moment in time. This limits the experiential conditions within the architecture itself and downplays the importance of human interaction. As designers, we must take into account this transient and fleeting relationship between architecture and time.

In order to understand the relationship between architecture and time, we need to unearth an understanding of what time is. Time is a concept of the human mind. It cannot be seen, cannot be heard; it can only be conceptualized through the change which is witnessed in our material surroundings. In other words, time is evident not in and of itself but only through its continual progression. To provide an example of this notion, take a sports stadium. During the period when it is empty and not in use, very little progression is evident. Yet during the “event” a constant history is taken by the observer. Sensory information is recorded in the mind and manifested as memory. This mental process is proof to the existence of time.

Humans also have an unequaled yearning for knowledge and understanding. The majority of the religions in the world are geared towards answering the unsolvable questions which we most often pose. Where did we come from? Why are we here? What happens to us after we die? Many of such questions regard our relationship with time. Just as we strive to understand the cycle of life, we also hope to understand the cycle of planets and the life that lives upon them. The anxiety of our unknown origin and unknown destination proves the fact that our understanding of our place in time is uncertain at best.

This is also why we have thrown ourselves into the thresholds of science to better this understanding. Every slice of knowledge that we pull away from our inquisitive experiments expands this collective wisdom. We hope to learn everything that we possibly can in
order to answer our questions of time. In reality many questions we pose in either science or religion is really a question about time. What happens when..? What led to..? Why is it like this..? All of these are questions about happenings or events. Each of these events has changed something in ourselves, our environment, or just in the things that interest us. So why is time so important to us?

Time is the one variable which we as humans cannot control; it moves forward whether we like it or not. We have been able to manipulate our environment, our planet, our natural resources, and even ourselves but time is always beyond our reach. We cannot stop the sun from setting, or the seasons from changing, or tides from flowing. What designers can do, however, is to accept this change and use it to their advantage in some way.

Just as change cannot be eliminated from our surroundings, it is also impossible to halt the passage of time in relationship to the human body. Our bodies change over time and age as each second passes. From the time of birth to the time of death, we are in a state of constant flux, the means of which cannot be controlled. This demonstrates that the cycle of life is inescapable. This realization is a very rare thing in the animal kingdom, humans are arguably the only animal to understand and anticipate the coming of death. Yet we also understand that there is a cycle of life not just a beginning and an end. There is also the idea that as one life ends another begins. This natural transition is inherent to not only the life cycle of humans but of all things, including architecture.

Just as we die, so can our architecture, and once it does, it becomes something new. The material nature of all things ensures that there is a constant cycle of life and death. When a building is destroyed, it transforms into a pile of rubble. At which point, the individual pieces of the structure begin lives as something else. This is true no matter what they are used for; whether they are directly reused in their intended purposes, used in a different function, recycled, or simply returned to the earth. This material cycle of life and death is much easier to accept than that of our own bodies.

To combat the limited lifespan with which humans have to adhere, we heavily invest into our own health and wellbeing in an attempt to lengthen our short lives. Medical technology is a top priority in modern society not only as a means to save ourselves but also to save others from being taken away. This fear of death drives us to solve the until-recently “disunderstanding” of many detrimental health complications. This investment into ourselves proves that fact that humans can and do understand that actions in the present will affect us in the future. We understand that by eating healthy and exercising now, even though we may not enjoy it, we are probably extending our lifespan.

Obviously we, as humans, live a dynamic, ever-changing life style. We also understand that as we grow and evolve as individuals, our priorities will also change. This is coupled with the fact that our environment continually changes all around us demonstrates that the human culture is one that is extremely organic and transmutable.
This being said, it can easily be concluded that elements of our lives that do not adhere to this flexibility are incompatible with us in the long run. In an architectural essay by Karsten Harries called Time Death, and Building: he asserts that we as humans require and demand change, so static architecture is incompatible with us. Not only do people and buildings evolve in tandem, but they also influence each other as they do so. David Leatherbarrow in his book: On Weathering: The Life of Buildings in Time says that a house is “never finished” meaning that it evolves along with the occupant.

This evolution can take place in a nearly endless array of forms from functional to merely aesthetic changes. In any case, the architecture that a person chooses to inhabit becomes a representation of that person in and of itself. You can learn about the priorities, the beliefs, and the characteristics of that individual or group of individuals just by examining the place they call home. This merger between human and architecture is not instantaneous, however. These connections grow stronger as time passes and as changes within the “inhabiter and the habitat” begin to reflect upon each other.

In On Weathering, Leatherbarrow also says that even as the final touches of a space are added by the human hand, the change does not end there. He states that the human “finish” is not the final product. In this case by finish he means the final details added at the end of construction such as paint, varnish, sealer, stucco, and so on. After the builder has applied his finish, it then becomes nature’s turn to add her finish. We tend to consider a building to be fully complete once construction has ended but this is not the case. Even before the moment the human hand lifts away from the surface of architecture, change has already begun. Over the course of a buildings lifetime, it is constantly in a state of transformation. The change inherent to the environment physically affects everything it is in contact with, including architecture.

This action is clearly evident through the accumulation of patina. Patina is the product of environmental weathering. Weathering is a characteristic of the relationship between architecture and its passage through time. In the work of LeCorbusier, he often made the attempt to create a surreal, “timeless” form of architecture with the rejection of patina. He thought that white was the purest of colors and that the taint of dirt and grime was detrimental to the aesthetic of his buildings. He even calculated an idea of the perfect temperature within dwellings. This could not change two degrees up or down without compromising the architectural integrity of a space. Obviously, to him architecture was more of a work of art than it was a dwelling. The rejection of patina is a rejection of time. A rejection of time means nothing because it will always continue to press forward. This passage of time will always leave lasting effects on architecture.

Patina is only an aesthetic manifestation of weathering, however. Deterioration is just as common but is much more intrusive to architecture. As Adrian Stokes reminds us in Stones of Rimini, “Earth is decomposed rock.” By this he means that through the passage of time, mountains erode into boulders, boulders to stones, stones to pebbles, pebbles to sand, and
sand mixes with organic matter to form what we call earth or soil. David Leatherbarrow seems to go a step further. He says that through sedimentation and erosion each “artwork” will inevitably return to nature. All material things, including architecture, have life cycles just as humans do. They begin as one thing and over the course of their lifetime; they change just as we do. Once this change is complete, a new life cycle begins and the material is reborn anew.

According to G. Rostrevor Hamilton in Bergson and Future Philosophy, “matter at is ideal limit has no duration; it dies and is born again unceasingly.” In other words, matter and architecture evolve throughout their lives until they cease to exist as their original function and begin a new life as something else. He later expands upon this by saying that every individual or thing has its own duration of time. This means that the duration of a cycle of one thing does not correspond with another. All things go through their own lives and create a story along the way. No two stories are ever the same and never share a duration.

Harries expands upon this idea in Time, Death, and Architecture: “All that now is or promises to come into being someday will be gone. The past will overtake any future.” To say that the future is never too far away for the past to overtake is to say that time will never halt. The continual motion of time ensures that all things will be forced to live through their life cycles. Necessarily, nothing will ever become static.

Unfortunately, however, Harries is right when he says that “the fact that we photograph architecture demonstrates that we view it as stationary in time.” Architecture without a sense of time is not really architecture, it is simply and illusion. Just the same, a photograph of architecture is not architecture it is an illusion or an image of a piece of architecture frozen in time. He expands upon this when he says that architecture depicted in a photograph is in a state of “derealization.” Real architecture undergoes constant change and is never frozen in time like the photograph suggests. Without a sense of time, we cannot experience architecture.

“Time is as intimately involved in our experience of architecture as space,” says Harries in Time, Death, and Architecture. Architecture is experienced only through the moving body. We move in, and out, and around it to view it from the many possible perspectives. Without time, we cannot experience a space in three dimensions. This is precisely what sets architecture apart from the art pictured on a flat page. As Stokes says in Stones of Rimini, “The stones (sculpture) make permanent drama.” In other words they portray a moment in time, forever. The sculpture will only ever depict that same scene frozen in time. Harries agrees. He says that painting and sculpture are instances in time and that architecture is not. Although painting and sculpture invite us to change perspectives they cannot be experienced in the same way as architecture.

Architecture, unlike art can be experienced in all perspectives and can be physically explored. Art is meant to be viewed whereas architecture is meant to be inhabited. Without
human interaction, architecture ceases to be architecture and become a work of art. And, interaction can only be manifested over the passage of time. So without the passage of time, there can be no architecture. On the other hand, architecture is also unlike music and poetry but for a different reason. Music and poetry are similar to architecture in that they cannot exist without time but the difference is that they then cease to exist entirely.

As soon as a performance is over or a reading is finished, it vanishes. For this reason sound is a very useful tool in determining the passage of time. When an “event” takes place, it is through human, spatial, and mental interaction that we experience the passage of time, whether this is manifested through the sound of music, singing, reading, speaking or more secondary sounds such as the squeak of a chair as its owners shifts his weight or the shuffle of feet as they move down the isle. This constant action cannot be denied. But once the sound of the event vanishes and the space becomes quiet, the event is over understood as over.

Similarly, architecture is also influenced just as much by sound travel. The spaces within a building manipulate and distort sound. Mass restricts sound as void allows it to pass. Once again it is human interaction that produces this sound. As we move through a space and interact with out surroundings, we inevitably make noise. Footsteps in a hallway, the sound of doors opening and closing, the echo of conversation all demonstrate the passage of time in relationship to our bodies and ourselves. Thus, sound is a key component to human interaction and without time, sound does not exist.

So, architecture, like poetry and music, is one of the few arts that cannot be separated from time. If, painting, photographs, and sculpture are a moment frozen in time and music and poetry are “timeless” then where does architecture fall into the hierarchy? The role of architecture goes even further than these. It is not a moment in time. It also does not cease to exist instantaneously. However, it is derived from direct human interaction. This interaction is what makes architecture. It may be obvious that architecture must change as time passes but it what ways does this change occur?

There are just as many types of change as there are representative concepts of human time. To keep the topics from being overwhelming, the list will be broken down into five categories. The first is reuse and disuse which relates to how a space changes in use or becomes no longer utilized. The second is functional in which the space is no longer used for its intended purpose but instead used in a functionally different way. This differs from reuse in that the change in function is a preprogrammed rather than haphazard, after-the-fact reuse. The third category relates to the physical nature of the change in materials over the course of time. The fourth is environmental change in which it is not the building itself which is changing but the environment in which it resides. Finally the fifth category is that of “process” in which the process of building is important.

The term adaptive reuse has become a household phrase as we continue to look for ways to
not only protect the environment but also to simply save money. As a building becomes old or out of date and is no longer able to be utilized in its original function, something must change. This change can come in a number of ways. The first is probably the simplest. Tear it down. This may be drastic in many instances however. The history of the building would become lost and any significance it may have had would be no longer evident. The demolished building also creates a state of dis-investment. Money and materials are lost by paying to have it torn down and shipped away before new construction can even begin. Despite these disadvantages, demolition sometimes is the correct choice. This is when the cost of restoration far exceeds that of a fresh start or when the original building is too damaged to economically repaired.

Similar to this idea is that of partial demolition. This is done when only part of the building is torn down as the remainder is still functional and profitable to maintain. This idea of de-addition is very interesting because it represents the reverse of what we normally expect. We often add onto buildings when more space is needed but what about removing space as it becomes unneeded? In some cases, the old is added onto and eventually the new can replace the old.

The final possibility is that of pure adaptive reuse. The building is converted into a new function and from that point on, only the history of the old use lingers. This is becoming more and more popular as people begin to admire the history and the architecture of our past. Many times, in the United States, we have felt envy towards other, older nations for their rich history and evolution. Well, we have begun to establish our own traditions and adaptive reuse is one key example of that.

The second category of building change is functional flexibility. This is an attempt to provide the opportunity to utilize adaptive reuse in the future. In other words, future functional change is planned ahead of time. This is very useful as it can be a time and money saver down the line and could actually prevent demolition of our history through economic incentive.

Buildings that are designed to be changed can come in a number of forms from the simple to the extreme. This can be realized through the form of taller ceilings, open floor plans, and flexible openings. Such spaces can be easily converted into different functions for little cost. Modular construction is another example. If a building can be added onto or reconfigured simply by adding another pre-designed module, it can easily expand as long as additional space exists to do so. Walls that are flexible enough to move or be rearrangeable can also be utilized to create flexible interior spaces that are conducive to multiple functions. Whether the flexibility is in plan, elevation, sections, or void, design decisions can be made prior to construction and planned for later reuse.

The next logical category is that of physical building change. This means that the skin of a building should be flexible enough to represent and react to the passage of time. The subtle-
ties of weathering and deterioration were discussed earlier. These changes are inherent to all buildings regardless of materiality and this must be taken into consideration during design. Very few buildings are built with the intention that they will deteriorate down into nothing. We build to make things useful and to serve a function. This function is compromised if extensive deterioration damages the building beyond usability.

In order to combat this, the design must somehow incorporate the notion that it will become damaged and repair will be needed. In some cases, the building façade is actually constructed of living material. Literally, the building itself is a living organism such as a cultivated and manipulated forest. The trunks become the walls and the canopy becomes the roof. In this case, the building actually heals itself and over time actually becomes stronger as it grows. This is an extreme example but the idea can be probably be used in a more subtle fashion.

In other cases, the building itself is constructed of a temporary material that is designed to disintegrate into nothing such as ice or untreated wood. In this case, the architecture attempts to prove a point regarding the temporal nature of material things. As time wears on, the materials begin to fade and flake away until it eventually vanishes altogether. Not only does such a process remind us of how temporary we are in the long run but it is also environmentally intelligent to build with materials that are known to be biodegradable. Such practices would bring us in touch with our surroundings.

As mentioned earlier, architecture never exists without a context, which brings us to the next category, environmental integration. Architecture is always contained within an environment. The architecture affects its surroundings just as its surroundings affect it in return. This relationship is very meaningful in that it is designed it can actually be beneficial compared to detrimental when set at odds with one another. In other words, the building can feed from the environment while reducing pollution instead of trying to combat the environment. A metaphor of this is the owner and his house. No one purposely damages the place in which he lives. He maintains it and takes care of it so that it can shelter him and provide him with security. The same should be true of architecture and its environment. Buildings should not damage their surroundings. The two should have a symbiotic relationship. Attempting fight the forces of nature is not only inefficient but also futile. The best architecture is that which works with rather than against its environment.

This could be building upon stilts in a flood plain, or the inverse as on an island which is accessible only when tidal forces allow it. Seasons will always change and day will always turn into night. These changes should be considered during design and be utilized as an architectural element. This can be emphasized through a physical reaction in the building as the wind speed and strength change or as the sun sets or rises.

Architecture that ignores its environment is at a disadvantage from the start. The context surrounding a building is constantly changing just as the built and unbuilt landscape is con-
tinually changing. From the moment a plant is set into the ground, it begins to grow and this evolution changes the context around it. The landscape is a part of the architectural design and must be integrated in such a way as to add to the aesthetics and not do damage towards it.

Most importantly, the architecture also affects the environment in all cases. Architecture is constructed of materials and according to the information discovered early in this essay, nothing lasts forever. So what happens to the materials from which the architecture is built at the end of its life? It does not disappear, it returns to the earth. If these materials do no degrade naturally, they become a form of pollution. This can be prevented through thorough deconstruction and reclamation at the end of a building's life cycle or by simply using environmentally sustainable materials to begin with. Similarly, architecture continually releases gas emissions and pollution runoff during its inhabitation. This is also a form of environmental damage that should be thoroughly addressed. In any case, design can be a tool which reduces and even prevents the pollution of our planet in the first place.

The final and probably simplest category is that of process. In other words the actual act of making is significant to the relationship between architecture and time. The act of producing leaves marks on what is made and becomes a representation of the process of the making itself.

Architecture obviously does not just appear out of nowhere, it is ultimately built by the human hand. It is just as important to indemnify the process as it is to protect the artifact. The act of building is just as much of an art form as the end product and this ritual should be represented in some form by the architecture itself. The techniques of construction are continually being refined and reinvented to suit modern techniques and designs. Through this it is inherent that buildings in and of themselves speak about the specific time period in which they were built.

This should also be extended beyond the initial construction and into the maintenance procedures. The act of maintaining is supportive of the notion that architecture is always in a constant state of flux. It is ever-changing and ever-evolving and this continual act of preservation and repair directly represents that. This routine continuation should somehow be reflected within the architecture itself in order to best signify the never-ending passage of time.

These ways in which architecture can change are representative of the flow of time and how architecture and time affect one another. These are not only examples of ways in which this change is manifested but also aspects that should be taken into consideration during the design process. Unfortunately, this is not always the case.

Overall, these categories represent a set of useful design tools with which to more thoughtfully create architecture. Architecture that incorporates these strategies would ultimately
have a much closer relationship with not only the environment but also ourselves. This is gradually becoming more and more necessary as the population continues to increase as our natural resources decrease. In order to better understand how to build architecture that relates to us, we must understand the intricacies of the relationship between architecture and time through the lens of human interaction. It is these intersections which must be studied to allow us an understanding of what we are doing wrong and what can be improved upon to further our relationship with our architecture and consequently our relationship with our environment as a whole. Architecture and time have an inclusive relationship. As proven earlier, without time architecture could not exist and without architecture, the passage of time on a human scale would not be properly represented. This is why the realization that architecture is continually evolving and devolving into new and unique states must be made in order to better understand our place, time, and impact in the universe.
CASE STUDIES
In the world of architecture, time is never static. It is everflowing, ever-(de)evolving, and always re-imagining itself. Like time, architecture also follows this pattern of continual re-invention. Just as you can never step into the same river twice, you will never see the exact same piece of architecture a second time. By the time you return to the site, many nuances of its previous form will have changed. This change can range from the slow, subtle accumulation of patina to a drastic change in programmatic function; from the gradual ambient environmental change of the surrounding area to the complete destruction of the building; and so on.

There are an infinite number of cases in which the built environment has changed and begun “its own course.“ Every building quickly takes on a life of its own after completion. No matter how closely regulated change is in a piece of architecture, it can never entirely be made static. No one can protect architecture from getting wet during a rainstorm. Patina can be washed but not entirely removed without causing damage to finishes. Inhabited spaces can never be entirely dust free, no matter the cleaning regime. Deterioration and change on even a microscopic level will always occur without exception. The world in which it exists is built to reuse and recycle everything in it.

There is nothing we as humans can do to prevent this change. Even if we were to encase architecture into a condition of artificial stasis in an attempt to eliminate all change, (besides the fact that the architecture at that point would lose all possible meaning) change and deterioration would still occur. This may be at a slowed pace but there is nothing that can fend off such change.

For decades, we have made attempts to prolong the life of our most significant paper documents. This has been done by way of the creation of architecture and technology that regulates temperature and humidity change which have destructive effects towards parchment. Even if all environmental factors are removed from the equation, (which is inevitably impossible) this would mean that no one would ever be able to read what was meant to be read. Yet if no one reads the documents then what is their significance? Is it their mere existence or is it really their significance in relation to the human beings that created and are affected by the piece of writing? Most probably, it is the latter.

In both of the above examples, the point is that change is not preventable in its entirety as well as the fact that even if it were possible to achieve, “static architecture“ would be devoid of any human meaning.

So what follows is actually the exception rather than the rule. Selected are a series of projects in which the designer intentionally planned for the continual change of his or her work of architecture. In each case, the intention differs but each is still relevant to the process.
Ise Grand Shrine
Ise, Japan
Shinto Tradition

There are few examples of architecture that convey the passage of time as well as the Ise Grand Shrine. The shrine itself is not really all that important. What really matters, especially to the Shinto Monks of the area, is the process by which the structure and its site are constructed and venerated. Every twenty years, beginning in the third century C.E. the shrine is disassembled and rebuilt using the same techniques, tools, and materials, but nothing is reused for the exact same purpose it was originally intended to fulfill. Each new piece is either rebuilt from scratch or cut out of a larger-sized piece.

To this end, although the structure appears to be an exact replica of the previous iteration, in reality it is a completely new creation. For all intents and purposes, there is literally nothing that is the same between the new and the old. The physical site on which the shrine is constructed is not the same. With every recreation of the shrine, it is rebuilt not on the same plot of land but directly adjacent to the previous site. This new site has been left untouched for generations in order to allow the surrounding forest to mature. These trees are then harvested using the same traditional methods of the original Grand Shrine and used in the construction of the new.

To the monks this process of construction, disassembly, and renewal is an analogy for the cycle of life. All things have a beginning just as all things also have an end. Once the end inevitably comes, a new condition emerges to take its place. In this sense life according to the Shinto monks of Ise is cyclical. It is filled with constant birth, death and renewal and such beliefs are clearly evident in the manifestation of their most sacred architecture [1]
Galleria West
Seoul, South Korea
UN Studio

The Galleria West is quite unique in the world of architecture in that it actually adapts to the changes of its surrounding environment. The building itself is relatively unassuming during the normal working hours of the daytime but once the sun begins to go down, it takes on a whole new life. The entire facade of the building is covered in translucent disks that allow diffuse light to pass through. Behind each disk is an LED light with the ability to change in a wide variety of colors. This creates a dramatic change of the building between day and night.

Although this condition is interesting in its own right, the story does not end here. Each individual LED light is linked to a central control console which is in turn linked to several integrated sensors attached to the exterior of the building. These sensors allow the “fabric light show” to respond to not only the time of day but also such environmental conditions as wind strength and direction as well as ambient noise. So depending on the time of day and the activity level, both human and natural, the facade of the Galleria physically modifies itself in response to its surrounding conditions. [2] [3]

In this respect, the time-orientation aspect of the Galleria is multilayered as all buildings should be. It responds to several conditions of the surrounding area.
Lindisfarne Castle
Holy Island, England
Kingdom of England

During the sixteenth century in the British Isles there was a dramatic lack of political, social and economic stability. The border between England and Scotland was constantly shifting as the struggle of conquest roared on. To make matters even more complicated, Nordic invasions by sea were almost a common occurrence. To combat this insecurity and in an attempt to secure her borders, England began to construct a number of forts and castles along the border with Scotland and near the more vulnerable or important port cities.

One of these castles that was built during this time was a very unique one on Holy Island in the region of Northumberland. The castle was built to protect the small port town at Lindisfarne, however, the castle itself is not really the interesting component in this story. What is of interest is the choice of site on which both the city and the castle were placed. In order to create a higher degree of defensibility, they were constructed upon an island. That is, at least part of the time.

The island is actually connected to the mainland by a causeway. But this is only the case during low tide. During high tide, the entire road leading from Holy Island to mainland England becomes submerged under a considerable depth of water. This not only demonstrates the designers ingenuity but also his sense of time in relation to architecture. In this case, the architecture itself does not change, the environment around it does.

Even in modern times, the community maintains this unique condition. The road has been paved using modern materials and still goes through the daily submerging and emerging process.[4]
Ice House Detroit
Detroit, Michigan
Gregory Holm & Matthew Radune

Not all architecture has to serve a specific function in order to convey a meaningful relationship with the passage of time. In the case of Ice House Detroit, a simple modification speaks volumes. During the winter of 2009-2010 an architect, Matthew Radune, and an artist, Gregory Holm, endeavored to create an installation that they felt represented the rest of the state and the country. They chose an abandoned house in the shrinking city of Detroit, Michigan as their canvas.

Once winter began, they got to work. In freezing temperatures, they sprayed the house with a high powered hose. The house steadily began to accumulate a layer of ice over its entire surface. Icicles formed and all the surrounding ground and plant life took on a new winter-wonderland atmosphere. But their intentions of the project were far from whimsical. In fact they were pretty grim when it comes right down to it. The entire installation was created as a social and economic commentary. It is meant to represent the poor state of the economy at the time and the housing crash of 2009. Many people during this period began losing their homes to foreclosure and the flight of residents from Detroit and Michigan itself marched on. In 2009, Michigan was one of only two states that actually saw its population decline. Their project is meant to highlight this condition and to call attention to just one of the 80,000 abandoned homes in the city.

On of the most interesting components of the installation is its duration. Since the ice could only exist during the sub-freezing temperatures of winter, once it warmed enough, the project was over. In the aftermath, the house was then deconstructed and the materials reclaimed to be re-used as future construction material. In the end Ice House Detroit was a temporary installation for a temporary circumstance.
Auerworld Palace
Germany
Marcel Kalberer &
Sanfte Strukturen

Most architecture is built to resist change, yet some are designed, based on the structure, expecting that change will inevitably occur. In the case of Auerworld Palace, the architecture is actually the living landscape. Designed and built by a couple of thesis students in a field in Germany, the Palace was designed to change on its own.

The group began by planting trees in a designed pattern which created a formal quality in plan. The ends of these trees were then lashed together with other adjacent trees and formed into a central dome. Great care was taken in constructing the features and elements of the living archways, trusses, and aesthetic crisscrossing features of the structure.

Since the Auerworld Palace is literally constructed from the landscape in which it resides, the two elements evolve in unison. On the pages opposite, a graphic depiction of this change is provided. Over the course of the last fifteen years especially, marked changes have begun to occur. The designers even predicted the outcome as far into the future as 2012.

In the image above the diagrams, one can see a more recent image of the actual building after a period of extensive growth. It is quite obvious that the formal quality of the original design has been mostly lost as the plant-life has continued to grow, yet the overall shape of the building remains essentially intact. The ornate arches have merely mutated into more simplistic versions of their former selves.

The Auerworld Palace is a very interesting example of how architecture can change over time in a very literal and materialistic way, although it may be a very unique and rare circumstance.
Airtecture Hall
(No permanent site)
Festo KG

Architecture as process is inherently time driven at its core. Just as the Ise Grand Shrine is significant because of the construction techniques and traditions, so the Airtecture Hall also anticipates change through a specific construction technique. The Hall itself is a pneumatic structure with integrated, inflatable trusses to support a roof and walls. The building itself is specially designed to be collapsible much like a camping tent but on a much larger scale.

A modern version of the carnival tent, it can be packed up and transported to any locale in which such a structure is needed. Once again, the erection of the building is what is significant to the thesis. Since the building itself is designed to be a temporary structure that migrates from site to site, its relationship with regards to the passage of time is obvious yet significant at the same time.
Not all adaptive reuse projects are drastic rethinks of the function of a building. Sometimes, functional change is very minimal compared to the formal changes. In the case of Castelvecchio by Carlo Scarpa, an historic castle was converted in order to take on the function of a museum. The elements within and surrounding the castle have been modified and reorganized to express this transformation.

Sections of the fortification were cut away to reveal that it was no longer to be used as a structure for war. These incisions were also designed to allow the onlooker hints of the activity within while still keeping much of the historic qualities of the site intact. Art and sculpture that originally inhabited the castle itself have been reused in a purposeful way in order to be a modernistic spin on the centuries old structure.

Interestingly, many aspects of the redesign were intended to mimic the original and to expand upon it while others stand in stark contrast to the existing and historical conditions. In some areas, historical materials and techniques were used in order to exemplify the respect that the designer held for history. Yet in others, modern materials and techniques seem to stand in direct opposition to the classical elements.

Steel, concrete, and glass were all brought in to expand upon the already intriguing array of local materials. In many places, the old features were surgically rearranged and modified to create something entirely new. Walls were picked apart, statues were moved to strange places, new roofs were added to accent and contrast with the originals. Scarpa truly created a uniquely integrated combination of historic preservation and bold adaptive reuse that may or may not be controversial even if the work was done today, nearly fifty years since it was originally done.
Conner’s Creek Power Station
Detroit, Michigan

Usually modifications to existing architecture is expected to come in the form of additions or renovations. These may be common occurrences but definitely not the only possibility. There are also some instances in which sections are removed from the original or in some extreme cases, the original is added onto and the new structure takes the place of the old after a certain period of time.

This is the case of the Conner’s Creek Power Plant in Detroit, Michigan. Known locally as the Seven Sisters, Two Brothers, thanks to the nine total smoke stacks, the power plant has been an icon of the industrial function of the region since it was first put into use. Originally, the site consisted of one building that housed the seven large smokestacks: the seven sisters, but at some point in time the technology utilized in this section of building was starting to become obsolete. So it was decided that a second plant would be added in order to supplement the original which gave rise to the two brothers.

This much more modern and efficient section of the power plant slowly became more utilized than the original although all nine stacks continued to be used at some level. However after a certain point, post World War II, as the industrial function of Detroit began to decline, the need for such a large, central power plant became diminished. Considering the fact that the Seven Sisters were so marginalized and underused, they were deemed to be unneeded. The more modern two brothers, although also seldom used were kept in case they may be needed in the future.

With that, the historic seven sisters were to come down. The addition to the power plant had become the entirety of the power plant. The old replaced the new and a new chapter emerged at Conner’s Creek.
When designing a building that caters to the people who will inhabit it, questions regarding space always linger. How is the appropriate amount of space determined? How does one determine what mix of spaces would be suited to the majority of clients. The answer that Tay Yee Wei came up with is simple, let the inhabitant decide.

Only the user of the space will fully understand their own needs and are best suited to determine their own space requirements. The Plug-In Dwelling proposed for construction in Malaysia does just this. It consists of modular hexagonal pods that can be combined together to create additional space. Each pod can serve a variety of functions. They can be converted into kitchens, bathrooms, bedrooms, living spaces, and so on. The client can decide how much space is needed and when it is appropriate to expand their own living quarters which can be done at any time.

If more space is needed, another pod can be added, if downsizing is in order, a pod can be removed. This building is an example of a space in which the actual space is flexible enough to literally change the square footage of a unit on an as-needed basis.

The interesting aspect of this is design does not even lie within the program but in the way in which space is paid for. Instead of purchasing the pod or the interior, the space in which the pod resides is rented out. So depending on how much square footage is needed and in turn how many pods are needed a certain portion of the three-dimensional space within the structure is taken up by that individual unit. So the amount of volume used, not the square footage is the basis of measurement in determining rent.

Clearly, this building is an interesting and significant example of architecture that is geared towards the continual change of use presented by the thesis.
Domestic Transformer
Hong Kong, China
Gary Chang

With similar concepts to the Plug-In Dwelling in mind, Gary Chang designed his private home in Hong Kong. He affectionately calls it the Domestic Transformer. Rather than using the solid and void of Tay Yee Wei’s design however, he intended to maximize the functionality of his very limited space.

He grew up in this cramped space as a child. His family of four and a tenant were all living in this tiny space together. Due to such limited room, he was forced to sleep in a cot in the hallway. After many years of entrapment and eventually earning a degree in architecture, he was given the apartment to use as his own. However, he had a larger vision of an architect’s home and strove to expand upon this tiny family home.

In order to maximize his space, he decided to attach entire rooms to panels suspended on rolling tracks attached to the ceiling. In this way, he was able to create twenty-four different layouts in a space that only had enough room for maybe one or two. Whenever he needs to use a specific function of his apartment, he has the ability to just roll the walls away and once they are no longer needed they can recede away like tools in a drawer.

Every amenity he hoped for he was able to include; from a jetted bathtub, to a full kitchen and from a complete library to adequate storage. He has the luxury of a queen sized bed for night time or a suspended hammock for lounging during the day.

Once again this is an example of architecture that can be manipulated to serve a specific function on an as needed basis.
THREE

SKETCH

PROBLEMS

THREE
Not everything can be learned from researching the work of others, however. At some point, in order to create an idea of your own, one must produce their own experiments to explore the possible questions which still remain unanswered. This thesis is no exception. After reviewing and studying how ten different buildings intentionally respond to the passage of time in ten different ways, questions began to arise as to what all of these installations mean and what relevance they truly hold in the relationship between architecture and time.

Living architecture continually changes. Sometimes the building can respond to the environment. Sometimes, the environment itself changes around the architecture. Or it can be physically manipulated on an as needed basis: on a massive scale; or even an individual’s scale. Sometimes, the building is simply reused and reorganized once its original function is no longer viable. Some architecture emphasizes its own construction methods; or its own mobility. Whatever the case may be, all architecture ultimately changes on some level. This change can obviously take the form of a nearly limitless range of possibilities, but maybe these possibilities can be broken down into simpler categories.

But then the question becomes: what are the criteria that set up these categories? Is it random? Is it flawlessly structured? Experiments that make sense in terms of the thesis must fall at the intersection of architecture, time, and event. Without time there can be no interaction. Without interaction, there can be no architecture. So in every case the experiment must include all three of the necessary components: architecture, time, and human interaction.

In this section there are four explorations that were intended to delve deeper into this intersection and to explore the possibilities of what can happen and what does happen when the three elements meet under certain conditions. Each sketch problem has specific goals and guiding principles. Each stands on its own yet compliments the others. They are designed to be unique and as such tell a different tale.

They are not simply examples of architecture’s relationship with time and human interaction, they are experiments and investigative insights into the many possibilities that can take place in this three-way intersection. They, however do not claim to cover every basis and exhaust every avenue of the architecture/time relationship. They are simply explorations that are intended to exemplify and learn from the persistent progression of time in relation to architecture.
Seasonal Pavilion

The first of the sketch problems is reliant on human interaction in order to function. The premise behind it is that the architecture will change function on a seasonal basis. This change will not be self-imposing but instead requires the users to physically manipulate the constituent components into the different configurations. These pavilions are intended for utilization by people in the more rural parts of northern Michigan.

During the springtime, the components would be organized into a configuration which will facilitate a flower and plant shop that will cater to gardeners who plant during the spring months. To accommodate this function, the organization of the parts will allow for the maximum amount of display space on which to place the flower and plant pots. (As seen in the upper left image on the opposite page.)

At the start of summer the pavilion will be deconstructed and rebuilt as a sales stand for black cherries. In order to protect the salesperson from the harsh summer sun, the organization of the components will create a window and roof style shading device. The footprint of the cherry sales stand is much smaller than that of the flower pavilion due to the reduced storage need of cherries compared to flower pots. (The image on the upper right of the following page shows the configuration.)

When fall comes along, the cherry stand is once again deconstructed and rebuilt using the same components to create an installation that functions as sales and consumption of cider and donuts. The hinged walls and roof of the cherry stand fold into box shaped chairs on which customers can sit and relax while they enjoy their cider and donuts. The window and walls reorganize and combine to form tables as seen in the bottom left image on the following page.

The final configuration of the seasonal pavilion is a beacon that demarks the location of the road to warn snowmobilers during the winter months. With large amounts of snow covering the landscape, it can become easy to mistake a snowy road for and open field or frozen creek. This configuration helps ease that danger. Once springtime comes, the pavilion once again takes on the form of a flower stand.
Dirt, grime, leaching, and deterioration are all integral to our understanding of the affect that the elements have on the materials we use to construct architecture and machines. This accumulation of patina is a huge indicator of the passage of time. The physical elements are literally transformed in a very visible way. The materials that are used to build, support, and clad these structures only remain pristine for a very short period. Most often noticeable amounts of patina and deterioration have already accumulated within the span of one month or even less.

There are two ways in which this change can be dealt with. The first option is that money can be invested in an attempt to clean off the patina and the deterioration can be attempted to be repaired. The other option is that the patina can embraced as a design element or at the very least understood as an element that adds character to the building; and the deterioration can be stabilized to accentuate the scars created by the environment. The second of these options is probably the more interesting and meaningful choice.

This sketch problem was intended to explore that avenue. A road side rest stop was chosen as the program from which to design the charrette. Materials were chosen based on their deterioration and patina accumulation characteristics. The roof-cap of the building is pyramidal and made of concrete clad in untreated steel. Over time this steel would begin to accumulate rust and begin to deteriorate. This run off would then get swept up with the rain water and get carried through the integrated gutter system of the roof and flow down the channel cut into the wall of the building. This action would leave rust staining on the concrete facade of the channel.

To build upon this, other elements of the rest stop were also clad in untreated materials. Along all facades of the building is a strip of copper plating and a band of untreated wood. All of these elements are intended to accentuate the passage of time through the lens of patina and deterioration. This is just one very straight forward example of how these processes can be utilized in order to create a designed element for architectural installations.
Box Experiment

Although this section is called the box experiment it has less to do with the fact that the objects are boxes and more to do with the materiality from which they are constructed. The experiment really is an exploration which is secondary to the patina project rather than a stand alone iteration.

The process began with five boxes made of thin cardboard which was glued together to hold its shape. These boxes were then taken to an exterior space and subjected to five unique environmental conditions. Each box was correspondingly marked with a number that relates to the condition in which it was placed. The first box was placed on an elevated, well drained platform as a control. The second box was placed directly on top of the soil in a garden space. The third was buried just below the soil surface near box two. The fourth box was placed in a container filled partially with water so that the water level was half the height of the box itself. And finally the fifth box was placed into a container of water with which the water was filled to twice the height of the box itself.

The boxes were inspected daily to ensure their unique conditions had not changed or any forces alien to the process had affected them such as animals or curious people. However each box was exposed to the rain and wind which factored into the patina and level of deterioration of each object.

After the cardboard boxes had been subjected to the elements for ten days, the process was repeated with the same exact methodology as of that explained prior with the exception of materiality. Three new materials were chosen to repeat the experiment. On the opposite page from top to bottom, with the before line-up on top in each pairing are: aluminum cubes, untreated steel cubes, and solid wood cubes. These boxes underwent the same process as the cardboard in order to get a first hand understanding of how each material deteriorates and accumulates patina when exposed to the elements. This experiment informed the overall process of the thesis by providing direct insight into the affect of the environment on these specific material choices.
The Blind House

Architecture is generally a visually oriented profession. Buildings have much to do with spatial relationships, formal qualities, programmatic design, visual aesthetics, and qualities of light. But architecture also contains other important design elements. The sense of touch is also integral to how architecture is understood. Materiality creates a level of texture while solar heat gain and ventilation allow for change in ambient temperature. The hardness felt underfoot of tile stands in stark contrast to the soft cushion of padded carpet. But do these actions not create sound? How well is the connection between the built environment and our sense of hearing understood?

Sound is our most temporary sense and thus our most potent indicator of the passage of time. The sense of sight can be prolonged. One can stare into the forest for an entire lifetime without a care beside food and water. The invention of photographs reinforce this idea. Each image captures a singular scene for all eternity. This picture prolongs the experience indefinitely. The sense of taste can linger for extended periods of time as well. If you eat a potent food or neglect to brush your teeth, the taste of your last meal can stay with you an entire day. The same goes for our sense of smell. The sense of touch lasts as long as you decide to stay in a cold room or run your hand over a rocky surface. But the experience of sound only lasts as long as the sound exists. Once its over, the event no longer exists.

That revelation is the premise for this sketch problem. It explores the possibilities that lie within the transition between sound and architecture. It is a reading room designed for a blind man. The architecture is simple and unordained but the real interaction rests within the sound possibilities. The interior is unlit as there is no need to convey visual information. The slatted windows are designed to eliminate the sight of those who can see yet still funnel the wind through the building. The tin roof is used to convey the information of rain to the inhabitant while the slow drip gutter system is designed to indicate how much rain fell during the storm. Overall The Blind House is meant as an example of how architecture can respond to sound rather than the other, more tangible senses that humans utilize on a daily basis.
Memory Exploration

Not all experience is driven by the architectural elements of buildings. There is also a sense of what we recall from our interactions not only with the architecture itself but also other people, animals, and objects within these spaces. More often than not, this is the type of experience that we remember rather than the physical space which we were in. Other times, we remember minute, inconsequential details of the space that have no real significance from an architectural perspective. Yet sometimes it is these oddities that strike us and linger within our memory over the course of a lifetime.

This intangible aspect of architecture is very different than the themes explored in the other three sketch problems. This one intends to document and comment on how architecture is remembered not as art but as experience. Each image shows a space intimate to the author of this thesis. Each has a meaningful significance in terms of memory but is not necessarily noteworthy due to the architecture. Each image is drawn from memory rather than a photograph. No single person besides the author can clearly identify each of the four images for what they are or the experience had in each instance.

And even if they did, the qualities of each image differs greatly from the actual place. This is due to the interesting occurrence talked about earlier. Since each drawing was created from memory, they vary based on what elements of the space were important to the author at the time of the event. The space may have changed, objects may be missing, proportions may be incorrect. But none of that matters, what does matter is the experience and the memory of each space.

This slightly different example of the affect of architecture upon the inhabitant is a little more difficult to comprehend but may be even more important than the other forms of interaction explored in the other case studies and sketch problems. This is because of the intimate link between man-made architecture and the human interactions within and facilitated by the space it creates. Without humans to engage with this architecture, it would have no real significance or meaning.
Thompson Block  
Historic Depot Town  
Ypsilanti, Michigan  
Built: early 1860’s

In order to best explore a thesis regarding the relationship between architecture and time, only an appropriate site should be considered. A suitable site should be one that exemplifies the change inherent to architecture, the flexibility of its structure and layout to facilitate multiple unique functions as the need to change arises, a rich history of uses and transformations, and the opportunity to provide for a change in function right now.

The site search began by setting up a list of conditions to be met as the ideal location for an experiment into the architecture/time relationship. The building had to be of a large enough scale so that several iterations of unique architecture/time overlaps could occur. This would preferably be in the form of unique rooms, elevations, interior elements, multiple materials, and multiple stories. The building also needed to be in a location that suited such an installation. This means that the surrounding context also had to make sense in terms of the thesis in some meaningful way. Related to this idea, the surrounding area also needed to contain a sizable population that would affect and be affected by the architectural installation. The third major criteria was that the building itself should be in some sort of disrepair. This could mean that the materials with which the building is constructed have deteriorated to a level that required significant repair or replacement. Or the other possibility is that the building’s primary function is no longer viable or has fallen into a state of disuse or underuse.

At first glance, this wish list may be hard to completely fulfill. But sure enough, a suitable candidate inevitably came along. The Thompson Building in the historic Depot Town of Ypsilanti, Michigan meets and even exceeds the list of needs set out by the thesis project.

The building itself was constructed in the 1860’s, giving the site nearly one hundred and fifty years of history and in that time period it was utilized for many different functions. The building was very large with adjacent vacant land that could allow for expansion. And not only was it no longer in use but there was also a major fire that destroyed nearly seventy-five percent of the site leaving only the facade intact.

The site is right on the edge of both a residential and a historic commercial district which creates opportunity to accentuate this transition. The Thompson Building is also constructed of reclaimed materials and sits in a district rich in heritage, which provides plenty of historic preservation and adaptive reuse possibilities. On the next two pages are a few images of the building’s early history and an annotated time line that will give a sense of the site’s historical significance and many changes in usage.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1838</td>
<td>Mark Norris founds Depot Town/builds the Western Hotel</td>
</tr>
<tr>
<td>1850’s</td>
<td>The Western Hotel is demolished</td>
</tr>
<tr>
<td></td>
<td>The current building is built using materials from the hotel</td>
</tr>
<tr>
<td>1857</td>
<td>O. E. Thompson paint shop</td>
</tr>
<tr>
<td>1862-64</td>
<td>Civil War barracks for 14th Michigan then later 27th Michigan Brigade</td>
</tr>
<tr>
<td>1888</td>
<td>1st floor manufacturing/retail, 2nd/3rd floor residential</td>
</tr>
<tr>
<td>1890’s</td>
<td>Houses volunteer and professional fire department</td>
</tr>
<tr>
<td>1893</td>
<td>Thompson and Sons Manufacturing</td>
</tr>
<tr>
<td>1898</td>
<td>No longer used as a fire department</td>
</tr>
<tr>
<td>1909</td>
<td>No longer used for residential purposes</td>
</tr>
<tr>
<td>1916</td>
<td>One of the first non-Detroit based Dodge Brothers dealerships</td>
</tr>
<tr>
<td>1930</td>
<td>Used mainly as a city storehouse</td>
</tr>
<tr>
<td>1960</td>
<td>Mixed manufacturing/retail</td>
</tr>
<tr>
<td></td>
<td>Begins to deteriorate due to neglect</td>
</tr>
<tr>
<td>1996</td>
<td>The court orders David Kirchner(owner) to make repairs</td>
</tr>
<tr>
<td>2002</td>
<td>City of Ypsilanti sues Kirchner to create a repair fund</td>
</tr>
<tr>
<td></td>
<td>Barnes and Barnes receive the property and makes repairs</td>
</tr>
<tr>
<td>2005</td>
<td>David Beal acquires the property</td>
</tr>
<tr>
<td>2006</td>
<td>Planning and development begin for the new usage</td>
</tr>
<tr>
<td></td>
<td>Planned usage- retail with residential lofts above</td>
</tr>
<tr>
<td>2008</td>
<td>Recession begins, work slows</td>
</tr>
<tr>
<td>2009</td>
<td>70% of the building burns to the ground due to vandals</td>
</tr>
<tr>
<td>2010</td>
<td>Only the façade remains intact supported by temporary structural bracing</td>
</tr>
</tbody>
</table>
The time line, however only tells a piece of the story of the Thompson block. As stated before, the building resides in the historic Depot Town of Ypsilanti, Michigan. This district has undergone significant restoration and redevelopment in order to mark its status as a local and regional destination. After an extended period of time of disuse, the area began to grow as a community hub for people to come together. The historic buildings began to reopen with modern twists as commercial space on the ground floor with renovated living spaces on the floors above. This revitalization was renewing the lost energy for Depot Town and reinvigorating community involvement. Unfortunately, the Thompson Block was slow to join this movement.

After years of underuse during the seventies and eighties couples with significant deterioration, the building was becoming an eyesore and the community was beginning to run out of patience for it. Since the entire area surrounding it was being given new life while it stood decrepit, public outcry forced the city to take action. After many years of controversy and failed plans to revitalize the tired, old building, the city decided to sell it to a local developer. This developer made plans to renovate the building in a very similar fashion to that of the rest of Depot Town: retail on the ground level with residential above.

It finally seemed that the Thompson block was going to be brought into the twenty-first century much like the rest of the historic district. Unfortunately, conflicts between the developer and the city arose and eventually the building was retaken by the city after an extended halt in work. The Thompson Building was then sold to another developer with a better reputation and work began once again.

But then, following the trend of the building’s luck, the recession of 2008 and 2009 struck and work temporarily halted. During this period the building was frequented by local college students and, the building was inadvertently burned by vandals. All that remains today is a burned out shell of what was once there. Although this was unfortunate for the Thompson Building, it creates a rich opportunity to explore this thesis.
As mentioned earlier, the building is now basically in a state of ruin. The interior floors and roof have completely caved in and sections of the interior and exterior walls have collapsed. The brick and mortar joints are damaged beyond repair in some locations and the entire structure has become unstable and dangerous. The exterior walls, which are left without self-supporting elements are suspended in place by temporary wood trusses. Luckily this was done soon after the fire by the developer in an attempt to salvage the historic facades.

Although the deteriorated walls themselves may cause problems for construction and cost more to repair than to rebuild, the state offers tax credits to projects that reuse historic elements of existing buildings. This condition has fortunately saved the Thompson Block for the time being as it is still profitable to renovate since upon completion, the developer would receive a substantial tax refund if the historical elements still remain.

Although work has not taken place in the past two years, the site is primed to begin a new life with a new function. This proposed function will be discussed later as it is not an inherent component of the site itself.

The Thompson Building was originally a three story building that has been used in a number of unique ways and has undergone many interesting changes in the course of its one hundred and fifty year lifetime. Doors have moved, windows have been bricked up, walls have been added, stairs have been taken away, machinery and furniture has constantly moved in and out of the building as function has changed. These interesting changes and modifications still remain for the most part but the interesting aspect of them is that any evidence of why they occurred in the first place has been burned away. This obviously creates many interesting opportunities to do similar modifications to the already modified building.

Walls can be moved, windows and doors can be converted, spaces can be reclaimed, nearly anything is fair game in this pseudo blank-slate project.
As if to throw another level of complexity into the situation, a portion of the building still remains intact as it was prior to the fire. During the time the Thompson Block was owned by the City of Ypsilanti, modifications were made to prevent a fire from spreading from the leased sections to the areas used as city storage. In order to accomplish this, work was done to fireproof an entire wall between bays two and three of the building. This never came into effect during the era in which it was built but inevitably did save a portion of the site.

Once the fire broke out, it quickly spread to every area that it possibly could and destroyed all of the flammable portions of the building but a third of the main body remained undamaged. This section serves as a reminder of how the building looked and what its previous function was. Several existing windows and doors remain intact which could be used in design later in the project. A section of storefront also survived that tells a story of how it was most recently used. The large letter atop the abandoned shop reads “Antiques” as if to remind us that the wounded Thompson Building once had a significant purpose and that there is still time to reinvigorate this relic of a building.

In addition to the facades, the interior floors and walls of this section remain predominantly intact. The old wood plank floors that originally served as a means to soak up the oil and paint of a booming manufacturing company still serve as the divider between floors. In some ways, the surviving elements of the site yearn to be the template by which the building is repaired. But in another way, it merely serves as a reminder of what was so that it can become something new.
The fire has created potential on multiple levels in regards to the thesis. The damage has set up the opportunity to modify the surviving elements in nearly any way. The facade alone can be used. Guidance can be derived from the completely destroyed elements. Questions can be taken from the still surviving features of the building. Any of these possibilities are valid but in reality a combination of all of them is probably the best course of action in relationship to the thesis.

The building itself is located on a street corner adjacent to the railroad tracks. Across the street to the south is a historic manufacturing building that has been converted into an automotive and industrial museum that focuses on Ypsilanti’s Depot Town. In the same building, further east is the office of the Depot Town Rag, a free local news service with ties to the Ypsilanti Historic Foundation.

Down the street to the west are the historically prominent train tracks that cross the region on a diagonal moving from the northwest to the southeast. On the far side of the rail road, Depot Town proper bustles. Directly across the street there is an historic passenger station that is no longer in use. The site of this building is also under utilized. Accounting for the shear size of this vacant land, it would be possible to expand the project to incorporate this location should the need arise. In terms of footprint, this area is roughly three times the size of the Thompson Building.

Beyond the passenger station lies a commercial station which is also no longer used in its original function but has taken on new life as a farmer’s market that provides produce to the local community. To the south of this is Cross Street which is home to the many historic, three level commercial building. These have taken on a number of uses that range from bars and restaurants to costume shops and jewelry stores.

Adjacent to the north and west of the Thompson Block is an expansive residential district that consists of single family homes. The home directly to the west of the proposed site was so severely damaged by the spreading fire that it needed to be torn down. This creates yet another opportunity to expand the scope of the project to create new construction rather than just renovating the existing.
Understanding the Thompson Block

In order to best use the site and fulfill the goals of the thesis, care must first be taken to understand the existing conditions. Pictures and experiences can be helpful but detailed drawings of the layout, elevations and surrounding context are extremely important. Recreating these conditions in three dimensions allows the entirety of the site to be accessed from any angle at any time.

In addition to normal site conditions, this technique is also very valuable in a project such as this due to the extensive damage inflicted onto the building. This is especially true considering the fact that the structure itself is too unstable and unsafe to enter. So rather than relying on a series of obscure photographs, an interactive three-dimensional model would prove to be invaluable in terms of accumulating the discovered conditions.

These drawings were created using extensive research of the site, brick course analysis, research materials provided by the Ypsilanti Historical Foundation, satellite images, the developer’s concept drawings, a historic structure report done by a student of the University of Michigan during the early 1990’s, and several newspaper articles.

The three-dimensional model embodies the information contained within all of these sources and combines them into one, single interactive document. The surrounding context was also fully documented in three dimensions by use of satellite photography provided by Google, Sanborn fire insurance maps, and on-site investigations.
Site Attitudes

During the three major site visits, it was deemed necessary to develop a series of site attitudes. In other words, what was an appropriate response to the site, the artifact, and the region and what was obviously inappropriate.

The historical district of Depot Town has been in continual development since the middle of the nineteenth century. The area was originally the downtown district of Ypsilanti for a long time until that moved to the other side of the river. Since that time, the district shifted to a more industrial and commercial center. Over the past seventy years, this characteristic has been lost.

The area is now mostly residential with pockets of commercial activity. The site itself lies at the intersection of an area entirely made up of single family homes and the more historical Depot Town itself. This condition places a relative height restriction and requires the new development to be a walkable, liveable space.

The artifact as it currently exists is a mere shell which is now reinforced by temporary wood supports. This allows for an entire reinvention of the way in which the building is put together and experienced by the moving body.

The images on this page and the one opposite are representative of an early demonstration of how the building may be dealt with in relation to the thesis. The white material on the model represents existing construction which have the possibility to be responded to. The green material is representative of possible new construction. Finally the orange material is meant to depict areas of the roof which may become outdoor livable spaces.

Although this model does not make a direct translation to the final design, some specific characteristics of its design are carried on in later iterations.
Soon the time came to select a suitable program that would not only be suitable to the spatial restrictions and opportunities of the Thompson Building but more importantly reinforce the thesis in a significant way. After considering more than a dozen separate program typologies, it was decided upon to use a library as the primary program. This was chosen after much thought and consideration based on two very specific revelations.

The first is the fact that the library is a transition point between the past and the future. In other words, the store of past knowledge can be studied in the present in order to better understand, respond to, and plan for the future. This condition of learning is central the library as a typology. All libraries are stores of information to be used as reference when planning future endeavors.

The second more literal revelation has to do with the state of transition in which the library exists today. As technology has advanced at an unprecedented pace, the way in which we record our store of knowledge has begun to shift from analog to digital media. This progression has led to conflict between the two media. As computers, smart phones, and e-books have begun to supersede the written page, the library has been forced into a state of transition. This transition has not yet been fully calculated. It it is not known whether books will be phased out entirely, take a back seat to digital media, be complimented by these new technologies, or whether they will remain prominent.

These two considerations have driven the program development to create direct connections with the questions earlier posed about the relationship between architecture, time, and human interaction. It is important to understand that all design decisions, even though they may be directly related to program development, are made through the lens of the central thesis opposed to designing what specifically makes a “good library.” The object of the project is not to design a analogue, digital, or hybrid library it is to explore the question of how the passage of time and the occurrence of human interaction can be utilized in the process of making architecture.

Although this may be the case, a good understanding of library design was needed in order to make design believable and based in reality. This section demonstrates the directed research of four unique library precedent studies. Each study differs from the others in regards to design concepts relating to the development of digital media. The first is an library built in the mid eighteenth century, well before the invention of the modern computer. The second is one built immediately prior to the digital boom of the nineteen-nineties. The third is a post-digital library. And the final is an example of a library that has transcended the digital era. It was built well before but has been updated and added onto significantly in recent years in order to transition it into the modern digital era.
The library’s collection and marble busts have also given the building a aura of reverence. Within the past two-hundred years, additional libraries have been built on campus to store the university’s newer books. The Old Library now acts exclusively as a museum and houses two-hundred thousand of the school’s oldest books.

This building is an example of a classical library in which it serves a dual function: library and museum. In ancient times, most libraries were literally also museums. It is interesting to see how this building has slowly gotten replaced by newer structures but still remains as a symbolic representation of the heritage behind Trinity College. Because the books within the Old Library are rarely opened, they have become subjects of display rather than conveyers of knowledge.
Cambridge Law Library
Cambridge, United Kingdom
Norman Foster

The Law Library at the University of Cambridge is an example of a library which immediately predates the digital technology explosion. Although computers did exist at the time Norman Foster was designing it, the overwhelming impact they would have was yet to be understood. For this reason, the traditional library elements were placed within the shell of the building as they had been for almost a century. The building itself does have the aesthetics of a modern-era design but this is merely superficial.

Foster was just beginning to develop the modern techniques for library building but it appears he was more interested in creating interesting and innovative building envelopes. The interior contains traditional stacks, surrounded by large open reading rooms, lecture spaces, group meeting areas, private studies but no dedicated digital zones.

In an attempt to push the limits of library design, he created a large, swooping, curved wall that enveloped the entire north facade. Each floor was open to the void created by it. This created the unintended consequence that sounds of gatherings and people moving throughout the noisy lobby space would be transmitted all the way to the third floor reading areas. The noise transmission created such a problem that the second, third, and fourth levels had to be enclosed in glass to prevent disruptions.

Clearly, the library design at the time seemed innovative but unfortunately it was not developed to the modern sense. This proved that “modern” open plan concepts were not viable in every case regardless of program or scale. Learning from mistakes here, this thesis project takes into account the open and closed nature of potential modern library design.
Figure 11.20
Floor plans, Law Library, Cambridge University: (a) basement; (b) ground floor; (c) upper floor. (Foster and Partners)
The Seattle Public Library is a library which was designed and constructed well after the start of the digital revolution. Rem Koolhaas designed with this in mind. Like Norman Foster before him, he also attempted to create a uniquely modern example of architecture rather than focusing purely on the functionality of the library.

The main entry on the building is a multi-story, wide open space which serves as a hub in which to access all other areas of the library. Each floor is designed with a specific function. Most levels are strictly dedicated to book stacks but some are meant for other purposes. He uses interesting names to describe these floors such as “living room,” “meeting room,” and “mixing chamber”. Rather that labeling the use of his rooms, he refers to them by the actions which take place within them. This is a rather progressive way to think about architecture but it also an example of changing the bounds of our traditional notion of libraries.

He further reinvents the typology through his design of the book storage levels. Rather than stacking the floors like pancakes, he begins to blur the lines between them. He shied away from creating planes connected by circulation towers. Instead he designed the entire stack area as an enormous, winding spiral. The stack room is one continuous procession around and up half a dozen stories. This is concept has been used in other venues such as Frank Lloyd Wright’s Guggenheim Museum but this is a radical reinvention of the library typology.

These design strategies also proved useful in the design of the thesis project and in at least one case, taken a step further.
The Morgan Library is a true library marathon runner. Since its initial construction by McKim, Meade, and White in 1906 it has undergone progressive upgrades every few decades. The original library was meant to be a private, dedicated collection of J. P. Morgan who owned a large brownstone adjacent to the site. This private library was meant to be a supplement and expansion to his home.

Twenty years later the brownstone was torn down to make room for an annex with additional stacks and a reading room. Shortly after, the library was opened to the public at J. P. Morgan Jr.’s request. A separate brownstone also on the same block was purchased and later become home to the family.

With the addition of the new brownstone and the annex, the area of the library now consumed three-quarters of the city block on which it stood. Although the brownstone no longer acted as a residence after 1938 when it was converted into a public museum. It remained unchanged until 2006 when Renzo Piano was brought in to renovate and connect the three buildings which much like the Old Library at Trinity College have diminished in importance as a library but increased in historical significance.

The three buildings were combined by one over-arching installation of glazing which inclosed the space between the three. This created interior pathways and new, enclosed sections of the library. The three buildings now no longer exist as individuals. They have been combined into a single, enclosed complex.

This distinct change in character is intriguing not only because of the evolution but because of the interplay between previously interior-exterior relationships which are now solely interior spaces. This aspect of the Morgan Library will come to affect the thesis project greatly.
There is a long history of libraries replacing the obsolete prior program of buildings. Yet there are not many instances of the library being replaced by something else. This is because as humans, we are continually recording new information, making new discussions, correcting past misunderstands, and creating new works of fiction. This has led to a need for an ever increasing about of space in which to store our books, periodicals, newspapers, journals, DVDs, and CDs. This trend has been going on for centuries.

That is until the onset of the digital revolution. Since the invention and subsequent dominance of computers, the written page has lost some of its power. With the click of a button, information can appear on a screen. Extracting information from these digital publications is also much simpler. Rather than flipping through the pages looking for a key section, all the while referring to the sometimes antiquated glossary, all one has to do it type some key words into a search box and scroll to the desired content.

This ease of use and quick access has led to the prominence of digital media which has finally turned the tide against the traditional, analogue formats. This means that rather than exponentially expanding our libraries as we have in the past, the exact opposite is likely to occur. Instead of creating new bigger and bigger libraries, it will now likely be fewer smaller centers to store our knowledge.

This does not mean that the written page will be forgotten to history however. This only means that a new system of analog data storage will have to be developed in order to accommodate this large expanse of increasingly underutilized media. The question then becomes how will we deal with these artifacts, the next few pages pose a solution to this problem.
At this stage it was deemed necessary to explore the options of what a library can become, what its role is in the modern era, and what can be done to improve the economy in which space is utilized. These questions may have no correct answer, the problems can be addressed in any number of ways but decisions had to be made before further advancing the project into building design.

These questions taken as a whole may produce the simplest of answers: so what is the role of the modern library? Well, if it is less about storage of books then what activity would take its place? An answer to this is simply human interaction. This has always been a function of the library typology. Instead of the main focus on storage and stacks, it could be a place in which to convey that knowledge to others through direct interaction with other people. Stacks could be removed when books are no longer needed and be replaced by tables, chairs, and coffee cups.

This then raises another question. What becomes of the books? They should not be thrown away as they still maintain value as a store of knowledge and a historical artifact. In the top image, there is a radical, rather whimsical proposal of a “book wheel” in which the books are placed to save space. This plays off the notion that people in the post-digital age expect things to come to them rather than expending energy to retrieve it. A search could be performed digitally and the stack would rotate and bring the book to the user. The machine would do all the work.

This may seem farfetched but it turns out a similar (slightly more practical) system already exists and has been around for nearly twenty years.
Automated Retrieval Collection (ARC)
HK Systems

This project is not the first to question the role of analog media in the digital age. Within the last fifteen years, several innovative companies have come up with new and unique ways of dealing with the huge quantities of seldom used books.

The ARC is a system in which books older than a certain date and those that are rarely used are placed in order to reduce the floor space necessary to house them. The books are kept in bins which are labeled using a barcode system. All books are recorded in the ARC’s computer system. In order to check out a book, the librarian finds the book in the digital catalogue and a robotic arm goes and retrieves the bin in which the required book was deposited.

This system obviously takes up much less space than traditional floor stacks. This development allows the library to enter into a new role as a community center in addition to a store of knowledge. Each story of ARC stacks is roughly equivalent to three stories of traditional browsing stacks. When an ARC request is placed by a patron the book is generally available at the circulation desk within five to ten minutes.

University libraries around the world have begun to adopt such systems in order to maintain their collections but at the same time, free up floor space for new books as well as alternative activities. These universities now use their ARCs to store books older than twenty years, periodicals older than ten years, and archival material. Within the next few decades, more and more libraries will begin to install ARC systems as more material is produced and collections continue to grow.

The ARC system will be used as an integral component of the library designed in this thesis project.
SEVEN

SCHEMATIC DESIGN
Drawing from all prior research including the time research, case studies, sketch problems, library precedent studies, and program development with the goal of the thesis in mind, design began. This transition was not flawless however. It was difficult to quantify all that was learned into a singular building. It became a question as how to attack the library while still remaining true to the thesis. Should the design be remiscant of the fact that time is ever flowing? Should it physically change over time? What criteria should be set up in order to facilitate decision making?

These questions became very difficult to answer and led to a long period of “designing in circles.” In other words, work was done and once reflected upon, were often abandoned. These difficulties may have been expected due to the complexity of the thesis.

The first attempt at design was using the physical nature of the site attitude model shown on pages 64 and 65 in combination with a set of design strategies which were derived from all accumulated research. These strategies are dealt with in more detail in the pages that follow. Each set of explanations on the following page directly relate to the corresponding graphics that follow.
Adaptability

This may be the most obvious aspect of the project to date and consequently the easiest to grapple with. It was decided that the library should be designed with future adaptations in mind. This led to formal concepts in which the layout and execution of the floor plans and sections were specifically designed with changing functions in mind.

The ARC system also follows under this category. One of the keys of the project is to use the limited available space economically to allow for more human interaction rather than totally filling the space with books and magazines. The library would also come to question its future as a typology by planning its own obsolescence in a way. To facilitate this, alternate uses for all spatial components were designed considered.

Patina

The third strategy is that of patina. This was one in the question was not how the building responds to the people inside but to the environment in which it resides. How is the passage of time marked on the building? What happens when rain falls and leaches into the centuries old brick façade? What materials could be added in the renovation that demonstrate the passage of time in a meaningful way? These questions become among the hardest to answer during the design process. It was unclear whether the building should be as a work of Carlo Scarpa in which the façade acts as canvas for the environmental painter, weather in a specific way, or merely be constructed of materials which tend to weather or degrade over time.

Day Lighting & Open/Closed

The second design strategy to develop was the idea of light in combination with mass and void. Since the thesis centers around questions of time, the decision was made to create pseudo-experiments to see how people might actually experience the space differently if he or she is more aware or less aware of the passage time, has his or her sense of time challenged, and finally manipulate his or her experience of time.

In other words, how can the space change the way someone experiences the passage of time? This can be done by creating wide open, bright spaces which make the inhabitant less aware of the passage of time or dark, more cramped spaces which make the progression seem to take much longer. Another way to accomplish this is to manipulate where human interaction is rare and where it is common. A person experiences the passage of time differently when in a group compared to as an individual.

Process

Process is also a significant aspect of the final design. In this case it is related to methods of actually building the library. In other words it is how the old melds with the new and what happens at that intersection. It would inappropriate in regards to the thesis to merely mimic the existing artifact rather than attempting to differentiate from it. Throughout the design process, this notion is taken into account thoroughly.

Significant attempts are made to differentiate between old and new even in the way in which the models and drawings are put together. Differing colors are meant to represent different materials. Rather than reusing brick to match the Thompson Block, it was decided to use a totally different material.
Adaptability

Inspiration

Concept
Daylighting

Inspiration

Concept

In Context
Open / Closed

Inspiration

Concept
Process

Inspiration

Concept

In Context
Initial design

As mentioned earlier, the first step in the process was to reuse the previously designed “site attitude” form as a test for the initial library design. The form was then used as a canvas on which to test the four design strategies. Each concept was literally taken and pasted upon the building. Although this may have been useful as first step, it was a very inappropriate way to design with regards to the thesis in general. In using this methodology the site, the surrounding context, and the library as a program all largely went ignored. It was quickly decided that the design should be done in tandem with these three contextual conditions. This iteration may have been a necessary stepping stone to reach the next phase in the design process but the form itself turned out to be a deadend.

Rather than designing based on aesthetics, the next step would be a direct response to the building as an artifact which later came to incorporate the program and specific design strategies. The beginnings of this process is shown on the next page.
Library Sketch Model A

This model was the first in a series of three in which attempts were made to respond directly to the existing artifact of the Thompson Block. Old is distinct from new in these models demonstrated through materiality. Brown denotes the existing building while blue represents new construction.

The main punch out at the front of the building is the main entrance which is flanked by two voids left from when the ground level floor collapsed into the basement during the fire. These two spaces are intended to house inhabitable exterior green space.

Unlike the previous designs, this one does not attempt to fill in all of the voids within the building but instead begin to play off of the intricacies of fenestration while creating an interesting set of spatial qualities.

The large tower in the rear of the building is meant to house the ARC. Unlike most other examples of ARC installation which are placed within subterranian levels, in this case, it placed in a large, above ground tower. The reasoning behind this is the notion that the building may need to change in function at a later date and a tower is much more usable as a space for people than a giant pit in the ground.
Library Sketch Model B

The previous model does have several restricting and unrefined characteristics. The first of which was the tower. The tower in model A is massive and would overwhelm all other structures around it especially the residential houses which surround it on the north and east sides. So in this iteration the tower is scaled down somewhat in order to work better compositionally with the other portions of the building.

It was also decided that one single extrusion from the facade was awkward on its own. Due to this two more were added to create a more interesting experience.

Model A also only included infill for the ground floor, second level and basement which left the third floor entirely vacant so effort were made to include the third floor into the design to a greater extent.

The addition to the existing artifact was much more of a solid mass and not as intricate. This was rectified by cutting away a section of the second floor in order to break up the mass of the building.

During design for model A, it was noticed that there was a missed opportunity in the rear of the existing building. A second story interior courtyard was created responding to previously enclosed windows from some addition built onto the building sometime in its past. The courtyard now reverses the role of these windows. Some which once looked out to the residential district behind the Thompson Block now look back into the courtyard. The directionality of the window is now reversed. Space that was once interior is now exterior and vice versa.

Due the existence of a three story fire wall between the two northern bays of the Thompson Block and the four southern bays, a change to the original maintained this condition while simultaneously highlighting it. Rather than creating openings in this wall, a bridge was created between the second story of the northernmost bay and the new addition’s primary stairwell. In this way two previously disconnected sections of the Thompson Block are reunited by the new construction.
B were working together. Similar to this was an exploration of how the top level could create connections to the sky using strategic skylights, although this was not adopted for the final design.

The last change made between model B and C was the dimension of the three extrusions from the facade. It was found to be awkward that all three shared the same dimensions and no hierarchy was made between the three. In this iteration, the extrusions now have differing dimensions.

Library Sketch Model C

After reviewing model B, further refinements and clarifications were made in order to create one final sketch iteration.

The first of these is the problem apparent by looking at model B and trying to understand where the inhabitable exterior spaces are located. So in this iteration, exterior green spaces are denoted by using a contrasting, dark blue material to differentiate between roof and inhabitable space.

The mass of the addition is also further refined to include another courtyard, this time on the ground level. This breaks up the mass of the building and creates a more intimate connection with the surrounding street life making the building a much less intrusive structure.

It was also deemed time to create a more graphical representation of where windows were located within the original building to better understand how the intricacies of the directional change depicted in model B were working together.
EIGHT

FINAL DESIGN
Taking the formal and programmatic knowledge gained from the three “blue” study models, the final design was starting to emerge. This process is described here and depicted on the subsequent pages.

Within the plans are included the experiential conditions of each individual space represented by the background images. Rather than showing walls and furniture while pasting everything else with white space, each room is backrounded with an image of its use. This leaves white space with a very significant contrast. In the plans and sections the white denotes doors and windows which makes them stand out from the other elements of the drawings.

The ARC system makes a direct translation into the final design as does the courtyard and many other formal elements. What is further explored on the floor plans which was previously left undeveloped is the open and closed nature of the spaces. The further one moves into the building, the more private the spaces become. The main entrance is surrounded by open space which leads down to the far east end of the building which houses the main circulation desk. Offshoots of this corridor contain an internal cafe area and large gathering spaces. Moving up the main stairs to the second floor, an occupant would enter into a large group gathering space with tables and chairs meant for small groups to collaborate. Moving further inside one reaches the main stacks and beyond those and into the third floor are private study areas. The basement follows a similar concept. The main area once exiting the circulation tower is a large lobby area which serves as a transition space for a one hundred seat auditorium. An offshoot of the lobby leads into a more private rare books library from which content cannot be checked out. Group and private study areas dedicated to these sections of the library are also contained within this space, which includes two subterranean, exterior green spaces.

This same concept is utilized in the design of the administrative wing of the building. The northern two bays of the Thompson Block are separated from the other four by a fire wall and thus segregated from the rest of the building. This pre-existing condition was used as a design element in the final iteration. The ground floor is mainly made up of group gathering space similar to the public portions of the library but here it is intended for employees. Moving up the private, dedicated stairwell leads to a series of offices and more private gathering spaces.

Related to the open and closed concept of previous explorations is the interconnection of interior spaces with exterior green space. In many cases this occurs in contrast to the historical layout of the Thompson Block. These green spaces break up the building in tandem with areas of void to serve as buffers between unrelated sections of the library. This complex series of green spaces is meant to give the building a heightened sense of depth and intensity.
These sections are meant to emphasize the materiality consistent between the old sections of the Thompson Block and the new additions. Red denotes existing brick conditions while the gray represents the metal paneling of new construction.

The physical model is shown on the following two pages. This model also demonstrates the difference between old and new just as the previous blue models. The old brick construction is represented by the brown chipboard while the new appears as white museum board. This model also contains a higher level of detail in that it shows all fenestration of the library.
The page opposite as well as the following two pages show three sets of renderings. These renderings are meant to demonstrate the change in function and quality of space during environmental cycles including day and night as well as summer to winter.

These are meant to convey a deeper understanding of the ways in which architecture changes in relationship with the environment.
Pages 123 through 125 are meant to demonstrate the possible functional changes of the building during its lifetime. The image on the opposite page depicts two perspective sections the first of which shows the tower housing the ARC system while in use as a library. The second image is a possible later conversion of the entire tower into a different function, in this case it is apartment living space. A series of perspectives and sections also follow on pages 124 and 125.

The two images above demonstrate the intersection of old versus new materiality. The diagram on the left separates the existing artifact from the new construction with a composition of the two in the middle.

The image on the right demonstrates how the brick facade intersects with the new metal and glazing installations of the library.
Concluding Statements

Having learned a great deal from the thesis project. It is now easy to see where the flaws and shortcomings fall within the final design. It feels as if the project could take another step further to truly capture the spirit of the thesis as it was originally posed. Each of the four strategies could be taken to a further extreme. In future explorations, changes could be made to add another layer of polish to the concepts. Here are some examples of ways in which the project could continue.

Patina

Patina was largely left out of the final design unfortunately. This is probably due to the strict time constraints and sheer difficulty of the concept. In the initial design shown on pages 98 and 99, patina played a central role but the way in which it was inacte came off as more kitch than it did art. To say that the building is made out of such and such material but this specific portion of the facade is meant to be a “canvas” undermines the idea behind patina. This specification of where patina is relevant to the design ignores the fact that patina will inevitably happen over the entire facade no matter what is done to prevent that.

Light

Although light and spatial considerations are present in the final design, this concept could be taken further. An example of this are the day and night renderings shown on pages 120 and 121. Although attempts were made to demonstrate how the building changed over the course of the day as light conditions continually change, the design in this regard is really no different from any other building. As depicted in the final presentation, it merely demonstrates how any building would react as day turns to night and night to day. This could be improved by further exemplifying this change to make it stand out from other architecture and truly respond to the change in some way other than reversal of light flow.

Adaptability

Although this is a central theme of the final design, adaptability could also be taken a step further to include more detail in how the library could potentially change in function over the course of time. Secondary plans and sections could be further explored in detail to demonstrate how a building can truly be designed to be functionally adaptable. In addition, other new programs could be proposed rather than just the simple residential and commercial proposal depicted in the design as is.
Process

Process was dealt in a very sensitive fashion but the connections between old and new remain undeveloped. This could be improved by providing more detailed drawings of how this intersection in dealt with. Orthographic wall sections with a higher level of detail could help tell this story better. It is crucial to understand how the joints and connections are dealt with both from a practical and a theoretical standpoint. This could be extended to the construction of the walls and floors as well. Although the general concept of these three conditions have been considered, they could be taken into an even more developed state which would be greatly helpful in demonstrating the thesis in general.

These four strategies as a whole have been very helpful during design and should probably be taken into account in any architectural project. Overall, the thesis project has turned out to be a very helpful and informative experience. The sheer scope of information was far beyond what was expected at the onset of the process. But now I have a much stronger understanding of how design can be enhanced through the lens of time as demonstrated through human interaction.
Thesis Paper Endnotes

[5] Stones of Rimini: Stokes
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Case Study End Notes

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