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I, Samuel C. Ellison, hereby submit this original work as part of the requirements for the degree of:

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Forming Ritual Reality

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forming ritual reality

Defining a modern cremation funeral procession sequence prioritizing the qualitative and experiential for ritual significance and memorialization.

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ABSTRACT:

The rituals of the modern funeral procession have become diluted and disconnected from their primary purpose. The original function of the procession was to watch over the body from the time of death to the time of committal, to console and to celebrate the life of the deceased. Funeral procession evolution has distanced the mourners from the body and the reality of death. The cremation funeral procession evolution has further distanced the mourner from the ritual by subtracting the committal from the experience. Cremation supports modern trends through its finality and purity, however an application of this complete procession has failed to emerge. This thesis aims to prioritize the relationship of the surviving participant with the reality of the ritualistic procession of cremation to memorialize the experience. The architectural response enriches and reinforces the cremation ritual significance. This is accomplished by sequencing the experiences and spaces, which provide opportunity for each to influence the other. This is done through the use of materials, light and proportion to reinforce and balance the dialogue among the social, physical and emotional qualities of the ritual. The built form aims to govern and enhance the separation of the sacred moments from the static everyday, memorializing the experience.
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INTRODUCTION:

The rituals surrounding death have evolved with time, technology, religion, and social norms. These rituals not only shape the existence of culture, but are also prevalent in every culture on earth. They construct a framework between the known and unknown realms and offer closure for the human psyche. With time and technology, rituals continue to change and be altered. Western culture, and more specifically the United States, has gravitated away from the innate humanistic rituals of death. Last rites rituals have become abbreviated to a short social event with little to no contact with the reality of death, the procession of the body and the environmental moment. The perception of the corpse as disgusting, offensive or taboo has taken over the human instinctual nature of watching over the procession of a loved one’s remains from death to committal.

The reality of the ritual death should not be swept under the rug and phased out of the experience of life. Death defines life as a temporal window of existence. Death should be embraced, confronted and realized for our psychological health. Humans are told from youth not to bottle up emotions; that it is acceptable to cry and let emotions be released. Releasing emotions feels good; it reinforces recovery from trying times as opposed to holding emotions in and allowing these feelings to fester and pollute existence. Martin Heidegger, in his work Being and Time, states that an individual must conceive
that he or she is a “being toward death”\(^1\) to achieve a quality of life. The death ritual sequence of spaces should serve each event’s social, spiritual, and individual needs.

The concept of death as taboo arose from two factors. First, the funeral process developing into an industry through the evolution of the funeral home, which took over the humanistic responsibilities of the family. Second, the media influence on society’s perception of death, dying and the dramatization of the corpse. This separation from the reality of death fades the relationship of the individual with his or her own mortality, and is a reflection of the mental health of our culture. Having a healthy relationship with one’s mortality improves one’s sense of being and life, by strengthening attitude, emotional capacity, and spirituality. The aim of this thesis is an architectural response to the rituals of death that offers an opportunity for the mourners to have an intimate relationship with the journey of the deceased, insuring dignity and respect. This will recapture the qualities of the primitive ritual while maintaining the technology and qualities of today.

Cremation has gained popularity exponentially over the past decades as a means of disposition closest to ideals of modernity. It is a minimalist procedure that transforms the corpse from carnal form to a pure material, “ashes-to-ashes, dust-to-dust,” so to speak. The act of ending the journey of the carnal form prevents the need for embalming, and the process for

\(^1\) Heidegger, Martin, *Being and Time*, pg 289.
decomposition. In a sense, this preserves the dignity of the deceased by removing from existence the body or vessel that has been abandoned by the soul. The committal to the flame is thought by many cultures to have purification powers that enable the soul to be freed from this world and continue into a new realm.

Cremation also is an environmentally friendly answer to burial. The misconception that cremation spews offensive smoke from burning flesh is common. Modern cremation chambers burn the body and channel the debris and smoke to a different chamber to be burned. This process repeats itself a number of times resulting in a colorless and odorless carbon dioxide vapor exhaust.² Cemeteries, although beautiful, are full of embalmed bodies that rot and seep into the soil eventually polluting water sources, and are slowly sprawling over developable land. Cost is another major reason that the popularity of cremation is increasing. Cremation is about five times less expensive that a traditional burial.³ This thesis will explain how the qualities of cremation answer these problems with the existing traditions of disposal of the deceased.

Cremation has been the method of disposition for most eastern cultures since the dawn of time. Hindu and Buddhist religions use cremation as the standard for their rituals of death. These cultures have a close relationship with death and the death process by being involved directly with the deceased’s journey in the ritual. In ancient times western (European)

cultures used cremation as the primary means of disposition, the high point being the Roman Empire. Cremation was then abolished by the European transformation to Abrahamic beliefs. However, since the Roman Catholic lift on the ban of cremation in the 1960s, the process has been slowly working its way back into western culture. The program proposal will provide a cremation facility that is sensitive to the traditions of all religions with no particular affiliation.

The existing standard method of cremation in the United States is more fragmented than the disposition of burial, despite the nature of the process being more modern. The typical process of cremation disposition has no social contact with the most important parts of the ritual. The family parts with the deceased early in the ritual, leaving it in the hands of the crematorium that carries out the true ritual. The ashes are returned to the family for inurnment and final placement.

This process has a disconnect from the ritual at the apex. This procession has no connection to the committal to the flame, offering little closure for the individual. The procession of a burial bears witness to the committal to the earth as the body is enveloped under the surface. Cremation does not provide a physical and spiritual connection to the committal in a sensitive way. This proposal aims to encompass the entire procession of the cremation ritual with the opportunity for the individual to participate as they see fit.

The experience of the procession for the surviving individuals is the main focus of the architectural design for the proposed modern cremation ritual. Experiential qualities of funeral homes currently are very static and limited. These settings offer little connectivity to the environmental moment, to the deceased and to the social interaction of the procession.

The sequences of this cremation funeral procession are broken down into a linear catalogue of spaces that coordinate with the activities of each stage of the ritual. Each space, along the procession, has different needs pertaining to the social and physical activities (whether sacred or profane), the spatial relationships, the views, the required services, the materials, and the natural light. The juxtaposition of the spatial and action sequences reveals the significance of the balance or conflict with the sacred or profane qualities. Thresholds and interstices act as collisions of program and activity sequencing, by reflecting the transitions of the activities and functions of the ritual within the procession; they support the dialogue between space and action. Constructing this montage of spatial and activity sequencing, as well as the thresholds and interstices memorialize the experience by way of framing moments.

The devices used for creating these momentary experiences are the architectural form, materials, craft and details. They reflect and use the natural light of the environmental moment in place of religiously charged ornament. The relationship between the individual’s procession and the environment offers the opportunity for the ritual to be a memorable moment,
part of universal existence. To feel the dynamics of a dreary overcast day, a sudden sun burst through the clouds, or the stirring shadow of a tree from a cool breeze is to be one with the environment. These moments that occur through the influence of the all-controlling environment are infinitely unique. This, paired with an emotionally meaningful moment of transcendence and sacrality of the ritual from the banausic everyday, nourishes and captures the moment to be memorialized within the individuals' being. Lastly, the relationship of the individual's procession with the committal to the flame is the conclusion of the incarnate existence of the deceased. The experience should not be a horror show or a blindfold, but should respect the level of participation desired by each individual and should support their emotional needs of closure. This space, along with the columbarium viewing spaces, should be the most reflective and connected to environment. The display of the moment in time should emphasize change of time, intensity, color and shadow of the light due to the somber quiet reflective nature of the moment of the committal and visitation to the final resting place.

The program of the proposed urban crematorium requires a linear flow of the visitation/ceremonial procession: the vehicular arrival sequence, exterior gathering space, entry threshold, circulation, wake ritual space, visitation space, ceremonial threshold, ceremonial room, reflection space, and the columbarium. These spaces and activities fluctuate in sacrality and social context. They should reflect this in design and connection to the environment. The supporting services'
flow is non-linear and includes a delivery dock, morgue, cremation lab, cremation support, offices, kitchen and a casket-making shop. These spaces should be highly functional and seamlessly serve the procession spaces. This thesis aims to examine each of these spaces required for these different flows and arrange them in accordance with activities, needs, views, light, and materials.

The site prescribed for this design project of the modernization of the rituals of death reflects the needs and progress of modernity. Downtown Cincinnati is a dense urban mass that stretches north from the Ohio River to the neighborhood of Over-the-Rhine (OTR). The northern half of the Central Business District (CBD) is underdeveloped and is spotted with empty parking lots. This urban setting provides an interesting juxtaposition for the rituals of death against the backdrop of the everyday flows of a city. Funeral homes are common within cities but it is custom for crematoriums to be set off on their own. The advancements of technology in cremation allow for such a facility to be within the urban environment due to reduction of emissions. The columbarium is also an unusual application for a city’s downtown; it reflects the aim of this thesis by providing a stronger connection between the inhabitants of society and death.
FUNERAL PROCESSION DEVELOPMENT:

Dating back to 60,000 A.D., Neanderthals and early homosapiens both participated in postmortem rituals by burying their dead and garnering the bodies with gifts. All cultures through all times used some method of tending to their dead in accordance to their beliefs. With no great psychological knowledge to draw from these primitive cultures, they seemingly instinctually, performed rituals to mark the end of life of an individual. Beliefs of cultures and religions arose out of unknown forces beyond their control. Early man desired to have pseudo-control over the uncontrollable: nature. Not many aspects of life are more unknown and uncontrollable than death and the afterlife. Death played a large role of importance in early civilizations, and led to the creation of the theory of an afterlife. This theory became the most important aspect of existence to the majority of early civilizations.¹ The built form typically consisted of simple geometric shapes, such as the circle. This is a result of an organized group conforming to become one continuous chain or entity with an introverted focus, the first rituals of death.

The Egyptians believed the ritual of death was the most important event of existence; that preservation of the body was a necessity for the spirit of the deceased to come full circle. Ancient Egyptians believed that after death, the soul encountered upon a journey ending with a return to the embalmed body. At this point the body and soul would become

one again and live with the gods forever. This was the birth of embalming and the preservation of the dead, as cremation was forbidden.²

European pagan religions used cremation, believing the committal to the flame cleansed the spirit, and that removing the corpse from existence solidified passage of the spirit into the afterlife. Cremation also eliminated possible desecration of the deceased. Stonehenge originally was the grounds for cremation ceremonies around 3000 B.C.³ The Greeks believed in an afterlife that was initiated by committal to the flame via wooden pyre. The committal was initiated by the eldest son and accompanied with words, songs, drink, and food. Traditions that surround this include putting a coin under the tongue of the deceased for passage across the mythical River Styx, which separated the world of the living from the world of the dead. Various cultures and religions around the world believe water to be a supernatural barrier-maker between realms of existence.⁴

The Romans adopted cremation as the standard method of disposition influenced by the Greeks. The extravagance and pomp exercised for the procession, cremation and celebration reflected the importance of the individual within the

² Ibid.
³ Ibid.
⁴ Ibid.
society. They constructed large columbariums for memorial visitations to the resting place of the cremains. This visitation space also displayed the social significance of the individual.\(^5\)

The eastern religions of Buddhism and Hinduism primarily use cremation as their method of disposition for the funerary ritual. Hinduism is credited as being the oldest living religion and dates back over 3,000 years.\(^6\) Buddhism dates back plus or minus 2,500 years with the tradition of cremation initiating with the cremation of Buddha.\(^7\) Both of these religions and their traditions of cremation were influenced by the ancient Vedic Religions of India.

Japanese Buddhist, 荼毘 [haini], cremation ceremonies were originally carried out solely by the family in the home, but like western culture, some of the traditions were absorbed by funeral homes. The traditional ceremony started with the family’s purification or washing of the body. This is still practiced today in some more traditional funeral homes, where participation and viewing of the formal cleansing is provided. The body is then dressed in a suit or a kimono. At all times a representative of the family will stay near the body, a reminder of the tradition of the family staying with the body until the committal to the flame.

\(^5\) Ibid.
\(^7\) Davies, pg 279.
The Japanese ceremony starts with the placement of the casketed body on an altar surrounded by flowers and pictures of the deceased. Also within the casket are items to be cremated with the body for potential spiritual use in the next realm of existence. At the entrance of the family home or funeral home, representatives from the family greet the procession of mourners. These visitors show respect by taking a bow or offering prayers at the alter to the deceased and mourning family. The guests then retire to another room for food and drink. Next are the wake ceremony rituals, which consist of readings, burning incense and chants. Some family members stay in the same wake ceremony room with the deceased for the entire night. The Japanese Buddhist funeral ceremony is traditionally the day after the wake service. The body is brought to a temple (in the case of a home wake service) and placed before the altar, where readings of the sutra and the offering of incense are performed. Visitors bow or offer prayers upon leaving.8

After the funeral service, the family transports the coffin to the crematorium and inserts the casket into a cremation chamber. Some facilities offer space for the family and visitors to have food and drink during the interim time of cremation. On returning to the cremation chamber, the cremains are displayed to the family for the traditional Japanese bone picking ritual. The family members are given chopsticks to pick out the remaining bones to be placed in an urn. The urn is usually placed in

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the family home or a columbarium. After cremation there are prescribed memorial services and grave site visitation normally for the first 7 days, and on death anniversaries.\(^9\)

Hindu cremations, मुर्दा जलाना [murda jalaana], are traditionally open-air cremations on the banks of the sacred Ganges River. The final remains of the dead must be placed in the river for the soul to complete the post-mortem journey. The Hindu funeral procession begins with the final rites at the family home. The traditional bathing of the body with abishegam milks and ghee is carried out by the family or carried out by hired professionals. It is custom for the entire procedure to be done without commotion or weeping. The body is then dressed and placed in a modest wood coffin for viewing. Family and friends arrive and sit around the body in a social setting for the wake period. The traditional cremation involves the family bringing the body to the concrete and stone ziggurat banks of the Ganges after the wake ceremonies have been performed. The deceased is handed over to the Domes, a social subculture of people living meagerly on the riverbanks performing cremations. The Domes build wooden pyres, place the body within, and guide the eldest son through the ritual. Offerings are placed in the hands, and the eyes, mouth, ears, and nostrils are covered with coins. The Karta circumambulates the coffin or pyre, spilling water for separation of the dead from the living, and lights the bottom of the pyre with a torch or clay vessel. The

\(^9\) Ibid.
mourners then either bathe at home or in the waters of the River Ganges. In return the Domes collect what jewels and gold are left from the cremation.  

As the Indian population spreads globally, it is sometimes not possible to transport the body to the Ganges. In such cases the cremation is carried out at a closer location, and the ashes are transported and scattered in the sacred river at a later time. Following the committal, immediate family members participate in mourning rituals of purification.  

There are few facilities in America that offer services catering to these religions by providing a program of spaces that accommodate the events of their traditions and customs in a sensitive manner.  

Abrahamic religions such as Judaism, Christianity, and Islam have beliefs similar to the Egyptians, that the carnal body is the sacred property of God. Initially, these religions strictly buried their dead, forbidding cremation, to preserve the potential reunion of soul and body by God. The funeral rituals of Judaism are intended to happen as soon as possible after the death, as a gesture of respect. It is prescribed that the ceremony takes place one day after the death, and is only postponed for holidays or to accommodate immediate family members who are traveling from out of town. The ritual is supposed to happen quickly, because embalming and cremation are considered acts of desecration against the body and God, so the decomposition process cannot be prolonged.  

10 Ibid.  
11 Ibid.  
12 Interview and tour of the Cincinnati Cremation Co. facilities, Elaine Sloan, General Manager.  
Christians inherited these same funerary beliefs, and enforced them in honor of the nature of the death and resurrection of the body of Christ. It was believed that the cremation of the body would prevent the possibility of resurrection. When the Roman Empire converted to Christianity cremation was criminalized. As Christianity spread throughout Europe, the replacement of pagan cremation with Christian burial was one of the aspects that enhanced this transformation of beliefs and traditions. This, accompanied with the Jewish migration throughout Europe, changed funeral rites of the continent to a sequence of wake ceremonies, religious services, procession, and committal ceremonies, and remained the European standard until more modern times. It formed the model for the American funeral customs we have today and resulted in cremation disappearing from western culture with the exception of preventing the spread of disease in catastrophic situations.¹⁴

The traditional Abrahamic American funeral customs generally consisted of a wake, visitation, services and committal. The wake, defined as the period of time between death and committal, involved the family and close friends of the deceased watching over, cleansing and dressing the corpse. This segment of the ritual was usually held in the family home, accompanied with food and drink, and was very social in nature. The wake culminated with a social visitation period offering other friends and family the opportunity to view the body. The services or ceremony followed this, and were usually held in

¹⁴ Ibid.
religious settings. Here, religious officials blessed the soul of the deceased. Finally, there was a funeral procession from the church to the graveyard for committal to the earth, with last words and prayers.\textsuperscript{15}

Traditional Abrahamic American funeral customs have changed and adapted through the years. In the early 1800s, the American funeral customs changed very little from the Abrahamic European traditions. Cabinet-makers of the community also served as casket makers and would come to the home during the wake for the casketing of the body. Undertakers emerged as a full-time profession from this as the United States population expanded.\textsuperscript{16}

During the American Civil War transportation of dead soldiers to their homes was often a cross-country trip and took weeks to complete, resulting in the body decomposing before the families could perform their last rites. American embalming techniques rose out of this problem to ensure safe delivery of the deceased for appropriate and proper services. These embalming techniques evolved the carpentry-based undertaker into the modern mortician that performed body cleansing, embalming, and casketing. The profession remained as house-call typology until the late 19\textsuperscript{th}Century as funeral homes developed and took the body from the family home, absorbing all the non-social aspects and abbreviating the activities of the wake. This development fragmented the function of the wake from watching over and taking care of the body to a short social gathering at the home of the family without the deceased. With time, funeral homes adapted and transformed to what they

\textsuperscript{15} Ibid.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{funeral_procession_diagram.png}
\caption{funeral procession diagram (burial today)}
\end{figure}
FUNERAL HOME DEVELOPMENT:

Late 19th Century funeral homes were retrofitted large homes or street-front commercial buildings. Specific design of funeral homes developed during the Victorian period and initiated the image of the funeral home being a large home-like environment, later adapted and used today by the American funeral industry.¹ The program largely consists of display and preparation space that has little to no social contact or conversation. The preparation spaces are the morgue, primary, and secondary preparation spaces. The morgue stored the bodies in an organized manner. The primary preparation spaces were for washing and embalming the body, a process more medical by nature. The secondary preparation room, less medical and more sensitive by nature, included body preparation such as washing, clothing, hair, and make-up. The body was then placed in the slumber room, defined as a resting space for the deceased before the casketing and rituals of the wake or visitation occur.² The display or visitation component of the American funeral program was usually set in a dividable series of large living room settings just beyond the foyer of the funeral home, with the visitation line wrapping through these rooms and sometimes outside of the building, depending on the social importance and magnitude of the individual. Most funeral processions conduct a ceremony before the body in the same visitation spaces. These large living room block spaces are not

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¹ Ibid.
² Ibid.

i17: funeral home stigma, movie poster from 'Funeral Home' (1980).
conducive to the events or emotions of the rituals because they offer little narrative of the journey of the procession, since all activities taking place are in the same sterile atmosphere, which alone provide the sequencing of the ritual.

This development resulted in the separation of the American last rites customs from the original and instinctual purposes of the rituals. The wake, visitation, ceremony, and committal should be a journey that never severs contact with the reality of death. The original purpose of the wake was for the family to come together and watch over the body of their loved one. The palpable connection with the deceased and prolonged exposure to the result of death are a primal part of human culture that allows individuals, as beings, a better understanding of having a temporal existence, of being mortal. The modern funeral traditions of the United States have been criticized for a number of reasons. First and foremost is the cost for services during an elevated vulnerable and emotional time. The American funeral also receives criticism on embalming as being a debased form of paganism that is a culmination of primitive desires of the uneducated masses.³

³ Interview with Colin Muehlenkamp, Funeral Director, Dobbling, Muehlenkamp-Erschell Funeral Homes, Inc.
Over the past three decades the funeral home has evolved from the retrofitting and/or application of residential architecture. “McFuneral Homes” are another step away from the true, instinctual ritual of the wake. These facilities are designed for a visitation and a ceremony only, and like their predecessors do not provide any opportunity for the loved ones to participate in the procession of the body. The spaces provided by these facilities are not conducive to the social functions of the funeral procession. The congregation accessible spaces are solely a lobby space for collection, socializing and relief, and one to three chapel spaces. Few relics of the true wake or procession are found in this strategy.

The modern profession of undertaking is a result of the evolution of our culture’s dying relationship with death mortality and life. It is a snapshot of the direction American culture is headed.

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4 Ibid.
CREMATION:

As the American mortician was rising from the advent of American technology of embalming in 1873, Professor Brunetti was introducing his cremation chamber at the Vienna Exposition.¹ This opened cremation back into western European culture as a “new” option in an industrializing world. The alternative option of the chamber made the cremation process more efficient and less offensive in respect to fumes and odors of burning flesh of the open-air cremation. Factors in the re-emergence of cremation in Europe initially were, first, that the nature of the cremation ends the existence of the corpse and the possibilities of desecration; and second, that the expanding of cities and cemeteries created density problems in development, thus resulting in an increase in burial cost.²

In 1963, Pope Paul VI reversed the ban on cremation, and in 1966 Catholic priests were permitted to officiate cremation ceremonies. This was a breakthrough of cremation in western culture, since Catholicism was the religion of the majority.³

³ Ibid.
Modern cremation breaks down into the following steps: cleansing of the body; removal of jewelry, clothing and preparation; visitation; services; cremation; filtering and pulverization of the bone into ashes; presentation to the family in an urn; and final placement of the ashes.4

The ritual of modern American cremation is flawed. It is modeled after the American burial ritual with a void in the procession for the committal. The procession is identical to that of traditional burial services in relation to flow from the coroner to a funeral home, the cleaning and preparation of the body, the wake, the visitation, and the final services. However, traditional burial processions follow the body to the cemetery for a committal, and witness the body being lowered into and engulfed by the earth. The cremation ritual diverges from contact with the procession of family and friends at the point of committal. The body is transferred sometimes hundreds of miles to a crematoria, and is committed to the flame with no members of the family and/or procession witnessing. The cremains are processed at this facility, inurned, and shipped back to family or funeral home. The procession then partially recommences for an inurnment ceremony that involves the placement of the cremains in an urn, followed by the placement of the urn in a columbarium, or the scattering of the ashes at a specific location.5

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5 Ibid.

i24: funeral procession diagram (cremation today)
Around the turn of century the few existing crematories had ceremonial spaces for committal of the body to the cremation chamber, which usually involved the coffin being lowered into the chamber on the floor below. The technology of cremation chambers at this time was less advanced and modern codes and regulations of emissions closed these facilities down. Now, most modern crematoriums have cold, industrial spaces with no sensitivity or natural light. Some funeral homes contain a cremation chamber but the setting of the committal to the chamber is usually similar to cremation facilities and in a subservient space that is not suitable for ritualistic / ceremonial experience.  

The advancements in technology of the cremation chamber have streamlined and cleaned up the process to be more conducive to design. The modern cremation chamber reaches 1600°F-1800°F, and takes on average two hours to liquefy the corpse leaving only bone fragments. The emission from the process is an odorless colorless carbon dioxide vapor. These advancements make it easier for a crematorium to be located in a more populated urban setting and have little to no adverse effects on adjacent development.

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6 Interview and tour of the Cincinnati Cremation Co. facilities, Elaine Sloan General Manager.  
Cremation projects have increased around the world over recent years because of the trends of cremation statistics, the recent recession, and environmental awareness. Cremation is one out of every three funeral rituals in the United States.\(^8\) In Europe and South America, crematoriums have become a new trend of funerary design.

The Treptow Crematorium of Berlin designed by Axol Schultes, the Rennes Crematorium by Plan01 Architects, and the Tanatorio Crematorium in Lima, Peru, by Jose Orrego, all create emotionally supportive environments for cremation ceremonies, while simultaneously providing the visitor with varying contact to the committal to the flame in a sensitive manner.

The Treptow Crematorium photographs and plans indicate a large, social and spiritual gathering space that is composed of a random field of circular columns that terminate into the roof with oculi dynamically illuminating the gathering. The changing of light through the random oculi creates a peaceful forest-like feeling. The ceremonial spaces are lit with diffusion through wood fins that create an even, peaceful day-lit space. However, these chapel spaces have no relationship to the committal, which occurs in the cremation space in the floor below.\(^9\)

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The Rennes Crematorium provides connection to the environment through its concentric and overlapping design of large circular interior spaces and small circular exterior spaces within the program. The project is illuminated through the exterior surfaces of the perimeter, and from within by the exterior ‘courtyard’ spaces open to the sky. The ceremonial chapels are each situated in large circular plans. They are adjacent to the cremation chambers but do not offer contact to the committal. The body is wheeled down a small hallway after the funeral services and applied to the cremation chambers. This strategy brings the participant closer to the apex of the ritual but offers no contact with the actual committal.10

The Tanatorio Crematorium is also an experientially designed sequence of spaces that provide dynamic day-lit spaces. It collects the social procession and condenses it to a focused ceremonial experience through program sequencing. The application to committal is a step closer to participating with the committal. The catafalque extends through the ceremonial space’s wall to the cremation space where the body is collected and applied to the cremation chamber, leaving a small but ever-present disconnect from the apex of the ritual.

Architect Gurjit Singh Matharoo’s design of the Ashwani Kumar (also referred to as the Shwinikumar, and Ashwanikumar) Crematorium in Surat, India, on the banks of the Tapti River, has a raw contact with the committal to the flame. The project is a simple and straightforward sequence of spaces that are conducive to the entire cremation procession.

The first gesture of his design was to elevate the plane of the crematoria above the street activities on the riverfront. The compound wall, foliage and entry sequence hide the building and its activities, concealing the building’s function. The entry sequence skews in plan to create a view through the project of the river, and isolates the visitor from the street. It builds on the traditional crematorium structure as a simple pavilion.\textsuperscript{11}

The program opens to the visitor as a large open-air pavilion marked by nodes of ritual; each defined by curvilinear concrete open to the north, scooping in light through the wall mounted skylight slit. This space embraces the congregation around the cremation chambers. Hindu cremation rituals are exposed and raw. This is conveyed through the design of the cremation spaces; the body’s physical committal to the flame is visually open for all to witness. The series of cremation ritual spaces are linear running east and west, each flows north to south chronologically. To the north, these spaces are met by a courtyard that is social in nature and has visual connection to the cremations taking place. The ritual is flanked by the

\textsuperscript{11} “Gurjeet Singh Matharoo and His Works,” Archinomy, Bridging the Gap, Copyright 2008-2010.
south pavilion overlooking the river, which is visually blocked by the curvilinear walls. The pavilion is used for reflection and gathering after the ritual, as well as for random visitors to enjoy the view.

The Ashwani Kumar crematorium provides an experiential space for the weaving of life, death, celebration and mourning with a quiet dignity. The dichotomy between light and shadow, interior & exterior and ritual and reflection is enforced by the design of daylighting through detail and materials. The changing light of the day is displayed on the exposed concrete surfaces and through the smoke of the cremations. The experience of the individual is enhanced by design to achieve the significance desired.

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SPACES & EVENTS:

The funeral procession (wake), American funeral homes, and crematoriums lead to a set of needs consisting of sensitive activities, spaces, and emotion to complete the funeral procession. The orchestrating of these needs into a program is primarily concerned with the experience of the individual. Paramount is the individual’s relationship with the sequence of spaces in correlation with the specific activities. The qualitative factors of experience through framed moments that fluctuate spatially, socially, and spiritually create a sequence that is individually significant and memorialized.

The intent of this design project is to provide a cremation facility that houses all the functions of the average American funeral home with additional programming that encompasses the entire cremation funeral procession. The sequencing of spaces and activities, and their interaction drive the design.

The proposed program of the ceremonial crematoria & columbarium has five basic user groups, listed in order of importance: the primary mourner group (the immediate family and close friends), the secondary mourner group (other friends and other wake participants), the tertiary mourner group (the columbarium visitors), the client or business group, and lastly, the employee and services group. These five groups have multiple characters, each with different meaning to their individual use, which overlaps spatially and visually.

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1 Interview with Colin Muehlenkamp, Funeral Director, Dobbling, Muehlenkamp-Erschell Funeral Homes.
The derived program consists of a ceremonial arrival sequence, ceremonial cremation procession sequence, columbarium visitation sequence, and the professional and services sequence. The ceremonial arrival sequence is the beginning segment of the ceremonial cremation and columbarium visitation sequences. It consists of a vehicular and pedestrian approach, including a covered drop-off and an exterior gathering space. The vehicular and pedestrian approach from the street transforms from a street view of the facility to the protective covered vehicular drop-off space. This covered vehicular drop-off space is the first step of isolation from the everyday and provides a safe resting space for transition from vehicle to pedestrian. Activities, social by nature, would consist of individuals helping each other in and out of automobiles and conversing. The exterior gathering space is the second stage of isolation from the everyday, serving as a waiting space for parties of mourners, to collect composure, socialize and reflect. It acts as the main interstice separating the street from the facility. It welcomes and eases the visitors into the procession. The lobby space is the third level of isolation from the everyday. It serves to greet, direct and circulate the procession to appropriate wake suites or ceremonial sanctuaries. This space is also social by nature, but an agenda is formed and a specific journey is initiated to either the ceremonial procession or columbarium visitation. Between the circulation and the wake suites are secondary gathering spaces; for collection of visitation line over-spill, waiting, socializing, and collecting composure.

2 Ibid.
The ceremonial cremation procession sequence is divided into two sets of spaces pertaining to the wake and committal, respectively. The wake suites each contain private family rooms, a cleansing room, a slumber room, a wake hall, and reflection rooms. The family rooms are private areas only for immediate family use, and contain sleeping quarters for one to two people, to provide the opportunity for a true wake where they can actually watch over the body until committal. Cleansing and dressing rooms provide private and/or optional viewing or participating in the body’s cleansing, dressing and preparation. The slumber room provides a private body viewing area for the family, as the deceased lays in wait for last rites. This room is adjacent to the wake hall and also serves as a viewing room during visitation. The wake hall is the largest space and is social by nature; a bar and kitchenette would allow for food and drink during the wake and visitation. Reflection rooms or smaller living rooms would provide private intimate spaces for escape, emotional composure, and consoling. The circulation between the wake hall and the ceremonial sanctuary would be designed around the event of the pallbearer procession.

wake sequence

circulation  family  cleansing  slumber room (display)  wake hall (social)  reflection

i38: wake sequence montage

ceremonial sequence

circulation  gathering  ceremonial threshold  ceremonial sanctuary (committal)  witnessing room (confirmation)  gathering

i39: ceremonial sequence montage
The ceremonial spaces shift the general procession from a social ritual to a focused, spiritual ritual. These spaces consist of a sanctuary, staging rooms, a witnessing room, an inurnment room, and the cremation chamber control room. The sanctuary is the primary space allowing for congregations of up to 200 people, and is designed to facilitate any religious beliefs, if desired, by using only material and light as the ornament. It provides separate seating for the immediate family apart from the general congregation. A chancel is elevated before the seating, and accommodates a catafalque for ceremony display of the departed. It also provides space for readings, eulogies, music. A pedestal for the funeral spray, the chancel requires supportive spaces for clergy, musicians, and audio/visual control. The application of the casket from the catafalque into the cremation chamber is the most sensitive design issue of the program because it should allow for an emotional connection to the committal that is void of campy theatrics. The witnessing room serves as a gathering space for the immediate family after the committal for optional witnessing of the actual cremation. The inurnment room is a space for the optional participation of placing of the ashes into the urn.

The columbarium visitation sequence consists of a meandering circulation, the columbarium itself, and a roof garden. The meandering circulation slows this visitation procession down for contemplation and views. The columbarium itself consists of a monumental wall adorned with individual or family niches that house the urns. The monumental columbarium
wall viewing-surface is divided into smaller visitation rooms by partitions that offer secluded resting and reflection space for a more intimate visitation. The columbarium accessible rooftop green space facilitates a larger, open, less specific space for reflection.

The professional spaces include an interior hearse parking and loading area, the morgue, the medical preparation room, office space, display room, arrangement room, casket making shop, laundry loading and storage. The entry sequence of the hearse should be a respectful place, and separate from the loading dock space. The morgue and medical preparation room provide space for organizing and preparing the body for viewing by the family. Office space serves four to six people consisting of funeral directors, secretarial, and facilities management. The arrangement and display rooms provide for professional / client interface for planning and selecting funerary services. A casket-making wood shop houses production and support for simple and tasteful clean burning caskets to order.

This program proposal of spaces and activities is essentially a housing for the entire procession of the cremation ritual, the columbarium visitation, and their supporting services. It recaptures the function of the wake and provides a connection between the individual and the ritual of committal to the flame. The design of these sequenced spaces consist of points of interdependence and conflict that are accentuated by the montage of moments of each user group, their activities and experiences.
SEQUENCE:

The design intent for experiencing the cremation procession places emphasis on the moments and spaces combining to fulfill the emotional spiritual and physical needs of the participant. The overall journey is more important than any point within it.¹ This emphasizes why sequencing the events, actions and spaces; and their interactions are of utmost importance. A sequence, as defined by Merriam-Webster Dictionary is “a succession of related shots or scenes developing a single subject or phase of a film story.”² Bernard Tschumi’s definition of sequence is “a composite succession of frames that confronts spaces, movements, and events, each with its own structure and inherent set of rules.”³

Examining the philosophy and methods of overlaying sequences of space and activities in architecture (Bernard Tschumi, Steven Holl, Peter Eisenman, and Le Corbusier) and film (Sergei Eisenstein and Lev Kuleshov) demonstrates sequencing as having importance on experience and the journey as a whole.

In his essay “Sequences,” Bernard Tschumi explains that, “any architectural sequence includes at least three relations.”⁴

The first is an internal relation of transformational sequence or movement. The second is an external relation pertaining

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1  Tschumi, Bernard, “Sequences.” pg. 29.
4  Tschumi, Bernard, “Sequences.” pg. 29.
to physical space; a montage of formal devices (volume, light, and order) that is linked with the program of activities, accentuating the sequence as a whole. The third is an external relation pertaining to the programmatic, \textsuperscript{5} “sequences of events, use, activities, incidents are always superimposed on those fixed spatial sequences. These are the programmatic sequences that suggest secret maps.”\textsuperscript{6} Tschumi states that ritual lies within the relationship of the spatial and programmatic relations. The relationships between event and space can be indifferent (battalion marches on the fields), interdependent (skater and skating rink), and conflictive (battalion skates on the tightrope).\textsuperscript{7} Observation of these three relations and their interaction drive the design as a montage of activities against proportion, materials, and light. This creates a personal procession by way of framed views of moments in time, which in turn, create an experiential journey that is significant and memorialized.\textsuperscript{8} The dialogue between sequences of the spaces and the events are ultimately independent, but share a causal bond: the narrative. The narrative intertwines and defines the two systems, while maintaining separate contradictions and reciprocities in a dynamic manner. This narrative has both plot and story. The plot is how the individual learns of the

\textsuperscript{5} Ibid. pg. 30.
\textsuperscript{6} Ibid. pg. 31.
\textsuperscript{7} Ibid. pg. 32.
\textsuperscript{8} Ibid. pg. 33.

i43: Tschumi, Manhattan Transcript diagram
action. The story is the action in itself. The dominance of the plot over the story reiterates that the process or journey is more important than the individual parts. The use of a plot and a story suggests an ending and superimposes closure to the open-endedness of the transformational sequence. Applying the proposed procession of the American cremation funeral procession to a plot and a story is significant in that it is a journey itself, resulting in a retelling of the ritual to provide significance of the experience to the individual. The discovery of the events and spatial sequences make it impossible for a singular interpretation and provides “meaning…derived from the order of experience rather than the order of composition.”

The narrative product of the event sequence and spatial sequence can be in collage (collisions) or montage (progressions), resulting in dynamic interstices that highlight the relationship. The interstice is created with devices such as compression, rotation, insertion, transference, variations, fusion, repetition, substitutions, metamorphoses and dissolutions. “The interstitial proposes a dissonant space of meaning.”

As previously defined by Tschumi, sequence is a synthesis of a series of frames. Frames derive significance from juxtaposition of movement, event, and space, establishing memory. Frames are a partial control composed of devices and

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9  Ibid. pg. 29.
10  Ibid. pg. 33.
materials, the moments of the sequence.\textsuperscript{12} Devices are conforming, regular, solid, materials that are questioning distorting, displacing.\textsuperscript{13} The sequence consists of frame after frame, room after room, episode after episode, view after view. This sequence is broken down into snapshots, points along the journey, frozen frames that are memorialized by significance. Frames control extreme formal manipulations of sequence: mixed, superimposed, dissolved, cut up, repetition, disjunction, distortion, dissolution, and insertion. These points are opportunities for the events and spaces to align or be juxtaposed to enhance the experience and/or change the meaning.\textsuperscript{14} This strategy offers a plurality of interpretations, not a singular fact.

The relations of spaces and events as a montage or collage, and their production into a narrative relate strongly to film editing. Russian filmmakers Sergei Eisenstein and Lev Kuleshov used film montage to capture emotion of cinema and the visual narrative.

Kuleshov used contrasting shots to manipulate emotions by juxtapositioning ideas to confront each other and produce a new idea that is unique to the individual. He constructed montages matching shots of different connotations and intensities with an emotionless face. The viewer draws different meaning from the same emotionless face depending on

\textsuperscript{12} Tschumi, Bernard, “Sequences,” pg. 35.
\textsuperscript{13} Ibid. pg. 35.
\textsuperscript{14} Ibid. pg. 35.

i45: Kuleshov effect film frames
their interpretation of the first shot.\textsuperscript{15} Or, as in this architectural thesis response, drawing different meaning from the same architectural program or sequence. Each space can provide different personal experiences through proportion, materials and light.

In Eisenstein’s 1927 film, “Oktober,” montage was used as a progression of shots that reiterate and feed a similar direction and meaning at multiple levels. Eisenstein’s montage films translate shots from volumetric (wide angle scene of soldiers marching) to detail (a close shot of the soldiers’ boots).\textsuperscript{16} This duality provides the viewer with an intimate knowledge of the event and space and is interpreted uniquely by the individual, providing significance. Devices of the Russian montage and collage filming strategy are metric (numerical), rhythmic (cutting based on time), tonal (emotional), overtonal (cumulating of all of these), and intellectual (shots combined to provoke an intellectual meaning).\textsuperscript{17} These tools relate to the architectural response of the funeral procession by manipulating sequence views and proportion. The memory snapshots experienced by the user at multiple levels.

\textsuperscript{15} Pudovkin, “Naturshchik vmesto aktera”, in \textit{Sobranie sochinenii}, pg. 184.
\textsuperscript{16} Eisenstein, Sergei. (film) Oktober: Ten Days that Shook the World.
\textsuperscript{17} Smith G. M., “Moving Explosions: Metaphors of Emotion in Sergei Eisenstein’s Writings”.

\textsuperscript{i46: Eisnstein, Oktober frame montage}
These methods of montage of visual sequencing provide a narrative, or journey that is more powerful than any one segment, frame, or image. It is about how the narrative of the sequence is told, not what is told. Film Editor Walter Murch proscribed six criteria for evaluating a cut or deciding where to cut and the design of the juxtaposition of two different shots. In order of importance: evoking appropriate emotion, advancement of the story, rhythm, sensitivity to the movement of audience's focus, two dimensional plane of the screen, and three dimensional plane of action.¹⁸

Le Corbusier's Villa Savoye broke traditional codes of residential architecture by using a temporal progression and linking spaces allowing for a journey of realization of settings and activities. This defines what Le Corbusier called a ‘Promenade Architecturale.’¹⁹ Perception of the sequence of spaces, and the interrelation of these volumes with each other and the environment, develop as the space is experienced and processed by the user through motion and vision. The architectural promenade is the journey of the user through spaces serving as a device to reveal the soul of the built environment.²⁰

Corbusier placed importance on the users’ experience through the house. The vehicular approach, the arrival, entry, transitions, initial experiences and the journey through and unfolding of the spaces were the primary design concerns.²¹ The

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¹⁸ Chami, Camille, “Le Corbusier and Villa Savoye Remembered.”
¹⁹ Ibid.
²⁰ Ibid.
²¹ Ibid.

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![Corbusier, Villa Savoye diagram]
planned path with fixed halting points linked by continuous movement provided a developing relationship of volumes, and spatial conversations that display the soul of the machine for living. His five-point strategy is revealed in the telling of the story through experiencing the promenade of the residence. The five points consist of pilotis, free façade, open floor plan, views and a roof garden.\textsuperscript{22} These devices carry out Corbusier’s philosophy of having a minimal footprint “removed” from the landscape and replaced with the roof garden.\textsuperscript{23} This is realized during the approach, where the residence is perceived to be framed by the existing landscape. As the program is unveiled to the user through the promenade, the roles are switched and the landscape is framed internally through the form of the building.\textsuperscript{24}

The promenade begins with the automobile approach compressed under the dominant second floor. Next, the user is led through the entry with views of the main arterial ramp that continues through the promenade. The switchback ramp sequence is continuous programmatically but evolves spatially and visually. This offers a series of “successive perceptions… passing through one space after another.”\textsuperscript{25}

\begin{thebibliography}{9}
\bibitem{22} Ibid.
\bibitem{23} Ibid.
\bibitem{24} Banham, R., \textit{Guide to Modern Architecture} pg. 25.
\bibitem{25} Jurgen J., \textit{The Ramp as Architectonic Promenade in Le Corbusier’s Work}, pg. 105.
\end{thebibliography}
Enric Miralles’ Igualada Cemetery or ‘Cemeteri Nou’ concerned the poetic ideas of confronting death by cutting a cross-section through the past, the present, and the future,\textsuperscript{26} even more so than the normal application of program.

The project consists of a main arterial procession that cuts down through the earthen landscape as a metaphor of the river of life leading into the city of the dead.\textsuperscript{27} This arterial of the cemetery leads down to the lowest point of the program and bulges into a resting point for reflection before the main burial site. This strategy provides the mourner or visitor with a stretched sequence of meandering to a resting or reflection space at a different elevation or spatial relation from the point of arrival, which brings the visitor to a different state of mind. The circulation then turns back up on itself to reveal more clearly interstitial passages that cut through the mausoleum to the secondary cemetery circulation. This path lines the outer boundary of the lower, primary circulation path below and its resting space. This space then leads into two layers of interior spaces for ceremonies, gathering, and management, which are on grade with the original procession entrance.

The goal was to bring the bereaved through a transformation sequence to the city of the dead, an in-between place where the living and the dead are brought close together. The sequencing and repetitive procession to this spiritual reflection

\textsuperscript{27} Ibid. pg. 15.
area is intended to evoke memories and thoughts. The cemetery is more complex than translating the program; it is an exploration of the cultural topography.  

Using montage for orchestrating the relations of sequences of events, spaces, and movements to construct an individual narrative inform the design of the complete cremation funerary procession. Spaces of approach, spaces of arrival (vehicular and pedestrian), spaces of social interaction, spaces of movement, spaces of grieving and consoling, spaces of focused ritual, and spaces for reflection are juxtaposed to form, reinforce, dissolve and close each other to maximize the desired experience.

28 Ibid. pg. 17.
LIGHT AND EXPERIENCE:

Everyone has experienced spaces with no connection to the environment: the buzzing of florescent bulbs overhead, a static yellow glow. There is no sense of time or being, and these are punishing spaces to endure, that are usually used for short spans of time because they are not suitable for working or living settings.

“Have not you yourselves sensed a difference in the light that suffuses such a room, a rare tranquility not found in ordinary light? Have you never felt a sort of fear in the face of the ageless, a fear that in that room you might lose all consciousness of the passage of time that untold years might pass and upon emerging you should find you had grown old and grey?”

– Jun Ichiro 1934

It is has been medically proven that daylight and visual connection to the environment has a significant effect on the human body. The stimulation of the human eye by daylight triggers a release of the chemical serotonin. Serotonin is an essential component for the body to find emotional well-being. Sunlight also creates Vitamin D by absorption through the skin. Prolonged absence from connectivity to daylight leads to seasonal affective disorder (SAD). Psychological research has theorized that lack of sunlight can lead to depression from the slowing these chemical flows that are usually stimulated

1 Tanizaki, Junichiro, In Praise of Shadows, pg. 22.
instinctually and reactively by the light of the sun in natural settings. These dependencies of mood and disposition stem from our primal connection to the sun as the provider of the environment. Not only mood and disposition but also cognition has been proven to be influential by amount of sunlight. Memory, and thinking performance is affected negatively by a loss of connection to daylight. When individuals get motion sickness at sea, the most common remedy is to gaze at the horizon to stabilize mentally to a location in the world and reach a realization of one’s relationship within the environment. This is similar to the connection between the light of the moment of the environment and human well-being within architecture.

Traditional and conventional day-lighting methods and materials can sufficiently illuminate spaces at comfortable levels throughout the day, but can be limited in their representation of the environmental moment, by not showing all of the true color and unique qualities. Diffusion is a method of indirectly lighting a space by reflecting natural or artificial light off of a reflective surface. Using color responsive surfaces of the earth such as stone, block or concrete informs the observer of the time, color, and quality of the sun. Diffusion scatters the straight light beams from the sun into thousands of directions. This process softens sunlight by fragmenting and filtering. The light is purified through diffusion as it spreads and pours across a

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4 Ibid.
5 Ibid.
6 The author’s knowledge of this stems from a life experience in sailing, and was not gathered from a medical reference.
7 Baker, N. Steemers, K., Daylight Design of Buildings, pg. 89.
surface. The inconsistencies of natural/imperfect materials previously mentioned not only diffuse the light with true color and quality, but also generate miniscule shadows that create a dialogue between the individual and time, environment, and built form. These methods of diffusion include wall mounted skylights of the strip or node type, light shafts, fins or skins that bring the light in and filter it through the material (can be passive or active), clerestories bringing the light in from high and gently lowering it to the level of the user, and light shelves, which can use diffusion to wash light across the ceiling.

Continuous wall mounted skylights are mounted along vertical walls that either extend past the ceiling and roof planes, or have some other method of collecting light and diffusing it below on the south face of the wall lighting the space from the north. The light washes downward along the surface and can be manipulated with orientation through angles and or curvature of surface. The reflective and absorption properties of the materials are integral for achieving the qualitative results desired in the design. This technique emphasizes the scale and size of the room, and applies a large canvas of pure natural light for interaction with the environment.

Nodular wall mounted skylights are similar to the continuous but are either broken up into segments or are singular locations on a wall instead of continuously running the entire wall. This technique can be used to focus the light on a specific location.

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spot for dramatization. These skylights can also provide a repetition for corridors and circulation spaces.¹¹

Fins, screens, and filters use diffusion as the previous wall mounted skylights do, but perform between the occupiable space and the sun, thus lighting the space from the south and above. The components of the system act together to bring light in and diffuse it in a specific direction. The design purpose is to evenly illuminate the space but also prevent unwanted contact to direct sunlight. Fins are repetitive extruded forms that shield light and diffuse it off the adjacent form. Screens and filters use a fabric made up of light diffusing modules. These modules can be designed to obtain light and diffuse light in specific directions; they can also be homogeneous or can be more reactive to the environment and develop in coordination with the interior spaces and the solar angles.¹²

Clerestories are a common method of channeling light to interior spaces by filtering the light from above, and letting it fall gracefully to create an extremely soft, clear, pure natural light. This allows light to diffuse as it falls down to occupiable spaces and prevents direct contact with the sun. This technique has been prevalent for hundreds of years, notably in the gothic times in cathedral design.¹³

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¹¹ Ibid. pg. 50.
¹² Ibid. pg. 109.
¹³ Ibid. pg. 51.
Light shelves are essentially a hybrid of the clerestory and a singular reflector fin or shade device. The concept employs a large window with a reflector/shade device at an appropriate height on the window in accordance with solar angles to divide the natural light entering the building. The reflector/shade redirects the light entering the space on the upper portion of the window up, toward the ceiling (preferably canted). The light washes across the ceiling surface allowing it to penetrate deeper into the space, preventing the majority of direct sunlight contact, and diffusing the light to a soft quality. This strategy has been used in classroom design over the past two decades and provides excellent working conditions with natural light being diffused unnaturally deep into spaces.\textsuperscript{14}

Artificial light, along with diffusion, can be used as a hybrid and/or supplement to reinforce and compliment the light of the moment. As the light emerges from the east and fades to the west, there are different moments in light. The light at the beginning of the day is a different angle and shade of color than the light at twilight or noon. Weather and seasons affect the intensity of the light. These uncontrollable factors that retard the amount of light available for day-lighting are opportunities for artificial lighting. The aim of this strategy is to not fight the light of the day, but to provide a smooth transition from maximum amount of daylight offered to efficient even electric lighting of nighttime. Methods of diffusion can be replaced by electric light as shown in the nodular wall mounted skylight. The diffusion of light can also be applied in the opposite

\textsuperscript{14} Ibid. pg. 105.
direction exemplified with up lighting along vertical walls. The color and intensity of the artificial light can be controlled by the color and intensity of the natural light via sensors for maximizing contrast of colors so they are read more clearly.\textsuperscript{15}

The use of materials along with the detail of fenestration is a major concern in designing a lighting strategy that promotes the experiential intent of the sequencing of the ritual. The touch and feel of the materials, the reflective qualities, the transfer of the lights’ information including color quality and intensity can enforce or combat the design intention.

Concrete is the primary material selected to form the sequencing of spaces and events of the prescribed program and to display the ever-changing, ephemeral qualities of nature's light.\textsuperscript{16} This material can be manipulated in a variety of ways to reinforce the experience desired for each space and interstice. Rough hand-chiseled surfaces provide an organic dynamic haptic relation to the surface and the diffusion of light is fragmented at a larger scale. Board formed concrete consists of building wood plank forms for concrete pours. The design of the wood form and the composition of the concrete are the variables that can produce a multitude of qualities of finishes. The wooden reveals can be widened to single out the wood impressions or can be minimal to produce a more uniform surface. The quality of wood and composition of the concrete can produce an impression of the wood that is strong, appearing like wood made of concrete for a warmer more haptic aesthetic

\textsuperscript{15} Ibid. pg. 128.
\textsuperscript{16} Ibid. pg. 89.
or a more subtle representation of the surfaces’ construction. These variables provide a spectrum of possibilities of natural light diffusion qualities. Board formed concrete surfaces provide the user with an apparent reactive conversation of the method of construction. There is a dichotomy between temporal and permanent and the two materials that form the surface. Smooth concrete surfaces (as Todao Ando primarily employed) display a sheet of concrete that is clean and provides a more uniform surface with small scale of diffusion that can be read all at once, placing more emphasis on the light itself. This gives the user a lesser relationship with material and its construction than these other methods. The manipulation of the concrete’s composition such as fly ash content, aggregate specification percentage, and wetness can create a spectrum of finishes.

Todao Ando uses strict principles in the design and craft of concrete to guarantee both density of material and precision of surface. The mix itself is of engineering quality, never using a slump greater than approx 6”. Complete and thorough vibration of the pour is an absolute prerequisite if one is to produce a concrete free from pocketing. Reinforcing bars are no closer than 1.5” from the face of framework. The precision of the framework joinery is executed by Ando’s select carpenters and concrete workers that repetitively work together to execute the labor. He desires a very stable concrete that resists the penetration of moisture, thus taking a long time to become stained with rain. These very wet pours with low slump create imperfections of the material that are miniscule but are still read in their interaction with daylight.17

17 Frampton, Kenneth, Tadao Ando, pg. 20.
materiality of the details forming an architectural space become evident, the haptic realm is opened up. Sensory experience is intensified; psychological dimensions are engaged."

The selection of wood as a secondary surface material compliments and contrasts concrete to emphasize the sequencing of spaces and events. Wood provides a warmer familiarity that is conducive to light and has a strong association with touch. Employing the physical qualities of wood’s materiality by stacking, or sequencing intermittently with reveals can create surfaces, walls, and dividers. The juxtaposition of wooden surfaces and board formed concrete surfaces can be used as a metaphor of time and construction. The composition of the design of the wooden surfaces and the wood formed concrete can form a space between the construction, as if the wooden surface constructed the concrete surface and then was pulled away constructing a void between the conversation.

The technical information concerning diffusing natural light, while critical, is a quantitative, “measurable (and) is the means used to build it, once built, takes us back to the original realization in unmeasurable” or qualitative. The relationship of the individual with the environment is very important for the experiential value of the actions performed in the space. The day-lighting methods and materials listed above speak with volume of an emotional and experiential architecture.

The surfaces light the space and make a connection to the user, to the environment, and to the built form uniquely and simultaneously. These strategies manifest each moment of the surrounding environmental state by using the immediate materials and creating a space that is unique from moment to moment.\textsuperscript{20} The unique qualities of the ever-changing light are made more selective and unique through design of the permeation of light and the materials that diffuse it. This results in an experience for the user that is about the moment, emphasizing the ritual or activity at hand, memorializing the experience.

Louis Kahn insisted that light is “the giver of all presences.”\textsuperscript{21} His works employ methods of day-lighting with diffusion, with an intention to create poetic experiences that are “unmeasurable.”\textsuperscript{22} He honors simple materials by forming them to make light and shadow from the environment, “form as the realizations of nature.”\textsuperscript{23} This provides his interior spaces with an experiential quality that is ever-changing and as unique as the environmental moment of time itself. The user feels something different with every encounter with the space. The significance of this quality is an activity that is memorialized due to its unique qualities corresponding to the environment and a “comforting feeling of knowing the time of day.”\textsuperscript{24}

\begin{tabular}{ll}
20 & Ibid. pg. 229. \\
21 & Ibid. pg. 228. \\
22 & Ibid. pg. 222. \\
23 & Ibid. pg. 232. \\
24 & Ibid. pg. 226. \\
\end{tabular}
Kahn’s Kimbell Art Museum exemplifies his philosophies of form making light, and light making shadow to produce a “silence”\(^{25}\) or an “unmeasurable” quality.\(^{26}\) The structural concrete cycloid vaults are washed with diffused natural light to evenly illuminate the galleries. This superimposes the natural moment of existence in time on the structural form of the building, creating a correlated conversation between structure and nature that intensifies the silence and ever-changing quality of the experience.\(^{27}\)

Peter Zumthor uses day-lighting strategies to stage experiential events of a program, exemplified in his thermal baths at Vals and the Brother Klaus field chapel of Switzerland. In Vals, Zumthor uses diffusion of natural light through slits cut through the roof along the interior faces of the stone walls. These walls are illuminated, monumentalizing the surface to appear as if it is one entity or carved from the earth itself, “stone made of stone.”\(^ {28}\) The interior has a qualitative feeling “of always having been” there.\(^ {29}\) The light serves as a way-finder through the program using the dark and light to sequence the procession of the different bathing spaces. The diffusion of changing natural light through the steam of the baths and

\(^{25}\) Ibid. pg. 17.  
\(^{26}\) Ibid. pg. 236.  
\(^{27}\) Lobell, John C., *Between Silence and Light: Spirit in the Architecture of Louis Kahn*, pg. 94.  
\(^{28}\) Zumthor, Peter., *Thermal Bath at Vals*, pg. 54.  
\(^{29}\) Ibid. pg. 54.
reflecting off the water creates a qualitative “feeling for the mystical nature of a world of stone inside the mountain.”

The Brother Klaus field chapel simple program lit naturally with diffusion through one large oculus. The construction abstract was to bound together a cluster of trees as a “tent” for the interior surface of a concrete form. Next the concrete was poured into the form and cured. By burning out the bound cluster of wood he creates a void in its place. This provides a dialogue between the user, and the built form, and the environment, as light pours in high through the oculus and descends softly across the organic charred remnants of construction.

Todao Ando, as a builder / architect, focuses on materials, finishes, detail and light. Concrete finishes are constructed with precision to be a canvas for the “light changes expressions with time.” The faces of his surfaces are a “dematerialization under the impact of sunlight, to illuminate, through the continual movement of the sun.” The environmental subtleties of “a faint drizzle or a sudden unexpected breeze, the onset of twilight or the premonition of dawn” are transposed to the concrete that clearly represents the color quality and detail of the environmental moment. Ando strives to respect

30 Ibid. pg. 55.
31 Zumthor, Peter., Atmospheres, pg. 27.
32 Frampton, Kenneth., Tadao Ando, pg. 2.
33 Ibid. pg. 12.
34 Ibid. pg. 12.
the building materials and their construction and uses only autonomous compositional elements that are used in their natural state, unfragmented or cut. Precision is ornament and the true “intrinsic character of material” is expressed. Ando’s Ashiya Hyogo living quarters and studio in Japan also use skylight slits along the edges of the interior walls, so as the sun moves across the sky, it plays on the rich texture of the concrete walls and creates a constantly changing pattern of interior shadows.

The principles abstracted from these master architects of experience are: the measurable serves the immeasurable, an honoring of materials, and transposing nature’s ever-changing quality. These principles, though general, serve as a set of rules to inform design of the selected detail methods of diffusion and materials. The quantitative factors of light, detail, construction, and materials construct a sequence of spaces that have a qualitative feeling that is transposed on the sequence of events and activities for a maximization of experience.

35 Ibid. pg. 20.
36 Ibid. pg. 12.
The site typology selection for the application of this crematoria / columbarium program is within the fabric of an urban downtown area. Crematoriums have traditionally been set off of the urban fabric in wooded or rural areas and cemeteries due to the emissions from the cremation chambers and Abrahamic negative connotations. With the advancement of cremation chamber technologies, the emissions are odorless and not harmful. The placement of this project into an urban setting confronts the dying American traditions of the funeral procession. This reiterates the concept of the proposed program as an answer to the social deprivation resulting from the development of the American funeral industry.
Cincinnati is layered from the Ohio River north. Just north of the river, “The Banks,” consist of two major sports stadiums framing future residential, retail, and green space development. Fort Washington Way runs east/west and splits this development from the Central Business District (CBD) core of downtown. The CBD is home to multiple corporation headquarters including P&G, Macy’s and Kroger’s. The CBD also contains a convention center, a city center (Fountain Square), the Aronoff Center, and two major professional sport franchises.
The Cincinnati based non-profit real estate development company 3CDC, has been doing a study for the development of the north section of Cincinnati’s Central Business District (CBD). The riverfront and southern CBD layers have been developed successfully but this fades out north of 7th Street. Over-the-Rhine development has been debated for years due to crime in the area and the large collection of turn of the century Italianate architecture. The land between, Northern CBD, has been neglected in these conversations. This north section of the CBD is defined by Broadway Commons to the east, Central Avenue to the west, Over-the-Rhine to the north and 7th Street to the south. Its landscape is riddled with surface parking lots that are partially used, and it contains small isolated islands of urban activity including the Cincinnati Public...
Library, The Kroger Building, County Administration and judicial facilities along Broadway Commons. The Streetcar proposal plans for streetcar lines running north along Main Street and south along Walnut Street. Main Street was selected due to its involvement with redevelopment of Northern CBD and the south to north vehicular approach’s visual relationship with the building and sunlight.
The specific site location's programmatic needs include ample vehicular access to facilitate multiple layers of automotive flows and large southern exposure for maximal possibilities for day-lighting. The site selected is on the block formed by 9th Street, 8th Street, Main Street, and Sycamore Street. The specific space is an existing surface parking lot to the south of the historical 2nd National Bank Building adjacent to Alden and Pancoast Alleys. The bus and proposed streetcar systems run along the lane closest to this site and offer efficient sustainable transportation to the facility.
The site’s solar angles and directions for daily and annual cycles inform the design from detail to building orientation and layout. Summer Solstice sunrise is around 5:00am at 80°(E) and climbs to a solar elevation angle of 74° at midday; sunset occurs around 7:15pm at 300°(W). The Equinox sunrise is around 6:00am at 90°(E) and climbs to a solar elevation angle of 56° at midday; sunset occurs around 6:15pm at 270°(W). The Winter Solstice sunrise is around 7:20am at 120°(E) and climbs to a solar elevation angle of 28° at midday; sunset occurs around 4:45pm at 240°(W).¹ The 2nd National Bank Building is over 14

stories tall and can be used for diffusing light from the North off of the southern brick face of the building. The buildings to the south of the site range from three to five stories and block sunlight from the first-floor volume of the site during the winter months. In the late afternoon, there is full exposure of sunlight from the southwest corner of the site due to the streetscape and vacant lots on the south end of the block across the street.

The limitations and opportunities of the daylight dynamics as well as the existing site automobile and pedestrian flows are used to inform the design. The intent is to use these site factors to enhance the moments of the funeral procession.
i71 birdseye view of site from the west
i72 birdseye view of site from the south
i75: committal sanctuary section
CONCLUSION:  

The “reemergence” of the disposition of cremation has uncovered the void created by the displacement of the committal in the procession of the Americanized version of the ritual. This void, along with the long standing disconnect within the American funeral procession, has weakened the significance and reality of the ritual. These problems are directly related to a disjointed program that has deteriorated the significance of the American death ritual.  

The programmatic intent is to fulfill all of the necessities of the existing rituals and to complete the American cremation ritual into one processional sequence of space and activities. This programmatic solution requires a sensitive strategy for encompassing the complete sequences of activities and spaces of the ritual.  

The design intent of this project is primarily based on the experience of the individual within the procession. Through montage of spatial and event sequences, the significance of the ritual is realized and memorialized. The use of form, materials, and light frame the experience into a memorable narrative that is unique in perception and quality for every user and moment in time.
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