Oasis in the City: A Place to Integrate Spirituality in a Multicultural Society

by

Keqin Zhu

Submitted in partial fulfilment of the requirements
for the degree of Master of Architecture

at

Dalhousie University
Halifax, Nova Scotia
June 2022

Dalhousie University is located in Mi'kmaq'i,
the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

Contents

Abstract

The growth of different cultures in Canada has been accompanied by a reduction in the influence of religion. Christian burial customs in Canada are being replaced by secular cremation and multicultural rituals, creating new issues and needs that cannot be resolved by current funeral facilities.

This architectural thesis for Halifax, Nova Scotia, proposes a new crematorium in Point Pleasant Park, at the south end of the Halifax peninsula. It draws from historical funerary culture, traditions, and architecture application, using three architectural elements (water, light, geometry) and architectural relations (contrast, merger, and reciprocity) to integrate building and landscape, the living and the dead, and place and ritual.

Acknowledgements

I would like to express my thanks to the following people who helped me during my thesis study.

First of all, my sincere gratitude and appreciation goes to my supervisor, Diogo Burnay, who supported my project from start to finish. He provided constant encouragement when I felt lost in project design, as well as invaluable assistance leading to the writing of this thesis report. My study could not have been completed without your help and guidance. It has been a great privilege and joy to study under your supervision.

Special thanks also goes to my thesis advisor, Niall Savage, for his help during the first step of my thesis. I obtained a better understanding of the theory from his profound knowledge. Thank you for your illuminating guidance, which has been very important for me to develop a sound theoretical basis for my thesis study.

I am also extremely grateful to Steve Parcell, who helped me reviewing this report. Thank you for your insightful advice and continued tutoring. Truly appreciated.

Many great thanks to my family, especially my parents, for their love and care. They provided financial and practical support throughout the years of my university study. Thank you for always being there for me. Also, special thanks to my cousin, Jiarui Huang, who gave me a lot of inspiration developing this thesis report. Thank you for taking time out of your busy schedule to spellcheck and proofread this report.

In addition, many thanks to all my friends who supported me during this period, especially my colleague, Yao Chen, who continually gave me substantial courage to perform better in my study. Your advice was very valuable to my design project.

My heartfelt thanks goes to my best friend Yuchen Wu, who stands by my side and gives her complete moral support all the time, even though we are far apart from each other for many years. I could never get through this without you.

Lastly, in loving memory of my late grandfather, who passed away just over a month ago. You are my greatest motivation during this project and granted me the strength to keep going. Really wish you could be here with me. Miss you always.

Chapter 1: Introduction

The Origin of Death Rituals

Death symbolizes the end of life. It is an inevitable experience in human life that will eventually occur to every human being and to those they connect with. Throughout history, people have been learning how to cope with this natural process and how to triumph over their fear of death. Meanwhile, the progress of human society allows people to use various ways to express their individual emotions so that they can adapt to the loss of their loved ones (Davies 2017, 3).

Death rites are one of the most common methods when dealing with the deceased, dating back three hundred thousand years. Archaeologists have discovered that ancient humans deliberately buried the dead to express their awe of death. The comparison of death rituals among different eras and cultures has become a popular subject for historians and sociologists. They claimed that people recently focus more on the spiritual aspect instead of simply coping with corpses, as in ancient times (Davies 2017, 8). As claimed by Hoy, "Death rituals are always tethered to the past, to a connection with family, spirituality, community, and world" (Hoy 2013, 5). Death rites turn feelings of sorrow into an ongoing energy for the rest of their lives.

Death Ritual in Religions

Traditional religions were born out of fear of the unknown. By creating a theoretical system of belief, people gave symbolic meaning to the supernatural phenomena that could not be explained by science at that time. Two of the most common questions were to explain the origin of the universe and the meaning of life and death. Therefore, it

is hardly surprising that rituals became one of the religious practices to allow people to accommodate grief by adversity (Davies 2017, 26).

Death rites are closely related to religious cultures. Various death rituals were developed around the world based on religious influence. Most Eastern Asian religious beliefs flourished around the Buddha's doctrine, which states that funerals mark the transition of the dead from one life to the next. They believe that Buddhist scripture and meditation would help alleviate grief. Hindus believe that the body is just a container for the soul, which means the body should be returned to nature through cremation, water burial or sky burial (Davies 2017, 106). Typically, in Western cultures, rituals are profoundly influenced by Christianity. Most Christians still follow the church customs and adhere to the traditional burial ceremonies on consecrated ground (Davies 2017, 170). These different cultural backgrounds subtly yet profoundly influenced people's way of life, the expression of mourning, and the form of death rituals. Thus, the integration of these different cultural variations is essential to conceptualizing the ritual of death.

Development of Death Rituals

Unlike other species, human beings have a strong sense of self-awareness, which allows humans to overcome the fear of death by using positive cultural resource. As human society progressed, the context of rituals has also changed by being endowed with more social and cultural meanings.

Burial

Burial has been a common way to dispose of human remains throughout history. There are many cases of burial in the

early Stone Age that indicate people were already conscious about caring for the dead (Davies 2017, 31). The history of formal burial rituals in Canada can be traced to the early nineteenth century. The family usually buried the dead near their homes or churches under the influence of Christianity (Smith 2007, 20). When epidemics led to a growing concern that such close burials would generate health and hygiene risks, the ritual moved from a family burial ground to a rural cemetery. Unlike the old burial ground, the rural cemetery was designed to be a cheerful place for families to commune

The congested Protestant Burial Ground in Montral was closed in 1854, photograph from Archives of the Anglican Diocese of Montreal (Young and James 2003, 12)

A park-like setting Mount Royal Cemetery, Montreal, 1915; photograph from McCord Museum of Canadian History (Young and James 2003, 12)

with God, nature and friends (Smith 2007, 49). Moving to the twentieth century, urban development also affected the layout of cemeteries. The memorial garden has become a trend in cemetery design.

The Rise of Funeral Parlours

The development of the North American funeral industry cannot be separated from the funeral culture during the Victorian era. At that time, death was a dreaded topic because of the high infant mortality rate. Superstitious customs became popular to help families overcome their fear, such as decorating the home with flowers and placing photos with the deceased at home, in order to make the funeral less gloomy. Most people passed away at home, so the funeral was commonly held in the parlour. Later on, with the advancement of medical study and public health awareness, the hospital became the main institution for looking after the dying. This transformation directly promoted the emergence of funeral parlours, also known as funeral homes. It usually consists of several rooms similar to a family parlor. The aim

Victorian-style parlour of Isaac Kinsey House in Indiana, United States. (Boucher 1975)

Existing interior design of funeral home in Dartmouth, Nova Scotia (Sokhi 2017)

is to create a sense of home through warm and cozy interior decoration (Davies 2017, 45). Funeral parlours have come a long way. Nowadays, they provide a wide range of services, including visiting, transferring the body, preparing the legal documents, and various methods of body disposal. One of the fastest growing body disposal methods is cremation.

Cremation

The practice of cremation has a long history as well. Many mature cremation practices were already well documented at the time of the Roman Empire. However, the concept of burning bodies was challenged by the common religions at that time, so the history of cremation was a long and slow process (Davies 2017, 34). The growth of modern cremation began only one century ago. It started in Europe, gradually spread to North America, and then the whole world (Davies 2017, 35). In Canada nowadays, non-religious cremations have become more and more common due to the gradual weakening of religion in Canadian society. A crematorium is a facility that disposes of dead bodies by reducing them to

ashes with intense heat. It consists of a primary chamber for burning the bodies and a secondary chamber for burning the emissions. In recent years, there has been an increasing amount of research on green and sustainable cremation, which is a clear indication that the acceptance of cremation is growing.

Giovanni Lanfranco. *Funeral Rites for a Roman Emperor* (Lanfranco 1636)

Canada's first crematorium was built in Mount Royal Cemetery, Montreal in 1901 (Young and James 2003, 134)

Memorialization

Nature Scale

Nature plays an intrinsic role in death rituals. The symbolism of death varies from country to country, depending on different religions and culture, but many of them are connected to nature in a certain degree. In the Native North American culture, it is believed that the soul will leave the body and set out on a journey to another world after a person dies. They usually buried the dead near a symbolic sacred tree, which they believed to be a part of the journey in the cycle of life (Davies 2017, 113). In Christianity, death is a part of life's transformation. Their doctrine believed that Christians live and die together with Christ. Since Christ will resurrect from holy water, using holy water after death and burying the deceased in a place with water all imply the meaning of rebirth (Davies 2017, 170).

Although many religious customs have been replaced by secular rites over time, natural symbols seem to have been passed on. They became more of a non-religious tradition and are still reflected in various forms of funeral rituals today. There is an approach to the dead called "woodland burial"

Old grave sites in Woodland Cemetery, Stockholm, 1996; photograph by Fabio Galli (Johansson et al. 1996, 30)

that emerged in the UK in the mid-1990s. People decided to bury the dead in a site that stresses the environment of earth, plants and animals, which emphasizes the idea that all living things will ultimately return to nature (Davies 2017, 125).

Nature's significance in death-related incidents is not limited to spiritual aspects; it is also quite momentous for its profound healing properties. Some studies indicate that natural elements of green space are related to health and restoration, as green space helps to reduce stress and loneliness by increasing social contact with a group of people. The symbolism of death also can be transplanted into urban space, and facilitate the recovery of the mental health of the living in the form of a green urban park (Quinton and Duinker 2019, 256).

Urban Scale

Remembrance of the dead can be found in various forms in every corner of the city. From small graffiti on an alley wall to a grand monument piercing the sky, they all function as a constant reminder to the living. In addition to preserving and showcasing historical events related to dead ones, monuments and memorials contain a great deal of information about how history has been shaped, framed and positioned to create a connection with contemporary society. As Ottawa's National Capital Commission states, "Commemorations express enduring values, connections to the past and aspirations for the future."(Weeks 2019, 124)

Memorializing is common in Halifax. During the twentieth century, public disasters such as the sinking of the *Titanic* in 1912, the Halifax Explosion in 1917, and the influenza pandemic in 1918 were important chapters in Halifax's

history. These historical events have drawn public attention to memorializing the dead. The original public forms of remembrance were mass burials, public memorials, and monuments. By evoking people's "collective memory," they provided a place to rest, to remember and to heal for those who were trying to overcome the loss of their loved ones.

After the twentieth century, with the development of funeral culture, a large number of commemorative ceremonies with different scales became active in the city. More individual commemorative activities have been accepted and successfully held in the public (Davies 2017, 50). One of the most commonly prepared funeral events around the world is funeral catering. This custom can be dated back to the ancient Egyptian times. Food such as bread and wine was left in tombs as a tribute to the deceased. Over time, this tradition slowly shifted to allow those mourners to eat the food. In Christianity, this practice became a tradition known as communion culture, where a piece of bread and a sip of wine symbolized the body and blood of Jesus. Food would be served to all mourners at the end of the funeral, which embodies a spiritual inheritance. After the nineteenth century, the symbolism of food became more standardized

Communion photograph from Justice Scalia's funeral mass (Hananel and Gresko 2016)

and gradually changed to a more acceptable secular event as catering (Davies 2017, 148). This encouraged more human interaction in death ritual events, and contributed to the formation of memories at the urban scale. The diverse collective remembrance activities now provide more opportunities for people to think about death in the urban environment by breaking the boundaries between public urban form and private mourning sites.

Changes and Potential Issues

From the mid-eighteenth century to the mid-nineteenth century, rural cemeteries developed rapidly in North America. Overcrowding cemeteries with high-density burials led to potential health risks, resulting in a faster transition to burials in large, open areas. These rural cemeteries were usually located around the outside of the city and were designed to be scenic with ornate monuments (McGuire 1990, 2). It helped to solve the problems of health risks and gave cemeteries meanings beyond burying bodies.

Even though Halifax's burial culture did not develop as fast as in larger cities, there is evidence in The Old Burying Ground and Camp Hill Cemetery that shows the changes influenced by American rural cemeteries. Compared to the Old Burying Ground, the epitaph styles in Camp Hill emphasized spiritual remembrance, rather than just the physical form. The symbols on the gravestone also changed from skulls to wreaths, which reveal a shift toward positive themes (McGuire 1990, 56). In the 1860s, a renovation was conducted on the Old Burying Ground, too. It aimed to change this flat, barren land into a park-like cemetery with flowers and trees. Large monuments in Halifax are scarce

Photograph of a skull symbol on a gravestone in the Old Burying Ground, Halifax

Photograph of a lamp and weeping willow symbol on a gravestone in the Old Burying Ground, Halifax

compared to cities in the United States, due to its smaller city scale.

Under the influence of immigration, the integration of multiple religions has become a trend in Canada. Statistics show that the cremation rate in 2020 has reached seventy-three percent (Statista 2021a). The city of Halifax is no exception. Nowadays, funeral parlours have become the first choice for many people. However, the rapid growth of this industry has also led to the consequence of over-commercialization. The psychological support needed by families is overlooked due to the staff's lack of psychological expertise and knowledge

(Korai and Souiden 2017, 251). In addition, most funeral parlours only focus on a small family scale by decorating their interior space to simulate a cozy and informal family environment. This is against the promotion of a more open funeral ceremony and a more collective ceremony culture, which has a positive effect on overcoming the pain of loss.

Since the 1900s, technology and functionality have been a priority in the development of the crematorium (Grainger 2005). Families used to participate in death related activities more frequently. From death bed care, to help with the funeral, and to visit relatives after the death, they supported

Front view of Harbourside Crematorium in downtown Halifax

Congested surroundings of Harbourside Crematorium in downtown Halifax

each other in overcoming grief through sharing words and actions. However, the professionalization of cremation led to a reduced involvement in death. The interaction between people has largely decreased (Davies 2017, 46). Ruskin claimed that the crematorium should be "an effect on the human mind, not merely a service to the human frame" (Ruskin 1989, 1136). The existing crematorium in Halifax still focuses on functionalism, without realizing that the crematorium is not a place that is built only for the dead, but also for the living. This traditional form of crematorium can no longer adapt to a multi-religious and multi-cultural society.

Thesis Statement

This thesis takes the position that funeral rituals need to be reinterpreted to adapt to the current diverse society in Canada. It will be tested and explored through the design of a multi-purpose crematorium in Halifax, a coastal city in eastern Canada. The purpose of this project is to change the existing architectural form of the crematorium in Canada by introducing a new type of funeral ritual and related facilities, generating a new architectural language by studying the landscape architecture; integrating funerals with urban life and natural environment; and strengthening the connection between life and death in the city. It argues that the crematorium needs to serve people both functionally and spiritually, and act as a catalyst to transform traditional funeral rituals into a positive collective culture. The design will help to positively affect people's attitudes towards death and help them to overcome their grief in an open urban environment.

Wish image collage to express the idea of the transition from urban to nature

Chapter 2: Theory

Landscape and Architecture

Space for Memorizing

Architecture and landscape can be seen as memory devices to record history and transmit culture (Treib 2009, 18). One of the most typical vehicles of remembrance is monuments, in almost every city on the planet. People also build landmarks or memorial gardens at locations where historical events took place. However, when isolated from the actual physical monuments, "places" is the most common and best medium for architects to recall memory. According to Lyndon, "place" refers to spaces that are memorable, imaginable and considerable. People feel comfortable and safe in these spaces by generating association and resonance (Lyndon 2009, 63). Due to the biological limitation of human brains, memory can fade over time. However, it does not mean that memory cannot be preserved to a certain extent. The right "place" can amplify memory, and therefore emotion. This idea reinforces the bond between architecture and memory. The architecture materializes abstract memories and transmits them to people through the sense of touch, smell, sight and hearing. Likewise, the physical experience within a space can also give meaning to the architecture itself by creating memories.

There are two ways to enhance the memory of space: with a powerful design and with associated events (Lyndon 2009, 64). Well-designed architecture and landscape can communicate with people and stimulate the human brain to revive memory. Thus, the idea of rewriting architectural language to actively direct people's attention and stimulate

positive memories should be considered as a crucial part in funeral ceremonies.

Space for Mourning

Any landscape has its own pattern of formation, and this pattern originates from emotions that are born from the combination of different cultures. The meaning of the landscape is therefore to give a specific identity to the place. In the early twentieth century, as the cremation movement became more popular, a new form of garden crematorium became known to a wider public. People's attitudes towards death started to change in a positive way. Based on the interaction of cremation rituals with the surrounding environment and landscape, designers proposed that landscape design needed to reconcile the living and the dead. The landscape no longer functioned only as a tool of memory but began to emphasize the importance of evoking individual and collective emotions (Latini 2009, 157). Compared to traditional monuments, the landscape adds serious mourning meaning to the space. It focuses on natural expression, which can play a psychological and spiritual comforting role in funeral rituals, consequently neutralizing the negative emotional impact of death (Grainger 2005, 262). Designing to balance the loss and memory with the landscape is both a respectful and imaginative concept that needs to be taken into account.

Elements in Architecture

Light

Space is the basic composition of architecture and is created by defining it with tangible material, while light is the most common abstract material used as a separator

Window shutters in Luis Barragan's house and studio in Tacubaya, Mexico City, 1948 (Valero Ramos 2015, 104)

in architecture. The scientific investigation of light began in the third century B.C. with the mathematician Euclid's work on the laws of reflection, refraction and linear propagation of light. Towards the end of the first millennium, the Arab philosopher Alhazen proposed the theory that light originates from the sun and derived the concept of shadow as opposed to light. Aware that the production of light is always accompanied by shadows, architects use the contrast between light and shadow as the most fundamental strategy for perceiving space (Valero Ramos 2015, 5). As stated by architect Louis Kahn, architecture needs to evoke a sense of use through space, and music for musicians is about translating what they hear into words for people (Kahn 2003, 220). Architecture works in a similar way: The perception that architecture wants to convey can also be composed of light and shadow.

Water

Water is a source of life. It is a fundamental substance on which all living creatures depend for survival. The study of water by humans has been recorded as early as the ancient Greek period. The ancient Greek philosopher Thales proposed that water is the basic element that constitutes all things in the universe. This concept was accepted for a long time afterwards and gave rise to many praises for water. At the time when natural science was underdeveloped, water even became a symbol of worship and was ubiquitous in all aspects of life. Architecture also began to incorporate the design of water and was widely used to symbolize the vivid and lively natural scenes. As mentioned earlier,

Water oppupies a central position in the Paradise panel of *The Garden of Earthly Delights* (Bosch 1490-1500)

space cannot be formed without the five senses of human perception. In comparison to other architectural elements, water appeals to the senses of touch and sight, like most architectural elements, and in some cases even stimulates the sense of taste (Sedighi and Mollazehi 2017, 1185). All these properties make water another important tool for spatial expression in architecture.

Geometry

Similar to the water element, the study of geometry dates back to the third millennium B.C. in ancient Egypt, ancient India and ancient Babylon. Although early geometry was limited to the most basic empirical principles of length, angle, area and volume, these geometric concepts were already widely used in architecture at that time. As claimed by Leyton, these conventional theories focus on invariance and symmetry, unlike newer theories of geometry. He states that geometry is a study closely related to memory, but invariants and symmetry cannot help to store the memory (Leyton 2006, 13). For instance, the shape below shows various deforming actions such as protrusion, extrusion and
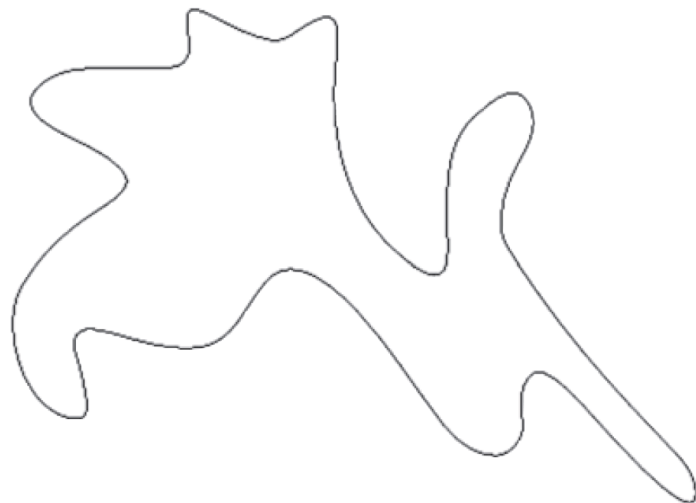
The shape can be seen as squashing, protrusion or indentation (Leyton 2006, 13)

indentation. These dynamics cannot be inferred from an invariant geometry. The following pair of images is another example of asymmetries. We can see the top image as paper being twisted, while the bottom image appears only as a symmetric rectangle. The newer concept of geometry can be incorporated into the architectural design to help fill the building with vibrant memory. As Leyton wrote at the end of his book, "Building should be an extension of the person's mind" (Leyton 2006, 92).

(a)

(b)

An asymmetric sheet can be considered as a twisting action, but a symmetric sheet cannot (Leyton 2006, 16)

Metaphor in Death

Funeral rituals have taken different forms in different cultures. Their customs have changed over time, but some continue to the present day. The following paragraphs analyze the meaning of light, water, and geometry, as three elements that are common in various historical funeral rituals.

The use of light in Christian funeral rituals can still be seen today in funeral homes and churches. One of the most common applications of light today is candles placed around the room. This practice has been recorded as early as the time of Augustus. Archaeologists found many funeral scenes in which torches and candelabra were placed around the coffin, as when they studied fragments from the tomb of Haterii (Rushforth 1915, 149). These elements were mostly used in the funeral ceremonies of notable people such as
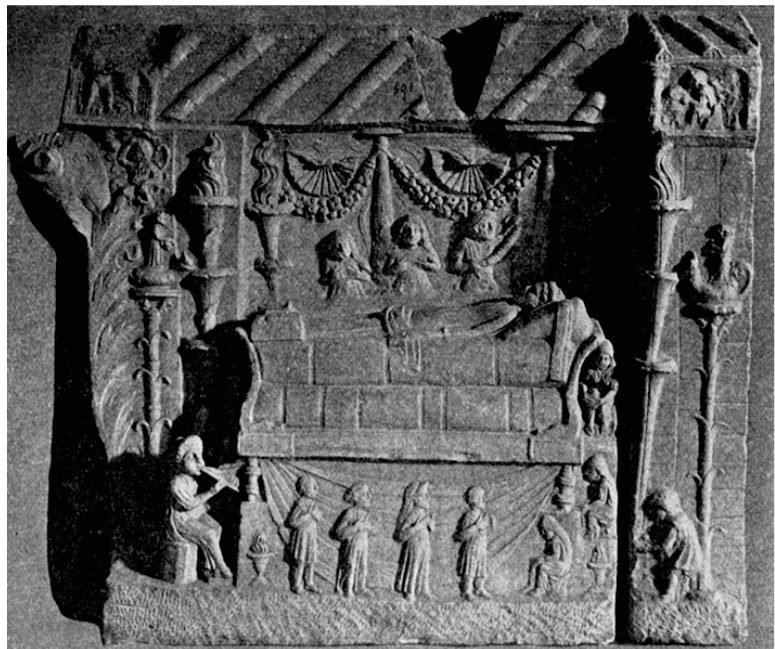
Funeral relief from the tomb of the Haterii in the Lateran Museum (Rushforth 1915, 165)
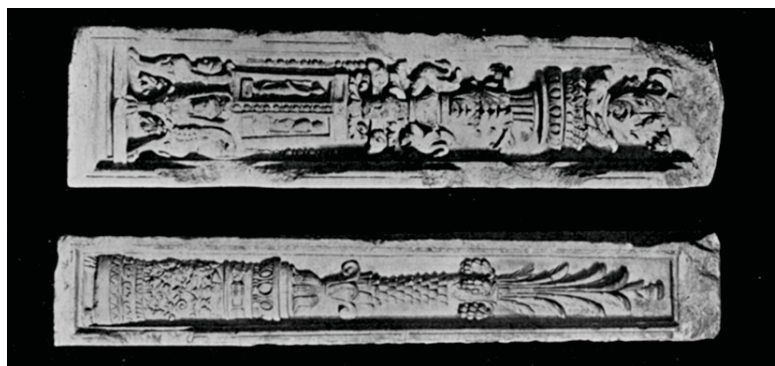
Pilasters with reliefs of candelabra in the Ashmolean Museum (Rushforth 1915, 158)

emperors. According to an account from Constantine's funeral, the tall casket was covered with golden candelabras. In addition, some ancient marble candelabras were also found in the tomb. Rather than temporary decorations, these marble candelabras were more like funerary tomb furniture, permanently preserved as a symbol of the light that would never be extinguished (Rushforth 1915, 153). Light became a guide for the continuation of life in funeral rituals. Carvings of candelabra and torches can also be found on urns, which have the same meaning of always shining on the deceased. These metaphors for light became a tradition that was carried over into Christian funeral rites (Rushforth 1915, 162). Similar evidence can be seen on Christian gravestones, such as the carved symbols on a headstone in the Old Burying Ground. It represents a lamp that stands under the weeping willow.

Hinduism emphasizes the continuity of life and the return of the soul, and the water of the Ganges, worshiped by Hindus, is the embodiment of this spiritual significance (Davies 2017, 102). The Ganges, India's "mother river," has a long history and rich culture. Even after years of civilization, people on both sides of the Ganges still maintain ancient traditions and customs, one of which is the funeral ceremony. Hindus believe that the Ganges represents the goddess as well as the origin of atonement and redemption. Its holy water can wash away the sins and illnesses of a lifetime, purify the soul, and ascend to heaven (Sen 2019, 21). Therefore, in Hinduism, there is a tradition to sacrifice the remains directly into the Ganges River to the gods, believing that this will help the deceased to be reborn in a better afterlife. This funeral practice continues to the current era. Even though cremation techniques have matured in India, the traditional

Hindu cremation rites on the Ganges River (Luong 2007)

death ritual continues: scattering ashes into the Ganges River to be purified by holy water (Sen 2019, 29). Water is an essential component of Hindu funeral rituals.

Geometry is one of the most fundamental studies in mathematics, and it is widely used in spatial and structural design. The basic concepts of mathematics have been recorded as early as ancient Egyptian times. The theory of geometry also permeated many architectural designs at that time, including those associated with death rituals. One of the most famous is the Egyptian pyramid. The pyramids were constructed as tombs for their deceased pharaohs. During the study of the funerary chapel of Sarenput II in the Qubbet el-Hawa cemetery and the pyramids of Amenrmhet in Egypt, it was found that the basic components of the chapels were derived from a geometry with $\sqrt{2}$, $2/\sqrt{3}$ and $\sqrt{2}/\sqrt{3}$ ratios (Martinez Hermoso et al. 2014, 287). Simple geometries such as squares, rectangles and equilateral triangles are the most commonly used geometric patterns. However, the combination of these geometric shapes is not a coincidence. From the study of the pyramid of Khufu, it was found that there is a close relationship between its
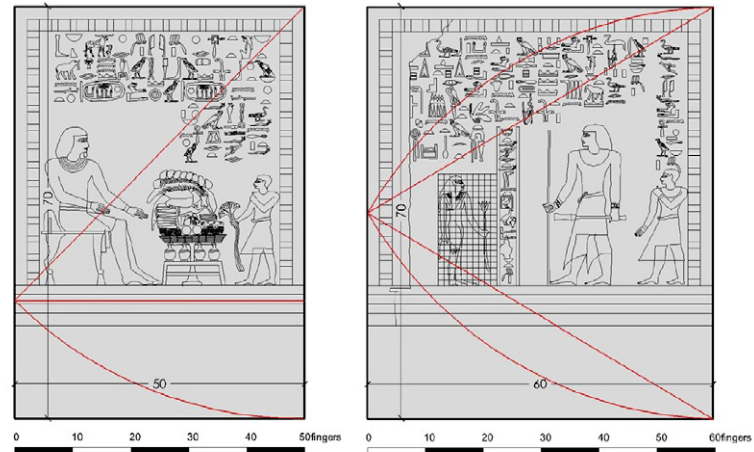
Geometric proportions of the fresco in Qubbet el-Hawa cemetery
(Martinez Hermoso et al. 2021, 302)

geometric ratios and the sun's path. The angle and slope of the pyramid align with the angle of the solar equinox, thus indicating the descending rays of the sun during the equinox (Ghoussayni et al. 2021, 9). This is related to the primary ideology of earth. The ancients expressed their admiration and worship for the origin of the world through architectural geometry. A similar theory is also reflected in Stonehenge in England. The original purpose of Stonehenge is still a mystery, but the remains near Stonehenge provide a preliminary confirmation of a strong connection to death rituals. Moreover, many circular geometry patterns have been found on these remains. This application of the circle geometry seems to have become a tradition, developing from tomb tunnels to residential houses. Bradley claims that various indications point to this circular geometry in emphasizing the formation of a spherical universe (Bradley 1998, 108). The ancient people who experienced the cycle of the seasons under the sky dome believed that the circle symbolized the repetition of life. Therefore, it is not surprising that circular geometry was widely used in funeral rituals.
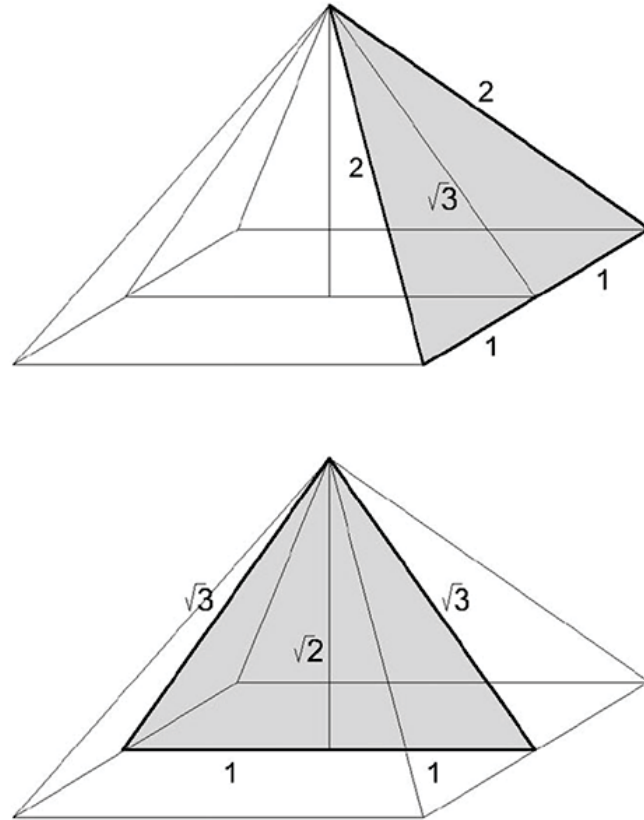
Geometric proportions of the Amenemhat pyramid (Martinez Hermoso et al. 2021, 304)

The Missing Architectural Language

There is a growing need for creating a new architectural language in funeral-related spaces, as the current one does not emphasize the beneficial bond between mourning sites and the natural landscape. The new language should neither celebrate nor ignore death, but make life and death intertwined. By subtly integrating architecture with the landscape to convey the cycle of life, architects can potentially solve this dilemma. In the opinion of Goodwin, "architecture should offer a space in which both the living and the deceased become one with nature" (Goodwin 2016, 24). Rainey demonstrates three common architectural relationship strategies that can help achieve this goal. The

following section analyzes these three strategies through three case studies.
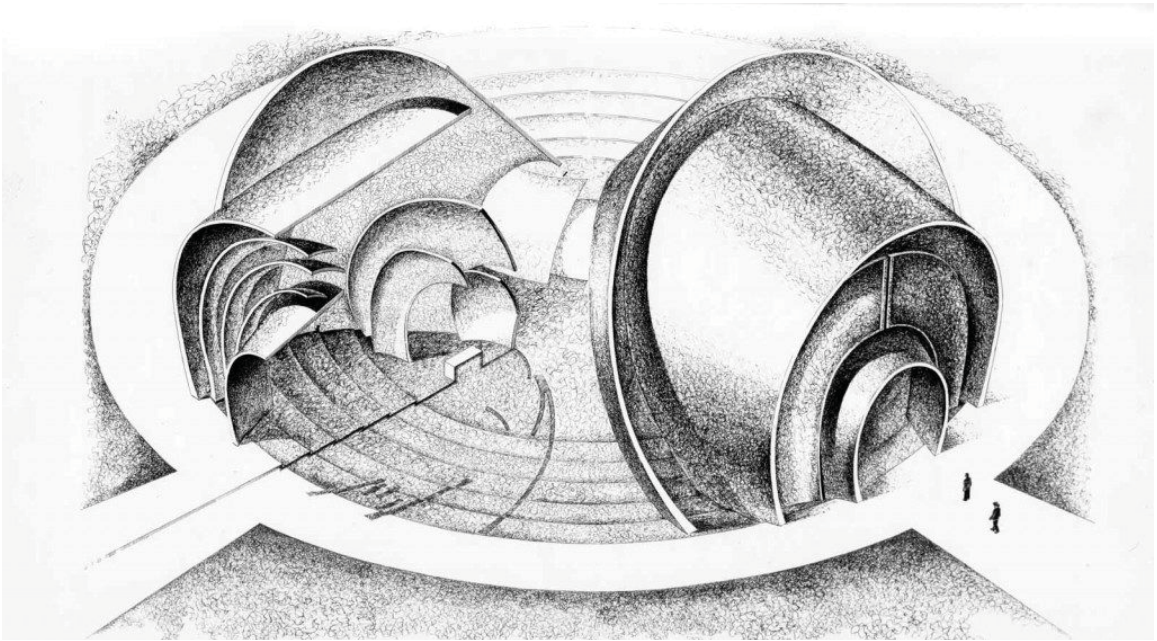
Contrast: Kiev Crematorium

Contrast is a strategy that architecture can use in an untouched natural or cultural landscape. There is no transition or interaction between architecture and landscape, so the unique qualities of each material are emphasized via contrast (Rainey 1987, 4). Kiev Crematorium is one of the most distinctive examples of socialist modernist architecture that prevailed in the former Soviet Union. The project was finished as a part of Baikove Cemetery in 1968 by Abraham Miletsky. Cremation was a sensitive topic during the 1960s, as the horrors of the Second World War and the mass killing of Ukrainian Jews by Nazis still loomed largely over the nation. To be accepted by the public, the project was sculpted in white concrete with curving walls to avoid a direct association with cremation. The building is sitting in the centre of Baikove Cemetery's memorial park, surrounded by gravestones and vegetation. The curvy plain walls contrast with the lively green environment, making the building stand

In the Baikove Cemetery, a narrow space is formed between the crematorium and a memorial wall (Lombardi 2015)

Kiev Crematorium and the surroundings (Socialist Modernism 2017)

Exploded 3D section model of Kiev Crematorium (Socialist Modernism 2017)

out from the surrounded terrace. In addition, Miletsky mixed many metaphors in the design, such as the remembrance wall constructed right next to the building, which resembles two snuggling and crying people (Hatherley 2014, 1101). The architect wanted to evoke the mourners' contemplation of weeping and death by contrasting the serious building with its surroundings. This serves to weaken the functionality of the building and emphasize its commemorative significance.

Merger: Tomba Brion Cemetery

Merger, unlike contrast, is where architecture is integrated with the natural or cultural landscape. With this method, the design of the building may reflect the surrounding topography or even be placed underground to integrate with the landscape completely (Rainey 1987, 4). Tomba Brion Cemetery is a representative project which uses the merger strategy. It is a private mausoleum north of Venice designed by Carlo Scarpa for the Brion family. The tomb, chapel and pavilion in this cemetery are all linked together by the vegetation and the path of the water. They help to guide the visitors to circulate through the building and landscape. While the meditation pavilion was dedicated to
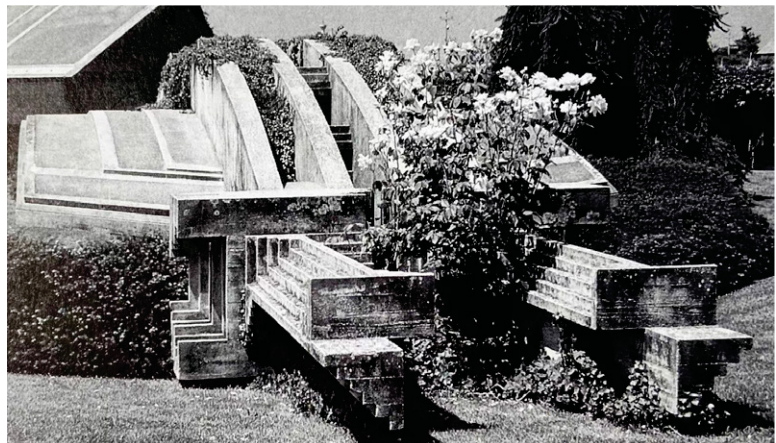
Vegetation covers the concrete walls and zigzag edges bring a sense of life to the site, 1997; photograph by Yutaka Saitō (Saitō et al. 1997, 21)

Elevation view of tombs of Brions, 1997; photograph by Yutaka Saitō (Saitō et al. 1997, 75)

0 _____ 1m
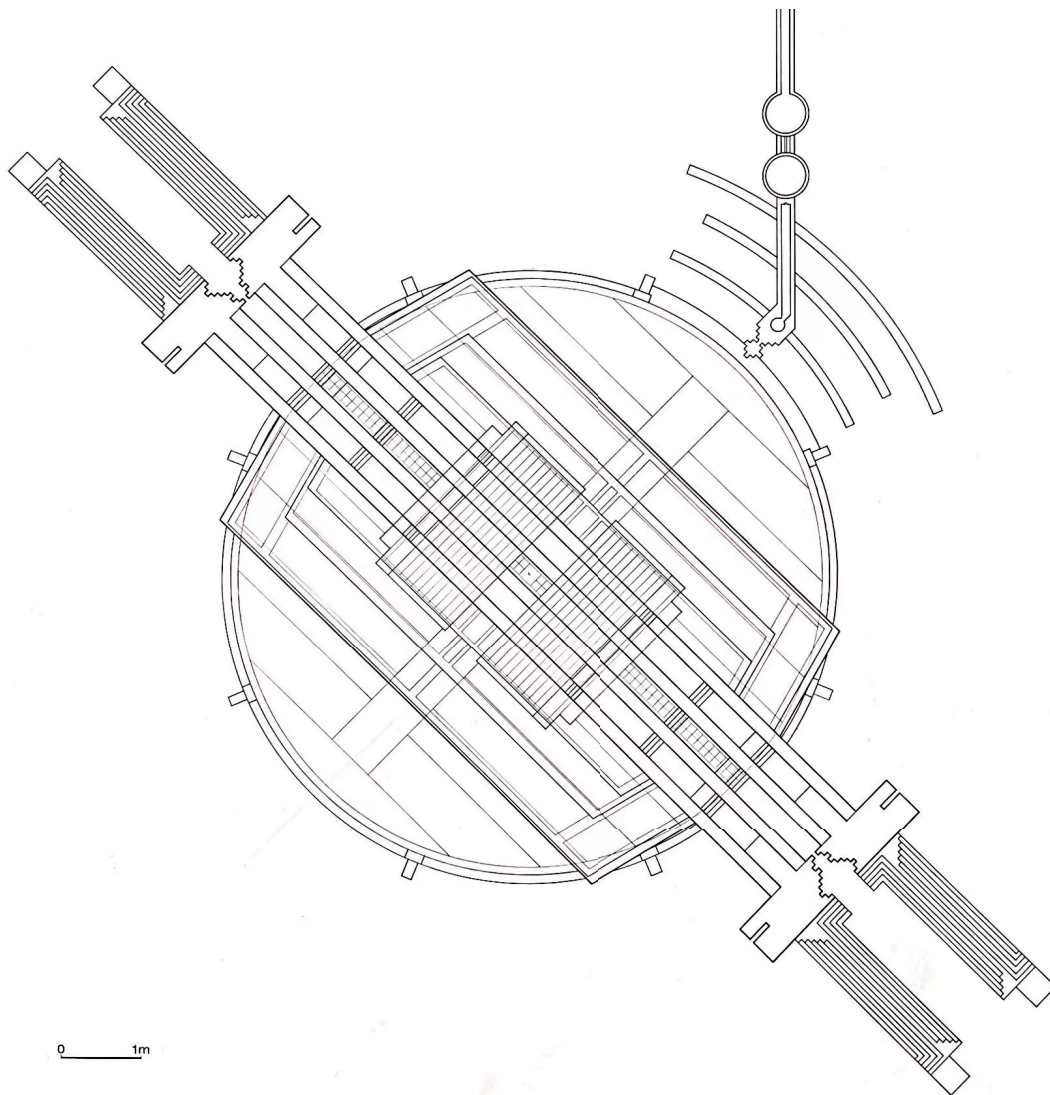
Ground plan and roof plan of tombs of Brions, drawings by Archivio Scarpa. (Saitō et al. 1997, 24)

more personal and introspective use, the chapel was built to hold the collective celebration. These two practices merged at the sunken tomb of the Brion couple in the center (Saito et al. 1997, 20). The building slowly eroded over time and the concrete began to discolour by mold. The whole building no longer looks new, but as Scarpa depicted in his sketches, the vegetation around the building thrives and blends more and more closely with the building. These landscape elements combined with architectural and sculptural elements to form a harmonious place for both the dead and the living. The alternation of the seasons symbolizes that the lost vitality will eventually be purified by the power of new life (Saito et al. 1997, 21).

## Reciprocity: Woodland Cemetery

Reciprocity is commonly found in architectural design, when architecture and landscape modify and shape each other. Reciprocity can occur where a building grid transitions into the landscape or where the outdoor space gradually transitions into the building, creating an interaction between interior and exterior (Rainey 1987, 6). Woodland Cemetery was built by Asplund and Lewerentz in the southern part of

The mound with the Meditation Grove in Woodland Cemetery, 1996; photograph by Fabio Galli (Johansson et al. 1996, 84)

The portico of Holy Cross Chapel with reflecting pool at the front, 1996; photograph by Fabio Galli (Johansson et al. 1996, 90)
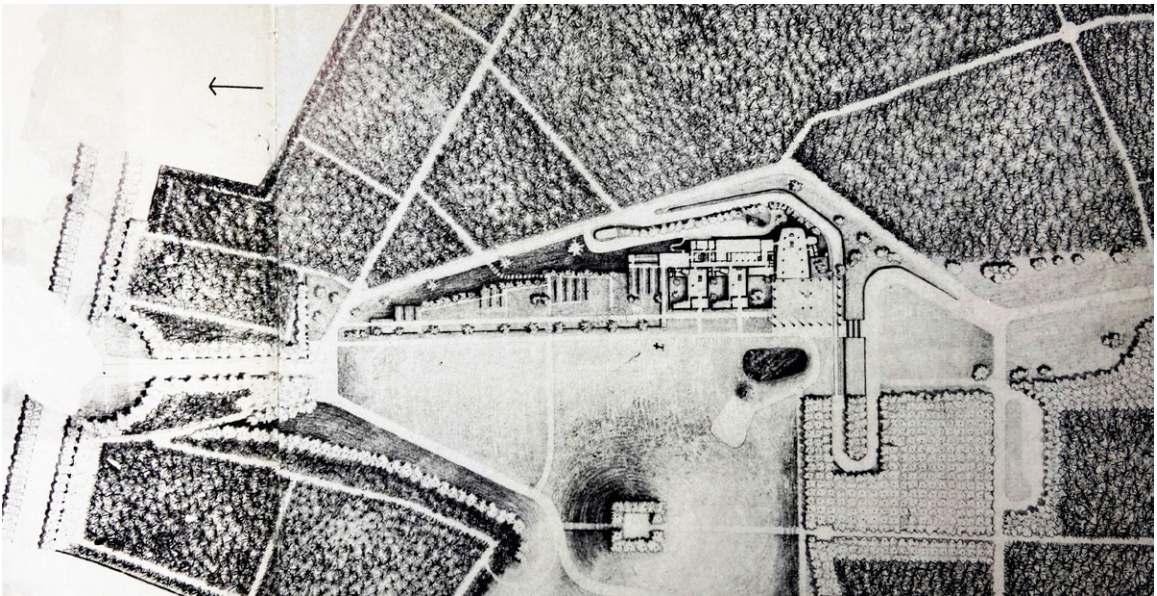

Site plan of Woodland Cemetery, 1940, drawing by Erik Gunnar Asplund (Johansson et al. 1996, 107)

Stockholm. The project was started in 1917 and completed in 1920. The aim of the design was not to compete with the landscape but to link vegetation and architectural elements so that the building would adapt to the irregular landscape (Johansson et al. 1996, 20). In other words, the architecture needs to retain its independence while collaborating with the landscape, revealing its own identity in the process of merging and contrasting. If the chapels in Woodland Cemetery had been isolated from the landscape, they would no longer be meaningful. Water is commonly used in this strategy. Its reflective properties allow the architecture and landscape to interact visually. For example, the reflecting pool located in front of the forehall acts as a medium to project the building into the neighbouring landscape, skillfully fusing the landscape to the building.

Chapter 3: Site

City Identifying

In this thesis, the argument and design are focused on the Halifax peninsula. It aims to relocate the crematorium to a city park in order to address the problem of isolated funeral rituals in Halifax and establish connections between the crematorium, the urban life, and nature.
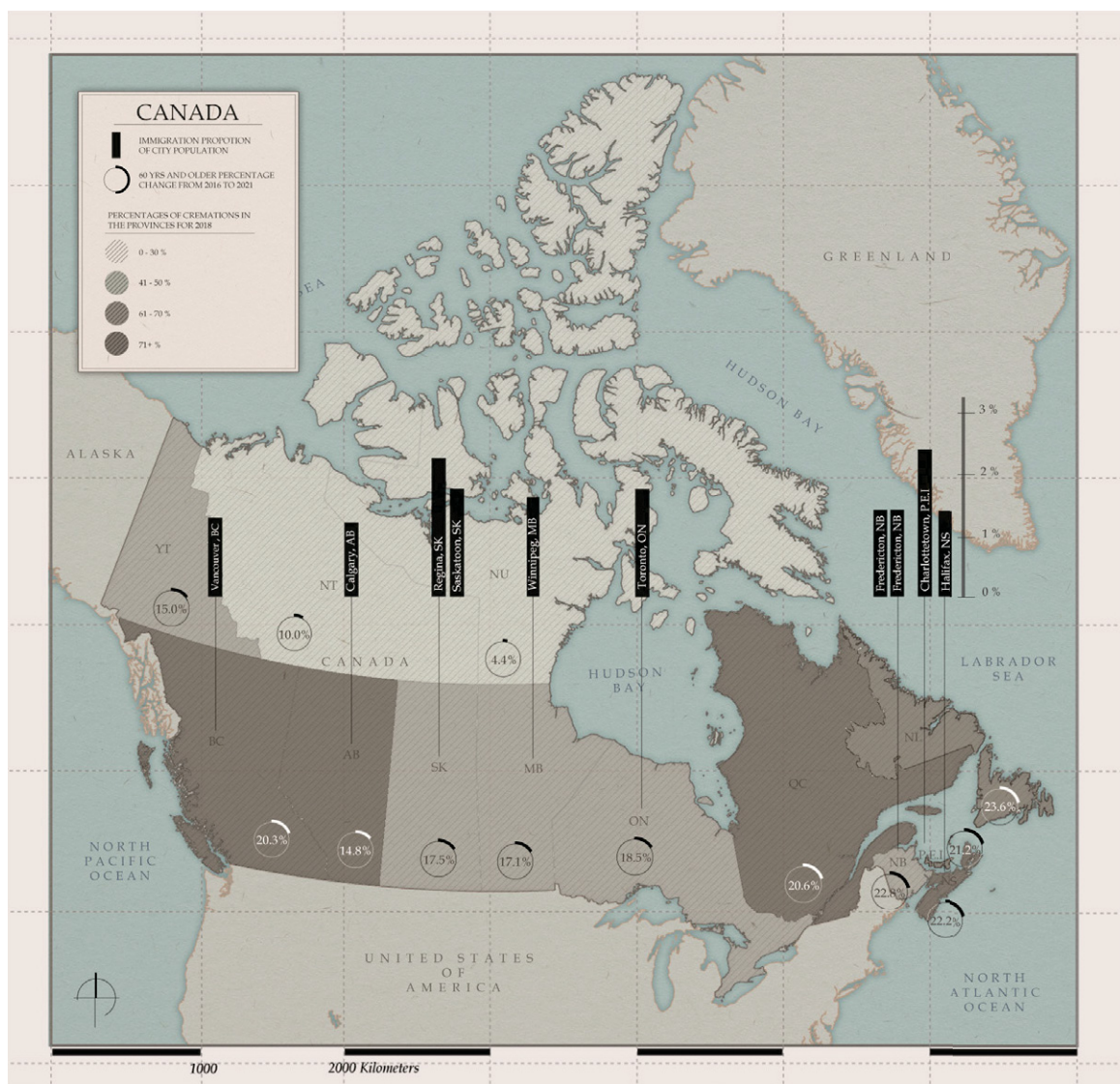
Comparison of data on population, immigration rate, aging rate, and prevalence of funeral rites by Canadian provinces (data from Statistics Canada 2022)

Halifax is the capital of Nova Scotia and the largest municipality on the Atlantic coast of Canada. The regional municipality is made up of four former municipalities: Halifax, Dartmouth, Bedford and Halifax County. The total population is about four hundred thousand. Although Halifax's downtown area attracts many young adults, the proportion of the population aged sixty-five years and older is higher than average in Canada (Statistics Canada, 2022). The number of deaths in Halifax is increasing year by year, which means the aging population is a potential problem (Statista 2021).

Halifax peninsula is about three kilometres wide and eight kilometers long. The terrain near the isthmus is relatively flat. The highest altitude is about sixty meters, located at Citadel Hill. Therefore, the elevation varies greatly throughout the downtown area. Halifax has a humid continental climate and is adjacent to a maritime climate. Generally, the weather is mild in winter and cool in summer, so the overall temperature is quite comfortable.

Site Qualities

The site selection was influenced by the geographic location of city zoning and the natural environment research conducted for the project. When choosing the site for this thesis, six location factors were taken into consideration: urban parks, water, residential houses, hospitals, urban cemeteries and main traffic routes. After comparing and filtering, Point Pleasant Park, which is located at the southern tip of the Halifax peninsula, is the potential site that fulfilled most of the criteria.

Point Pleasant Park, located at the south end of the Halifax peninsula, is the potential site that fulfilled most of the criteria (data from HRM 2022)

Site History

It is recorded that Point Pleasant Park was once a settlement for Mi'kmaq people. St. Aspinquid's Chapel was built there by Priest Louis-Pierre Thury in the late seventeenth century as a spiritual place for the Mi'kmaq. In the eighteenth century, the British government decided to occupy Halifax as a strategic British settlement and began building many fortifications and fortresses to protect the Halifax Harbor.

Their military weapons remained in use until the end of World War II. After the British abandoned the site and it no longer served any military purposes, Point Pleasant Park was transformed into a city park in the late nineteenth century. Now, Point Pleasant Park is covered with approximately two hundred acres of forest, trails, beaches and military monuments. Most of them commemorate the military and innocent people who died at sea during the war years (Kitz and Castle 1999, 34).

Site Analysis

Urban Context

Point Pleasant Park is located at the southern tip of the Halifax peninsula. The park includes several main roads and many trails. Tower Road, the largest street north of the park, connects directly to the centre of the peninsula. A deep railway cut separates the southern residential area and Point Pleasant Park from the rest of the city. This allows for a connection between the city and the park, while still maintaining a certain distance. The bridge connection across the railway cut makes a gentle transition from the urban to nature. Moreover, Tower Road also connects the park and the future crematorium to the downtown hospital. On the north and northwest sides of the park are residential areas, making the park accessible to near-by residents.

Natural Environment

On September 29, 2003, Category 2 Hurricane Juan made landfall in Nova Scotia. Point Pleasant Park suffered significant damage due to strong winds. Nearly three-quarters of the park's trees were blown down, or had to be cut down. The park was also forced to close for a year.

Circulation analysis of Point Pleasant Park (data from HRM 2022)

After this disaster, the park started a long-term restoration program, and by 2008, over seventy thousand Acadian forest trees had been replanted in the park (Tumur and Richardson 2019, 64). The park now has more than twenty different species of vegetation, including the three largest species: red spruce, white pine and balsam fir (Steenberg and Duinker 2010, 28). As can be seen from the comparison images of landscape between 2003 and 2022, the newly planted trees are relatively shorter and denser, which make the park more friendly for citizens. The abundant forest

is the key element in this project. It helps create a semi-isolated natural space away from the city, Point Pleasant Park is surrounded by the sea on three sides: south, west and east. Since water is another key element, it is important to have a site near the water.

Landscape and Topography

The project is located on the southeast side of the park and built along Heather Road. The entire project will extend from the upper Heather Road directly to the coast. The total distance is about 280 meters and the elevation difference

An aerial view of damaged trees in Point Pleasant Park after Hurricane Juan in 2003 (Fogarty 2003)

An aerial view of trees in Point Pleasant Park in 2022 (Google Maps 2022)

is approximately 15 meters. Nearly 42% of Point Pleasant Park has a slope gradient of 10% or higher (Steenberg and Duinker 2010, 29). Since the interaction between landscape and architecture is one of the main objectives of this thesis, the relatively steep slope possesses a great challenge for the transition and connection between the various programs.

Chapter 4: Design

Site Strategy

Landscape Development

The idea of this project is to maximize the circulation as much as possible, thus increasing the interaction of people with the building and the landscape. To achieve this goal, the basic strategy is to spread out each space, increasing the distance and time required to move between each activity, so that people can slow down their experience on the site. The whole project is intended to create a sense of transition from negative to positive space through transitions between architecture and landscape.

One of the preferred materials for creating this spatial relationship is the existing vegetation on the site. The existing tall trees will remain untouched on both sides of the approaching pathway, as well as the entrance of the building to create a sense of enclosure. Around the end of the sequence, a moderate amount of tree removal is required to create a wide-open space that directly connects to the coastal area. This will create a noticeable contrast between the enclosure at the beginning and the open space later.

Circulation Development

In Point Pleasant Park, most of the historical sites and cultural sites are evenly distributed along the coastline of the park. These historical sites draw visitors to the coastal area, which is the ideal place for public gatherings. On the other hand, sites with memorial meaning also can help evoke public empathy for funeral rituals.

To emphasize the contrast between the loud city and the quiet nature, the meandering approach is another important component. An S-shaped drive connects Ogilvie Road and Heather Road, and serves as a buffer zone to integrate the mourners' emotions into the landscape before entering the building.

The main pedestrian circulation is a loop, designed to connect to the historical sites in Point Pleasant Park. One loop connects Pine Road, Sailors Memorial Way, Arm Road and Cable Road, following the coastline of the Park. The other loop is located on the inner side of the park, connecting Ogilvie Road, Heather Road and Cambridge Drive. Rather than connecting two separate loops via secondary trails, the entire project acts as a link between the internal private experience and external public activities.

Layout Development

From the previous study of geometry, it is found that the combination of simple geometries provides more possibilities for architectural design of memorial space. Based on the historical application of geometry in the funeral culture, the building layout of the Halifax crematorium project is constructed with basic forms of triangles, squares, rectangles
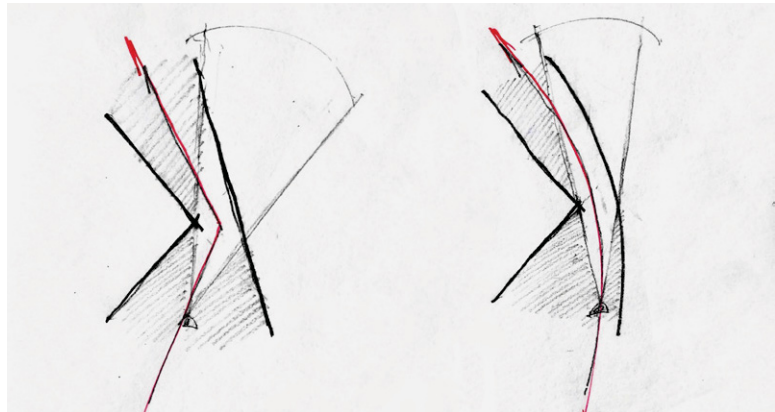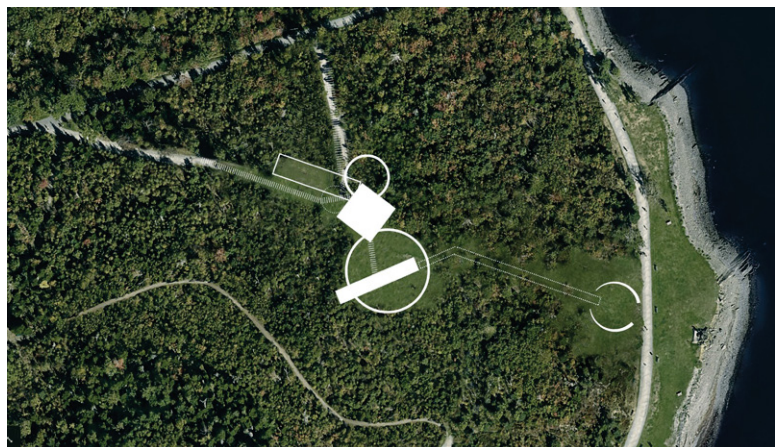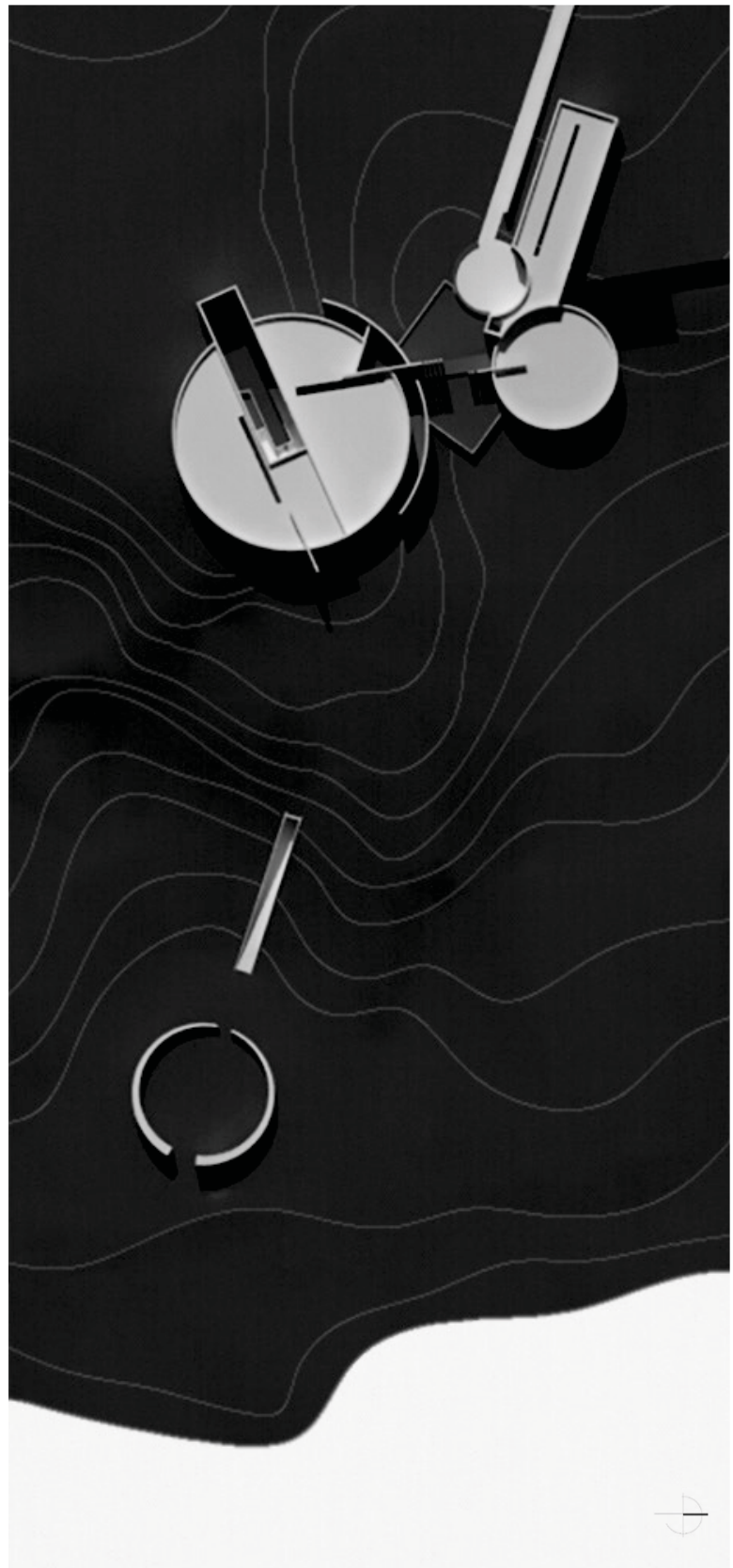

Geometric studies
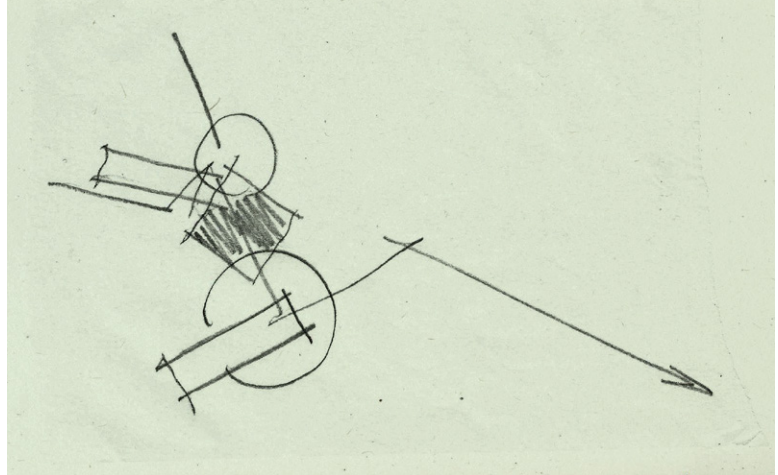
Design parti of elements and circulation

Existing landscape on the site (Google Maps 2022)

Proposed landscape scheme with potential programs (base map from Google Maps 2022)

Plan view of project layout

and circles. The first three forms, with their corners and angular geometry, can be used as a spacial guidance. The combination of corners and planes creates two connected spaces while retaining privacy for each other. The semi-obscured walls and relatively narrow passageways in between add the perfect amount of mystique to the space for people to meander. The strength of the circular geometry lies in its enclosure properties. Unlike angles and corners , that can create a sense of alienation, the circular structure can generate an intimate sense of enclosure and belonging. Therefore, in this project, the circular structure was chosen for programs and buildings where people would stay and gather. Inserted in the topography of Point Pleasant Park, the whole project consists in three circular structures, one square and one rectangular structure, connected by several linear pathways in between.

Design Strategy: Intertwine

The two core modules of this whole project, based on human activities are transition and implementation. To combine them, the design introduces three architectural elements, water, light and geometry, as well as three architectural concepts of contrast, merger and reciprocity. The two diagrams in the following figures are based on a small-scale spatial design by pairing elements and concepts. This experiment shows each scene and the theory that goes with it.

Based on the three concepts of contrast, merger and reciprocity, each concept can be extended with two different types of combinations between elements and transition modules. For instance, the transition can be continuous, like a stair that guides people to move from one space to

another. It can also be separated by a partition. Although a partition prevents a visual connection, people may be drawn forward to the next space through water, light and geometry. Similarly, a spatial transition can also blur the boundary. Moreover, spatial transitions can be either actual threshold connections or abstract sensory connections. The layering condition shown in the diagram of the third group can be connected by a continuous gentle slope, or by a visual connection that is not directly accessible. Implementation can also use two expressive functions: ceremonial and monumental. This group of experiments emphasizes the


Diagrams of transition

basic positional relationship of "in, at and on" between architecture and program, and between architecture and landscape.

Inspired by the spatial combinations from this pairing experiment, the design combines multiple elements and applies them in the Halifax crematorium project. In addition, this experiment also provided insight into combinations of the three elements, such as reshaping water and light with architectural geometry to emphasize different spatial contexts.
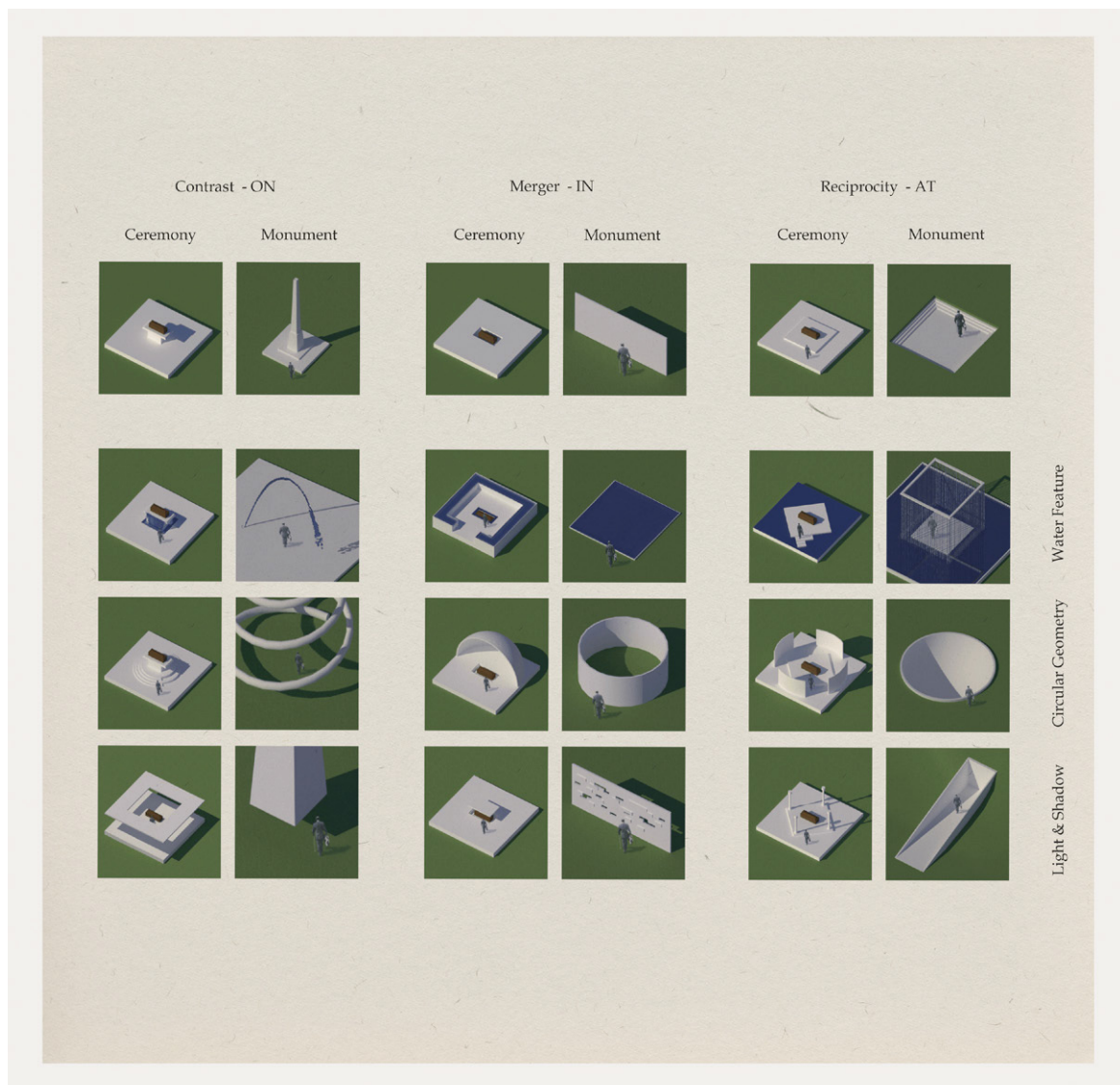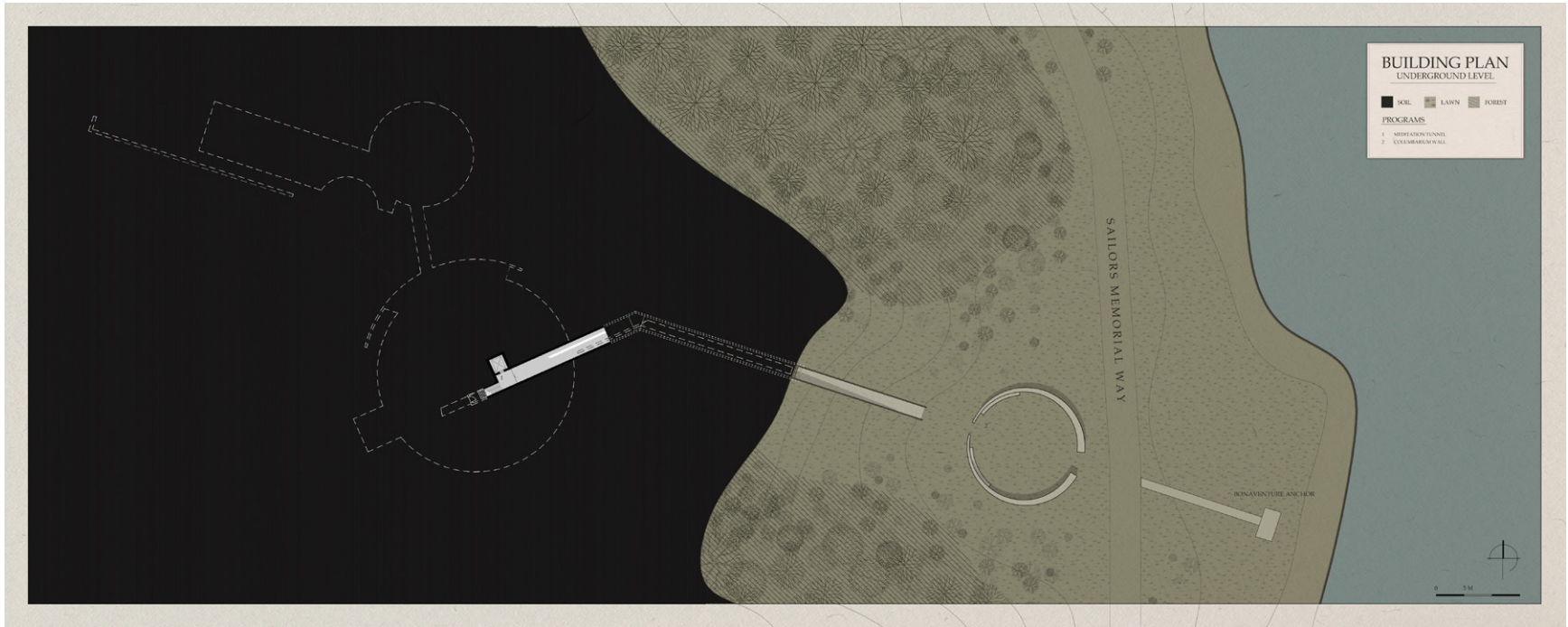

Diagrams of implementation
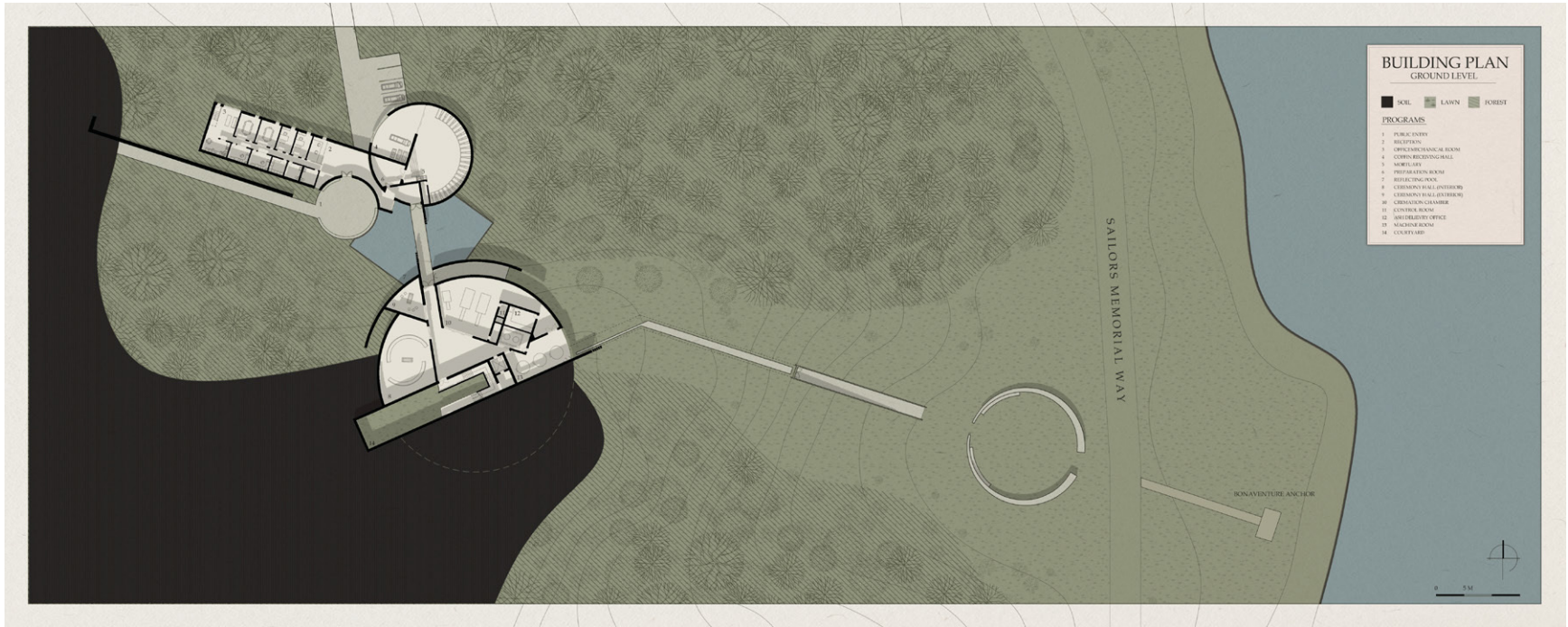
Plan view of preparation, ceremony and cremation on the ground floor
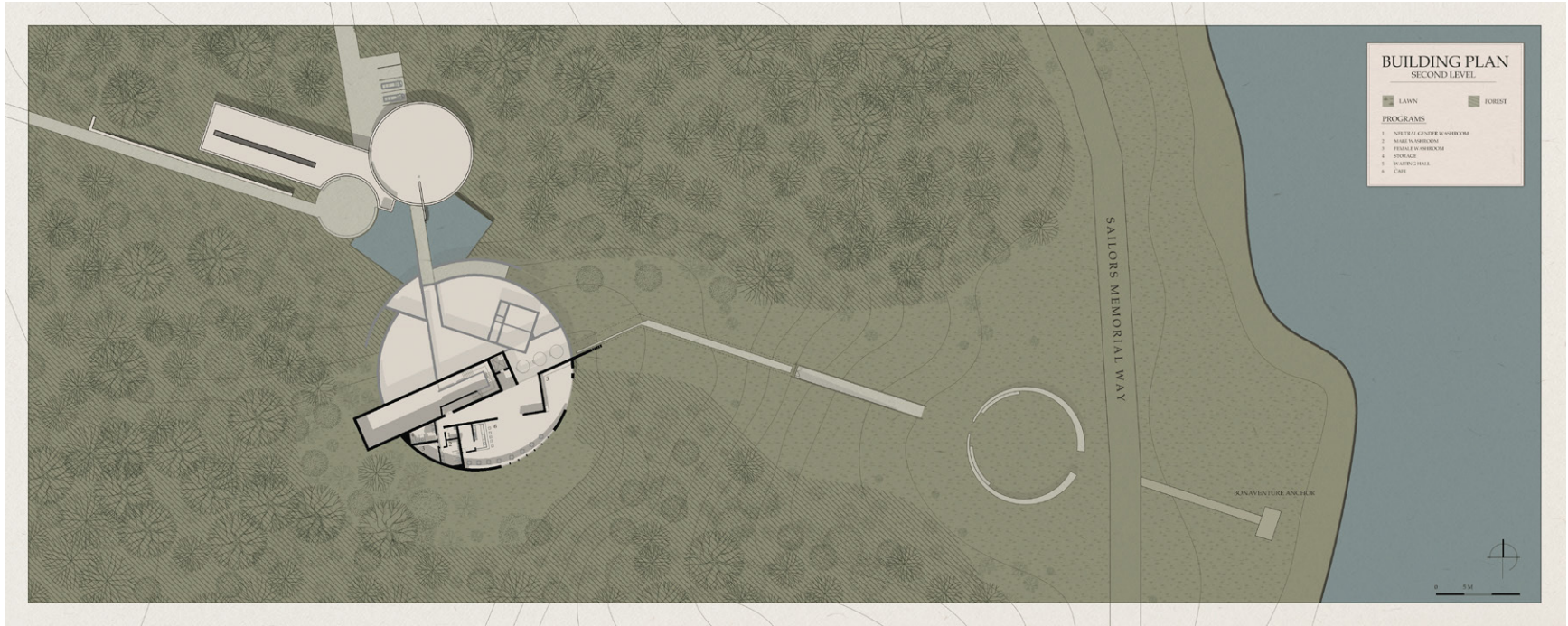
Plan view of waiting space on the second floor

Plan view of underground meditation tunnel and columbarium wall

Project Design

The project follows the complete process, from entering the funeral ritual to cremation after-care. There are five steps in the process: preparation, ceremony, cremation, meditation and public gathering. Each program will be described in detail by telling the story of how a family circulates throughout the building and finally meets the public.

Family Approch
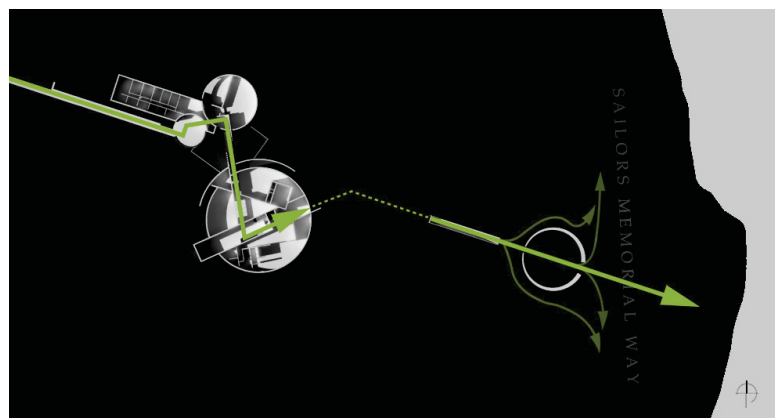
Family procession through the site

Preparation

Mourners will drive in through the north entrance of the park, across the main route, Cambridge Drive, pass Ogilvie Road and Prince of Wales Drive, and reach the parking lot located at the intersection of Prince of Wales Drive and Heather Road. The dedicated funeral van for transporting the remains and casket will continue east along Prince of Wales Drive for about one hundred meters and turn right to the drop-off area of the mortuary. The experience of passing through the forest feels like crossing a boundary that separates the exterior world from the peaceful space.

Heather Road is a four-meter-wide vehicle-free pathway. The trees on both sides of Heather Road are tall and tight,

creating a narrow and isolated space. As the path continues, the trees on the right side gradually thin out and become shorter, and the outline of the building begins to emerge. The wall on the left side gradually increases in height as the terrain changes, not only creating a visual separation between the office area and the public entrance but also guiding the mourners to slowly merge into the building context.

The waiting area at the main entrance is a semi-enclosed circular form, which also serves as a transition area from the exterior to the interior. Inside the main entrance is the reception desk, where mourners go through a series of procedures such as booking and registration. To the right is a two-meter-wide aisle formed by two curved walls, with a skylight at the end of the aisle to guide mourners moving forward. Through the window are the reflecting pool and the bridge over the water. This view introduces the mourners to the next space.

The overlapping space is the preparation room for the funeral ceremony. Some activities like embalming or encoffining will be performed in this preparation room. Once preparation is complete, mourners will follow the casket across the outdoor central bridge to the space where the funeral ceremony takes place. In the transition from indoors to outdoors, the light changes from dark to bright, and the surrounding materials change from a single artificial concrete structure to a variety of natural materials, such as water and trees, symbolizing a metaphor for the transition from death to life.

Ceremony

Due to cultural diversity, the space for the funeral ceremony is split into two rooms with different scales. The smaller room

is an entirely open space, which is designed especially for outdoor funeral activities. The total area is about thirty square meters, which can accommodate a maximum of twenty-five mourners in the room. The entire room is trianglar. Its open-air design allows for brighter lighting to merge the remains with nature.

The large-scale ceremony room is rectangular, with a maximum occupancy of one hundred mourners. Unlike the outdoor ceremony room, the design of this room
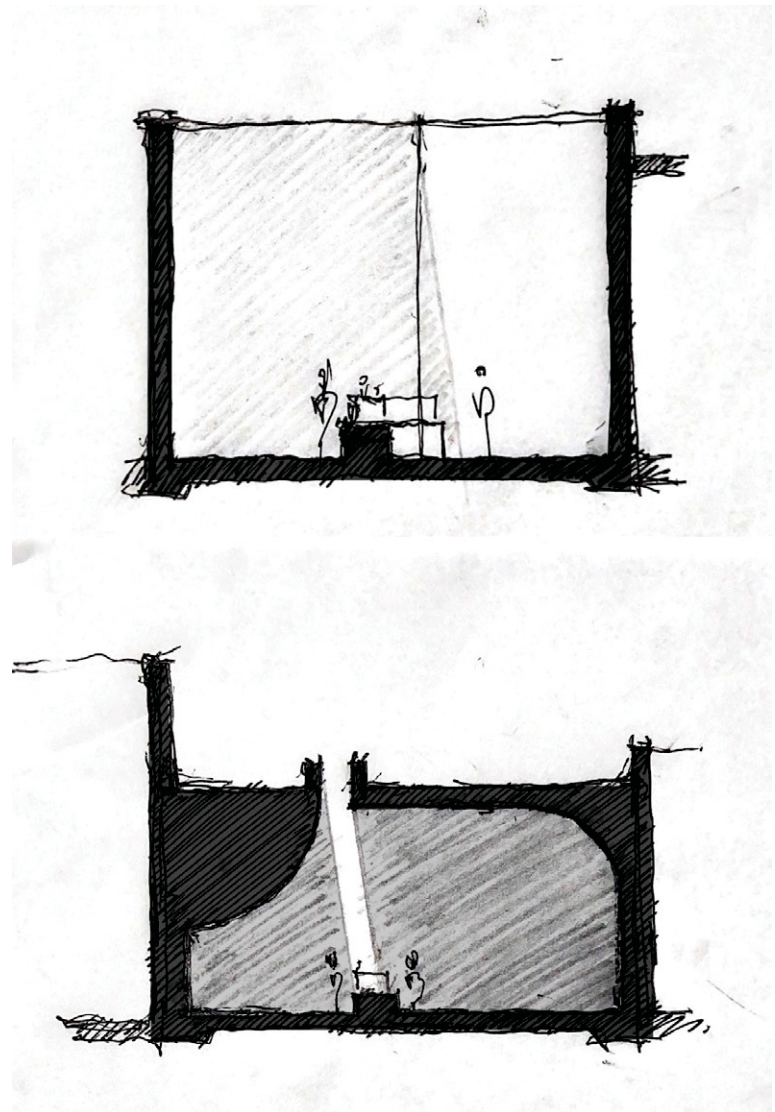
Light study of two scale ceremony room

emphasizes the idea of contrast. It has almost no openings, except for a narrow skylight. The incoming beams of light spill over the casket, contrasting with the darkness of the room. It conveys the idea that death is not the end but the beginning of a new journey. The ceiling is designed with irregular curved surfaces, which soften the intense natural light to increase the overall brightness of the room, and also creates a contrast with the angled wall connection, reducing the height of the roof and bringing the mourners closer to their loved ones. Artificial lights are also installed in the room to compensate for inclement weather such as rain or snow.

Cremation

The cremation room is located across from the ceremony room. Transparency is the main idea behind the design of the cremation room, making it easier to soothe the pain rather than hiding the process in the dark. The transparent entrance allows mourners to choose whether to participate in the cremation process in the chamber, or witness the process through the glass. The cremation room contains two human incinerators and one dedicated incinerator for pets. Connected to the cremation room are the ash delivery office and mechanical room. The machinery for cremation and exhaust treatment can also be witnessed through the glass at the east corner of the central hall. This offers an unconventional but effective contrast between the mechanics and the peacefulness.

Cremation usually takes about three to four hours to complete. During this time, mourners may wait in the resting space on the second floor. The main pathway to reach the resting space is the stairs in the central courtyard. The courtyard follows the simple design concept: regular rectangular walls

with a flat lawn, and stairs circling up along the walls. This courtyard is a separation between the functional area on the first floor and the resting area on the second floor, as well as a transition space for changing emotions from sorrow to calm. The elevator on the side also provides access to the waiting area for the disabled community.

The space on the second floor is entirely open, with no partitions. A café and a waiting corner are the two main areas. During summertime, the glass door in the café area will be entirely opened, so that mourners can have direct contact with nature. The quiet waiting corner is on the east side of the second floor. Unlike the welcoming café, the waiting area is a more enclosed space that is separated from the café by narrowing the boundary.

Meditation

Once the cremation is finished, mourners can choose to place the urn on a public columbarium wall by the sea. To reach the columbarium wall, the mourners walk through a tunnel under the ground. The tunnel is a gently sloping design that is also accessible for the disabled. The tunnel is approximately sixty meters long and three meters wide, with a height difference of four meters. The interior structure follows the triangular geometry with a narrow top and a wide bottom. The tunnel has a linear glass skylight. The skylight goes from narrow to wide, creating a gradual change of light from dark to bright. The materials for the tunnel are different from the building. The walls and floors are made of the same dark grey concrete. The interior is polished to a matte finish to create a raw and natural look. Its low reflectivity also allows for better light presentation in the tunnel. This meditation tunnel represents the final journey,
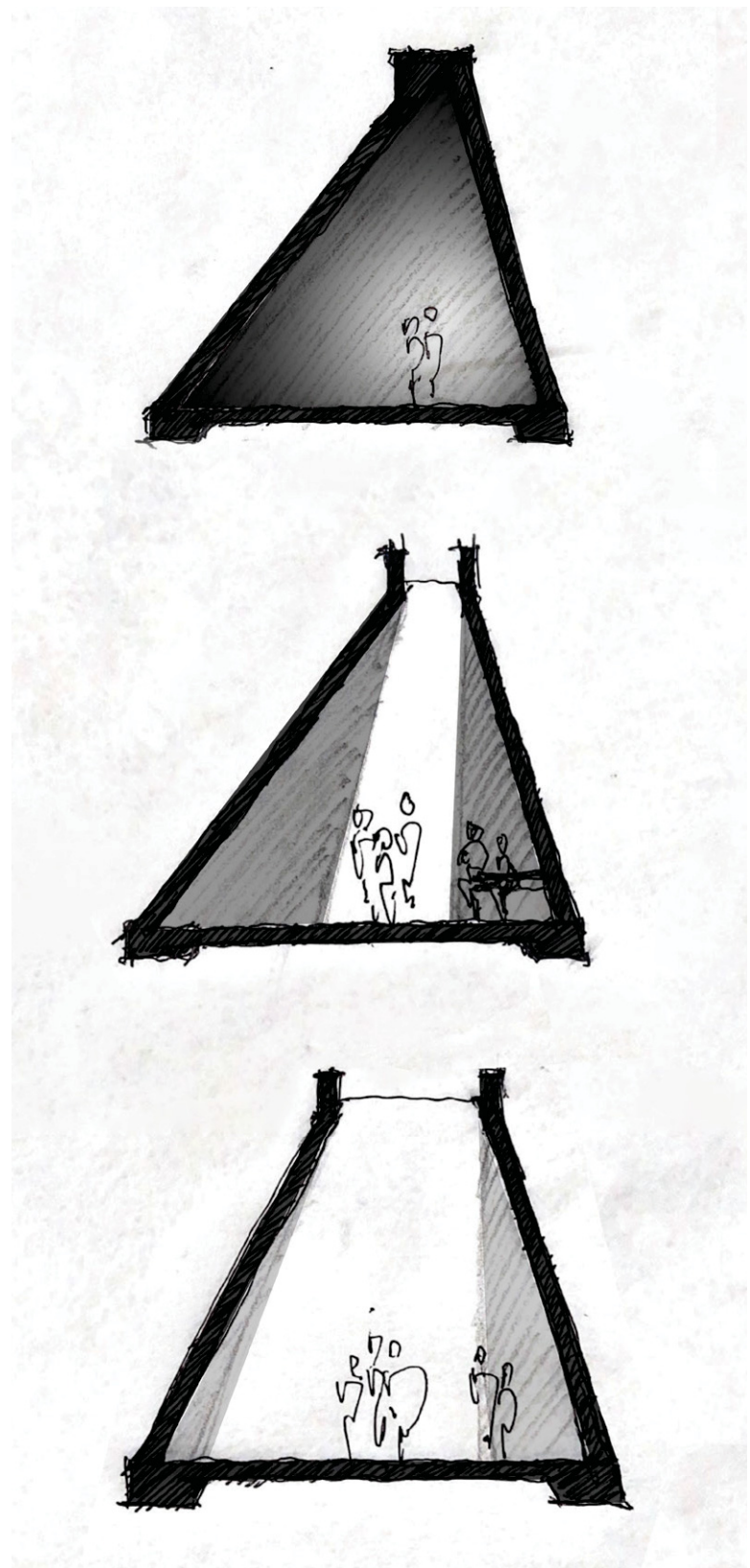
Three moments of meditation tunnel

symbolizing the mourners' acceptance of death and the hope for continued life.

Darkness is ideal for creating a quiet space for mourners to meditate. Seating is provided at the turning point of the tunnel for mourners to take a short break. However, the material for seating is the same as the walls and ground, which makes it less uncomfortable than the outdoor seating. This may shorten the time for a stop, and encourage the mourners to move on. Seating is embedded into the walls along the tunnel, giving the mourners a semi-private space while also providing a visual connection to other mourners passing by. The movement of the crowd can positively affect others' emotions and actions.

The exit of the tunnel is a passage formed by concrete walls. The exit wall design parallels the entrance wall, which gradually changes height with the terrain. The exit walls eventually blend in with the flat surface to achieve a gradual separation between mourners and the landscape. Most of the vegetation around this area is removed to create an open view, in contrast to the sense of enclosure at the beginning of the procession. Out of the tunnel, mourners will notice the columbarium space surrounded by two semi-circular walls. The wall at the entrance is only half a person's height. It rises as mourners walk into the center and ends at a height of three meters. The indentation in the wall allows mourners to place the urns and flowers. There are also some benches in the middle of the space for mourners to spend a last moment with their loved one. The exit of the columbarium space is higher and wider than the entrance, which serves as a border between personal funeral rituals and public gatherings. This is a metaphor for releasing negative thoughts and continuing to a new life.

Public Gathering

After leaving the columbarium space, mourners will be on the Sailors Memorial Way, the main loop along the periphery of the park. This is the green space that opens for some public gathering activities like an outdoor concert or a memorial catering event. There is also a memorial monument, Bonaventure Anchor, that stands on the shore at Point Pleasant Park. It was dedicated to the people who died while serving in the Royal Canadian Navy during peacetime. This monument is also located on the centre line of the entire project, emphasizing the significance of memory to the city and the living. It is the moment when individual thoughts and collective memories join together, reflecting upon the life and death.

Public Approch

Point Pleasant Park has become a popular place for citizens to relax due to its rich history and beautiful scenery. Many visitors go to the park to encounter the ocean, enjoy the
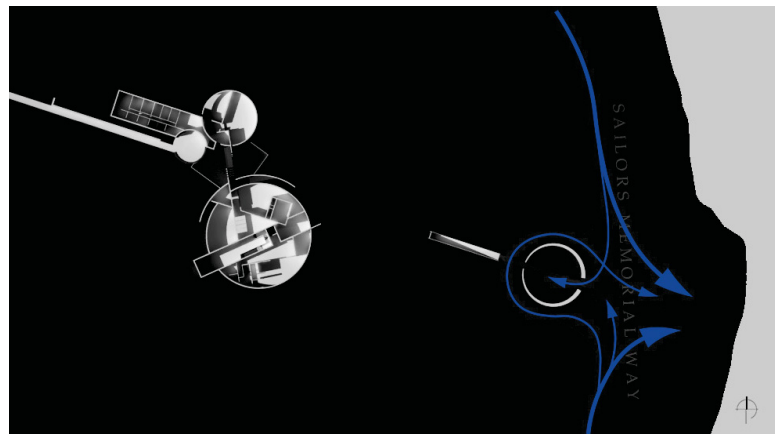
Public procession through the site

forest trails or visit the historical sites and romantic ruins. One of the main paths in the park that connects the various

programs is the perimeter loop, Sailors Memorial Way. Less vegetation near the waterfront allows the visitors to have an overview of the project. The top of the building on higher ground will gradually appear as the visitors approach the historical site of the Bonaventure Anchor monument. When visitors look up at the entire project by standing on the centre line, they will notice the openings of the columbarium space pointing toward the meditation tunnel and aligning with the building on top. The wider and non-occlusive openings of the columbarium space dilute the sense of boundaries, which provides for the positive integration of individuals and the public.
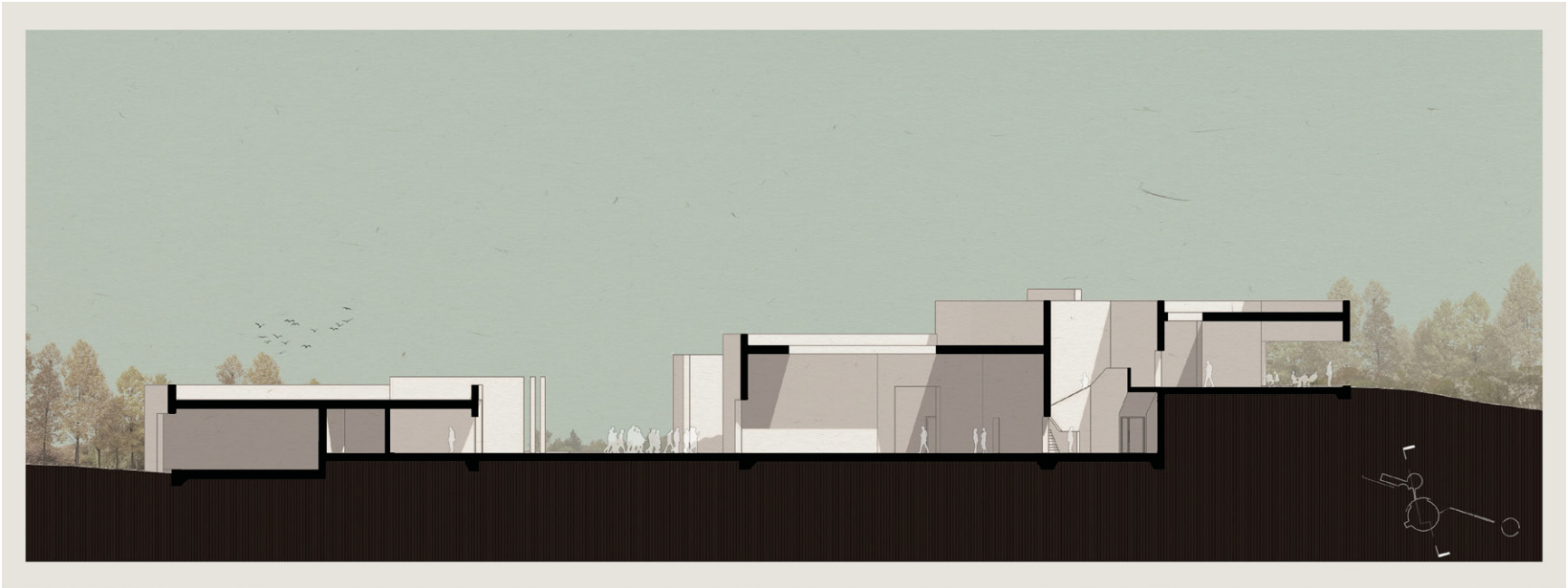
South-north section view cutting through mortuary and crematorium hall
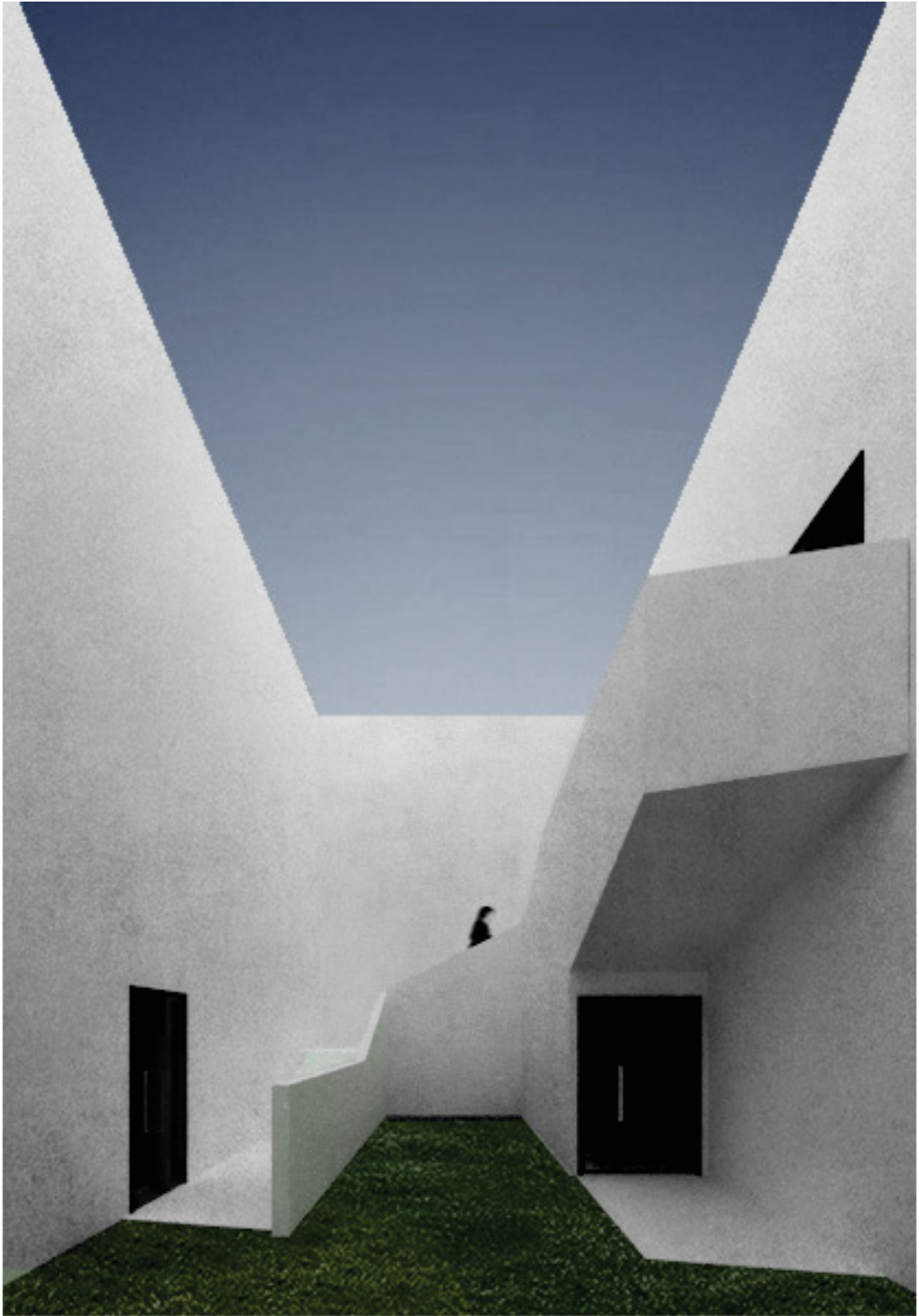
East-west section view cutting through courtyard, meditation tunnel and columbarium wall

The view of the first approach from mourners' perspective

The transition from main hall to preparation room

Perspective view from the central courtyard

The view of the first approach from public's perspective

Chapter 5: Conclusion

Death rituals, one of the most ancient and basic behaviours in human society, have an amazing power to help the living to overcome the excruciating pain of losing a significant person in their lives. Cremation is becoming a popular choice for disposing of the body. Modern cremation should adapt and evolve as people's needs change due to globalization.

Halifax has been experiencing cultural pluralism in recent years. People with different backgrounds are now re-forming the Halifax community. Resulting in an increased demand for various forms of funerals. However, the blind pursuit of urbanization ignores people's spiritual needs. With the COVID epidemic crushing countless lives, the importance of combining substance and spirit in funerals is further highlighted. The current crematorium in Halifax focuses only on functionality, and lacks care for the living who participate in the funeral. This thesis study aims to transfer funeral rituals from the city to an outer urban park. With respect for the local culture as its foundation, this project strives to fulfill the need for funeral rituals for different cultural backgrounds. The end result will integrate architecture as a medium between the departed and the living in order to serve people both spiritually and physically, and redefine the meaning of death by allowing the city to actively embrace it rather than avoid it.

This thesis introduces three relationships (contrast, merger and reciprocity) between architecture and landscape. Through the exploration of geometry, water and light, a series of decentralized program designs are applied in Point Pleasant Park to actively support the circulation of mourners. The relocation of mourning rituals can be helpful

to encourage an interaction between the urban fabric and natural environment while creating a bond between individuals and the masses, thus actively contributing to a faster acceptance and clearer reflection on death.

References

Bosch, Hieronymus. 1490-1500. *The Garden of Earthly Delights.* Painting. Museo del Prado. https://www.museodelprado.es/en/the-collection/art-work/the-garden-of-earthly-delights-triptych/02388242-6d6a-4e9e-a992-e1311eab3609?searchMeta=delight.

Boucher, Jack E. 1975. View of parlor. https://www.loc.gov/pictures/item/in0087.photos.066023p/

Bradley, Richard. 1998. "Closed Circles: The Changing Character of Monuments, from Enclosures to Cemeteries." In *The Significance of Monuments*, 144–158. London: Routledge.

Davies, Douglas James. 2017. *Death, Ritual, and Belief: The Rhetoric of Funerary Rites.* Third Edition. New York: Bloomsbury Academic.

Fogarty, Chris. 2003. Point Pleasant Park Tree Damage. NovaWeather. http://www.novaweather.net/Hurricane_Juan.html.

Ghoussayni, Fouad, Amer Ali, and Ali Bayyati. 2021. "Critical Investigation of Cheops Pyramid Building in Relation to the Solar Equinox." *Journal of Architectural Engineering* 27, no. 4 (December): 1-10.

Goodwin, Kate. 2016. "Life in Death." *The Architectural Review* 240, no. 1436 (November): 24–24.

Google Maps. 2022. Map of Point Pleasant Park, Halifax. http://maps.google.ca.

Grainger, Hilary J. 2005. *Death Redesigned: British Crematoria, History, Architecture and Landscape.* Reading: Spire Books, in association with the Cremation Society of Great Britain.

Hananel, Sam, and Jessica Gresko. 2016. "Watch Justice Antonin Scalia's Funeral Mass." Video, 2:15:28. PBS NewsHour. https://www.pbs.org/newshour/nation/watch-antonin-scalias-funeral-mass.

Hatherley, Owen. 2014. "Everybody Knows This Is Nowhere: The Kiev Park of Memory and Post-Soviet Urbanism in Context: Debates and Developments." *International Journal of Urban and Regional Research* 38, no. 3 (May): 1092–1101.

Hoy, William G. 2013. *Do Funerals Matter?: The Purposes and Practices of Death Rituals in Global Perspective.* Hoboken: Taylor and Francis.

HRM (Halifax Regional Municipality). 2022a. *Ferry Routes.* Halifax Open Data. Map from GIS data, using ArcGIS. https://catalogue-hrm.opendata.arcgis.com/datasets/1bac39377d2643dfa5c68e694151a312_0/explore?location=44.655625%2C-63.560808%2C16.52.

HRM (Halifax Regional Municipality). 2022b. *HRM Park Recreation Features.* Halifax Open Data. Map from GIS data, using ArcGIS. https://catalogue-hrm.opendata.arcgis.com/da tasets/52127546a407426ba67c359640353ca7_0/explore?location=44.780824%2C-63.152920%2C9.00.

HRM (Halifax Regional Municipality). 2022c. *Zoning Boundaries.* Halifax Open Data. Map from GIS data, using ArcGIS. https://catalogue-hrm.opendata.arcgis.com/dat asets/11adc4e1e52a45b5b9f6bc63ef6e0883_0/explore?location=44.852102%2C-63.171443%2C10.22.

Johansson, Bengt O. H., Fabio Galli, Erik Gunnar Asplund, and Sigurd Lewerentz. 1996. *Tallum: Gunnar Asplund's & Sigurd Lewerentz's Woodland Cemetery in Stockholm.* Stockholm: Byggförlaget.

Kahn, Louis I., and Robert C. Twombly. 2003. *Louis Kahn: Essential Texts.* New York, N.Y: W.W. Norton.

Kitz, Janet F., and Gary Castle. 1999. *Point Pleasant Park: An Illustrated History.* Halifax, NS: Pleasant Point Pub.

Korai, Bernard, and Nizar Souiden. 2017. "Rethinking Functionality and Emotions in the Service Consumption Process: The Case of Funeral Services." *The Journal of Services Marketing* 31, no. 3 (May): 247–264.

Lanfranco, Giovanni. 1636. *Funeral Rites for a Roman Emperor.* 1636. Painting. Museo del Prado. https://www.museodelprado.es/en/the-collection/art-work/funeral-rites-for-a-roman-emperor/fcd6f6c1-52a2-4f9b-93b3-49ce70c23508.

Latini, Luigi. 2009. "The Mediterranean Cemetery: Landscape as Collective Memory". In *Spatial Recall: Memory in Architecture and Landscape.* 1st ed, edited by Marc Treib, 154-175.

Leyton, Michael. 2006. *Shape as Memory: A Geometric Theory of Architecture*. Basel/Berlin/Boston: Walter de Gruyter GmbH.

Lombardi, Ludovico. 2015. Photograph of Kiev Cremation. *Some/Things Magazine.* https://www.someslashthings.com/online-magazine/2015/1/3/somearchitecture-kiev-crematorium-avraham-miletski.

Luong, QT. 2007. Photograph of Cremation Fire on Banks of Ganges River. Terragalleria. https://www.terragalleria.com/asia/india/varanasi/picture.indi38847.html.

Lyndon, Donlyn. 2009. "The Place of Memory." In *Spatial Recall: Memory in Architecture and Landscape.* 1st ed. edited by Marc Treib, 62-85.

Martinez Hermoso, Juan Antonio, Fernando Martinez Hermoso, Francisco Paula Montes Tubio, and Alejandro Jimenez Serrano. 2014. "Geometry and Proportions in the Funeral Chapel of Sarenput II." *Nexus Network Journal* 17, no. 1 (November): 287–309.

McGuire, Kim. 1990. "The Rural Cemetery Movement in Halifax, Nova Scotia." Honour's thesis, Saint Mary's University. https://www.smu.ca/webfiles/mcguire-theruralcemeter-ymovementinhfx-1990.pdf.

Quinton, Jessica M. and Peter N. Duinker. 2019. "Beyond Burial: Researching and Managing Cemeteries as Urban Green Spaces, with Examples from Canada." *Environmental Reviews* 27, no. 2 (April): 252–262.

Rainey, Reuben. 1987. "Architecture and Landscape: Three Modes of Relationship." *Places* 4, no. 4: 4–6.

Rushforth, G. McN. 1915. "Funeral Lights in Roman Sepulchral Monuments." *The Journal of Roman Studies* 5 (November): 149–167.

Ruskin, John. 1989. *The Seven Lamps of Architecture*. New York: Dover Publications.

Saitō, Yutaka, Hiroyuki Toyoda, and Nobuaki Furuya. 1997. *Carlo Scarpa*. Shohan. Tokyo: TOTO Shuppan.

Sedighi, Samaneh, and Ali Asghar Mollazehi. 2017. "Water in Architecture and Its Usage in Contemporary Houses Interior Design." *Tarih Kültür Ve Sanat Araştırmalari Dergisi* 6, no. 4 (September): 1176–1195.

Sen, Sudipta. 2019. Ganges: *The Many Pasts of an Indian River.* New Haven, CT: Yale University Press.

Smith, Doug. 2007. *Big Death: Funeral Planning in the Age of Corporate Deathcare.* Winnipeg, Fernwood Publishing.

Socialist Modernism. 2017. 3D drawing of Kiev Cremation. http://socialistmodernism.com/memory-park-kiev/.

Sokhi, Manpreet. 2017. Photograph of Dartmouth Atlantic Funeral Home. Arbor Memorial. https://www.arbormemorial.ca/en/dartmouth.

Statista. 2021a. Cremation Rate in Canada from 2000 to 2023. https://www.statista.com/statistics/916310/cremation-rate-in-canada/.

Statista. 2021b. Number of Deaths in Nova Scotia, Canada from 2001 to 2021. https://www.statista.com/statistics/568019/number-of-deaths-in-nova-scotia-canada/.

Statistics Canada. 2022. Census of Population, 2016 and 2021. https://www150.statcan.gc.ca/n1/daily-quotidien/220427/mc-a004-eng.htm.

Steenberg, James W. N. and Peter N. Duinker. 2010. "Post-Hurricane Coniferous Regeneration in Point Pleasant Park." *Nova Scotian Institute of Science* 45, no.2: 26-54.

Treib, Marc, ed. 2009. *Spatial Recall: Memory in Architecture and Landscape*. 1st ed. Abingdon, Oxon: Routledge.

Tumur, Anwar, and David H.S. Richardson. 2019. "The Lichens of Point Pleasant Park, Halifax, Nova Scotia." *Northeastern Naturalist* 26, no. 1 (January): 63–80.

Valero Ramos, Elisa. 2015. *Light in Architecture: The Intangible Material*. Newcastle upon Tyne: RIBA Publishing.Weeks, Eric. 2019. "Memorializing an Ideal: Representations of Inclusivity in Canada's National Public Monuments." *London Journal of Canadian Studies* 34, no. 1 (November): 123-148.

Young, Brian J., and Geoffrey James. 2003. *Respectable Burial Montreal's Mount Royal Cemetery.* Montreal, McGill-Queen's University Press.

Young, James E. 1989. "After the Holocaust: National Attitudes to Jews: The Texture of Memory: Holocaust Memorials and Meaning." *Holocaust and Genocide Studies* 4, no. 1 (January): 63–76.