

MEMENTO MORI VIVI

Natural Organic Reduction
In Sihlfeld Cemetery, Zurich:
Ecological Gardens and Forests of
Remembrance

Free Diploma HS22/FS23
Claire Debons - 17-825-95

Main Supervisor: Momoyo Kaijima
Chair of Architectural Behaviorology
Assistant: Basil Witt

Co-Examiner: Milica Topalovic
Architecture of Territory



Figure 1: Sihlfeld Cemetery, Crematory D arcade view: grave, urn wall, allotment garden shed. by Author (2022). [image]

ACKNOWLEDGEMENTS

Chair of Architectural Behaviorology
Professor Momoyo Kaijima and Assistant Basil
Witt
for guiding and supporting me throughout the
project

Chair of Architecture of Territory
Professor Milica Topalovic
for believing in the subject and helping me find
the right words

Dr. Francis Müller
for the conversation and interview

Friedhof Forum
for the conferences, discussions and visits

Family and Friends
for the endless dinner conversations, for your
insights and perceptions, for your reactions and
opinions

Special thanks to Nathalie, my mom, for her help
in setting up the exhibition and all her loving
support



Figure 2: Sihlfeld Cemetery D Park Benches, fountain, path separating natural field and graves. by Author. (2022). [imgae].

PROLOGUE

Have you ever asked yourself how you wanted your body to be disposed of once you die? The options, in Switzerland, aren't varied: they are determined by the legal system. Therefore, you have a choice between earthen burial and cremation. On one hand, earthen burial was defined by the church that was responsible for death care until 1874 (in Zürich). It is consequently a practice that has a religious background (see chapter 3.5). On the other hand, cremation emerged in the context of a social revolution: the Enlightenment (18 hundreds) (see chapter 3.6). We are now living through another type of social and cultural change with notions such as: equal rights, feminism, or the climate crisis. Our death care system fails to reflect contemporary ideologies, especially ecological ideologies. It has thus become anachronistic.

Because of social and cultural changes, our cemeteries have already started to evolve. The prior function of a cemetery: the graveyard, has gradually lost its role. The religious landscape has shifted and influenced a drastic increase in cremation which has led to a decrease in the number of earthen burials. As Switzerland's policy includes a limited lifespan of graves (15-20 years), the amount of space available in cemeteries has not ceased to escalate. What happens with these spaces? In cases like that of Sihlfeld Cemetery, the cemetery acquires a new function: the role of a public park (see chapter 4.3). The typology of the cemetery has changed and become multifunctional.

Gradually we have started to redefine the cemetery, the place of final rest, the place of remembrance. When a cemetery becomes Park, it gains a public value that is in fact contradictory to the traditional values of a cemetery. The place where people come to mourn is juxtaposed with the place where people come for leisure.

Such transformations reflect the way we perceive death. Our society is increasingly secularized and accordingly, we trouble to find meaning in the rituals around death because they are linked to the historical and social context of burial as well as cremation. As religion plays an important role in the rituals and understanding of death, how can a secular society find a new spirituality/meaning around death?

Gradually, new forms of disposal of bodies have started to appear. The search for ecological alternatives to burial and cremation is on the rise (see chapter 2). The importance of these new techniques isn't simply ecological however, they tend to integrate new forms of ritual. These rituals bring us physically closer to death, a proximity that is helpful in understanding and accepting death (see chapter 3.3). Furthermore, rituals require space. Therefore, the implementation of an alternative burial method in an existing cemetery is in fact the implementation of a new ritual. A ritual that has the capacity to redesign as well as redefine the "cemetery".

TABLE OF CONTENTS

1. INTRODUCTION - REMEMBER WE MUST DIE ALIVE

- 1.1 Overview
- 1.2 Problematic - The Anachronistic Death
- 1.3 Problematic - Ecological Impact: Burial vs Cremation

2. RECOMPOSE - NATURAL ORGANIC REDUCTION (NOR)

- 2.1 Alternative Burial Methods
- 2.2 Soil vs Human Composition - We are Nature
- 2.3 Recompose - Human Composting

3. DEATH IN ZURICH - TRADITION, CULTURE & PERCEPTIONS

- 3.1 Population & Death - Statistics
- 3.2 The Perception of Death - From Accepted to Taboo
- 3.3 Mourning and Rituals - Symbols of Grief
- 3.4 History - Building Cemeteries
- 3.5 Traditional Ritual Evolution - Cremation over Burial
- 3.6 Current Traditional Rituals - From Death to Disposal

4. SIHLFELD CEMETERY - ZURICH'S CENTRAL CEMETERY

- 4.1 Sihlfeld Cemetery Context
- 4.2 History - A Palimpsest of Zurich's Growth
- 4.3 The Cemetery Park - Nature in the Cemetery
- 4.4 Historical Evolution of Building Uses
- 4.5 Cremation History- Symbolic to Industrial

5. PROJECT PROPOSAL - AN ECOLOGICAL CEMETERY CYCLE

- 5.1 Programme - Technology at the Service of Spirituality

6. PROJECT DESIGN - ECOLOGICAL GARDENS AND FORESTS OF REMEMBRANCE

- 6.1 Masterplan Design - Back to Nature
- 6.2 Organic Matter - Constructive System
- 6.3 Body Preparation - Flowering Pavilions
- 6.4 Decomposition - Vessels of Metamorphosis
- 6.5 Mourning - Pavilions of Remembrance
- 6.6 Curing & Testing - House of Rest
- 6.7 Architecture Regeneration - House of Construction
- 6.8 Nature Regeneration - Gardens of Remembrance

7. CONCLUSION

8. APPENDIX

- 8.1 The Virtual Garden, Project references, Sihlfeld Images, Flyers
- 8.2 Illustrations
- 8.3 Bibliography
- 8.4 Abstract & Programme

I. INTRODUCTION

- REMEMBER WE MUST DIE ALIVE

“You and the tree in your backyard come from a common ancestor. A billion and a half years ago, the two of you parted ways... But even now, after an immense journey in separate directions, that tree and you still share a quarter of your genes.” - Richard Powers¹

I.1 OVERVIEW

The aim of this Research is to explore the potential of natural organic reduction, in the city of Zurich. Therefore, the project develops a green burial method and thus an ecological cemetery garden in Sihlfeld Cemetery. The problematic regarding current death care practices is discussed in chapter 1 therewith introducing chapter 2 that presents an alternative method of disposing of human bodies: Natural Organic Reduction (NOR). Chapters 3 and 4 dive into the site, namely Zürich and then, Sihlfeld Cemetery to understand the historical, cultural, social, and political context that shaped the death care system. Finally, in chapter 5, the project proposes a vision of Sihlfeld Cemetery in which the bodies are composted and planted. Chapter 6 presents the second phase of the project in which the project is designed (figure 4).

Firstly, we dive into the subject with the problematic of death. In chapter 1.2, we look at how a strong cultural past has rendered our death care system anachronistic. Indeed, in chapter 1.3, the ecological impact of cremation and burial are presented.

These ecological ideals can in fact be assimilated in alternative burial methods such as natural organic reduction. Chapter 2.1 explores these alternative methods explaining why NOR is the most attractive solution. Chapter 2.2 shows us the similarities of composition between us and the earth, reminding us that “we are nature”. We then understand the logic of human composting developed by companies such as Recompose. The Recompose method is explicitly described in chapter 2.3.

In Chapter 3.1 we dive into the demographics of Zurich and how they influence death statistics in the future. Numbers are essential to the comprehension of why and how death is dealt with in Zurich but these are also linked to historical socio-cultural contexts, described in chapter 3.2. The evolution of rituals and their importance are described further in chapter 3.3. The psychological perception of death analysed has then influenced the physical development of cemeteries in Zurich, chapter 3.4, and this has itself influenced our rituals around death as drawn in chapter 3.5. Finally the history and culture have shaped the way we deal with death now as shown in chapter 3.6.

In Chapter 3.1 we understand the demographics of Zurich and how they influence death statistics in the future. Numbers are essential to the comprehension of why and how death is dealt with in Zurich but these are also linked to historical socio-cultural contexts, described in chapter 3.2. The evolution of rituals and their importance are described further in chapter 3.3. The psychological perception of death has influenced the development of cemeteries in Zurich, chapter 3.4, and this has itself influenced our rituals around death as illustrated in chapter 3.5. Finally, chapter 3.6 explains how history and culture have shaped the way we deal with death nowadays.

These rituals are the ones practiced in Sihlfeld Cemetery. The site of Sihlfeld is first looked at through its context in the built environment of Zurich in chapter 4.1. The importance of the cemetery as a palimpsest of time is presented in chapter 4.2. In chapter 4.3 we look into the complex function of the cemetery as a park. Within this park the buildings have a historical and symbolical value that is outlined in chapter 4.4. Sihlfeld, thanks to its crematoriums, built Switzerland’s cremation history as seen in chapter 4.5.

In chapter 5.1, we take a look at the programme proposal: a spiritual and ecological alternative to burial and cremation. A design that is based on natural organic reduction and thus a new ritual.

In chapter 6, we firstly look at the general masterplan design of ecological gardens and forests of Remembrance. A design based on a return to nature as described in chapter 6.1. The following chapters dive into the architectural design with chapter 6.2 illustrating the constructive system. Chapter 6.4 to 6.8 gradually unfolds the different infrastructural elements of the project following the natural organic reduction cycle.

A brief conclusion in chapter 7, looks back onto the project from an analytical and critical point of view. Thereby, the conversation opens up onto the “extreme scenario” proposed. How can such a radical proposal benefit the deconstruction and re-definition of our values regarding death, rituals but also our relationship to nature?

¹ Powers, Richard. The Overstory.

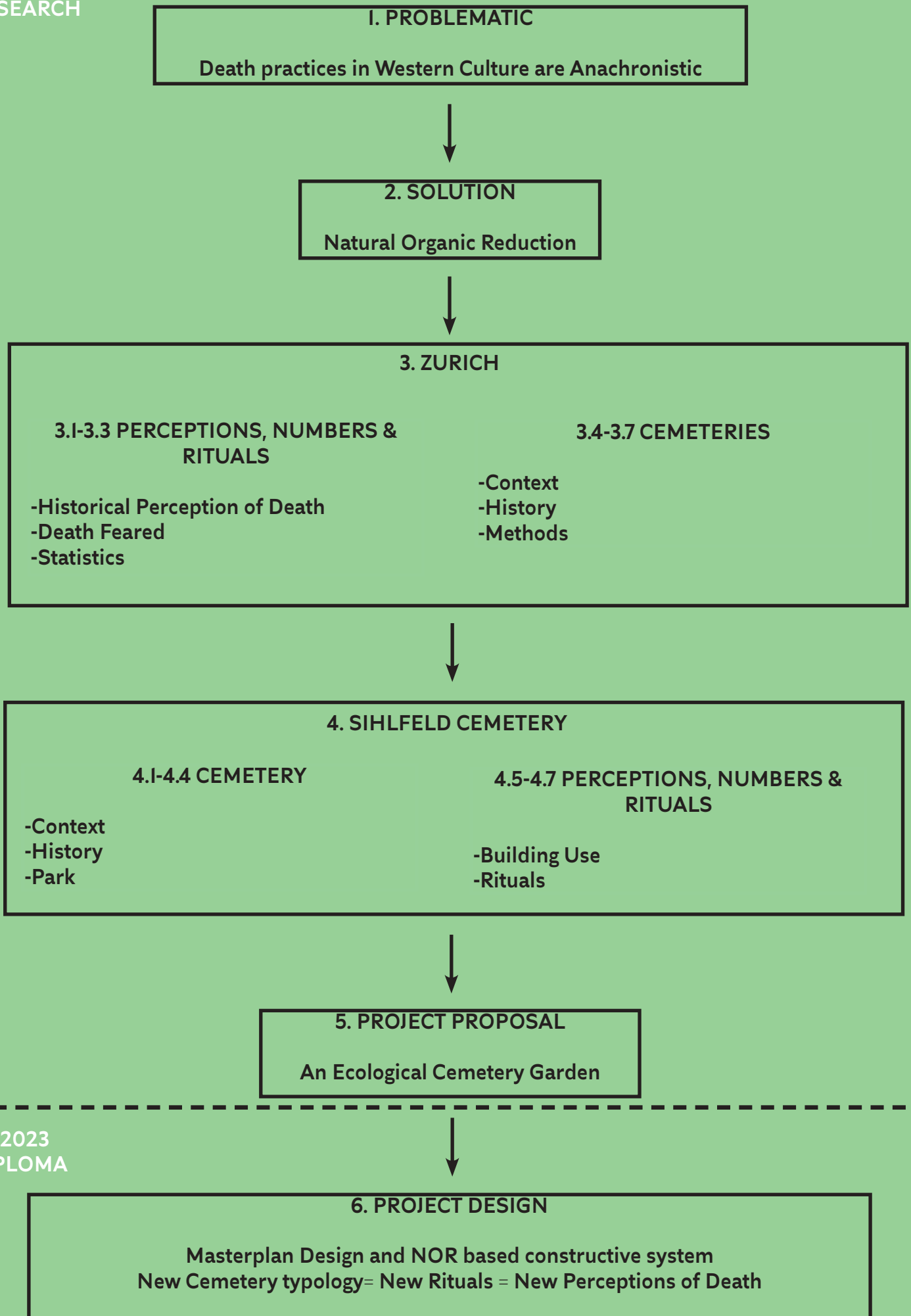


Figure 4: Research Flow Chart. by Author. (2022). [Diagram].

	CHURCHYARD	CEMETERY	PARK	GARDENS & PARK	GARDENS & FORESTS OF REMEMBRANCE
YEAR	0-1800	1800-1950	1950-2050	2050	2150
INHABITANTS ZURICH	17'200	494'000	1'521'000	1'882'000	2'100'000
DEATHS PER YEAR (ZH)	175	5'708	11'814	17'000	20'076
SOCIO-CULTURAL CONTEXT	Church and State non-differentiated	Enlightenment	Secularization	Global Ecological Crisis	Global Ecological Crisis
PERCEPTION OF DEATH	Death Accepted	Death Taboo	Fear of Death	Symbolical Death	Death is Nature
DISPOSAL METHOD	Burial	Burial + Cremation	Burial + Cremation	Natural Organic Reduction	Natural Organic Reduction
PLACEMENT	Centre of the City	Outside of the City/ Rural area	Within the City	Within the City	Within the City
FEATURES	Row of graves	Row of graves + trees and Shrubs	Parks + Graves	Memorial Gardens	Gardens and forests of Remembrance
BUILDINGS	Church	Mortuary + Crematory	Mortuary + Crematory + Gardner's House + Chapel	Mortuary + Chapel + Technical Infrastructure + Gardening Space	Mortuary + Chapel + Technical Infrastructure + Gardening Space
CARETAKERS	Church + Family	State Undertakers + Family	State Undertakers	State Undertakers + Gardner + Family	State Undertakers + Gardner + Family + General Public
BOUNDARIES	Wall and gates, strict delimitation	Wall and gates, strict delimitation	Walls, gates and fences open access 24/7	Gradual deconstruction of walls	No strict boundaries

RESEARCH SYNTHESIS

PROJECT PROPOSAL

Figure 5: Research synthesis and project proposal. by Author (2022). [table]



Figure 6: Return Home Company: Natural Organic Reduction, laying in. Source: <https://returnhome.com/> [Accessed 11 Nov. 2022]

I.2 PROBLEMATIC - THE ANACHRONISTIC DEATH

As populations continue to rise, so does the impact on our environment. In Switzerland, our legal system determines what we are allowed to do with bodies when we die: traditional burial or cremation. These 2 methods not only consume a lot of energy and generate carbon emissions, but also belong to a religious and cultural past that is evolving rapidly. An increasing amount of people are seeking alternative burial methods: methods that can bring us “back to nature” (companies such as Return Home for example are offering NOR, figure 6). This romantic ideal is visible through the new rituals that seek to dispose of ashes in nature with methods such as the water urn (figure 7 & 8)². However, the basis of the problem lies in the fact that the bodies are cremated. These ashes are not good for the environment therefore putting them back into nature renders the action somewhat hypocritical.

Research has proven that alternatives to earthen burial and cremation do exist. Most of them explore an alternative way of decomposing human remains. These methods vary from: alkaline hydrolysis (chemical cremation), promession (decomposition through freezing), bio-methanization (anaerobic digestion to create biogas) or composting (figure 8).³

Moreover, in many overcrowded cities such as New York, the space in cemeteries is very limited and thus problematic.⁴ Switzerland, with its high percentage of cremation (95%)⁵ is encountering the opposite problem; most cemeteries (depending on the region and cremation rate) are becoming anachronistic and are gradually being transformed into Parks. This is the case in Zürich with the cemetery of Sihlfeld.

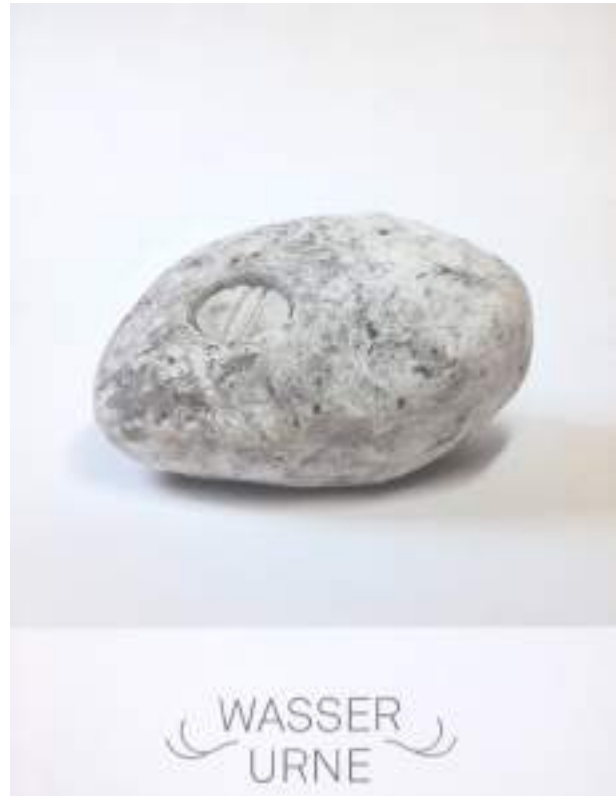


Figure 7: Water Urn: alternative for disposal of ashes, Switzerland. Heid, N. (2022). [Flyer]



Figure 8: Water Urn: dissolves within 30-90 minutes. Heid, N. (2022). [Flyer]

² Podium Discussion. “Hallo Tod! Zurück in die Natur”, Podiumsgespräch über Alternative Bestattungsformen. 2022

³ <http://deathlab.org/funerary-processes/> (accessed 11 Oct. 2022)

⁴ Ibid

⁵ <https://www.dailymail.co.uk/news/article-9172305/Inside-Switzerlands-biggest-crematorium-forced-extend-hours-amid-coronavirus-pandemic.html> (Accessed 11 Oct. 2022)

I.3 PROBLEMATIC - ECOLOGICAL IMPACT: BURIAL VS CREMATION

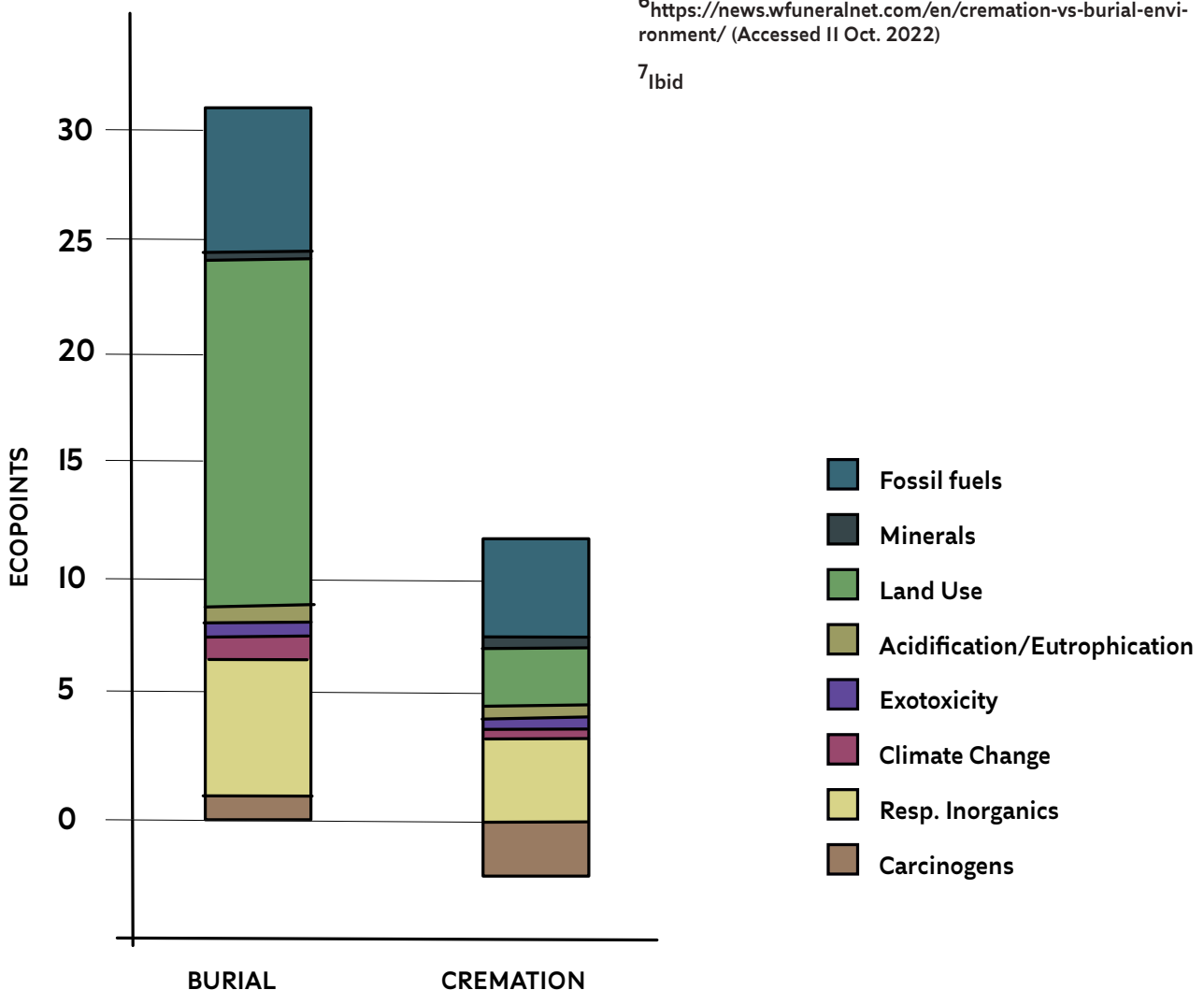
Earthen Burial:

For traditional earthen burials, the body is kept in a cool environment so that the mourners can come and pay their last respects to the deceased (aka. the wake). The preparation of the body can include the following embalming methods: sealing, disinfecting, draining the blood and injecting chemicals that disinfect as well as delay decomposition. The body is also dressed and styled according to the family's wishes. Dyes and humectants are used to give the body a natural living aspect. The embalming fluids and chemicals are toxic and thus participate in polluting the soil where the body is then buried. The clothes and other non natural elements that are buried with the body also contribute to polluting the ground. Moreover, a great number of valuable resources are used for earthen burial such as, wood for the caskets, stone for the tombstones, steel for memorial plates etc. Furthermore earthen burial uses up land: precious space that is valuable in overcrowded cities.⁶ (figure 9).

Cremation:

During cremation, toxic hot gasses are regularly released into the atmosphere and non-renewable fuels are used. The energy consumption necessary to burn a body is huge as it takes from 2 to 3 hours to burn a body. After the burning of the body, the ashes are collected and are put into a cremulator, thus allowing the ashes to be as fine as possible.⁷ In Switzerland, it is legal to scatter ashes in nature however the ecological impact of the ashes must be controlled. (Figure 9)

As a matter of fact, alternative solutions such as natural organic reduction do exist (see chapter 2.3). This alternative reduces carbon emissions and consume less energy. However, human composting is not yet legal in Switzerland (figure 10 & 11, here the agreement on funeral wishes is altered to imagine a scenario in which natural organic reduction is the unique disposal method).



⁶<https://news.wfuneralnet.com/en/cremation-vs-burial-environment/> (Accessed 11 Oct. 2022)

⁷ibid

Figure 9: Life Cycle Assessments for Burial and Cremation - with Ecoindicator. Keijzer, E. (2011). Graph redrawn by Author. Available at: <https://core.ac.uk/download/pdf/148285704.pdf>. [Graph]



Agreement on Funeral Arrangement Wishes

Residents of the City of Zurich may deposit their **personal** funeral requests with the Funeral and Cemeteries Office. Their wishes will be communicated to the persons reporting the death.

Surname: _____ First name: _____
Street: _____ Postal code: _____ Zurich
Date of birth: _____ Place of origin: _____
Telephone: _____ E-mail: _____

What type of funeral would I like?

*After NOR (natural organic reduction)
if cremation, I would like:
to plant my soil*

- Cremation *plant my soil*
- Interment *donate my soil*
- Burial plot in row *Sihlfeld forest*
- Burial niche in row *Sihlfeld garden*
- Rented burial plot in row
- Rented family burial plot
- Rented burial niche
- Communal burial site, incl. inscription: yes no
- Communal burial tree
- Family burial tree
- Existing grave: No. _____ *garden*
- Entrust urn to relatives
Name: *soil*

If interment, I would like:

*to donate my soil
flower bed*

- Side-by-side burial plot *to Stadt Zürich*
- Family burial plot *to an exterior company:* _____
- Already rented family grave, Grave-No. _____

I would like the following cemetery: _____

In doing so, I am aware that

- the assignment of burial plots/niches in rows depends on the last residential/reported address; *flowerbeds*
- for the cemeteries of Eichbühl, Schwandenholz, Sihlfeld, Witikon and for communal graves, there are no restrictions; *gardens*
- rented burial plots can be freely selected, with the exception of the cemeteries of Fluntern and Hänggerberg;
- burial of ashes is possible in the forests of Leimbach or Hänggerberg. *disposal of soil*

(Please see overleaf)

Figure 10



Would I like my GPS coordinates to be public? yes no

Would I like a free-of-charge official death notice? yes no
(national newspapers: NZZ, Tages-Anzeiger, official gazette of the City of Zurich: Tagblatt der Stadt Zürich)

What are my special requests for the funeral arrangements / funeral service?
(e.g., without funeral service, funeral ceremony at the grave site or in the chapel / church, pastoral minister, private speaker, organ music, music from a CD, DVD, soloist, singer, choice of casket, ~~urn~~, burial gown or private garments, floral arrangements for the funeral, plants to be put on grave, ~~headstone~~, etc.)
planted

Do I wish to pay for the expenses in advance, i.e., make an (interest-bearing) advance payment?

Temporary wooden cross grave marker yes no
Temporary tablet grave marker yes no
Maintenance fee for a collective burial plot / tree, niche / *garden* yes no
Inscription at communal burial site / niche slab yes no
Grave care (maintenance and plants) yes no
Headstone / niche slab (am including sculptor's quote) yes no
Funeral costs (death certificate, *NOR* ~~cushion~~, casket, etc.) yes no

I would like the person reporting my death to contact the following person(s) (surname, first name, address, telephone number(s), e-mail):

1. _____
2. _____

Place and date: _____ Signature: _____
(delegation to an authorized agent **not** possible)

Leaflet No. 9 contains useful information for the Agreement on Funeral Arrangement Wishes. It is available free of charge from the Funeral and Cemeteries Office and at www.stadt-zuerich.ch/bestattungsamt (forms, leaflets). The Funeral and Cemeteries Office will be pleased to answer any questions you may have or help you to complete the forms.

To be completed by the Graves Administration:
Counseling by: _____
Date: _____ Funeral and Cemeteries Office, Signature _____
Version: 0.2012/bab

Figure II

Figure 10 & II: Agreement on Funeral Arrangement Wishes, modified proposal. Stadt Zürich (2012). Modified by Author. [PDF]. Available at: https://www.stadt-zuerich.ch/content/dam/stzh/prd/Deutsch/Bevoelkerungsamt/Formulare%20und%20Merkblaetter/BFA_Formulare_Merkblaetter/Bestattwuensche_andere_Sprachen/Formular%20BW_e.pdf (Accessed: 30 October 2022)

2. RECOMPOSE

- NATURAL ORGANIC REDUCTION (NOR)

“I bequeath myself to the dirt, to grow from the grass I love; If you want me again, look for me under your boot-soles.”

- Walt Whitman. Song of myself. 2013

2.1 ALTERNATIVE BURIAL METHODS

Cremation has become somewhat a default choice because it is cheaper than burial and requires less organisation. However, there are an increasing number of solutions to alternative burial methods. Here are the most popular methods:

BIODEGRADABLE URNS

Many have looked for ways to go “back to nature” by maintaining the idea of burial and incorporating cremation. Thus, biodegradable urns are some of the most popular options nowadays. However, this method still entirely depends on cremation and thus does not solve the problem of the ecological impact of cremation on the environment.⁸

“CAPSULA MUNDI”

In this option, the deceased is placed in a biodegradable pod on top of which lies a tree. As the body decomposes, it acts as a natural fertilizer for the tree. This project however remains very theoretical. (Figure 13)⁹

ALKALINE HYDROLISIS

This method consists in decomposing the body using water and chemicals that are slightly heated. By exposing the body to this mixture, for a total of approximately 3 hours, the body is broken down into bone fragments just like cremation.¹⁰

THE MUSHROOM SUIT

This suit is an outfit that covers the corpse and is made of mushrooms that allow the body’s nutrients to return to earth and foster growth. Moreover it cleans the toxins in our body and is therefore not toxic for the environment (figure 12).¹¹

The problem with most of the solutions proposed is that they are either simply alternative methods still highly influenced by cremation and therefore not necessarily better for the environment, or they are completely natural. The completely natural methods such as burying a body in an ecological manner, take up space and time. The advantage of a method like the one developed by recompose (natural organic reduction or human composting) is that it uses technology to control a natural process. It is therefore:

-Eco-friendly

-Good for the environment as the soil then acts as a fertilizer

-Does not require an excessive amount of space

-Faster than outdoor composting

⁸<https://www.weareatticus.com/articles/burial-alternatives-costs-ultimate-list-of-interment-substitutes> (Accessed 05 Nov. 2022)

⁹Ibid

¹⁰<https://www.cremationassociation.org/page/alkalinehydrolysis> (Accessed 05 Nov. 2022)

¹¹<https://www.weareatticus.com/articles/burial-alternatives-costs-ultimate-list-of-interment-substitutes> (Accessed 05 Nov. 2022)



Figure 12: Mushroom Burial Suit. Source: <https://www.weareatticus.com/articles/burial-alternatives-costs-ultimate-list-of-interment-substitutes> (Accessed 05 Nov. 2022)[image]



Figure 13: Capsula Mundi. Source: <https://www.dezeen.com/2019/03/31/capsula-mundi-egg-shaped-burial-pod/> (Accessed 05 Nov. 2022)[image]

2.2 SOIL vs HUMAN COMPOSITION - WE ARE NATURE

SOIL

“Soil can no longer be conceptualised as a neutral surface, it demands to be understood as a living, dynamic and processual ‘thickness’ - as a volume in four dimensions. Soils, although degraded and fragmented, require a new gaze. They need to be re-articulated in a new project of space aimed at the construction of a shared, productive and inhabited nature. All forms of urbanity contain strong ecological potential and are all, today, the testing ground on which to re-conceive new relations among soil, city and society.”

- “The project of Soil” OASE #110 ¹²

¹²Peleman et al. The Project of Soil. 2022.

In our environment, soil/dirt plays a critical role in the creation of living beings and the health of ecosystems. Soil not only absorbs carbon dioxide from the air but also creates a home for animals and contains nutrients for plants as well as trees (figure 14).

Therefore, the ecological impact of human composting isn't simply in the reduction of CO2 emissions but also in the creation of dirt that naturally benefits our environment. Ultimately natural organic reduction produces earth that can help re-mediate the quality of the soil in certain areas. Typically, the quality of the ground in cemeteries has often been tarnished by its use as traditional burial grounds. Hence the desire to regenerate the soil in existing cemeteries.

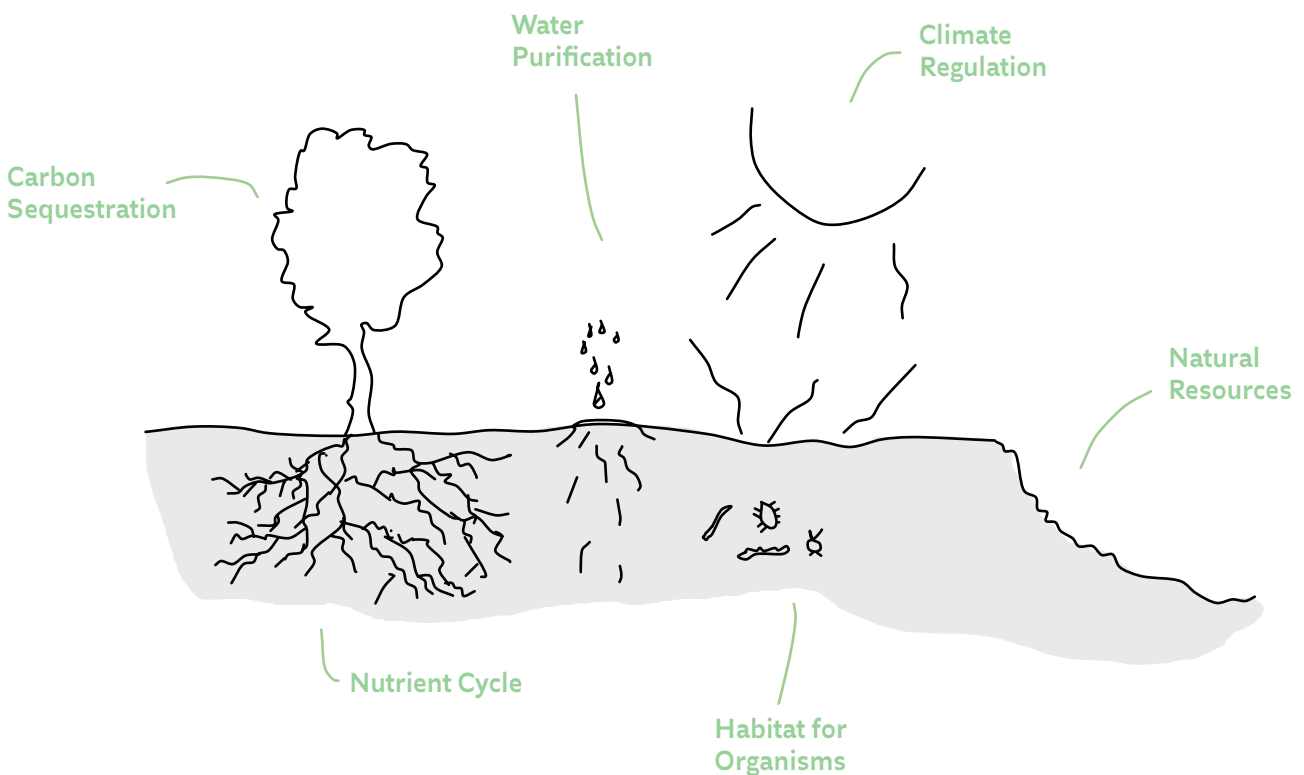


Figure 14: The Functions of Soil. Redrawn by Author. (2022). Source: Food and Agriculture Organization of the United Nations (2015). Available at: <https://qph.cf2.quoracdn.net/main-qimg-d379a383181f28de5abac634f732e867-lq>[Accessed 12 Oct. 2022]. [Sketch]

COMPOSITION OF THE HUMAN BODY

When looking at the elements that constitute the human body, it is interesting to notice that 99% of a body is made of six elements: oxygen, carbon, hydrogen, nitrogen, calcium and phosphorous (figure 15).¹³

These Elements are essentially the same that constitute the Earth. Our bodies are thus ideally composed to contribute to a natural ecosystem (figure 16).¹⁴

If we consider that our bodies can contribute beneficially to the natural environment, we must consider these alternatives that enable our bodies to reintegrate nature in the most natural way.

In Sihlfeld Cemetery, nature is abundant and therefore the simple transformation of bodies into soil can enrich the quality of the existing earth in Sihlfeld; earth that has been polluted due to earthen burial. Moreover, using this soil to grow more trees and plants can help the ecosystems to develop.

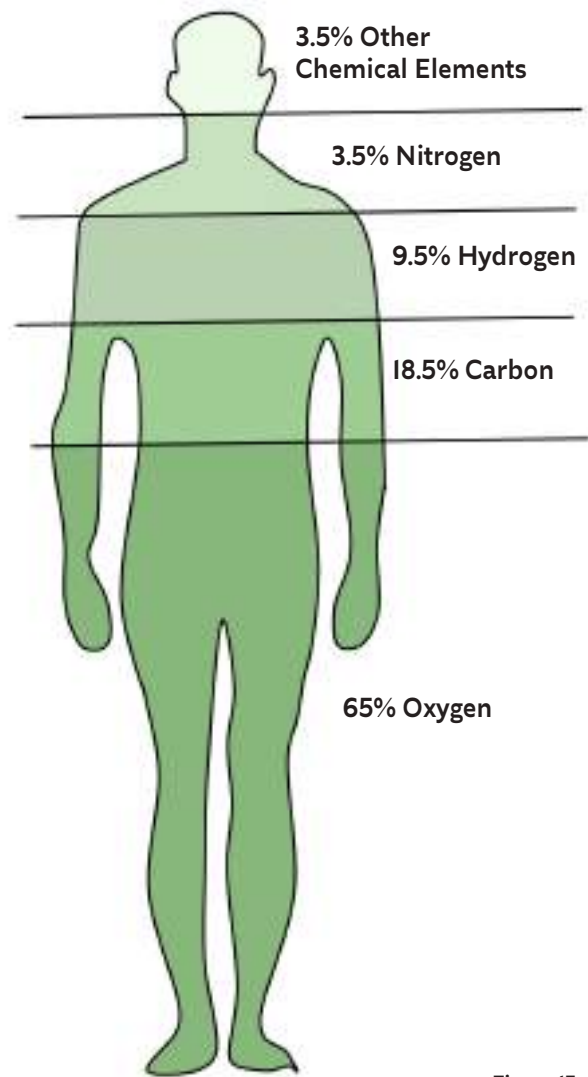
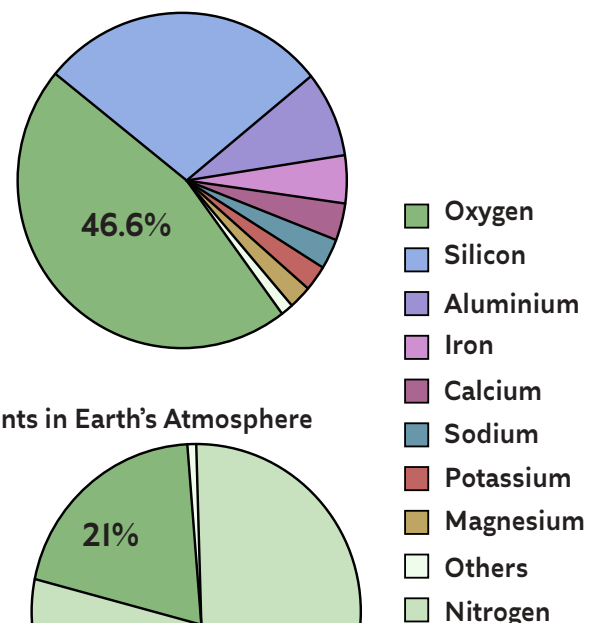


Figure 15

Elements in Earth's Crust



Elements in Earth's Atmosphere

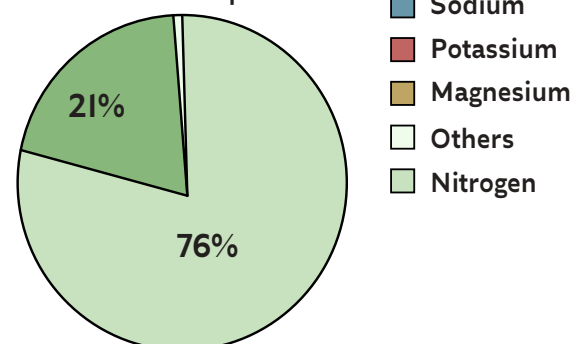


Figure 16

¹³<http://deathlab.org/body-composition/> (Accessed 12 Oct. 2022)

¹⁴Ibid

Figure 15: Constituents of the Human Body. Redrawn by Author. (2022). Source: Scienceabc (2022). Available at: <https://www.scienceabc.com/humans/what-elements-are-present-in-the-human-body.html> [Accessed 12 Oct. 2022]. [Diagram]

Figure 16: Constituents of the Earth's Crust and Atmosphere. Redrawn by Author, C. (2022). Source: Pearson Education (n.d.). Available at: https://www.emsisd.com/cms/lib/TX21000533/Centricity/ModuleInstance/5456/Percentage_of_Elements_PowerPoint.pdf [Accessed 12 Oct. 2022]. [graph]

2.3 RECOMPOSE -HUMAN COMPOSTING

Recompose is an American company that has elaborated a system allowing the decomposition of a human body organically within approximately 2-3 months. Human remains are transformed into dirt/soil. This method produces less carbon emissions and consumes a lot less energy than earthen burial or cremation (figure 17 & 18). The system is based on livestock composting (figure 19). The body is wrapped in an organic shroud and covered with organic matter. It is then placed in a Vessel for 30 days, the control of the air allows an acceleration of the decomposition of the body. The remains are also heated to 55 degrees thus killing of contagions. The earth is then cured for 6-8 weeks, filtered (to extract bigger pieces of bones or implants) and then tested (to be sure that it is safe for the environment. The final volume of earth obtained is equivalent to 0,8 cubic meters per body. This earth is then disposed of either by the family of the deceased or by Recompose (figure 20).¹⁵

Recompose is not the only company operating this kind of system. As a matter of fact, there are several companies such as this one already active in the United States. However, in Switzerland, such companies have not seen the light yet. The proposal of the project is to create the infrastructure necessary at Sihlfeld cemetery for such a process. The design of the technical infrastructure as well as the way the earth can be used within the park of Sihlfeld constitute the main design task (see chapter 5). However, the challenge that inevitably appears is that of the ritual that such a system evokes and how to design this ritual to find a new meaning in the process (figure 21).

¹⁵<https://recompose.life/> (Accessed 25 August 2022)

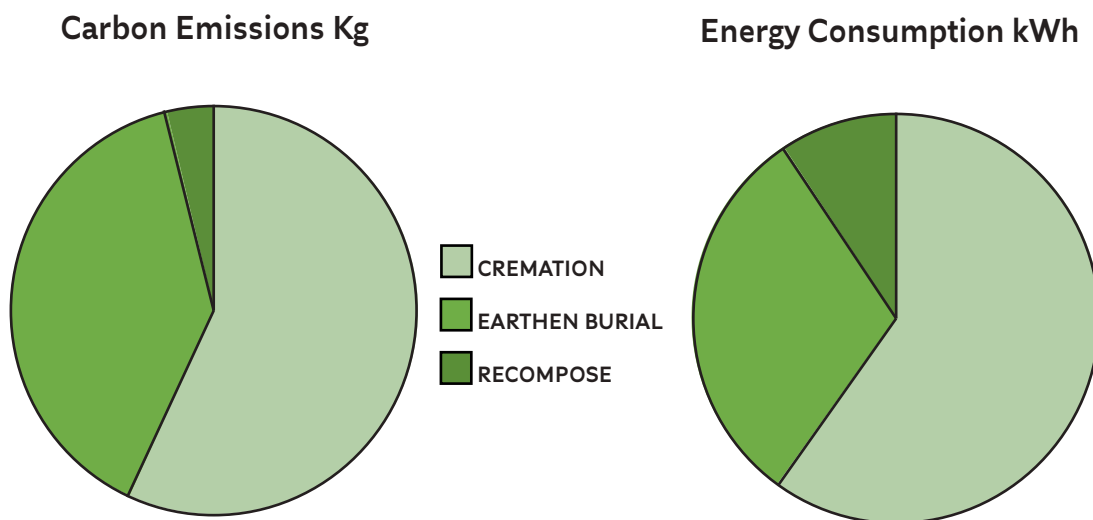


Figure 17: Carbon Emissions in Kg comparison. by Author. Data Source: <http://deathlab.org/funery-processes/> [Graph].

Figure 18: Energy Consumption in kWh comparison. by Author. Data Source: <http://deathlab.org/funery-processes/> [Graph].

STATIC PILE LIVESTOCK COMPOSTING

NATURAL ORGANIC REDUCTION

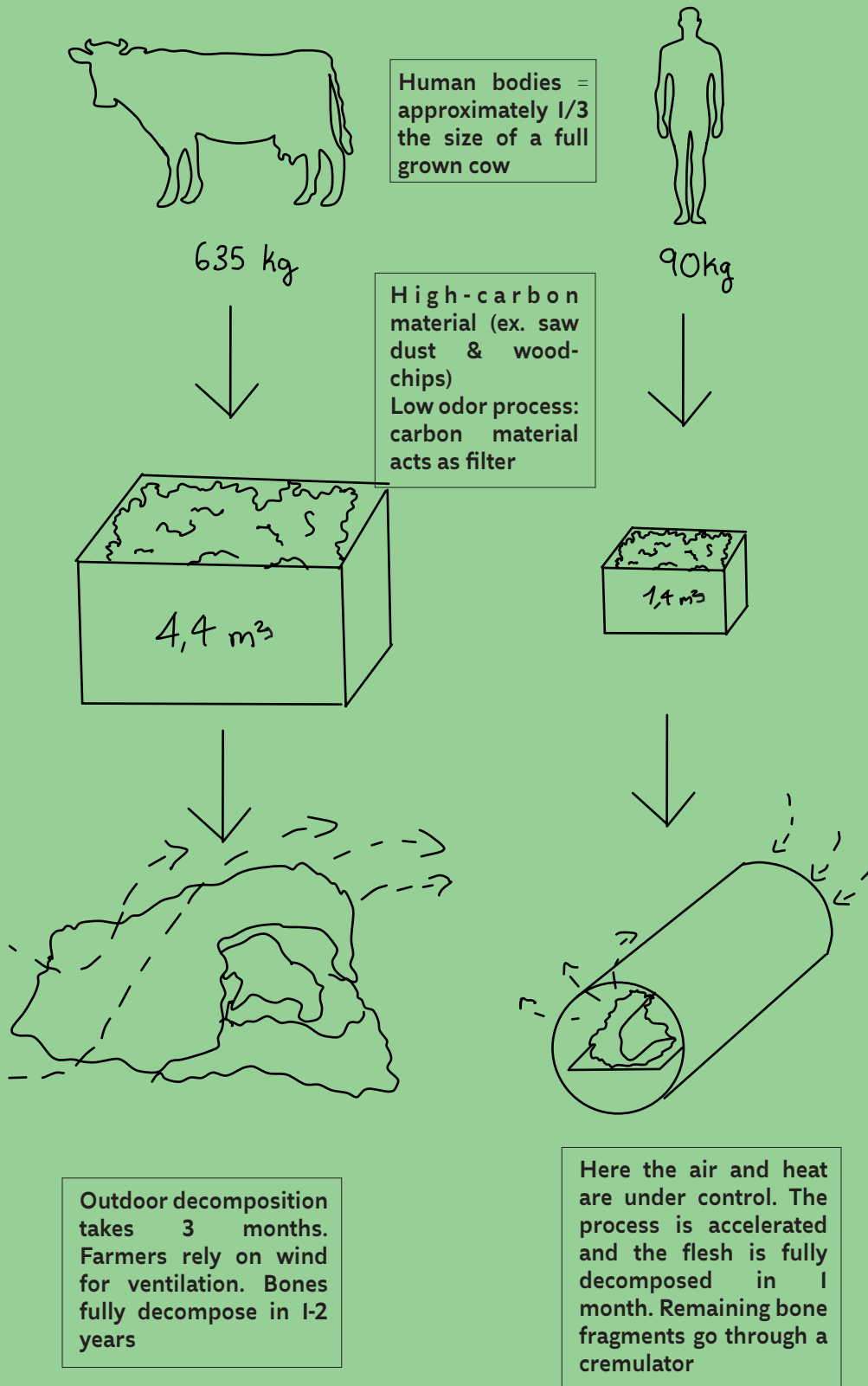


Figure 19: Livestock Decomposition applied to human body. Redrawn by Author. Spade, K. (2013). Of Dirt and Decomposition. [online] p.42. Available at: <https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=2213&context=theses>. [Sketch]

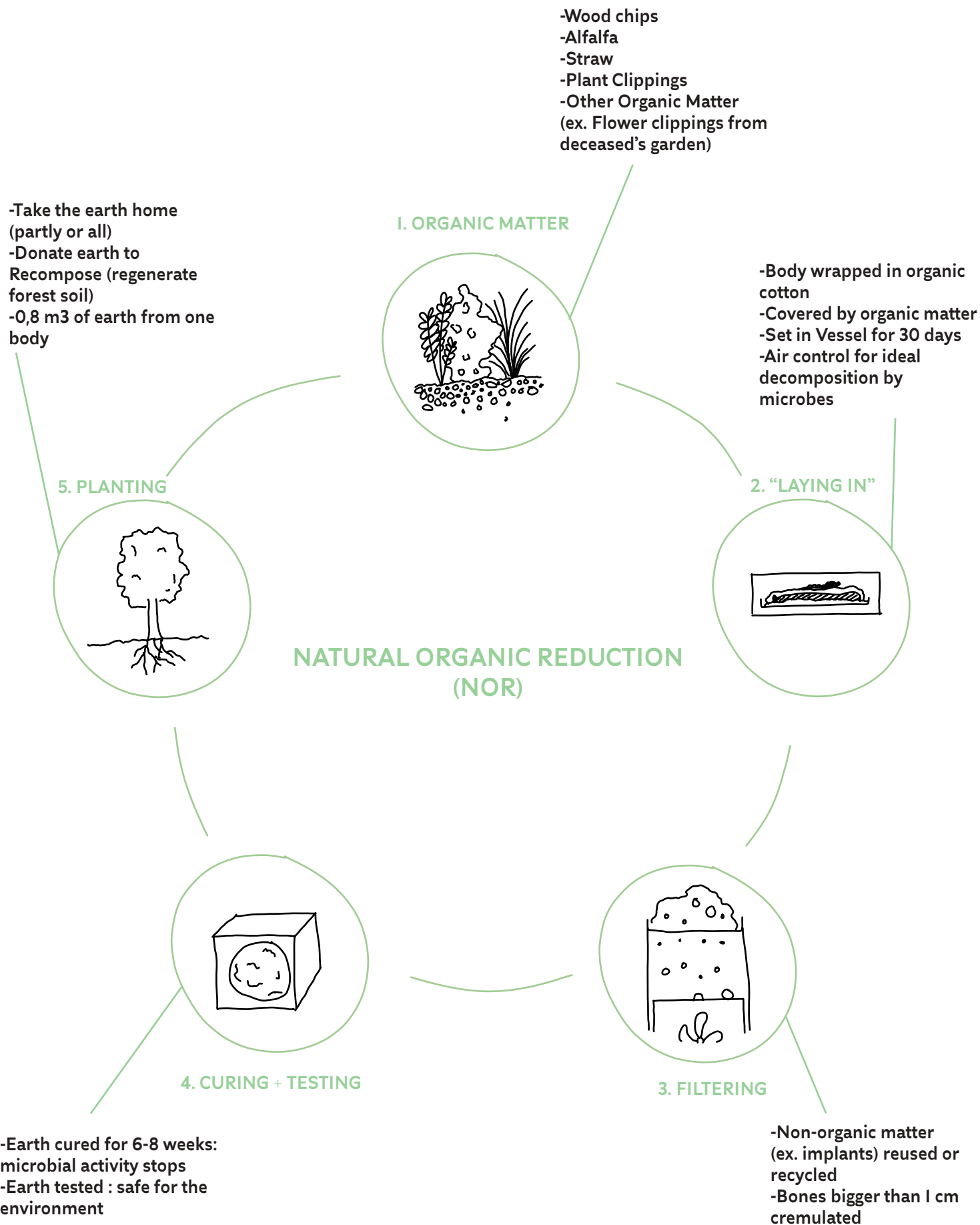


Figure 20: Recompose process. Redrawn by Author (2022). System Source: Recompose (2021). Available at: <https://recompose.life/> [Accessed 25 August 2022]. [Diagram]



Figure 21: Recompose laying in ceremony. Source: <https://www.nytimes.com/interactive/2022/12/05/opinion/human-composting-new-york.html> [Accessed 27 January 2023] [Image]

3. DEATH IN ZURICH - TRADITION, CULTURE & PERCEPTIONS

“The natural process of corruption and decay has become disgusting, as disgusting as the natural process of birth and copulation were a century ago; preoccupation about such processes is (or was) morbid and unhealthy, to be discouraged in all and punished in the young.”
-Geoffrey Gorer¹⁶

3.1 POPULATION & DEATH - STATISTICS

The canton of Zürich, with its 1.521 million inhabitants, is currently home to 17.6% percent of Switzerland's population (figure 22).¹⁷ Moreover, a total of 67'088 people die each year in Switzerland, therefore 11'814 die in Zurich (figure 23).¹⁸ In 2050, it is projected that the Canton of Zurich will house 1.882 million people: 18% of Switzerland's population (figure 24).¹⁹ The Swiss Federal Office of Statistics predicts that a total of 95'000 deaths will be recorded yearly in 2050 (figure 25). Thus if 18% percent of those deaths happen in the canton of Zurich, there will be a total of 17'100 deaths per year in 2050 in Zurich.

The reference of 2050 is used as it is an important ecological date set by the Swiss confederation. Death and population statistics guide us in understanding the needs in cemetery capacity on the logistical and spatial scale in the upcoming years. In the city planning interventions taken by the Confederations to reach these goals, spatial planning of cemeteries is not part of the equation. However, the proposal projected by this thesis asserts that albeit the small role cemeteries and more precisely body disposal methods play in the climate crisis, they could be part of an ecological urban solution. The project proposes that in 2050 all bodies in Zurich (17'100 a year) will therefore not be buried or cremated but rather composted.

The project imagines how this system would alter the cemetery after 100 years. The predictions of population and death count in the year 2150 are harder to find and remain inaccurate. However, according to U.N. projections, there will be a total of 2'100'000 inhabitants in Zürich in 2150 and 20'000 deaths a year.²⁰ These numbers guide the design proposal of the cemetery garden over the course of 100 years from 2050 to 2150.

¹⁶Gorer, Geoffrey. *Death, Grief and Mourning: A study of Contemporary Society*. 1965. p. 196

¹⁷www.citypopulation.de (Accessed 12 Oct. 2022)

¹⁸www.macrotrends.net(Accessed 12 Oct. 2022)

¹⁹Swiss Confederation, FSO. 2018.

²⁰ <https://www.macrotrends.net> [Accessed 25 Jan. 2023]

Figure 22: Population Distribution per Canton in Switzerland, 2018. by Author. (2022). Source: <http://www.citypopulation.de/en/switzerland/cities/> [Accessed 4 Oct. 2022]. [Graph]

Figure 23: Amount of Deaths per Year in Switzerland and Zurich. by Author. (2022). Source: FSO (2018). Available at: <https://www.bfs.admin.ch/bfsstatic/dam/assets/16644533/master> [Accessed 4 Oct. 2022]. [Graph]

Figure 24: Zurich's Population Evolution Forecast. Redrawn by Author. United Nations (n.d.). Source: <https://www.macrotrends.net/cities/22606/zurich/population>. [Accessed 4 Oct. 2022]. [Graph]

Figure 25: Development of number of deaths in Switzerland 1990-2050. FSO (2018). Source: FSO (2018). Available at: <https://www.bfs.admin.ch/bfsstatic/dam/assets/16644533/master> [Accessed 4 Oct. 2022]. [Graph]

2018

POPULATION DISTRIBUTION SWITZERLAND

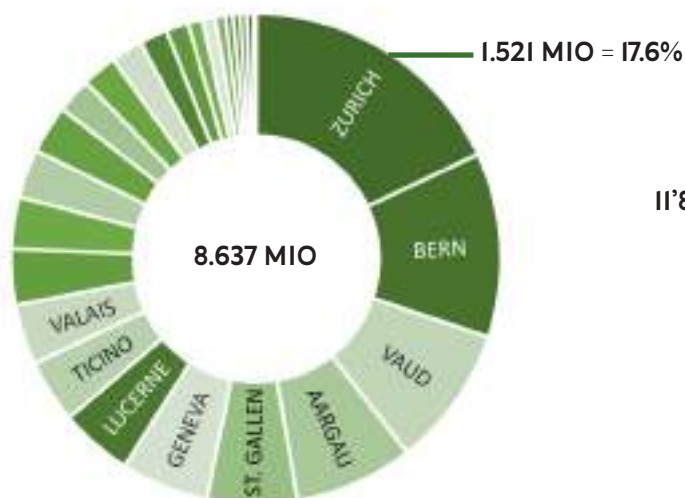


Figure 22

AMOUNT OF DEATHS YEARLY (2018)

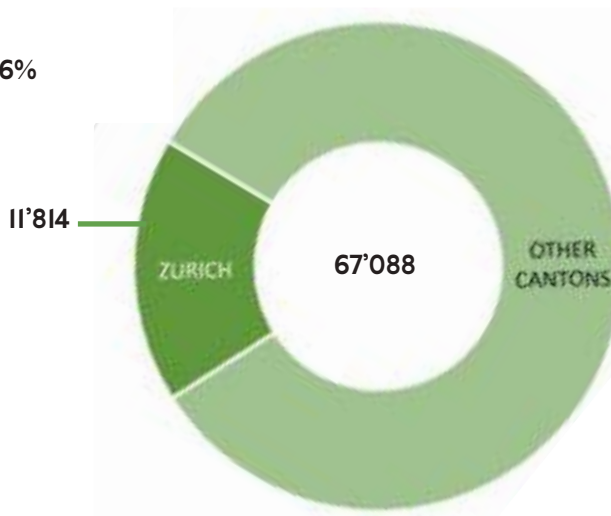


Figure 23

2050

ZURICH POPULATION GROWTH FORECAST

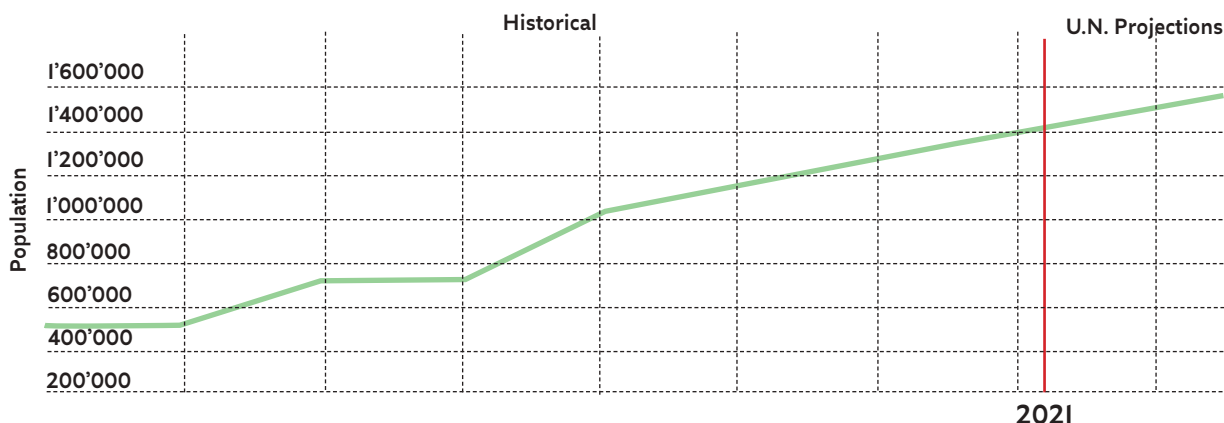
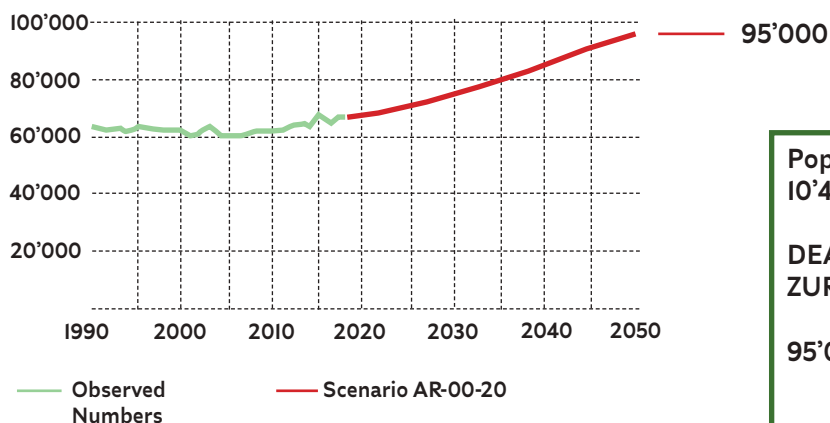


Figure 24

POPULATION FORECAST 2050 ZURICH: 1'882'00

DEVELOPMENT OF NUMBER OF DEATHS, 1990-2050



**Population forecast Switzerland 2050:
10'400'000 (ZURICH= 18%)**

**DEATHS PER YEAR IN THE CANTON OF
ZURICH IN 2050:**

95'000 X 18%

Figure 25

3.2 THE PERCEPTION OF DEATH

-FROM ACCEPTED TO TABOO

From the Idea of Death to the Idea of Mortality

Throughout the middle-ages and as far back as the history of death practices goes, there was a big sensibility towards the moment when one died. The physical death generally happened in bed and surrounded by people. The dying man knew he would die and accepted it even though he regretted leaving his life. With the renaissance came an important schism in the Christian religion. The Christian religion changed, and the clergymen stopped deathbed conversions. According to Ariès this is a major influence in the way death was perceived: the idea of death (the final moment; the actual act of dying) is replaced by the idea of mortality. The focus is therefore on life and the constant awareness throughout life that we are mortal.²¹

This new distance in the attitudes towards death has a consequence on cemeteries. Before, cemeteries were churchyards: their position next to churches was essential. Being buried ad sanctos was crucial. In fact, it was so important to be buried close to the saints that many churches were used as burial grounds as well (chambers, charnels, sarcophagus...), the richer people were, the closer to the saints they were buried. With the distancing of the self to death, cemeteries started being relocated.²²

From the Victorian Death to the Modern Death

According to Ariès, there is a revival of the cemetery and the approach towards death in the 19th century: "So the public cemetery becomes the focus of all the piety for the dead. [...] it becomes a "cultural institution"; I would even call it a religious institution."²³ Gorer explains that from the 13th century all excessive feelings regarding death were "repressed or ritualised. But after the eighteenth century we sense a rising need to proclaim one's grief, to advertise it on the tombstones, which now becomes something it was not, the privileged place of memory and regret."²⁴ Gorer highlights that: "Children were encouraged to think about death, their own deaths and the edifying or cautionary death-beds of others. It can have been a rare individual who, in the 19th century with its high mortality, had not witnessed at least one actual dying, as well as paying their respect to 'beautiful corpses'; funerals were the occasion of the greatest display for working class, middle class and aristocrat."²⁵ This era was marked by progress and change. The 19th century was overwhelmed with technical and intellectual advances which made it hard for people to find meaning. According to Tara Heimberger, death was therefore an anchor.

It was the one thing that people were sure of the "memento mori", Latin for "remember, we must die" became extremely popular.²⁶ It allowed people to psychologically hang on to the thing they could be sure of.

Death Taboo

A shift occurs in the perception of death from the end of the 19th century to the 70's as death becomes a taboo. Many factors influenced this evolution from death being accepted to taboo. First, there is a massive decline in religious belief. With the decline of religion and rituals people trouble to find the appropriate way to mourn. Another influential element is the decrease of mortality rate as medicine starts to rise due to important advances in science. The third important change is the increase in violent deaths with World War I or the introduction of cars in everyday life. Thus, in a short period of time, death became a taboo: therefore, prohibited by custom rather than by law.²⁷

Sanitary questions become central and cemeteries are relocated outside of the city boundaries.

In the 1960's however, people started to write about the sociological aspect of death, another shift in perception arises: death is less a subject of taboo but still something that we do not openly talk about; "death hidden" as Philippe Ariès calls it.

Although there has been a definite evolution of the perception of death, it remains a topic that people have difficulty talking about. When reading Gorer's book, it is impressive to notice how little has changed in our ways of dealing with death. On one hand, although religious belief has suffered a decline in the past century, death remains a religious preserve. It is extremely rare that a body is disposed without a ceremony. Nearly all death ceremonies remain religious despite a certain decline in religious funerals.²⁸

On the other hand, Gorer talks about how we tell children about death. He notices how rarely people tell children that someone has "died" and how often people use euphemisms. Paradoxically, people who aren't religious have a tendency of using religious euphemisms such as "gone to heaven".²⁹

The Fear of Death

The fear of death is largely due to the mystery it carries but also our natural reaction when witnessing death. Grief is an "endopsychic" reaction and "the work of mourning can be assisted or impeded, and its beginning outcome facilitated or rendered more difficult by the way in which the mourner is treated by his society in general [...] Similarly, the aid which ritual may give in dealing with grief and providing patterns for mourning is almost completely ignored."³⁰

It is therefore up to society to create adequate environments for new rituals surrounding the theme of death. In this sense, cemeteries or places of burial must create a healthy environment not only for the dead but for the living as well. Ideally, death should be represented through a reassuring and peaceful environment for our perceptions to change.

Most cemeteries in Switzerland are places where trees and grass weave themselves between rows of tombstones. The use of plants and trees in cemeteries illustrates the importance of nature when it comes to create a serene and peaceful environment (figure 27, page 31). Nature is often the symbol of a neutral, reassuring, comforting and regenerating space. Therefore, the importance of nature in Sihlfeld cemetery is primordial.

²¹Ariès, Philippe. *The Hour of Our Death: The Classic History of Western Attitudes Toward Death Over the Last One Thousand Year.* 1977. p. 314

²²Ibid. p. 318

²³Ibid. p. 524

²⁴Ibid. p. 529

²⁵Gorer, Geoffrey. *Death, Grief and Mourning: A Study of Contemporary Society.* 1965. P. 195

²⁶Heimberger, Tara. *The Victorian Obsession with Death.* 2016. p. 2

²⁷Ariès, Philippe. *The Hour of Our Death: The Classic History of Western Attitudes Toward Death Over the Last One Thousand Year.* 1977.

²⁸Gorer, Geoffrey. *Death, Grief and Mourning: A Study of Contemporary Society.* 1965. p. 20

²⁹Ibid. p. 11

³⁰Ibid. p. 150-151

3.3 MOURNING AND RITUALS

-SYMBOLS OF GRIEF

MOURNING

Ariès explains that the high symbolic of death and mourning rituals was still very present during the beginning of the 20th century. At that time, death belonged to the community: “it altered the space and time of a social group”. “The shutters were closed in the bedroom of the dying man, candles were lit, holy water was sprinkled; the house filled with grave and whispering neighbours, relatives, and friends. At the church, the passing bell tolled and the little procession left carrying the Corpus Christi.”³¹

Even after death appeared in physical signs: a notice of bereavement was hung on the door of the house, all doors and windows were shut except the front door that was left open for visitors, at the church the whole community would gather, then a slow procession to the cemetery was saluted by people passing by. “The period of mourning was filled with visits: visits of the family to the cemetery and visits of relatives and friends to the family [...] The death of each person was a public event that moved, literally and figuratively, society as a whole.”³²

Even though death remains a societal event, it is no longer as present. There is no visible sign of knowing that someone has died. In Zurich for example, the traditional hearse has been replaced by a van.³³

According to Gorer, the decline in mourning and in the dignity of funerals is in part due to the increase in cremation. “To choose cremation is to reject the cult of tombs and cemeteries as it has been developed since the beginning of the nineteenth century.”³⁴

It has reached a point at which mourning is now “suppressed” by society. Ariès declares: “Society refuses to participate in the emotion of the bereaved. This is a way of denying the presence of death[...]”. “A heavy silence has fallen over the subject of death.”³⁵

However, it is also due to a drastic decrease in the religious landscape. The amount of people without religious affiliation has increased by 10% in 10 years in Switzerland (figure 26).

The gradual physical detachment from the process of death and from religion have led us to fear death. Therefore, the search for a new meaning to give to death is present. The project proposes that natural organic reduction can design new forms of ritual that implicate the mourners in the process. A closer interaction with death and the natural process of decay can ultimately generate a new spirituality thus changing our perception of death.

³¹ Ariès, Philippe. *The Hour of Our Death*. p. 558

³² Ariès, Philippe. *The Hour of Our Death*. p. 558

³³ *Ibid.* p. 559

³⁴ *Ibid.* p. 577

³⁵ *Ibid.* p. 614

EVOLUTION OF RELIGIOUS LANDSCAPE

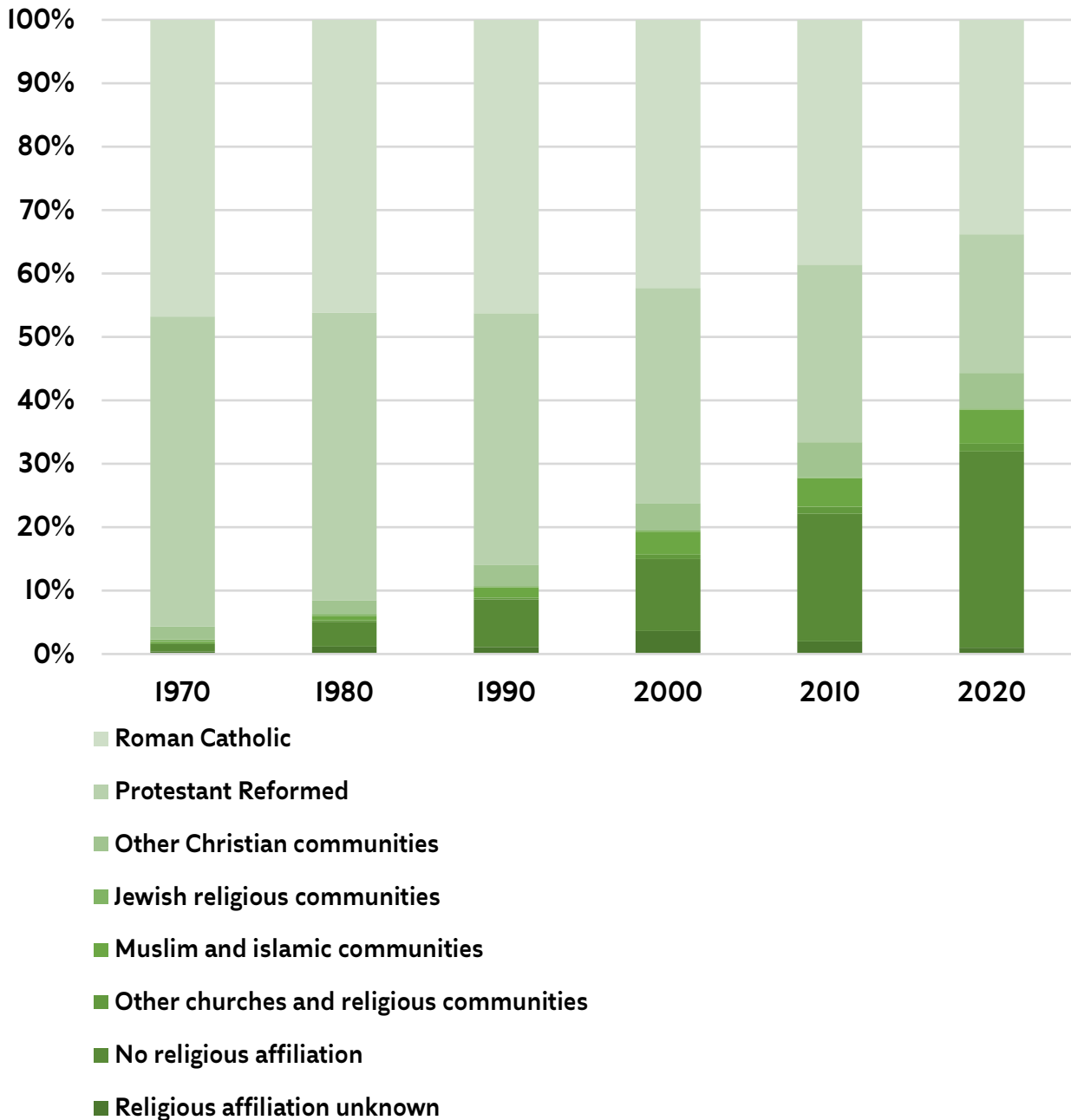


Figure 26: Decrease in religious belief, increase in secularisation. Redrawn by Author. Source: FSO - FPC (1970-2000), Structural Survey (2010-2020). [Graph].

THE ROLE OF THE RITUAL

The funeral constitutes one of the “Rites of Passage” defined by Van Gennep, moreover he defines this ritual as a “rite of separation”.³⁶ The funeral is therefore a key ritual in life and as mentioned by Guy Cook and Tony Walter, rituals can be considered as a form of communication.³⁷

However, in our current funerary practices, there is a lack of movement or actions of the participants. Walter and Cook highlight this clearly by reminding us that : “ This is a notable change, as a rite of passage is a distinctly embodied rite: there is a bride and groom to be married, a baby to be named, a coffin to be buried. The rite entails movement of these key actors in space and time; indeed their journeys (of the bride up the aisle accompanied by her father, of the coffin from sight) symbolize the social journeys (from single to married, from wife to widow, from child to orphan) that the rite marks and enables.”³⁸ Their theory is that in both religious and secular funerals there is a tendency of de-ritualization.³⁹

Patrick Sweeny claims that rites celebrated after a death can help in the consolation of the bereaved.⁴⁰ He even mentions that in order to go through the stages of grief, one must accomplish the following 6 actions in the first weeks after the death:

“1. They must come to believe that the death has occurred.

2. They must make sense of the absurdity of death.

3. Feelings must be expressed.

4. The body must be disposed of.

5. Relationships must be reorganized.

6. Social support must be marshalled”⁴¹

“The rites can provide a gradual way for parting with loved ones, and a secure containing context for expressing strong feelings. They can assist the bereaved in the task of making sense of what is happening, through the linkage of their specific story of death with the Great Stories of the Tradition. Through the rites, relationships can be re-organised and social support mustered. But maybe most important of all, the rites can enable the bereaved to do something at a time when nothing can be done.”⁴²

PERCEPTIONS, CEMETERIES & RITUALS

The evolution of the perception of death highly influenced the placement of the cemetery as well as its relationship with the urban fabric. (Figure 28) Thereby, it also changed the rituals regarding death (chapter 3.5) thus influencing the way we mourn and how we deal with grief. The graveyard changed from churchyard, to cemetery, to park and has now the possibility to change again. The proposal suggests that if we change our disposal methods, we do not only redefine cemeteries but also our rituals and perceptions regarding death.

³⁶Van Gennep, Arnold. *The Rites of Passage*. 1960. p. 11

³⁷Cook, Guy. Walter, Tony. *language and social relations in traditional and contemporary funerals*. *Discourse & Society*. 2005. p. 367

³⁸*Ibid* p. 377

³⁹*Ibid* p. 384

⁴⁰Sweeny, Patrick. *Funeral Rites and the Consolation of the Bereaved*. *The Furrow*.1992. p. 395

⁴¹*Ibid*. p. 398

⁴²*Ibid*. p. 405

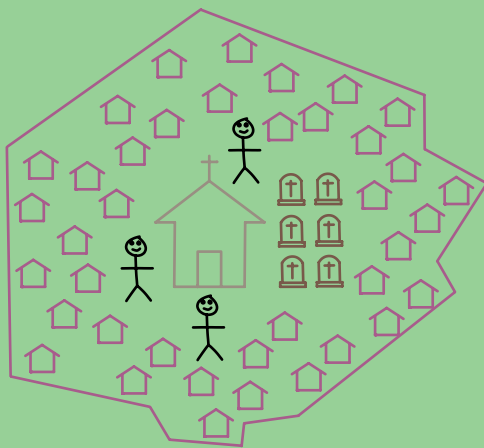


Figure 27: Gardening in Sihlfeld Cemetery. Source: Locker und Hänsli (1989). *Wo Zürich zur Ruhe kommt*. [image]

CHURCHYARD
Up to 19th century

DEATH ACCEPTED

Central placement of churchyard within the city



CEMETERY
From 19th century to mid 20th

DEATH TABOO

Psychological and physical distancing to death

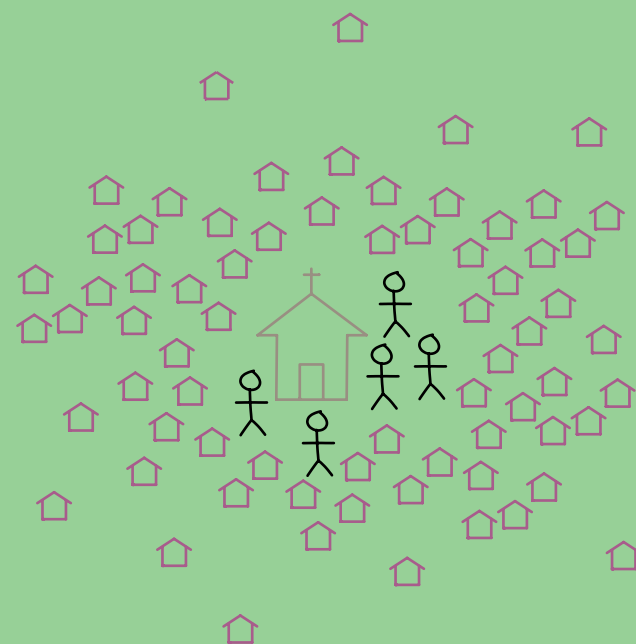


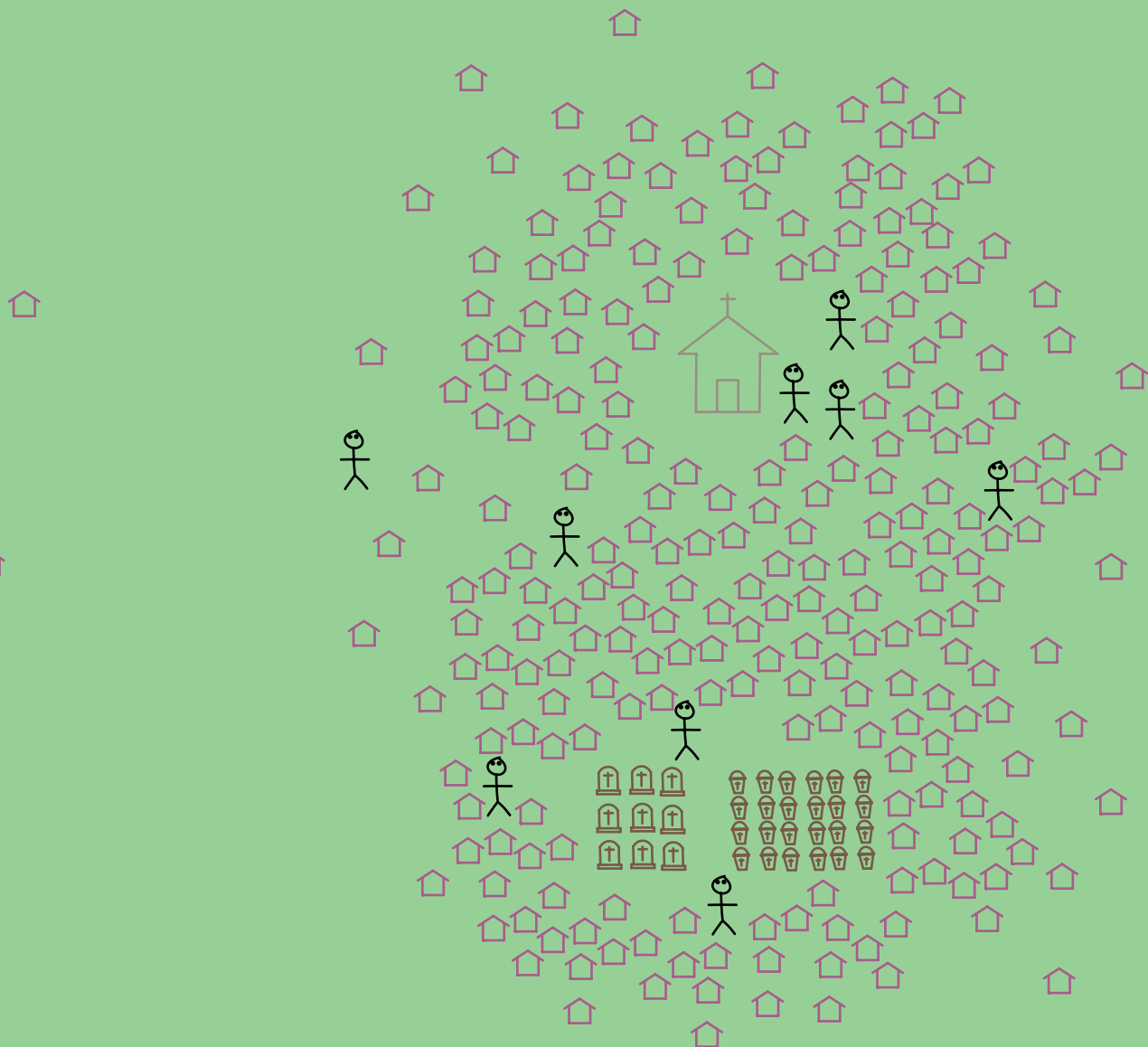
Figure 28: Co-influence of the perception of death and the physical cemetery as well as its placement in regards to the city. by Author (2022). [Sketch]

PARK

From mid 20th to now

DEATH FEARED

Increase in Cremation means less graveyards
Cemeteries become parks
Further distancing from Death as it is feared
and cemeteries no longer present death with an
abundance of tombstones



3.4 HISTORY -BUILDING CEMETERIES

When Zwingli (1484-1531) came to Zurich and started the Reformation of the Catholic Church, he banned the use of grave markers and burials in churches; churchyards simply became empty meadow areas. It is only in 1845 that grave markers became legal again.⁴³

In the 19th century, the cemeteries started being saturated and therefore many cemeteries were built. This constant increase in the number of cemeteries complicated the allocation of burial places: some family members were buried in different cemeteries. Furthermore, the question of space was still problematic: the graves were often refilled causing unsanitary and irreverent situations. Frequent complaints about the unbearable smell in the vicinity of the cemeteries required a general improvement in the burial system.⁴⁴

In 1840, plans were made to create a central cemetery in Selnau. This project was rejected by the population because it was considered too complex. The main cemeteries of the city of Zurich, Grossmünster, Fraumünster and Hohe Promenade (figure 29), became overcrowded in the early 1870's. Additionally, the loamy nature of the soil prevented the corpses from decomposing.⁴⁵

In 1874, the burial system which was in the hands of the churches for centuries was revised by the Federal Constitution and thus transferred to the political communities. The city of Zurich bought the area in Wiedikon, previously agricultural land, from the parishes and began planning a central cemetery (soon to be Sihlfeld Cemetery). The aim was to create a cemetery in which all residents of the city were to be buried, regardless of denomination, religion or social rank.⁴⁶

In Zürich there are now 4 cemeteries that are over 100'000 square meters and a total of 19 publicly owned cemeteries. The design and intention of these cemeteries are similar. They appeared around the same time and thus inscribe themselves in a similar context. A context where the cemeteries started being built outside the city walls, a context where cemeteries were no longer churchyards but became independent park like structures. (figure 30).⁴⁷

There has been a clear evolution of the cemeteries that have grown to adapt to the size of the city and have found themselves once again within or at the borders of the urban fabric. This has altered the way the rituals are carried out.



Figure 29: The now closed Hohe Promenade cemetery with the cemetery chapel (today English church) and gravestones. Source: Michel, R. (2001). Der Friedhof Sihlfeld in Zürich-Wiedikon. p. 5 [image]

⁴³<https://art21.org/read/mark-dion-neukom-vivarium/> (Accessed 5 September)

⁴⁴Loacker and Hänsli. *Wo Zürich Zur Ruhe Kommt*. 1998.

⁴⁵Mihcel, Regula. *Der Friedhof Sihlfeld in Zürich-Wiedikon*. 2001. p. 5

⁴⁶*Ibid*

⁴⁷Mihcel, Regula. *Der Friedhof Sihlfeld in Zürich-Wiedikon*. 2001. p. 6

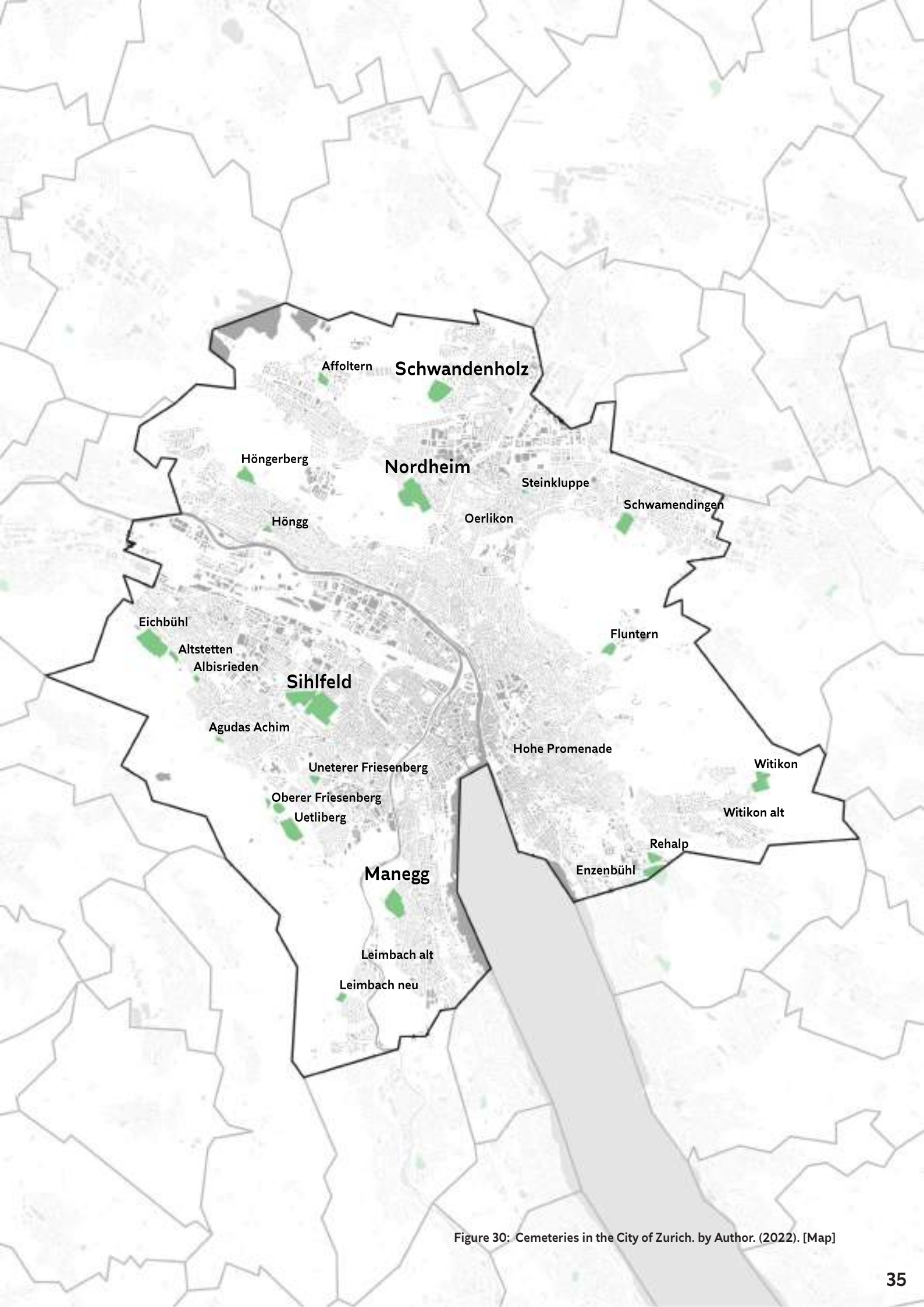


Figure 30: Cemeteries in the City of Zurich. by Author. (2022). [Map]

3.5 TRADITIONAL RITUAL EVOLUTION -CREMATION OVER BURIAL

EVOLUTION OF FUNERARY RITUALS

The sociocultural context at specific periods in history influenced the placement of cemeteries in relationship to cities. This went hand in hand with the perceptions of death. It inevitably changed the process of disposing of bodies and therefore drastically altered the rituals around death.

THE CHURCHYARD - UP TO 19TH CENTURY: The funeral and burial place merge. The site of burial is also the site of the final goodbye.

Before the creation of central cemeteries, burials took place at the “Churchyard”. When someone died, it was usually at home, thus the body would be cleaned and laid out by the family. Then the wake followed. People came by to pay their final respects to the deceased. A few days after the death occurred, the burial took place. First the body was carried to the church where a funeral mass took place. Then, a second procession carried the body to the burial site (next to the church). People were present as the body was put in its grave (figure 31, “THE CHURCHYARD”).⁴⁸

THE CEMETERY - FROM 19TH CENTURY TO MID 20TH: The site of the funeral and final goodbye are the same: the body is brought to the oven or burial plot. Symbolism and technology merged.

When the central cemeteries were built such as Sihlfeld, the funerals drastically changed. It was no longer possible to have processions from the place of wake to the cemetery since the cemeteries were built outside of the city walls. Thus the cemeteries were equipped with mortuaries where the bodies were prepared and laid out for the wake. On the funeral day, the bodies were carried from the mortuary to the burial site where a final mass was carried out. For those who started choosing cremation, the body was brought from the wake to the crematory. There, the final goodbyes were said as the body was carried directly to the oven. Some family members waited a few hours for the cremation to take place and then carried out a final ceremony for the laying in of the ashes (figure 31, “THE CEMETERY”).

THE PARK - FROM MID 20TH CENTURY: The funeral and burial place are no longer merged. Only the closest people to the deceased assist the burial. The cremation and funeral are 2 distinct places. The final goodbye happens when the coffin is put into the hearse to be brought to the crematorium. The crematorium typology changes: several ovens are lined in basements, it becomes an industry.

Nowadays, the number of cremations has largely surpassed the number of burials. This has led to an “industrialisation” of funerary rituals.⁴⁹ A new spatial interruption occurred as the cremation does not happen at the same place as the ceremony. Thus, the final goodbye takes place as the body is taken away by the undertaker in the hearse. Whereas the disposal of ashes usually happens in yet another place. When it comes to burials, the situation is similar since it does occur that some people are not buried next to the place of ceremony. If, however, the body is buried close to the final mass, the people who do attend the laying of the coffin in the ground are often only the closest family members (figure 31, “THE PARK”).

As the number of cremations in Switzerland is extremely high and the graves are turned over every 15-20 years, the cemeteries have an increasing amount of free space. (“In 1983, 30% of all deceased were incinerated. By 2013, the figure had risen to 90%”⁵⁰), Cemeteries such as Sihlfeld are therefore transforming these free spaces into parks.

Our current ritual regarding death has thus been shaped by a cultural and religious background (figure 32). In an increasingly secular society, this ritual has become industrial and has lost its importance. Thus, the current death care system plays an important role in the ritual and must find a way to offer rituals that can aid in the process of mourning. The proposal therefore imagines how the new ritual would look in regards to a secular society. A ritual based on natural organic reduction.

⁴⁸ Ariès, Philippe. *The Hour of Our Death: The Classic History of Western Attitudes Toward Death Over the Last One Thousand Year.* 1977. p. 496

⁴⁹ Interview Francis Müller

⁵⁰ Swiss prefer cremations to burials - SWI swissinfo.ch (visited 23.01.2022)

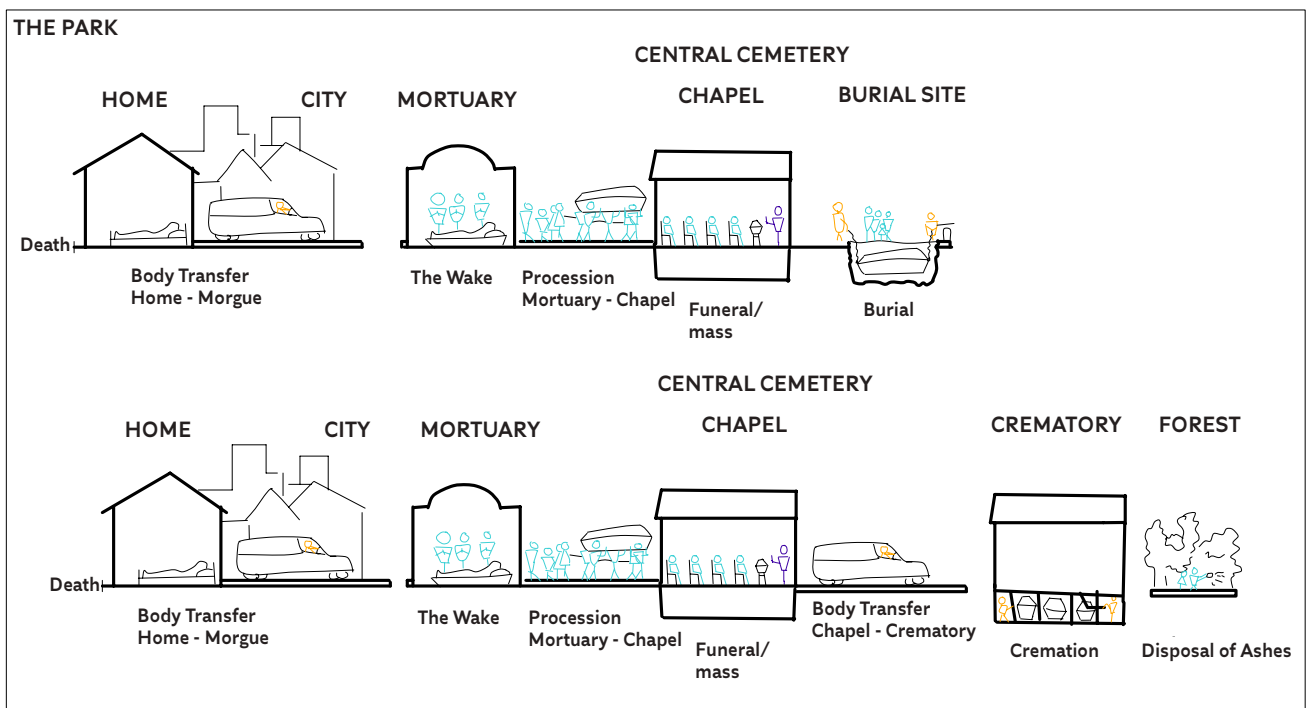
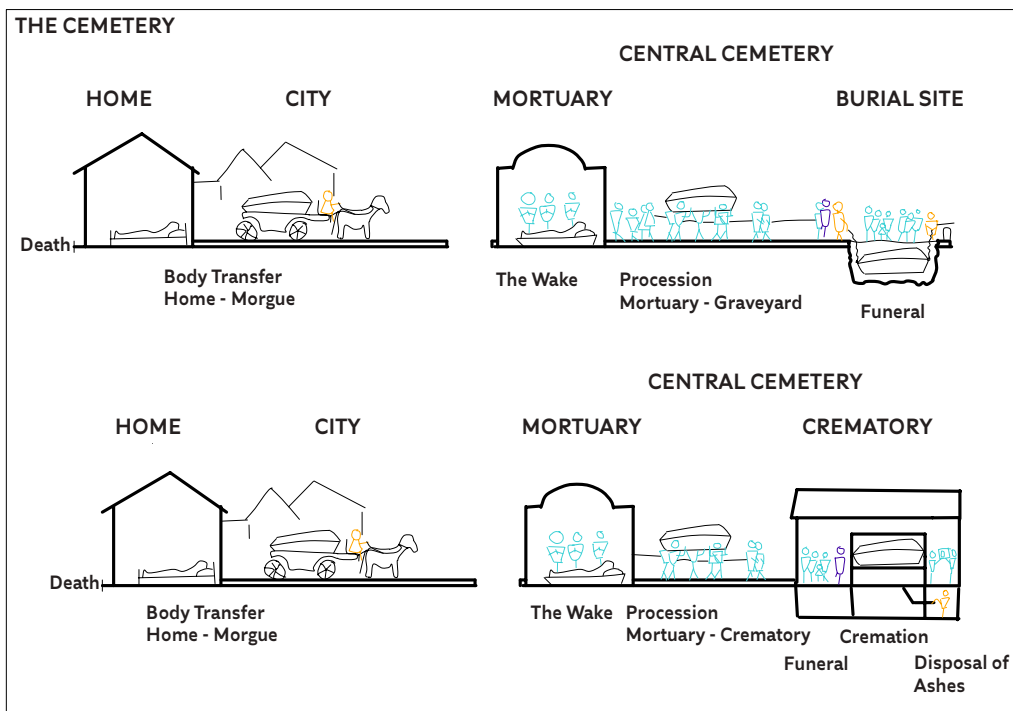
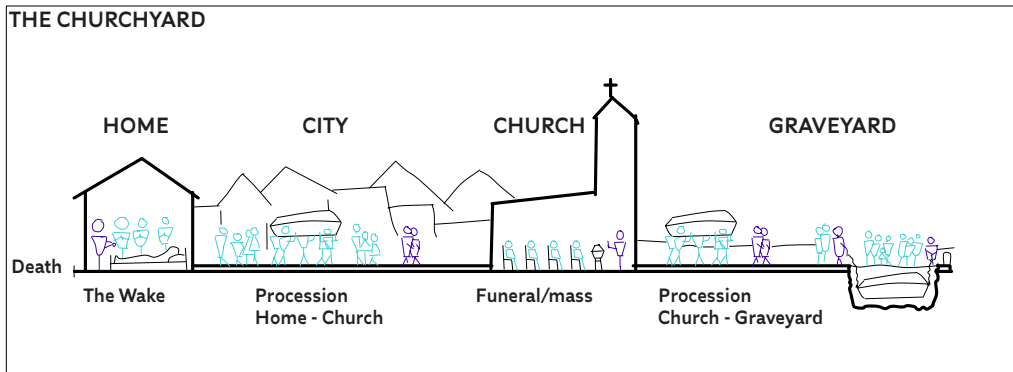
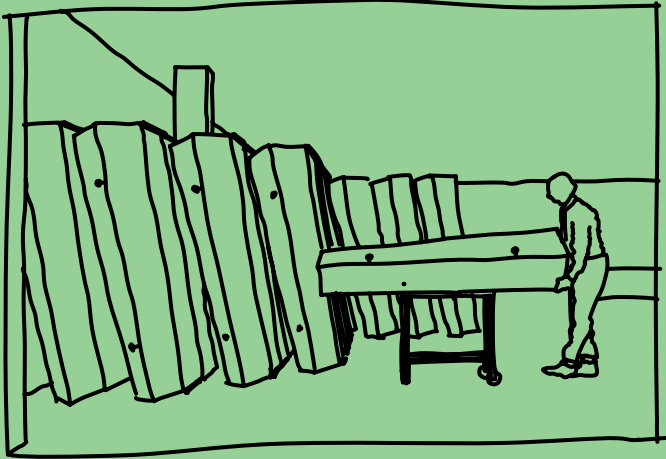


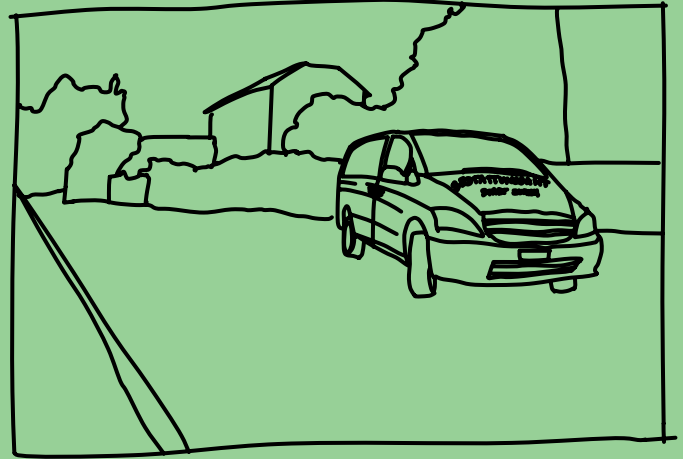
Figure 31: Evolution of Funerary Practices Overview. by Author (2022). [sketch]

3.6 CURRENT TRADITIONAL RITUALS - FROM DEATH TO DISPOSAL



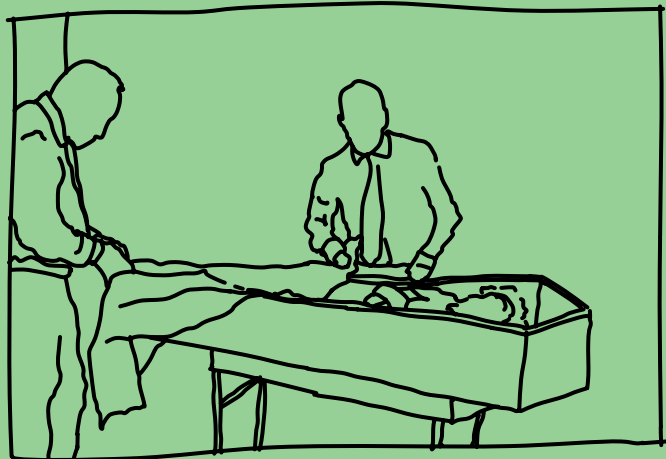
1. COFFIN CHOICE

- The Undertaker receives an official death notice
- The Undertaker chooses the right coffin size (coffins in Zurich are free of charge for the inhabitants of the city)⁵¹



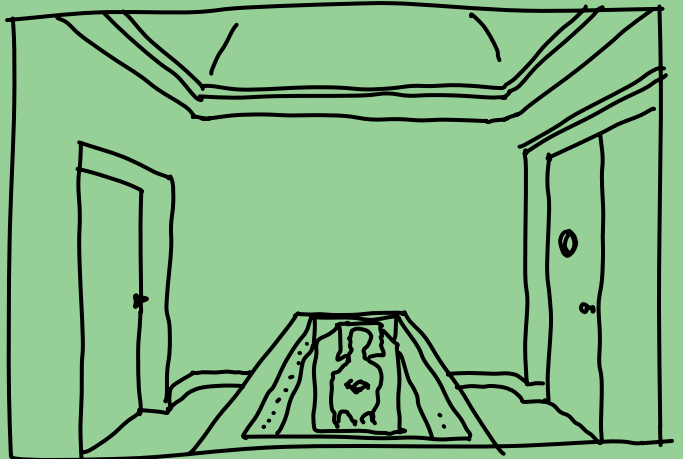
2. RETRIEVING THE BODY

- The Undertaker picks up the body
- Hospital, accidents, place of death, nursing homes etc.



3. EMBALMING

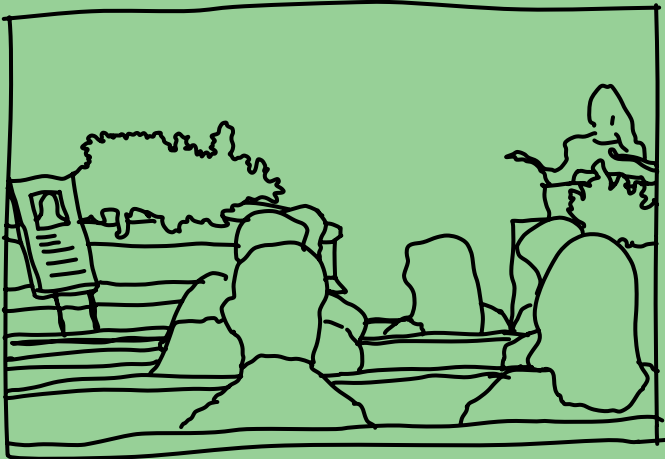
- Preparing the body for the “wake” (viewing of the body)
- Dressing
- Covering up injuries
- Laying out



4. THE WAKE

- Body is placed in a cooled room for people to come and pay their last respects
- The body remains in the room for 4-5 days

Figure 32: Storyboard of Traditional Ritual: from death to disposal of body. Drawn by Author (2022). Process source: Michael Müller. https://www.youtube.com/watch?v=olb-YOV_gUc&t=461s (Accessed 30 September 2022). [Sketch]



5. FUNERAL/CEREMONY

- Commemoration Ceremony
- Religious or secular



6. BURIAL

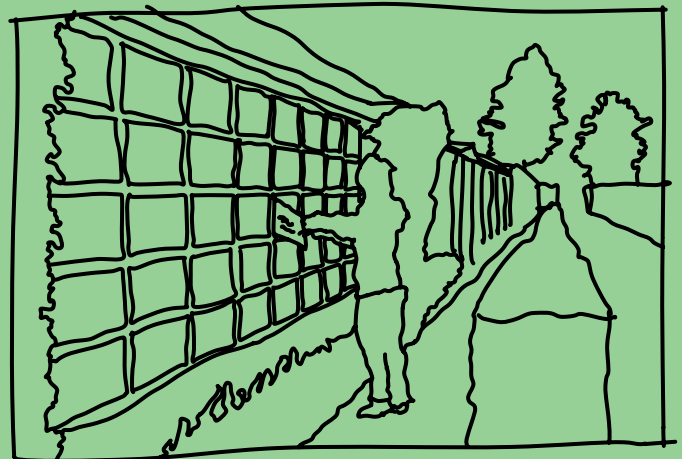
- The body is buried in a coffin, in front of a tombstone indicating year of birth and death as well as the name
- A last ceremony can be carried out at the site of burial

OR



7. CREMATION

- The body is brought to the crematorium by the undertaker
- The body is incinerated
- The remaining ashes are cremulated



8. DISPOSAL OF ASHES

- The ashes are placed in an urn
- This urn is given to the family members
- The family decides what to do with the ashes: the ashes can be put in an urn wall back in the cemetery, thrown in nature, kept at home etc.

⁵¹ Podium Discussion. "Hallo Tod! Zurück in die Natur", Podiumsgespräch über Alternative Bestattungsformen. 2022

4. SIHLFELD CEMETERY -ZÜRICH'S CENTRAL CEMETERY

“Besides, it is always the others who die.” (D’ailleurs, c’est toujours les autres qui meurent)
-Marcel Duchamp’s epitaph

4.1 SIHLFELD CEMETERY CONTEXT

The change in death care over the past centuries has largely influenced cemeteries such as Sihlfeld Cemetery.

Sihlfeld is currently the biggest cemetery in the city of Zurich (285'000 sqm) as well as the biggest continuous green space (figure 33).⁵²

Big parts of the cemetery no longer carry their original function of graveyard and have already been turned into parks. The cemetery thus has a hybrid function for various actors. The fact that it is now mostly a park has attracted a crowd of people that engage in activities that seem contradictory to the traditional uses of a cemetery. Sihlfeld cemetery is situated in the residential area of Wiedikon. It is adjacent to a school with sports fields, residential buildings (between 4 to 6 stories high), allotment gardens and streets (figure 34-40).

The site is divided in several parts that mark the gradual adaptation of the cemetery over time to the sociocultural context. This can clearly be felt when looking at the different entrances to the cemetery. The historical Sihlfeld A entrance (figure 34) is in a classical style whereas the entrance to Sihlfeld E is entirely modern with apparent concrete structures (figure 35). Although this fragmentation of the cemetery can be clearly observed, it is hard to notice that this green space is a cemetery from the outside.

Indeed, a row of dense vegetation separates the school sports fields from the urn wall belonging to the cemetery (figure 36) so that when looking from the school, it is impossible to perceive that a cemetery lies right beside it (figure 37).

This hiding of the cemetery from the exterior gaze is clear throughout the cemetery. Where there is a road, there is a wall. Even in spaces in-between, the cemetery’s vegetation takes over and hides the cemetery park. For example between Sihlfeld E and D1 there are allotment gardens (figure 38). Further down this road where there are no allotment gardens, there is a car park, lined with trees that hide the 2 sides of the cemetery (figure 39).

This closed aspect of the cemetery is once again related to the past and how the cemetery has evolved. For a long time, the cemetery had opening hours and would close during the night. Its unique function was that of a cemetery. However, when the cemetery transformed into park, it no longer had opening hours but the structures (walls) of the prior function remained. These witnesses of change give the park its historical value, a historical value that is important to understand in order to propose an alternative project for the cemetery of Sihlfeld.

⁵² Locker and Hänsli. *Wo Zürich Zur Ruhe Kommt*. 1998. p. 131



Sihlfeld Cemetery

- BUILT
- Buildings
- FOREST
- Forest
- forest
- LANDUSE
- Landuse
- cemetery
- commercial
- industrial
- park
- recreation_ground
- retail
- allotments
- Residential
- residential
- WATER
- Water





Figure 34: View from Aemtlerstasse of the main entrance gate. by Author (2022). [image]



Figure 35: Main entrance to Sihlfeld E from West side. by Author (2022). [image]



Figure 36: Urn Walls facing School: relics of Sihlfeld B. by Author (2022). [image]



Figure 37: Sports Fields next to the School. by Author (2022). [image]



Figure 38: Allotment Gardens between Sihlfeld D and E. by Author (2022). [image]



Figure 39: Parking in-between Sihlfeld C and D. by Author (2022). [image]

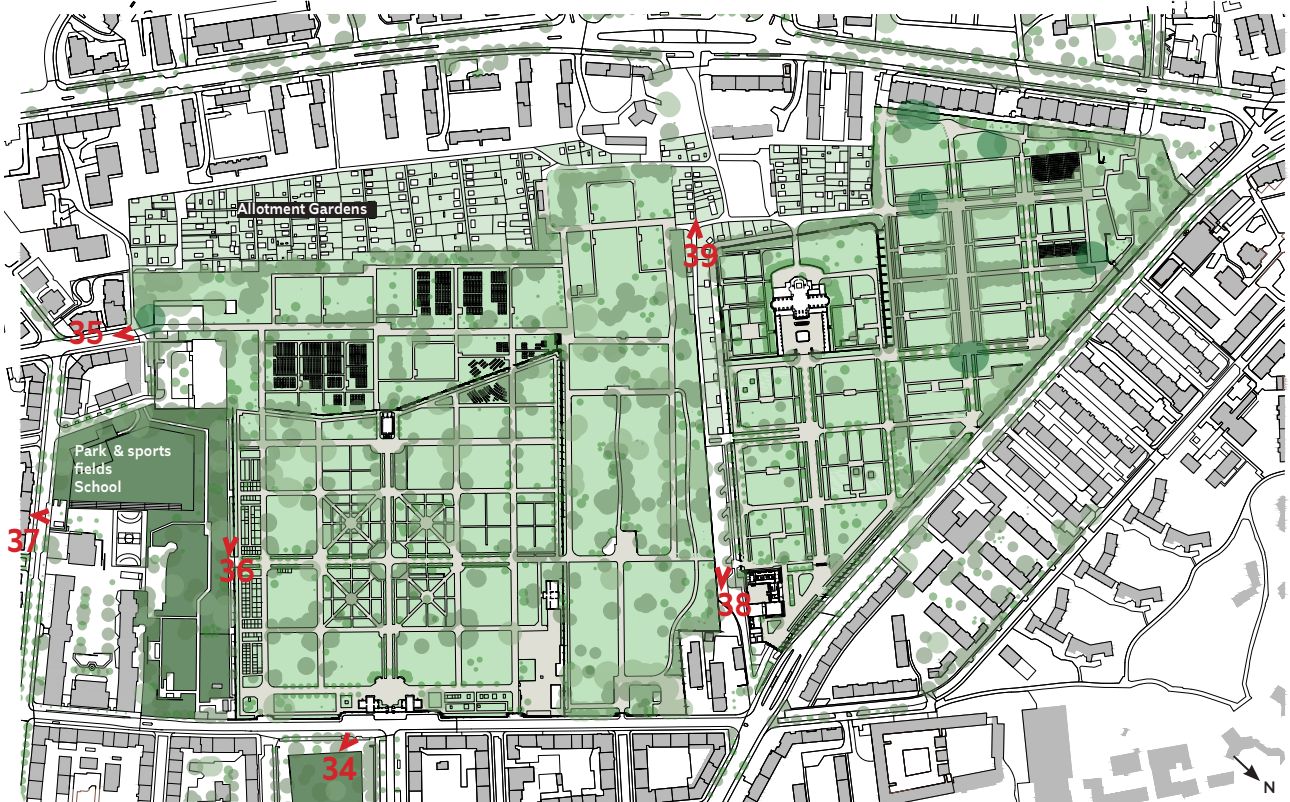


Figure 40: Map of Sihlfeld Cemetery. by Author (2022). Source: Stadt Zürich. [Map]

4.2 HISTORY

-A PALIMPSEST OF ZURICH'S GROWTH

The cemetery of Sihlfeld inscribes itself in the historical context described in chapter 3.4. The cemetery was established in order to solve the issue of the cemeteries within the city. These had become overcrowded and insalubrious. It is also in this context that cemeteries and funerals shifted from the hands of the church to those of the state (chapter 3.4 History - Building Cemeteries, page 34).

The architecture and concept of the cemetery was designed by Arnold Geiser (1844-1909). The aim was to create a non religious style with a symbolic language based on antique architecture. On Sunday, October 7 1877, the north-eastern half of today's Sihlfeld A was inaugurated. In 1892, the other half of Sihlfeld A opened and so did the crematory. This was the very first crematory in Switzerland and one of the first in Europe.⁵³

Sihlfeld A forms the core of today's Sihlfeld Cemetery, it is under monument protection. At the end of the central axis stands the old crematory in the form of a small temple.⁵⁴

The expansion of the cemetery with parts B (now belonging to the school next to the cemetery), C, D, and E followed the expansion of the city on a physical level as well as a political level (figure 42-45).⁵⁵

PIECING TOGETHER SIHLFELD (figure 41)

Before Sihlfeld cemetery was built, Sihlfeld was used for agriculture in a place that was set far from the city boundaries (figure 42).As mentioned previously, the first parts of the cemetery that were built were the 2 parts of Sihlfeld A in 1877 and 1892. Almost at the same time, in 1877, Aussersihl Cemetery was built and in 1876 Sihlfeld B was erected. Between 1893 and 1902, these 2 previously separate cemeteries, were incorporated in Sihlfeld Cemetery.⁵⁶ (figure 43)

In 1921, Aussersihl was converted into a public park.

The current Sihlfeld C was opened in 1902. (figure 44) Later, as a prolongation of the cemetery, Sihlfeld DI was set up between 1915 and 1917. From 1931 to 1932, Sihlfeld D was expanded to include part DII (figure 45). In 1958, the city council of Zurich decided that the cemetery sections A, B and C were to be gradually turned into parks. This was a way of improving the poor supply of open space in district three. Six years later another section of the cemetery was built: Sihlfeld E in 1964.⁵⁷

In 1969, Section B became a public facility now known as Aemtlerwiese. Then, between 1983 and 1987, graves were cleared from Sihlfeld C so that it could be radically transformed into a park. As a reaction to these changes, in 1991, parts A and C requested to be preserved legally. Therefore in 1997, the entire complex was placed under protection. In addition, selected burial sites are now under monument protection. Sihlfeld A is considered a valuable witness of times and a garden monument.⁵⁸

⁵³Mihcel, Regula. Der Friedhof Sihlfeld in Zürich-Wiedikon. 2001. p. 7

⁵⁴Mihcel, Regula. Der Friedhof Sihlfeld in Zürich-Wiedikon. 2001. p. 8

⁵⁵Mihcel, Regula. Der Friedhof Sihlfeld in Zürich-Wiedikon. 2001. p. 9

⁵⁶Maerki, Faye. Der Friedhof als öffentliche Parkanlage? 2011. p. 8

⁵⁷Ibid. p. 12

⁵⁸Ibid. p. 12

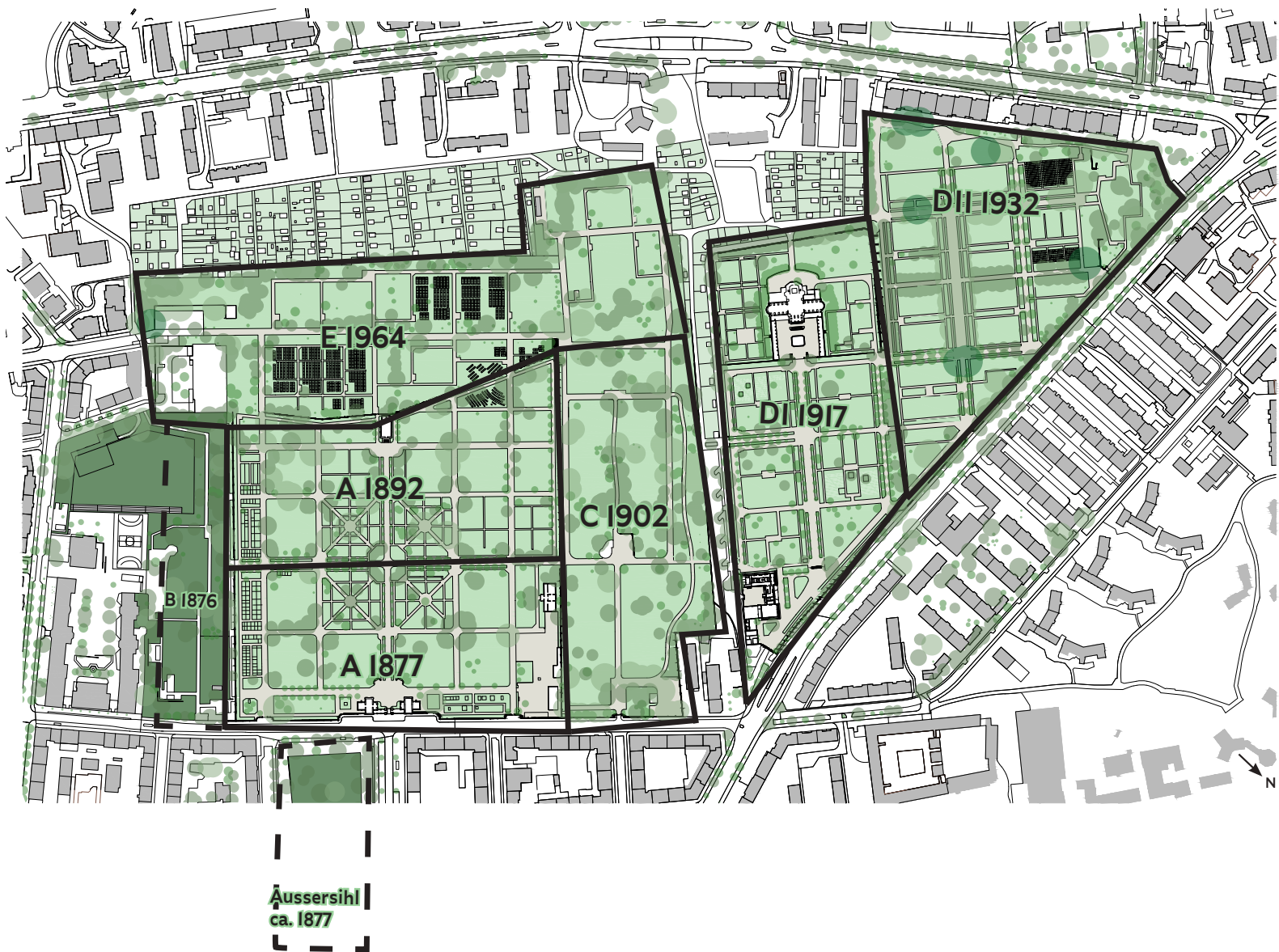


Figure 41: Map with parts of the cemetery and when they opened. by Author (2022). Source: Rohrer-A. & Hager (1998). Anthos : Zeitschrift für Landschaftsarchitektur = Une revue pour le paysage. [map]

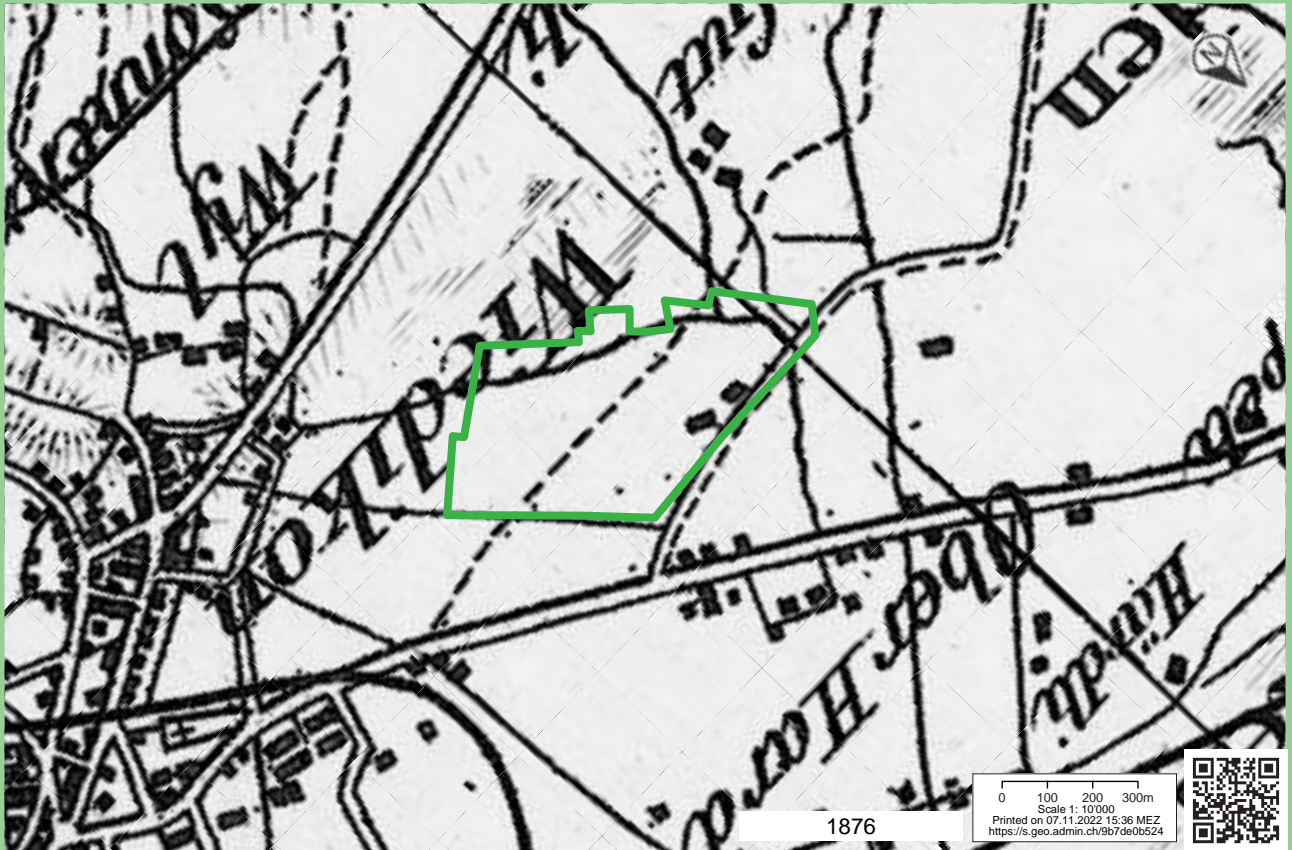


Figure 42: Map of Zurich, 1876: Before the central cemetery was planned, the site was agricultural land. Source: geo.admin.ch. [Map]



Figure 43: Map of Zurich, 1892: Central Cemetery Sihlfeld A is built before 1892, there is only the lower half of Sihlfled A. Source: geo.admin.ch. [Map]

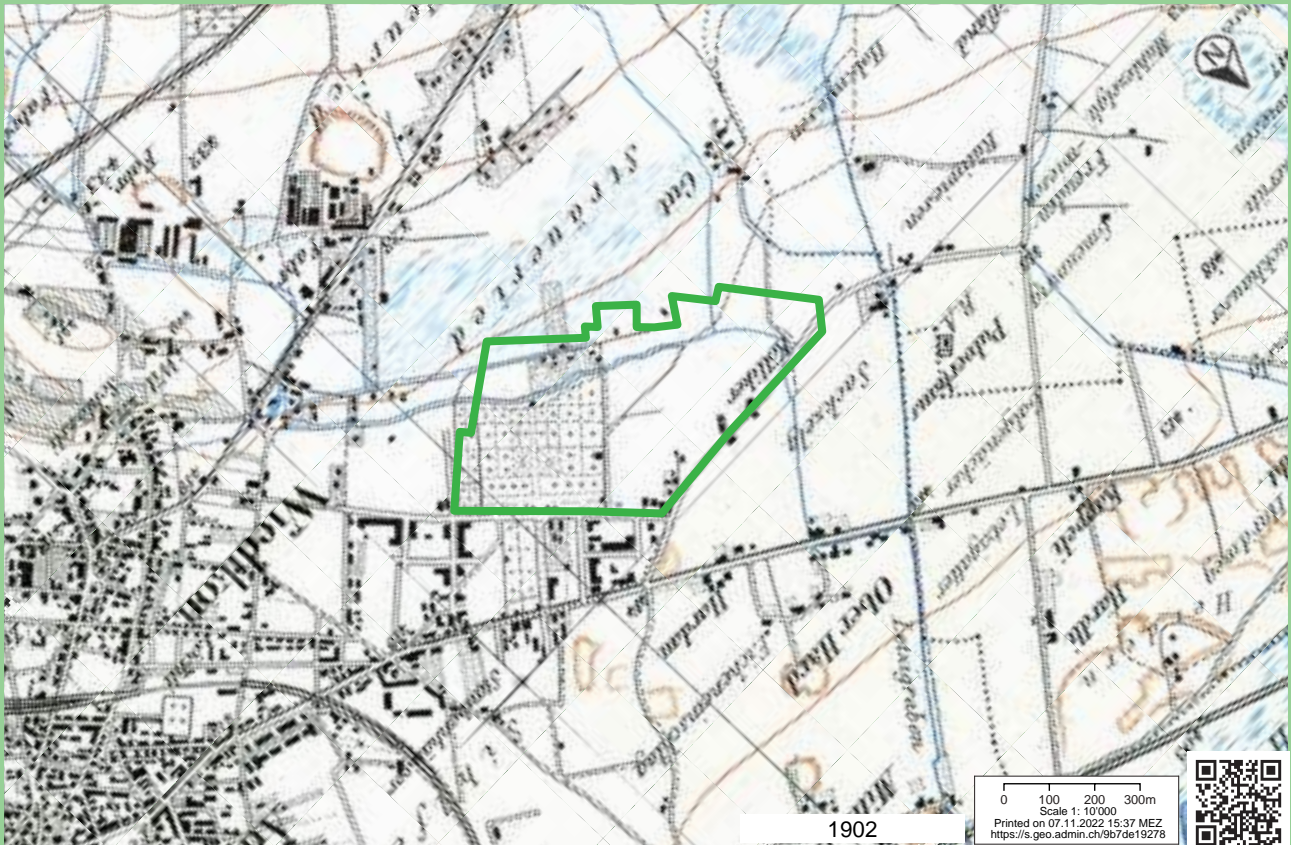


Figure 44: Map of Zurich, 1902: Now parts A and B are complete, there is also the Aussersihl part of the cemetery that has been added. Source: geo.admin.ch. [Map]



Figure 45: Map of Zurich, 1930: the plan of the cemetery starts resembling what it is now. Sihlfeld DII and E aren't built yet and B still belongs to the cemetery but will soon be removed. Source: geo.admin.ch. [Map]

When Sihlfeld was originally designed, it was meant to be a graveyard (figure 46). However now, in Switzerland, 9 out of 10 people are incinerated (this is an extremely high rate that is only matched by a few other countries such as Japan). The direct consequence of a high cremation rate is a drastic decrease in tombs and tombstones. (Figure 47 shows the amount of tombstones in 1923 that were then replaced by park like fields, figure 48). Thus, there is also a drastic decrease in people that visit cemeteries for their primary function: a place of commemoration.⁵⁹ The majority of people seen within the cemetery are people who seek the comfort and quite of the park as well as its nature, for leisure purposes.

⁵⁹Podcast: la nouvelle vie des cimetières. 2016. <https://www.rts.ch/audio-podcast/2016/audio/la-nouvelle-vie-des-cimetieres-suisse-25450193.html>

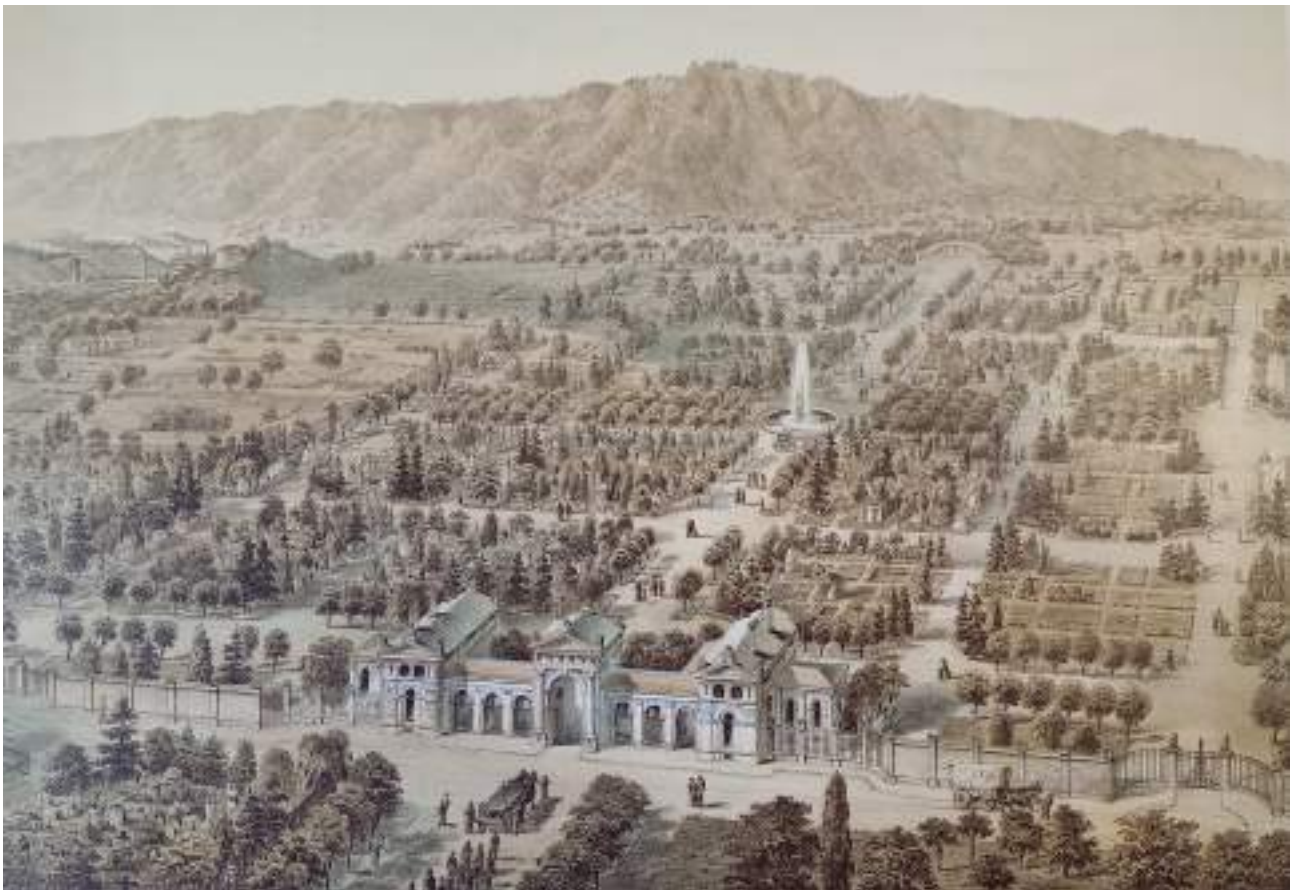


Figure 46: Sihlfeld Cemetery original drawing. Source: image of drawing from archives of Stadt Zurich. [Accessed: 12 Oct. 2022]. [drawing]



Figure 47: Sihlfeld Cemetery Image 1923. Source: <https://ba.e-pics.ethz.ch/catalog/ETHBIB.Bildarchiv/r/500588/viewmode=previewview/qsr=Sihlfeld> [Accessed: 16 Oct. 2022]. [photograph]



Figure 48: Sihlfeld Cemetery Image 2022. Source: Google Earth Pro [Accessed: 4 Nov. 2022]. [screen capture]

4.3 THE CEMETERY PARK - NATURE IN THE CEMETERY

Nature in all its shapes, sizes and forms is extremely present within the cemetery. As there is a decreasing amount of tombs, there is an increase in Park surfaces (figure 49). Some of these are clearly used as park with clean cut grass whereas as others are fields where nature is given the liberty to grow (figure 50), these contrast with the

few neighbouring plots that still contain rows of graves (figure 51). The cemetery is also bordered on most sides by natural features such as allotment gardens or parks (figure 52).

A park demands however a lot of maintenance, a maintenance that is carried out by Grün Stadt Zürich (figure 53 : sprinkler turned on for bushes and trees).



Figure 49



Figure 50



Figure 51



Figure 52



Figure 53

- Figure 49: Sihlfeld D. by Author. (2022). [img]
Figure 50: Sihlfeld C: field. by Author. (2022). [img]
Figure 51: Sihlfeld A: row graves. by Author. (2022). [img]
Figure 52: Sihlfeld E entrance, allotment garden adjacent. [img]
Figure 53: Sihlfeld A: left entrance. by Author. (2022). [img]

Nature in the cemetery is highlighted by signs indicating the benefits of certain zones for animals (figure 54). Moreover, the city has created ways to emphasize this nature with, for example, a walk that brings you to see different trees in Sihlfeld and explains how these trees benefit the environment (figure 55).



Figure 54: “Foxhole” explanation sign Sihlfeld. Source: <https://www.attilio-meyer.ch/blog/die-neue-signalistik-im-friedhof-sihlfeld-klar-modern-und-barriere-freundlich/> [Accessed 28 Jan. 2023]. [image]



Figure 55: Tree Observation Walk proposed by Stadt Verkehr 2025 Zurich. Source: https://www.stadt-zuerich.ch/ted/de/index/stadtverkehr2025/routen/plan_sihlfeld_baum.html. [screen capture]

THE CEMETERY PARK

The swelling in free space in cemeteries has led to an increase in pressure on the land that is precious due to its position within the urban context. In 1958, to compensate for the lack of green infrastructure within the city, it was decided that vacant plots in cemeteries would be used as parks. The problematic of the cemetery park lies in its multi-functionalities that are, to most people, contradictory. The previous Sihlfeld B and Aussersihl were easily transformed into traditional parks because of their peripheral placement in relationship to the main cemetery. However, Sihlfeld E, was defined as a Park for "Silent use" because of its placement within the still active cemetery.⁶⁰

When talking about their vision for the future of municipal cemeteries in the upcoming years, Grün Stadt Zürich writes: "Cemetery areas that are not required for burials for the time being, are available to the public as quiet and extensive parks. No commercial use takes place here and only events appropriate to the location take place".⁶¹

Conversations on transforming Sihlfeld C into a traditionally defined park have taken place, however the complex nature of a park must be taken into consideration. There are three key ecological problems when it comes to transforming Sihlfeld into a Park. The open spaces appear as meadows however there cannot be a large variety of flowers or plants on these fields. This is because, traditionally, the over-fertilized top 20 to 30 cm of graveyard plants is removed to allow new flowers to grow, but this was not done so the quality of the topsoil is bad. Secondly, "art historical and garden monument" values that were given to Sihlfeld E place its trees and vegetation under protection. Thirdly, the way the border plants, shrubs and hedges are dealt with should be reconsidered: north of Sihlfeld C, Sihlfeld E is directly visible and being dug for new graves.⁶²

In fact, it may come as a surprise that there is not enough ground for new graves. Indeed, when seeing all the free space available, it is hard to imagine such a situation. This is because, a cemetery floor plot can hold a maximum of three layers of graves as well as four to six urns however it takes 70 years before the ground can be used again for burial plots.⁶³

The need to enrich and heal the ground of Sihlfeld Cemetery is therefore clearly stated. The proposal of the project to create rich and fertile soil is thus compatible with the necessity to regenerate the ground of the cemetery. Hence transforming the cemetery into a garden can heal the soil, the soul of the people mourning by giving them physical activity, and act as a habitat for the already present ecosystems (figure 56 & 57).

Moreover, the mixed function of the cemetery with the park makes the transformation of a cemetery into a garden relevant. Let's remember that from the Middle Ages to the modern period, cemeteries were already multifunctional. They were used as public squares: places of justice, marketplaces, meeting places, workplaces, playgrounds, festival grounds etc.⁶⁴. The idea of placing mourning, leisure, social interaction, politics and economics in one place did not pose many problems. This was probably due to the fact that the ideology of a grave (a physical mourning place) did not exist as the graves were communal: this is of course also a witness to a time that perceived death with acceptance.

⁶⁰Maerki, Faye. Der Friedhof als öffentliche Parkanlage? 2011. p. 6

⁶¹Ibid. p. 7

⁶²Ibid. p. 23

⁶³Ibid. p. 24

⁶⁴Ibid. p. 26



Figure 56: Sheep in-between cemetery wall and allotment gardens. Source: Loacker und Hänsli (1989). *Wo Zürich zur Ruhe kommt.* [image]



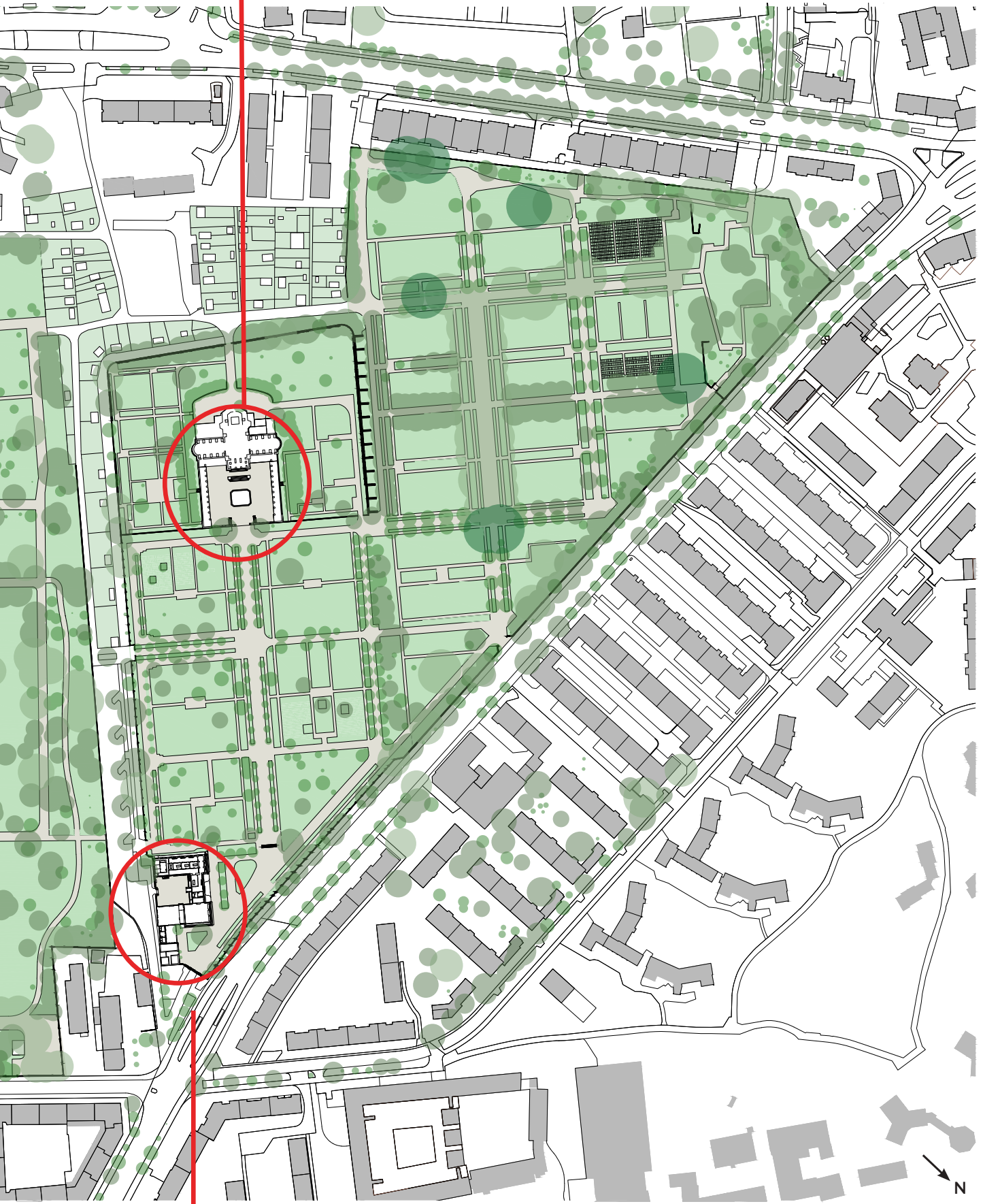
Figure 57: Cat sitting on grave in Sihlfeld Cemetery. Source: Locker und Hänsli (1989). Wo Zürich zur Ruhe kommt. [image]

4.4 HISTORICAL EVOLUTION OF BUILDING USES



Figure 58: Sihlfeld plan with building numbers indicated. Stadt Zürich (n.d.) [PDF]

5. New Crematory

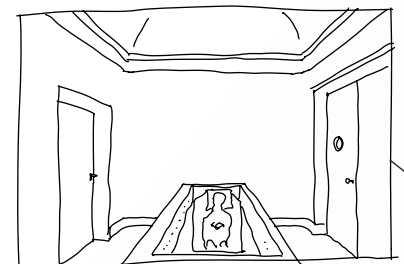


4. Administration Building

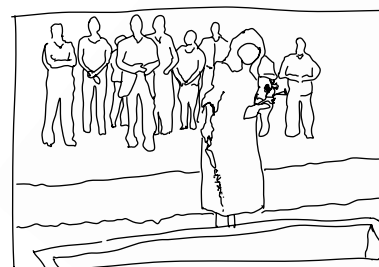
As the cemetery adapted to the size and organisation of the city, buildings changed and were built. This has made Sihlfeld Cemetery a patchwork that has recorded time and keeps on adapting and being used to meet the needs of the city (figure 59).

Since 1992, the cremation rate has not ceased to increase. Therefore, Sihlfeld's old crematory became quickly insufficient to meet the needs of the population. In 1992, the last cremation took place in Sihlfeld D's crematory and nowadays all cremations happen in Nordheim. The old and new crematory are currently used as abdication chapels. The other buildings within the cemetery have slightly altered functions but remain in general administrative or storage spaces for equipment. The Parking and Storage building created in 1959 has gradually lost its function and is now a shared building with offices that have nothing to do with the cemetery. The new building programmes have ceased to carry the symbolic that they originally had.

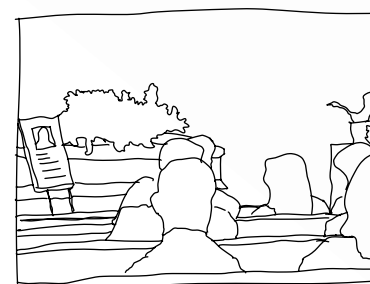
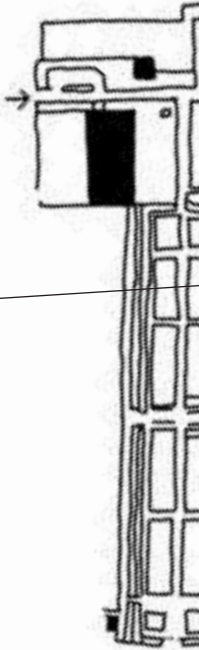
Figure 59 shows how the different steps of a traditional death care ritual within Sihlfeld have a tendency of underutilising buildings and the space available. The ritual is mainly concentrated in the main mortuary building. The buildings were designed in a symbolical way and their new programmes as well as protected status have a tendency of making them underutilised. The project proposal tends toward a greater use of the cemetery space and also the cemetery buildings. Generating more movement and life within the buildings and the park.



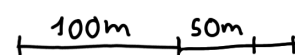
4. VIEWING ROOM

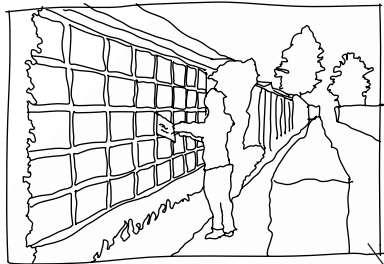


6. EARTHEN BURIAL



5. FUNERAL/RITUAL

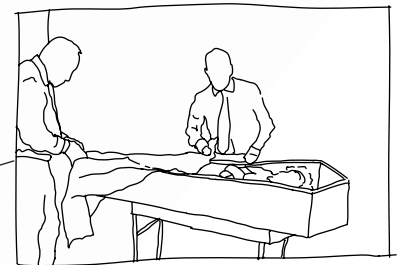
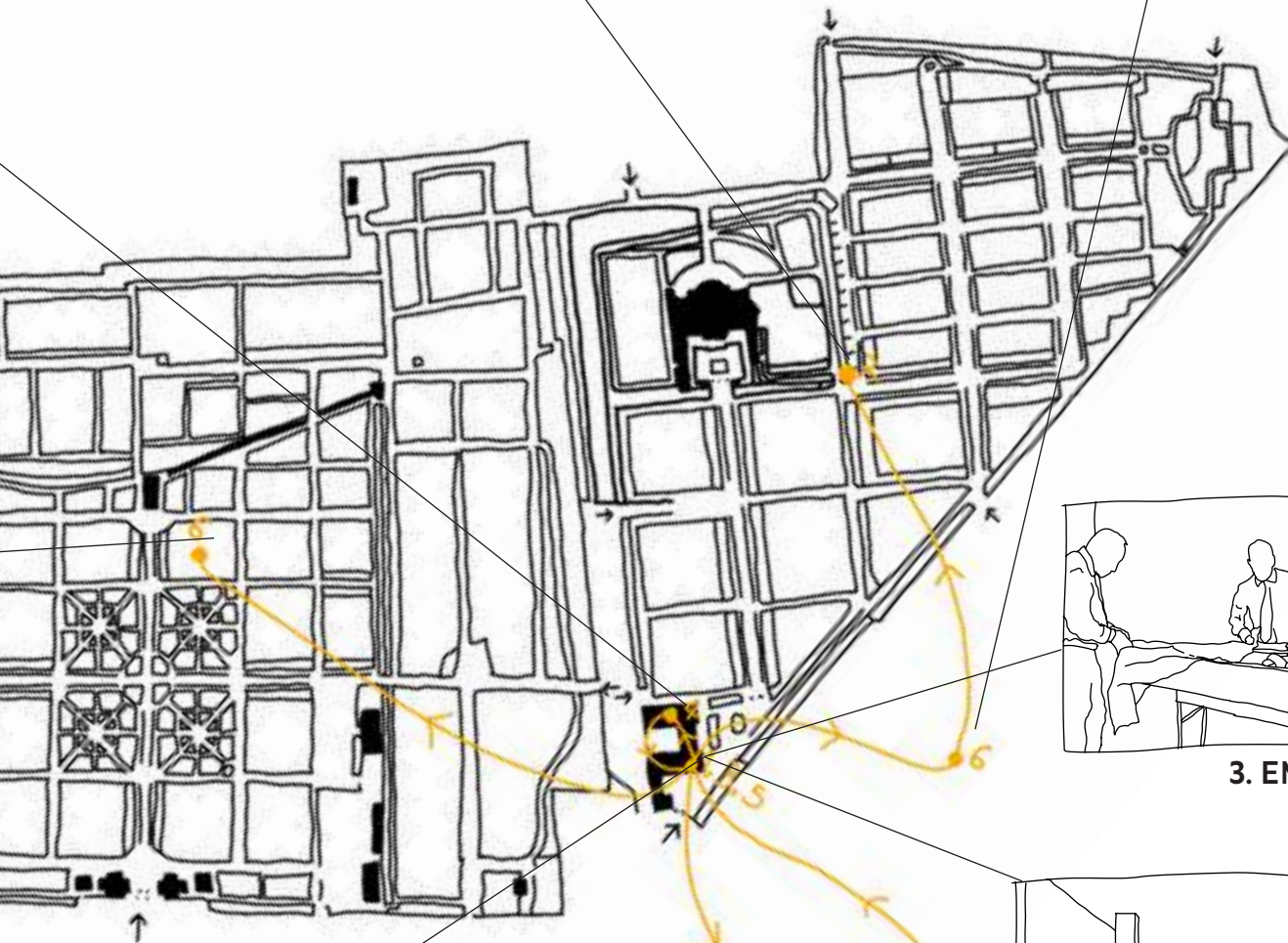




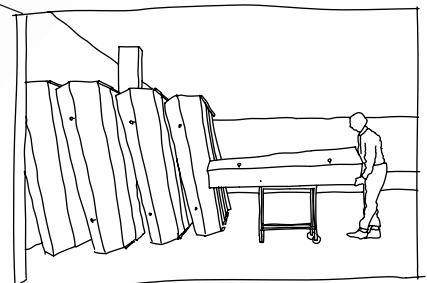
7. DISPOSAL OF ASHES



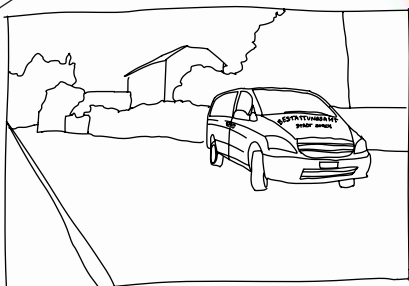
6. CREMATION



3. EMBALMING



1. COFFIN CHOICE



2. RETRIEVING THE BODY



Figure 59: Traditional Ritual in Sihlfeld Cemetery Now. by Author. (2022). [sketch]



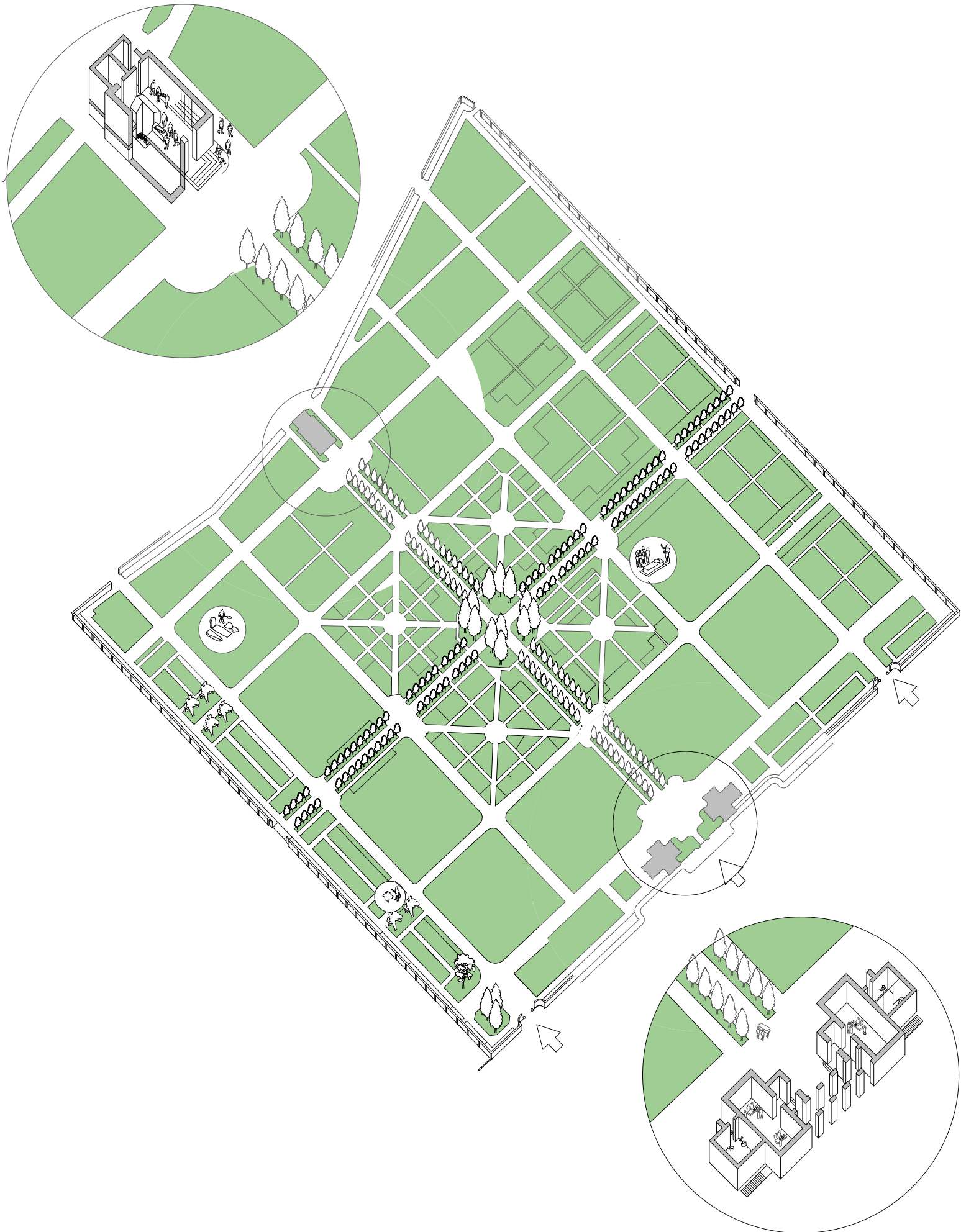


Figure 60: Sihlfeld Cemetery building uses 1889-1898. by Author.(2022). Source: Locker und Häsli (1998). WO Zürich zur Ruhe Kommt. [sketch]

From 1889-1898 (figure 60)

When the cemetery was first designed and imagined (Sihlfeld A) two buildings were planned. The first building was the entrance gate. As practices changed and the cemetery left the city centre, it became necessary to have a place at the cemetery where the wake could take place. Therefore, the Entrance Gate was originally designed as a mortuary. A space in this building was also left for the gardener. Shortly after this building was erected, the first crematory in Switzerland was built. The crematory was placed at the extremity of Sihlfeld A in line with the main-entrance gate. The path leading to the crematory was lined with trees. Thus the mourners were invited to carry the coffin from the wake (entrance building) to the crematory where the coffin was placed on a table. This table then moved the coffin into the oven. Some mourners stayed a few hours until the ashes were ready and set in an urn. They then proceeded in placing the ashes in a memorial (either in the crematory or outside).

Building I: Main Gate Building (figure 61)

This symmetrical axis building had 3 tasks to fulfil. The first was that it had to be functional: 2 separate buildings with, on one side the gardener's house and on the other the mortuary. The second task was adequate architectural representation. The third concern was the theme of life and death. Both architecturally and iconographically, the portal complex had to show the thematic of the transitory element of dying and burial. The entrance is composed of a triumphal arc and arcades. In the pediment there are attributes of death and resurrection (two inclined torches, laurel wreath). The buildings contain triangular pediments and acroteries creating the allusion of a temple complex. The mortuary was decorated with coffered ceilings and a meandering frieze of skulls. 65

⁶⁵Stadt Zürich VI. Die Kunstdenkmäler des Kanton Zürich. 2016. p. 118

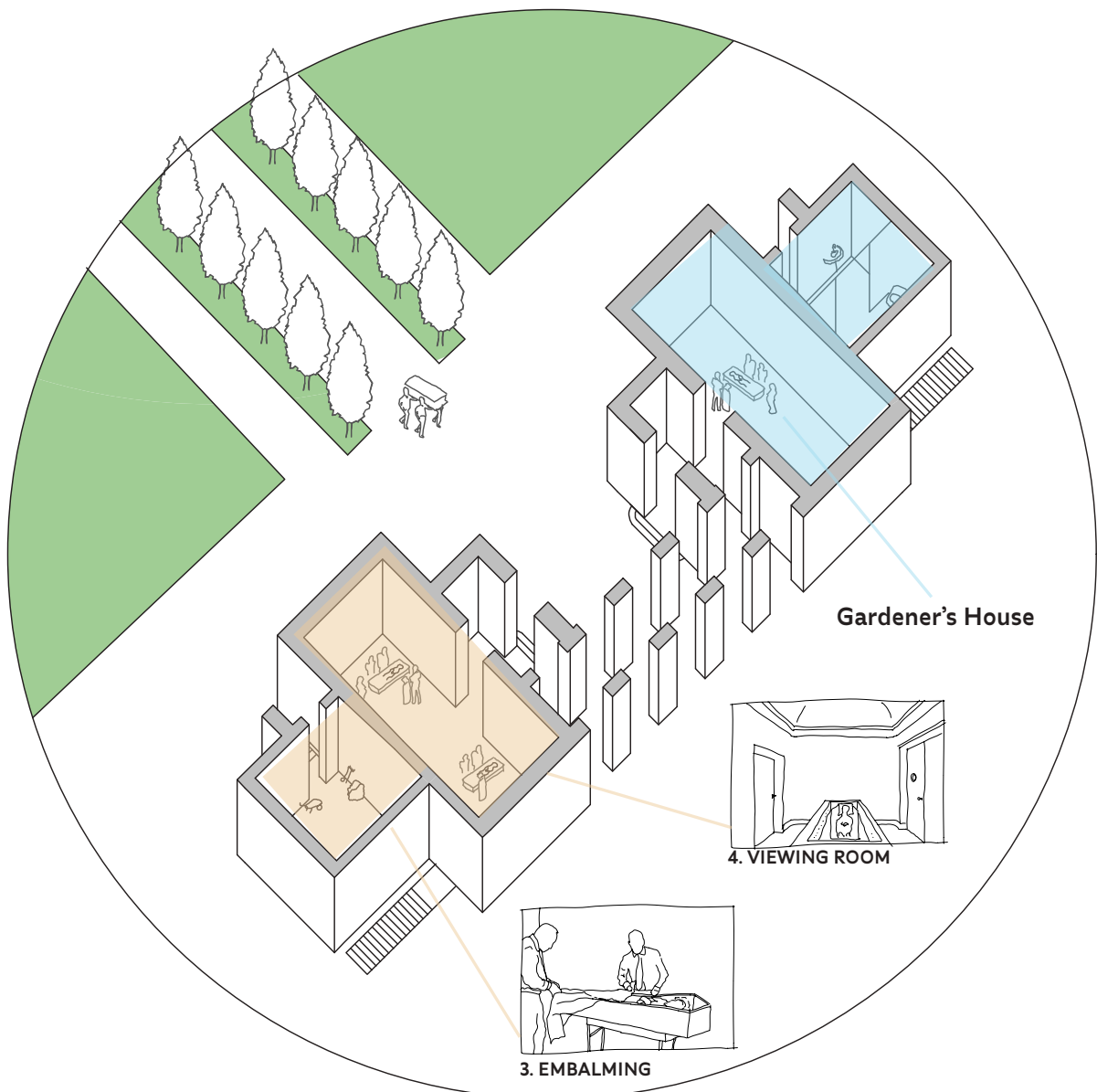


Figure 61: Entrance Building use from 1889-1898. by Author.(2022). Source: Loacker und Hänslı (1998). WO Zürich zur Ruhe Kommt. [sketch]

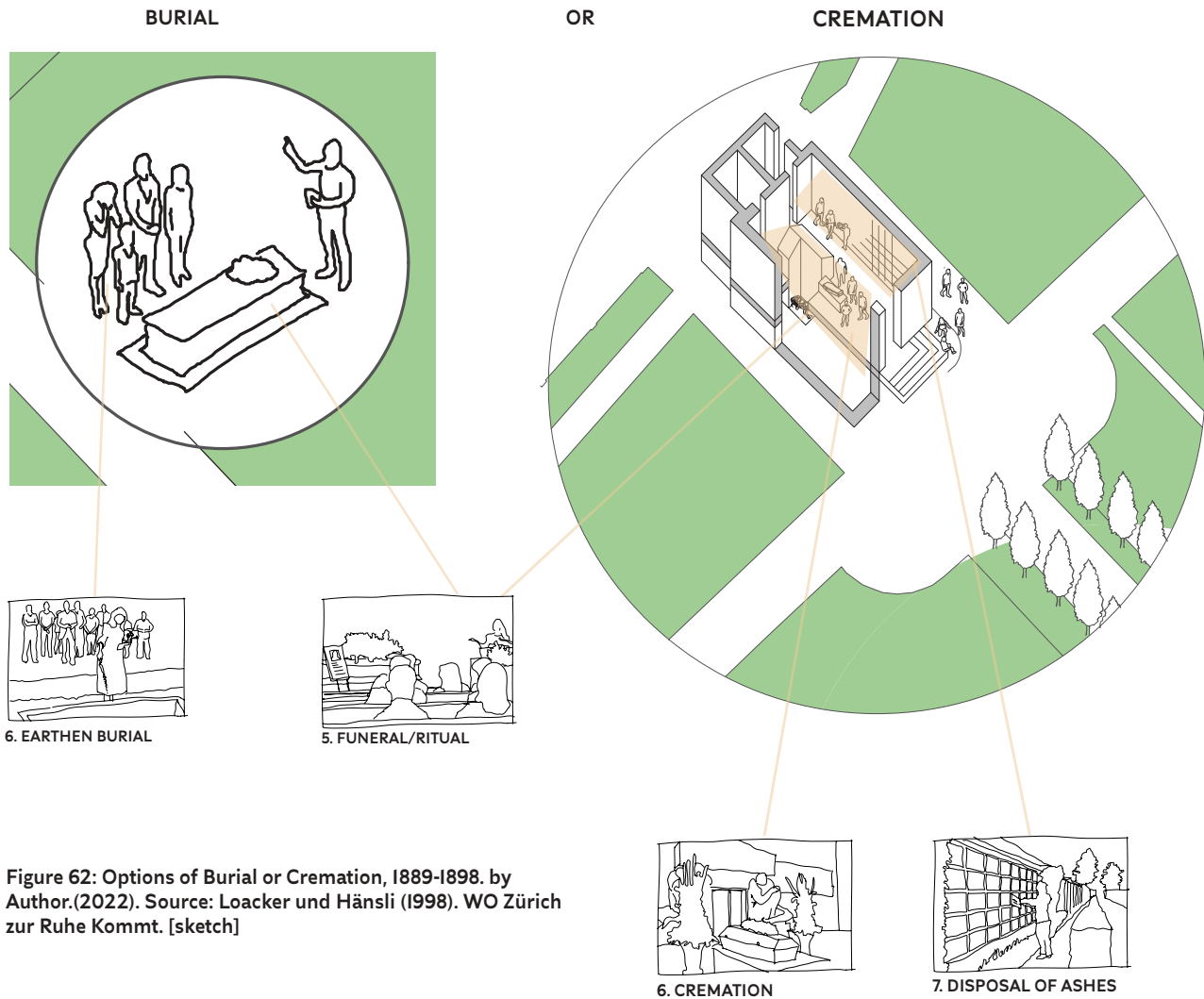


Figure 62: Options of Burial or Cremation, 1889-1898. by Author.(2022). Source: Loacker und Hänsli (1998). WO Zürich zur Ruhe Kommt. [sketch]

Building 2: Old Crematory (figure 63-65)

When the cemetery opened, in 1877, plans had already been made to build a crematory. In 1889, the crematory in Sihlfeld A is therefore the first in Switzerland, the third in Europe.

Geiser had planned the crematory in formal analogy to the gabled buildings of the portal complex, but more simply and in exposed brick (figure 63). The formal model was Roman temples, therefore the portico is reduced to a an edicule with Tuscan columns. The crematory oven was engineered by Emile Boury and the interior of the building was designed to integrate urns in its walls (figure 64).⁶⁶

Just like the main entrance building, the first crematory was designed in a classical and symbolical secular style. The importance of these buildings lies not only in their classical and symbolical nature but most importantly in their historical values. They represent technical and societal change.

⁶⁶Stadt Zürich VI. Die Kunstdenkmäler des Kanton Zürich. 2016. p. 117



Figure 63: Old Crematory exterior photo. Archive Stadt Zurich (1877). [img]



Figure 64: Old Crematory original interior. Archive Stadt Zurich (1877). [img]

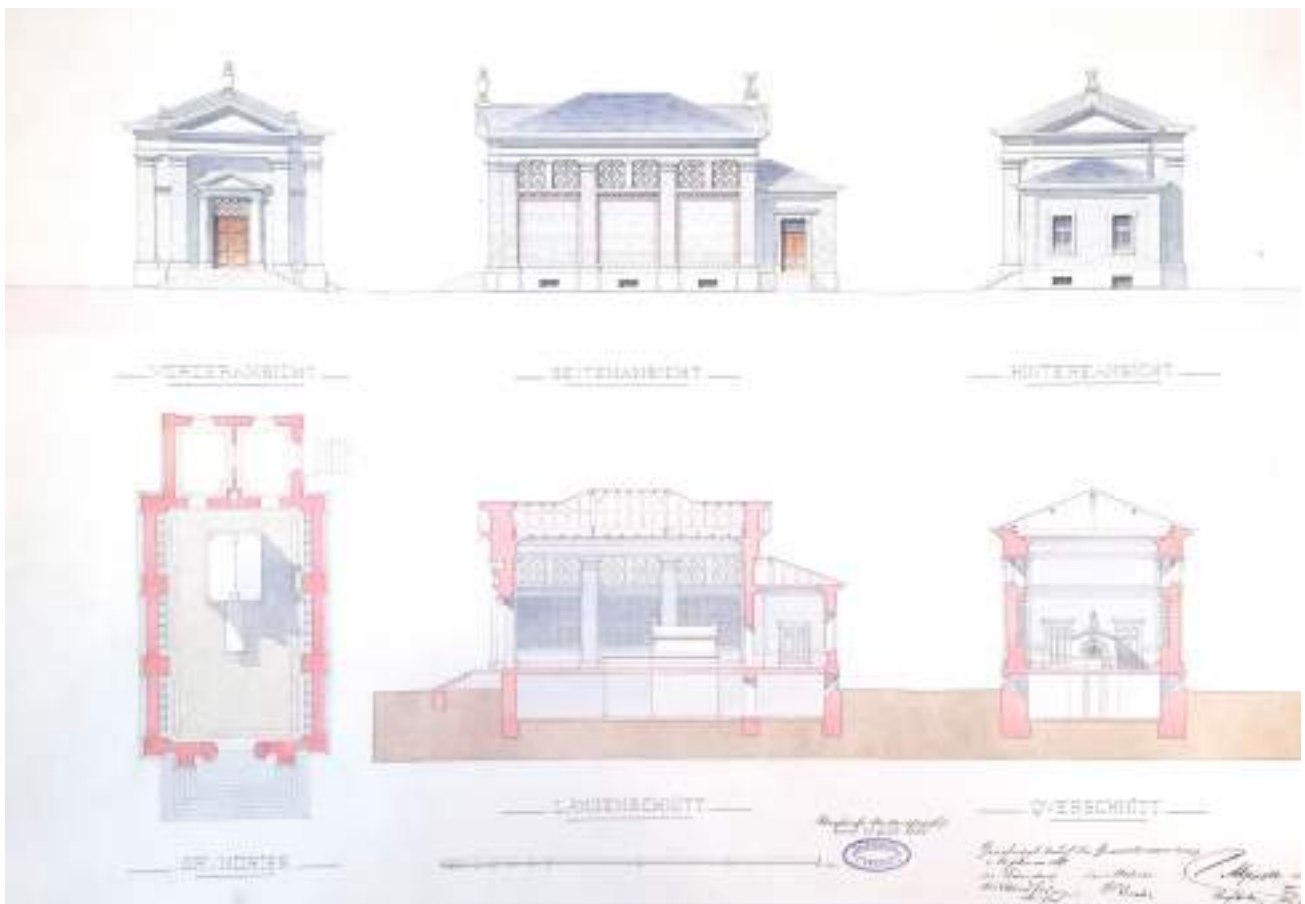


Figure 65: Crematory Plans. Archive Stadt Zurich (1877). [Plans]

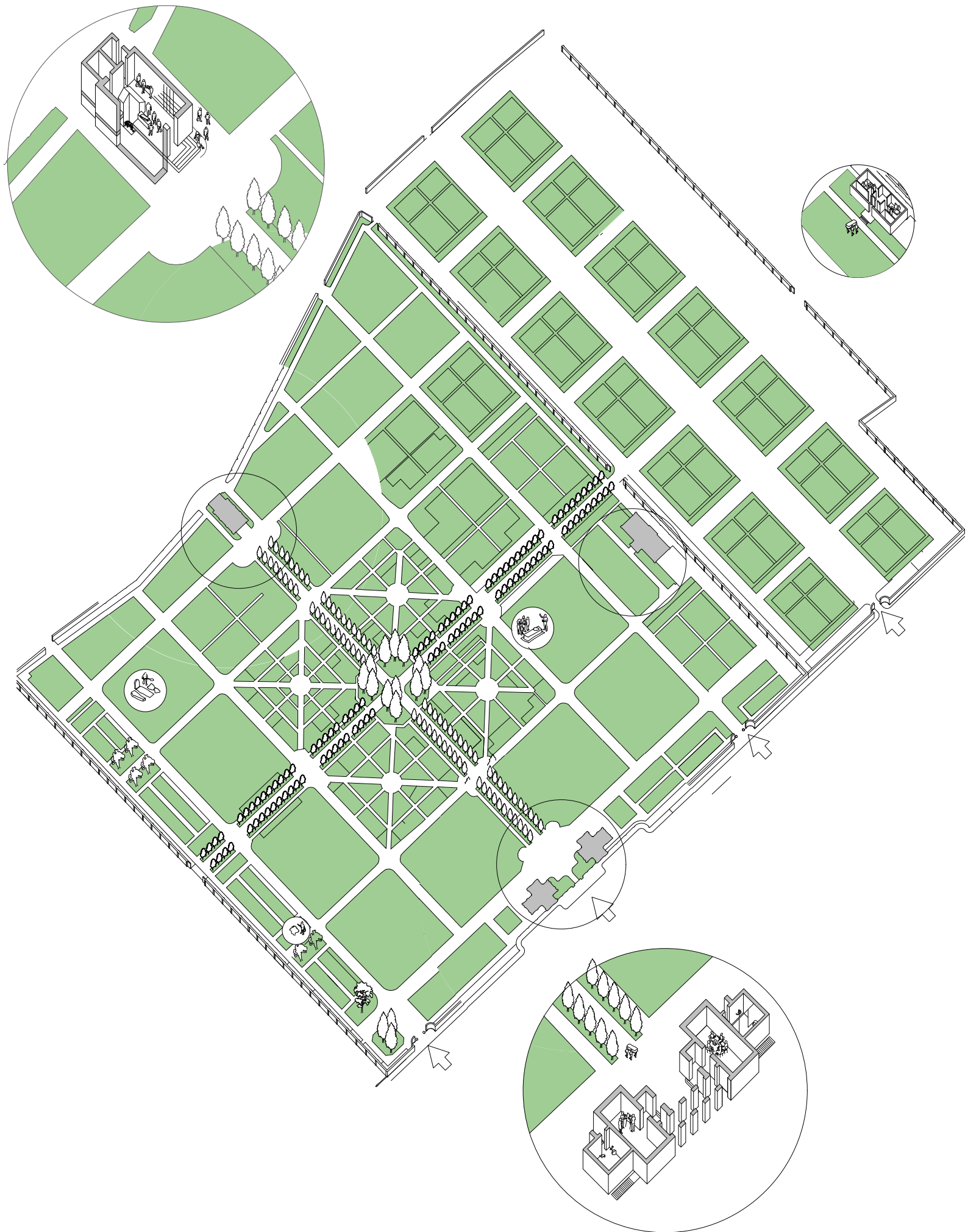
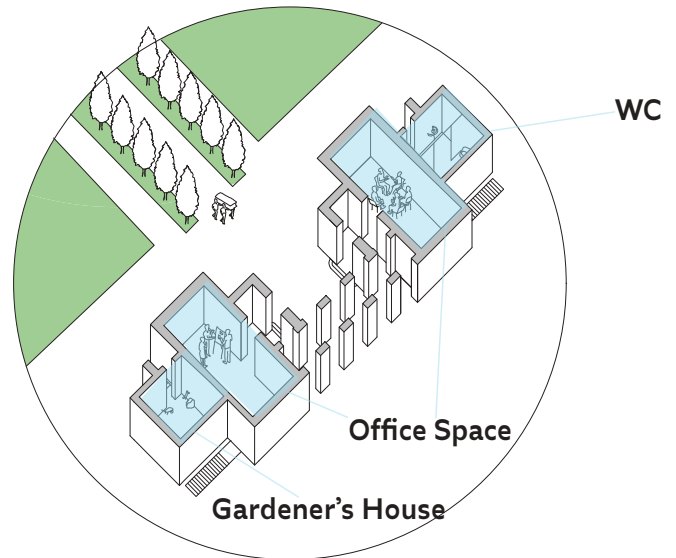


Figure 66: Sihlfeld Cemetery building uses 1898-1917. by Author. (2022).Source: Locker und Hänsli (1998). WO Zürich zur Ruhe Kommt. [sketch]

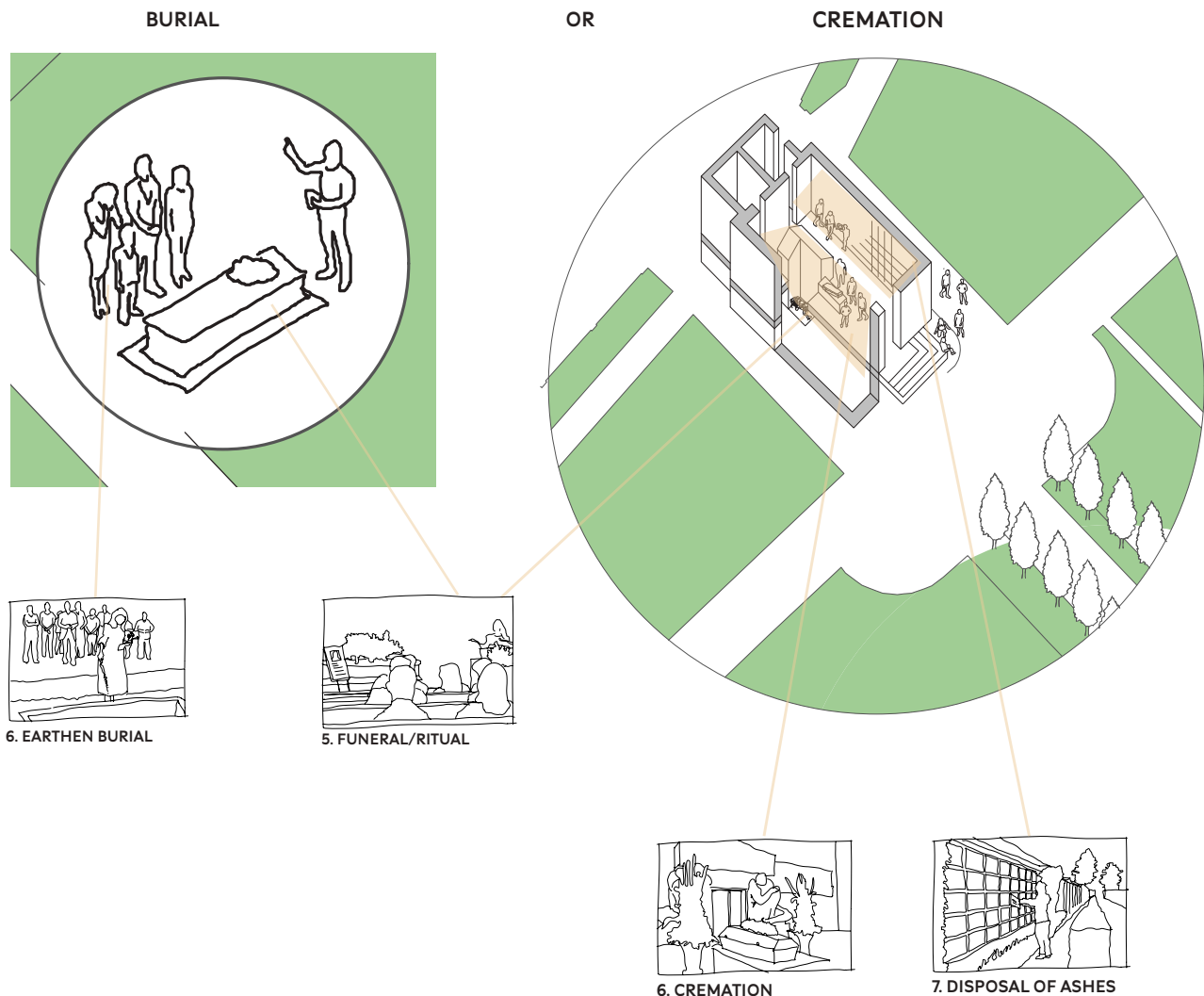
From 1898-1917 (Figure 66)

As the cemetery grew and Sihlfeld C was built to accommodate more graves, it became necessary to have more building space. At this time, although the crematory was used, cremation still remained banned by the Christian religion and was viewed as a new technology that people were sceptical about. However the main issue remained that the mortuary was too small. Therefore in 1898 a new mortuary was built on Sihlfeld A. This allowed the cemetery to gradually give more space to the gardener in the entrance building but also to transform part of the entrance building into offices for administrative purposes. In 1904, a common storage building for machines and equipment was built on Sihlfeld A.



Building I: Main Gate Building (figure 61)

When the new mortuary was built, the main entrance building changed functions. The former mortuary space became an office space.



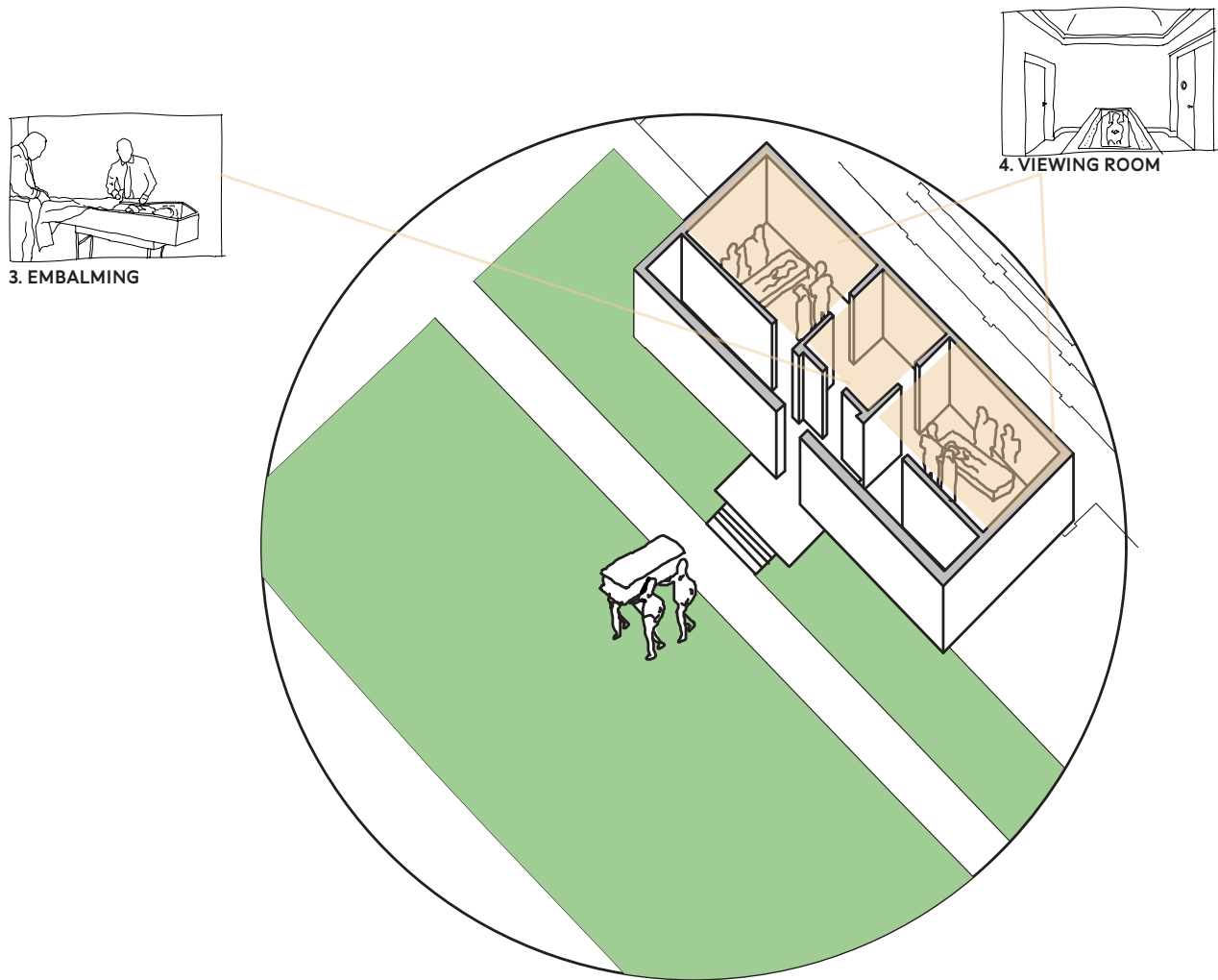


Figure 67: Sihlfeld Cemetery New mortuary uses 1898-1917. by Author. (2022).Source: Locker und Hänsli (1998). WO Zürich zur Ruhe Kommt. [sketch]

Building 3: New Mortuary (figure 67)

In 1898, 7 years after the opening of the second half of Sihlfeld D and 10 years after the opening of the crematory, the need for a bigger mortuary arose.⁶⁷ Thus the new mortuary was built at the edges of Sihlfeld A.

This additional building remains within the classical style that was used for the main entrance building and the crematory, however it is built in a humble manner. A simple house with no symbolical pretension (figure 68). A traversing corridor distributes the different viewing rooms and autopsy spaces. A simple and efficient building plan that resembles that of a house: a familiar space designed to reassure the mourners. (figure 69)

The fact that this building resembles a traditional house, brings us back to the original rituals regarding death care. Formally the wake, now pursued in the mortuaries, was done at home.

⁶⁷Locker and Hänsli. Wo Zürich Zur Ruhe Kommt. 1998. p. 207



Figure 68: New Mortuary. by Author (2022). [img]

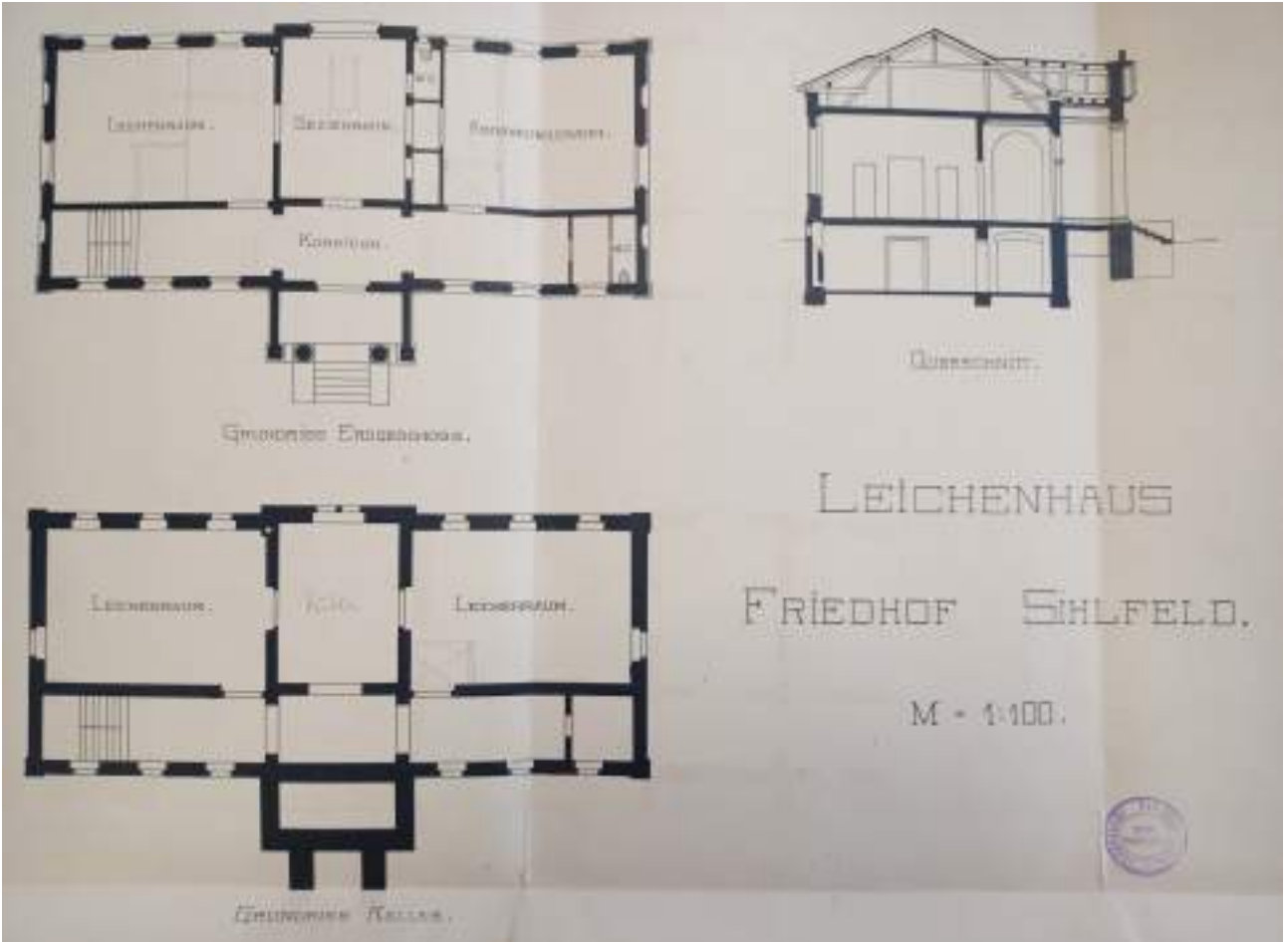


Figure 69: New Mortuary Plans. Archive Stadt Zurich (1898). [Plans]

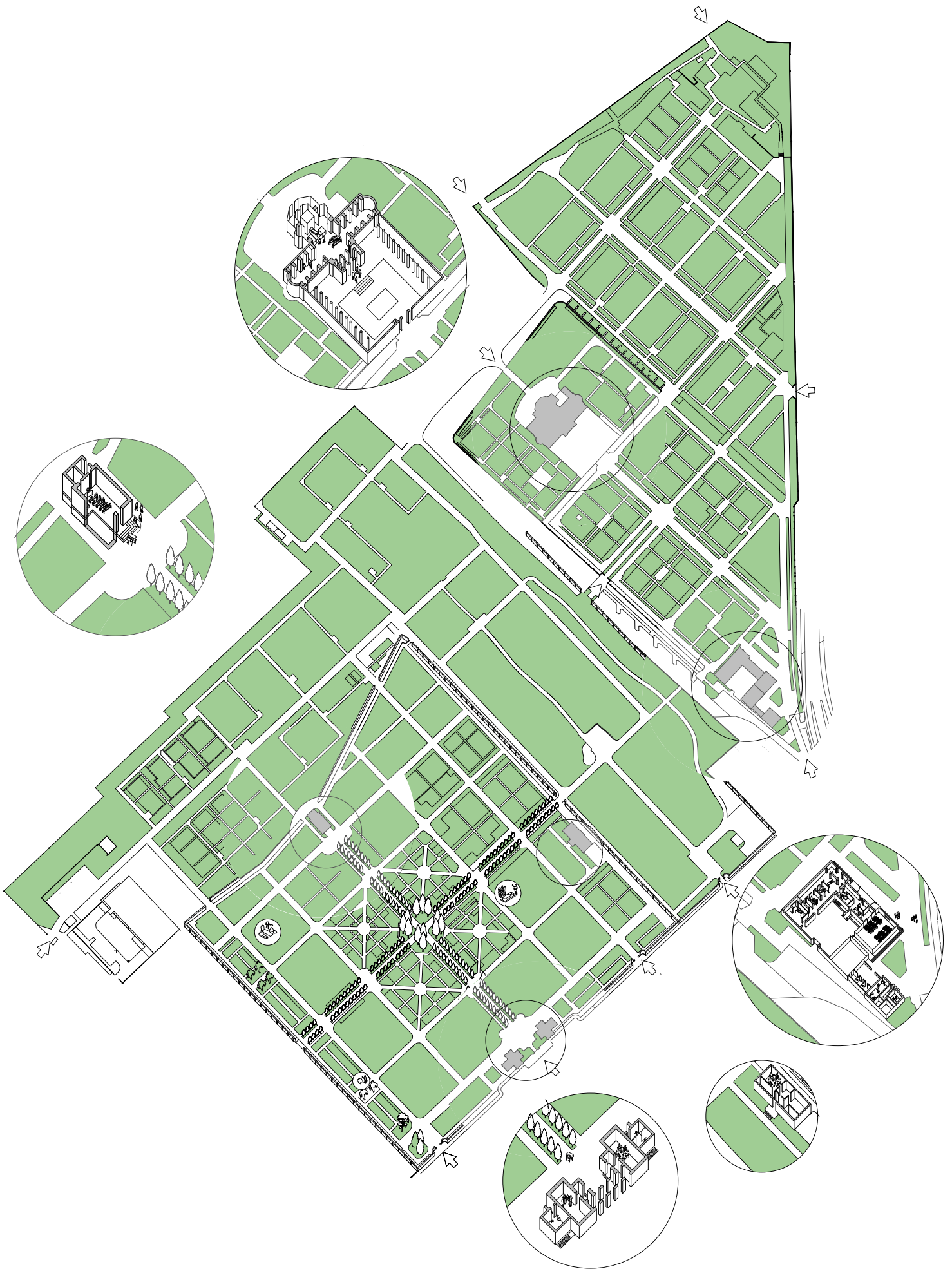


Figure 70: Sihlfeld Cemetery building uses 1917-1992. by Author. (2022). Source: Locker und Hänsli (1998). WO Zürich zur Ruhe Kommt. [sketch]

From 1917-1992 (Figure 70)

Gradually the first Crematory built in Sihlfeld A became insufficient as cremation became the popular option. Therefore, in 1915, the new crematory was built in Sihlfeld D. To follow the growth of the cemetery, a new mortuary/administration building/gardener's house was built in 1917. The mortuary that had been in use before gradually took on administrative functions. The crematory in Sihlfeld A became an abdication chapel. The main entrance gate transformed over time to become mainly an administrative building. Moreover in 1959 when Sihlfeld E was developed, an administration building was built for the parking of hearse's and storage of equipment.

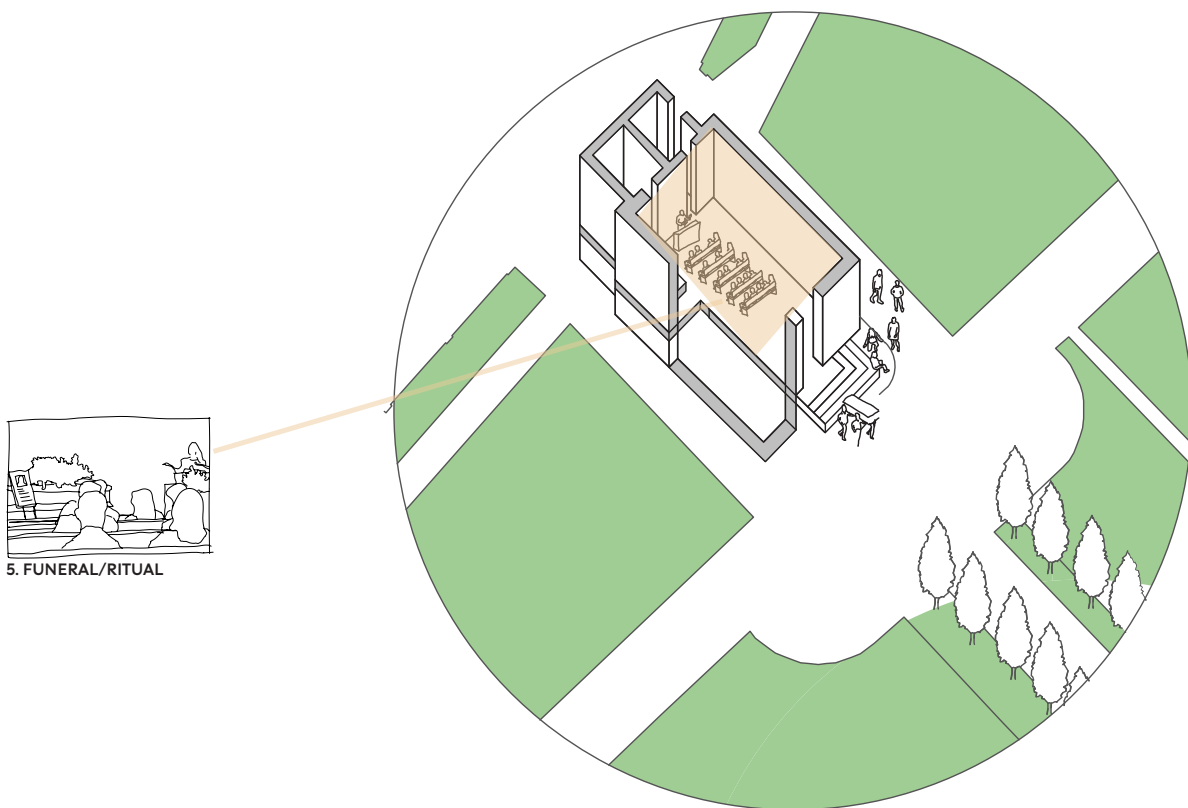
Building 2: Old Crematory (figure 71)

The building, now plastered and no longer with apparent bricks, was stripped of its furnishings in 1936 when it was converted into a chapel for abdications (figure 71). The room was decorated with a mural by Karl Walser on the back wall.

Five angels surround an open sarcophagus, at which a mourner bows down and doves fly to the sky (figure 72).

The removal of the crematory oven removes an important historical and symbolical value to the building.⁶⁸

⁶⁸Stadt Zürich VI. Die Kunstdenkmäler des Kanton Zürich. 2016. p. 117



5. FUNERAL/RITUAL

Figure 71: Sihlfeld Cemetery crematory uses 1936-now. by Author. (2022). Source: Loacker und Hänsli (1998). WO Zürich zur Ruhe Kommt. [sketch]



Figure 72: Old Crematory chapel interior after 1936. Source: Stadt Zurich. [img]

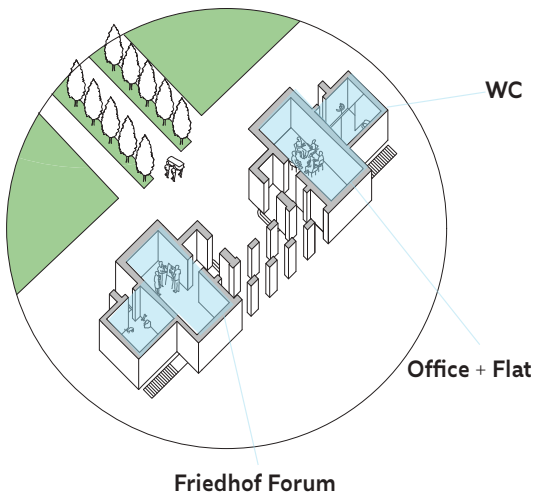


Figure 73: Entrance Buildings Now. by Author. (2022). [sketch]

Building I: Main Entrance Building (figure 73)

In the building on the right, friedhof forum settles in 2012 (figure 74) and the building on the left becomes an office space with a rented flat on top.

As the original architectural structure of the building has remained the same (figure 76), gradually the building lost its original function completely. The symbolism remains however the historical value of the ritual within the building is lost.



Figure 74: Entrance Buildings, Friedhof Forum exhibition space. by Author. (2022). [img]

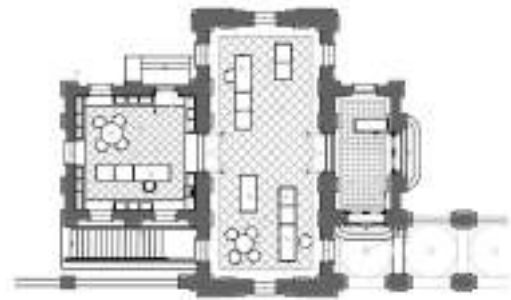


Figure 75: Entrance Buildings, view from inside cemetery. by Author. (2022). [img]

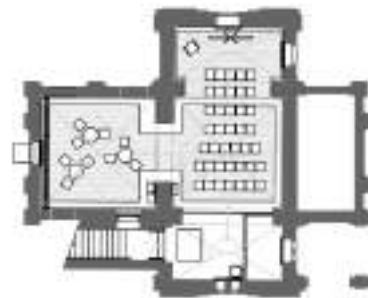


Figure 76: Plans of Main entrance gate left building. Stadt Zürich Amt für Hochbauten (2012) Source: https://www.stadt-zuerich.ch/prd/de/index/bevoelkerungsamt/rund-um-den-tod/friedhoefe/friedhof_sihlfeld_aed.html [PDF]

Building 4: Administration Building (figure 77)

“Saying goodbye to a deceased person is a journey with many stations. One of them is the place of interment - where many where many relatives visit their dead for the last time. This place, the laying out hall in the Sihlfeld cemetery, has been redesigned by Bosshard Vaquer Architects.”⁶⁹

The mortuary was built along with the extension of Sihlfeld cemetery D in 1917 and has been in use ever since.⁷⁰ The Building is U shaped to have on one side, a chapel and a technical storage room and on the other, the autopsy and viewing rooms. A narrow part for toilets link this building to a gardener’s house (figure 78).

However the new gardener’s house has become an office space.

The building with its symbolical statues and arcades reflects the main entrance gate and first crematory. Friezes and ornaments depict symbolical references to death (figure 79). Moreover, the building acts as an innovative technical machine as the viewing rooms (figure 80), that hold the bodies, are cooled through new technologies inspired by mortuaries in Germany (in the archives of the city of Zürich, the exchanges with mortuaries in Germany are accessible).

⁶⁹Stadt Zurich Amt für Hochbauten.2004. p. I

⁷⁰Loacker and Hänsli. Wo Zürich Zur Ruhe Kommt. 1998. p. 207

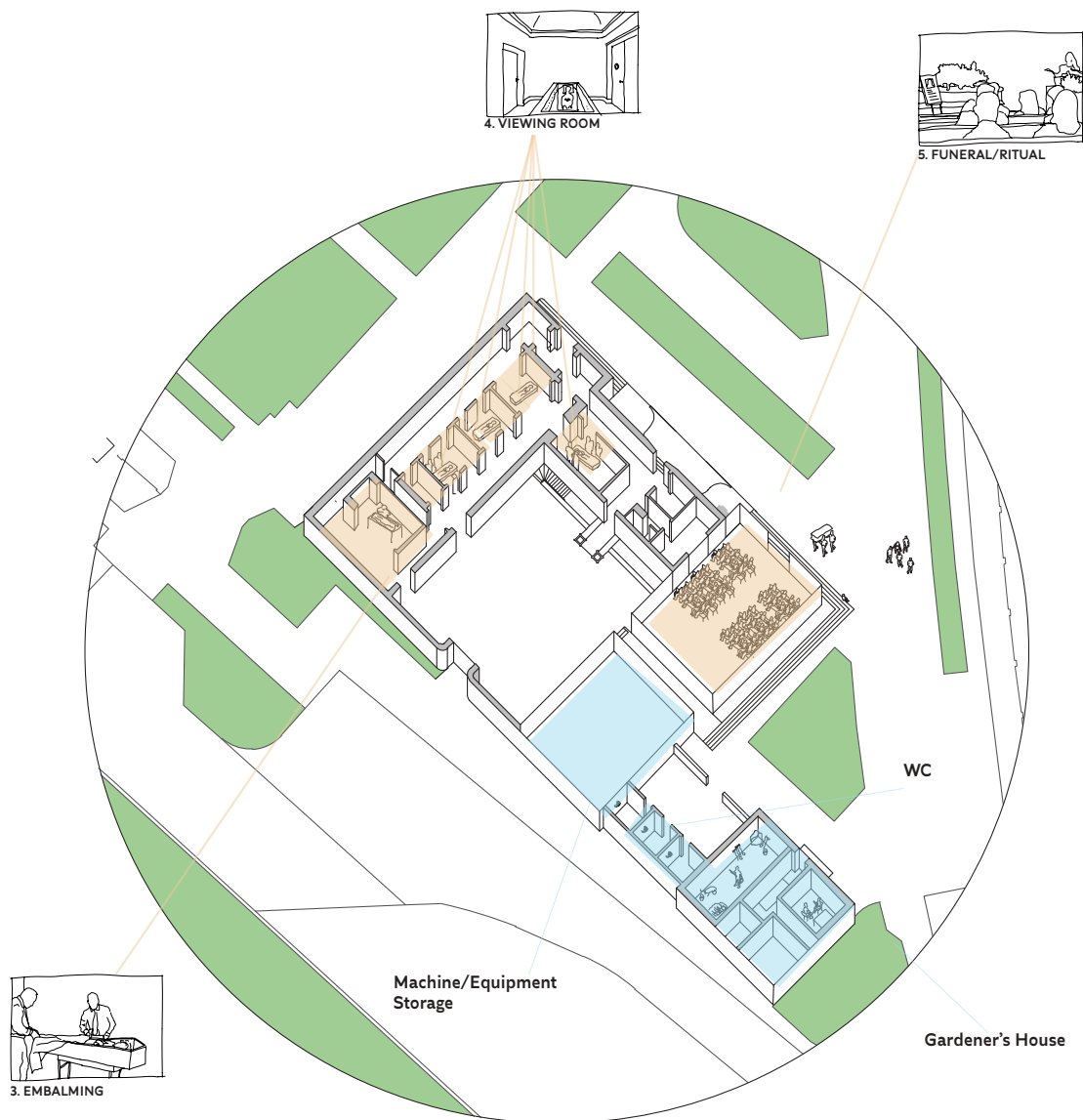


Figure 77: Sihlfeld Cemetery building uses 1917-1992. by Author. (2022). Source: Loacker und Hänsli (1998). Wo Zürich zur Ruhe Kommt. [sketch]

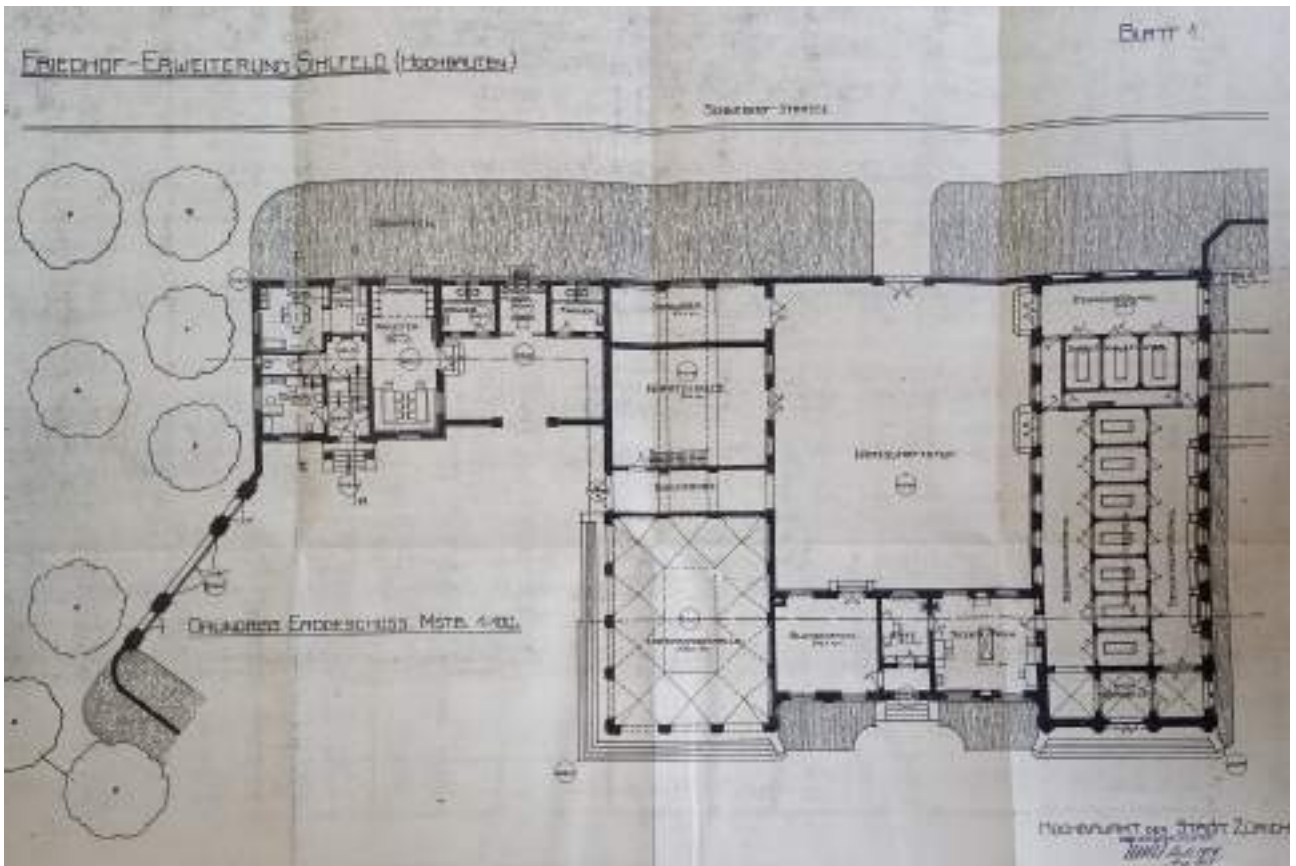


Figure 78: New Administration Plans. Archive Stadt Zurich (1914/15). [Plans]



Figure 79: New Mortuary Exterior. by Author. (2022). [img]

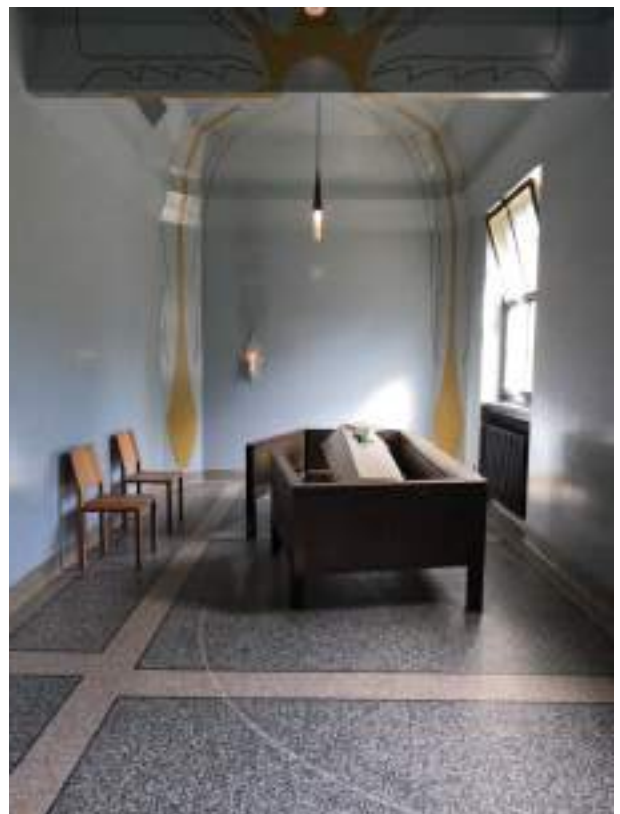


Figure 80: New Mortuary. by Author. (2022). [img]

Building 5: The New Crematory (figure 81)

The new crematory was built in 1915 and replaced the old crematory oven with 2 new ones. It was used until 1992 when Nordheim crematory replaced Sihlfeld's. It has been a urn hall and abdication building since then.

Architect Albert Fröhlich succeeded in symbolically interpreting the cremation as a hymn to the 'immortality of the soul redeemed by fire'.⁷¹

Last cremation in Sihlfeld: 24 September 1992.⁷¹

Comparable to the other buildings built previously on site, the building is classical and symbolical. Arcade wings wrap the entrance courtyard in which a pond sits.

The building is preceded by a vestibule (pranos with doric columns to which the portals are inserted) (figure 82-85).

The symbolism of death in this building is inspired by the Greek mythology. The two atlases kneeling next to the entrance of the gate that leads the coffins to the 2 ovens, are symbols of suffering and mourning (figure 83). In the pediment the following inscription is written : "Flame dissolve/ The Perishable/ Free the Immortal".⁷²

⁷¹Loacker und Hänsli, *Wo Zürich zur Ruhe kommt*. 1998. p. 141

⁷²Stadt Zürich VI. *Die Kunstdenkmäler des Kanton Zürich*. 2016. p. 119

CREMATION

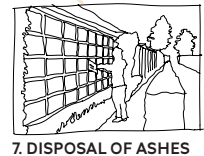
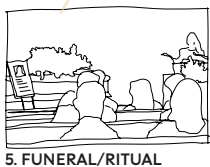


Figure 81: Sihlfeld Cemetery Crematory D 1917-1992. by Author. (2022). Source: Loacker und Hänsli (1998). *Wo Zürich zur Ruhe Kommt*. [sketch]



Figure 82: New Crematory exterior photo. by Author. (2022). [img]



Figure 83: New Crematory Interior view of oven.
 Source: https://www.stadt-zuerich.ch/prd/de/index/bevoelkerungsamt/rund-um-den-tod/friedhoefe/friedhof_sihlfeld_aed.html



Figure 84: New Crematory Interior View Chapel.
 Source: https://www.stadt-zuerich.ch/prd/de/index/bevoelkerungsamt/rund-um-den-tod/friedhoefe/friedhof_sihlfeld_aed.html

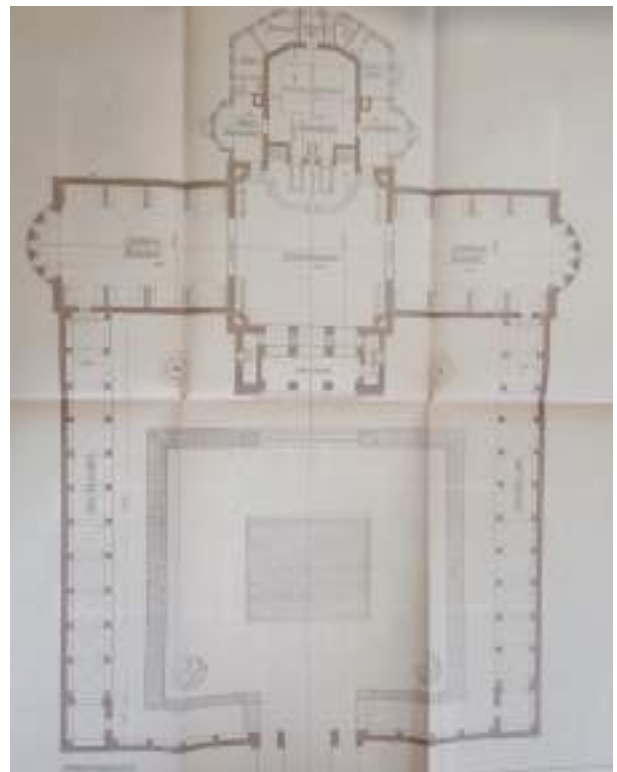


Figure 85: New Crematory Floor Plan. Archive Stadt Zurich (1915). [Plan]

Building 6: Common Storage Building (figure 88)

In 1904, a common equipment storage was built. This is mostly for the storage of machines and equipment used by the gardeners. This simple structure detaches from the other buildings on site and fulfils a completely functional role.

It is a simple rectangular building with a large door and a high ceiling on the ground floor. A small attic for storage runs throughout the building. In front of it a large surface is kept for the manoeuvring, parking and stocking of machinery. (Figure 86 & 87) The functionality of the building is the primary design guideline which thus does not give it a symbolic or historic value.

However its function illustrates the need for equipment and space for the caring of the nature on site. As machinery needs to be used to care for the nature and the digging of graves, there is also a need for storage space.



Figure 86: Equipment Storage Building, gate view from inside Sihlfeld A. by Author (2022). [img]



Figure 87: Equipment Storage Building. by Author (2022). [img]



Figure 88: Equipment Storage. Archive Stadt Zurich (1904). [Plan

Building 7: Administration Offices

“To the right of the portal there is a windowless, defensively walled service building of the funeral and cemetery office on three sides. It houses the vehicle fleet, the coffin magazine and an archive. Connected to this building by a concrete traverse, on the left side of the path there is a caretaker’s house.”⁷³

Nowadays, this building is used as the parking for hearses and other vehicles for the funeral home. It is a shared building that also houses IMMO Zentralwäscherei (a laundry service) and a fire department.

It is a large building that does not seem to be used to its full capacity as most of the rooms adjoining the parking are empty.

Moreover, this building with its apparent concrete stands out from the style of the other buildings that are part of Zurich’s built heritage.

This building closes off from the exterior of the cemetery with almost no openings (figure 89) and opens towards the cemetery with its glass brick facade (figure 90). A beam joins it to a small house used for office purposes (figure 91). Thereby forcing the visitor that enters to pass under this beam and marking the act of entrance into the cemetery park.

⁷³Loacker und Hänsli. Wo Zürich zur Ruhe kommt. 1998. p. 148



Figure 89:Funeral Home Parking and Storage Entrance. by Author (2022). [img]



Figure 90:Funeral Home Parking and Storage view from cemetery. by Author (2022). [img]



Figure 91:Funeral Home Parking and Storage caretaker's house. by Author (2022). [img]

SYNTHESIS OF BUILDINGS IN SIHLFELD (figure 92)

Within the cemetery/park of Sihlfeld there are a total of 7 buildings most of which were built progressively as the cemetery was extended (figure 41, page 45). These buildings have adapted to the context in time and thus have mostly changed their original programme.

Like the orthogonal grid structure of the park, they are witnesses of social, political and cultural evolution. They carry traces of innovation (cremation and mortuary cooling system). A great attention was carried to the use of a symbolic architectural language: one that had to be non-religious. Therefore symbols coming from ancient Greek/Rome and Egypt are present throughout the buildings. These also extend to portals and smaller structures.

This symbolism rendered the buildings 1 to 5 part of the heritage constructions of the city of Zurich that are placed under protection. This has had the advantage of keeping these buildings more or less true to their original designs. However the frequency at which they are currently used (especially the crematoriums) have rendered them, to some extent, obsolete. Buildings 1 to 5 have also lost their original value within the rituals (the crematoriums are now ceremony rooms).

The project proposal aims not to alter these buildings but to keep them as they are and use them more extensively for the new ritual emerging from natural organic reduction. Building 7 does not have the symbolic and historical value that buildings 1 to 5 have although it marks an entrance to Sihlfeld. Therefore it can be re-purposed to incorporate the technical facilities necessary for human composting.

BUILDING NAME	YEAR BUILT	TOTAL SIZE (SQM)	ARCHITECT	ORIGINAL PROGRAMME	PROGRAMME NOW
1 Main Gate Buildings	1877 renovation: 2012	422	Arnold Geiser	-Gardner's Room -Mortuary	<u>Left:</u> -Friedhof Forum Exhibition Space and Library -Conference Room <u>Right:</u> -Toilet -Offices -rented flat
2 Old Crematory	1887-1889 renovation: 1991	320	Arnold Geiser	-Crematory	-Chapel
3 New Mortuary	1898	456	Arnold Geiser	-Mortuary	-Office space -Magazine Office
4 Administration building	1916-1917	Mortuary + chapel: 912 Gardner's house: 450 total: 1362	Friedrich Wilhelm Fissler	-Administration Building Sihlfeld D -Gardner's House -Mortuary	-Mortuary -Abdication Chapel -Library
5 New Crematory D	1913-1915 1945 conversion	1200	Albert Fröhlich Project called 'Peace'	-Crematory -Abdication Chapel	-Meeting room and office for gardener's
6 Equipment storage	1904	300		-Equipment storage	-Offices for Magazine
7 Funeral Home Driving Service	1959	1500 (first floor and underground) 960 (for other floors) total: 4920	Philipp Bridel	-Parking for Hearse -Office Buildings	-Parking -Laundry Service -Offices

TOTAL:
8'980

Figure 92: Comparison of buildings in Sihlfeld Cemetery. by Author. (2022). Source:Loacker und Hänsli (1998). Wo Zürich zur Ruhe Kommt [table]



Figure 93: Propaganda for Cremation in Zurich 1874. Source: Zemp, Ivo. Die Architektur der Feuerbestattung eine Kulturgeschichte der Schweizer.2012. [image]

4.6 CREMATION HISTORY -SYMBOLIC TO INDUSTRIAL

EVOLUTION OF CREMATION FROM 1800 - NOW

The act of cremation: burning a body, existed long before the first crematoriums were built. However, the catholic church, that reigned state and religion for a noticeable period of time in history, rejected cremation as a form of burial. It was only tolerated again during the Second Vatican Council (1962-1965).⁷⁴

The history of modern cremation started around the 18th century but grew only in the 19th century. Modern cremation exists thank to intellectual, technical and socio-cultural factors. These have also highly influenced it's evolution through time.⁷⁵

At some point in history, fire was a form of punishment and purification. During the witch hunt period (15th to 18th century), the church burned people who seemed like rebels or were simply outside of the norms of society. This was a way of blaming people for disasters or epidemics.⁷⁶

The real turning point in the 1800 that made cremation possible again was the "siècle des lumières" (Enlightenment). Human reason stood in opposition to the divine faith as a new authority. This was expressed in a scientifically based criticism of the Christian Church and its doctrine. This aroused an interest for Greek and Roman antiquity as well (figure 93).⁷⁷

The French revolution brought a reversal of social values and a change of people's relationship to religion.⁷⁸ The growing awareness of hygiene and the emancipation of the church from funerals allowed new cemeteries to be built.⁷⁸

As Technology and science became important, crematoriums started being developed. By the beginning of WWI, several furnaces had been built.⁷⁹ The war brought a rationing of fuel and coal, thus many crematoriums had to close temporarily (Zürich from October 1917 to November 1918).⁶⁹

This allowed research into alternative ovens. Thus, in 1933, the world's first electrically operated cremation facility opened in Biel.⁸⁰ The incinerators of today follow the current state of the art and differ primarily in the use of the various energy carriers. Gas, oil or electrical energy are used to generate heat, while fuels such as wood, coal or coke are practically no longer in use.⁸¹

The architecture of the crematoriums reflects the ideas of death in the respective temporal circumstances. From 1889 to the 1930's, crematoriums were based on "one-room temple like" structures (Sihlfeld Crematory A). At a certain point in time a symbolic typology (using historical references) emerged (Sihlfeld D). After WWII, there is a shift in perception of death and the "functional" type appears. The emotional rite and technical side (cremation) become separate.⁸²

Public health care in the 19th century required not only a morally irreproachable and vital person, but also a clean death. Cremation ideally provided the means required to dispose of the remains hygienically and discreetly.

This behaviour towards the dead body brought with it an unexpected taboo and extended to the entire realm of death. The representative mourning hall of the crematorium and its image-intensive symbolism took the place of the repressed, invisible combustion apparatus as a substitute myth. With this, the change in the act of burial took place on a purely psychological and intellectual level.⁸³

⁷⁴Zemp, Ivo. Die Architektur der Feuerbestattung eine Kulturgeschichte der Schweizer.2012. p. 8

⁷⁵Ibid. p. 21

⁷⁶swissinfo.ch (2009)

⁷⁷Zemp, Ivo. Die Architektur der Feuerbestattung eine Kulturgeschichte der Schweizer.2012. p. 27

⁷⁸Ibid. p. 32

⁷⁹Ibid. p. 44

⁸⁰Ibid. p. 84

⁸¹Ibid. p. 86

⁸²Ibid. p. 87

⁸³Ibid. p. 90

4.6 CREMATION TODAY

In 1992, the last cremation took place in Sihlfeld, from then on all cremations took place in the new crematory: Nordheim Crematory.

NORDHEIM CREMATORY

Around 10% of people who die in Switzerland are cremated in Nordheim. 6'000 people are cremated there yearly thus making it one of the largest crematoriums in Europe. The building hosts 6 ovens that are constantly in use even at night (figure 94 & 95). There is also one oven that is not in use but exists for back up purposes.⁸⁴

The cremation process lasts two and a half hours. Some bodies take more time to disintegrate, for example people who have undergone chemotherapies slow the process. The employee checks regularly throughout the process. It first takes 10 minutes to burn the coffin before the body starts to ignite. The temperature in the oven climbs up to 1'400 degrees. After the body is disintegrated, the ashes drop down one floor where they are cremulated and put in an urn.⁸⁵

The reason why cremation is so popular is because it is the simplest and cheapest method. It has to some extent become default also because it allows more flexibility when it comes to where the ashes are laid. Therefore the project aims to propose a method that brings us closer to the process and offer a new ritual, thus removing this non-symbolic value to the method of disposition of human remains.

⁸⁴<https://www.limmattalerzeitung.ch/limmattal/zuerich/krematorium-nordheim-asche-zu-asche-staub-zu-staub-ld.1817401> (Accessed 10 Oct. 2022)

⁸⁵ibid



Figure 94: Nordheim Crematory Hallway. Source: <https://rossmaier.com/joomla/12-projekte/bearbeitung/im-bau/92-krematorium-nordheim.html> [image]

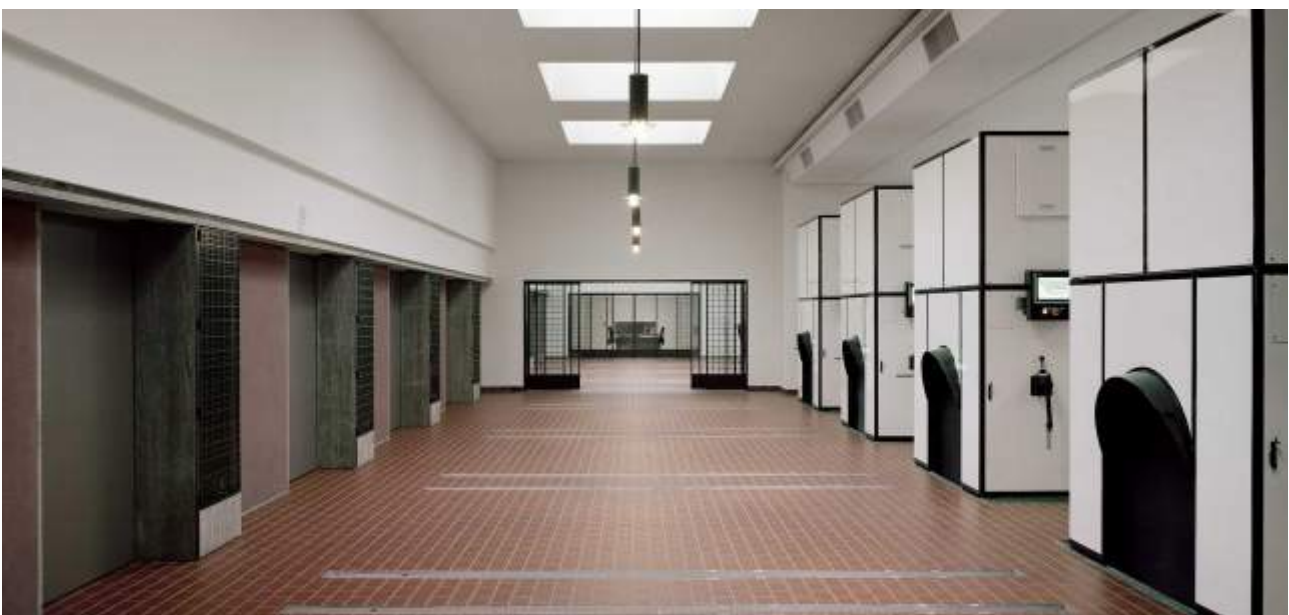


Figure 95: Nordheim Crematory Ovens. Source: <https://rossmaier.com/joomla/12-projekte/bearbeitung/im-bau/92-krematorium-nordheim.html> [image]



2050



Figure 96: Sihlfeld Cemetery D, fountain and benches. past situation and future imaginary. by Author (2022). [collage]

5. PROJECT PROPOSAL - AN ECOLOGICAL CEMETERY CYCLE

“La mort est une néantisation toujours possible de mes possibles, qui est hors de mes possibilités” (“Death is an always possible neantisation of my possibilities, which is outside my possibilities”)
 -Jean-Paul Sartre⁸⁵

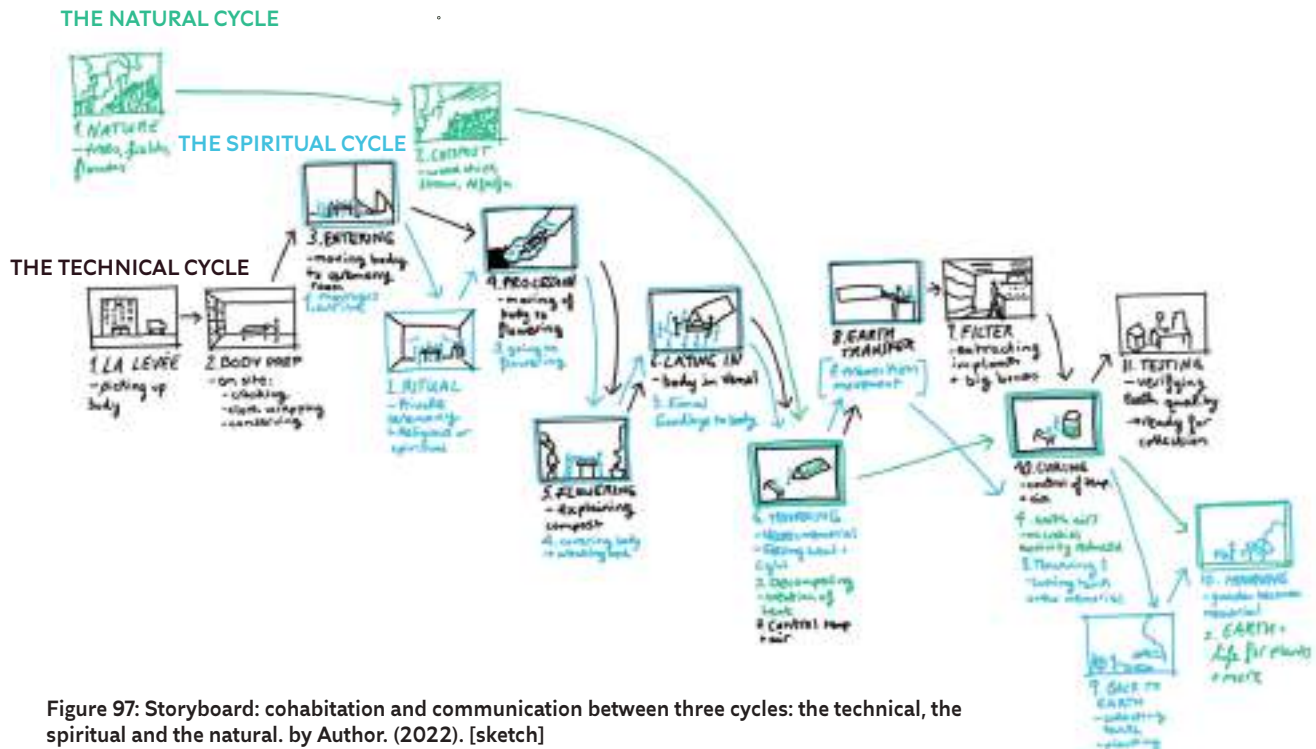


Figure 97: Storyboard: cohabitation and communication between three cycles: the technical, the spiritual and the natural. by Author. (2022). [sketch]

5.1 PROGRAMME -TECHNOLOGY AND NATURE AT THE SERVICE OF SPIRITUALITY

The project is threefold:

- Spiritual
- Natural
- Technological

The project primarily offers a new form of ritual thanks to the new process of natural organic reduction. This ritual engages the mourners to take actively part in the process, a process that is longer than the traditional one. Therefore the design of the green space and the design of the buildings follow rules dictated by the ritual.

Although the technical infrastructure allowing the decomposition of the body is a major part of the project, the most complex programmatic question is how to bring together technical infrastructure, nature and spiritual spaces (figure 97).

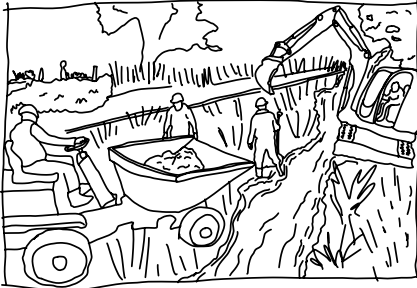
Creating a new system allowing the decomposition of human bodies, implies a new way of dealing with death and mourning. Thus, a new spirituality emerges. The space for spirituality and rituals: the ‘human space’, is just as important as the space for technical infrastructure.

Moreover, the ‘human space’ not only encompasses the spiritual/mourning space but also the public park: the gardens of remembrance.

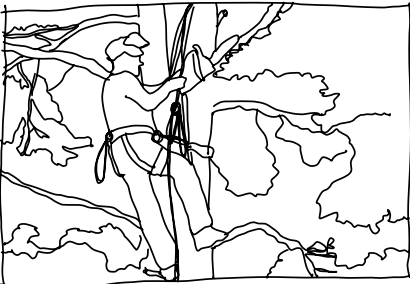
Nature, Technology and spirituality will find their place in the cemetery. A maximum of communication between the three will generate mutually beneficial conditions.

The project uses nature to its full extent thanks to technology (figure 98). It becomes a complex machine that decomposes and regenerates itself.

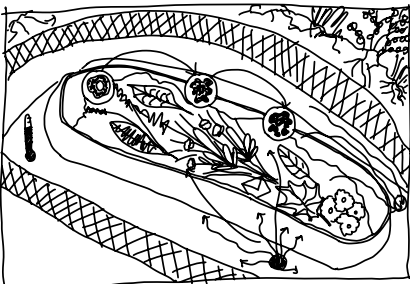
NATURAL CYCLE



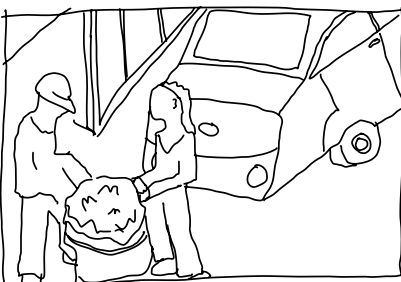
I. RESTORING THE HISTORICAL RIVER



II. WOOD WORKING



III. NATURAL DECOMPOSITION



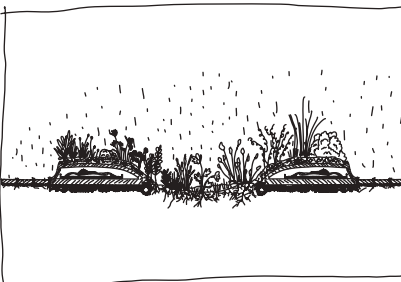
IV. EARTH NOURISHING SOIL



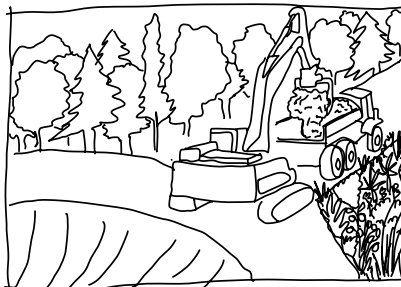
V. GARDENS OF REMEMBRANCE



VI. FLOWERING



VII. TOPOGRAPHY CREATION

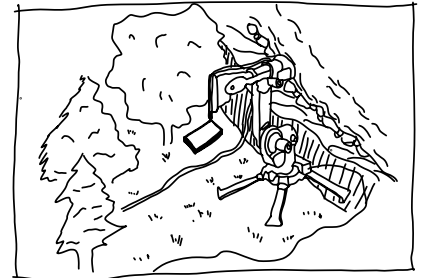


VIII. CLAY QUARRIES



IX. MUSHROOM HARVESTING

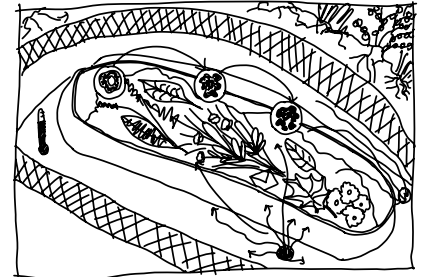
TECHNOLOGICAL CYCLE



X. ON-SITE 3D PRINTING



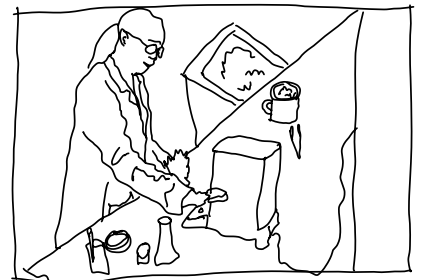
XI. MYCELIUM BRICK PRODUCTION



XII. AIR & TEMPERATURE CONTROL



XIII. HEAT HARVESTING FOR LIGHT



XIV. EARTH TESTING

Figure 98: Natural and Technological storyboard. by Author. (2022). [sketch]

BUILDING NAME	TOTAL SIZE (SQM)	PROGRAMME NOW	PROJECT PROGRAMME	DISTRIBUTION SQM
1 Main Gate Buildings	422	<u>Left:</u> -Friedhof Forum Exhibition Space and Library -Conference Room <u>Right:</u> -Toilet -Offices -mietwohnung	<u>Left:</u> -Friedhof Forum <u>Right:</u> -Arrival gathering space	Friedhof forum: 211 Gathering space: 211
2 Old Crematory A	320	-Chapel	-Funeral/ritual room (chapel)	320
3 New Mortuary	456	-Office space	-gardner's house	4556
4 Administration building	Mortuary + chapel: 912 Gardners house: 450 total: 1362	-Mortuary -Abdication Chapel -Bibliothek	- Mortuary	1362
5 New Crematory D	1200	-Abdication Hall	-Funeral/ritual room (abdication hall) + technical unit	1200
6 Equipment storage	300	-Equipment storage	-Equipment storage -Gardener's House	300
7 Funeral Home Driving Service	1956	-Parking -Laundry Service -Offices	-House of Rest	4'960
8 2 Flowering Pavilions	2100	Flowering Ceremonies	-Ceremony space Crematory A -Ceremony space Crematory D	-150 -150
8. House of Construction	4400	Construction and stocking	-stocking earth and wood -wood and mycelium construction -3d printing	-300 -100 -100

Figure 99: Change in building functions and additional infrastructure. by Author. (2022). [table]

- Renovation
- Additional constructions: pavilions

In Chapter 4, the symbolical and historical value of the main gate building, the old crematory, the old mortuary, the administration building and the new crematory have been highlighted.

The project proposal (figure 99), aims to keep or bring back this symbolism by using the buildings for the new ritual process. Therefore, the historical crematories keep their current use: abdication chapels. The main entrance building remains a space for the friedhof forum and offices. The new mortuary stays the office space for the gardeners.

The new parts of the ritual demand alternative spaces. Therefore the "Funeral Home Driving Service" building is renovated to house the technical infrastructure necessary for the control of natural organic reduction. This building becomes the house of rest and therefore houses the resting blocks thus becoming important in the ritual. The additional spaces for rituals such as flowering will be situated in pavilions.

**NUMBERS & INFRASTRUCTURE
- HOW MUCH FOR HOW MANY**

Decomposing 7'832 bodies in Sihlfeld in 2050 implies that Sihlfeld must have the following facilities: 653 Vessels (1 Vessel is approximately 1,20 x 1,20 x 2,50 m), 1'300 curing containers (1 curing container of 1,20 x 1,20 x 1,20 m), a filtering lab equipped with a cremulator, a laboratory for the testing of the earth and a technical office for the regulation of the air within the vessels.⁸⁶

In order to estimate the size of the building necessary for such a process, we can compare the amount of vessels and the size of Recomposes' facility (figure 100-101) to the amount of Vessels needed at Sihlfeld. Thus, the total size of building needed would be 14'955 square meters.

⁸⁶<https://recompose.life/planning-ahead/#how-it-works>. (Accessed 1 Sept. 2022)

⁸⁷<https://olsonkundig.com/projects/recompose-seattle/> (Accessed 12 Oct. 2022)

RECOMPOSE SEATTLE

**2021
ARCHITECTS: OLSON KUNDIG
SIZE: 18'500 SQUARE FOOT = 1'719 SQUARE METERS
NUMBER OF VESSELS: 75 ⁸⁷**

**RECOMPOSE IN
SIHLFELD**

(653/75) x 1'719 =

14'955 sqm



Figure 100: Recompose Project Facility Render. Olson Kundig Architects (2016). Available at: <https://olsonkundig.com/projects/recompose-seattle/> [Accessed 12 Oct. 2022]. [Render]

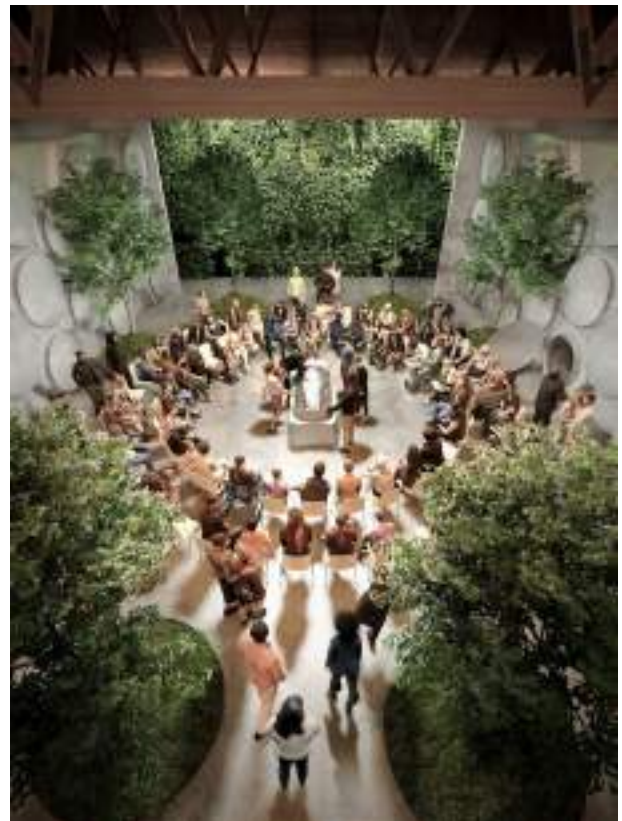


Figure 101: Recompose Ceremony Render. Olson Kundig Architects (2016). Available at: <https://olsonkundig.com/projects/recompose-seattle/> [Accessed 12 Oct. 2022]. [Render]