

Czech University of Life Sciences Prague

Faculty of Environmental Sciences

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**Faculty of
Environmental Sciences**

Multifunctional Cemeteries and Reverent Parks

Master's Thesis

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DIPLOMA THESIS ASSIGNMENT

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Landscape Engineering

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Thesis title

Multifunctional Cemeteries and Reverent Parks

Objectives of thesis

The current state of cemeteries in the Czech Republic is outdated, burial in the grave is on a decline and cremation is far more frequent, which may result in demand for another form of cemeteries or their abandonment.

The most common burial method in the Czech Republic is placement in an urn, which, if we are not talking about ecology (since the cremation itself releases a lot of CO₂ or possibly even other pollutants), has several pros, for example, the ashes in the urn can be kept at home, turned into a diamond, made into a glass sculpture, or scattered at the favorite place of the deceased.

This research will explore: the demand for cemeteries as we know them now in the future; if the bereaved can honor the memory of a loved one by remembering them wherever they are; or they could keep the urn at home. However, if there were a larger number of bereaved who would like to go someplace every now and then to enjoy the memories they shared with the departed. How should this new place, where one would enjoy going to, look like? And how do you deal with the ashes to make the survivors happy while keeping the act respectful?

This research aims to demonstrate how a "reverent park" could become a place that not only the bereaved would enjoy visiting, but also one that is enjoyable, respectful, and repeats the cycle of life, because our lives cannot be represented or confined by stone or other inanimate fabric.

Methodology

The research will begin with a detailed literature review, including an understanding of how ashes are stored – columbariums, the burial of urns near trees, scattering meadows, and other alternatives. Review work will also look into law/land management/planning as to why are cemeteries considered monofunctional and what is the deal with scattering ashes and so on (in Czechia it is okay to scatter them anywhere, even into rivers, if you have permission from the land-owner).

Secondly, the work will conduct a questionnaire. It would pose as "market research". Because there is little talk about burial, as it is a sensitive topic, one does not even know what others would like in this regard and

"progress" is minimal – in a way, one has only two options to choose from (coffin → ground, or cremation → urn), because one does not often know, that it could be done differently.

Based upon the survey, interviews with designers who specialize in memorial grounds, etc. A proposal for designs, improvements – and/or a (re)design of a cemetery → reverent park will be made.



The proposed extent of the thesis

70 pages

Keywords

burial ground, cemetery, reverent park, interment, memorialisation

Recommended information sources

- Bennett, G. and P. Davies. 2015. Urban cemetery planning and the conflicting role of local and regional interests. *Land Use Policy* 42:450–459
- City of Camas Cemetery Master Plan. 2009. Camas: Washington.
- Curl, James, Stevens. 1975. The Architecture and Planning of the Nineteenth-Century Cemetery. *Garden History*, Vol 3, No 3, 114-131.
- Dillon Cemetery Master Plan and Conceptual Design: Narrative Description. 2015. Colorado: Dillon.
- Felicori, Mauro and Annaliza Zanotti. 2004. *Cemeteries of Europe: A Historical Heritage to Appreciate and Restore*. Compositori Industrie grafiche. Italy: Bologna.
- Tallents, C. 2018. Cemetery Land Use Contribution to Environmental and Heritage values. Report by Carolyn Tallents, Landscape Architect

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Declaration

I hereby declare that I am the sole author of this diploma thesis titled "Multifunctional Cemeteries and Reverent Parks", which I have done under the supervision of doc. Peter Kumble, MLA, PhD. I have listed all literature and publications from which I acquired information in the attached list of references at the end of the thesis. As the author of the mentioned diploma thesis, I further declare that I have not violated the copyrights of third parties in connection with its creation.

In Prague on _____

Acknowledgements

I want to express my gratitude to my supervisor, doc. Peter Kumble, MLA, PhD, for guiding me, sharing his contacts of people who would be interesting to interview and encouraging me. Secondly, I would like to thank all who partook in my survey, particularly those who agreed to get interviewed and share their knowledge and opinions on the matter. Finally, I would like to thank my family for supporting me through my studies and my partner for reassuring me of the importance of my interest in this topic.

Above all, this is a tribute to my beloved grandmother, whom I greatly thought about while working on this thesis.

Multifunctional cemeteries and reverent parks

Summary

This master's thesis discusses Czech cemeteries' relevance and limited adaptability to current burial requirements – which is important due to the high cremation rate. It ponders cemeteries from the point of their functionality, possibility and suitability to provide other uses. The aim was to find the optimal way to memorialise the departed that were cremated.

The literature review mentions Czech cemeteries' legal aspects and the provided options for burial and memorialisation. Additionally, it summarizes the historical development of cemeteries and cemetery planning. It explores the various methods of disposition of the body, its environmental impact and the multiple ways of memorialisation available in some countries. Finally, it looks into the functions of cemeteries alone and the functions that could be bestowed upon cemeteries by vegetation and architecture.

Through the public survey, it aims to identify people's preferences on the look of cemeteries, requirements regarding memorialisation, behaviour and acceptable activities. It explores possibilities of integrating memorialisation into the urban matrix. It also identifies the shortcomings of Czech cemeteries. It proposes possible improvements, considers a more holistic approach to cemetery planning to make the final resting places sustainable, and proposes the concept of reverent parks.

Reverent parks present a promising approach to sustainable urban planning, land use, and memorialisation. The challenges connected to its implementation in the Czech Republic need to be addressed through a collaborative effort among planners, designers, and community stakeholders to ensure the viability of these commemorative landscapes now and in the future.

Keywords: burial ground, cemetery, reverent park, interment, memorialisation

Multifunkční hřbitovy a pietní parky

Souhrn

Tato diplomová práce pojednává o relevanci českých hřbitovů a jejich omezené adaptabilitě na současné požadavky na pohřbívání – což je důležité vzhledem k vysoké míře kremace. Zabývá se hřbitovy z hlediska jejich funkčnosti, možnostech a vhodnosti poskytnout další využití. Cílem bylo najít optimální způsob, jak uctít památku zesnulých, kteří byli zpopelněni.

Literární rešerše zmiňuje právní aspekty českých hřbitovů a nabízené možnosti pohřbívání a memorializace. Dále shrnuje historický vývoj hřbitovů a plánování hřbitovů. Zkoumá různé metody nakládání s tělem zemřelého, jejich dopad na životní prostředí a různé způsoby memorializace dostupné v některých zemích. Nakonec se zabývá samotnými funkcemi hřbitovů a funkcemi, které by hřbitovům mohla propůjčit vegetace a architektura.

Prostřednictvím veřejného průzkumu si klade za cíl zjistit preference lidí na vzhled hřbitovů, požadavky na memorializaci, chování a přijatelné aktivity. Zkoumá možnosti integrace memorializace do městského prostoru. Identifikuje i nedostatky českých hřbitovů. Navrhuje možná zlepšení, zvažuje o holistický přístup k plánování hřbitovů, aby byla místa posledního odpočinku udržitelná, a navrhuje koncepci pietních parků.

Pietní parky představují slibný přístup k udržitelnému městskému plánování, land use a memorializace. Výzvy spojené s jejich implementací v České republice je třeba řešit společným úsilím mezi projektanty, návrháři a komunitou, aby byla zajištěna životaschopnost těchto pamětných krajin nyní i v budoucnu.

Klíčová slova: pohřebiště, hřbitov, pietní park, pohřbívání, memorializace

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1 Introduction

There is an increasing interest in bereavement, death and funeral practices both on academic grounds and in media, as it is a matter that touches all our existences (Davies, 2017). This thesis will focus on cemeteries in the Czech Republic with regard to multifunctionality. Multifunctionality as a means of sustainability, as the space that a cemetery takes up, could, in many cases, provide more functions than the one of interment and memorialisation. The thesis will ponder the use of cemeteries not only by the deceased but also by the living. This is important, especially in the limited space of urban areas.

The current state of cemeteries – not only in the Czech Republic – in consideration of the pressures from the increasing population and bigger demand for space and resources, does not align with sustainability. People in the Czech Republic know cemeteries as stone on stone, taking rather a lot of land; in this way, even after life, we demand space and resources. Jandovská (2002) says the look of Czech cemeteries is based on Christian churchyards with routine care for the dead and tombstones of permanent character.

To top it off, the burial method of choice of more than 83 per cent of people in the Czech Republic is cremation (Smolová et al., 2019), and in Prague, it is up to 97 per cent of the capital's dwellers (Plášková et al., 2021). The number of deaths in the Czech Republic in 2022 is estimated at 120 thousand (ČZSO, 2023); this makes around 100 000 cremations that year. Although people's preferences for burial changed towards cremation, the cemetery design had not changed much, and some cemeteries are facing the increasing demand for urn graves or columbaria spots. However, this is not the only way to do it; therefore, the thesis will also look into the ways of burial, including some alternative methods and types of burial grounds, as there are some alternatives on the rise in the Czech Republic and around the world.

The meaning of burial grounds varies through time and culture; it is ever-changing. In other words, vegetation grows, preferences for burial design change, attitudes towards the dead change, and hazardous memorials are removed. All in all, Rugg (2000) says that cemeteries may hold the characteristics of a local park.

The thesis ponders the potential of cemeteries, what functions they may offer and the possible shift to reverent parks. This research aims to demonstrate how a "reverent park" could become a place that not only the bereaved would enjoy visiting. A place that is enjoyable, respectful, and repeats the cycle of life as our lives can hardly be represented or confined by stone or other inanimate fabric.

If in our thinking, we relate to cemeteries – in Czechia, places with vegetation and various levels of impervious surfaces – only to the dead and, as such, treat them in the future. In that case, there may be no more place for the living. I believe we ought to change how we think about the whole dying, death and interment ordeal.

The architecture of cemeteries had not developed or changed as fast as it had in other fields. There are new "alternative" cemeteries and new ways of burial and interment. In the Czech Republic, this has not been truly considered, although the cremation percentage has since increased in contrast to casket burial. Cremation allows for more informal landscapes.

2 Objectives

Cemeteries in the Czech Republic are spaces with underutilised potential; their potential lies in the functionality they could have. This thesis aims to identify the functions cemeteries have and the constraints refraining cemeteries from being more than places for interment and memorialisation. Additionally, its objective is to find the perceived functionality of cemeteries.

The aim of this thesis is to see whether Czech cemeteries provide viable solutions to the current burial trend of cremation. The objective is to investigate public preferences for burial grounds, as well as their attitudes toward alternative forms of memorialisation. It explores whether people require a specific place for remembrance and what nature it should be.

The future of cemeteries is uncertain and dependent on their ability to adapt to the changing needs and expectations of modern society. To better understand this, this study examines examples of cemeteries and burial grounds that have already embraced change and offer additional functions beyond traditional interment. Moreover, the research investigates the sustainability of current cemetery practices.

In doing so, this study examines the potential for alternative memorialisation by introducing a new commemorative space - a reverent park. It states its functions and explores the design criteria that could be applied to such spaces.

3 Literature Research

As the population increases, the number of deaths grows. More deaths logically lead to more space requirements for burial. The space required, however, depends on the burial and interment method chosen.

Countries are running out of space in burial grounds, especially in urban areas. The Singaporean government decided to demolish family tombs in favour of columbaria, which is a room or building with niches for funeral urns to be stored. Graves in the state can be used only for 15 years. After that, the remains are cremated, and the burial space is used again. In Hong Kong, the government asked celebrities to promote cremation to alleviate the burden of burial. In Japan, the struggle to find adequate space for burials in urban areas began in the 1970s. The main form of burial is cremation, but this is not suitable for all inhabitants, as some religions forbid it. Since 1990, organisations have promoted the scattering of cremains (Mikles, 2021). This matter does not concern only the cities of Asia. Lees (2020) stated that in some cemeteries across Canada, the lack of burial space is also not addressed adequately. Urban cemeteries in the United States also deal with a lack of adequate space, as land is the most in-demand commodity in urban areas. The prices of burial also mirror the practices chosen, and there are expectations of an increase in cremation and therefore decrease in burial (Schenke, 2017).

As per the land required, it is essential to know the use of different disposition methods and what percentage of bereaved choose cremation, traditional in-ground burial or green burial methods (Lees, 2020). Other options exist in foreign countries, such as alkaline hydrolysis, cryomation (Keijzer & Kok, 2011) and composting.

For now, the two most common methods of disposition in the Czech Republic are cremation – over 83% (Smolová et al., 2019), and traditional in-ground burial. Lees (2020) says that in Canada, only 20% of cremated remains are interred in the cemetery. Therefore, he thinks the sensible approach for Canadian cemeteries should be to design for traditional in-ground burial or natural burial. These options are the ones that require the most ground in comparison to the interment of cremains, which can be interred in a much denser fashion.

However, in the Czech Republic, the data for the interment of cremains in cemeteries are unknown, which makes it more challenging to determine what the requirements are by the people and how cemeteries should plan for future space requirements. Evensen et al. (2017) add that the users of cemeteries and their behaviour should also be a source of information for management and planners of cemeteries in urban areas. They should mirror their needs and prevent conflict between recreational users and the bereaved.

3.1 Burial and interment in the Czech Republic

This thesis discusses burial and interment in the Czech Republic. However, there may be no improvement on a broader scale if we only focused on how things were done in one country alone. Therefore, I propose looking into some options around the world in countries

with similar cultures; this may provide a great source of inspiration and leverage for changing people's perceptions of burial.

Nevertheless, it is essential to understand the possibilities in the Czech Republic prior to delving any further, which is the purpose of this chapter.

Stejskal and Šejvl (2011a) state that by law, the deceased have the right to reverent protection of their person, and this right can also be claimed by the bereaved.

3.1.1 Management and rules

There are multiple laws and regulations that go hand in hand with burial practices to ensure that everything is in order and the reverence of the act is maintained along with maintaining hygienic conditions for the workers. They ensure that the cemetery and funeral workers do not come in harm's way and that funerary rites are done with respect and appropriately.

First and foremost, the cemetery's management and operation are in the public interest. A cemetery is, in most cases, a publicly accessible area meant for the burial of either human or animal remains (Leňo et al., 2022). The administration is usually under the municipality to which the burial grounds belong or a registered church; as such, it is always at least partly funded from the operator's funds. The management of the burial ground is not only monetary. The area also needs a professional who operates with the remains and funeral structures – this person is usually a gravedigger and is responsible for interment, inurnment, exhumation and opening graves. Apart from the interment, the place must be managed throughout the year to ensure safe movement and reverence of the site; through vegetation maintenance or minor repairs (Stejskal & Šejvl, 2011a).

The area of the burial ground is in the master plan of each municipality. That is, in the case the municipality has a burial ground; in case it does not, there has to be an agreement for providing interment on a burial ground in another municipality. In the master plan, a protection zone of at least 100 m from the borders of the burial ground should be established. This protection zone is set to regulate the development of the neighbouring area and its character as well as provided services that could go against the reverence of the burial ground or its operational capability. In the cadastre, the burial ground is either noted as a cemetery or an urn grove (Stejskalová, 2011).

Leňo et al. (2022), in the Metropolitan plan for Prague, consider cemeteries as part of the urban park areas. The park area is defined as a non-development part of the city made of greenery and, if needed, additional structures required for the area's purpose. The development of new facilities in a cemetery is possible only if necessary for the functioning of the cemetery. The purpose of the cemetery is to be a space for reverence, influencing the site's character. Plášková et al. (2021) mention that the municipal plan of Prague from 1999 set 181 ha (0,36% of the area of Prague) as areas with the function of cemeteries, which were made of 84 cemeteries. There is a difference between urban and rural cemeteries. The urban cemeteries of Prague do not lack space for coffin burial. Since this kind of interment is no longer as popular, cemeteries should focus on establishing spaces and structures for the memorialisation of cremated remains.

3.1.1.1 Operational rules

There are even rules for writing the Cemetery visitation order, which is placed by the entrance to the burial ground and poses as a guide for visitors and lessees of the burial plots. This order mentions provided services, allowed behaviour and usage of the cemetery facilities and points towards prohibiting various things. Here are some examples of what the order includes (Stejskalová, 2011):

- Provided services
- Administration and maintenance
- It can set what materials one has to choose to inter in
- Terms of use of the structures of the cemetery
- Prohibited behaviour to ensure the reverence of the site
 - Children (< 10 years) can enter only accompanied by an adult
 - No entry with dogs and other animals
 - No access to drunk people and no alcohol consumption on the premises
 - No admission with bicycles, roller skates and other wheeled recreational devices
 - No stepping on scattering gardens
 - No tampering with the cemetery vegetation or planting outside one's plot
- It states what with, where and how the bereaved can memorialise
 - And when they have to remove it
- The time for which the cemetery is accessible to the public (opening times)
 - This time may vary through the year, as cemeteries are usually open only in daylight

Although some restrictions are reasonable, others limit people's usage of cemeteries by telling them how and when they can honour the departed. A question of what is reverent and respectful arises. Plášková et al. (2021) think cemeteries should reconsider their rules and be open to people.

3.1.1.2 Inactivation of a public burial ground

Cemeteries can cease their function if it is in favour of the public interest. If the cemetery area is going to be used for a purpose that requires digging operations, such as development, all interred remains must be exhumated and transferred. The cemetery ceasement can happen when all the leases have ended or after the decomposition period of the last interred has passed. If the cemetery cancellation has to happen before these periods have passed, the regional office pays for all exhumations and transport of the remains to a different cemetery. Even the scattering and ash burial garden turf and soil must be relocated. All stakeholders are

informed of such matters and should transfer the remains to another cemetery (Zákon č. 256/2001 Sb.)

Cemeteries that no longer fulfil their primary function hold a possibility for transforming such spaces to perform other functions (Plášková et al., 2021). Common is a conversion of such areas into public parks. The turn of graveyards into public parks helps preserve their established vegetation. Multiple small burial grounds in Prague and other cities were transformed into indispensable green oases in the dense urban fabric. This was the case for Arbesovo square (early 19th century), the square of Svatopluk Čech (1927) or the park of Mahlerovy sady (1958). In the case of the latter mentioned, the park was created on a big part of the late Jewish cemetery, which still exists, although having a much smaller area right next to the park (Kovařík, 2017; Kupka, 2006). However, the small part of the Jewish cemetery was reconstructed and opened to the public in 2001 (Kovařík, 2017).

3.1.2 Interment options

A public burial ground is a place for the burial of human remains or the interment of human cremated remains. Burial grounds consist of either variation of these structures; graves and tombs for casket interment or urn graves and columbaria for inurnment. There is also the possibility of the interment of the ashes without an urn in a grassy area by either scattering or placing the ashes in the ground (Stejskalová, 2011). According to Zákon č. 256/2001 Sb., one has to either bury human remains in a burial ground or cremate them in a crematorium (Plášková et al., 2021). This law mainly talks about how to dispose of a cadaver by either burial or cremation.

Kovařík (2017) also points out that cremation ashes have historically not only been placed on burial grounds. Cremation ashes of some historical figures were placed inside their statues in public parks; this is the case of actress Hana Kvapilová, composer Vítězslav Novák and poet Antonín Sova. People walk past these statues without knowing or realising these are actually monuments.

The structures and buildings (Figure 1) that provide for interment in the Czech Republic are as follows (Stejskal & Šejvl, 2011b):

- Graves
 - Urns placed on graves or near monuments
- Tombs
- Columbaria
- Urn graves
- Scattering gardens
- Ash burial gardens

Cemeteries can also provide other spaces for memorialisation through cenotaphs. Cenotaphisation, i.e. placing a memorial without interment, is usually used for war or political

victims. According to Plášková et al. (2021), municipalities and cemetery providers should push forward and focus on providing natural burial.

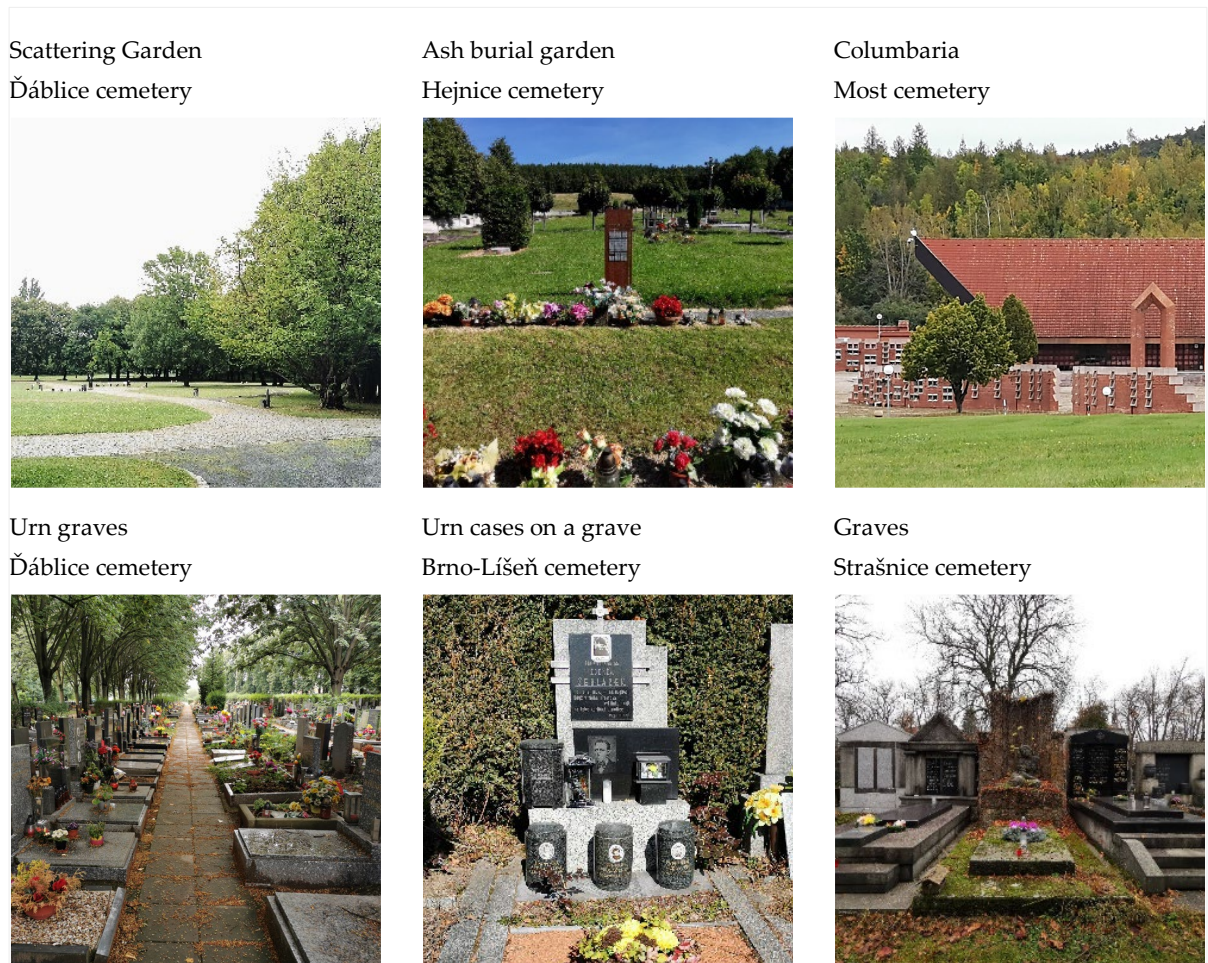


Figure 1: Some of the different burial structures found in Czech cemeteries. Five of the six images portray various ways of ash interment.

In the Czech Republic, burial plots can be rented for a specific amount of time, usually in increments of 10 years. Historically some cemeteries provided the option to rent the lot – in the case of Olšany cemeteries, its the Chaple tombs – for as long as the cemetery operates, rendering them unusable in the future as the family still holds the right to them, although they may be long gone (Dvořáčková, 2021).

3.1.3 Facilities of cemeteries

Cemeteries are areas delineated from their surroundings (Leňo et al., 2022). Stejskalová (2011) states that fencing off a cemetery is done in case of operational restrictions, keeping wild animals and dogs off the premises and preventing vandalism and theft. Otruba (2000) states that cemeteries should be delineated permanently due to hygienic reasons. The material and overall look of the fence/wall is up to the cemetery operator and their available finances (Stejskalová, 2011). For that, see Figure 2. Rugg (2000) considers the reasoning behind cemetery boundaries, be it a hedge, wall, or fence, to protect the dead from disturbance while separating the dead from the living.



Figure 2: Walls of a couple Czech cemeteries. One can notice that the Řáblice cemetery wall is in the architectonic style the entire cemetery was designed in (cubism). The maintenance of the walls also differs between cemeteries.

Other facilities a cemetery could and should have are areas that provide maintenance utensils storage, a water source for watering, a recycling station (Figure 3), toilet facilities and an operational or administrative building (Plášková et al. 2021; Otruba, 2000; Stejskalová, 2011).



Figure 3: Watering and recycling facilities examples on Czech cemeteries. The watering station is in the cubistic style and th recycling station is somewhat visually secluded from the cemetery.

Burial grounds can also have a morgue on the premises, although, in most places, it is no longer used (Stejskal & Šejvl, 2011b).

3.2 Cemeteries, graveyards and other burial grounds

This chapter looks into the history of burial grounds, some types of burial grounds, interment methods and cemetery planning – in the Czech Republic and elsewhere.

3.2.1 History of burial grounds

This chapter contains a history of burial grounds. The looks and functions of burial grounds changed noticeably over time; what they all have in common is respect for the dead, and the form of it also differs with culture.

The first kind of body disposition on Czech lands might have been inhumation in 500 BC by Celts, who buried their ancestors along with weaponry or jewellery; the amount or absence of these things in a grave mirrored the position of the deceased in society. Around 200 BC, there was a shift from inhumation towards cremation. Germanic tribes typically used cremation as the primary disposition method; their graves consisted of urns and armour (Kovařík, 2017).

Between the 5th and 6th centuries came the Slavs, later known as Czechs (Kovařík, 2017). The primary burial method was cremation on a pyre (Lutovský, 1996). The cremated remains were put into ceramic containers (Kovařík, 2017). Lutovský (1996) states that the common look of burial grounds was tumuli, which could be described as burial mounds. These took on multiple forms; in some cases, they were structures where cremated remains of multiple people could be placed or for individual burial. It was common for the settlers in one location to use one small burial ground for centuries. Even now, we can see the tumuli as heaps of land of various shapes and sizes throughout the landscape (Lutovský, 1996). For unknown reasons, around the 9th Century, the tumuli were also over uncremated remains until tumuli were no longer used. This clashes with the spread of Christianity, but that is not considered the cause for the end of cremation and tumuli (Hupková, 2014; Jandovská, 2002; Lutovský, 1996). Kovařík (2017) writes of burial grounds in Prague from that period in places we now have buildings, such as the Motol hospital and Strahov monastery. In the coming periods, the number of burial grounds only increased; therefore, one could say that many areas in Prague used to be burial grounds, and we walk past them or build upon them without knowing or realising what they once meant.

After that, Christian burial grounds were moved to the areas near churches, i.e. interment was in churchyards. A churchyard was usually small land for burial close to a place of worship, used for interment for centuries (Rugg, 2000). Not only was this change in the burial rite, but the burial grounds were no longer separating the dead and the living (Kovařík, 2017). In the area of the Czech Republic, this came to be mainly in the 11th Century with the building of churches. Initially, every church had a churchyard, forming a solid connection between burial and Christianity (Skalická & Kašpar, 2006, as cited in Hendrych et al., 2018).

Kovařík (2017) states that up until the 18th Century were burial grounds inside the city walls, mostly connected to a church. Although some preferred burial outside of them, usually

peasants (Lutovský, 1996). Apart from burials in churchyards, burials were also made in crypts, tombs, or church ambits. The interment into a sacral building was supposed to be only for men of high faith; however, it also accommodated emperors, noblemen and other notable individuals (Kovařík, 2017; Možný, 1990). In comparison, the poor public were buried in the churchyard, possibly in mass graves, as mentioned later. Churchyards were also restrictive of who could be buried on their grounds, so Jews had established their own burial grounds on degraded land that was not suitable for anything else or on the outskirts of cities, as their burial rituals were not tied to a place of worship (Skalická & Kašpar, 2006, as cited in Hendrych et al., 2018). A notable Jewish cemetery in Prague is the Old Jewish cemetery (1425) which was a burial ground for thousands with memorials in lines and on top of one another (Možný, 1990; Pacáková-Hošťálková, 1999).

The rise of burial grounds, in many cases just large mass graves, was due to famine and epidemics of the plague from every century at least once from the 14th to 18th century. In the late 12th Century, there was a note of eight mass graves that each could fit 1000 cadavers filled within six months. Only at times of plagues and other health worries were cemeteries developed behind the city walls to stop the spread of diseases, i.e. concerns over hygiene. The first, but not the only such cemetery in Prague is also the Olšany cemetery, established in 1680 as a plague cemetery. The burial of the dead was conducted the same or the following day. The cadaver was buried either in a coffin or a shroud (Kovařík, 2017).

In the 18th Century, Joseph II ordered to bury only in a shroud and use one wooden crate to transfer the cadaver (Kovařík, 2017; Kupka, 2006). This was due to environmental concerns over the lack of wood and also to promote the fabric industry (Kupka, 2006). However, this order was cancelled the following year as people found it too disrespectful (Kovařík, 2017).

Cemeteries, as we know them, came to be between the 18th and 19th centuries; they were located close to, but not within, settlements. The reason for this was the worry of health risks connected to the overcrowded churchyards in the inner city (Goode & Lancaster, 1986; Rugg, 2000). In 1782, Joseph II forbade the burial in city cemeteries and crypts. Then began in 1786 the establishment and regular use of cemeteries outside the city walls. The overcrowded or no longer used churchyards were closed or demolished to allow for more hygienic urban living and city development. Those that were only closed remain a cultural heritage (Kovařík, 2017).

Creating cemeteries on the outskirts of developed areas now allowed for the burial ground to be of more considerable size and could even be expanded. However, many of the sites have to this day been built around due to urban sprawl (Kupka, 2006; Rugg, 2000). In the place of an old burial ground that used to be within the city walls of Vyšehrad was Slavín cemetery for significant women and men of the country established on the verge between the 19th and 20th Centuries (Pacáková-Hošťálková, 1999). The modern cemetery rose from religious and sanitary reforms that deemed urban churchyards limiting. There was a need for more burial space as the urban churchyards were overcrowded. For example, Paris banned churchyard burial in 1809, which led to the establishment of the famous Pere-Lachaise

cemetery. This proved influential in the cemetery design of the 19th Century (Goode & Lancaster, 1986).

An exciting change to cemeteries was Abney Park Cemetery (1840), which was laid out as an arboretum, popularising the use of exotic species. Similarly, the Mount Auburn cemetery in Boston, United States is an arboretum and includes a botanical garden (Figures 4 and 5). In England, on the other hand, Loudon believed cemeteries should have an unmistakable character to ensure people knew they were in a cemetery. To achieve this character, he proposed by planting coniferous and fastigate trees in avenues or regularly spaced. This design was later viewed as sombre. There were also experiments with the layout of cemeteries going from informal to very formal layouts - informal with serpentine walks, undulating grounds and clumped trees, some formal elements, avenues with a central emphasis and winding paths, to very formal and purely geometrical (Goode & Lancaster, 1986).



Figure 4: Painting of the Mount Auburn cemetery by Thomas Chambers, mid 19th century. Available at: <https://www.nga.gov/collection/art-object-page.45641.html>

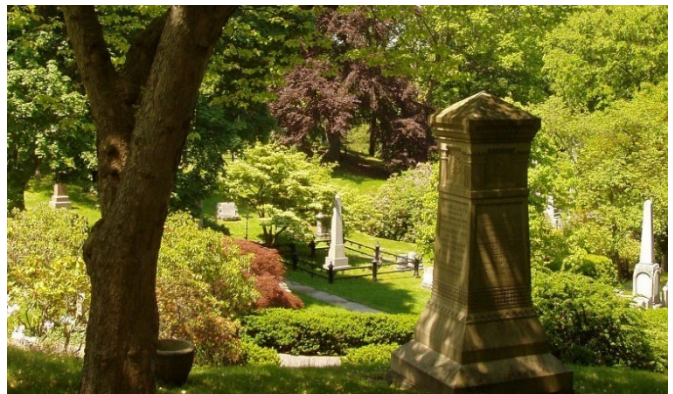


Figure 5: Photo of the Mount Auburn cemetery portraying some of the monuments along with lush greenery. Author: Daderot Available at: <https://www.nps.gov/places/mount-auburn-cemetery.htm>

New kinds of cemeteries, even more, embrace the natural character of a landscape. Some countries only allow metal or stone flat monuments on the ground, making these cemeteries look more like public parks. This is in contrast to the cemeteries with vertical headstones with a robust character (Kupka, 2006).

Regarding the historical functions of cemeteries, Možný (1990) states that in medieval times cemeteries had multiple functions and that they were social places. Not only did people go there to tend the graves, but they also held markets, drank wine and baked bread. Since cemeteries were on sacred grounds of the church, some people, such as beggars, found refuge there. Cemeteries were part of the municipality, as well as death, was part of everyone's life since people died at home. In no way is this in praise of the medieval burial practices that were due to hygienic concerns changed in the 18th Century, as stated earlier. However, it is interesting to note the different approach to cemeteries and death compared to how it is now, with this topic being taboo.

Later some cemeteries took on the role of the first parks in some cities, as public parks as we know them now did not exist yet. This was especially true in the United States, where cemeteries were designed primarily for public pleasure with informal layouts of winding paths, clumps of trees and even lakes (Goode & Lancaster, 1986).

3.2.2 Burial Grounds and Memorialisation

Cemeteries of the 20th Century can be divided into three main categories (Figure 6), which differ in their feel, management, used materials and overall design. The three kinds are architectural, park/lawn, and forest cemetery. The architectural cemetery that uses constructions divides space, and the vegetation itself is more of an architectural aspect, i.e. shaped or with a robust habitus. This cemetery type utilizes its area intensely and fits the most remains of the deceased. Park cemetery uses a park-like structure that is imbued with areas for burial. This cemetery type utilizes solitary, grouped and alley greenery in the entire area, along with lower vegetation near the burial plots. Outside of the Czech Republic, the lawn cemetery contains flush graves instead of headstones, creating even more of a park-like feeling. They usually include additional facilities and aspects, such as seating areas, water bodies and art installations. The last type is a forest cemetery, which utilizes the existing landscape, and the burials are done in the entire area where space allows. To increase burial density hedges can be used as dividers. Its character is based on the landscape, vegetation, terrain, and views (Otruba, 2000; Robert Auzelle, 1965, as cited in Goode & Lancaster, 1986).

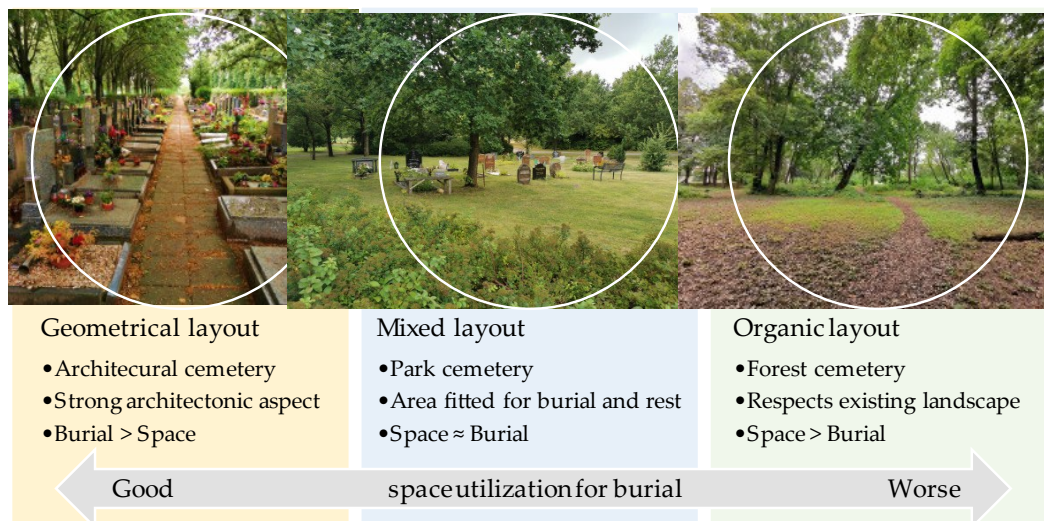


Figure 6: Example of the three cemetery types as described by Otruba (2000), with relation to utilization of the cemetery space for burial, i.e. quantity of interments possible.

Goode and Lancaster (1986), apart from cemeteries, mention crematoria gardens that allow for a different layout, as there is no constraint of burial as in a cemetery. As an example, they state Golders Green Crematorium (1902), which has a garden-like setting (Figure 7).

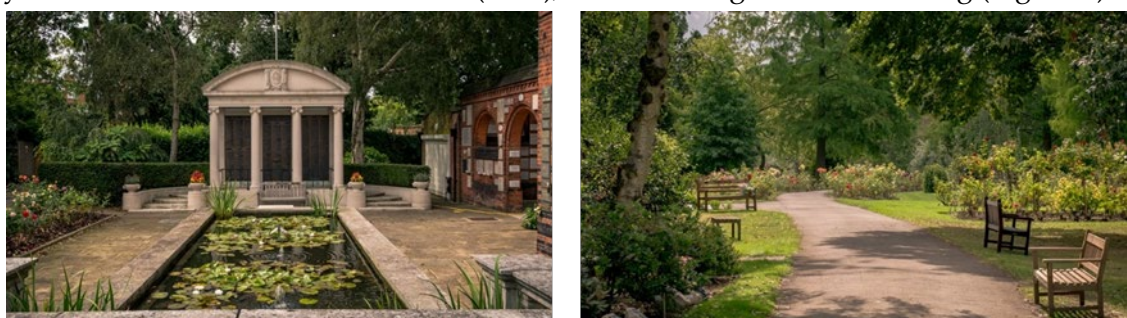


Figure 7: Pictures of the Golders Green crematorium garden. One can see both formal and informal layout. The garden allows for ash scattering, burial or urn interment. Available at: <https://www.thelondoncremation.co.uk/south-east-crematoriums/golders-green/default.aspx>

3.2.2.1 Green and other alternative burial grounds

Currently, two burial grounds in the Czech Republic offer greener interment options, only for cremation ashes. One is in Prague in the Ďáblice cemetery called Les vzpomínek, and the other is newly established as part of the Brno-Líšeň cemetery. In Les vzpomínek, one can inter the cremains in a biodegradable urn or the ashes alone close to trees. They allow for interment only during the vegetation period from April to October (Les vzpomínek, 2015).

There are also some forest cemeteries in a more natural setting; however, they have monuments at the burial and cremains interment. These cemeteries are in Zlín (1931) with an area of 40 hectares, Hradec Králové (Pacáková-Hošťálková, 1999) and Praha-Motol, which main interment option is for ash interments as the memorial park has a crematorium on its grounds (Kupka, 2006).

The most notable forest cemetery is the one in Stockholm called Skogskyrkogården (1920); see Figure 8. It mixes nature with built structures; there are three burial chapels, a crematorium and columbaria. The terrain varies throughout the cemetery, and there is an extensive pine forest. The cemetery was inscribed in the UNESCO heritage list in 1994 as a culturally designed landscape and a prominent cemetery example (Felicori & Zanotti, 2004).



Figure 8: Some of the views in the Woodland Cemetery in Stockholm, portraying the architecture, landscape and burial.

Even more natural than forest cemeteries with monuments are green burial grounds. There are traditional cemeteries that have green burial lots on their grounds. The green burial part of the cemetery then acts as a conservation ground. Some cemeteries are solely green burial grounds, and their amount among conventional cemeteries is relatively negligible; in the United States, it is ca. 10 000 traditional cemeteries vs 120 green cemeteries. However, green burial is on the rise (Schenke, 2017).



Figure 9: Natural Cemetery extension of the All Saints Cemetery in Waterford, Michigan. Designed by: Jack Goodnoe Source: <http://www.jackgoodnoe.com/natural-cemeteries.html>

One of the examples of natural burial grounds is in Waterford, which was added as an expansion to an existing cemetery (Figure 9). This part was designed by Jack Goodnoe and offers possibilities for burial as well as ash interment. It has a concept of visitation and non-visitiation graves. Visitation graves offer the possibility of memorialization by the path close to the place of burial; on the other hand, non-visitiation plots are further from the path, and one cannot memorialize the buried at the spot. However, it still offers a shared space for memorialisation and name inscription in a low wall of stones found at the site. It offers plots by the stream, in a meadow and next to trees (Goodnoe & Burns, 2015).

In Japan, with the lack of space, the population shifted from rural to urban areas, and fewer people who would take care of the graves and the prices of graves led to innovative ways of memorialisation and cremains storage. In 1999 at the Chishou-in monastery in Iwate, they came up with the interment of the ashes into the ground, marking the spot with a tree instead of a tombstone. This later became a more used practice around Japan; the majority of the places look like pleasant parks, some have large lawn areas, some plant a flower, and some use headstones or smaller stone plates (En-Park.net, 2017). For example, Ichiharaminami Cemetery (Figures 10 and 11) by the Daitsu-ji temple provides interment spots of various sizes and allows for the planting of perennials, geophytes or trees on top of the cremains, along with the possibility of adding a small stone plate (Ichiharaminami reien, 2023). Japanese Buddhism considers flora a living component and a part of the cycle of reincarnation, making tree burial

a suitable way of interment. It is chosen not only by Buddhist practitioners. Tree burial is considered a commitment by Buddhists to preserve the natural environment (Mikles, 2021).



Figure 10: Trees and plants in the Ichiharaminami Cemetery, Japan. Available from: <https://ichiharaminami-reien.or.jp/cemeterymap/map08.php>



Figure 11: An overview of part of the park-like Ichiharaminami cemetery for cremains. Available from: <https://ichiharaminami-reien.or.jp/cemeterymap/map07.php>

There are also more technological and architectural ways of interment. In Tokyo, the Shinjuku Rurikoin Byakurengedo Buddhist temple is a modern multiple-storey interment facility. It allows for cremains storage and simple access to them by the bereaved via an ID card. It includes facilities such as mechanized cranes that deliver the cremains and unique rooms for grieving (Hiyama, 2022).

Among the indoor cemeteries in Japan, there is another interesting one in Nagoya (Figure 12). This temple has a room with 3000 drawers. Each has a front from thick glass with an engraved Buddha statue that can light up upon request. The whole room also has a sound system to create a pleasant ambience (Fujimura, 2009).



Figure 12: The columbarium at the Banshoji temple in Nagoya, Japan. Author: Noriko Hayashi/SGIA/Panos (January 2015). Available from: <https://library.panos.co.uk/stock-photo/draws-in-the-banshoji-temple-where-on-the-3rd-floor-there-is-a-room-called/search/detailm>



Figure 13: Lit up Buddha statues in the Ruriden columbarium at the Kōkoku-ji temple, Tokyo. Author: 日蓮宗 正定山 幸國寺 (December 2016) Available at: <https://goo.gl/maps/E2GWuYntDrzAsHaY9>

Another columbarium with a similar concept is the Ruriden columbarium (Figure 13), which is part of the Kōkoku-ji Buddhist temple in Tokyo. This is in a small building with an octagonal layout filled with over 2000 crystal Buddha statues with LED lights underneath. Behind each

statue is a drawer with cremains, which are to be stored for 33 years and buried below the columbarium (Sim, 2015).

Hariyono (2015) considers the use of vertical cemeteries, as these could prevent urban sprawl while providing enough space for interment in dense cities. His theoretical proposal of typology for a vertical structure, where every floor would allow for different burial methods (Figure 14); sky burial, columbaria, wall burial (stacked), floor burial and ground burial on the ground floor. The reason behind various methods is that not all religions allow cremation, and some require burial in the ground. The ratio of the burial methods would be decided upon in the inventory of the demographics (Figure 15). Providing different methods in one place also improves social integration and inclusiveness. However, vertical cemeteries might be problematic to accept for people of strong belief whose religion does not allow them to share burial facilities with others.

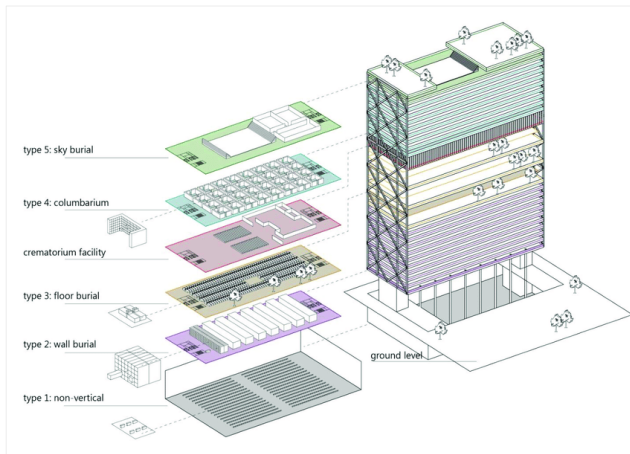


Figure 14: Hariyono's portrayal of the different burial methods on each floor of a vertical cemetery. Source: Hariyono (2015)

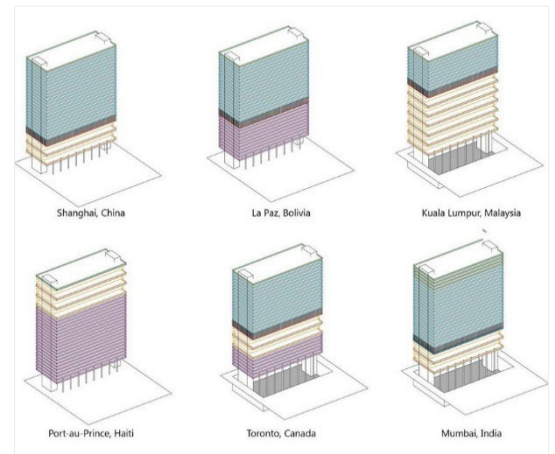


Figure 15: How the vertical cemetery could be implemented in various countries based on the burial method requirements. Source: Hariyono (2015)

3.2.2.2 Memorialisation in the time of technology

In the age of the internet, there are multiple ways one could use to either remember someone after their passing or to memorialise them. Here are some examples of such services.

Echobox Memory Vault (2020) is an application where one writes posts on a profile and adds pictures, videos, and voice recordings of themselves or their deceased loved ones. Family and friends can access and view the memories or memorabilia of the departed.

The World Wide Cemetery (1995) was the first virtual cemetery, established by Mike Kibbee, who got the idea and thought he would be the first one to have a grave there. One can:

- Search by words, name or even a country.
 - This shows different results be it to a memorial of a person or their board, where anyone can send an image of flowers or leave a comment.

- Leave a message on the Memorial of the deceased.
 - I saw some messages on one's board from someone who did not know the deceased, but they left a note for the bereaved, as they shared the same burden of losing a father they loved.
- Set a permanent online memorial for a fee of 90 USD.
 - The memorial contains various information about the person, their picture, and even the place where the person is buried. There can even be a description of the person or a story about them written in an uplifting way.

Virtual Grave (2020) is a website first established in 2006 that got a reboot in 2020. The website is stylised as a gothic cemetery. It provides many possibilities for people and pets. What it provides:

- Graveyard or catacombs locations for people and one graveyard for pets.
- Option to choose a gravestone design (based on religion, where each has various designs).
- The memorial cannot be purchased forever, contrary to The World Wide Cemetery (1995), and one would have to pay to prolong the memorial. A memorial can be purchased for 12 months/2EUR or "forever"(until 2030)/15EUR.
 - When setting the memorial, one can design a card for the funeral ceremony – name, date, etc., which could be shared.
- Assortment of various candles, wreaths, flowers, and plushies, which one can then place on anyone's grave along with a message. These memorialisation "things" also have a duration and can be purchased - 1 day/free, 30 days/2EUR, 360 days/3EUR and "forever"/10EUR.
 - The items are visible at the "lodging of the deceased" for the purchased duration.
- One can even set the mood of the cemetery, be it day or night, or change the weather to sunny, rainy, snowy or stormy.

3.2.3 Methods of Burial

The burial method and customs connected to death are linked to one's religious beliefs, economic development, society, lifestyle, and political context. This connection can be observed in the various burial customs people have all around the world and had in the past (Hupková, 2014). Hupková believes these factors lead to the high cremation rates in the Czech Republic. The subject of burial and death says a lot about the cultural development of a country's society (Davies, 2017; Hupková, 2014).

The chosen burial method also potentially generates profit/income for a burial ground; see Figure 16. Cemeteries require income to cover governance expenses; some cemeteries can be funded by associations or municipalities (Lees, 2020; Stejskal & Šejvl, 2011a).

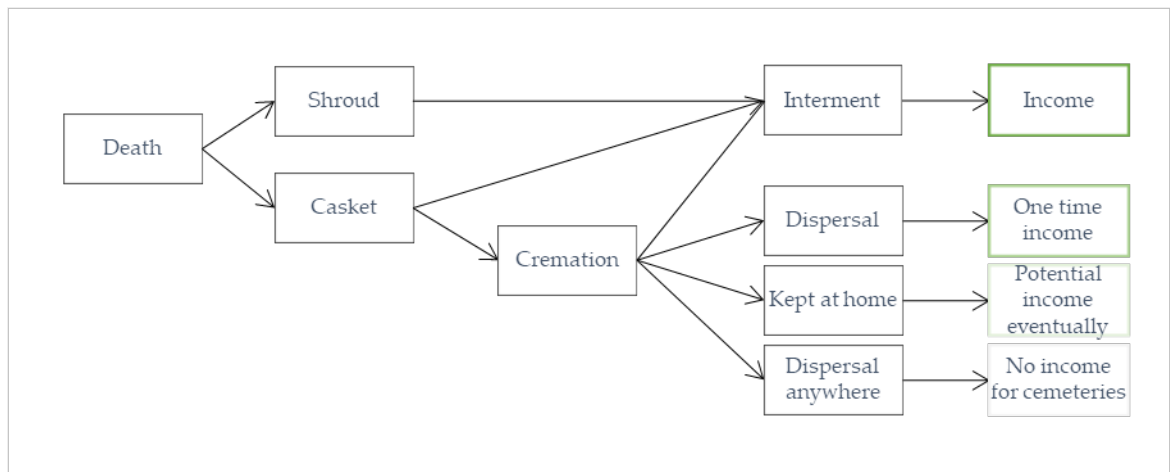


Figure 16: Simplistic portrayal of conventional interment methods with relation to generating income to burial facilities.

3.2.3.1 Cremation

In the area of the Czech Republic, incineration was used prior to whole-body interment, which came to the region only in the 9th Century (Hupková, 2014; Skalická & Kašpar, 2006, as cited in Hendrych et al., 2018).

Yeom (2008) mentions that in the 19th Century, cremationists proclaimed cemeteries to be an „outdated, grotesque display of pompous statuary“ holding little spiritual value; therefore, cremation would be the ideal alternative. Hupková (2014) states that the rise of cremation started with organisations that promoted it. Body interment was later after the introduction of cremation at the beginning of the 20th Century when the law on "Burial by Fire" was introduced in 1919, legalising cremation on a decline (SPH, 2021). Anděl (2021) says that cremation in Czech lands was propagated by an association called Volná myšlenka“ ('Freethought).

Hupková (2014) listed a couple of possible arguments for why cremation was introduced in the Czech Republic, such as:

- more hygienic method
- prevents soil pollution and groundwater contamination
- effective, simple and fast process
- reduced burial cost
- efficient use of cemetery space
- provides with another choice of disposing of a cadaver

Further, Hupková states that the expansion of cremation in Western society was due to the change in thinking, values and attitudes (e.g. secularisation, alternative spirituality or return to nature).

Anděl (2021) describes cremation as the process of burial. The coffin used has 100% polyester lining, and the wood cannot be treated in any way (to prevent smoking). The coffin is necessary as it is vital in the incineration process. The heating medium used is natural gas, the temperature in the furnace is 780 °C, and through the incineration, it has to be higher than 850 °C. It takes 30 to 60 minutes; after cooling, the cremated remains are sieved (the sieved medical and metal materials are recycled), and the bones are ground. The result is circa 3.5 kg of ashes. These ashes are then placed into a marked black plastic official urn.

The interment of ashes allows for many options. The cremains in an urn can be placed into an urn grave or a columbarium. The cremains can be interred through scattering or buried in the ground (Otruba, 2000). An urn grave can be 100 x 100 cm big; in this structure, one can inter four urns. A columbarium is a standalone structure or part of an existing structure, such as a building or a wall. A scattering garden is an open green area, usually a lawn. The area of it should be 3-5 m² per interment. Stejskal and Šejvl (2011b) mention 1-4 m², depending on whether it is scattering or ash burial.

Cremation is a burial process outside the burial grounds; the cremated remains can later be brought to the burial grounds to be interred (Stejskal & Šejvl, 2011b). However, according to Zákon č. 256/2001 Sb., the bereaved do not have to inter the cremated remains on burial grounds. They can keep them at home or scatter them anywhere, as long as it does not go against the reverence and public safety. One can scatter or bury cremated remains on his property or with the landowner's permission.

3.2.3.2 Ground burial

The process of ground burial can be done in two ways. The conventional way is with a coffin, often containing various kinds of artificial material, be it either the attire of the buried or the lining or outsides of the casket.

The other option is a so-called natural burial. For the burial to be green, i.e. environmentally friendly, the body cannot be covered in embalming fluid and may only be covered in natural materials, such as a shroud, or a woven coffin, as these materials will degrade and decompose easier along with the body (Davies, 2017; Plášková et al., 2021). Plášková et al. (2021) further think that municipalities should provide the option of natural burial and that the public should be told about it. People who choose green burial are only a tiny fraction of a per cent, which is why it is necessary to still plan for other kinds of interment as well (Lees, 2020; Plášková et al., 2021).

Kavka and Šindelářová (1978) define the best place for ground burial to be in flat terrain, with a slope of maximal 3-5%, with a water level > 3,5 underground and good permeable soil to allow for decomposition of the body while preventing the spoiling of the underground

water by the decomposing fluids. Otruba (2000) states that the maximal slope can be 8%; in case it is more than that, the slope has to be transformed into terraces. The size of an adult grave is 210 x 80 cm with > 120cm of soil on top. Üçisik et al. (1998) also mention the minimal soil layer that is to be put on top, along with the minimal soil layer required to be at the bottom. Burial cannot be done on a rock foundation; there has to be a soil layer from top and bottom due to hygienic reasons.

3.2.3.3 Innovative ways of disposition

There is a shared concern about the environmental impact of burial (Bencko, 2011; Keijzer, 2017; Keijzer & Kok, 2011; Robinson, 2021), which led to research of alternative ways of burial.

Aquamation is an alternative way of burial, requiring less energy than cremation. It is based on alkaline hydrolysis of the body. It takes part in a stainless steel container filled with water and potassium hydroxide, heated to 93 °C. The process takes four hours, and it results in the dissolving of the soft tissues, leaving only bones that are then ground. Similar to this is resomation, which is done at a lower temperature for a shorter time (Kamenev, 2010). Robinson (2021) states that the water is heated to 150 °C and takes 3-4 hours, creating a sterile effluent and bone fragments that are ground into powder. According to Keijzer and Kok (2011), it seems this may be an option with the most negligible environmental impact – this method was not yet compared to natural burial or body composting.

Cryomation, which was also introduced as Promession/Promessa, went bankrupt (Promession, 2023). It was an idea for freeze-drying the corpse in a container with liquid nitrogen. Keijzer and Kok (2011) considered it an environmentally reasonable disposition method.

Composting of the body, a new method of body disposal, is done by a firm called Recompose in the United States. This method is based on transforming the body into soil. The process quickens the natural decomposition by adding plant matter and microbes in a vessel/capsule. After that, the mixture was transformed into soil and left to cure for some time. The overall process takes 7-13 weeks and makes about 0.76 m³ of soil amendment. The product can be used to improve soil texture, where the bereaved want, or they can choose to donate it to Bells Mountain conservation land (Recompose, 2017).

3.2.3.4 Environmental impacts of burial and other disposition methods

Bencko (2011) considers the negative impacts of burial. During the decomposition, fluids leaking from the cadaver could pose a hygienic concern if they were to contaminate a source of potable water. This concern is supported by Robinson (2021), who states that some coffins that are used are not even biodegradable, creating unfavourable conditions for decomposition. Another negative is the use of formaldehyde (which is carcinogenic), often used to prevent

body decay (Bencko, 2011). Water pollution depends on the location, site characteristics, management of the cemetery and materials buried along with the body (Bencko, 2011; Üçisik et al., 1998). This can be avoided by choosing the right location away from water sources (Leňo et al., 2022; Otruba, 2000; Üçisik et al., 1998).

The primary concern for cremation is its greenhouse gas emissions and the need for fossil fuels to power the incineration process (Robinson, 2021).

Keijzer (2017) quantified the impacts of burial and cremation. This research was undertaken with Dutch data, however, the results could differ in each country. The most significant environmental impact of both methods is caused by the production of the coffin and monument, emissions, and the grave rest period. Keijzer concluded that although burial had a lower impact in most of the impact categories, cremation had a lower impact in two main categories – human toxicity and urban land occupation. Overall on average, burial has a higher environmental impact; nevertheless, both burial practices have their impacts in different categories; the change of cotton lining in the coffin for a more sustainable fabric such as jute would have a more significant effect than the difference between burial and cremation. In the end, the carbon footprint of burial (97 kg CO₂ equivalents) and cremation (210 kg CO₂ equivalents) was compared to an average carbon footprint of a person (818 t CO₂ equivalents), making the burial method a negligible part (0,01% burial and 0,03% cremation) in the environmental impact in a person's life.

In previous research, Keijser and Kok (2011) concluded that burial had the most significant impact out of the four studied burial methods: burial, cremation, resomation and cryomation. Resomation seemed to have a minor environmental impact. Another benefit of resomation and cryomation is that it does not require a coffin for the disposition process.

Tallents (2018) evaluated the impacts cemeteries may have on landform, flora, fauna, visual, heritage and cultural landscape. The most significant impact is caused by monumental burial, burial buildings (such as mausolea) and columbaria. This can be tied to their high-surface footprint. The least impact is caused by natural burial, lawns (including scattering gardens), and lawns with monuments and infrastructure. However, compared to other land uses, such as residential, commercial or industrial, that have a medium to high impact on the aforementioned aspects, cemeteries have an impact similar to that of open space, i.e. low impact.

3.2.4 Cemetery Planning

Otruba (2000) believes that cemeteries should grasp and reflect the genius loci of a place. Vacek (2015) says that genius loci is a multi-dimensional phenomenon that is invisible in the built world – although it may seem like an abstract term, it is an internal trait of a place, closely tied to its duration and its changes of the place in time. It may be understood as a relation between identity, form and time. Genius loci, in other words, the spirit of a place, is often perceived more artistically as an exclusive and aesthetical feature only some places possess - he

interprets *genius loci* as something that gives meaning to why we spend time in some place without relation to the artistic-aesthetic value of it.

One can either make the cemetery a part of a more extensive landscape or seclude it and create a place within itself. This can be accomplished by creating views of the surroundings and their dominants (Otruba, 2000).

A cemetery has to allow for good accessibility through parking, pathways, facilities, shelter against rain, waste facilities and many more. It should be easy to navigate either through the layout of the paths, memorials, vegetation or additional informative and wayfinding signage (Kavka & Šindelářová, 1978).

Otruba (2000) states that the space for and of a cemetery has an influence on the quality of an area, and therefore, its location has to be well chosen; preferential is the connection to existing infrastructure. This is with regard to hygiene, as the natural conditions of an area contribute to the functioning of a cemetery. One has to choose a location that is good for the decomposition of the buried bodies, which is influenced by soil, water level, and terrain. The decomposition time is 5 to 30 years, an average of 12-15 years in the Czech Republic. Stejskalová (2011) states that the decomposition period set for the Czech Republic is at a minimum ten years. In case the cadaver is buried in a soft wooden coffin, it can decompose in five years, and any synthetic material negatively influences decomposition (Stejskal & Šejvl, 2011b).

When one has chosen the location or is expanding on an existing cemetery, a significant part is cemetery planning. However, prior to the planning itself, it is necessary to do research and inventory of the area (e.g. look for underutilised space), the community (demographic trends), interment capacity, look for opportunities and define the constraints and engage stakeholders and the public (Lees, 2020). In contrast, in 1954, documentation for a cemetery needed only the borders and area, the number of graves and special requirements, such as keeping the current vegetation (Lunc, 1954).

Lees (2020) goes into more detail as to what is necessary to consider:

Circulation – How do people and equipment move through the place. There is a need for hierarchy in circulation to ensure the safe movement of the people within the cemetery. It also provides the safe movement of all equipment and vehicles, so they do not disturb the graves and headstones. This includes, for example, emergency gateways, where would the funeral procession enter and move around and where the people go to have good access to the burial spots. The circulation should lead the way and view, e.g. to exciting vistas. It can also include parking. Altogether circulation can consist of the following:

- Vehicular circulation
- Pedestrian circulation
- Operational circulation

Interment and memorialisation – To show where the different interment options will be. These options can include e. g.:

- Traditional in-ground burials
- Cremation gardens

- Future infills
- Potential green burials
- Common burial ground for skeletal remains and ashes (Stejskalová, 2011)

Alternatively, it can show the placement of the different kinds of memorialisation, such as:

- Upright markers
- Flat markers

Vegetation – Where the vegetation will be placed and what form it will be. They are usually either formal or informal formations. It also considers existing vegetation and its maintenance; if it is hazardous, it can be replanted. Otruba (2020) deems vegetation an integral part of cemeteries and says it helps the overall design. The vegetation used should be colourful, flowering and uplifting.

Wayfinding – A series of signage to ensure people can find their way around the cemetery and their burial plot. Otruba (2000) adds that the cemetery area can be divided into sections to allow for better coordination within the space. Further on the importance of division, Stejskalová (2011) states that it is crucial for keeping burial records.

Operations – Enough space for movement of the maintenance vehicles and workers, where is what stored (e.g. soil, maintenance tools) and ensure it is all efficient for the cemetery workers. Otruba (2000) adds to this with the need for waste management and a water source.

Landscape character – This is tied to the inventory that has to be done before designing. It contains biophysical issues, such as landslips, that could cause the graves to move. In other words, it considers various unfavourable conditions, such as the fore-mentioned slope, areas with a high water-table, etc. It is essential to know these conditions, to prevent unwanted accidents or to know how to mend them.

Another part of the design has to be resting areas and seating spaces, with a possibility for lighting by the main path and selected structures (Otruba, 2000).

The cemetery differs in the burial and interment methods allowed and the structures provided for that. If we take interment options for cremated remains, urn graves allow for memorialisation in itself; however, for columbaria and scattering gardens, a place for memorialisation has to be added, along with a resting space for sitting and meditation – probably even some water or art element. In the case of columbaria, a meditation garden can be considered (Otruba, 2000).

Lees (2020) mentions that cremation options should be near the in-ground burial areas so the family members can be interred nearby. Making cremated remains interment options integral to the cemetery plan would be a better way to go about it than in the past when the cremation gardens would be placed in a corner, separate from the rest of the cemetery. Integrating this option may encourage families to inter the cremains in the cemetery. On the other hand, Plášková et al. (2021) state that different burial methods should be kept apart to maintain the character of a cemetery. Especially because sometimes turning a full-sized grave into an urn grave is not always aesthetically pleasing.

Cemetery master planning, according to Lees (2020), deems it crucial to optimise the space in cemeteries while keeping it a meaningful landscape for both families and visitors. Not

to make it overcrowded and dense. Kavka and Šindelářová (1978) wrote that the cemetery area comprises infrastructure and greenery by 60% and burial plots by 40%. The area of a cemetery was counted as 4 m² per person. Due to a better adaptation to the graves' dimensions, symmetrical geometrical layouts were preferred to informal layouts, allowing for better space utilisation (Goode & Lancaster, 1986).

There are two main points concerning the optimisation of the area of a burial ground – infilling and diversification. Infilling can prevent the cemetery the need to expand, as the infill capacity can cover the need for another period of time; this is connected to the cemetery inventory. Diversification, conversely, ensures that everybody in the community feels welcome and can find their chosen place for interment and memorialisation. This can be done by accommodating the needs of people of various faiths, e.g. for those of the Muslim faith, the burial spot has to be aligned to the Black Stone of Mecca (Lees, 2020). Davies (2017) also mentions the different practices and requirements based on culture or religion. Grabalov and Nordh (2021) state that people wish for more individualised memorialisation and should be provided with more options for burial, as well as options for all ethnicities and faith.

Cemetery planning and the development of the area can be done in phases (implementation plan), as expansions are not viable until there is a greater need for interment (Goodnoe & Burns, 2015; Lees, 2020). Lees (2020) expands on it by proposing the development of different spaces that people can use, such as a nursery, active play space or a community garden, before the cemetery expands to that part of the area. Stejskalová (2011) states that cemetery management must remember that cemeteries are meant for extended operation, hopefully forever, and the planning should not be haphazard, as that can negatively influence the feeling of the cemetery. Plášková et al. (2021) also mention that the cemetery design, even of the individual monuments, should not go against the aesthetics of the existing cemetery.

These recommendations were tied mainly to providing a functional place for interment. If cemeteries are to be open to more people and usage while preventing conflict with those mourning, Evensen et al. (2017) think the cemetery design should consider zoning, signage and lighting.

3.2.4.1 Vegetation in cemeteries

Vegetation is deemed an integral part of cemeteries; therefore, this chapter is devoted to vegetation in cemeteries. According to Plášková et al. (2021), the canopy layer of cemeteries covers 90 to 95% of the cemetery areas of Prague. The functions of vegetation are described in chapter 3.3.2.

Greenery in cemeteries helps create a reverent character and has aesthetic and hygienic functions (Otruba, 2000). According to Lunc (1954), vegetation in cemeteries is for decorative purposes and to unite the cemetery.



Figure 17: Tall hedges of coniferous woody plants used as dividers between individual rows of the cemetery in Brno-Líšeň.

Cemeteries are typically endowed with an alley or alleys of deciduous trees by the main paths. Common are also coniferous and evergreen species of shrubs as hedges (Figure 17), groundcovers and climbers. A widespread plant in cemeteries is ivy (*Hedera helix*); see Figure 18. Another common green component is grass turf (Plášková et al., 2021).

Kavka and Šindelářová (1978) say that the cemetery vegetation has to align with the vegetation in the surrounding areas while being designed and maintained in a respectful way. The key species should be the ones that are typical for the location, and one should aim for trees that grow deep roots. The vegetation should support the overall theme and layout of the cemetery, and the decorative greenery on individual graves should also support this.

Stejskalová (2011) mentions that the purpose of the vegetation planted in the cemetery is vital. The correct vegetation type and species should be chosen based on its purpose. This relates to longevity, size and maintenance. One should also keep in mind that vegetation can disrupt the statics of the burial plots, rendering them unusable for further interments due to root growth.



Figure 18: Vegetation cover in the old part of the Olšany cemetery. One can see trees and structures overgrown with ivy.

Apart from vegetation in the cemetery, vegetation can be planted on individual graves (Figure 19) if their disposition allows it (Jandovská, 2002; Stejskalová, 2011). In this case, one can choose multiple designs, seasonal or permanent planting in a harmonious composition, reverent but not depressing. When selecting woody plants, one has to foresee that they may grow, possibly overgrowing the headstone. One could say that taking care of the vegetation on one's grave is a form of memorialisation and a way to show that the bereaved respects the interred (Jandovská, 2002).



Figure 19: Example of the vegetation planted on a grave as a custom. The planting is seasonal with a couple of perennials. The pictures show the planting right after planting (left), prepared for winter (center) and after weeding in fall the following year (right).

3.3 Multifunctionality

What is a function? Merriam-Webster defines function as "the action for which a person or thing is specially fitted or used or for which a thing exists: purpose "(Merriam-Webster, 2022). Multifunctional is something able of multiple functions, i.e. is fitted for multiple purposes.

Multifunctional urban space design could solve the problem cities face with the pressure of a growing population. This pressure causes a dilemma of whether to build horizontally and further negatively influence the surrounding environment or to build vertically and decrease the quality of life of its citizens. Having multifunctional spaces would help accommodate the needs of the citizens of urban areas, ensure their quality of life and have minimal impact on the environment, as it would improve the functional performance of the existing urban areas (Ghafouri & Weber, 2020).

A cemetery can be metaphorically considered a mixed media art; there is the landscape as the base, the need for interment as the main idea, and on top is a mixture of architecture, craftsmanship and animate and inanimate objects that form it all. Therefore, cemeteries, from the very beginning, have multiple functions that are provided by the various media used. I propose these two media, vegetation (i.e. part of the natural environment) and architecture, as the leading function providers.

3.3.1 Sustainable development

The reason behind choosing multifunctionality is that it may be more sustainable. Sustainable development, along with sustainability, may have been misinterpreted and overused. The concept is nevertheless essential and should not be put on the sidelines. Sustainability is not only about preserving the natural environment and protecting native species; but about finding an equilibrium between the natural environment and civilisation.

"Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs." – WCED (1987)

There are many definitions of the sustainable development concept, which usually consists of the following:

- Environment
- Equity
- Economy

These factors are mostly intertwined and connected. There is another definition that combines the three E's with "culture" that goes through it all since without people as the carriers of culture, there would be no need for any development. It is vital that for continuous development, one cannot be considered alone without the other aspects, as in one way or another, it is dependent on them (Giddings et al., 2002).

It bears in mind future and how the environment can be developed well into it. This is achieved by the efficient use of urban space, minimising the consumption of natural capital and multiplying the social capital. It requires a change in structure, attitude and values, not just minor changes in existing practices and focus on the long-term consequences (Roseland, 2000).

According to Jabareen (2006), sustainable urban development is of high density, with sustainable transportation, greenery and sustainable energy sourcing. Among the main objectives, we can find a decrease in energy use, waste, pollution and automobile use, as well as preserving the open space and natural environment while building community-oriented human environments. The sustainable form has these aspects:

- Formal and physical
 - The topic of compactness, density, diversity, mixed land-use and sustainable transportation
 - Compactness in line with population density to prevent urban sprawl, making opportunities closer to the neighbourhood inhabitants
 - Polycentric structure with different densities between the city centre and the suburbs
 - Infrastructure that shifts people towards NMT (non-motorised transportation)
 - Walkable neighbourhoods with flexible and adaptive zoning
- Social
 - A mixture of generations and social diversity, i.e. no separation, all inhabitants have access to all essential facilities and services, having equal status
- Environmental
 - Nature integrated within the city
 - The built environments are adapted to climate change, or nature-based solutions are used

Ghafouri and Weber (2020) discuss the issues of sustainable urbanism. According to them, it needs to establish a framework for these issues:

- Social - mobility and equity
- Technical issues - infrastructure and urban form
- Mobility - transport routes and infrastructure
- Resources - energy, food and materials

All in all, sustainable development aims for harmony between society and the natural environment, along with harmony within society. Be it through citizens' participation in decision-making, a more flexible administrative system, solution development through evolving technology or a functional economic system. This is all to meet the present and future needs (WSED, 1984).

“Developing a sustainable society requires both shifting away from values which encourage unsustainable behaviours and also shifting toward values which promote sustainable practices.” –

Roseland (2006, p. 126-127)

3.3.2 Functions of greenery

Since cemeteries are considered public green spaces, this chapter is dedicated to the benefits of vegetation. Roloff (2016) thinks that the negatives of vegetation are often more discussed than the benefits. Hendrych et al. (2018) consider the functions and benefits provided by vegetation as essential to urban citizens. They also consider vegetation as place-making in urbanism, along with improving the aesthetics and ecology of the city.

According to Jansson et al. (2013), vegetation is essential as it positively affects physical and mental health, aesthetics, social functions, children's play and biodiversity. Janeček (2019) describes eight main functions of greenery, and they are as follows:

1. Hygienical
2. Climatological
3. Meliorative and soil improving
4. Water-managing
5. Biological
6. Productive
7. Cultural and landscape-forming
8. Health improving and recreational

The **hygienic** functions are conducive to the well-being of people in cities, as it improves the environmental conditions.

Vegetation produces oxygen necessary for survival. It uses the sun's energy and transforms it into energy in chemical bonds while transforming carbon dioxide and exuding oxygen as a byproduct. Although vegetation changes a tremendous amount of carbon dioxide, more carbon dioxide is created and let into the atmosphere by people through combustion, further increasing the amount in the atmosphere. This leads to rising temperatures, which may influence precipitation quantity (Whitmarsh, 1999). Janeček (2018) says that a 100-year oak - with a height of 25 m and a crown wide 14 m has around 900 000 leaves – has a leaf area of 1600 m²; this tree can transform the amount of CO₂ produced by 16 people in one day. What one tree processes in an hour is the amount an average car produces in 3 minutes. The 100-year-old oak can make enough O₂ for ten people for a year in its whole vegetation period.

Vegetation helps decrease noise and vibrations of the city rush, mainly caused by traffic (Janeček, 2018; Kavka & Šindelářová, 1978; Lunc, 1954). The most effective part of the plants is the leaves, so the more significant the leaf area, the greater efficiency of noise decrease. It also depends on their angle, quantity, size and texture (Kavka & Šindelářová, 1978). A grass turf with crumbly soil can also decrease noise (Janeček, 2018).

Greenery decreases dustiness and particulate pollution in the air. Beckett et al. (2011) consider it vital as small particles when inhaled, can otherwise lead to various health issues. This is especially important in urban areas and is vital along communications (Karel & Smolová, 2016). The efficiency depends on similar aspects as to noise reduction. It depends on the leaf surface, its character, angle, stickiness and movement (Beckett et al., 2011). Coniferous species are the best choice, along with small-leaved dense shrubs and turf (Beckett et al., 2011; Karel & Smolová, 2016). Kavka and Šindelářová (1978) state that the best filtration is when the vegetation is not too dense, varies in structure and height and lets the wind flow through.

Along with that, some vegetation can have germicidal and insect-repelling functions (Kavka & Šindelářová, 1978). Some woody plants have the ability to cover up or mitigate unpleasant smells. For this purpose, one can utilize coniferous or aromatic deciduous species (Janeček, 2018).

The **climatological** function of vegetation lies in influencing air humidity, wind flow and overall temperature regime (Janeček, 2018; Kavka & Šindelářová, 1978). This is an essential aspect of greenery; it improves the living conditions for urban inhabitants as it helps reduce the negative influence of the heat island effect. One tree can produce 100 l of vapour through transpiration, which takes up energy from the heat of built-up areas, which ultimately leads to the formation of precipitation in the atmosphere, having a vital function in the water cycle

(Hendrych et al., 2018). Dense and varied vegetation influences microclimate through evaporation, creating higher humidity and overall decreasing the temperature (Hendrych et al., 2018; Kavka & Šindelářová, 1978). Therefore, we can say that vegetation near built-up areas helps with reducing temperature extremes. Vegetation helps with routing the airflow, even averting the airflow from some places altogether. Built-up areas can get ventilated thanks to the presence of vegetation in their surroundings, which positively influences their hygiene (Janeček, 2018).

Vegetation has a **soil-improving** function; it also helps stabilize soil on slopes, preventing soil erosion and helps balance the **water regime**, as it minimizes water runoff and retents moisture (Janeček, 2018; Kavka & Šindelářová, 1978). This is either directly by vegetation and the fallen organic matter or indirectly by fungi and other microorganisms attached to its roots (Janeček, 2018).

The **biological** function lies in the habitat provision to various species. Vegetation helps improve ecological stability. In urban areas, a green plot may pose as a stepping stone for some species; however, continuity between urban green areas is essential. This helps to preserve and promote biodiversity (Gustavsson et al., 2005; Janeček, 2018; Jansson et al., 2013). Various species from different families should be planted. This decreases the probability of the whole stand dying if one species gets stricken with a disease. Although it is of interest to plant native species, one may think of including alien species, e.g. via assisted migration from warmer regions, as these may be more suitable for the urban conditions and the changing climate (Sjöman et al., 2016).

Hardly anyone thinks about vegetation as a holder of the **productive** function in a cemetery. It would be a pity not to mention it, at least briefly. The production function of greenery dramatically depends on its management. Trees are a source of timber, twigs for weaving or branches for children's play and hut building, which is nicely connected to coppicing (Gustavsson et al., 2005). There is also the fruit-bearing function of vegetation (Janeček, 2018).

Greenery has a **landscape forming** and **cultural** function, as it co-creates the image and character of a place while also portraying the community's customs and needs, as well as improving the aesthetic value of a place. Vegetation also helps with the organisation of and orientation in a place (Kavka & Šindelářová, 1978; Otruba, 2000); people prefer open yet defined green spaces (Kaplan & Kaplan, 1989).

Janeček (2018) says trees have a symbolic function, as they can be planted to commemorate special events such as birth or a historical event. Clayden and Dixon (2007) state that trees should be embraced as grave markers instead of stone monuments as people can put value in them and have a continuous relationship with the burial plot. As trees can have a symbolic meaning of life, and one can nurture them.

In urban areas, the primary function of vegetation is **recreational**, as it was created mainly for the improvement of the natural environment within the artificial environment. Vegetation is the counter-element to the otherwise static architecture bringing in change over time and even throughout the year (Hendrych et al., 2018).

On top of being a place for recreation, they also have a beneficial influence on people and their behaviour. Natural environments have a **restorative** effect on people's minds, i.e. their mental health, as they contain fewer distractions and are more peaceful compared to the architectonic urban environment. Therefore, it helps restore their mental energy and focus and improves creativity (Kaplan & Kaplan, 1989). On top of benefits to mental health, vegetation helps with healing patients as well. Patients who have access to greenery require less pain

medication, have a faster recovery and can handle stressful situations better (Verderben & Reuman, 1987); this could be considered a specially beneficial aspect of greenery on cemeteries. Coley et al. (1997) say that vegetation helps with the behaviour of urban inhabitants, makes them form a connection with their neighbours, increases their sense of community, and decreases criminality and violence.

All in all, vegetation is invaluable and comprises many aspects that we humans take for granted, and municipalities do not value enough.

3.3.2.1 Negative effects of greenery

It is fundamental to mention that not all the time has vegetation a positive aspect or is viewed in a positive light. Trees are living organisms; therefore, a conflict may arise with humans as vegetation tries to use all the space it can.

The most noted one is the disruption of built structures or utility networks – influencing the stability or functionality of such structures. Another problem may be caused by static failure of a tree; the wind can uproot it, and it can fall on a car, built structure, such as a road obstructing the path, or lone falling branches, which may cause fatal injuries; however, this is more common in species that have softwood (Janeček, 2018; Roloff, 2016). Some natural processes may also be viewed as a hindrance, such as falling fruits that are enticing to insects and could dirty structures or cars, leaves or sticky pollen (esp. from lindens). Along with their allergenicity, 20% of allergic people are allergic to pollen. Some species are poisonous; their planting should be reconsidered based on the purpose of the plantation and its location – either avoiding such plantations or educating the public (Janeček, 2018). Roloff (2016) puts another negative as the cost of maintenance of urban trees.

The opposing view on trees in society is supported by a study by Kozina (2016), who names a "contra-arborcentric mentality" of the last 20 years, where he fears that due to vandalism and negligence of costly care, the big trees will slowly disappear from the urban environment. There is a dislike for trees in the Czech Republic; wherever trees collide with interests and needs, people use their dominancy and have the trees cut down, often without replacement. It is impossible to plant in many places as it is no longer according to the norms. This leads to constant and irreversible evanescence of greenery in urban areas. Often trees, even newly planted, are subject to vandalism. This calls for change in the mentality of the people who think trees have a peripheral meaning for our subsistence. In the future, there may no longer be large trees in urban areas, and they will be pushed out by smaller trees and shrubs, which may make the pressures of vandalism even harder to survive.

Another aspect related to vegetation is perceived safety (Jansson et al., 2013). perceived safety is subjective (Table 1). Nonetheless, it influences people's preferences for visiting some areas. Environmental aspects that affect perceived personal safety:

- Spatial context
 - A feeling of unsafety when vegetation is close on both sides
 - Some distance from vegetation or one side open is perceived as safer
 - Vegetation and lighting
- Overview and visual control
 - Have an overview of the environment and see if someone is approaching
 - Clearings perceived as escape routes
 - Visual contact with buildings

- Roads or people can increase safety
- Vegetation density (visual penetration)
 - Low density in the understory is perceived as a possible escape route
 - Visible vegetation interior gives increased control
 - More access to interiors has improved aesthetics and play possibilities
- Vegetation character, along with a perceived level of maintenance

Areas with poor qualities can, therefore, cause people to avoid them; adapt to the fear through mental preparation, fast walking and looking around, or choose social protection, which can be either a companion or knowing the locals.

Socio-demographic	Individual	Social	Crime	Environment
Childhood environment	Personal fear	Company	Media	Overview, control and management
Gender	Own experiences	Local relationships	Talk	Density, height and character of the vegetation
Age	Outdoor habits	People nearby	Experiences	Usefulness and values
Health		Local engagement	Worries	Lighting and management

Table 1: Factors influencing perceived safety as defined by Jansson et al. (2013)

3.3.3 Functions of the built environment

There are functions that the built environment, understand the artificial environment, can and should have. In this part, various aspects of the built environment and its functions are mentioned. The functions of such an environment and the way it makes one feel or do can include how the cemetery serves or is perceived since cemeteries are also built environments.

When talking about built environments, these can be the forms in the city that are public. It is essential for such places to avoid the exclusion of anyone. Public spaces have to consider collectivity and diversity, and their atmosphere should be inviting to anyone. No one should, however, overuse this shared resource; this can be prevented through governance (Borch & Kornberger, 2015).

According to Hillier and Leaman (1976), the functions provided by built environments are these:

- Spatial organisation of activities - a building needs to provide optimal support for the actions desired by adequately arranging the available space – e.g. siting related activities next to one another and providing efficient communication between them, and by separating activities that are likely to conflict with one another
- Climate regulation - a building must provide an optimum interior climate for the users, their activities and their property – adjust the internal climate of each room to suit its own particular use
- Symbolic - a building can be seen as the material embodiment of the designer, client and end users' specific ideas and expectations. Creating a cultural object with social and symbolic significance and meaning

- Economic – buildings require investment and give added value to raw materials. Maintenance and management form part of an exploitation cost and must be set against income from rental or sale. A building, whether a property or investment object, has economic value and so an economic function.

There are different types of activities a person does in outdoor spaces depending on the quality of the physical environment (Gehl, 2011):

- Necessary/functional activities
 - These take place no matter the quality of the built environment
 - Better place influences the amount of time spent there
- Optional/recreational activities
 - Depend significantly on what the area has to offer and how it makes people feel
 - A better place is where more optional activities occur
- Social activities
 - Such happen spontaneously during the latter activities, so it also greatly depends on the quality of the environment

Gehl (2011) also puts emphasis on having greater possibilities of performing optional activities as it then ensures a higher quality of life for the citizens, i.e. quality of urban life depends on the possibility of engaging in optional activities. Therefore, with sustainable development, it is not only significant to densify cities but ensure that social and environmental aspects are considered and new facilities are established, for the quality of life of the residents otherwise decrease.

Environments have several layers, and through time, they can either add new layers and meanings continuously, or the meanings can slowly dissipate and be replaced. These layers are everpresent throughout time, and we can change the way we view them, read them, either the same or change them completely. The importance of cities is existential. Participative urban planning is crucial - as the place (city) is made for human beings, and without their participation, it would be "depersonalized". Urban should be transformed into habitable places that will continue to leave a trace behind, possibly being written by its inhabitants (Vacek, 2015). Vacek (2015) further points out three characteristics that places hold:

- Hierarchy and organization – stable for centuries
 - The way the streets are planned
 - Hierarchy of the public spaces
 - Composition of dominants, symbolic places and buildings
 - Essential infrastructure
- Form and function – this as a whole holds good stability, but it changes, transforms and morphs throughout decades
 - The form, function and use of spaces
 - The buildings and surfaces, the look of public areas
 - The greenery
- Life of the place – neither stable nor unstable, but adaptable

- This has "life cycles" with daily, weekly and seasonal changes

Therefore, even though built structures may seem permanent, over time, everything changes.

3.3.4 Functions of Cemeteries

Everybody agrees that the primary function and purpose of cemeteries is for burial, that is, the burial of the body. In the case of cremation, the process of cremation is the burial. That is where memorialisation comes in as another function of cemeteries. As for memorialisation, it is different; the purpose of memorialisation is to honour the dead and help the bereaved with their grief. Memorialisation also gives people a reason to continue to want to inter cremains on the grounds of a cemetery.

According to Otruba (2000), a cemetery is the garden of eternal being. Where planners are creating an abstract landscape that, to everyone, symbolises something else. It is a place for grief and contemplation, holding a spiritual meaning as it provides a space where one reflects on life and death (Grabalov & Nordh, 2021).

Rugg (2000) states that cemeteries consist of, are appreciated through and can be defined by four interlinked features:

- physical characteristics,
- ownership and meaning,
- the site's relationship to personal and community identities,
- and sacredness, i.e. the ability to promote and protect the individuality of the deceased while acting in the context of grief

Cemeteries are places where people go to pay their respect to the departed. This in the Czech Republic takes the form of taking care of the graves by removing debris and placing objects such as flower bouquets or wreaths and lighting a candle; in the case of children's graves, some people bring stuffed animals and other toys on the grave. Some visit frequently, and some go there mainly to escape being badmouthed for not caring for the deceased (Patríchová, 2015).

They can also be taken as places for recreation, even that of a daily character, be it only for a couple of minutes. In this way, it is mainly used by the elderly, who find solace there. To children, cemeteries may be educational and teach them honour and respect for things, nature and life (Otruba, 2000). In Copenhagen, it is not uncommon for social gatherings and activities, such as concerts, art exhibitions or weddings, to take place in a cemetery (Grabalov & Nordh, 2021). The social function can be seen especially in the parts of the city where there is a lack of access to public parks; in that case, cemeteries can work in their stead, and people can go there for a walk, relax, read and meet with their friends. This function also depends on the density of the population in the area and the accessibility to other structures (Plášková et al., 2021).

Evensen et al. (2017) monitored the use of two cemeteries in Oslo. The cemetery closer to the central train station was visited by more than twice as many people, and the reason for their visit had a more recreational character. On the other hand, the cemetery slightly further from the city centre was visited in 55-70% of cases by the bereaved visiting a grave.

Nevertheless, in both cemeteries, they noticed bereavement activities as well as the use of non-motorised transportation, jogging, strolling, walking a dog, playing, resting on benches, consumption of drugs and alcohol and eating. Lai et al. (2019) conducted a similar study in two cemeteries in Edinburgh; these cemeteries no longer allow interment. Most commonly, they were used to walk through and for dog walking. Other observed uses were resting on benches, walking with a baby in a pram, cycling, running, photography and bird-watching. Since city dwellers want to use these spaces and they offer aesthetic, heritage and restorative values, the policymakers should be more open and tolerant to other uses than memorialisation and consider them informal greenspace.

This was based on behaviours and uses in a traditional cemetery; however, the strategy for cemeteries in Oslo considers forest cemeteries as more optimal to provide secondary functions and collective memorials for cremains as ideal for multifunctional use (Grabalov & Nordh, 2021).

Felicori and Zanotti (2004) stress the importance of cemeteries and their significance in the European heritage as they are an image of the times long gone (Figure 20). Cemeteries are as important of an heritage not only because they portray the period, but also because in some cases they were commissioned by renowned architects and the works one can find in them shows the crafts (stonemasons, sculptors, architects) in all their glory, in the ingenious funerary monuments. Pacáková-Hošťálková (2004) states that the form of cemeteries of the



Figure 20: Examples of tombs found in Czech cemeteries. They may be cultural heritage, a nice tourist attraction and the mirror of society, its taste in design and history.

past and present time is a part of landscape architecture history, although one may not usually think of them as pieces with such qualities. This can be seen in Figure 21, portraying a Baroque cemetery in Střilky filled with Christian symbolism. Pacáková-Hošálková states that the area within the walls might have just been a garden connected to the chapel with crypts, and the cemetery for inhabitants of Střilky was elsewhere. However, later the garden area was filled with traditional graves affecting the aesthetics and architectonic intent of the grounds.



Figure 21: Baroque cemetery in Střilky, with contemporary graves. Credits: Tomáš Tuček (2020) Available at: <https://en.mapy.cz/s/carefutegu>

Patrichiová (2015) in the case of a rural Czech cemetery, states that the layout of the cemetery and its changes reflect the changing burial methods and religiousness, as religious symbols are no longer used that much. Various ritual rites are society's response to death, which is how people come to terms with it (Davies, 2017).

Some cemeteries are culturally valuable due to the presence of significant individuals, be they national artists or intellectuals. Such sites are then visited more as tourist attractions than places of grief. However, these graves might grant the cemetery more permanence. On the other hand, through a political lens, such sites may also be destroyed just for the reason of holding the remains of a person that went against the political regime (Rugg, 2000). In some cemeteries, there is a possibility to adopt an old grave that has historical value or is of an important figure; the purpose of the adoption is to get the memorial renovated by the adopter (Dvořáčková, 2021).

Tallents (2018) states that cemeteries could hold similar functions as parks and open spaces, increasing their relevance to the city inhabitants (Figure 22). Cemetery land could be used in multiple ways:

- Passive recreation – walking trails, bicycle routes, seating areas, café
- Structured activities – exhibitions
- Heritage tours – commemorative memorials
- Educational purposes – architecture, history, art, arboriculture, photography
- Research activities – genealogical

Grabalov and Nordh (2021) mention that finding the equilibrium between the primary and other functions of cemeteries so there are no conflicts is a challenge. However, they believe that making cemeteries more appealing to people, leading to more of them on the grounds, is

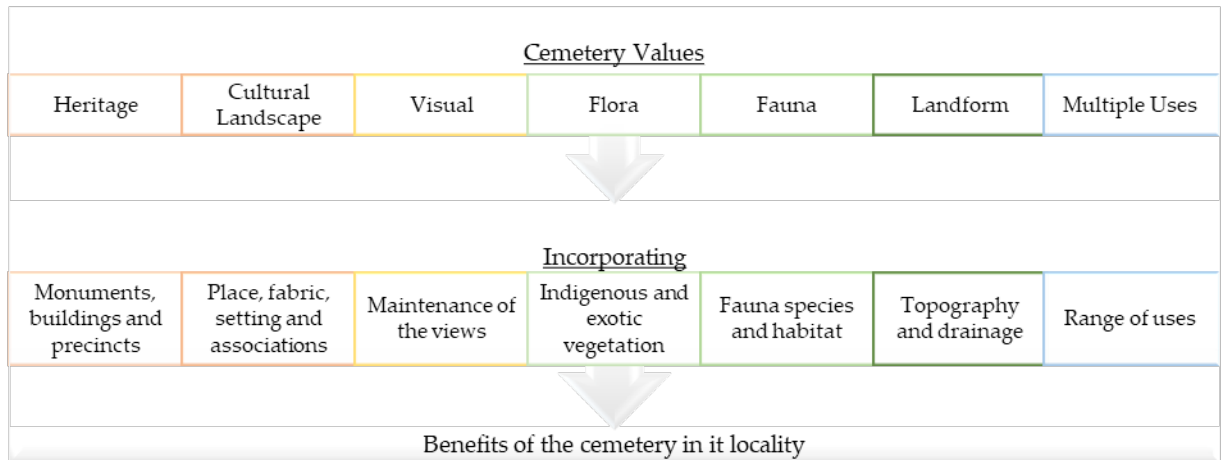


Figure 22: Examples of cemetery values and what should be incorporated in them to benefit the area the cemetery is in. Adapted from Tallents (2018).

not necessarily conflicting and may be beneficial to the bereaved.

Cemeteries can be considered indispensable structures in high-density urban settings. They provide accessible green space. To people, cemeteries as areas with structured nature; they are of great importance to the aesthetical value of the city. It contrasts and softens the harshness of the urban matrix and alleviates the negatives of its functioning and influences on the environment where people spend their time (Hendrych et al., 2018).

They can potentially provide ecosystem services (McClymont & Sinnett, 2021) along with a cultural space for interment and memorialisation (Lees, 2020; McClymont & Sinnett, 2021). Along with being a spiritual place, the memorials may pose as a reminder that the departed once roamed this world and left something behind (Patríchiová, 2015).

Lees (2020) further considers cemeteries as a place that allows wildlife movement, with patches or corridors in the cemetery area, especially around natural burial grounds, providing habitats. This contrasts the Czech mentality of fencing off cemeteries that Stejskalová (2011) states. The importance of cemeteries and especially their greenery is that it is a part of the broader green infrastructure (Kupka, 2006; Otruba, 2000; Plášková et al., 2021), which is vital to upkeep in urban settings. Leňo et al. (2022) consider the cemeteries of Prague as decent parts of the urban ecological structures, rating it „3“, i.e. as areas with moderately stable ecosystems – the scale ranges from „0“ (no stable vegetation cover) to „5“ (climax stage of ecological stability). Plášková et al. (2021) mention urban cemeteries as important for biodiversity, especially birds. Apart from the primary function, the municipality of Oslo focuses on the benefits of cemeteries in mitigating climate change and increasing biodiversity (Grabalov & Nordh, 2021).

Cemeteries can also be thought about in terms of economic function, as they should aim to cover their establishment and operation costs (Lees, 2020). Goodnoe (Goodnoe & Burns, 2015) thinks the best way is to have a hybrid cemetery including traditional and green burial.

“The idea of a large landscaped park should be a principle for new cemeteries and ongoing functions of old cemeteries, providing multipurpose open space for the entire community, whilst providing for a range of interment options. In addition interment types and practices are diverse and continue to develop with the changing attitudes to memorialisation, the need for land uses to be multi-functional, and ecological and sustainable approaches become essential.” – Tallents (2018, p. 69)



Figure 23: Dog-walking in Stockholm's Skogskyrkogården. A multifunctional burial ground with many methods of interment and memorialisation, while being enjoyed for recreation.

4 Methodology

The research was carried out through field observations, a mixed-method survey in the form of a questionnaire and a qualitative survey in the form of interviews.

The field observation consisted of visits to various cemeteries, primarily in the Czech Republic, mostly in urban settings but also in more rural locations, with both traditional and alternative methods of internment.

The questionnaire was based on questions meant for the general public. It intended to survey the opinions of people on cemeteries and what they would be open to regarding the cemeteries' functions while maintaining piety and respect for the deceased.

On top of that, a couple of people in the fields of planning, burial, and cemetery design were interviewed. The interviewing part had high-value input, as the interviewed people were professionals who ponder cemeteries the most and whose opinions are well-educated on the topic.

4.1 Online survey – Questionnaire

The questionnaire was meant to explore the preferences of people towards burial grounds. It was meant for the wider public, but people who care about burial grounds and funerary rites were also approached.

The questionnaire was online and consisted of 26 questions. The questionnaire was in Czech and English, and the surveyees could choose which version they wanted to fill in on the opening page of the survey. The overall look of the survey and the questions is available as in the document *Appendix_1-Online_Survey_Questions.pdf*.

Questions

The questionnaire was divided into three parts – photographs evaluation, thematic and demographic questions. There were closed-ended and multiple-choice questions; a couple of questions offered an option to write one's own response. Therefore, the majority of the responses were quantitative.

The first part consisted of 10 photographs (different burial grounds gathered during the field survey) evaluated based on two criteria – respectfulness of the site and the probability of the person visiting it. The second part contained thematic questions on the frequency of visits to burial grounds, the purpose of the visits, activities one could consider acceptable in a cemetery, functions of cemeteries, memorialization and the possibility of including cremains in public parks and cenotaphs in public spaces. The final part consisted of questions about the age, gender, residence, origin and religion of the surveyees – this was to ensure that the surveyees were varied and the survey, therefore, had a relevant output.

Availability of the survey

The questionnaire was available from 8.2. to 14.3. 2023. It was shared via social media on my profile, by acquaintances and through personal e-mail correspondence. On Facebook, the survey was further shared on these pages:

- Hřbitovy a pohřební služby hl. m. Prahy

- and their respective [web page](#)
- Masters Students of the Faculty of Environmental Sciences, CZU Prague!
- Praha 3 sousedská
- SLU Alnarp – International committee
- SMRTFEST 2023
 - Event page
- Všem taofilům
- Zahradní architektura

These pages offered access to the general public, professionals from the fields of garden and landscape architecture, cemetery and funeral rites planning, its enthusiasts, and students from various countries. Overall it offered access to a varied scope of respondents, focusing mainly on respondents from the Czech Republic.

4.2 Interviews

To get more insightful input, I interviewed a couple of people who have a professional connection to cemetery planning, management or ecology. I interviewed four professionals:

- Jack Goodnoe, MLA, ASLA – A cemetery designer in the United States with over 40 years of experience in strategic land use planning and site design.
 - Interviewed online on 25.1. 2023
- Mgr. Martin Červený – The director of Hřbitovy a pohřební služby hl. m. Prahy, a public contributory organisation, that manages 33 of Prague's cemeteries.
 - Interviewed in person on 16.2. 2023
- Mgr. Blanka Javorová (née Dobešová) – An eco-funeral enthusiast, co-creator of organisation Ke Kořenům, and the first administrator of the first natural burial ground in the Czech Republic, i.e. Les Vzpomínek.
 - Interviewed online on 10.2. 2023

The interviews were oral, and took 40 to 80 minutes, they were in a friendly atmosphere consisting of general and follow-up questions as each of the interviewees has a different expertise. The general topics discussed were on operating a cemetery, maintenance, memorialisation, alternative burial, natural burial grounds and (multi)functionality of burial grounds.

Here is the insightful information received from the three professionals in the field of burial and cemeteries. The interviews are not transcribed word for word, but rewritten based on the topic.

4.2.1 Jack Goodnoe, MLA, ASLA

Jack Goodnoe, MLA, ASLA had been working in the field of cemetery planning for over 40 years now and he sees a change in the industry from very conservative to more open.

When operating a cemetery

One of the main issues of cemeteries is to get the people to bury/inter in them, i.e. to want to use their service and therefore generate income for management/revenue for maintenance. As cremains can be either scattered in a favourite place, they can be kept in an urn in the closet or passed from relative to relative. In case one operates a profit cemetery or a municipal cemetery, their challenge is to have facilities to encourage and allow people to bring the cremains or memorialisation to the cemetery.

According to Goodnoe, from a planning point of view, there need to be spaces where people can be memorialised, whether their remains are there or remote. In his planning he had found that the need to create cenotaphs in garden settings - that will attract people to come and want to use the services of cemeteries - is increasing.

What is the source cemetery of revenue? Even if a cemetery is ran as a non-profit organisation, and is therefore taxed differently, it still needs money to operate; it could be from the general tax fund or the cemetery has to have a standalone fund.

Designing process of cemeteries

Prior to the designing process it is essential to know:

- Service area requirements
 - Demographics of the area. May be specific for the area and might be changing over time – economically, ethnically and religiously. This helps define what the program and cultural requirements are, and how is are these going to be satisfied over a period of time.
 - Inventory percentages of the cemetery, i.e. the burial that is available on the cemetery. What are the numbers and ratios of interments; this could be, e.g. 35% cremation, 60% full-body burial and what the rest mausoleums.
- Physical resources, such as the land resources – analysis of the available land. This is done by looking at the land map and colouring anything that does not have burial in it, such as maintenance areas, retention basins, open land and small leftover spaces.

After gathering these information one can start developing a strategy for using the land over time. The cemetery that Goodnoe designs can take even a hundred years to develop, therefore it is necessary to have a plan on what to do in five years, ten years and further. Goodnoe himself usually divides his plans into 4 or 5 phases, based on their development significance – immediate needs, near term needs, mid-term needs and long-term needs. However, he adds that the requirements are going to keep on changing (like what happened with the rise of cremation and therefore decline of full-body burial).

Why do it in phases? To not run out of funds, if the area of the cemetery is big (as Goodnoe designs cemeteries that can range from 50 to 300 acres which equals ca. 20-120 hectares. * *For comparison, the Olšany Cemetery – the biggest cemetery in the Czech Republic – is 50,17 hectares.*) It is principal to know where to build infrastructure, as revenue comes from sales and one wants only to build as much as they can support.

He puts it into perspective with development of a public park, which would need to develop more infrastructure from the very beginning to make it work as an outdoor recreation space, as in comparison to a cemetery.

Goodnoe also identified a couple points that should be considered in cemetery planning:

- Follow topography instead of putting the design on a gridline (gridline was and is preferred as it suits the burial plots better)
- Design good land cover (surfaces and vegetation)
- Land-sensitive approach (good land use)
- Water management system
- Include a meditation area

Walls

American cemeteries in contrast to the ones in the Czech Republic also usually have only a fence or even no seclusion from the surrounding area; Czech cemeteries have walls, that separate the inner part from the rest of the world. Goodnoe says, that the benefit of walls is that they could be utilised to hold cremains.

Cemeteries as part of parks

He had turned golf courses into cemeteries, but never put a cemetery in an existing park. However, he believes that it could be tastefully done. Other aspect, that would come hand in hand with implementing "cemeteries" into existing public parks, would be to get the public to accept the loss of the space, that would now be taken by memorialisation.

According to him this would need some operational restrictions, such as not having e.g. disruptive/athletic activities too close that it would disturb the service (meditation and grieving). Therefore, the permormance of intergrating a cemetery/burial grounds into a public park would depend on is the adjacency to other activities, access, appearance and privacy.

Walking over buried cremains or burials he does not consider an issue; in the US cemeteries it is established that one walks over the graves, as they usually only have head stones as markers of the grave (*compared to the curbed graves in Czech cemeteries*).

Cemeteries in the US were from the beginning considered public open space. With the very first parks in the US being cemeteries – also because it took so long to fill them (with the deceased) so people went there on picnics and recreate.

Alternatively, one day when the burial/interment of remains stops in the cemetery it is an excellent call to make it an public open space for recreation.

Why might cemeteries be challenging

According to Goodnoe it is because one is dealing with people that are in a state of grief and some may require refuge to "get away from the world" and focus internally and be peaceful, and grieve without disturbance.

To create such refuge Goodnoe considers the importance of buffer zones, be it open space (that could also work for storm water retention) or forest land. There are many ways one

could treat and design such buffers to separate the grieving and sporting activities and avoid conflict.

Cremation

He asked me about the cremation ratio – which as mentioned earlier is over 82% in the Czech Republic and in the capital city of Prague greater than 90%. According to Goodnoe, this is, in terms of space, a significant thing that changed in the industry over the years of his work, in the US over the last 20 years - (he has worked in this field for more than 40 years).

It has changed in how he does what he does for two reasons; the available land, and the way one thinks about the space, especially the small left-over spaces (that are in a cemetery and would not fit a conventional grave).

Prior to that his planning (ca. 20 years ago) always included mausoleums – today almost nobody wants them as people nowadays ask for either full-body in grounds burial or cremation.

Goodnoe is pro-cremation, as he considers land as much of a vital resource, as any other, since the fossil fuel requirement for cremation are simply two tanks of gas. He thinks that eco-burial enthusiasts should consider cremation also an environmentally friendly option. As it allows for the available land to be utilised more efficiently along with the possibility of turning it into a recreation space.

Trees over cremains

Goodnoe says that planting trees over cremains is scientifically not a good idea. As the trees would not like to grow with the ashes. However, what can be done to make it better is – put the cremains deeper (ca. 1 m), as most root systems are within the first ca. 50-60 cm of the soil. Another material thing to improve in this is to mix the cremains with amendments and other soil to decrease alkalinity of the cremains (**According to Carter et al. (2018) cremains are alkaline pH 11,8 and most soils range pH 5-8. Cremains should be mixed to lower pH and dilute Na content.*)

Burial of cremains is not as bad for established woody plants, but for seedlings, saplings and some herbaceous plants it may possess a problem, if the concentration of cremains is too high it may create bad growing conditions for the vegetation.

The place of the cremains burial should be marked, so that one does not dig up someone else's cremains. This could help accommodate a higher density of cremains in one spot than the others – one still has to keep in mind favourable growing conditions for the vegetation.

He would consider burying cremains >1,5 m away from the tree trunk starting with 8 burials, but the further away from the stem, the more it could be. Important is to not damage the roots of the tree.

Natural burial and green burial grounds

Goodnoe thinks, that there is a niche of people for all various kinds of interment. That alternative kinds of practices are gaining more and more consideration by people (*at least in*

the United States). He notes that people in the US are enthralled by the idea of going back to nature.

According to Goodnoe, burials of the deceased should be done in a meadow, not a forest setting as to not disturb the roots of trees. He likes designing with "sun-pockets "(glades), with a meadow surrounded by forest.

Alternatively the land could be turned into a forested landscape after the burial. However, he is concerned for the soil profile in this case, as the ground sets after the burial as well as when the body decomposes – in green cemeteries, there is ground mounted on top of burial, so it settles flat. Consider planting after the soil settles.

One can either leave a meadow or transition it into a woodland. He considers the strategy of turning a burial meadow into a woodland, so in fifty years it will be a forest, an excellent option. However, this transition would fill up the burial capacity of the area, compared to the meadow where the burial plot could be reused.

There are limitations to the maintenance of natural burial grounds, as for example lawn maintenance is out of the question.

Memorialisation

Memorialisation in cemeteries can be considered the key aspect, however, the individual memorials or cenotaphs can take on various forms and could be either private, family or common. Cemeteries now are about creating memorials. As Goodnoe points out, people like to see the name, touch it and have a memory recall.

Goodnoe himself considers being cremated, with cremains scattered in his favourite spot (*instead of interring the ashes in a cemetery*) and make use of a cenotaph memorialisation so that his family has a permanent place to come to and pay respects. Altogether, he strongly believes in memorialisation and that people want something they could touch, have a reminder that their beloved was in this world which they could come back to.

He also thinks that memorialisation through cenotaphs for example provides landscape architects with an opportunity to create meaningful public, yet meditative spaces, where people could gather. The density of "burial" could be relatively high and it would still provide with the requirement to be a refuge to the bereaved and all the things that are needed for grief.

In case of memorialisation in green cemeteries – wood will wither away, a stone would make it hard to maintain the area and a flat stone will eventually get damaged (by the blades of the mower). Therefore, he proposes to have a series of pathways mowed through the meadow and along it placed stones, which pose as cenotaphs (not everyone gets their own memorial near the place of the burial). With this matter he also proposes non-visitation and visitation graves:

- Visitation graves being near the pathway with a memorial along it. These are more expensive, as it needs to be maintained specially.

- Non-visitation graves that are further from the pathway and do not necessarily have a means of memorialisation (no memorial, i.e. anonymous and hence no space for placement of

flowers etc.) However, he also works with an option of having an e.g. stonewall, with each stone being a cenotaph/means of memorialisation for those interred further from the path.

To sum it up, Goodnoe feels that memorialisation is integral part of the cemetery culture and culture of the inhabitants of one area altogether, and without it the culture would be lost. Old cemeteries have a lot of character partly due to the memorials and lines about the deceased person, which is not so common nowadays. Memorialisation is vital so that in the future one's progeny still has a place to go and reflect on their predecessors.

Cemetery functions

Goodnoe thinks that cemeteries are for the living, since they are about memories as losing somebody takes time and cemeteries should provide solace and refuge for a person to go and grieve in a pleasant and inspiring space to deal with the loss.

Average period of visiting the graves in the US Goodnoe states as 7 years. During this period there are frequent visitations and after the visits are frequent, such as on dates of anniversaries etc. By then people have gotten used to the idea of loss. Therefore, cemeteries are places that should provide comfort when one is in the stage of grief but also after the 7 year period provide a space for the bereaved who are in a "recreational" mode.

Allowed activities – most cemeteries of US allow dogs, some cemeteries are againts cyclists and joggers. However, Goodnoe considers that having people in the cemetery decreases the probability of bad things happening in there (such as thefts). Therefore, having more people come to cemeteries should be encouraged.

According to Goodnoe cemeteries have the functions of:

- holding memories,
- comforting and protecting the bereaved,
- mental ascension to help find solace and move on,
- pleasant byproducts, that are all the other functions,
 - the environmental function mainly,
 - spaces for permanent and changing art instalations.

4.2.2 Mgr. Martin Červený

Mgr. Martin Červený is the director of the public contributory organisation Hřbitovy a pohřební služby hl. m. Prahy, which currently has 33 cemeteries and two crematoria in their management, out of which two cemeteries are no longer used for interment.

Financial aspect of cemeteries

Prague cemeteries altogether earn about 50% of the finances that they require to operate, the other half of finances is received as donation from the Prague City Hall. The donation also takes care of the heritage objects and structures, creation and distribution of information leaflets, that are not necessary for operation of cemeteries. All in all, if these „unnecessary“

expenses were cut, the organisation of the 33 Prague cemeteries alone would only be able to pay for two-thirds of its operation expenses.

Červený thinks, however, that in case they built a new cemetery, it would be able to pay for all its operation expenses. Since the cemeteries they operate come with many issues from the past, such as:

- Old trees, whose maintenance was neglected. Often these were not even intentionally planted. These trees are often in a bad shape, too old, not withstanding the climatic change or the new pests and diseases. Maintenance and removal of such trees is costly.
- Heritage objects, which in many cases were also neglected and are now in a bad shape.
- Areas that are no longer used for interment, as the rental periods ended and the lots were not rented again.
 - In the case of Olšany cemeteries, the I. cemetery was transformed into a small park without monuments, however, the II. and III. cemeteries only ceased leasing but were not yet transformed – they now provide with an irreplaceable atmosphere, as they still have the old monuments.
 - In the older cemeteries the percentage to which the burial plots are paid for is less than 10%. In other parts of Olšany it is up to 90%. This is closely tied to history and the population that used these burial plots – such as Germans, who were expelled and therefore, the connection to their burial lots was lost.

On top of that, in different eras the lease contracts were signed under different conditions and for different periods. Some were signed for the duration of the operation of the cemetery, in perpetuity or for a 100 years. This restricts and complicates the revitalisation process of cemeteries, as when they revitalize an area of Olšany they have to omit the memorials that potentially have an owner or a lessee; as they as a public contributory organisation cannot invest in someone else's property. The process of screening for such memorials is lengthy as they have to go through old archives, send mails to the addresses the owner/lessee might live. Červený says it can be a detective work. In some parts this can be up to 20% of the memorials/plots. Nowadays one can lease a tomb for a maximum of twenty years.

Due to the trend of cremation the percentage of burial lots that are paid for is decreasing. Therefore, the need for cemeteries diminishes, as the bereaved keep the urns at home or do with the cremains as they see fit (more or less).

What happens with monuments on plots that are not paid for anymore

Legally after the rental period ceases and the lessee does not react to inquiries, the spot/grave can be rented again. The monument/headstone that one does not take away prior to ceasing the contract becomes legally abandoned after 3 years. After this period, the municipality (cemetery management) can do anything with it – resell it (or dispose of it, in case it is in bad condition). Therefore, when one comes to inquire about an interment spot, they will offer the plot with the monument on – the price of it is evaluated and the person buys the monument and rents the plot. The new lessee will either sand off the late inscriptions and use it, or get rid of the monument. However, in case they want to get rid of it in a culturally protected cemetery, or the monument itself is of cultural value, then the lessee needs a resolution from the heritage institute, which usually does not allow for the disposal.

Alternatively, if the monument/burial plot is valuable – it belonged to a famous figure or it was made by a famous architect or artist – such a monument can become available as part of the „Grave adoption“ (*that I mentioned earlier in the literature review – Chapter 3.3.4*).

What happens with the remains from burial

When burial happens in a plot that already had been used prior to it, it always contains remains of the former deceased, most often it is only bones (*and clothes*). The bone remains can then be placed under the new burial or to a corner of the grave. In case the lessee does not wish for these remains in the plot (usually when it is a new lessee who has no relation to the former one), these remains are placed into a common grave that a cemetery has.

When asked about how Louka vzpomínek (*upcoming natural burial meadow in Ďáblice cemetery*) would operate with the regard to this, he is unsure, as these rules are not made by him, but he suspects that since it is meant to be a very respectful place, the remains would most likely be kept there.

Satisfying demand

I asked Červený for statistics on what the percentage of bereaved choose to inter in a cemetery, unfortunately, he told me that there are not any. However, there is a noticeable demand for urn interment – urn graves or columbaria; the people who have a family grave or tomb inter there, those who do not have one, do not usually buy one, as it is expensive compared to the aforementioned urn graves, columbaria, dispersal or interring into lawns.

At the moment the biggest demand is after the ash interment and scattering. They also experience good demand for non-standard columbaria, e.g. when an architect is commissioned for the design of a new columbarium or when an existing structure is converted, such as when a tomb or morgue is transformed into a columbarium, such can be for ca. 40 lessees. The latter is possible due to a very low interest in tombs and no need for morgues in cemeteries anymore. However, such conversion is not about creating income, as the reconstruction is more expensive for the cemetery rather than utilizing the existing structures as they are.

They are also going to transform one of the tombs into an ossuary (that could, in some cases, be open to the public) since they received a lot of bone remains from a military evengelic cemetery in Karlín that is being exhumated as the land of the former cemetery will be constructed on.

The most demanded plots had always been the ones by the main path or close to the gate.

Columbaria and reconstruction

He mentions that not every columbaria are in a good condition or are aesthetical altogether. They have multiple columbaria on the cemeteries, of different architectural values and various reverence values, since some are in bad technical shape.

They can repair such columbaria, however, for that they need all the lessees to remove their urns, or get an agreement from the lessees that they can store the urns elsewhere for the time being of the process. The repair itself needs to have a project, which defines the causes of the defects, suggests corrections and in case it is a cemetery that is of cultural importance, then they need statements from the heritage office, which can sometimes take half a year. The price of it is set and the budget for next year has to be approved. In case they do get the finances for reconstruction there is the process of public procurement, which also takes many months.

I raised a question on columbaria in Olšany, that are dilapidated although they built new ones last year. Červený in this case hopes, that the lessees of the dilapidated columbaria will move to the new one and they can then move onto restoration or demolition of the old columbaria.

However, from all the 33 cemeteries that they manage there are many other things that need to be taken care of and then it falls to prioritisation of what what can be done that year, due to the limited financial resources.

Disposal of cremains

On the question whether he thinks people know that they can dispose of cremains anywhere as long as they have an agreement with the land owner, Červený said that they may often not know, but do it anyway without getting any approvals. He even states cases when the bereaved come to a cemetery in later hours and do the scattering on the cemetery scattering garden on their own (*i.e. illegally*), to not have to pay for the service.

Scattering lawns Červený considers as a disputable place for disposal, as at that point one could choose to dispose of the cremains in an actual meadow, or a place to which the departed had a special connection.

On top of that in some cemeteries the scattering garden is of small proportions and the vegetation on it cannot withstand the number of scatterings. So there might be cases when the cremains are then raked through the area to create a thinner layer or the excess can be disposed of (*Červený mentioned this in the past tense, therefore, it is unsure, whether it is and ongoing practice, all in all, I do not mean to dishonor anyone by stating this*).

Opinion on alternative methods of disposition of the body

Červený says that he is very open-minded towards the alternative disposition methods (composting and aquamation). Especially composting he considers an interesting alternative, that the Czech legislation could take on.

Although as the best alternative, he considers burial, because he likes the feeling of the departed still being physically in the plot, as well as the possibility for DNA identification even after many years. Especially in comparison with the sterile cremated remains, which he does not really connect with the identity of the deceased. Burial to him has a special symbolic meaning, that can tie one to their roots, as buried remains are seldom transferred to a different burial ground by the bereaved, while transporting an urn is no big deal.

When asked about if the look of burial and cemeteries would be different, had we more options than conventional burial Červený thinks that the alternatives always find their audience and enthusiasts, even though it may not become the most frequent trend among the bereaved. Since he experienced it with the response to *Les vzpomínek* and the coming change to funeral rituals. He even considers that the conservativeness is due to the lack of options since the providers always offer the same old, then people choose the same old or opt for nothing and keep the urn and do a ceremony on their own (or not). Which does not mean that people do not honour their departed, but rather that they are unhappy with the options they are provided with.

Alternative burial grounds

Natural burial grounds according to Červený help create a friendlier, more humane and more open ground for the bereaved, while being more sustainable with regard to the natural environment.

At the moment the only alternative burial ground in Prague is *Les vzpomínek* (Memory grove) in the Ďáblice cemetery, which is a natural burial ground for cremains, Červený considers this a viable option. This year (2023) a new more natural addition called *Louka vzpomínek* (Memory meadow) will be established in the Ďáblice cemetery; it will allow for burial in ecological caskets or, if the law allows it without one – this part would also have no monuments at the place of interment. It is intended as a natural burial lot with only natural materials, where the depth of burial should be more shallow to allow for faster and better decomposition; which Červený compares to the alternative method of composting, but without the use of technology. He also thinks that the decomposition in *Louka vzpomínek* could take as little as five years, leaving only the skeleton after this period.

The depth of burial and possibility of burial without a casket is being dealt with by the ministry at the moment – thanks to these requirements, the ministry also set a new department that deals with such matters.

Červený also mentioned that in retrospect, some of the lessees in *Les vzpomínek* have made complaints on vegetation growing among the trees, such as bramble, as they probably imagined the space to be highly maintained; this burial ground only allows some maintenance interventions. Which proved that there are people who wish for a more natural interment, but require it to look maintained.

This at one point led to Červený pondering the project of a memorial garden, without monuments, with maintained greenery and possibility of planting a chosen plant on top of their plot. This he intended for in part of Košíře cemetery, where conventional burial is impossible due to high water-table but cremains interment would be possible. This project is currently on hold.

Dishonest business

Červený mentioned that some private funeral homes hold the funeral ceremony in the halls of the public crematoria they manage (*Strašnice* or *Motol crematoria*), but the actual

cremation happens in a privately owned crematorium elsewhere because such crematoria offer lower prices. This can lead to the body in its coffin travelling in a van around the country, collecting more to deliver them to the private crematorium. There were cases this happened without the private funeral home telling the bereaved that the body will be cremated elsewhere, or the bereaved did not pay attention in their state of grief.

He also mentioned an old case of a stonemason who had stores offering stone memorials right outside of cemeteries. Who provided his service purely for the business aspect of it, bringing monuments in from China, placing them in cemeteries and even bribing the gravediggers to tell the bereaved that only his services were available. This resulted in him cashing in large sums, as he over-priced the imported monuments. Had the bereaved not been ill-informed, they could have had a nicer memorial for their finances.

These questionable practices are what led to the establishment of *Pohřební ateliér* (Funeral atelier) under the wings of the public contributory organisation last year (2022). It offers design and ecological funerary products, as well as a place for holding a funeral ceremony – all to help maintain high funeral culture. Some years ago the organisation also co-held a contest for designers and students to show their way with funeral design, which met with multiple inputs and overall positive approach.

Memorialisation

What he considers questionable (in being respectful) is the memorialisation, that cremation leads to, as cremains can be made into jewellery or glass ornaments, these objects are then memorabilia. However, he does not condemn the people who opt for these memorabilia, as everyone is different and has a different way of coping.

In case of memorialisation by monuments there is also something to dislike. For some decades there had been an import of memorials, mainly from China, these all look the same, glossy stone with a typical shape, different colours and kitsch symbols. On top of these memorials not being made by the Czech stonemasons, they in cases negatively influence the aesthetics of the cemetery. In some cemeteries the stonemasons pay for a couple of grave plots setting these monuments and then getting business. Červený pondered doing the same thing, but on a higher aesthetical level by placing monuments that were carefully designed. He thinks that the culture of graves could be changed for the better if only the bereaved knew about it (cue the new *Pohřební ateliér* mentioned above). However, he states that people might be wary of custom monuments due to the expectation of a higher price; Červený stated that it does not necessarily have to be higher than that of the prefabricate memorial.

Cemeteries from the point of urbanism

Červený considers cemeteries notable spaces of the urban matrix, as there are many different kinds of cemeteries, which are incomparable. Their functions depend on the cemetery location and whether they should substitute other functions in said area. With regard to Olšany cemeteries, it may be a cemetery that acts more as a public space rather than a space for interment, memorialisation and grief.

Cemeteries have many reserves and could fulfil many functions better than they currently do. In some cases they pose as barriers in the area, which can be improved by adding more gates. Other limitations are the rules of cemeteries, which could be modified and the cemetery would then be more functional in terms of recreation. As examples of unreasonable rules he mentioned – the restriction of riding or even leading a bike through, and dog walking (although some cemeteries are homes of cats). Nevertheless, the rules of cemeteries should be in balance with the reverence of the site – as there are matters some people are sensitive about. Červený further believes that hygienic and other regulations restrict the creation of a nice public space, as there are regulations on how a pedestrian should move around, how to protect him etc. in the public space.

Walls and safety

Cemetery walls belong to the primary amenities of cemeteries, as there always were the wall, a central cross and a morgue. The historical reason being to divide the dead and the living, if only symbolically. Apart from cemetery walls being a historical relict, there are practical reasons to them, as they create a gated and guarded area. As Červený mentioned that in today's society safety in public space is praised, and if a place does not have safety measures, it is considered hazardous.

To support the reason for walled cemeteries he said that most cemeteries in Prague do not have lighting and their area can be pitch black at night. Stating a case when on All Saints' Day (when the opening hours are longer) there was a man that collapsed and was found hypothermic many hours later. Another case was of a lady falling into a tomb that had only a withered OSB (oriented strand board) on, that was covered in fallen leaves. This case led to the hysteric realisation of all the cemetery managers, who also have such hazardous plots in their cemeteries, where they provided solutions to inform visitors of the dangers (often by placing corrugated metal, rebar, warning tape and a warning sign).

There are areas, paths and plots in cemeteries that are hazardous and Červený thinks, that the fear from the management of cemeteries stems from their belief that when a person sets foot on the cemetery grounds they are responsible for their safety.

How could the functionality be improved

On how to improve the multifunctionality of cemeteries, Červený replied with „by rethinking and reinventing the rules of cemeteries“. He stated a sentence from the cemetery rules that prohibits any action and use of the cemeteries, which does not align with the purpose of the cemetery, which is burial.

To improve accessibility through the Olšany cemeteries (because of their size) they set up a free service for people who go there to care for their plots to transport them there by a small motorized vehicle and then pick them up. This service is commonly used by the elderly.

The physical form could be improved by: providing street furniture, improving the information system, and adding new paths; to make the cemetery feel more open to other uses as well as help put visitors at ease with their stay in the cemetery.

I had asked about restroom facilities, as sometimes there are none or far away, which Červený concurred with, although he did not consider it such a problem from the beginning. Now, there is a plan for adding restrooms in some cemeteries, possibly by transforming existing unused structures by the gates, as that is simpler and less expensive than building new structures.

Other improvement of functionality is done by opening the cemetery to the public be it through educational commented walks, concerts or art instalations. Červený mentioned that this year (2023) there is a music festival planned in the old part of the Olšany cemeteries – for which he expects some complaints about the management desecrating cemeteries.

In the Malvazinky cemetery they installed a *Poesiomat*, an instalation that plays narrated poems by public figures buried in the cemetery. Under the Olšany cemeteries there is a building used by a kindergarten (originally rented by *Cesta Domů*, now *Cestička*). These children are sometimes led into the cemeteries and one can see the remains of their chalk drawings on the paths, or art formed from chestnuts and cones. However, there were people who complained about this too, which points to the society not being uniform in how they perceive cemeteries and what goes and can go on in them.

On question of establishment a café or a communal space. He considers it probable, especially in the case of a café, where the bereaved could go after the funeral service, workshops could be held or it could pose as a space for art instalations. He himself talked about this option (of a meeting room for workshops with a coffee corner) in the past, but he met with contention, probably because the society was not ready for that yet.

4.2.3 Mgr. Blanka Javorová

Mgr. Blanka Javorová is one of the most influential and important eco-burial figures in the Czech Republic. She co-established association *Ke Kořenům, Les vzpomínek* (2015) and is working on many more projects connected to more mindful and ecological burial and memorialisation.

Interest in natural burial grounds

Although only a minimal amount of people (*compared to the number of deaths in Prague*) approach *Ke Kořenům*, with the interest in interment in their alternative burial ground (i.e. *Les Vzpomínek*). She guesses that it might be around 150 interments a year in *Les Vzpomínek* and some ceremonies they hold on different grounds. She believes that the interest in it will grow as the years go by and that the existence of *Les Vzpomínek* alone may inspire people to scatter/inter cremains on their own in nature.

This led me to the question, whether she thinks that people know of the possibility of scattering ashes on their own (if they have permission from the land owner). To which she replied that they meet several people who are not aware of this, and some that do it anyway without the knowledge.

Green burial

In the case of green burials, if a tree was planted on top of the spot, the whole area would become a protected forest. She pondered the possibility that such space could then also be used for the interment of cremains. However, the possibility of the site once taken by a body to be used for another burial would be none, at least in the close horizon – since the place is taken up by the tree. The continuity of burial in such area would depend on the spacing of the trees.

Which is why in the Ďáblice cemetery, they decided to choose meadow burial. Meadow burial allows for a continuous burial and therefore requires less space. The area of this new burial option will be called *Louka vzpomínek* (Meadow of memories) and will be managed by Adam Vokáč, who is actively pursuing this method to be allowed by the law/legislation; the need for change in the law is due to the requirement of shallower burial.

The ultimate vision of Javorová is for the future of cemeteries in the way of having whole memorialisation landscapes, forests and meadows that would pose for ecological burials.

Management in *Les vzpomínek*

Les vzpomínek is a part of Ďáblice cemetery, it was established in 2015 in a sizeable area (ca. 1 ha) with grown trees. People usually keep on the pathways, however, the bereaved have no problem approaching the tree tied to their loved one; it is allowed to walk around freely.

The interment of cremains is usually executed ca. 2 meters from the tree trunk, the number of ash burial by one tree depends on the tree's surrounding area and root placement. The holes for interment are dug sensitively since they do it manually with a spade, and if, on occasion, they find a tree root, they move away from it to prevent damage.

The memorialisation method is by wooden tags placed on a wire around the tree trunk. The wooden tags are owned by the bereaved; when they feel the need for renewal, they can ask for it. The wires that attach the tags to the trees are checked, so they do not cut into the tree – which is essential with younger trees, whose yearly increments are more significant.

Lease contracts for the interment spots are signed for ten years. After that, the bereaved can choose to prolong the contract, as in a conventional cemetery. On whether she thinks that people would like to keep renting the spot after the ten years, she thinks yes, but that is yet to be discovered.

Reusal of the "same" spot is possible after the lease ends. After five years, they experience the cremation ashes becoming an undistinguishable part of the forest, i.e. integrated.

Capacity-wise, *Les Vzpomínek* has over 800 cremains interred by ca. 220 trees. Since the forest is a living organism, they are not sure of the area's capacity. Lately it came to their attention that cremains can have a negative influence on soil, with alkaline pH (which could be dealt with coffee grounds or needles) and high content of Sodium (which could be managed by active charcoal). However, what to do and if anything needs to be done in *Les vzpomínek* to improve the conditions would need to be discussed with a professional.

Prior to this knowledge she thought of cremains as inert substances. This adds to her opinion on why to choose greener ways of burial.

The area of Les vzpomínek is irregularly maintained by the grave-diggers mainly with a string mower to cut back the growing vegetation among the trees. They plant only old Czech varieties of trees (if needed). The management of trees is under the management of the Prague cemeteries (the public contributory organisation), external greenery maintenance firms are hired for the maintenance of trees when required – this maintenance falls under a strict budget.

In other natural burial grounds Javorová mentioned that sheep sometimes graze meadows. In other cases the meadow is mowed manually with a scythe, such as in the Slovakian *Zahrada vzpomienok* (Garden of memories), which also provides the bereaved an opportunity to partake in the management.

The opportunity for the bereaved to be a part of the management she views as a positive aspect; partly since they encountered bereaved in the forest cemetery (Les vzpomínek), who seemed regretful that they could not nurture the burial place – some even sow grass; which is not possible in the natural setting. She, therefore, says that some people would benefit from choosing an alternative in which they can participate more.

The question of money and saying goodbye

She thinks that the price might influence the choice of interment or decision-making for having or not having a memorial ceremony, especially now with the economy's unsteadiness; this may be why there are so many burials by cremation without a ceremony. She wagers the probability of it also being because the traditional ceremony in a memorial hall might feel too impersonal, formal or a meaningless way of saying goodbye, with the bereaved possibly making the ceremony on their own.

The feeling of formal funeral halls being too impersonal is also the reason they work closely with the bereaved and hold the ceremonies right in the natural setting of *Les vzpomínek* – in hopes of making it as pleasant, respectful and meaningful to the bereaved as possible.

Coping with grief and sentimentality

She believes that the burial should stay in the hands of the bereaved and that the forest cemetery (Les Vzpomínek) is the place for that. As one of the critical factors of natural cemeteries, she points out that they are welcoming and inviting the bereaved to participate – e.g. by providing the possibility to light a candle in a designated space, send messages to "heaven", put the cremains into the ground on their own. She had received positive reviews on the ceremonials they held in the forest cemetery.

On the question of sentimentality and how people view when a tree that the bereaved interred the cremains under dies, as trees are living organisms. Javorová said that it may feel like a second loss for the bereaved. She encountered this with three trees in the forest cemetery. Some families took it as a symbol or metaphor for new growth or rebirth, some take it as it is, and some took it rather badly.

Memorialisation and dematerialisation

The area of the forest cemetery (Les Vzpomínek) is supposed to be close to nature by design, so the placement of artificial objects or even marking the place of interment with stones is forbidden.

There is an ongoing struggle with the bereaved not keeping up to the rules of not placing any inanimate objects into the area; it is a common phenomenon among some bereaved in natural burial grounds. She thinks people feel the need to bring something with them or decorate the place by bringing photos or stuffed animals. However, the managers then have to remove such objects to keep the area's natural feel.

They, as an organisation, are trying to inspire people to dematerialise and to view memorialisation more spiritually and emotionally, without the ecological burden a material memorialisation might have. However, Javorová believes that everybody should be able to choose what they need to cope and honour their relationship with the deceased.

She concluded memorialisation with a wish, that if one has to memorialise the dead, then it should be in a way, it can serve the environment or also have another function, e.g. by placing bird feeders, water bowls or an insect hotel.

Cemeteries for recreation

Javorová considers cemeteries as meaningfully used spaces, thanks to the functions they provide – mainly thanks to it being an essential part of urban greenery, especially since patches with vegetation are crucial in urban areas. However, she agrees that they could be better, have a better infiltration capacity, and possibly work as green oases within the city.

She alone likes to use cemeteries for recreation, to take a walk, enjoy the silence – for the most part she considers the forest cemetery as a wonderful place to go to, sit down on a bench and recall the memories of their loved one. It is a place of peace, rest and walks.

She further believes that cemeteries should be live spaces both environmentally and socially. She mentioned that she held a presentation on cemeteries, where they have cafés (e.g. Berlin) or practice yoga. She noted that people after the burial ceremony like to go sit somewhere for a while, so having a café on site would be a good thing.

4.3 Field Observations

The field survey was conducted through visitations to cemeteries in various locations. There was no specific time for the visitation of the cemeteries, some were visited on weekdays, some on weekends and the hour of the visit also differed. The vast majority of the sites were in the Czech Republic, mostly in urban areas, with most cemeteries visited in Prague. For comparison, I visited some cemeteries in Sweden.

Nr	CC	Setting	Name	Nr.	CC	Setting	Name
1	CZ	rural	Arnoltice cemetery	15	CZ	rural	Svatý Jan pod Skalou cemetery
2	CZ	rural	Brno-Líšeň cemetery	16	CZ	urban	Turnov cemetery
3	CZ	urban	Břevnov cemetery	17	CZ	rural	Velká Chuchle cemetery
4	CZ	urban	Řáblice cemetery	18	CZ	urban	Vinohrady cemetery
5	CZ	rural	Hejnice cemetery	19	CZ	urban	Vyšehrad cemetery
6	CZ	rural	Hojsova Stráž cemetery	20	SE	urban	Arlöv cemetery
7	CZ	urban	Hostivař cemetery	21	SE	rural	Fredentorps cemetery
8	CZ	rural	Lázně Libverda cemetery	22	SE	urban	Lund Norra cemetery
9	CZ	rural	Most Church cemetery	23	SE	urban	Malmö Gamla cemetery
10	CZ	urban	Olšany cemetery	24	SE	urban	Malmö St Pauli Norra cemetery
11	CZ	rural	Raspenava cemetery	25	SE	urban	Stockholm Sandsborgs cemetery
12	CZ	urban	Stodůlky cemetery	26	SE	urban	Stockholm Skogskyrkogården
13	CZ	urban	Strašnice cemetery	27	SE	urban	Stockholm St Johannes cemetery
14	CZ	urban	Strašnice Evangelic cemetery				

Table 2: Visited cemeteries, their location, name, setting and number for reference in the map (Figure 24).

I observed the overall feeling of the cemeteries, consistency of the design (memorials), what ways of memorialisation they offer, tools (water and bins), facilities, greenery, surrounding landscape and the way people honour the departed by leaving objects behind (or not). I made photographs and notes on the good and the bad.

Locations of the individual cemeteries can be viewed on this [map](#).

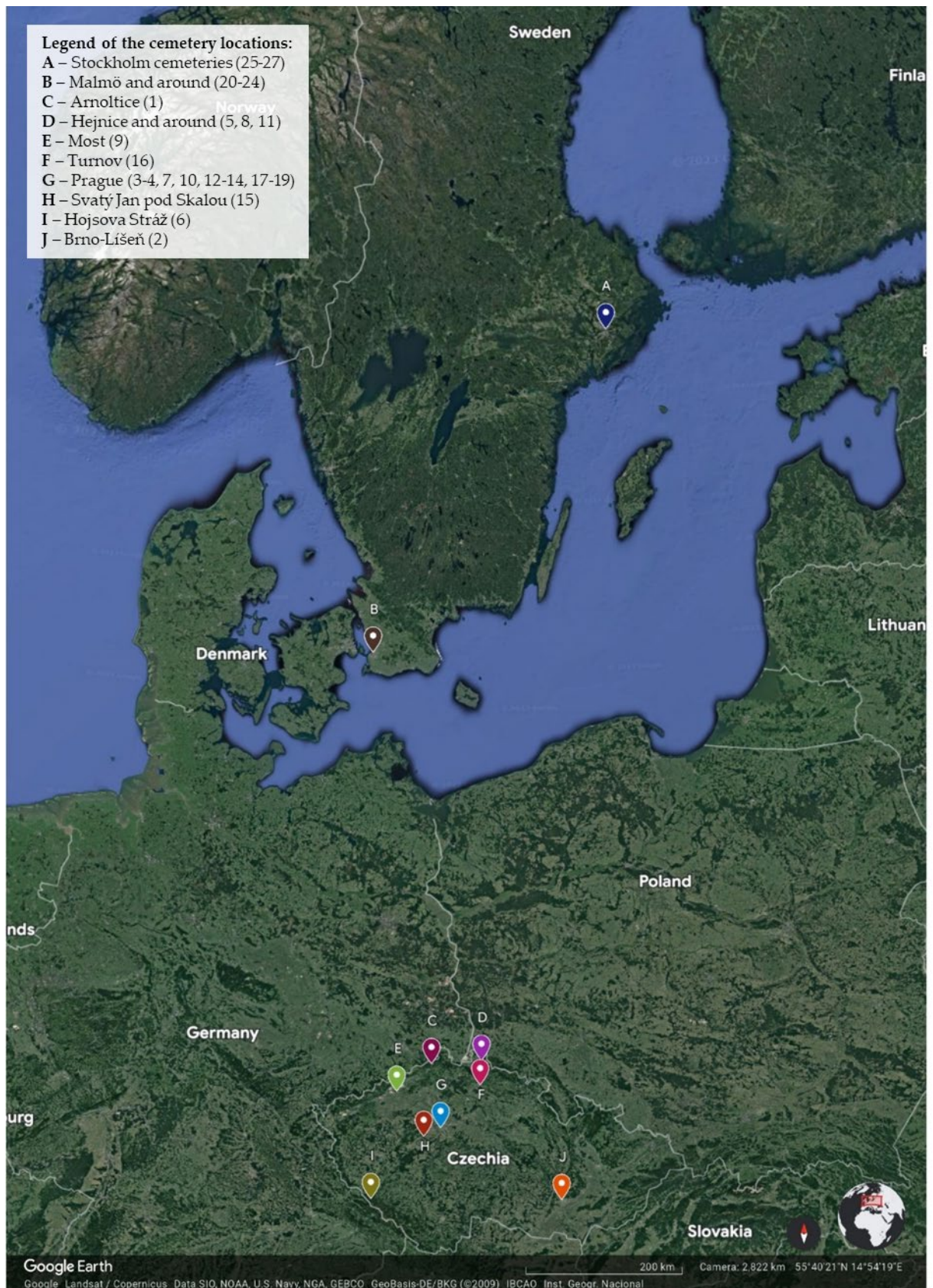


Figure 24: Location of the visited cemeteries. Numbers in the brackets of the legend refer to the cemetery numbering in Table 2. Points in map created in Google My Maps, the map printed from Google Earth.

5 Results

This chapter mentions the results of the online questionnaire, summary of the interviews and an overview from the field observations.

5.1 Online questionnaire results

The total number of respondents was **413**; all respondents filled in all asked questions within their chosen survey language, either Czech or English. The majority filled out the questionnaire in Czech (91%, 376) and almost a tenth in English (9%, 37). I did not further distinguish between these two categories and combined the answers for evaluation.

Mind that the responses are subjective; the responses to the thematic questions and the evaluation of the cemeteries are based on where the surveyees are from, what cemetery they imagine when the thematic questions are asked, how they were brought up, where are their ancestors interred, what are their traditions, their profession and more of the complex backgrounds that a person has – this complexity and finding why people think that way was not part of the research.

5.1.1 Demographics

Regarding the demographic questions, I provided the option not to disclose the information (Prefer not to say), but only a few respondents chose this option. All respondents filled out the question on age, and „Prefer not to say“ was chosen in question on gender (1%, 3), living setting (1%, 4), Country of origin (2%, 6) and religion (5%, 20).

These questions proved that the surveyees were of different backgrounds to provide various responses to the thematic questions, whose results are mentioned in the following chapters.

Origin (Figure 25) and living setting (Figure 26)

The majority of respondents were of Czech origin (87%, 361); the other more frequent groups were German (2%, 10) and Slovak (2%, 9). The rest ranged from 4 to 1 respondent per country and made up 7% of the surveyees; their countries of origin were the United States, India, Russian Federation, Netherlands, Norway, Iran, Australia, Austria, Brazil, Canada, France, Greece, Italy, Slovenia, Sweden, Syria and the United Kingdom. This better represents the population, as the population is not only made up of people of the same origin.

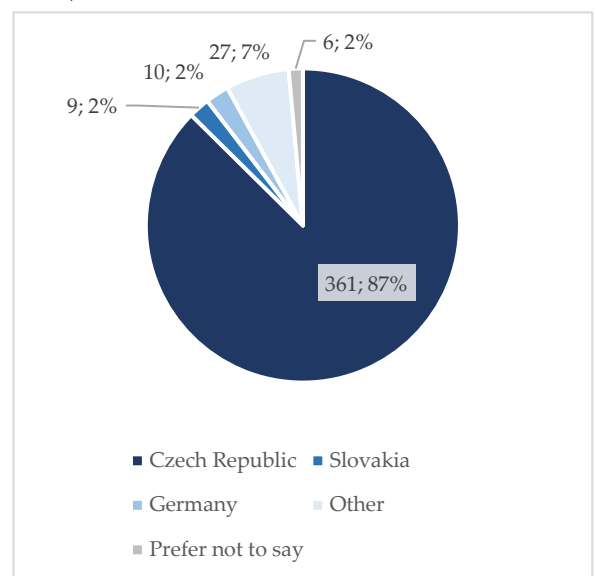


Figure 25: The origin of the online questionnaire surveyees.

Almost three-quarters of the respondents live in the city/urban setting (73%, 303) and a quarter in a village/rural setting (26%, 106). This fairly represents the distribution between the rural and urban settings in the Czech Republic.

Age (Figures 27 and 28)

The responses among age groups were evenly distributed between the four categories ranging from 18 to 58 years; these each counted 21-23% (85-96 respondents), which made a total of 89% (367) of the respondents. Tenth of the responses were from people in the „59-68“ category (10%, 40), minimal in the „Over 69“ category (1%, 6) and zero responses in the „Under 18“ category.

The surveyees were equally distributed between urban and rural settings (0,5-1,5% difference); only in the „59-68“ category was the difference between rural and urban 5%, with more people in this category living in the rural setting.

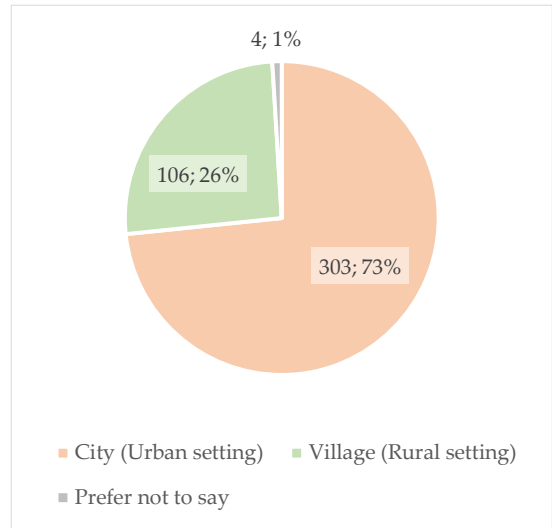


Figure 26: The setting the surveyees reside in.

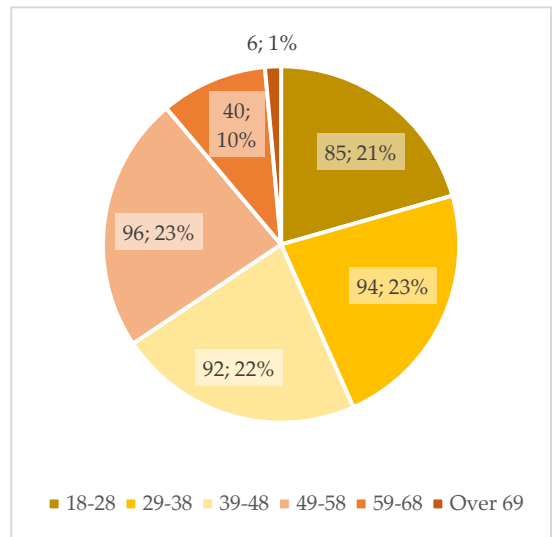


Figure 27: Age categories of the surveyees.

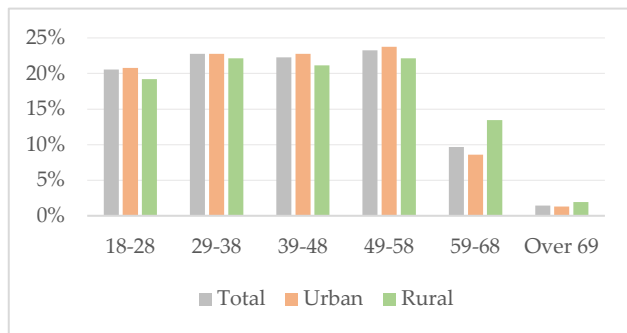


Figure 28: Age categories of the surveyees with relation to their setting of residence. Total shows the percentage of all the surveyees without relation to the rural or urban setting.

Gender (Figure 29)

This category is not equally represented, as the survey was taken by more females (65%, 270) than males (34%, 140).

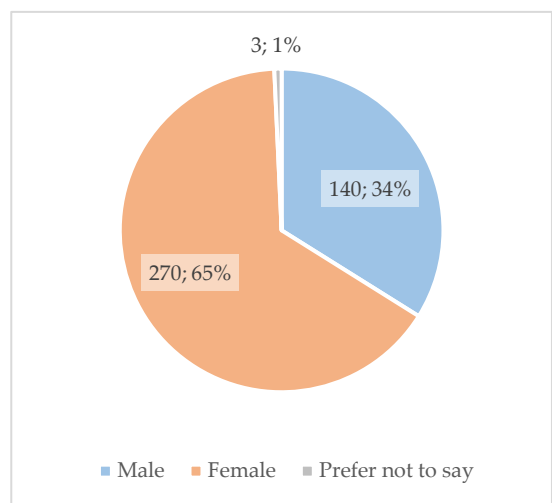


Figure 29: Gender of the surveyees.

Religion (Figure 30)

The number of religious respondents was relatively high for the Czech Republic, as according to the statistic from 2021, 22,2% stated they were religious; this percentage is 10% lower than what the surveyees chose. The survey was filled by 263 people (63%) who claimed „No religion“, 98 people (24%) chose „Christianity, and then 32 people (8%) chose various religions and beliefs. The other religions were Islam, Buddhism, Judaism, Paganism and Hinduism, while the beliefs ranged from belief „in something“, belief in energies, holding spiritual habits without belonging to a particular religion and holding Christian values.

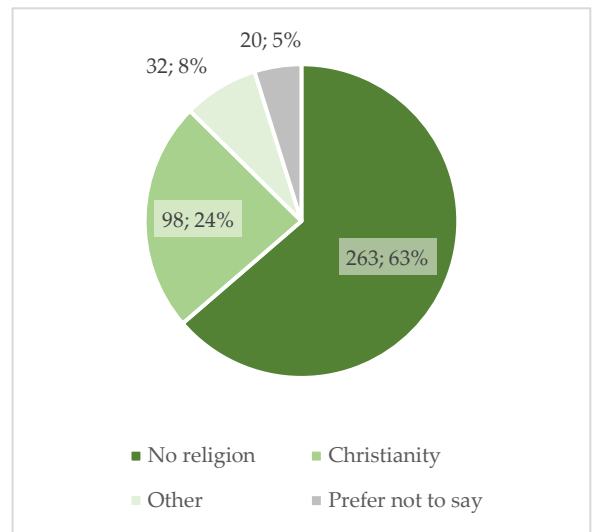


Figure 30: Religion of the surveyees. The category other includes religions chosen by individuals and various beliefs.

5.1.2 Visiting and activities

Visit pattern

The first of the thematic questions was on the frequency of visits to cemeteries (Figure 31). Slightly less than 90% of the respondents stated they visit a cemetery/cemeteries yearly; a quarter of the respondents frequent cemeteries once or twice a year, 40% visit multiple times a year, and a fifth come to cemeteries very often. A bit over a tenth of the respondents seldom or ever visit cemeteries.

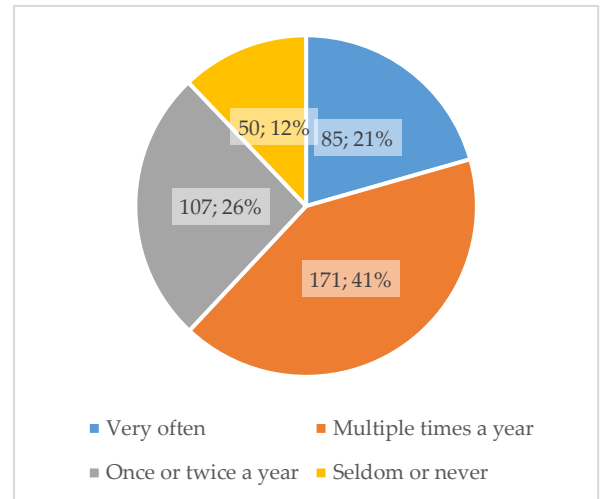


Figure 31: How often do the surveyees visit cemeteries?

I compared the visitation rate between urban and rural inhabitants (Figure 32) to see whether it differs and found that it was somewhat similar. In the urban setting, fewer people would go to cemeteries more often, which is then projected in the higher number of responses „Once or twice a year“, which is 5% higher than in the rural setting. However, overall more people from the urban setting visit cemeteries; the surveyees from rural settings responded slightly more, „I seldom or ever do “ (by almost 2%).

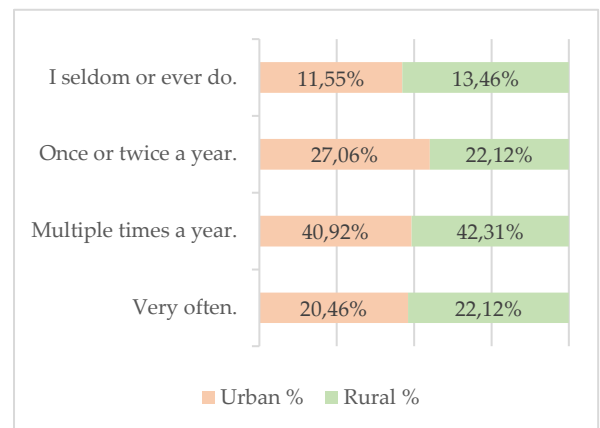


Figure 32: Relation of the visitation frequency and residence setting of the surveyees.

Purpose of visit (Figure 33)

The question on the purpose of one's visit to a cemetery was multiple-choice. The vast majority (82%) chose „Visit a loved one's memorial“; a quarter of the respondents (104) listed it as the sole purpose of their visit. Other frequent answers were „contemplation and enjoyment of the quiet“ (40%), „going for a walk“ (31%), „visit a memorial of a famous person“ (21%), taphophilia (14%), „visit a war memorial“ (14%) and „I walk through it“ (11%). The survey was responded to by 21 people (5%) who are tied to cemeteries professionally. A small percentage (3%, 12) answered that they do not visit cemeteries.

This was the only thematic question that allowed to write their own answer, which some (25) people did. These were the purposes among their responses:

- As part of a trip - sightseeing
 - This was usually related to visiting the church
- Getting to know the culture
- Studying and interest in mainly art, architecture and history
- Archaeological interest in the fossils visible in some headstones
- Funeral
- Filming
- Mushroom picking
- Mobile location-based games
- Sex
- Accompaniment of their grandparent
- Forced by relatives into visiting

From these answers, it is visible that some people have a particular interest in visiting cemeteries, some do questionable things there, and some would not visit cemeteries were it up to them.

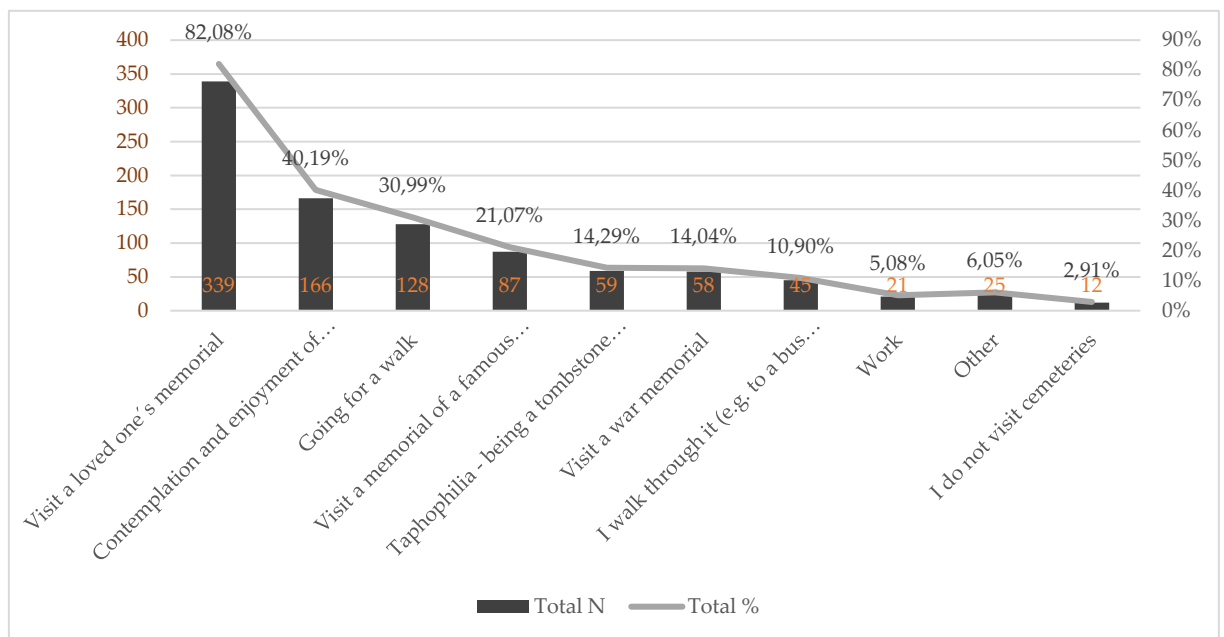


Figure 33: Graph portraying the responses on what is one's purpose of visiting a cemetery. The reasons the surveyees wrote on their own are under the category „Other“.

Activities

The question on activities the surveyees find acceptable in cemeteries/memorial parks are fascinating. It shows that some people would not mind if more activities took place in cemeteries contrary to the allowed activities written in the cemetery rules. The level of acceptance towards each activity differs (Figure 34).

The most acceptable activity chosen by almost 90% of the surveyees is to take a walk in a cemetery, followed by reading (71%) and talking (52%). Somewhat ambiguous responses were to these activities – calm leisure activities (38%), walking with a pet (30%), playing instruments (24%) and eating (19%). What would the majority of people find as unwelcome activities would be running, cycling and sunbathing. Quite a large number (9%) chose that neither of the provided activities is acceptable; on average, these respondents stated a higher visit frequency; otherwise, they were not of one origin, residence, gender, age or religion.

When I looked into the relation between people who chose as the purpose of their visit only to visit a loved one's memorial (which was 104 people as mentioned above), 22 chose that neither of the activities is acceptable, and 20 would not mind people going for a walk.

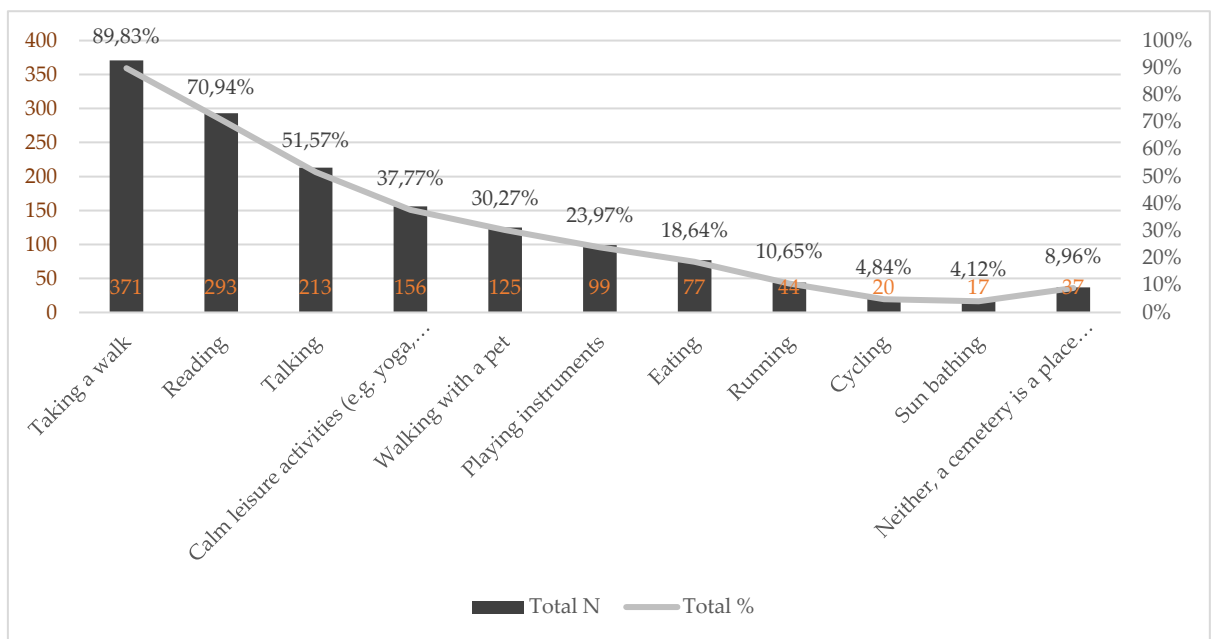


Figure 34: Activities that could be perceived as acceptable in cemeteries/memorial parks and the percentage of people who find them acceptable.

This was available as a multiple-choice question; these are the most common combinations of activities or sole activities that the surveyees chose as acceptable:

- Go for a walk (45 people)
- Go for a walk + reading (47 people)
- Go for a walk + reading + talking (29 people)
- Go for a walk + reading + talking + calm leisure activities (22 people)

For some, the list of possible activities would be bigger, as they also wrote various activities as the purpose of their visit, which is mentioned above. I believe that the activities

would be perceived by one differently in an old cemetery, in a random cemetery and in a cemetery holding the remains of their ancestors.

5.1.3 Memorialisation

To a different extent, memorialisation was mentioned in four survey questions. The mentioned forms were the need for a memorial, a place where one could honour the departed, implementation of interment options in public parks and the possibility of placing cenotaphs in public spaces.

Monuments (Figure 35)

The question on memorial requirement consisted of five options, which can be briefly described as permanent, temporary or no monument, memorialisation at home or „I do not know.“ – this roughly reflects the options available in the Czech Republic.

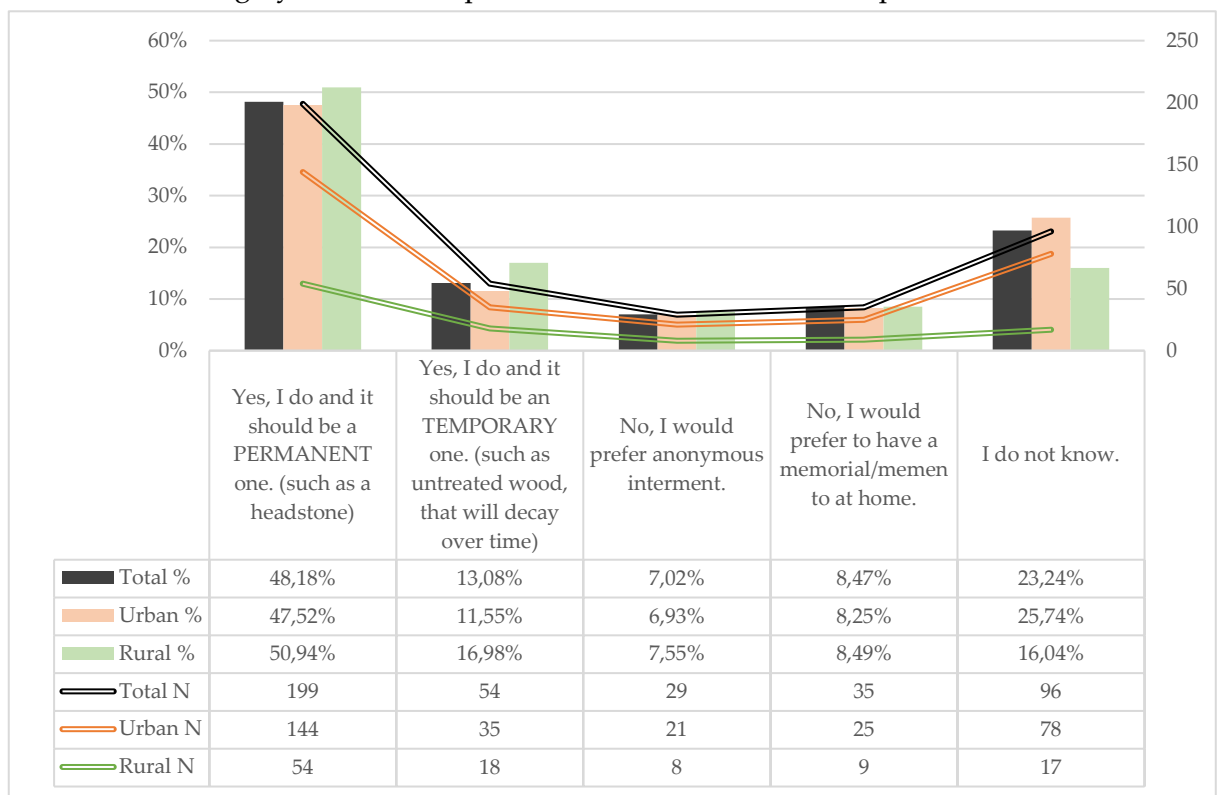


Figure 35: Requirements on memorialisation of the departed - permanent, temporary, none, at home or I do not know.

I will start the evaluation of this question from the end, as it reflects significantly on the overall result; the „I do not know.“ option was chosen by 23% of the surveyees. It can be debated whether these were unsure of their requirements or neither of the other provided options seemed like the option they would choose. If we go with the scenario that the surveyees who chose this option were unsure, then the people from the urban setting were 10% less sure, as almost 26% chose this option compared to the 16% from the rural areas. Another conclusion that can be drawn from this is that people in the rural areas might be more likely to choose the same way of interment and memorialisation as their ancestors. Since we covered that, it can be summarised that the other four options were chosen by a smaller percentage of surveyees from the urban setting.

The option that nearly half of the surveyees chose was the need for a permanent monument (48%). The rest of the options received way less recognition – temporary monument (13%), memorial/memento at home (8%) and anonymous interment (7%). Overall it shows that most surveyees chose the option they are most accustomed to in cemeteries. To some, taking care of their burial plot is of the essence; some would prefer if it were more integrated and no care was required.

Space for honouring the departed (Figure 36)

Another common aspect of cemeteries is the customary placement of flowers, lit candles and other objects to honour the departed. This was asked in a yes/no question. Two-thirds of the respondents stated their need for such a space. Surprisingly by percentage, the surveyees from rural settings stated a lower need for such space; no need for space was chosen by 38% rural and 31% urban surveyees. It can be debated if they only require the space at the place of interment or if they would be okay with common honouring space.

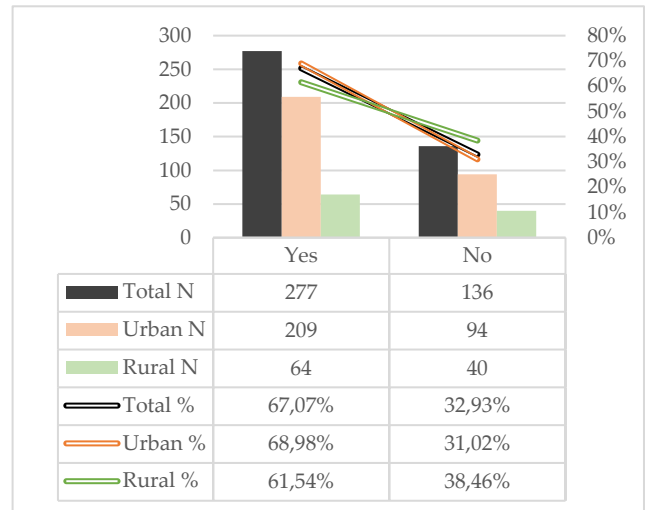


Figure 36: The outcome from question on requirement of a spot for honouring the departed by object placement.

Implementing cremains into public parks (Figure 37)

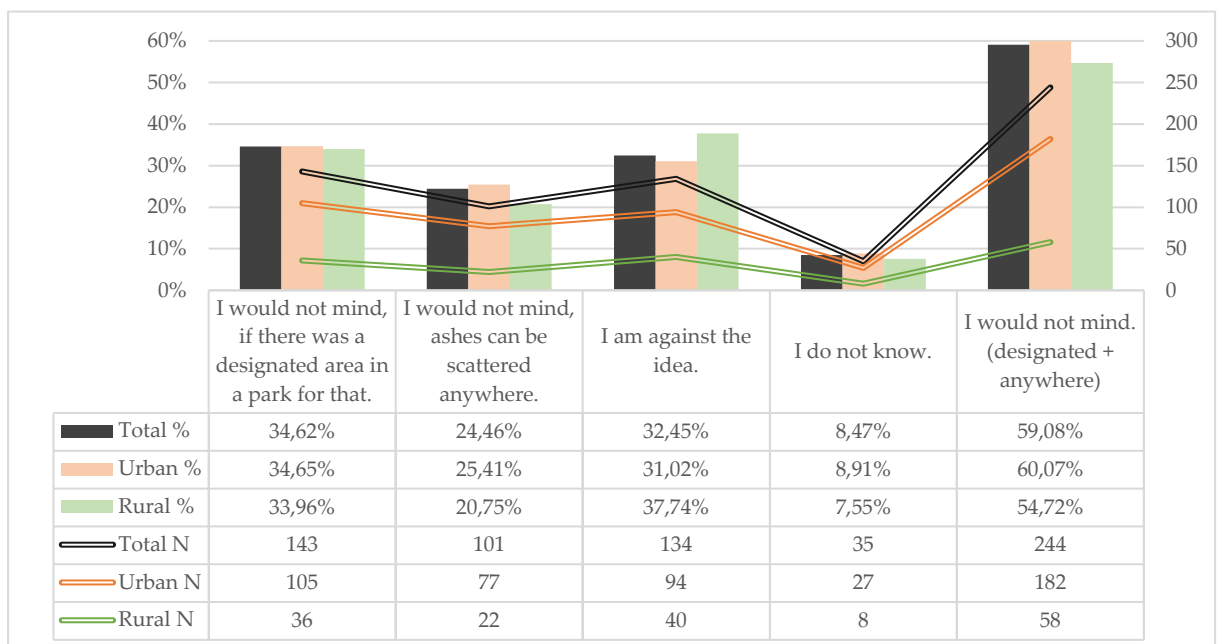


Figure 37: Peoples opinion on implementing interment of cremated remains into public parks. The four columns from the left show the options that were in the survey, while the column on far right combines the first two options to show the overall positive opinion on the implementation.

Since the law on burial does not require the interment of cremains in cemeteries (mentioned in Chapter 3.2.3.1), I decided to include a provocative question about allowing the interment of cremains in public parks. One question is if people would mind, and another is if they would opt to inter there, which was not part of the survey.

Nevertheless, quite a large percentage (59%) of surveyees would not mind such implementation, with 35% stating it would be okay were there a designated area for that, and 24% would be okay with cremains interred/scattered anywhere. However, although more than half would be okay, a third of the surveyees were against the idea, and 8% were unsure.

Implementing memorialisation into public space (Figure 38)

Another similar question was on cenotaphisation (or memorialisation) in the public space, such as parks, streets, squares etc. This would consist of a memorial for the deceased without interment in the area of the memorial/cenotaph. There are already cenotaphs and memorials in public spaces, although these are for public figures, martyrs or victims of accidents (most often traffic incidents).

Almost a fifth of the respondents (18%) were unsure, and a quarter of them was against the idea – with more people from the rural settings being against and unsure about it. Nevertheless, more than half of the surveyees (57%) would not mind cenotaphs in public spaces.

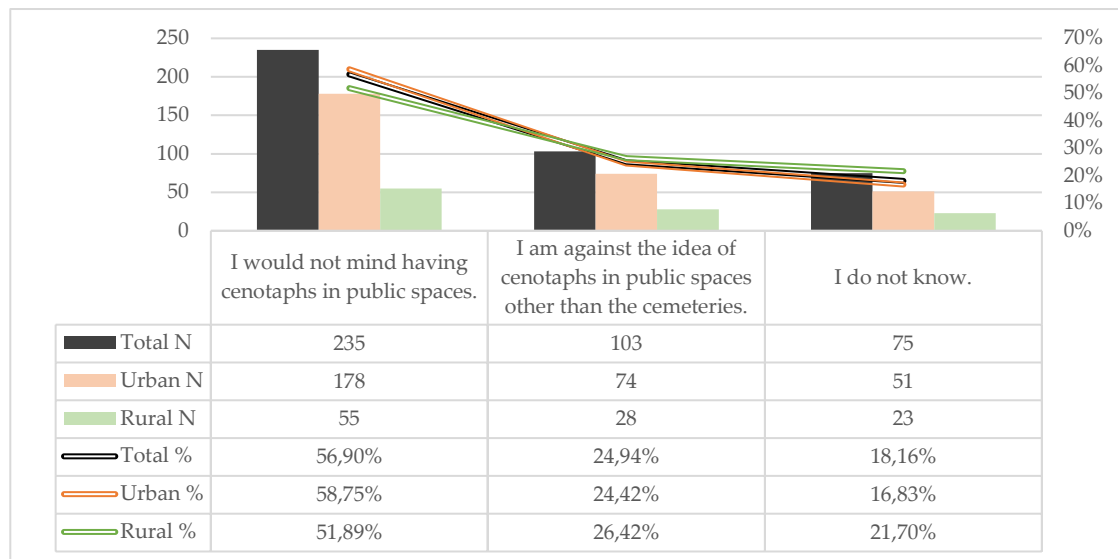


Figure 38: Opinion on memorialisation by cenotaphs in public spaces.

5.1.4 Preferences based on images

The photographs portraying different settings (Figure 39) and ways of interment or memorialisation in various burial grounds were evaluated on two criteria – seeming respectfulness towards the departed (Figure 40) and likeness of the surveyee of visiting such a spot (Figure 41). The result of these questions may be used as a pointer towards what people

are theoretically interested in; what could be the preferred way of memorialisation were it not for other factors, such as the location of these burial grounds, price or religion.



Figure 39: The photographs that were evaluated in the survey.

The **respectfulness** (Figure 40) was perceived as highest in the pictures (8, 3 and 10) portraying the forest cemetery for green interment of cremains (78%), remembrance space with art space for memorialisation in a park-like setting (74%) and the classic uniform well-maintained cemetery with curbed graves with headstones (70%).

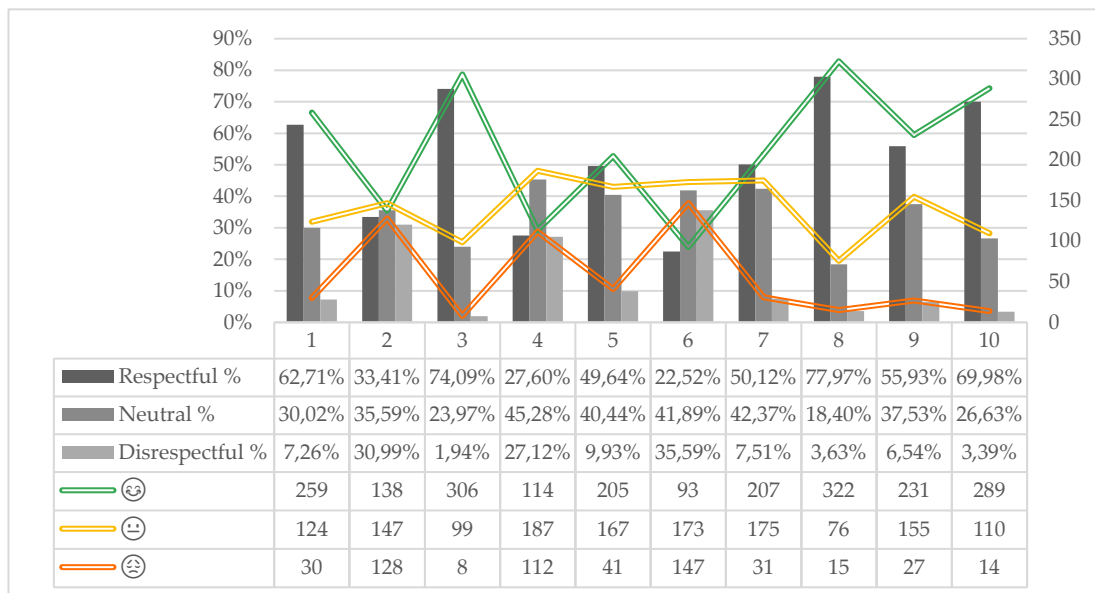


Figure 40: Respectfulness of the places shown in the images (Figure 28) evaluated by the surveyees (N = 413). Feeling of respectfulness of the place towards the departed, in which case SAD = Disrespectful, NEUTRAL = Neutral and HAPPY = Respectful, these show the number of responses.

Alternatively, we can view the respectfulness by adding respectful and neutral responses, in which case the seemingly most respectful sites were the same; however, their order changed slightly – 3 (98%), 10 (97%) and 8 (96%), adding also 1 (93%) and the more

ambiguous 9 (93%), 7 (92%) and 5 (90%). Painting the vast majority of the portrayed places as respectful.

Overall, all photographs were partly viewed as disrespectful; however, the extent varied from 2 to 36%. The places perceived as the least respectful or ambiguous were the columbaria and the overgrown old cemetery. The most ambiguous response received by the old overgrown cemetery (2 in Figure 39) with a similar percentage in all three categories, other ambiguous with a higher percentage of „Neutral“ but the same of Respectful/Disrespectful was the columbarium wall next to urn graves. Lastly, the ones marked as least respectful were the grey cubistic columbaria; although they were right next to a path and surrounded by greenery, 36% of surveyees marked it as disrespectful.

In the case of which of the portrayed spaces the surveyees would visit (Figure 41), more of the responses were neutral with a few outliers pointing towards likeness of visit in 8 (76%), 3 (63%), 1 (57%), 2 and 10 (both 54%).

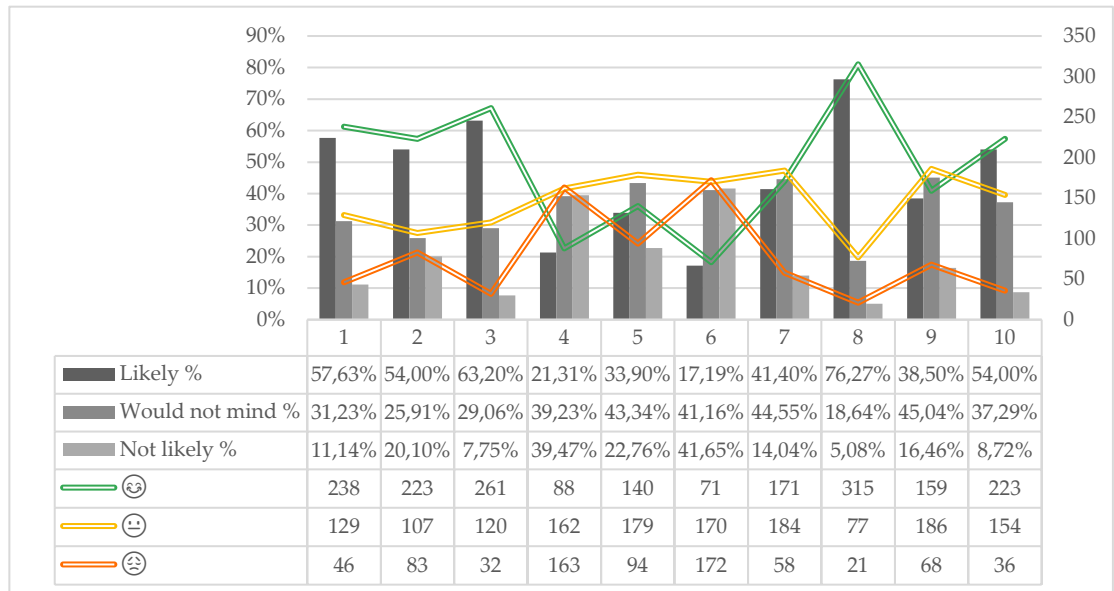


Figure 41: Likelihood of visiting the places portrayed in the photographs (Figure 28) by the surveyees (N = 413). Likelihood of the surveyee visiting the place, in which case SAD = Not likely to visit, NEUTRAL = Would not mind visiting and HAPPY = Likely to visit, these show the number of responses.

If the options of likely to visit and would not mind visiting are combined, then it further shows that photographs 8 (95%), 3 (92%), 10 (91%), 1 (89%) and 7 (86%) could be spaces people would visit.

On the other hand, photographs portraying spaces people would not likely visit, based on the percentage of „Not likely to visit“, were 6 (42%) and 4 (40%), followed by 5 (23%) and 2 (20%).

Combining likelihood of visit and perceived respectfulness (Figures 42 and 43)

If people chose the place of interment based on how respectful they find it and how likely they would be to visit such a place, then it is possible to add these together (Figure 42) and draw conclusions. The result is shown in Figure 43; the places most likely to be chosen for memorialisation would be 8 (77%), 3 (69%) and 10 (62%), and the least would be 4 (25%) and 6 (20%).

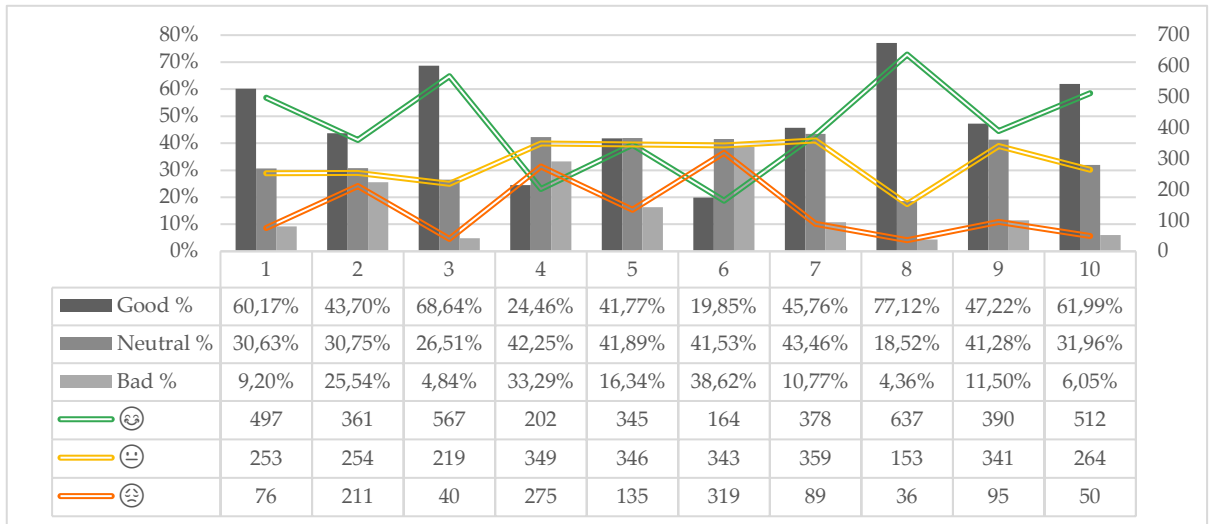


Figure 42: Mixed values of the questions on the likelihood of visit of the cemetery in the picture and how respectful it looks – the N is 2x413 as it combines two question. In theory, this could show what people may or may not choose as the final resting place. Nr. refer to images in Figure 39.

This shows the preference towards maintained and open spaces that show the prospect of being either places for recreation or as places for exploration – history, art and nature. It also seems that people prefer uniformity, space for self-realisation and it does not necessarily have to be portrayed by architectonic structures. The surveyees seemed more inclined to nature, culture, history and recreation.

In conclusion, columbaria do not seem to be the space people would enjoy, although cemeteries in the Czech Republic view them as the best option for cremains interment. It also further shows the potential of natural burial grounds and parks with memorialisation options (which was part of the survey and is mentioned in the previous chapter 5.1.3), as well as the preference for the traditional cemetery.

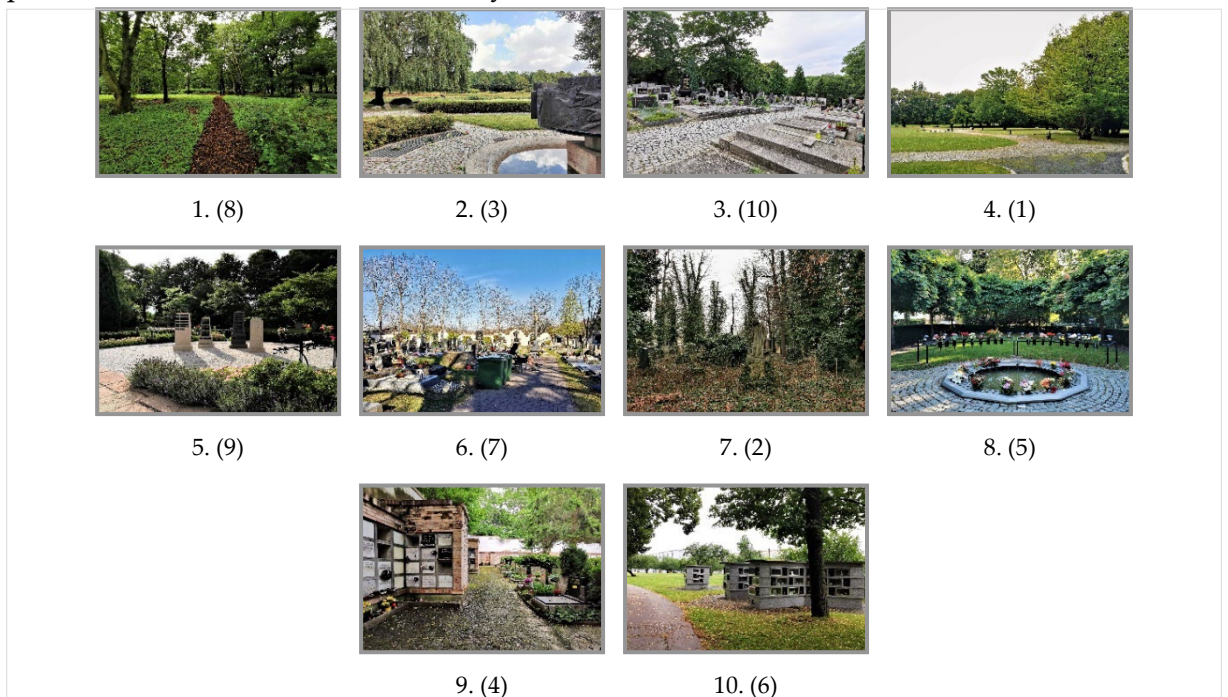


Figure 43: The evaluated photographs in order based on the addition of the positive responses on respectfulness and the likelihood of a visit. X. is the place in which the photograph placed, and (X) is the number of the photograph in the survey.

5.1.5 Functions

In the survey, I laid out eight functions a cemetery could have, with the first one being that of interment and memorialisation, as that is the primary function of cemeteries, as mentioned in the literature review of this thesis. The other functions could be connected to benefiting humans, with each of the options having stated an example of such function; for the environmental function, I set an example of „habitat provision“, and for the economic „income for management“, therefore, these might have been viewed as not beneficial for the public. Nevertheless, all of the functions are important, and I believe the majority of cemeteries have all of the functions; the extent to which they can be considered functional is, however, debatable.

Figure 44 shows the results of two questions of the online survey. One of them was on what function the surveyees feel cemeteries have, and the second was what functions an ideal cemetery should or should not have; this question also had an option „I do not know“.

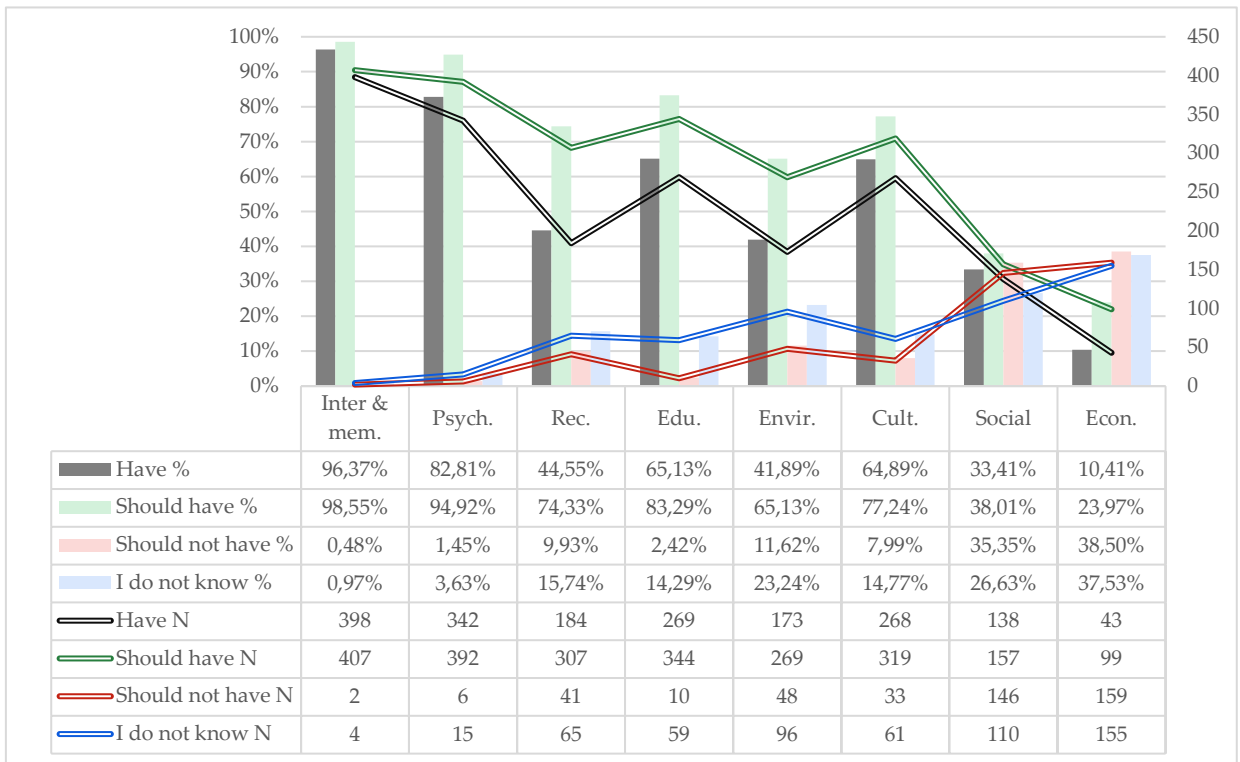


Figure 44: Graph portraying the functions – Interment and memorialisation, psychological, recreational, educational, environmental, cultural, social and economic – according to the surveyees (Total N = 413). It comprises data from two of the survey questions, one was on what functions do current cemeteries have and the other was what functions should an ideal cemetery either have/not have/I do not know.

Surprisingly the function of interment and memorialisation was not chosen by 100% of the surveyees, this functions differed between have/should have by +2% towards should have. Some surveyees (1%) even stated that cemeteries should not have such a function – it can be debated as to why, is it that they dislike either „interment or memorialisation“, or they could be against the idea of cemeteries altogether.

The most common combinations of what functions cemeteries have been:

- Seven functions, minus the economic (40 people)
- Six functions, minus the economic and social (35 people)
- All eight available functions (32 people)
- Only interment and memorialization (31 people)

The rest was different variations of the options.

The majority of the surveyees mentioned only half of the functions as functions cemeteries have. The functions that cemeteries were praised for by most were interment and memorialization (96%) and psychological (83%), while the other two, the educational and cultural functions, were mentioned only by two-thirds of the surveyees. The least mentioned was the economic function (10%).

Overall, the surveyees voted that cemeteries should have more of the available functions compared to their current state; the difference in the percentage of the other seven functions ranged from +5 to +30%. The most significant difference was for the recreational functions (+30%), followed by the environmental (+23%), educational (+18%), economic (+14%), cultural (+12%), psychological (+12%) and lastly the social (+5%) functions.

The functions that the majority consider cemeteries should have were psychological (95%), educational (83%), cultural (77%), recreational (74%) and environmental (65%). These functions also had a relatively small percentage of surveyees stated that cemeteries should not have, although nearly one in ten respondents were against the environmental, recreational or cultural functions. However, some of them had a higher percentage of indifference, such as the environmental function, which almost a quarter of the surveyees was unsure about.

The social function of cemeteries seems very ambiguous, as the percentage for (38%) and against (35%) is similar. It can be debated why; perhaps people mainly go to cemeteries to be alone with their thoughts and do not wish for any distractions from their thoughts, or it might have to do with individualism. However, there is also a percentage of people who think that the ideal cemetery should have a social function. The difference might be due to people's different habits and responses to grief.

Finally, the economic function of cemeteries seems rather controversial; it depends on how the surveyees understood this function. The example for it was „finance for management“, which for me includes maintenance and upkeep of the cemetery, but maybe the surveyees did not see it the same way or have a different view on how a cemetery should operate. Although this function received a higher percentage in the „should have“ category (10% have vs 24% should have), 39% of surveyees were against this function, and 38% were unsure. I suppose that if people view cemeteries as symbolic spaces, then the materialistic question of money may seem as inappropriate. Even some of sthe surveyees who stated „work“ as one of their purposes for visiting cemeteries were not undivided about this function.

5.2 Conclusions from the interviews

The individual interviews were with specialists in the field of cemeteries and interment; their origin and background differed, which influenced their views and experiences they had in the field; on some topics, they had more or less the same views, in others not and in some they had no experience – which leads me to the fact that I did not ask them the same questions.

I would start by describing each interviewee's inclination. Goodnoe has a landscape architecture approach, as he creates viable cemetery landscapes – from the economic perspective, suitable for the demographic and the area and its ecology; he had witnessed a significant change in the preferences towards burial and memorialisation. Červený holds in high regard the aesthetical and cultural value of cemeteries; he tries to implement new options for the bereaved to fulfil their requirements and open cemeteries to the wider public. Javorová believes in ecological sustainability - natural burial, connecting with and coming back to nature and dematerialisation, and making it a more pleasant experience as well as a better way to process grief.

All three agreed on people (even a niche) being open to a different disposition method. Regarding sustainability, Javorová leans towards natural burial and Goodnoe towards cremation, as land is also a valuable resource, and cremation allows for more variability in memorialisation. Červený prefers burial due to its symbol of permanence in the plot.

The financial aspect is essential for cemetery operation. According to Červený, this is more complicated with older cemeteries, as they require maintenance of the old memorials, structures and vegetation – the Prague cemeteries are able to support their operation only from two-thirds and therefore require extra funding. The prices of burial options and memorialisation may also influence what the bereaved turn to. Further, the rise of cremation in the Czech Republic is connected to the decreasing demand in cemeteries

According to Červený, the most demanded services in the Prague cemeteries due to the cremation trend are all options connected to the interment of cremated remains – urn graves, columbaria, scattering gardens and places for ash burial. However, he further noted that the need for cemeteries as places for interment is diminishing. Goodnoe believes the diminishing interest in cemeteries can be prevented if cemeteries focus on memorialisation – such as providing spaces for memory recall with cenotaphs, something the bereaved can touch. Javorová has a different view and believes in dematerialisation and moving towards spirituality. All three mentioned the differences in people, what they prefer and how they cope with grief. Goodnoe mentioned a period after which the bereaved do not come to cemeteries as often.

Červený and Javorová are unsure whether the bereaved know of the possibility of remains disposal at a place of their choice if they get the landowner's permission. Both, however, mentioned that people do it anyway and probably would even if it were illegal. Goodnoe stated that due to the possibility of ash scattering outside cemeteries, cemeteries should offer the option of just cenotaphs in a garden-like setting.

Goodnoe and Javorová raised concern over cremation ashes, their chemical composition and reaction, and their influence on soil and vegetation growth. Nevertheless, both talked about possible solutions to their burial, such as soil amendment or deeper burial.

With all three, I discussed green burial and natural burial grounds. Goodnoe considers the option of having as many possibilities in a cemetery to make them open to as many people, i.e. not just the natural burial. The Czech Republic's first natural burial ground will open this year as a part of Ďáblice cemetery, a meadow for natural burial; this set the wheels in motion concerning the law regarding burials – so it is yet to see.

Javorová mentioned natural burial grounds where they utilize grazers (sheep) for maintenance, manually maintain meadows with a scythe, or even allow the bereaved to help with the maintenance. There are also various ways one can use the natural landscape and nature for burial. Goodnoe thinks the best is for natural burial to be in a meadow setting with paths allowing the bereaved to access the burial plot. There is also the possibility of burial in a forest-like setting; however, there is a potential to harm the tree roots while digging the burial holes. Another option is transforming the burial meadows into a forest, which would disallow for more natural burial in that spot. According to Dobešová and Goodnoe, this would become a natural protected area. Unfortunately, since natural burial grounds do not allow for unnecessary interventions, it also does not allow for the placement of memorialisation objects (there might be a common space for that), monumentalisation or tending to the space of the burial. Due to some experiences of people not keeping the rules of the natural setting of *Les vzpomínek*, Javorová considered that a mix between the conventional cemetery and natural burial ground would be better for some bereaved; which is similar to what Goodnoe designs, as he considers the material aspect of burial grounds symbolic and the bereaved appreciate it.

Overall, Červený thinks that cemeteries fulfil multiple functions, but there are limitations to them, which he blames on the management of cemeteries. The functionality could be improved by changing the intangible aspect of the cemeteries, such as laws and rules, and the physical aspect or openly inviting the public to cemeteries. Goodnoe and Javorová consider cemeteries valuable spaces due to their vegetation, which they agree could be improved. Červený, concerning vegetation in Prague cemeteries, stated that they are costly to maintain, especially since their care was neglected in the past.

According to Goodnoe, cemeteries should be inspiring environments. Have the vegetation part (living environment) that recreates the living cycle and then the permanent marker that ties one to the past. Javorová also believes that cemeteries should be living places for social interactions. Nevertheless, according to Goodnoe, cemeteries should keep their function as a refuge for the bereaved; this could be maintained by adequately separating the various functions and activities to prevent conflicts. Červený thinks that having more people visit cemeteries would make them safer places.

Although in the past Červený and Javorová talked about implementing café or calm leisure activities (yoga), it was met with refusal from the public. However, these are common in some cemeteries abroad.

Cemeteries are cultural places that should help the bereaved as well as serve the public.

5.3 Conclusions of the field surveying

The cemeteries that I came across can all be considered multifunctional. The only difference would be to what extent each function is used (by the people) and could be used (rules). It can therefore be debatable to how each function is valued in each cemetery and therefore is truly present. In other words, do the people need the cemetery to have other functions than that of interment, as in rural areas, the other functions can easily be found elsewhere, while in urban settings, these can be further away.

The functions a cemetery provides and its quality depends on the following:

- the size of the cemetery,
- age of the cemetery,
- maintenance,
- options for interment and memorialization,
- accessibility – including accessibility and movement within the cemetery
- architectural solutions and art,
- vegetation quantity, variety and maintenance,
- provided street furniture,
- provided facilities.

Finally, it also depends on the people themselves. This I noticed on the different behaviour of people in Swedish and Czech cemeteries – I found Czech cemeteries and people to be more conservative. In Sweden, people used cemeteries as recreational public spaces, as some allowed biking and dog-walking and had longer opening hours. People made use of the longer opening hours of cemeteries as it allowed them to honour the departed even after sunset, and also, since the cemetery gates were open, they allowed for movement through them instead of being a barrier.

I can hardly say that either of the cemeteries was bad in its entirety, the majority were beautiful final resting places. However, there were Czech cemeteries or parts of them that had downfalls in the form of:

- inconsistency – mostly of memorial designs
- lack of street furniture
- limiting visitation time
- questionable respectfulness
 - dilapidated state of the structures
 - presence of trash and containers near to the burial plots
 - stashed tools
 - building material placed on a burial plot
- disruptions by vegetation
 - raised paths
 - close vicinity to burial plots
- accessibility
- permitted or rather prohibited activities

Only a few of these (visitation time and lacking street furniture) were observed in the visited Swedish cemeteries. These were overall well kept and maintained as well as less restrictive. In this way I would like to point out St Johannes churchyard (Stockholm) and Malmö Gamla cemetery – these contain old burial plots with monuments, they are no longer used for burials (with exceptions of family graves and in St Johannes ash interments in a secluded part), but their areas are viewed as parks where one should respect that it is an old resting place. Interestingly, there is no restriction on where one should or should not walk, and people use them as recreational spaces, dog walking, sunbathing; basically anything is possible unless one litters, causes ruckus or vandalises the area.

The cemeteries that could be considered as good and brilliant if they were improved by including structures, being less restrictive, having longer opening hours or including more varied vegetation, would be:

- Stockholm Skogskyrkogården
- Lund Fredentorps cemetery
- Olšany cemeteries
- Ďáblice cemetery
- Most church cemetery
- Strašnice cemetery

For rural cemeteries the main goal and primary function is indeed that of interment, if needed by the community, it could have other functions, otherwise there is no need to change them much. However, closer attention should be paid to the cemetery being consistent, as not to ruin the cultural and historical aspect of it by installing monuments that do not match those values (Figure 45). One does not have to worry about the environmental function as much as in the urban cemeteries, as the rural ones are usually surrounded by the landscape, where animals find refuge. Nevertheless, among the stones and under the scorching summer sun cemeteries should provide with a space, where one can escape these conditions – a grown tree or a shelter (quantity depending on the area of the cemetery).

Rural cemeteries have a high cultural value and symbolic, as the population that uses them is usually less varied. Some of the rural cemeteries (Hejnice Lázně Libverda and Most church cemeteries) were further away from the villages, making their accessibility worse, however, the views of the landscapes around them were worth it. Other rural cemeteries were right in the village as they were connected to the church (Arnoltice, Hojsova stráž and Raspenava cemeteries) or a church chaple (Svatý Jan pod Skalou cemetery) – these could in extension be places for tourism as it is not uncommon for tourists to visit cemeteries.

Since most of the visited cemeteries in rural areas were in the border area they contained old German graves that were abandoned and are mementoes of the times long gone.

I also focused on provided interment options – not all cemeteries had an option for cremains burial or scattering. Most often observed were urn graves, sometimes traditional graves transformer into and urn grave by reducing the original grave area. Unfortunately urn graves compared to a traditional curbed grave do not allow the bereaved to „garden“ on the burial plot, leading to the placement of potter plants or artificial plants on the stone lid (Figure 45).

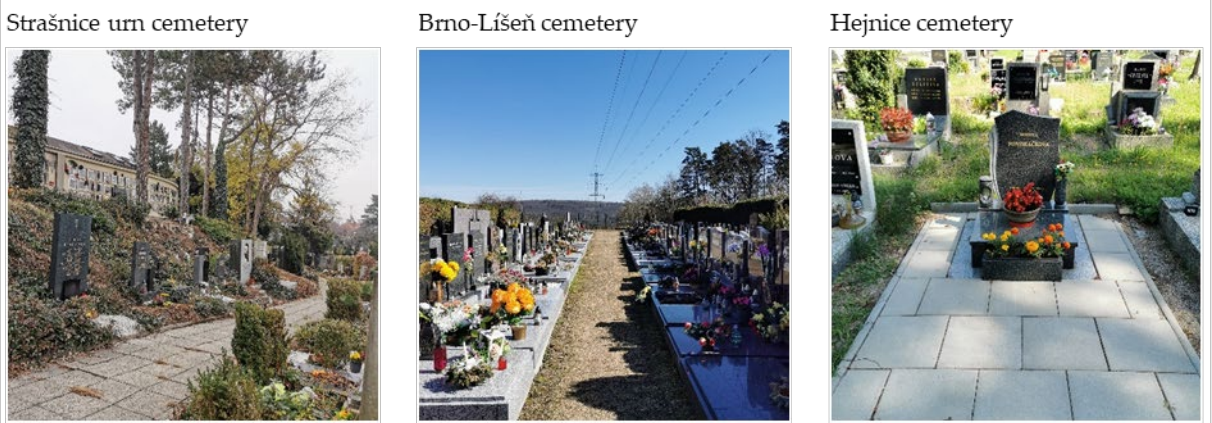


Figure 45: Examples of urn graves observed in Czech cemeteries. There is visible reverent uniformity up to aesthetical errors.

Other popular way of urn interment are columbaria (Figure 46), which ranged in their structural stability, aesthetical value and accessibility. Which is due to some cemeteries trying to accomodate such structures without being originally planned for that.



Figure 46: Some of the observed columbaria in the Czech cemeteries. From the very respectful one in Strašnice to a debatable solution of the cremation trend in the Velká Chuchle cemetery.

The last possible option is that of scattering lawns and places for ash burials (Figure 47). These were also either designed intentionally for that purpose, a part of an existing cemetery changed to accomodate this option. Their visual and aesthetic value also varied greatly among the visited cemeteries that offered this option. Usually these spaces have a common memorialisation space for placement of objects and placement at the place of is discouraged. Walking onto the grass of a scattering meadow is forbidden; this is different in the case of Les vzpomínek that allows for roaming among the trees, near whose roots the cremains were buried. As for monumentalisation, these spaces either provide none, individual or common on different structures.



Figure 47: Examples of scattering lawns and cremains burial in Czech cemeteries.



Individual memorials – Skogskyrkogården



Memorial columns – Arlöv cemetery



Memorial columns – Sandborgs cemetery



Sandborgs cemetery – close up

Figure 48: Examples of common monumentalisation and memorialisation in Sweden.

In the Swedish cemeteries there was more variation in the ways for monumentalisation and memorialisation (Figures 48 and 49), from structures to hold plants and candles to artistic common memorials. What I also observed was that the bereaved used only the places designed for memorialisation – for placing flowers and candles. In the larger common memorialisation areas there were structure and small cones for placing small flower bouquets in. Some burial places were of much larger size, which then in some cases was transformed into tiny serene memorial spaces.



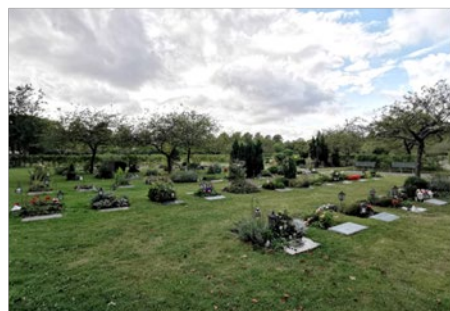
Hedges and gravel – Arlöv cemetery



Memorials for cremains - Skogskyrkogården



Garden-like setting – Lund Norra cemetery



Laying memorials – Lund Norra cemetery

Figure 49: The different feelings of Swedish cemeteries.

In most of the Swedish cemeteries I visited, I observed a place dedicated to everyone and anyone departed/deceased whose remains were not in the cemetery. They call this particular place *Minneslund*, which can be translated to Memory or Remembrance grove. It did not necessarily need to contain trees; what they had in common was that they looked peaceful and welcoming. They offered a space for:

- Sitting
- Placing cut flowers
- Lighting a candle

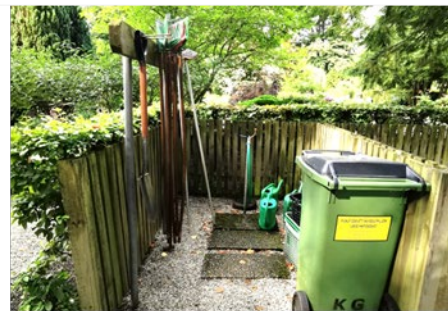
They also all had a sign stating whom this place is dedicated to in a broad term. This felt inviting and appealing, as even I felt like I could make memorialisation use of the cemetery without having anyone interred there.

The graves looked different, as they did not have curbed or stone-covered graves, but they did have either an upright memorial (headstone), a stone tablet or a small plot for placing objects (Figure 49). Lund Fredentorps cemetery for example offers, among other options, whole body interments in a park-like setting in a lawn area that one could walk on without restrictions. The graves were marked as 30x50 cm of land, that people decorated how they wished.

In most of the cemeteries, they provided with tools, such as rake and watering can, so one could use to tend to their plot. In the Czech cemeteries the tool provided is a watering can and the bereaved then bring their own tools they want to use, in some cases people store them behind their tombstone (Figure 50).



Personal storage – Velká Chuchle cemetery



Common tools – Lund Norra cemetery

Figure 50: Example of personal storage of tools and common tools.

Overall, I must say, that the Swedish cemeteries I visited were very well taken care off. People were at ease, walking with their dogs, children, elderly cycling through – it felt more serene, less restrictive and as places you could use for recreation.

Other aspect of cemeteries I briefly tried to observe was the vegetation (Figure 51). In the Czech cemeteries this usually consists of alleys of broad-leaved species, hedges or individual conifers and cut lawn, the amount and presence of these aspects differed on the area of the cemetery. Nice change I observed in the Hejnice cemetery, where they changed the no longer used area with and occasional old grave into a flowering meadow.



Figure 51: Increasing biodiversity by design - examples from cemeteries in Sweden and Czech Republic.

More variation I observed in the Swedish cemeteries, where they were not afraid of a dominant exotic species and fruit-bearing trees. They also contained alleys and hedges and cut lawn. For example the Lund Norra cemetery had an insect meadow in and Arlöf cemetery left a standing snag among the graves, which seemed rather symbolic. Their vegetation was overall very lush and well maintained. The vegetation in Czech cemeteries is also nicely maintained, however, in cases one can see that it had been neglected or the planting of woody plants had not been thought through.

On that note, trees are living organisms and even with care, they can cause trouble as they grow and age (Figure 52). Not only does their above matter grow, but also the roots, that can cause lifted pavement or disturb the nearby monuments. It can also make burial impossible or hard for the grave digger. Vegetation that is too dense or provides too much shade can create an unpleasant atmosphere.



Figure 52: Vegetation disturbance in cemeteries.

Vegetation, architecture, design and mainly culture (the people) play a great role in cemeteries, how they look, how they are perceived and what they allow. From that point it seems like the Czech cemeteries could take some inspiration from the Swedish ones.

6 Discussion

In the beginning of the thesis, I mentioned the trend of cremation in the Czech Republic, which since its introduction in 1919 (SPH, 2021) became the primary disposition method; being the disposition of choice of 83-97% of deceased (Plášková et al., 2021; Smolová et al., 2019). Červený (II. 2023, in verb) stated that this resulted in a lesser interest in cemeteries due to the possibility of keeping the cremains at home, which 8% of my survey respondents preferred; or scattering or interring the cremains anywhere as long as it does not interfere with public health and wellbeing, and is executed with the landowner's permission – however, I think that there is no way the authorities can find out whether people scatter ashes in public spaces, natural parks, etcetera or not, which partly led to my reason of doing this thesis.

Why should people choose to inter cremains in cemeteries, when there are more beautiful spaces one could scatter them. I think that one of the reasons is that people are used to interring and memorialising in cemeteries. Cemeteries might offer the feeling of eternal security, that nothing will happen to the remains and such space will be the true final resting place; which is not necessarily true since cemeteries can be closed/inactivated if it is in the public interest (Zákon č. 256/2001 Sb.), and it happened in many cases in the past (Kovařík, 2017; Kupka, 2006).

According to Goodnoe (I. 2023, in verb) cremation opens up many possibilities in cemetery planning; as cremains can be buried in spaces unsuitable for traditional burial. To maintain the interest of the bereaved in cemeteries, he proposes that cemeteries should offer the option for memorialisation through cenotaphs. Cenotaphs would offer a way for the memorialisation of their deceased, whose ashes they had scattered or interred elsewhere. He further stated that the bereaved appreciate the opportunity of seeing and touching the material portrayal of the departed. In my online survey, almost half of the respondents (48%) chose that they need a permanent memorial, and 13% would prefer a temporary one.

Hand in hand with memorials comes memorialisation through the placement of objects (such as flowers, candles, photographs etc.), 67 % of the surveyees stated a need for a specific place where they could honour the departed. Unfortunately, I did not ask whether they require such place to be at the location of the burial or if it could be a common space. A common memorialisation space is often in areas of cremation burial or scattering (examples of it can be seen in Figures 1, 47 and 48). In the Swedish cemeteries, I visited, I came across a lot of common memorialisation spots with structures to hold plants and candles, which seemed to be actively utilized by the bereaved.

Another custom in the Czech Republic for some is to tend to the burial plot (curbed grave) and plant permanent or seasonal vegetation; this can be seen in Figure 19. Jandovská (2002) wrote a book on the topic of choosing the right plants, their composition and what to avoid.

Natural burial grounds, on the other hand, stray from the conventional cemeteries people are used to and allows for burial that is closer to nature and is also more personal. It is being promoted due to its environmental sustainability, as it promotes natural environments

and refrains from the use of artificial materials or machinery; such usually take on the look of a meadow or a forest, in some cases entire landscapes would become protected areas after the burial. I considered natural burial as a wonderful option to the conventional cemetery, however, I believe that for society to be able to use them sustainably the thinking on death (as a part of our lives, not a taboo) and what is allowed in a burial ground (activities, reusal of plots, no memorialisation, etc.) would need to shift and be more open-minded and accepting, as Javorová (II. 2023, in verb) stated, make memorialisation spiritual and dematerialize the bereavement process.

Sustainability is not only about the natural environment, it should also encompass the social and economic sustainability (Giddings et al., 2002), the choices we make should bear in mind the future and in case of cemeteries, for how long can they be used for interment. To me a sustainable cemetery is a cemetery that is multifunctional, is serves multiple functions, not just the one of interment and memorialisation. Tallents (2018) mentions recreational, educational, cultural and environmental functions; Grabalov and Nordh (2021) state that on top of the prior mentioned functions cemeteries also have social function.

In the online survey, I had two questions on functions of cemeteries, I provided eight possible functions – interment and memorialisation, psychological, recreational, educational, environmental, cultural, social and economic. These functions were a conclusion of functions that were mentioned by various authors in the literature review. One of the questions was asking to choose the functions cemeteries currently have and the following question was on what functions they should or should not have. The conclusion was that, people do see cemeteries as multifunctional spaces as they are now; four of the functions (interment and memorialisation, psychological, educational, and cultural) were chosen by >50% of the surveyees. They seem to be open to cemeteries providing even more functions, as in the question of which functions cemeteries should have more of the functions reached >50%, i.e. the formerly stated plus recreational and environmental functions – the surveyees see a potential in cemeteries; although for many, there is a limit to what extent some functions should be supported.

Surprisingly the social function scored rather low (33% have and 38% should have), and the economic function was least supported (10% have, 24% should have, and 39% should not have). As to why these two functions were rated so low is debatable, it may be due to people seeking refuge in cemeteries instead of social interactions, which is understandable as people grieve differently; while the economic function might have just seemed irrelevant, or the surveyees might have connected it with all the prices that come with a person dying and the thought that a person has to pay while they grieve or to be able to have a place to bury and memorialize is inconceivable to them – funeral, burial and the matters connected to it are rather expensive. Nevertheless, as I talked about with Goodnoe (I. 2023, in verb) and Červený (II. 2023, in verb), cemeteries do need finances to operate. To have finances, unless they are being supported by another organisation, a cemetery has to earn money through the bereavement services it provides. These are now being broadened in some cemeteries, to be more appealing to people who opt for cremation as well as providing natural burial.

The results of the online questionnaire can be concluded by stating that although the primary function of interment and memorialisation is provided quite well, people would be glad or would not mind if cemeteries provided more secondary functions, as well as different ways of memorialisation or integrating memorialisation into the public space. In some cases, the preferred landscape did not align with the answers on memorialisation or monumentalisation; nevertheless, people seem to be open towards new solutions.

The openness of people towards new solutions (of burial and memorialisation) is also mentioned by Červený (II. 2023, in verb), who stated that the conservational nature of burial is mainly due to the cemetery/funeral providers. He further stated that the limitations to cemeteries and their functionality are set by the legislation and the cemetery managers. Which is true as Leño et al. (2022) write of prohibiting development or structures that are not necessary for the cemetery operation and the reverence of the area. Which to me seems contrasting to the claims that cemeteries are recreational spaces. Cemeteries are also praised for their vegetation and the environmental benefits connected to it – therefore, i think more attention should be paid to its maintenance, instead of considering it as a secondary notion.

Vegetation has positive influences not only on the city environment, but also on people's well-being and mental health (Kaplan & Kaplan, 1989; Verderben & Reuman, 1987), which in cemeteries should be especially appreciated as this could be considered as part of the psychological function of cemeteries.

Which leads me to the conclusion that the ideal cemetery would utilize greenery, keep some aspects of memorialisation that people are used to and plan for including multiple uses by design from the beginning; I wonder if cemeteries could create income in other way than just memorialisation, possibly through the other provided functions. The existing cemeteries should work on being more relatable with providing more options for memorialisation and interment as well as activities that people would consider interesting, make their areas more environmentally beneficial and take care of their heritage memorials, as that is where their cultural significance stems from. What I believe to be an important aspect is the digitalisation of cemeteries. Now cemeteries have a system in which one can find the location of one's grave, but it could include memorialisation similar to that of World Wide Cemetery (mentioned in Chapter 3.2.2.2).

People have different preferences, opinions and views when it comes to cemeteries and memorialisation. Some seem dissatisfied with the current state of cemeteries and would welcome a change, while some view it through a traditional lense of what they are used to. This I tried to find out through letting the surveyees evaluate ten photographs of various burial settings (Figure 39), which they could evaluate on the probability of visiting such place (Figure 41) and the perceived respectfulness (Figure 40). Surprisingly the most praised were the photographs portraying natural, maintained, open and not cluttered settings, with one exception of an old conventional cemetery with maintained graves of stone. The reason I am saying I found it surprising is that according to the findings from other questions many people would not choose for interment in these grounds as they would prefer a space with a permanent memorial and a place for memorialisation. Nevertheless, the most liked was the

forest setting of Les vzpomínek, that allows for burial of cremains close to grown trees, on which a temporary nameplate is secured; the second was a part of Lund Fredentorps cemetery, which is a park-like setting a meaningful memorialisation landscape, combining art, nature and memorialisation; and the third was part of Břevnov cemetery portraying maintained uniform old graves, for contrast I also put a photograph of a different part of the Břevnov cemetery, which portrays a dilapidated columbarium wall and urn graves, this ended in second to last place. The least appreciated from the two aspects of evaluation was a photograph of columbaria in the Ďáblice cemetery.

The dislike of photographs portraying permanent ways of memorialisation of cremation remains compared to the more symbolic ones, makes it seem that people purposefully choose memorialisation spaces, they do not actually appreciate. However, this I connected to the probability of people being scared to let go of the material aspect of memorialisation, I do believe that this could be changed and cemeteries could be more meaningful, spiritual and enjoyable landscapes for both the bereaved and visitors.

What I mean to say is, cemeteries are here for the public and we as the public set what is possible, allowed and how cemeteries look. We are the obstacle in cemeteries reaching their full potential and if we seek no change, then nothing changes.

Although at the time of death the sorrow may be overbearing, there may be a way of easing the grimness of it and that may be through the change of cemeteries or the establishment of reverent parks. One could feel happiness and enjoyment in these places, whether through the lush greenery or the happy people around.

As I mentioned earlier there are legislation limitations (Červený, II. 2023, in verb; Leňo et al., 2022; Plášková et al., 2021; Stejskalová, 2011) to cemetery functionality as anything else than places for interment, but it is also limited by the public. What is required for cemeteries to be truly considered as places for recreation? A shift of people's view on death and perception of cemeteries. Everyone grieves differently, but the „correct“ preconceived way in our society is that one has to be sad, do things sad people do and act sad. Death is natural, it can come to anyone at any time, sometimes it comes too soon, or it comes after a long and fulfilled life and in all cases one has to be sad. It sure is not a laughing matter, but the main point is that life goes and will go on. To one death may change their life; to others, it is just a number in statistics. According to Davies (2017), death is part of our lives, which we should adapt to and talk about.

In the survey I wanted to find opinions on integrating memorialisation into the public space, and outside of cemeteries. I asked if people would mind if the interment of cremains were included in public parks, which two-thirds of the surveyees would consent to (Figure 37). I had also asked about possibility of memorialisation/placement of cenotaphs in public spaces – which is a common occurrence for famous figures, victims of accidents and martyrs; over half of the surveyees (57%) would not mind it and a quarter was against. From which one can draw the conclusion that memorialisation could occur in public parks and there is even a possibility for the burial of cremains, if it were executed in designated areas of the park. Which Goodnoe (I. 2023, in verb) considers as a possibility, if there are buffer zones included so there

is no conflict between those grieving and people who otherwise use the park for active recreation.

Therefore, such integration is possible with sensible planning.

Incorporating memorialisation into the urban matrix

Memorialisation incorporated into the urban matrix instead of being secluded in the encapsulated space of a cemetery. I view this as a possibility for people, who do not need a memorial in a cemetery (a cemetery would just be a place for burial) and the memorialising could be done in a space the deceased liked, which could be more meaningful to the bereaved. There are multiple ways to go about it. In a way, this had been done already for a long time as mentioned above – there are monuments, mementoes, cenotaphs, plaques and other memorialising objects throughout cities. However, these usually are for historical figures, war heroes and victims. I think these could also be done for the ordinary person, which in a way would also serve as a way of embracing death as part of our lives, since it would no longer be only behind the cemetery wall. This memorialising could be done in two ways: individual or multiple-person memorial (with each individual mentioned).

This kind of memorialisation could take place anywhere in the public domain that the general public, urban planners, historians or conservationists would agree with and arrange. Here is a list of options I find intriguing:

- Parks
- Fountains
- Artworks/Statues
- Benches
- Pavement bricks
- Facades

This could bring back "life" to the historic city centre, and help build the community's sense of belonging as their beloved could be memorialised right in front of the house they lived in for example. This could be done in a very discreet way so the memory is there but it would not disrupt the overall genius loci of historical parts of the cities.

Reverent parks

I believe space is a significant "commodity", and it is vital to keep in mind that we have only so much available, which is especially noticeable in the cities. Which is why I pondered the integration into public other public spaces. Therefore, I find cremation to be a sensible way of disposition of the deceased, at least in the Czech Republic, since there are not many more options available yet and it is not as constricting in the placement as conventional or green burial, which has to follow hygienic recommendations.

I do not condemn ecological burials. However, I do not consider it possible at a larger scale at this point. The people's mindset on burial and death would need to change to have natural burials in urban areas without it taking significant amounts of space that are not considered areas for recreation. Nevertheless, I believe that natural cemeteries, as Jack Goodnoe designs them could be liked as a mixture between natural and cultural landscape (Figure 9).

In cities a more viable option to natural burial, and especially in the Czech Republic more suitable, would be creation of reverent parks. A reverent park in my definition would be a

space, that has more functions by default, the function of interment is not the only primary one. It would offer the option of memorialisation, which would take a slightly different form to what we are used to in a conventional cemetery, in this way it would be more similar to Les vzpomínek, Golders Green crematorium garden (Figure 7) and Ichiharaminami cemetery (Figures 10 and 11) – with the option of small plaques/memorials permanent or temporary.

What could this cemetery provide:

- Leasing a plot for care, allowing the bereaved to touch the land in which their beloveds remains are buried in
 - Short leasing period – depending on the needs of the bereaved
- Small memorials
- Storing the memorials – after the lease of the plot ends, to allow them to keep the material aspect of it after they processed the loss
 - Inspired by the memorialising rooms in Figures 12 and 13
- Common places for memorialisation – placement of flowers or candles
- Facilities providing counselling, workshops, art exhibitions, activities etc.

The reason for offering counselling is that not everyone from the bereaved sees eye to eye, everybody is an individual with their own needs, experiencing grief in different ways, and sometimes the bereaved may be lonely. Therefore, I would find it a meaningful addition to cemeteries to facilitate a space where social workers, psychologists, palliative care specialists, etcetera, could offer their help to those who feel lonely and cannot find a way to go on. These sessions could occur periodically (e.g. every other Wednesday), either individual or group sessions. There is also a possibility that the people in group sessions may find a way to one another and help each other, increasing the sense of community.

Based on all findings, I drafted a design (Figure 53) that is not for any specific location; it is more of an idea of a reverent park – a multifunctional remembrance space for urban areas where cremation is prevalent. Such an area could either be standalone or part of a public park. The reason I call it a reverent park and not a cemetery is that its primary function would be psychological, along with providing a respectable space for cremains interment, which is by legislation less restrictive, as with conventional and natural burial hygiene is considered.

This park could be in different scales and provide more or fewer functions or activities – this particular one could provide all functions I mentioned in the questionnaire; i.e. interment and memorialisation, psychological, recreational, educational, social, cultural, environmental and economic. To what extent these functions are fulfilled depends on the layout, size, used material, plant assortment and allowed and organised activities. The look and size of the reverent park would depend on its location within the urban matrix – were it integral, the size would be smaller and the look could be more formal, more garden-like, while on the outskirts, the size could be larger, more of a park setting with informal layout and areas of high and lower maintenance, areas for play and areas purely for interment.

Such a park would have entrance gates, as gates are considered symbolic, and an information board by them to let the people know they are entering a reverent place. Another element that lets the public know of the importance of the place is the formal layout.

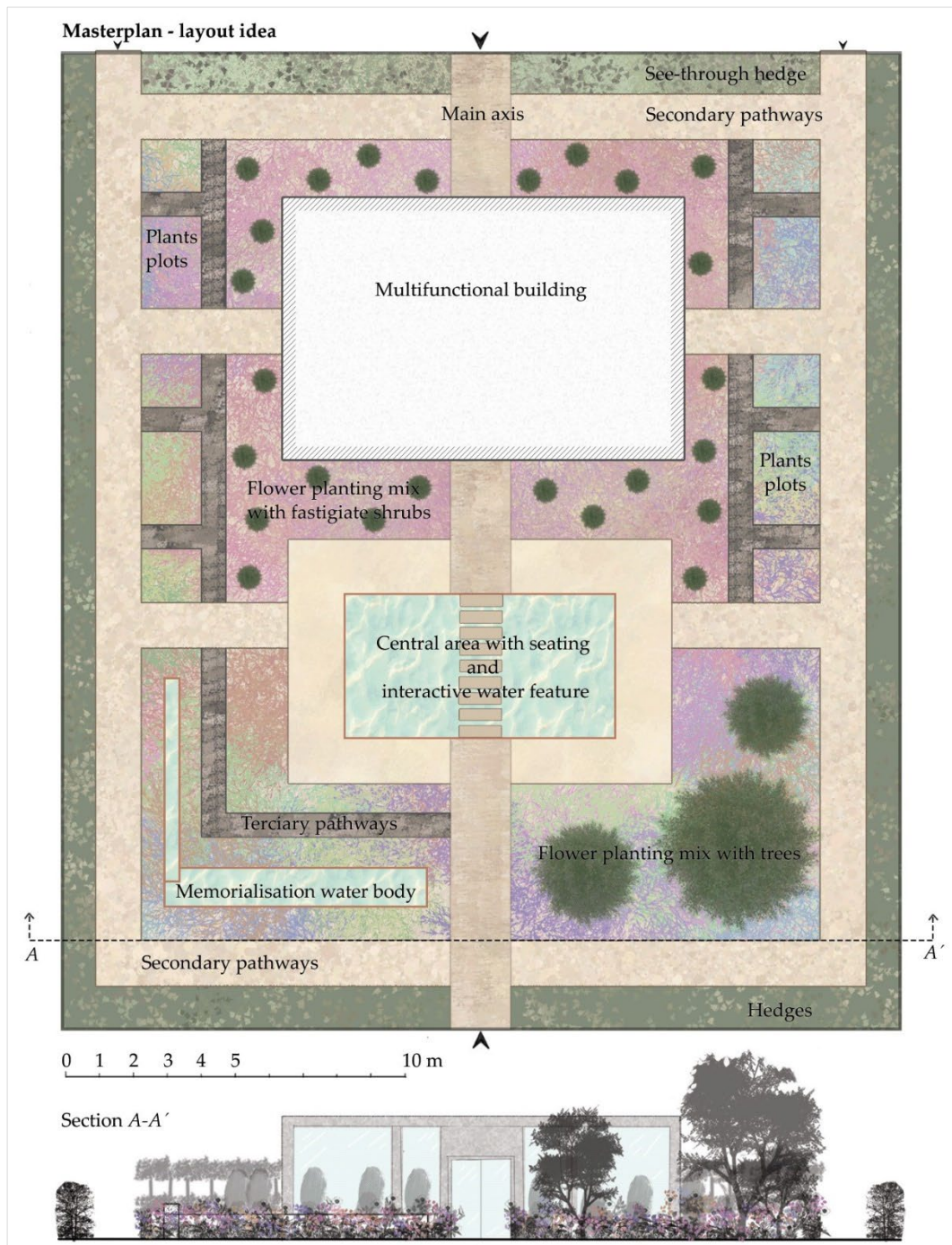


Figure 53: Concept of a reverent park. Space that focuses on more than interment and memorialisation.

A reverent park could be a community, recreation, remembrance and memorialisation park. Its main focus is making a cemetery a functional space for both parties, the bereaved and the general public.

It has features similar to a traditional cemetery with the main axis, gates, path hierarchy and „walls“. A more suitable comparison would be to a meditation garden, as it caters to anyone who seeks refuge from the bustle of the city, and also a community space.

It would provide the possibility to memorialise and inter cremation ashes into small plots that the bereaved could tend to for a limited time, enough to get them accustomed to the idea of their beloved's passing. The plants could be chosen based on the period the people

would use it for; it could be geophytes, annuals, biennials or perennials. One could gather seeds from the plants and in case of the geophytes and perennials, the bereaved could take them home after their lease ends as a symbolic memento.

After the lease ends the soil in the plot would be checked (nutrients and pH) if it would be suitable for another cremains interment. If not it could be amended or planted with soil-improving plants – such as *Trifolium incarnatum* (Crimson clover), which belongs to the *Fabaceae* family and therefore fixes nitrogen (its latin name is just a symbolic bonus); this is based on my estimate and would require further research.

This space would have street furniture (seating and trash cans), lighting, storage for gardening utensils, compost and storage for chairs that one could place where they wanted. The storage space could be tied to the multifunctional building.

What could be in the multifunctional building: public restrooms, a café, a community room (for exhibitions, workshops, psychological counselling, meeting with others who are lonely after their beloved's passing etc.) and finally, a memorial room where the small monuments could be stored and viewed.

It would also have a common memorialisation space, inspired by the Swedish *Minneslund*, to make this area relevant even for the people who do not have any burials on the grounds, but still could use this space for processing their grief.

I consider it more fitting and symbolic for living materials to represent the burial plots rather than stone or metals, that today's cemeteries are full of – stone may be permanent, but no one's life is. Therefore, I believe it beneficial to the people that visit graveyards – as flowers are more pleasant on the eyes, as well as the environment, as there would be no more need for mining, making surfaces impervious and macro and micro-organisms would enjoy it more. It may require more maintenance, but it would create spaces full of life and that is what a cemetery should be - a place where people like to go to and enjoy it, rather than taking it as a chore.

Alternatively, such spaces could include community gardens – where each plot would be a burial plot tended for by the bereaved, botanical or dendrological gardens. It is crucial to convey what the burial grounds will look like, how it is managed and what is prohibited and allowed. This space would also have longer visiting hours, as there is no reason there should be a restriction on when a person can grieve. Any and all aspects of a reverent park could be adopted by a cemetery.

Overall, it would be an enjoyable community space, that could be enjoyed by visitors as while staying a meaningful, inspiring and memorable place for the bereaved.

Ideas for future research

Reasons for keeping the cremains contained – be it at home in an urn, in a columbarium or in an urn grave. What would the interest be in other disposition methods – natural burial, resomation or composting and what would the bereaved do with the remains from these methods? What is the best way of disposing of these remains (including cremains), and what influences does it have on the environment and plant growth?

7 Conclusion

From all the findings of the surveys and literature review, the conclusion is that cemeteries are multifunctional spaces. The problem is to what extent the functionality is provided and supported – in the Czech Republic, that stems from cemeteries having a primary function of burial and memorialisation on which all planning is based and policies further focus. The other functions, although often praised more (environmental and recreational functions) than the primary one, are not as discussed in planning and policy-making. Cemeteries should meet the requirements of sustainable development and consider their viability of being environmental, social and economic spaces (Giddings et al., 2002; Jabareen, 2006).

The surveyees also confirmed that cemeteries' potential is not fully utilised, which proved the hypothesis, as they assigned more functions that a cemetery should have compared to the functions they currently hold. Nevertheless, for a small percentage of people, cemeteries are and should be just monofunctional spaces meant only for the burial of the deceased.

Another aspect of cemeteries is how they are and could be used. Primarily, they are used to pay respect to one's deceased; which, as is mentioned, can take on many forms, different to the options currently available in the Czech cemeteries. Cemeteries can also be spaces for relaxation and education; they are often tourist spots. In other countries such as Denmark, Norway (Grabalov & Nordh, 2021) and Sweden, cemeteries are places for recreation and social interactions, allowing leisure activities, walking with a pet and eating, which the majority of my online surveyees did not find acceptable. This is why zoning could be useful in cemeteries to prevent conflict between the bereaved and recreational users.

Due to the trend of cremation in the Czech Republic, the number of bereaved interested in cemetery services is lower; this low interest can also be connected to the limited options cemeteries provide. Cemeteries are unique places which have to be improved upon depending on the inside and outside factors; and should provide multiple functions depending on the external pressures. However, if there is low interest in cemeteries may eventually be transformed to fulfil a different purpose, e.g. that of a public park, which happened at times in the past. Therefore, it is crucial for the policy-makers, planners and cemetery managers to provide options for interment and memorialisation that are relevant to the modern people. For this purpose, they can use my research results, as well as trends and options provided all around the world, and make use of public participation.

Considering the current trend and results of my research, I proposed the concept of a reverent park, which combines the best from conventional and natural burial grounds with a twist of multifunctionality through the utilisation of vegetation and architecture.

The perfect cemetery would look different in every country; traditions, cultures, religions, spatial dispositions and prevalent burial methods differ everywhere. However, this does not change the fact that each cemetery should aim to provide the best services and functions it can and that the people could benefit from, since they belong to the public domain.

Overall, what is acceptable and possible in cemeteries depends on respectfulness, which is a subjective matter; therefore, it ultimately depends on the people.

8 Reference list

- Beckett KP, Freer-Smith PH, Taylor G. 2000. Particulate pollution capture by urban trees: effect of species and windspeed. *Global Change Biology*6:995-1003.
- Bencko V. 2011. Ekologie v pohřebnictví. 154-156in *Pohřbívání a hřbitovy*. Wolters Kluwer ČR, Praha.
- Borch C, Kornberger M. 2015. *Urban Commons: Rethinking the City*. 1st edition. Routledge.
- Clayden A, Dixon K. 2007. Woodland burial: Memorial arboretum versus natural native woodland?. *Mortality* 12:240-260. Available at <http://www.tandfonline.com/doi/abs/10.1080/13576270701430700>.
- Davies D. 2017. *Death, Ritual and Belief: The Rhetoric of Funerary Rites*. 3.rd edition. Bloomsbury Academic, London.
- Evensen KH, Nordh H, Skaar M. 2017. Everyday use of urban cemeteries: A Norwegian case study. *Landscape and Urban Planning* 159:76-84. Available at <https://linkinghub.elsevier.com/retrieve/pii/S0169204616302092>.
- Gehl J. 2011. *Life between buildings: using public space*. Island Press, Washington.
- Ghafouri A, Weber C. 2020. Multifunctional Urban Spaces a Solution to Increase the Quality of Urban Life in Dense Cities. *Manzar: The Iranian Academic Open Access Journal of Landscape, Nazar Research Center for Art, Architecture and Urbanism* 15:34-45.
- Giddings B, Hopwood B, O'Brien G. 2002. Environment, economy and society: fitting them together into sustainable development. *Sustainable Development* 10:187-196. John Wiley & Sons. Available at <https://onlinelibrary.wiley.com/doi/10.1002/sd.199>.
- Goode P, Lancaster M. 1986. *The Oxford companion to gardens*. Oxford University Press, New York.
- Goodnoe J, Burns R. 2015. Award-winning green section designed to give families options. *ICCFA Magazine*:38-48. International Cemetery, Cremation & Funeral Association. Available at http://www.jackgoodnoe.com/uploads/2/8/5/5/28556035/the_preserve_iccfa_mag._nov._2015.pdf.
- Gustavsson R, Hermy M, Konijnendijk C, Steidle-Schwahn A. 2005. Management of Urban Woodland and Parks — Searching for Creative and Sustainable Concepts. *Urban Forests and Trees*:369-397. Springer-Verlag, Berlin/Heidelberg. Available at http://link.springer.com/10.1007/3-540-27684-X_14.
- Hariyono WP. 2015. Vertical Cemetery. *Procedia Engineering* 118:201-214. Available at <https://linkinghub.elsevier.com/retrieve/pii/S1877705815020743>.

- Hendrych J, Kupka J, Stojan D, Klingorová I, Kubátová Š, Altukhova A. 2018. Struktury urbanizované zeleně. České vysoké učení technické v Praze, Praha.
- Hillier B, Leaman A. 1976. Architecture as a Discipline. *Journal of Architectural Research* 5:28-32. Available at <https://www.jstor.org/stable/43474204>.
- Hupková M. 2014. The link between the popularity of cremation in the Czech Republic and religious faith. *Prace Geograficzne*:69-90. Available at <https://www.ejournals.eu/Prace-Geograficzne/Tom-2014/Numer-137/art/3181/>.
- Jabareen YR. 2006. Sustainable Urban Forms: Their Typologies, Models, and Concepts. *Journal of Planning Education and Research* 26:38-52. Association of Collegiate Schools and Planning.
- Jandovská M. 2002. Upravujeme hroby. Brázda, Praha.
- Janeček V. 2019. Úvod do systémové arboristiky. Česká zemědělská univerzita, V Praze.
- Jansson M, Fors H, Lindgren T, Wiström B. 2013. Perceived personal safety in relation to urban woodland vegetation – A review. *Urban Forestry & Urban Greening* 12:127-133. Available at <https://linkinghub.elsevier.com/retrieve/pii/S1618866713000174>.
- Kaplan R, Kaplan S. 1989. The experience of nature: A Psychological perspective. Cambridge University Press, New York.
- Karel J, Smolová E. 2016. Kvantifikace vlivu vegetační bariéry na šíření prachových částic od komunikace. *Dopravní inženýrství* 1/2016.
- Kavka B, Šindelářová J. 1978. Funkce zeleně v životním prostředí. Státní zemědělské nakladatelství, Praha. Available at <https://ndk.cz/uuid/uuid:59d24490-9ead-11e3-a744-005056827e52>.
- Keijzer EE, Kok HJG. 2011. TNO Report: Environmental Impact of Different Funeral Technologies. TNO, Utrecht.
- Keijzer E. 2017. The environmental impact of activities after life: life cycle assessment of funerals. *The International Journal of Life Cycle Assessment* 22:715-730. Available at <http://link.springer.com/10.1007/s11367-016-1183-9>.
- Kovařík P. 2017. Procházky po pražských hřbitovech. Knižní klub, Praha.
- Kozina V. 2015. Nepřátelé stromy. "Kontraarbocentrická mentalita" v současné české společnosti na příkladu obce Staňkov u Domažlic. 149-164in *Krajina jako Antropologická Čítanka*. Togga, Praha.
- Kupka J. 2006. Zeleň v historii města. Nakladatelství ČVUT, Praha.
- Lai KY, Scott I, Sun Z. 2019. Everyday Use of the City Cemetery: A Study of Environmental Qualities and Perceived Restorativeness in a Scottish Context. *Urban Science* 3. Available at <https://www.mdpi.com/2413-8851/3/3/72>.

- Leňo M, Koucký R, Rubeš M, Špilar J, Hrdlička P, et al. 2022. Územní plán hlavního města Prahy: Textová část Metropolitního plánu. IPR Praha, Praha. Available at https://metropolitniplan.praha.eu/jnp/cz/ke_stazeni/.
- Lunc LB. 1953. Zeleň ve stavbě měst. Brázda, Praha.
- Lutovský M. 1996. Hroby předků: sonda do života a smrti dávných Slovanů. Academia, Praha.
- Možný I. 1990. Vztah ke smrti a mrtvým. 37-41in *Moderní rodina: (mýty a skutečnosti)*. 1st edition. Blok, Brno. Available at <https://ndk.cz/uuid/uuid:721fd750-d4d8-11e2-ac27-005056827e52>.
- Otruba I. 2000. Zahradně Architektonické Řešení Hřbitovů. 49-53in *Zahradně architektonická tvorba: význačné zahradní a parkové celky*. Mendelova zemědělská a lesnická univerzita, Brno.
- Otruba I. 2000. Zahradně architektonická tvorba: význačné zahradní a parkové celky. Mendelova zemědělská a lesnická univerzita, Brno.
- Pacáková-Hošťálková B. 1999. Zahrady a parky v Čechách, na Moravě a ve Slezsku. 1st edition. Libri, Praha. Available at <https://ndk.cz/uuid/uuid:8e746420-0817-11e4-83c7-005056827e51>.
- Patrichiová L. 2015. Pohřební rituály a rituály truchlení za blízké v České republice: případ obce Dolní Bělá. Bachelor's Thesis. Plzeň.
- Plášková K, Ditrich F, Ullmannová K, Slánský K, Rabiňáková K. 2021. Pražské hřbitovy: plugin : manuál tvorby veřejných prostranství hlavního města Prahy. Institut plánování a rozvoje hlavního města Prahy, Kancelář veřejného prostoru, Praha.
- Robinson GM. 2021. Dying to Go Green: The Introduction of Resomation in the United Kingdom. *Religions* 12. Available at <https://www.mdpi.com/2077-1444/12/2/97>.
- Roloff A. 2016. Intro: Urban trees - Importance, benefits, problems. 1-13in *Urban Tree Management: for the Sustainable Development of Green Cities*. John Wiley & Sons, Singapore.
- Roseland M. 2000. Sustainable community development: integrating environmental, economic, and social objectives. *Progress in Planning* 54:73-132. Available at <https://linkinghub.elsevier.com/retrieve/pii/S0305900600000039>.
- Rugg J. 2000. Defining the place of burial: What makes a cemetery a cemetery?. *Mortality* 5:259-275. Available at <https://www.tandfonline.com/doi/full/10.1080/713686011>.
- Sjöman H, Morgenroth J, Sjöman JD, Sæbø A, Kowarik I. 2016. Diversification of the urban forest—Can we afford to exclude exotic tree species?. *Urban Forestry & Urban Greening* 18:237-241. Available at <https://linkinghub.elsevier.com/retrieve/pii/S1618866716302539>.
- Skalická E, Kašpar V. 2006. Pražská pohřebiště a hřbitovy. Pražská pohřebiště a hřbitovy - součást historického a kulturního dědictví. Staroměstská radnice, Praha.

- SPH. 2021. 110 let městského pohřebnictví: Historie a současnost. Správa pražských hřbitovů, Prague.
- Stejskal D, Šejvl J. 2011b. Specifika pracovních činností. 75-126in Pohřbívání a hřbitovy. Wolters Kluwer Česká republika, Praha.
- Stejskal D, Šejvl J. 2011a. Hřbitovy a hřbitovnictví. 23-30in Pohřbívání a hřbitovy. Wolters Kluwer Česká republika, Praha.
- Stejskalová M. 2011. Správa pohřebiště. 35-68in Pohřbívání a hřbitovy. Wolters Kluwer ČR, Praha.
- Tallents C. 2018. Cemetery Land Use: Contribution to Environmental and Heritage Values: Report.
- Üçisik AS, Rushbrook P, World Health Organization. Regional Office for Europe. 1998. The Impact of Cemeteries on the Environment and Public Health: An Introductory Briefing. EUR/HFA Target 23: Waste Management and Soil Pollution. WHO Regional Office for Europe, Copenhagen. Available at <https://apps.who.int/iris/handle/10665/108132>.
- Vacek L. 2015. Genius loci: integrální součást městského prostoru. 31-42in Krajina jako antropologická čítanka. Togga.
- WCED. 1987. Our Common Future, Chapter 2: Towards Sustainable Development, IV. Conclusion. 41in Our Common Future: Report of the World Commission on Environment and Development. Oxford University Press, Oxford.
- Whitmarsh J. 1999. The Photosynthetic Process. 11-51in Concepts in Photobiology. Kluwer Academic Publishers.
- Yalom M. 2008. The American Resting Place: Four Hundred Years of History through our Cemeteries and Burial Grounds. Houghton Mifflin Harcourt, Boston.
- Zákon č. 256/2001 Sb.: Zákon o pohřebnictví a o změně některých zákonů. 2001. Česká republika. Available at https://www.pohrebnictvi-zakon.cz/33/256-2001-sb-zakon-o-pohrebnictvi-a-o-zmene-nekterych-zakonu-ve-zneni-ucinnem-k-1-9-2017-uniqueidOhwOuzC33qe_hFd_jrpTq9cW1BaCVhDvPGgKkZ_M8kCD-vMUnwPlw/.
- Zanotti A. 2004. Cemeteries of Europe: A historical heritage to appreciate and restore. Comune di Bologna, Bologna.

Web sources

- Merriam-Webster. 2022. "Function.", Merriam-Webster.com. Available at <https://www.merriam-webster.com/dictionary/function> (accessed October 18, 2022).
- ČZSÚ. 2023. Úmrtnost se loni vrátila na předpandemickou úroveň. Available at <https://www.czso.cz/csu/czso/umrtnost-se-loni-vratila-na-predpandemickou-uroven> (accessed February 20, 2023).
- Echobox. 2020. Echobox Memory Vault, Calgary. Available at <https://echobox.ca/> (accessed February 27, 2023).
- En-Park.net. 2017. Tree burial grounds in Japan. en park. Available at <https://en-park.net/books/8233> (accessed January 25, 2023).
- Fujimura M. 2009. Crystal Palace. Fujimura Design Studio. Available at Figure 1: The columbarium at the Banshoji temple in Nagoya, Japan. Author: Noriko Hayashi/SGIA/Panos (January 2015). Available from: https://library.panos.co.uk/stock-photo/draws-in-the-banshoji-temple-where-on-the-3rd-floor-there-is-a-room-called/search/detailmodal-0_00197322.html (accessed February 25, 2023).
- Hiyama H. 2022. QR Codes and Cranes: Japan Embraces Modern Cemeteries. International Business Times. Available at <https://www.ibtimes.com/qr-codes-cranes-japan-embraces-modern-cemeteries-3479592> (accessed January 25, 2023).
- Ichiharaminami reien. 2023. Ichiharaminami reien. Available at <https://ichiharaminami-reien.or.jp/> (accessed February 25, 2023).
- Kamenev M. 2011. Aquamation: A Greener Alternative to Cremation?. TIME USA, Sydney. Available at <https://content.time.com/time/health/article/0,8599,2022206,00.html> (accessed January 7, 2023).
- Lees E. 2020. Planning Makes Perfect: An Introduction to Cemetery Master Planning. LEES and Associates, Youtube. Available at <https://www.youtube.com/watch?v=FQm8decW7E> (accessed August 20, 2022).
- Mikles N. 2021. As countries run out of cemeteries, Japan has a thoughtful new way to bury the dead. Fast Company. Available at <https://www.fastcompany.com/90645396/as-countries-run-out-of-cemeteries-japan-has-a-thoughtful-new-way-to-bury-the-dead> (accessed November 26, 2022).
- Promession. 2023, January 20. Wikimedia Foundation, San Francisco (CA). Available at <https://en.wikipedia.org/wiki/Promession> (accessed January 7, 2023).
- Recompose. 2017. Recompose Seattle, Seattle. Available at <https://recompose.life/> (accessed March 2, 2022).

- Carter D, Schoff SK, Haskell N, Yarkosky S. 2018. Return to Nature. Available at <https://www.rtnsoil.com/research/> (accessed March 2, 2022).
- Schenke J. 2017. Urban Cemeteries Running Out Of Space As Baby Boomers Enter Twilight Years. Forbes. Available at <https://www.forbes.com/sites/bisnow/2017/11/03/urban-cemeteries-running-out-of-space-as-baby-boomers-enter-twilight-years/?sh=20dd7516579c> (accessed November 25, 2022).
- Sim D. 2015. Japan's Ruriden columbarium: Crystal Buddhas and LED lights for a spectacular afterlife [Photos]. International Business Times. Available at <https://www.ibtimes.co.uk/japans-ruriden-columbarium-crystal-buddhas-led-lights-spectacular-afterlife-photos-1495182> (accessed January 25, 2023).
- Smolová K, Mařík M, Odstrčil T, Baláž V. 2019. Hřbitovy v datech. DFMG. Available at <https://www.ceskovdatech.cz/clanek/142-hrbitovy-v-datech/> (accessed January 10, 2023).
- The World Wide Cemetery. 1995. Available at <https://cemetery.org/> (accessed March 10, 2022).
- Virtual Grave. 2020. Available at <https://virtualgrave.eu/> (accessed March 10, 2022).

Interviews and other oral sources

- Anděl D. 2021. Crematorium employee. Guided tour in the Strašnice crematorium. Praha, 17.11.2021.
- Červený M. 2023. Interviewed on 16.2.2023. Praha. In person.
- Dobešová B. 2023. Interviewed on 10.2.2023. Online.
- Dvořáčková O. 2021. Cemetery employee and founder of the project Adopce významných hrobů. Guided tour in Olšany cemeteries. Praha. 10.8.2021.
- Goodnoe J. 2023. Interviewed on 25.1.2023. Online.

9 List of Appendices

The files that are connected to the survey methodology and data:

- Online survey text and questions
 - Appendix_1-Online_Survey_Questions.pdf
- The responses to the online questionnaire
 - Appendix_2-Online_Survey_Data.xlsx

