

DIPLOMA THESIS

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**RE-DESIGN OF THE PUBLIC CEMETERY OF SALINAS CITY WITH THE
APPROACH OF A LANDSCAPE PARK CONCEPT**

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Master Thesis

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1 CHAPTER 1

1.1 INTRODUCTION

Cemeteries compose a very important part of society since as time goes by, traces are left in these places and contribute to the history or important events that occurred in a specific site area.

In Ecuador, the concept of cemetery just accomplish to one specific function (burials), however, on the last years, some new concepts are being developed in other parts of the world are taken as some examples or references and, as a result, the definition of a cemetery is getting modified and expanded in terms of function and uses.

With the development of new ecological methods, burial methods in other parts of the world are feasible for the environment as well as for society. These new concepts and techniques are gradually taking place towards the implementation of new functions and construction of new cemeteries in Ecuador.

The project to be developed in this thesis paper will be carried out in conjunction with the Municipality of Salinas located in Santa Elena province, Ecuador, since it is a very important initiative needed for the city and its population, acquiring better equipment and services to meet the demands that in previous years were not achieved with the latest crisis caused by the COVID-19 pandemic.

The main project focuses on the expansion and re-design of the Salinas cemetery in such a way that it cannot only be used as a space for funerary purposes, but one in which other activities and services can be carried out to involve the concept of a park. Therefore, other types of uses and activities will be provided in open spaces and at the same time it will contribute to the generation of green areas that the city needs. New burial techniques will also be applied to contribute to the ecological development of the cemetery.

1.2 RESEARCH APPROACH

1.2.1 Problem

The main problem derived from the Covid 19 pandemic on 2020, the one that brought a lot of deads in the country and in this city. According to this fact, the existing cemetery of the Canton of Salinas face huge problems which can be highlighted as: the unavailability it has now to accept

and bury more death bodies and the poor maintenance of the area, due to these main problems, families are struggling and make a fast decision to go to another nearby cities to find a place to bury their beloved ones in a proper cemetery and that counts with all the funeral services, space and good infrastructure. Besides these major issues, there is a secondary one which is the lack of recreational areas or green spaces in the city.

1.2.2 Solution

The re-design of the cemetery of Salinas city with the approach of a landscape park concept will help community integration along with the development of new spaces and different uses in the cemetery. It will count with better funeral services, higher number of graves, and will provide new areas for burial (individual way or by blocks) and ecological burial, thus solving the main problem of the current need and future burial methods at the study site.

When the cemetery redesign project is executed, it will meet the current and future needs according to the mortality rate that occurs every month in the Canton of Salinas.

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1.2.3 Vision

Improving the quality of life of the community through the integration of a landscape perception within the cemetery in the urban environment.

Proposing a whole new design for the current public cemetery of Salinas and at the same time introducing a new concept: to function as a park.

Creating new spaces: different types of burial, designing of gardens, flower selling points, cafeteria, chapel, terraces.

1.3 HISTORY FRAME

1.3.1 History of funeral architecture

Fernanda Alvarado (2016) describes that usually the cemeteries are for communal use, in this place the graves of the members of a community works independently, each deceased has its own space, although, if by familiar decision they can also bury several relatives in the same place. (p.g 24)

1.3.2 History of funeral architecture in Ecuador

According to Fernanda Alvarado (2016), “The ecuadorian funeral traditions have a big influence in the traditional indigenous rituals, a deep analysis on how the customs have been varying through the years will help us analyse the current trends” (p.g 33)

Proceramic Period - Las Vegas culture – 10000 b.C to 3600 b.C. The population had a very special worship for their dead, buried under the houses to maintained the communication with them, in these funerals the relatives gathered together to have this fortress bond. (p.g 33 - 34)

Formative Period - Valdivia Culture – 3500 b.C to 300 b.C. The deceased were buried in the same bases mounds of the houses. The burial of children were in ceramic vessels. (p.g 34)

Regional Develop Period, Tolita Culture – 300 b.C to 800 a.C. Priests and shamans leaded the different funeral ceremonies. It can be highlight some indigenous funeral traditions: (p.g 34)

Cuenca, Azuay: Is a tradition to light up candles around the dead body, relatives wear black clothes with white handkerchief on the neck to show their mourning. After the burial, there is a pichka ceremony where the clothes of the deceased are washed in the river. (p.g 34)

Quingeo sector: The dead body is placed on a table and people drink strong liquor (agua ardiente) and play guayru. Next, they bring the body to the church for a Mass. (p.g 35)

Chimborazo Province: The deceased is on a table and watched for 1 day in a room surrounded by candles, people drink aguardiente excessively, then, they move the dead body on a donkey until the church for a mass. (p.g 35)

Quito, Pichincha: The deceased is well dressed, wrapped in white sheets and watched outside the house for 2 days, men imitate animal sounds at night and women pray, at the end, on the 3rd day, 4 indigenous take the dead body and walk by the places he used to go and women follow, after this ritual the dead is buried. (p.g 35)

Based on the article made by Bernarda Tomaselli (2021) in the official website of the Heritage and Culture Ministry of Ecuador, with the arrival of the Catholic Church, the rituals were adapted to the traditions of the old continent, Europe, and were mixed with the indigenous costumes. Tomaselli (2021) also describes that wearing black clothes for funerals, making funeral processions, singing masses for several days, not allowing light to get into the house where the

deceased was held and hiring crying ladies to encourage the crying on people who attended the funeral, these are some of the colonial costumes that were extended until passed the XX century.

Tomaselli (2021) emphasizes that in the colonial age the funeral rituals took place in religious temples; under the churches existed the catacumbas where the remains of spanish bodies were buried. In the same way, there were cemeteries aimed to indigenous people, and most of them were located in the outskirts of the zone in which graves with no name or common graves were home of the poor, orphans, prisoners, madmen and people left behind by society.

Generally, the funeral lasts for 2 days inside a house, close family and friends gather in black clothes and relatives of the deceased offer some meal or coffee. On the third day, some families make a funeral procession until they arrive at the cemetery where the wake is buried. Depending on the location, some people choose cemetery service rooms, which commonly are the places where families can use for the wake. After the church funeral service, they go to the cemetery and in some cases, relatives and friends bring a serenade as the last farewell. A mass is given at the end of the 1st month and after 1 year of death as well.

Every November 2nd the dead are celebrated. People visit the cemetery for a long time; it was a costume to share a purple corn drink and sweetbread there, but nowadays people just visit their loved ones. Alvarado Santos (2016) indicates that some indigenous towns, especially in the Amazon, have a Shaman that makes the ritual post mortem with herbs and flowers, then the dead body is placed on a wood raft in the water while people make a party honouring the deceased. Afterwards, they burn the dead body and next, they take the remains of the wooden raft and burn these pieces to avoid pollution.

1.3.3 Burial typology in Ecuador

With the XIX century and the new hygiene standards, cemeteries arrived to Ecuador, mainly because of the danger that was represented to public health to keep burying the dead under the temples. (Tomaselli, 2021). This is how the National Cemetery of Guayaquil and El Tejar y San Diego in the capital Quito, were founded. (Tomaselli, 2021)

Tomaselli (2021) describes that the dark crypts that were placed in the belly of the churches were replaced by mausoleums where the remains of the most powerful members of society rest. They

were made of high marble sculptures, huge stained glass windows, and comfortable gothic structures are evidence of the transformation of funeral architecture according to the passage of time.

The biggest cemeteries in Ecuador counts with the same burial types which are the following:

Burial rows or niches: It is a cavity in the wall, integrated into the building of superimposed rows above ground level. It allows to house a corpse, additionally remains or ashes. (Sevilla, 2022).

Figure 1: Current burial rows in Ecuador

(Source: Adapted from *Cementerio Patrimonial abrirá durante todo el feriado (Photography)*, by *El Universo*, 2018, (<https://www.eluniverso.com/guayaquil/2018/10/29/nota/7025036/tres-cementerios-listos-recibir-familiares-difuntos-guayaquil/>)



This typology is the most common in the country, in big cities such like Guayaquil or Quito, the vertical burial method allows to make from 4 to 6 or 7 rows. These graves tend to be decorated by the locals with natural flowers or artificial ones. An example of this can be seen in figure 1 in the Heritage Cemetery in Guayaquil city, one

of the biggest cemeteries in the entire country.

Figure 2: Individual or double graves

(Source: Adapted from *Entendiendo a los cementerios (Photography)*, by Dignity Memorial, 2022 (<https://www.dignitymemorial.com/es-es/plan-funeral-cremation/cemetery/cemetery-property-costs>)



Individual or double graves: Are the second most common option for cemeteries in Ecuador. They are available in single or double depth versions. In these cavities, the remains of the deceased are placed in a coffin or an urn in case they are ashes. See figure 2.

Grave on ground: This type of tomb is characterized by having a stone structure and in some cases glass that protrudes from the tombs. The advantage of this option is that the design can be customized. See figure 3.

Figure 3: Graves on ground Ecuador

(Source: Adapted from *Cementerio general está colapsado (Photography)*, by *El Diario*, 2015, (<https://www.eldiario.ec/noticias-manabi-ecuador/371087-cementerio-general-esta-colapsado/>)



Despite of this typology with customized stones, there are many graves or plots that only have a cross made of wasted wood upon it, this also derives from this particular typology and can be found in every cemetery in the country, even in the big ones but mostly common in small cities.

Figure 4: Types of Mausoleums

(Source: Adapted from *Tumbas del mausoleo Ycaza-Gainza and Mausoleo más antiguo el de la familia de Yldefonso Coronel (Photography)*, by *Alex Carrillo*, 2022, *El Universo* (<https://www.eluniverso.com/larevista/sociedad/la-tumba-y-mausoleos-mas-antiguos-del-cementerio-patrimonial-de-guayaquil-un-museo-al-aire-libre-con-mucha-historia-nota/>)



Another alternatives of burial on ground are:

Mausoleum: Generally built as a building or space of high dimension inside the cemetery. As shown in figure 4, on the structure there are some tombs in cavities located in the walls. It can be private or public.

Figure 5: Columbarium, small building

Note: Adapted from ¿Qué es un columbario? (Photography), by Seguro de decesos, 2018, Seguratis (<https://seguratis.com/seguero-de-decesos/columbario/>)



Columbarium: More private and exclusive option within the cemetery. It is built as a room or a small building where cremated remains are retained. See figure 5.

1.4 REFERENCE FRAME

1.4.1 Green burials

Sara Romero, (2021) points out that 'Green' burials do not use concrete vaults to store corpses; nor do they embalm the bodies to prevent them from rotting; nor do they use pesticides or fertilizers on the graves. The bodies are buried less than a meter deep (to aid decomposition) in a container similar to a wooden coffin but completely biodegradable. This increasingly trending option is more environmentally friendly and reminiscent of how burials were conducted before the invention of the modern funeral industry.

This new type of burial service is an improvement on the traditional method of burial and incineration, as it minimizes the greenhouse effects and preserves natural habitats. (Romero, 2021)

In some countries like France, the 'green cemeteries' already exist in the capital, Paris, as part of their agreement to become carbon neutral by 2050. (Romero, 2021)

Romero (2021) gives as an example that the area is surrounded by bushes and natural meadows, and for the maintenance of the gardens neither pesticides nor chemical fertilizers are applied. It is strictly forbidden for the deceased to receive tanatopractic care and instead of tombstones, wooden steles of local species are placed.

According to Romero (2021) in Italy, they provide a service of egg-shaped biodegradable shells where the defunct are laid to be entombed as "a seed on Earth". To commemorate the cycle of life,

a tree is placed over the burial site, which serves "as a memorial for the deceased and as a legacy for posterity and the future of our planet.

Every time a tree is planted, it helps the environment and purifies the air. In addition and as a result, a careful landscape is obtained, pleasing to the eye and with a lasting emotional representation. (Sociedad Funeraria Nacional, 2022)

All of these initiatives show a growing awareness and concern about the ecological footprint in life and death that mortuary service options can have a positive impact on ecosystems.

1.4.2 Approach to green burial in Ecuador

The trend of these ecological burials is also present in Ecuador. Verónica Falconí Pérez began to offer this service in the country since one year ago through the Life Urns project (Alarcón, 2020).

Alarcón, (2020) explains the therapist works with two modalities. The first one is to sale ballot boxes made from recycled bamboo and paper, with no glue or toxins that can pollute the environment, and when these urns get in contact with water, air or land, they begin a degradation process. Floating urns, for example, can be placed in the ocean, rivers, or lagoons. These biodegrade within three hours and the ashes become part of the chosen water element, not generating pollution.

The second option consists of planting a tree using its seed, ashes, a neutralizing agent, black soil and pumice stone. The plant species are chosen according to the personality of the deceased. (Alarcón, 2020)

1.4.3 Green spaces and cemeteries

According to Natalia Belousov, (2020) nowadays the knowledge to integrate green areas into the urban zone is getting even more enhanced by society, the role of urban landscapes in supporting the provision of local ecosystem services is an essential part of urban resilience and sustainable thinking. (p.g. 17)

All greening and diversification within graveyards do not substitute effort in other spaces, instead, these small-scale endeavors enhance the resilience of urban spaces and inspire larger citywide approaches. (Belousov, 2020, p.g. 17)

Natalia Belousov, (2020) affirms that by integrating green components into cemeteries, they can facilitate the social functioning of ordinary death and provide healing benefits to the mourning process. If green infrastructure concepts are incorporated into their planning, cemeteries can be used as green buffers, ecological pathways, and corridors that promote habitat conservation.

Gaining an overall appreciation of the frameworks of green landscape infrastructure and resiliency can address the concept of multipurpose cemeteries. A design that supports a multifunctional usage can improve both utility and contribution to the well-being of the local population. (Belousov, 2020, p.g. 17)

Another important fact Natalia Belousov, (2020) mentioned is the significance public's receptiveness has to the use of a facility, since it can easily generate certain impact in its use. The environment and the infrastructure can similarly influence the usage of the service. For example, providing seating areas in a cemetery may be attractive to passers-by and induce them to enjoy some peaceful time, whilst an area overgrown with shrubs may drive people away for security reasons. This demands that perceptions of users need to be taken into consideration in the process of the design and development of a facility. Although city planners and suppliers of funeral areas are dealing with an accelerating growth for human burial grounds, cities are also in constant need for open spaces to enhance the quality of life, particularly for those living in extreme populated zones. (p.g. 18)

The use of urban cemeteries is increasingly being recognized and the demand of urban open areas can use the benefits of cemeteries as a valuable part of an urban landscape. (Belousov, 2020, p.g. 18)

When adapting existing graveyards to provide space for new uses, the authorities are faced with strongly held cultural and religious traditions and practices. It implies that a substantial public consultation is necessary. (Belousov, 2020, p.g. 18)

1.4.4 Cemeteries as urban parks

The cemeteries already are part of the urban environment in its own particular way. They integrate an already established green infrastructure and provide important services to local communities. (Kok, 2021, p.g. 16)

In the metropolitan city concept, the generation of green areas has become an important fact. This has certain implications in the way of how green urban cemeteries can be converted from funeral spaces to recreational areas. (Kok, 2021, p.g. 16)

In accordance with Dirco Kok (2021), similarly to city parks, cemeteries can provide natural and cultural values and have strong resemblances to the general concept of parks, as well as lawns, ornamental plantings, and pathways. This is where the public use make the difference whether it can only function as passive zone or if it can become a vital and important part for the locals. With this scenario, cemeteries can have multiple services and activities functions just like parks do. (p.g. 16)

When considering city green cemeteries as community parks, it is necessary to place them within a broader range of urban green spaces in the city. (Kok, 2021, p.g. 18)

Hence, green cemeteries present a unique potential as peaceful parks, where the combination of intentionally chosen design is combined with reflection and respect for the primary function of burial and remembrance. (Kok, 2021, p.g. 19)

2 CHAPTER 2

2.1 STUDY CASES

2.1.1 *Skogskyrkogården (The Woodland Cemetery)*

Location: Stockholm, Sweden

Unesco World Heritage Site (20 years)

Architectes: Gunnar Asplund and Sigurd Lewerentz.

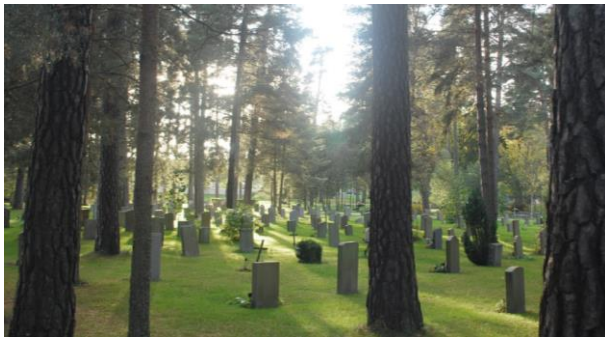
Area: 107 Ha

Graves: 100000 apr.

According to Carlquist Sara (2021), in 1914 the cemetery committee announced an international competition to design Stockholm's new southern cemetery.

Figure 6: The pine woodland of the burial ground

(Source: Adapted from Skogskyrkogården - The Woodland Cemetery 20+ years of being unique, by Sara Carlquist, 2021, Stockolms stad Editorial)



Cemeteries of that time were designed as magnificent parks with lavish grave monuments as a tribute to the dead. The cemetery committee now wanted to create a unique cemetery where nature and architecture formed a harmonious whole. (p. 1) See figure 6

It is characterized by the interaction between landscapes and buildings, richness of detail, essential vegetation and varied lines of sight. (p. 1)

2.1.1.1 *Landscape*

The architects fulfilled the requirements to create a cemetery integrated with the existing nature by making use of the site's existing topography and forest. (p. 1)

The cemetery is surrounded by a 4km long stone wall. Inside the semi-circular main entrance, the rolling landscape opens up. The iconic Almhöjden (Elm Hill) and the stone cross, designed by Gunnar Asplund, catches the visitor's eye. (p. 1)

In the distance, the pine woodland of the burial ground appears as a dark green silhouette. The 900m long processional path Sju brunnars stig (Seven wells path) leads you through the woodland to the southern part of the cemetery. (p. 1)

Throughout the design is the idea of the journey between light and darkness, between joy and sorrow, through the cycle of life-death-life. (p. 1)

2.1.1.2 The Woodland

The cemetery's 10,000 pine tree trunks tower up between the gravestones like roman pillars and their crowns form a green canopy against the sky. (p. 2)

The pines at Skogskyrkogården are one of the building blocks that make the World Heritage Site unique and the importance of its preservation is specially designated to maintain the World Heritage Status. (p. 2)

One of the cemetery's biggest threats is damage to the trees due to disease, grave digging or age. To ensure regrowth, new pines are planted in the cemetery every year. (p. 2)

Seeds plucked from the original pine trees ensure that the right plant material is used. (p. 2)

2.1.1.3 The Five Chapels

Inside the forest lies Skogskapellet (The smallest Woodland Chapel). The chapel is modestly subordinate to the pines and fir trees (p. 3). Since the chapel was too small for a large funeral party. In 1925, Uppståndelsekapellet (The Chapel of Resurrection) was completed and was twice as big as Skogskapellet. Its neoclassical design acts as the destination at the end of Sju brunnars stig and is visible all the way from the top of Almhöjden. (p. 3)

At the entrance of Skogskyrkogården, Asplund designed the cemetery's main buildings. Skogskrematoriet (The Woodland Crematorium) was completed with its three chapels, Tron (Faith), Hoppet (Hope) and Heliga korset (the Holy Cross). Functionalism now had its impact, which permeates through the entire design. (p. 3) See figure 7.

The unique layout of each building shows the architects' eye for richness of detail, focus on the visitors experience and the cycle of life-death-life. (p. 3)

Figure 7: The chapels inside Skogskyrkogården

(Source: Adapted from *Skogskyrkogården - The Woodland Cemetery 20+ years of being unique*, by Sara Carlquist, 2021, *Stockolms stad Editorial*)



2.1.1.4 The Crematoria

Nya krematoriet (The New Crematorium) was inaugurated in 2014 a unique building that was discreetly integrated into the surrounding woodland. (p. 4)

According to Dirco Kok, (2021), the Skogskyrkogården is a strong example that shows there can be a multiplicity of landscapes within one site. This cemetery holds multiple identities and atmosphere in one space that is made possible by successional degrees of privateness. Transitions from the public areas to the more (semi) private areas create a continuity in the cemetery that is pleasant for visitors, mourners and local residents. (p. 34)

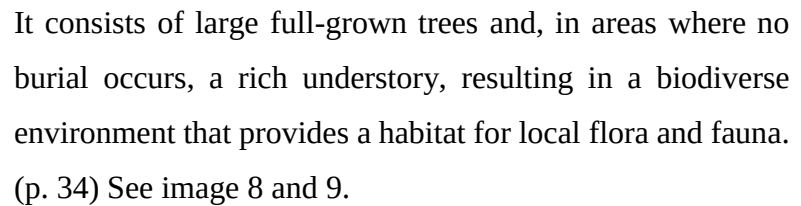
Figure 8: 'Urban forest' habitat within Stockholm's green infrastructure

(Source: Adapted from *The Children's Garden at Gunnar Asplund and Sigurd Lewerentz's Skogskyrkogården (Woodland Cemetery)*, by Lee F. Mindel, 2014, *The architect's eye* (<https://www.architecturaldigest.com/story/woodland-cemetery-stockholm-article>))



Dirco Kok, (2021) mentioned as well that the dense pine forest that was largely retained in the design makes the site, surrounded by suburban neighbourhoods, relevant as an 'urban forest' habitat within Stockholm's green infrastructure.

(Source: Adapted from *Cementerio en el bosque*, by Federico García Barba, 2012, Arquiscopio (<https://arquiscopio.com/archivo/2012/07/23/cementerio-en-el-bosque/>))



Location: Via a la Costa, Guayaquil, Ecuador

It is the largest and most modern cemetery in Guayaquil, a place where peace and modernity merge. It is composed of 15 hectares full of nature, which makes each visit a special moment to meet with their loved ones and disconnect from the entire world.

Alvarado Santos, (2016) also mentioned the design is attractive and different because of the various types of graves that have been arranged in the 10 sectors that make up the cemetery for a better configuration. One of them is the Memorial Forest located in an area of 7,900 m², in which 990 trees of four kinds have been planted: Jasmine, Nim, Myrtle and Tulip, which have been named as the ashes trees. (p.g. 43)

She emphasizes as well, with the Memorial Forest of the Metropolitan Pantheon, the Junta de Beneficencia of Guayaquil also contributes in a responsible way to the environmental care, people and animals, because from an ecological point of view, trees generate oxygen and absorb carbon dioxide, helping to purify the air. The tree is life and in the ashes trees their memories will stay alive. (p.g. 43)

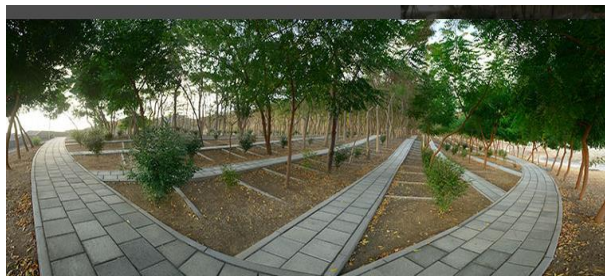
The services this cemetery provides are:

2.1.2.1 Ash Forest

Spaces of land with a variety of planted trees, in which the ashes of the loved ones are deposited and marble tombstones are placed around it. (Junta de Beneficencia de Guayaquil, 2022) See figure 10.

Figure 10: Harmonic area in the ash forest

(Source: Adapted from *Products (Photography)*, by Junta de Beneficencia, 2022, Panteón Metropolitano (<https://panteonmetropolitano.org.ec/productos/>))



Tumulus and Mausoleums

For the eternal rest of the loved ones, it has been designed an elegant building that stands out from the earth. Pre-fabricated structures of up to three graves, lined with granite and marble tombstones

are placed around it (Junta de Beneficencia de Guayaquil, 2022). See figure 10.

Figure 11: Service of Tumulus and Mausoleums

(Source: Adapted from *Products (Photography)*, by Junta de Beneficencia, 2022, Panteón Metropolitano (<https://panteonmetropolitano.org.ec/productos/>))



2.1.2.2 Lots for mausoleums

Surrounded by nature for the eternal peace of the loved ones, special mausoleum units; a set of lots located in an exclusive site. Their capacity is defined according to the needs of each family group. (Junta de Beneficencia de Guayaquil, 2022)

2.1.2.3 Lots

Figure 12: Service of single, double, triple lots

(Source): Adapted from Products (Photography), by Junta de Beneficencia, 2022, Panteón Metropolitano (<https://panteonmetropolitano.org.ec/productos/>)



The lots are earthen spaces with pre-fabricated crypts. Double and triple lot options are provided. (Junta de Beneficiencia de Guayaquil, 2022)

See figure 12.

2.1.2.4 Chapels

Elegant buildings covered with marble and with a private entrance door. Inside, there is an altar surrounded by niches and vaults with marble tombstones and bronze buttons. See figure 13.

Figure 13: Service of Chapel

(Source): Adapted from Products (Photography), by Junta de Beneficencia, 2022, Panteón Metropolitano (<https://panteonmetropolitano.org.ec/productos/>)



- Single Chapels: They have 20 vaults and 16 niches for remains.
- Double Chapels: They have 40 vaults and 16 niches for remains. (Junta de Beneficiencia de Guayaquil, 2022)

2.1.2.5 Vaults

Figure 14: Service of vaults

(Source: Adapted from *Products (Photography)*, by Junta de Beneficencia, 2022, *Panteón Metropolitano* (<https://panteonmetropolitano.org.ec/productos/>))



The vaults have a privileged design, totally hermetic marble slab, up to six rows high. They are for family use and can be reused. Also it counts with children section. (Junta de Beneficencia de Guayaquil, 2022) See figure 14.

2.1.2.6 Niches for remains and cineraries

Figure 15: Service of niches for remains and cineraries

(Source: Adapted from *Products (Photography)*, by Junta de Beneficencia, 2022, *Panteón Metropolitano* (<https://panteonmetropolitano.org.ec/productos/>))



They include a marble tombstone and are located in several sectors of the cemetery, up to six rows high. (Junta de Beneficencia de Guayaquil, 2022) See figure 15.

2.1.2.7 Sanctuary

It is a private space located inside St. Joseph's Church. (Junta de Beneficencia de Guayaquil, 2022)

3 CHAPTER 3

3.1 PROJECT CONTEXT

3.1.1 Site Introduction

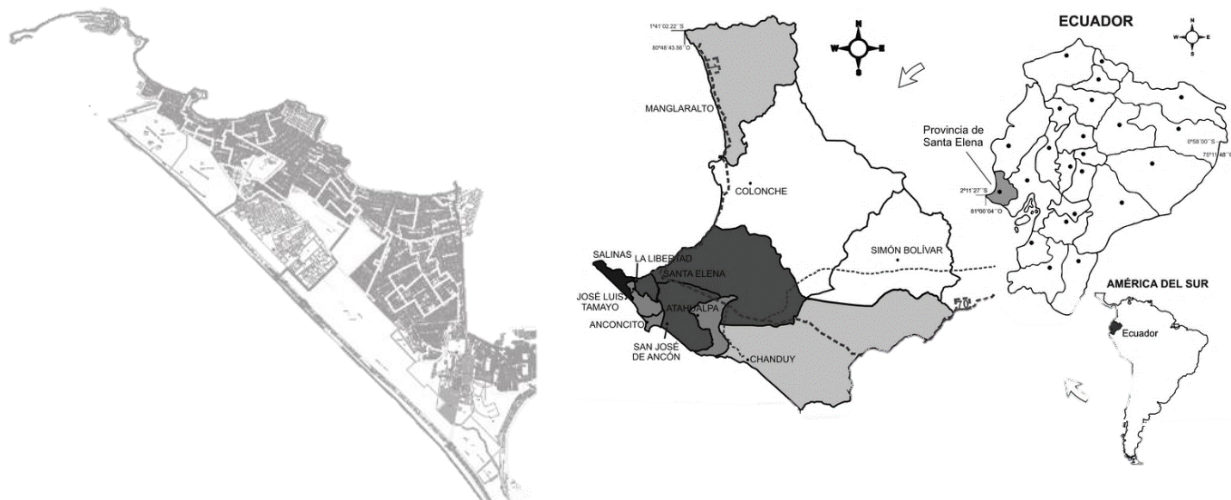
3.1.1.1 Location

The study site is located in the country of Ecuador - Coast Region - Santa Elena province in the urban area of Salinas city (the developed part), in Vicente Rocafuerte sector, west part of the city.

Salinas city is well known by Ecuadorians as an ideal destination and a great place to escape from the routine of a normal day, it is also famous by the international point of view due to the beauty of its nature, such as cliffs, beaches, protected areas and tourist infrastructure. According to this, the Ministry of Tourism, included this city as one of the many spots that conform the Route of the Sun. See figure 16.

Figure 16: Ecuador country, Santa Elena Province, Salinas city.

(Source: Adapted from *Sustentabilidad y Buen Vivir en la provincia de Santa Elena (Ecuador): Aportes para la definición de indicadores compatibles (Photography)*, by Laura Zulaica and Silvia Graciela Alvarez, 2017, License CC BY-NC.(https://www.researchgate.net/figure/Figura-1-Parroquias-de-la-provincia-de-Santa-Elena-indices-de-sustentabilidad-Fuente_fig1_312478784)



It is important to specify that the city of Salinas is divided into 3 main districts: Jose Luis Tamayo, Salinas, where the cemetery project is located, and Anconcito. See figure 17.

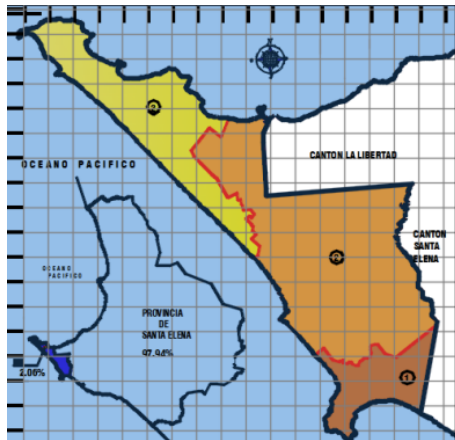


Figure 17: Map of Salinas city with its 3 districts

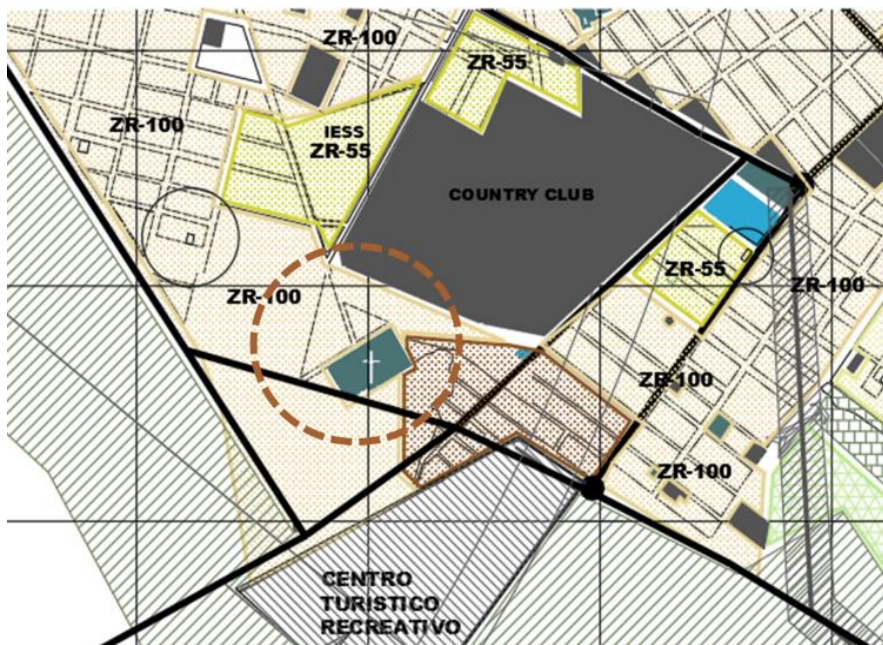
(Source: Adapted from *Plan de Desarrollo y Ordenamiento Territorial del Cantón Salinas*, by the Municipality of Salinas, 2014. The yellow color represents the Salinas district, the orange color represents José Luis Tamayo district and Brown color represents Anconcito district).

3.1.1.2 Surroundings

As shown in the figure 18 and according to the land use plan of the city, the plot is within the area catalogued as “other” which includes: mourning purposes, committees and related projects.

Figure 18: Land use Plan of Salinas city

(Source: Map provided by the Municipality of Salinas. The study site is selected in the circle)



The boundaries where the current cemetery takes place is limited as follows:

North: Private properties and Country Golf Club

South: Salt wells and private properties

East: Private properties

West: Airport and private properties

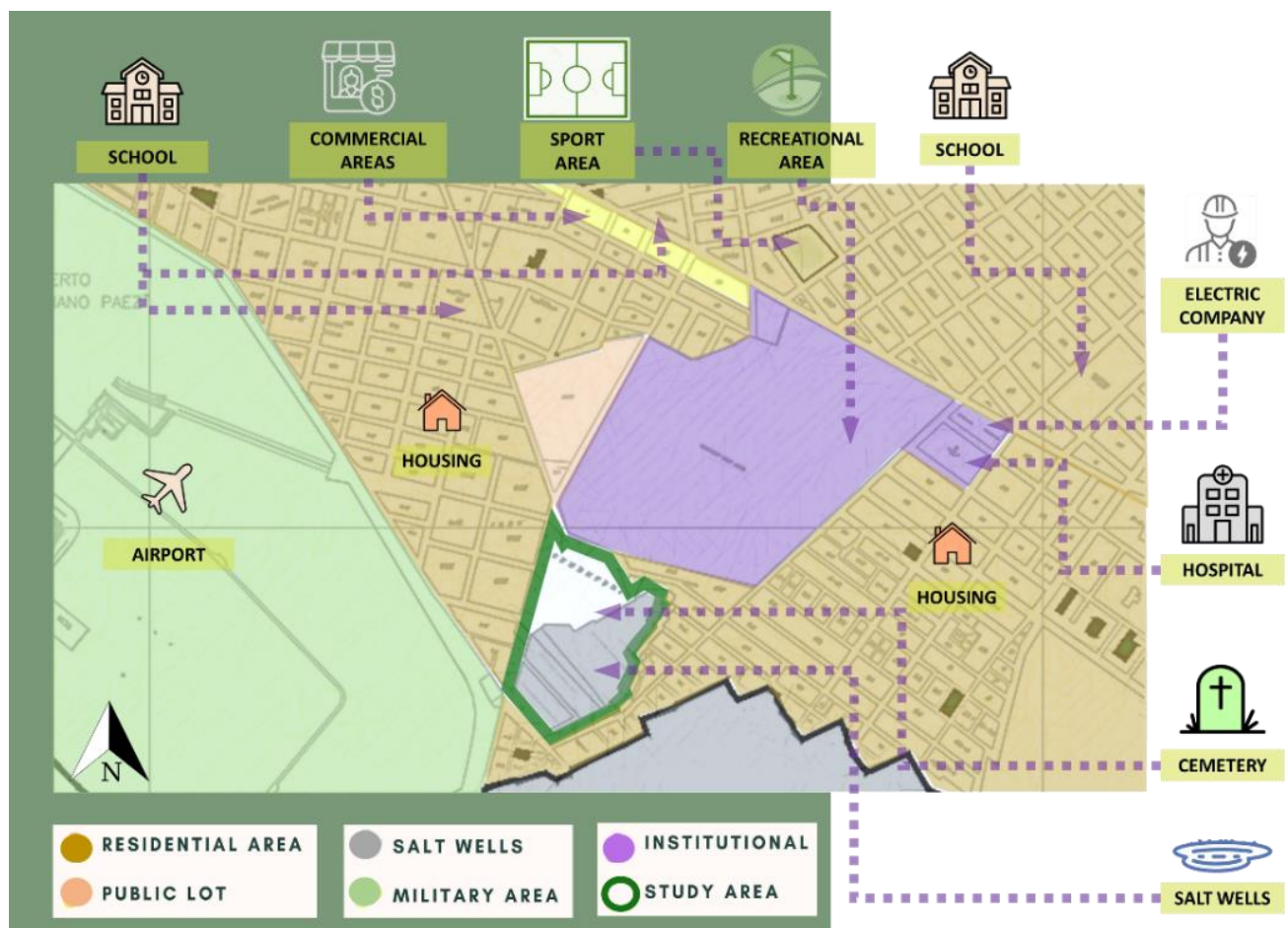
The site is enclosed by residential areas of 100 inh/ha and 200 inh/ha, however, we can find not far from there, green recreational areas, high urban influence area or military base and salt wells areas which are gonna take part as the annex in this project.

For a closer look, the following map appreciated in figure 19 determines the different types of settlements that are located inside the residential area and that helps to understand better the current situation, such as what type of users or institutions can be found inside a radio of 685 m.

Among these settlements, there are commercial areas like restaurants, recreational areas such as parks and sport fields, airport, public institutions such as schools, hospitals, electrical companies, and, salt wells area. See figure 19.

Figure 18: Meso scale map of different settlements around study site

(Source: Land use diagram made by the author of this thesis, 2022)



The current cemetery of Salinas sector counts with an area of 36,143.63 square meters. The municipality of Salinas had the decision to give priority to this green project, since due to the Covid Pandemic, the cemetery infrastructure could not received the huge amounts of dead people. This project is designed for the future outcomes that certain situations can cause. Because of this, they had the initiative to annex a new area, located in the same public plot, of 74,223.07 square meters, In result, the total area for the new cemetery project will be 110,366.7 square meters (11 Ha). See figure 20.



Figure 20: Existing area of the cemetery and new area to be annexed

(Source: Map provided by the Municipality of Salinas and coloured by the author of this thesis, 2022.)

3.1.2 Accessibility

The traffic level of Salinas is low since it is a small city, but, when there are national holidays is completely the opposite, people from every part of the country arrives to the small bay to enjoy its attractions.

Figure 19: Main road and secondary road close to the study area

(Source: Map provided by the Municipality of Salinas and coloured by the author of this thesis, 2022.)



It is important to acknowledge the existing main street roads in a general way and the connection they have along the entire city before going to a closer look.

The next map describes the 2 main roads mostly used by people who go to

the urban sector of the city and that actually leads to the touristic places in Salinas.

The red line expressed in the following figure 21, is defined as the main busy road (Av. Carlos Espinoza Larrea) and the one that connects Salinas with La Libertad city; the blue road reflected in the map is catalogued as the secondary road (Av 22 de Diciembre) used as well by some people to get exactly to most common places. Unfortunately, both roads do not connect directly with the study site, which is the green circle in the diagram, but it is far from them approximately with a distance of 1.5 km with the main road and with a distance of 0.68 km with the secondary road.

It should be noted that both roads are served by the public transportation service (buses).

Once analyzed the general roads of the city, it is important to give a closer look about other secondary or third roads that have accessibility with the study site.

The following figure 22 and 23 shows the site can be reached from Av 22 de Diciembre, which is the busiest road, where bicycles, motorcycles, private vehicles and urban transport circulate. As it can be seen, other tertiary streets derived from it; these third roads will be the main accesses to get to the study area: San Agustin Febres Cordero street (the only third road served by public transportation), Guayas y quil street, Av. Quito street and a no name street.

The conception of the streets in the entire city have no hierarchy; automobiles, bicycles, motorcycles and public transportation share the same space, no signage exists, most of the streets counts with sidewalks, however a few of them still do not have due to the increasing of population and at the same time the irregular settlements.

Figure 20: Third roads accesses that connect directly with the study site and Salinas streets hierarchy.

(Source: The study area can be reached by foot or by car through all the streets around it. Diagram by the author of this thesis, 2022).

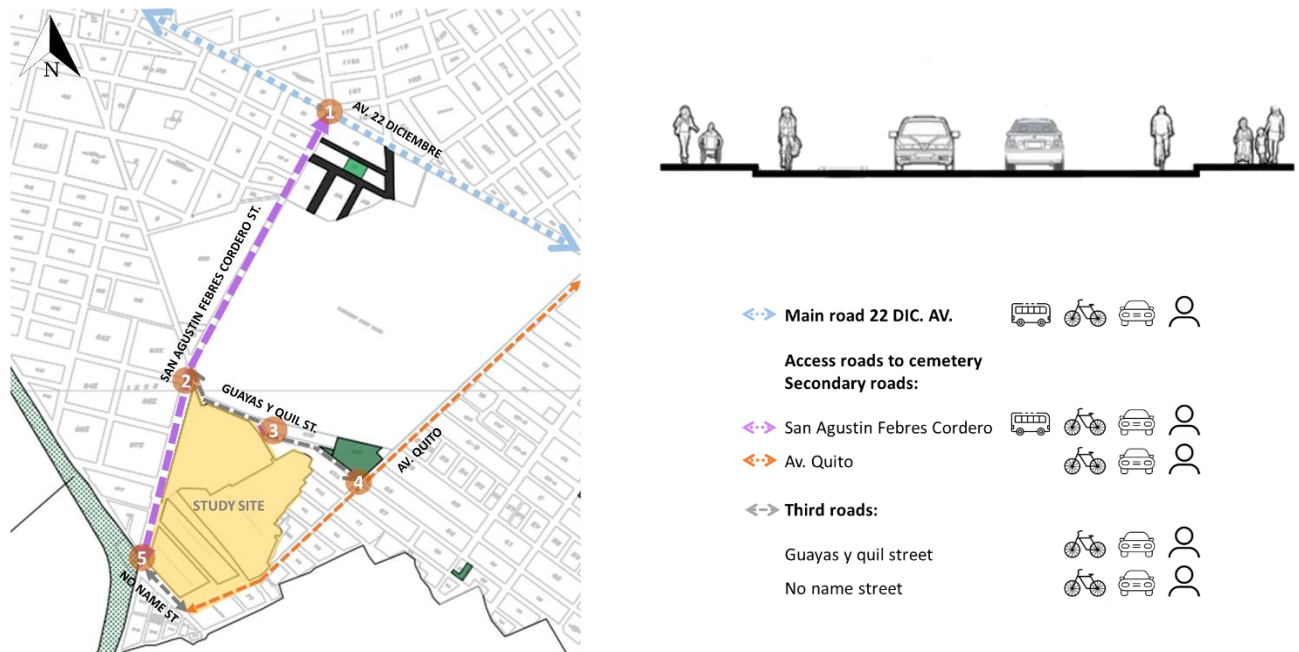


Figure 21: Accessibility to the site from different streets

(Source: Adapted from Google Maps and showing the roads accessibility to the cemetery (Photography), by Google, 2022).



3.1.3 Micro scale analysis map

3.1.3.1 Accessibility, users and existing areas

In this area it is possible to find residential users, professionals, students, athletes, given that near the zone are located (at a low level) recreational areas, public institutions, health facilities, restaurants, airport and others.

The following micro scale map indicates the main streets that surrounds the study area (existing cemetery and salt wells): Guayas y quil street., San Agustin Febres Cordero street., Avenida Quito and no name street.

Figure 22: Current situation of the existing cemetery

(Source: Analysis of the area: Roads, accesses, internal pathways, salt wells. Diagram by the author of this thesis, 2022).



The existing cemetery is surrounded by wall fence and has 3 entrances, the main one is located in the top side of Guayas y Quil street, while the other one located in the same street but more south side, is not useful since it is locked everytime, and finally there is a secondary entrance in San Agustin Febres Cordero street. See figure 24, 25, 26.

Figure 23: Photos of the main entrance of the cemetery

(Source: Adapted from Google Maps (Photography on the left), by Google, 2022, and from Google Maps (Photography on the right), by Robert Gonzabay, 2017).



Figure 24: Wall fence around the cemetery

(Source: Adapted from Google Maps and showing the wall barriers the cemetery has in its entire perimeter (Photography), by Google, 2022.



When going inside it is notable that there is a lack of activities missing at the cemetery, the only one function within the red boundary of the area (see figure 24) is for mourning, there is no wake rooms or chapels or any other function inside the site.

According to the internal pathways, only one is made of concrete and is located in the main entrance, the perpendicular pathway that follows has no surface material; however, it is noted as secondary path due to the regular walking made by people from one door to another, the rest of the surface in this area is natural soil. See figure 27.

Figure 25: Current situation inside the cemetery

(Source: Photographs provided by the Municipality of Salinas of the Current infrastructure of the cemetery, 2022).



there are not well organized.

The distribution of the graves starts with a regular design from the north part, nevertheless it did not respect this pattern and turns from one way to another in the lower part of the site, at the same time it is divided into 2 spaces, the right side, as shown in the figure 24, does not have any pattern or any design at all, the graves in

Figure 26: Salt wells next to the cemetery

(Source: Photographies provided by Municipality of Salinas, 2022. Existence of salt wells in the annex area.



surface material is the natural soil.

The salt wells plot belongs as well to the government and is shown in the figure 23 with green colour, there are 10 salt lagoons and the residents that live nearby have created this informal road with their own cars to go and grab some salt from the area. This improvised road comes from San Agustín Febres Cordero street until Av Quito. The main

As a conclusion the general maintenance of the site is very poor, most of the graves are in bad condition, plus there is a lack of vegetation and surface material.

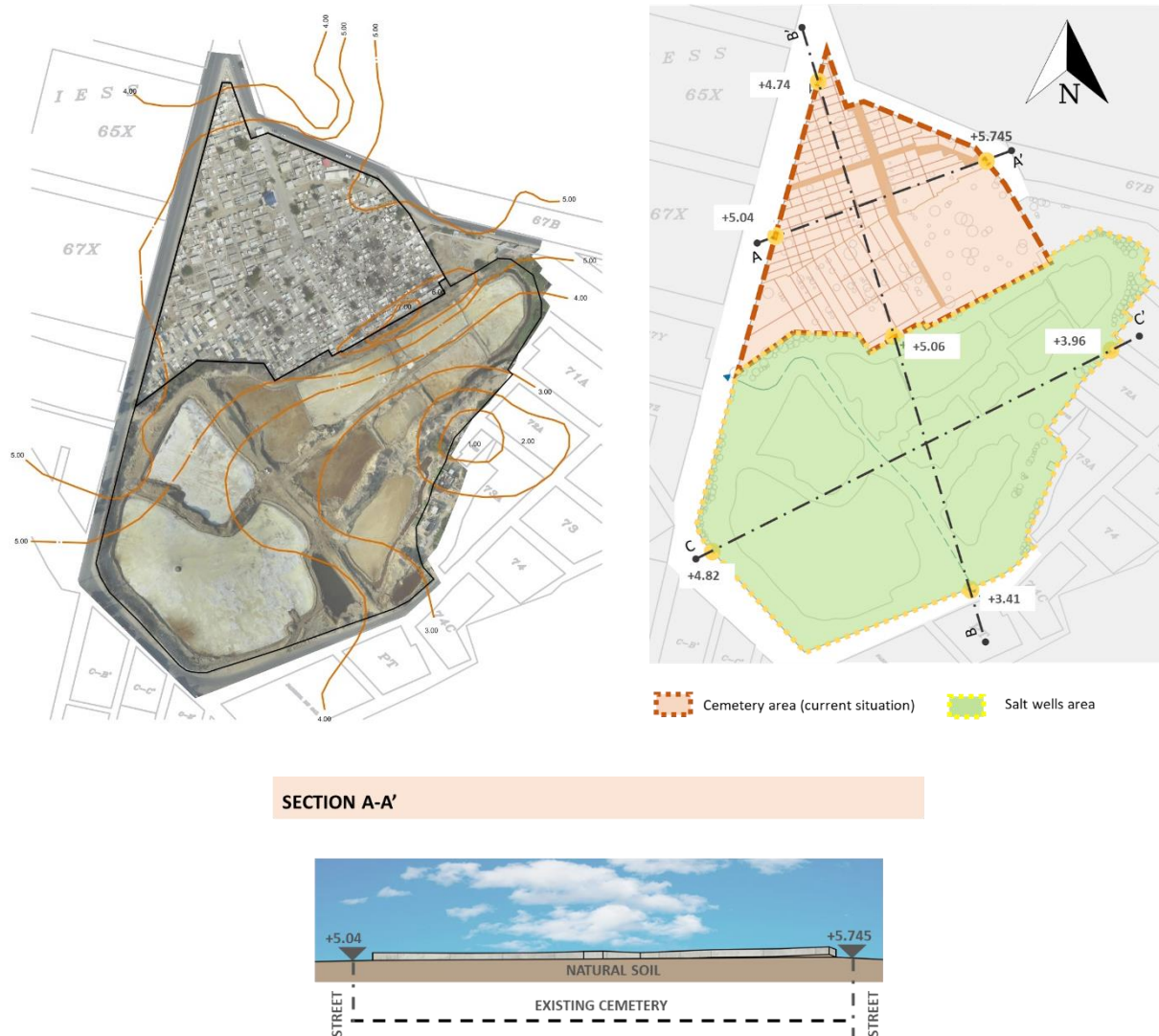
3.1.4 Topography

The site has an irregular shape and the topography of the terrain goes around 3 m and 7 m above the sea level, in which as indicated in figure 29, most of the red area is a flat surface, between 4m and 5 m above the sea level where the cemetery develops, while in the green part, where the salt wells are, the topography varies between 2m, 3m, 4m, 5 m, 6m, 7m above the sea level.

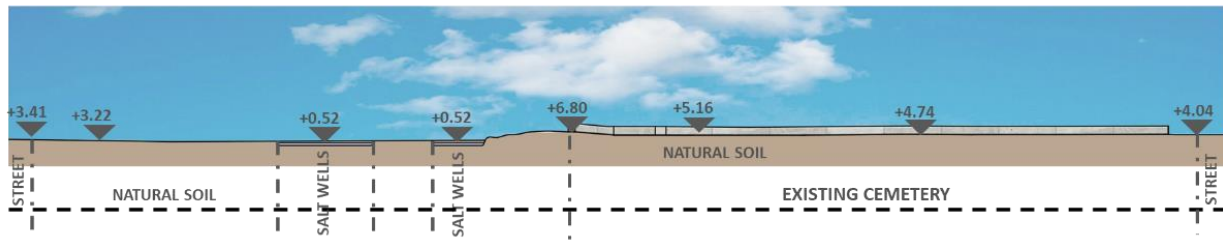
The soils of Salinas are called salortidos because they are predominantly sand, clay and is abundant in salts.

Figure 27: Topography on the site

(Source: Topography in the study area. Diagram and sections by the author of this thesis, 2022).



SECTION B-B'

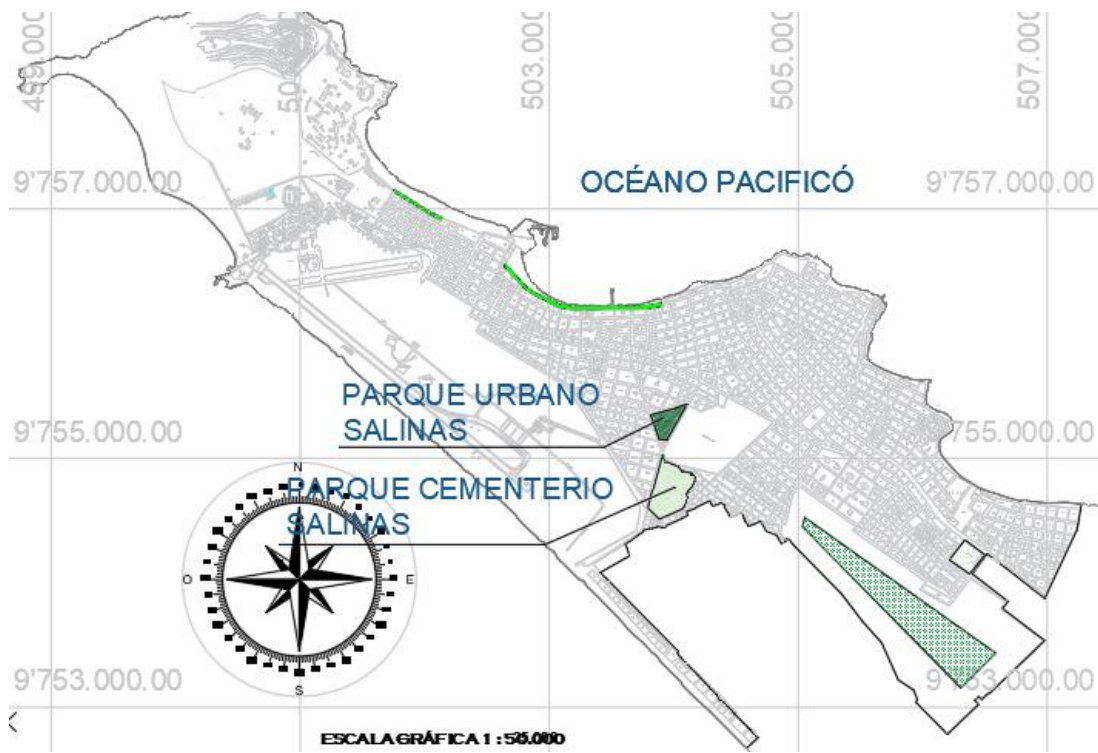


3.1.5 Green spaces

The current situation of both the study site and the city, focuses on the lack of green areas or recreational spaces in the sector, also the current cemetery is in a deplorable condition because it is not well maintained and therefore does not have a good infrastructure that meets the needs of people who require these funeral services. See figures 30, 31.

Figure 28: Green areas in urban city center of Salinas city

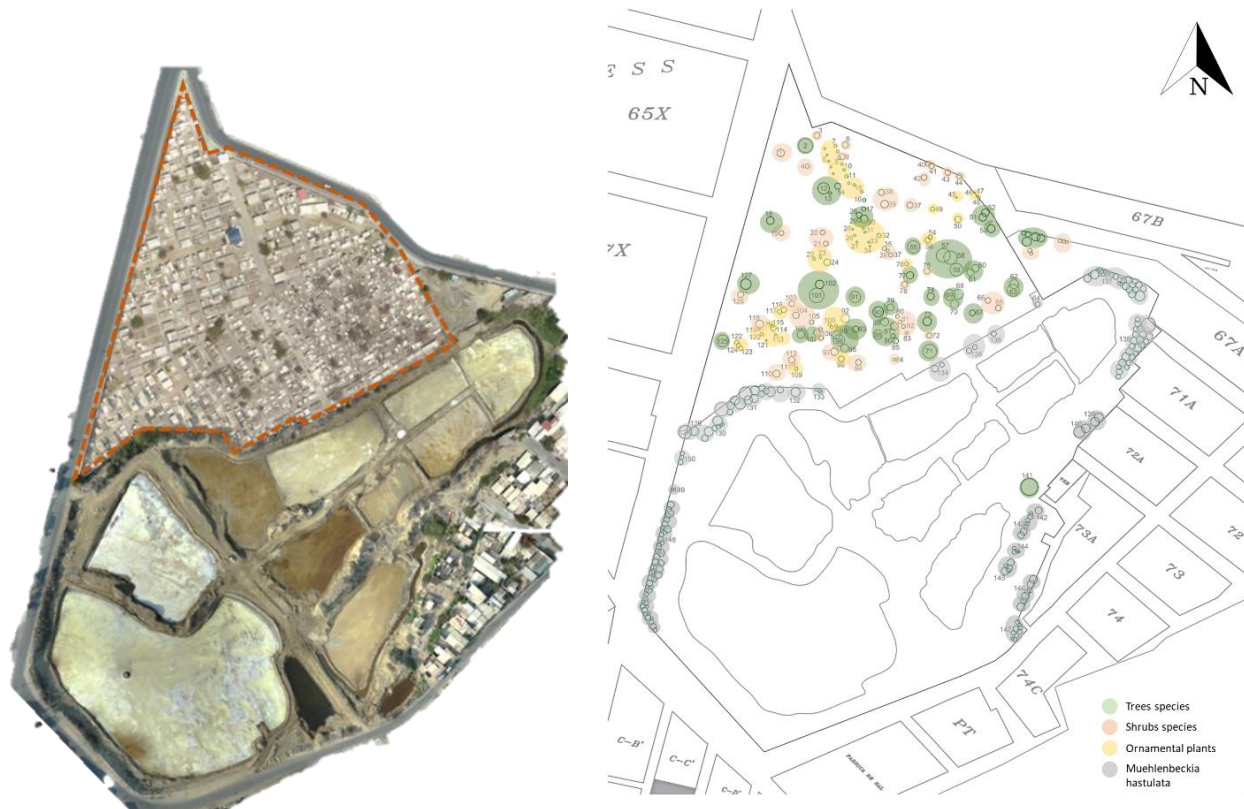
(Source: Adapted from Áreas verdes en centro urbano principal Cantón Salinas Plan (Photography), by Municipality of Canton Salinas, 2021).



According to the municipality of Salinas, some of the vegetation found on the site are not emblematic species, they have been allocated into the site with ornamental purposes, even so, it does not contribute with any useful solution and it does not fill the huge dry space that can be seen from afar.

Figure 29: Vegetation inside the Cemetery of Salinas

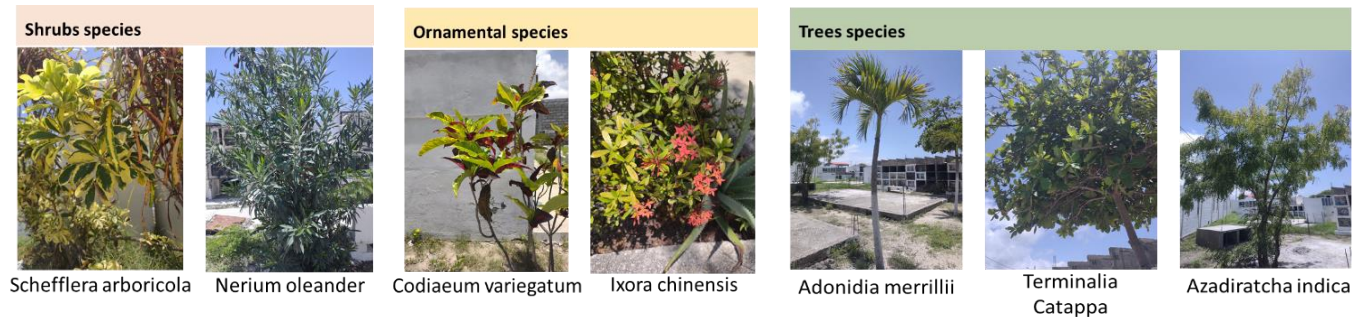
(Source: Left: Dron photo provided by the Municipality of Salinas where is visible the lack of vegetation. Right: Typology of vegetation found inside the study area).



There are some dominant trees species inside the current situation, such as Acacias (*Acacia Mangium*) and Neem trees (*Azadirachta indica*).

The ornamental planting are located in places such like little pots in a corner of some grave blocks and on the land soil, without any kind of grass or ground cover around them. See figure 32.

Figure 30: Shrubs, trees and ornamental plantation inside the study site
(Source: Photographies provided by Municipality of Salinas, 2022).



3.1.6 Green network and value map

It is well known by some Public National Institutions such as the Ministry of Tourism, that Salinas has a great potential to become one of the best touristic places in the coast region of Ecuador due to its famous beaches, attractions, nature and weather, but the main problem remains in the absence of a Green network project which can help Salinas to its prosperity in the future, making out of the city a better place to live, enjoy and visit.

According to this, the municipality of this Canton had the initiative to propose several green projects that can start to create this big network project. Most of the projects are related to parks, where the community can participate as well.

The green network project consists in turning the Avenida 22 de Diciembre into another main road of the city, in addition, San Agustin Febres Cordero street will become a secondary road, which at the same time will be surrounded by different green projects (parks), one of them, the cemetery.

This street has been particularly chosen since there are some government plots where many green projects can arise, despite of this reason, this secondary road goes directly to one of the most beautiful beaches in the city, La Puntilla, but that no one visits because of the lack of attraction, so it would be a perfect touristic approach to explode the city's potential. See figure 33.

Figure 31: Touristic approach - Value map

(Source: Diagram by the author of this thesis, 2022. Photos from Google Maps (Photography), by Google, 2022.)



3.2 DESIGN DEVELOPMENT

Salinas city has already a huge touristic potential, nevertheless is important to emphasize that its lack of vegetation and the missing of a green network have been creating years of an uncomfortable environment. The entire city needs to breathe more by increasing the number of plantations in every new project the municipality approves.

The re-design of the current cemetery will be one of these new green project that approaches not only to the touristic point of view but will also improve and implement the correct use of native and emblematic plant species of the sector, making out of the site a more breathable area which in turn will contribute with the biodiversity approach.

3.2.1 Concept design and Strategy

The re-design of the new cemetery seeks for the enhancement of the local community, the green network, the tourism and the site itself in order to be part of the future green projects development of the city in general.

The site has several advantages since it is surrounded mostly by residential areas, and it's located nearby an important street that leads to La Puntilla, which is a beautiful beach. This important fact will make out of this project one tourism main stop.

Some new accesses will be applied in the south part of the site, for the residents to have a direct connection with the Cemetery.

The application of regular mourning areas with some recreational activities such as: sport areas around, furniture that allows users to use the space to read, sit, talk, will integrate the different type of users into the project.

The implementation of native plant species will not only make out of the project a breathable space, but will promote the biodiversity and will control the erosion process, making population and nature start to evolve together within a healthy environment.

The use of ecological material will diminish the period of installation and will not damage the natural atmosphere, contributing with a focus of an eco-friendly project.

Strategy:

According to this, three aspects will be considered for the further development of the project:

Social aspect: Related in terms of society-space connection, where all kind of users (local community, tourists, internal and external) can be gathered in the project.

Functional aspect: Activities related with mourning functions will need to be peaceful, some in open spaces with an indirect relation with other areas, but others to a more private space, enclosure that offers a comfort environment.

Some activities outside the mourning main function will be joined as well, such as sitting areas, running area, and the transition between the different grave typologies spaces.

Ecological aspect: The green burial typology is a new technology that has started to appear in the country, it will contribute with the plantation of native species, which, at the same time, will work as well in the conservation of the biodiversity of the sector.

3.2.2 Capability of the project and Graves Typology

The Municipality of the Canton Salinas expect that the new project would arise at least with 2000 more new burial places.

According to the existing files information about the Cemetery, the current site has a total number of occupancy of 5241 graves, so it is estimated to have a total of 7241. The graves typology presented is as follows:

Block graves or niches: 4944 places

Burial/ground graves: 177 places

Mausuleums: 120 places

With the redesign of this project it has been calculated that the cemetery project will provide with a total occupancy of 8557 burial sites, which are classified as follows:

Block graves: 6440 places

Burial/ground graves: 345 places

Columbariums: 1320 places

Mausuleums: 252 places

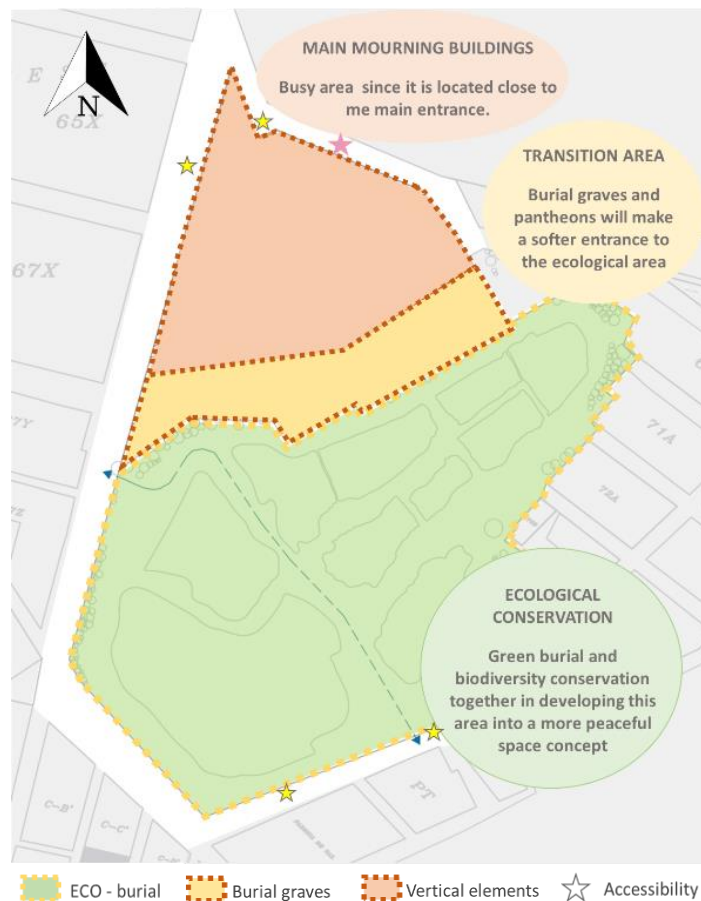
Ecological/Green burial: 200 trees

3.2.3 Zoning Map and necessities list

Starting with the zoning map, it was identified, the type of burial chosen: vertical burial, ground burial and ecological burial, and the location where each one of them are about to be placed.

Figure 32: Zoning map proposal

(Source: Diagram by the author of this thesis, 2023.)



The vertical burial area, or the “Main mourning buildings” will be located near the main entrance, just as the current site is, as the denser space in the project.

The ground burial or transition area, is where phanteons and ground graves are gonna be placed and where the journey from a busy zone to a calmer one (green burial area) will start to change.

The green burial area or ecological conservation zone (natural graves) is going to occupied almost the entire area of the annex plot in the south side, this part is the most peaceful space in the project since it is completely surrounded by nature developing the conservation of

the local species.

After having located the different zones, it was important to make a necessities list of the spaces the new cemetery will count with. Among these areas it was proposed the following:

Parking area:

- Guests Parking
- Service parking

Vertical buildings

- Chapel + garden
- Cafeteria
- Flower selling point
- Wake rooms
- W.C.

Graves area:

- Block graves/Niches
- Phanteons and ground graves
- Columbarium
- Mausuleums
- Ecological/Forest burial

Recreation area:

- Running track
- Salt well conservation (dry garden)

3.2.4 Bubble diagram

When developing the arrangement of the different areas the cemetery will have, it was taken in consideration the research made on the study cases such as analysis, concept, distribution of areas and many other aspects.

According with the concept design and the strategy, the different spaces are organized as follows:

From top, vertical elements like wake rooms, cafeteria, W.C, flower selling point and the parking area are located close to the entrances due to the busy activities carried on these spaces. The secondary internal accesses link indirectly with the main pathway of the project, allowing visitors to go to their preference spaces.

Following along we can find in the right side the mausuleums, under the parking area and in indirect relation with the block burial zone, it is important to point out that this mourning area is going to be surrounded by high vegetation making it more a semi enclosure space and keeping it away from the nearby noises.

The block burial rows or niches area will be dispersed on both sides of the main road and will be indirectly connected, on the left side (upper part), with the chapel and with the columbarium area on the lower part; also on the right side it will be connected with the mausuleum and the ground grave area. This last one will be directly linked to the area of ecological conservation, as it will turn as an element of transition to a much quieter and more pleasant zone.

In the green burial area, it was proposed to keep it the most natural possible, therefore some parts will be categorized as lawns while in others the different tracks will be made of natural soil and will be visible due to the limitation that some vegetation like bushes will be used for.

It is also worth mentioning that all the areas corresponding to the mourning, not only will be focused by this main activity, but also that they will be designed in a different way to the one that has been used for all these years and that in turn will be an attraction for visitors, for instance there will be added certain sitting areas that will act as social spaces for the visitors. See figure 35.

Figure 33: Bubble diagram

(Source: Diagram by the author of this thesis, 2023).



3.2.5 Conceptual Plan

The project for the new cemetery seeks for the implementation of a new structure that helps with a better improvement when organizing the different areas described before, besides the addition of a new plot will contribute with a longitudinal development to the project.

As a first point comes the accessibility, in which it was decided to maintain the main entrances in the north and west part. On the east side the existing pedestrian access (and that stands locked all the time) will become a vehicle entrance since the existing site does not have one; and finally, on the south side, 2 pedestrian accesses will be proposed to facilitate the entrance from the nearby neighbourhood.

About the circulation of internal paths, it was decided to create a main long pathway that goes from the primary entrance (north side) until the opposite one (south side). This main path is designed in order to distribute the different areas described on the necessities list mentioned previously and at the same time, the users can easily go to any of these zones from this common element.

On the left side, the secondary entrance will be connected with the main pathway, after crossing some building areas.

The general disposition is the transition to go from a busy noise and vertical elements made of concrete material to a quieter area where the vertical elements are in fact the natural environment.

The innovation of the project is to give a different focus from the conception of what a regular cemetery looks like and that has followed a tradition since many years ago. For instance, the block burial rows or niches area will count with green spots that will not just produce some shadows or give an aesthetic to the place, but in fact will be a zone where the interaction between people tends to happen.

The columbarium and mausoleum area will be more connected between the place and the environment since they are zones that need a quieter atmosphere. Sitting areas along the burial elements has been proposed, some of them enclosure with vegetation to make a more private space.

On the green burial area, 2 recreational spaces will be designed: the running track and the conservation of an existing salt well on the site. These proposed spaces are focused on recreational development within an environment of mourning activity, the same that will generate the concept that the project is looking for, to relate more the cemetery with the concept of a park.

The running track will be located around some burial trees inside the ring, and high vegetation around the boundaries of the terrain, the main idea is to convert this particular activity into an interesting attraction for the visitor while having a natural environment around even when this is a burial area.

For the salt well area, it was decided to preserve one of these salt lagoons and turn this specific spot into a welcoming space that calls the visitor to spend some time and appreciate the biodiversity

of the site. It will consist in building a dry-rocky garden around it and set some sitting areas around. As well as in the running track space, burial trees will surround the garden. See annex 1.

3.2.6 Vegetation Plan

The type of plants selected were chosen according to planting projects carry out in the city to preserve the species, native species of the sector, resistance to dry conditions and tropical weather, low maintenance requirements and adaptability in terms of soil types.

The plantation proposed is classified as follows:

Tree lines: The following species will be situated along the accesses of the project; due to its blooming it will bring the attention to visitors.

Tabla 1: Tree species chosen for tree lines in the project

(Source: own work,, 2023)

TREES	Native name	Plant type	Flowers	Height (m)	Width	Exposure	Water needs	Mainten	Soil	Uses
Tabebuia chrysantha (Jacq.) (Bureau & K. Schum.)	Guayacón	tree	yellow/red	10-14	7-10	full sun	low	low	clay/loam/sand	patio/avenues/streets/parking
Myrtus communis	arbol de mirto	shrubs	white	4	4	full sun	low/average	low	chalk/clay/loam/sand	beds and borders, hedges

Shadows and ornamental species: Mostly located inside the burial areas. The following species were chosen according to its medium height, color, smell and to the use they can give such as shadows and landscaping features.

Tabla 2: Tree species chosen for burial area

(Source: Table for tree species group created by the author, 2023.).

TREES	Native name	plant type	Flowers	Height (m)	Width	exposure	water needs	maintenance	soil	Uses
Tabebuia chrysantha (Jacq.) (Bureau & K. Schum.)	Guaya can	tree	yellow/red	10-14	4	full sun	low	low	clay/loam/sand	patio/avenues/streets/ parking
Azadirachta indica	Nim, Neen	perennial tree	white	12-15	15	full sun	low	low	loam/sand	shading tree
Guazuma ulmifolia	Guasimo	medium tree	white yellowish	9-18	12	full sun	low/average	low	chalk/clay/loam/sand	shading tree
Bucida buceras	Olivo negro	evergreen tree	green	9-18	18	full sun	low	low	clay/loam/sand	Ornamental/shade tree

The shrub species that will be placed in this area was selected according to its heights and colours, to offer an enclosure space and meditation feeling to mourners.

Tabla 3: Shrub species chosen for the burial area

(Source: own work,, 2023)

SHRUBS	Native name	plant type	Flowers	Height (m)	Width	exposure	water needs	maintenance	soil	Uses
Jatropha curcas L.	Piñón	perennial shrub	green-yellowish	2-3	3	full sun	low	low	chalk/clay/loam/sand	shadow/ornamental/restoration/hedges
Baccharis salicifolia (Ruiz & Pav.)	Azumiate	evergreen shrub	cream-yellow-white	0.8-3	2.7	full sun	low	low	sand	hedges, screens
Cordia lutea	Muyuyo	evergreen shrub	yellow	6	6	full sun	low/average	low	chalk/clay/loam/sand	landscape, ornamental, borders, screen,

Burial Forest: The following species were proposed according to the colour of its flowers in combination with their green leaves, mostly white flowers since this area is the most peaceful of the entire project, in consequence this pure atmosphere will bring calmness to the site. Nonetheless, we can also find other tree species with related colours just like yellow or cream flowers, to give a little bit of contrast in the area.

Another reason to select some of these species like *Cochlospermum vitifolium* (Willd.), *Sapindus saponaria* L and *Prosopis juliflora*, is for the reason that they are used for forest restoration purposes, which will promote healthy benefits to people and to the biodiversity itself.

These species will be placed in the boundaries of the site as well to contribute with this purpose.

Tabla 4: Trees species chosen for green forest burial area

(Source: own work,, 2023)

TREES	Native name	plant type	Flowers	Height (m)	Width	exposure	water needs	maintenance	soil	Uses
Cochlospermum vitifolium (Willd.) Spreng	Bototillo	tree	yellow	8-15	8-15	full sun	low	low	clay/loam/sand	forest restoration
Azadirachta indica	Nim, Neen	perennial tree	white	12-15	15	full sun	low	low	loam/sand	shading tree
Sapindus saponaria L	Jaboncillo	evergreen tree	white	15	15	full sun	low	low	chalk/clay/loam/sand	shadows/ ecological restoration/ parks/roundabout
Bucida buceras	Olivo negro	evergreen tree	green	9-18	18	full sun	low	low	clay/loam/sand	Ornamental/shade tree
Leucaena leucocephala	Guaje blanco	tree-shrub	white	20	12	full sun	low	low	clay/loam/sand	shading tree
Prosopis juliflora	Algarrobo	evergreen tree	creamy yellowish	6-15	8-12	full sun	low	low	chalk/clay/loam/sand	woodland/ forest restoration

Is important to mention that nowadays the city is carrying on a project to preserve native tree species, in this proposal enters the *Tabebuia chrysotricha* and *Cochlospermum vitifolium* (Willd.) species, these specific trees once were grown along the entire province, however it got extinct many years ago. The goal of this project is to bring back this species to its natural habitat and be once again part of the dry forest biodiversity. (Universo, 2018)

See annex 2.

3.2.7 Surface Plan

It is well known that in the coast region of Ecuador, according to the increase of urban development, non-permeable materials have replaced the natural soil. Along the years and with the presence of “El Nino” phenomenon, these areas have been affected by the heavy rains and the rainwater systems are not enough to evacuate the flood.

This situation has helped to determinate the materials that will be used for the surfaces in the cemetery project: permeable type; this will support the mitigation of the stormwater and exclude the overflowing that occurs from heavy rains that takes place by the period from December to April.

To enhance the concept of permeability and at the same time the low-cost solution in the design, the application of ecological paver stones will be placed around the entire project.

For the main path and chapel the eco paver stones will substitute the regular paver stones used in urban pathways.

For the secondary internal roads and the running track surfaces, the materials used are gravel stones and mineral stones.

The burial areas of block rows or niches, columbarium and mausoleums and parking zones will have an ecological stepping stones surface.

Lastly the types of grass that will cover the entire area of the green burial forest are: *Cynodon dactylon*, *Arachis pintoii* and *Stenotaphrum secundatum*. These ones are the mostly used in the coast region and all of them are resistant of the stepping. Its application are for sports fields, landscape features and ornamental coverings. See annex 3.

Tabla 5: 3 grass species chosen for the entire project

(Source: own work,, 2023)

GRASS	Native name	plant type	Flowers	Height (m)	Width	exposure	water needs	maintenance	soil	Uses
Cynodon Dactylon	Césped Bermuda	perennial plant	-	0.3	0.7	full sun	low	low	chalk/clay/loam/s and	sports field, garden and landscaping
Stenotaphrum secundatum	Césped San Agustín	perennial herbs	dark green leaves	0.27	0.7	full sun	low	low	chalk/clay/loam/s and	garden and landscape
Arachis pinto	Maní forrajero	perennial herbs	yellow flowers	0.5	0.7	full sun	low/average	low	chalk/clay/loam/s and	parks and gardens as ornamental covering specie

3.2.8 Focus area 1: Columbarium

The columbarium area was chosen due to the new conception between mourning and gathering integration activity.

As it is shown in the following figure..... it can be appreciated the plant enclosure each burial block has. Separated from one another with a shrub vegetation, *Jatropha curcas* L., with 3 m high, it gives to the space a more private mourning feeling. On each side of these blocks, sitting areas has been placed, behind them, a vegetation barrier of *Baccharis salicifolia* (Ruiz & Pav.) to contrast the surrounded vegetation with a natural white blooming. The surface in these particular area will be of eco pavers or stepping stones.

On the back, northwest side of this area, it has been established a social interaction place, where the mourner can change the atmosphere a little bit but without losing the entire sense of the grieving sensitivity.

The main roads of this selected spot will have a sustainable solution where the main material will be gravel stones pavers. Proarq. Company in Ecuador is the one that provides this ecological resolution and has been taken in mind to work along with this. See annex 4.

3.2.9 Focus area 2: Dry garden around salt well

This part of the project is located in the southeast side of the project to conserve one of the existing salt wells on the site. It will be a social space that indirectly will connect with the entrance from the neighbourhood nearby and the secondary roads from the green burial area.

The aim of the design of this zone is to promote the social interaction between people and mix this activity with the mourning feeling you can sense around (where burial forest is) so by that, this will create a huge and different development for the users comfort.

To make it possible, certain plantation species were selected to build the dry garden around the salt well. These species will be in combination with natural stones, since their main characteristics is that they can grow better around rocks and moss. See annex 5.

Tabla 6: Plantation for dry garden area

(Source: Table created by the author, 2023)

DRY GARDEN	Native name	plant type	Flowers	Height (m)	Width	exposure	water needs	maintenance	soil	Uses
Aechmea mexicana	Bromelias	perennial herbs	pinky-purple	0.8	0.8	Partial sun	moderate	moderate	chalk/clay/loam/sandy	ornamental, garden, needs to grow stick to stones or trees
Taraxacum officinale	Diente de leon	perennial herbs	yellow flowers	0.5	0.5	full sun	moderate	low	chalk/clay/loam	ornamental
Peperomia inaequalifolia	Congona	perennial succulent herbs	green	0.5	0.3	full sun	moderate	low	chalk/clay/loam/sandy	grow in rocks better
Asclepias curassavica	Algodonero	perennial herbs	red-orange	1	0.5	full sun	low/moderate	low	clay/loam/sandy	Container Planting, Flowerbed / Border, Parks & Gardens, Small Gardens

Heliotropium curassavicum	Hierba de fuego	perennial herbs	white	0.3-0.6	0.6	full sun	low/moderate	low	loam/sand	coastal/gravel and rock garden
Sesuvium portulacastrum	Verdolaga de Playa	perennial herbs	pink	0.3	0.7	full sun	low/moderate	low	clay/loam/sandy	groundcover, parks, ornamental
Aristida adscensionis	Zacate de agua	annual perennial grass	greenish	0.75	0.3	full sun	low/moderate	low	clay/loam/sandy	waste land, rocky places, grassland, open bush and fallows, erosion control

3.3 Conclusions

The re-design of the cemetery is necessary to satisfy the necessities of the population of Salinas in terms of: incensement of mortality index in the sector, tourism approach, development of green projects to make out of Salinas a breathable city.

The project will reach a point in a scale of public-mourning-green investment by introducing the theme of landscaping park into the cemetery.

It should be accessible for diverse type of users: mourners, tourists, sport people, local community.

The use of the native vegetation, besides giving a landscape or park focus, they will also contribute to give the user a comfort level, providing peaceful and fresh environments and will give to the site some ecological approaches (restorations). By this the project will become a natural development.

Following the idea above, the plantation of local trees as the new graves on the site, was decided to step onto a sustainable way of death, improving the biodiversity and reducing environmental pollution.

The creation of certain social interaction spots and inside the mourning areas were proposed in a way to allow the social connection between the community. The design of a running track and dry garden inside the green burial were made with the purpose to integrate different activities that can be mixed with the mourning one, where people can respect their loved ones and at the same time can enjoy some different spaces for relaxation, meditation and healing.

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Information provided by the Municipality of Salinas - Ecuador

Development and land use plan of canton of Salinas – Municipality of Salinas, Salinas city, Santa Elena Province, Ecuador

Current land use plan and ordinance of the city

Current plan of the city of Salinas

Plans of Green areas in the urban area of Salinas

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