

# Rethinking Bibi-Heybat:

Birth, death, and rebirth of Baku's oil field

by

Emir Aslan

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## Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.



# Abstract

Large urban parks are extensive landscapes that are integral to the fabric of the cities in which they are situated. They offer diverse recreational outdoor spaces to fulfill experiential needs and to help consolidate the public's sense of collective identity and outdoor life, hosting a broad range of people and constituencies. The ultimate virtue of large urban parks, when combined with social activities and interactions, is to enhance and evolve the sense of community, citizenship, and belonging in a locale. Vast urban parks allow visitors to take refuge from the busy lifestyle of cities and to be exposed to the charms and peace of nature, while discovering intimate places for retreat, renewal, and isolation. Large parks are also treasured for their ecological functions, in addition to their experiential and cultural benefits. These vast tracts of land provide a habitat for a rich ecology of plants, animals,

birds, aquatic, and microbial life. Furthermore, these great outdoor nature theaters act as a cleaning, refreshing, and enriching influence on cities.

Despite these obvious benefits, parks, especially large urban parks, are often overlooked or dismissed in the fastest-expanding cities; instead, most development attention is focused on mass housing, skyscrapers, hotels, condominiums, and signature buildings. This is true in Azerbaijan, as demonstrated in the environs of the capital, Baku. Alongside Dubai and Shanghai, Baku is now one of the fastest-growing cities in the world. The current government-sponsored construction boom is dramatically altering the urban face of Azerbaijan's capital—but how long can such a breakneck speed can be maintained, and at what cost?

The main impetus behind the rapid growth in Baku, and the exploitation and expansion of its urban environs, is the current oil boom—and yet most of the city’s residents have not yet realized the riches or promise of oil wealth. The unregulated construction boom has destroyed many historical neighbourhoods and traditional communities; the cultural, historical, and architectural landscape of the entire city is changing. The new wave of construction has reached towards the southeastern fringe of Baku, where Bibi-Heybat, a former oil field, lies. After decades of environmental carelessness, negligence, and extensive exploitation of the area’s resources, Bibi-Heybat has become one of the most polluted places on Earth. This thesis aims to address this issue by remediating the site, enabling this highly toxic locale to be redeveloped for better use by the people of Baku, turning it into a site that enriches

people’s lives through architecture and landscape architecture.

Through intensive remediation and thoughtful composition, Bibi-Heybat will be wholly transformed. The contaminated, inaccessible former oil field will be reclaimed and healed, becoming an important missing piece for Baku residents. Free from disturbance, the unstoppable dynamic of natural ecological process will create a new landscape with grasslands, shrubs, low and upland woodland, and clean water. As the landscape develops, diversity and balance will return, creating an environment where human activities and natural processes co-exist. Land, air, and water are vital pieces of life and essential for people’s physical and spiritual health; everyone feels a basic need to return to nature from time to time. Bibi-Heybat will be an embodiment of sustain

able urban landscape theories, proving that qualities of wilderness can be re-established within a large city. Large parks are an invaluable part of a healthy city, and those that do not have one will always be the poorer. By tapping into the unrealized resources and wealth of Bibi-Heybat, all the people of Baku will benefit.

## Acknowledgments

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To Rana, the love of my life

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" it is a truth universally acknowledged, that a single man in possession of a good fortune, must be in want of a wife."

*Jane Austen, Pride and Prejudice*

To Sevim, the joy of my life

To my wonderful friends Yashar Mughan and Cem Bakar

Thank you for always being there to share the laughter or the tears in the past twelve years  
I will treasure your friendship forever.

Finally to my parents

I am forever grateful for your unconditional love, encouragement, and support  
Words can't express my gratitude, I am blessed to have you in my life.







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Fig 1.2 Scheherazade, Dinarzade, and the Sultan from *The Arabian nights*



Fig 1.3 Rudolph Valentino and Agnes Ayres in *The Sheikh*

## Prologue

Even after being in Canada for more than eleven years, I still get the same puzzled looks from people who ask me the question, “So, where are you from again? Azerbaijan?!” The best stories of this sort are always from small groups of people who do not even know where Azerbaijan is—but who pretend to know all about it. More ironic than irritating, the image they paint of my home country

makes it a fearsome and wonderful place, a fantasy land of sultans and their harems, obscene bath houses, and seraglios in the desert oasis: A mysterious place inhabited by the uncivilized, uncouth and often scimitar-waving Turks! <sup>1</sup>

I lay at least part of the blame for this stereotyped vision on Mark Twain’s 1869 book, *The Innocents Abroad*. Twain’s depiction of the East and its inhabitants in his best-selling book

changed the Western perspective towards the rest of the world. To this day, one can still see Twain’s prejudicial and biased view in different media. For example, Twain expresses his astonishment at the barbarism he supposedly surveys when traveling through Turkey, Syria, Lebanon, and Palestine. In chapter XLIV, Twain describes “how they hate a Christian in Damascus!” or how Damascenes are the most fanatical Mohammedan purgatory out of Arabia. And how they are the “ugliest, wickedest

looking villains we have seen”.<sup>2</sup>


And yet explaining the truth about Azerbaijan is also met with skepticism. When I mention that Azerbaijan was the first country in the Muslim world to institute women’s suffrage—women were granted the right to vote and to run for office in 1918, one year after Canada and two years before United States of America—I get the same puzzled looks! As a new Canadian, it is very surprising to see how many of my fellow Canadians conceive of Azerbaijan. When I started to dig further to discover the origins of this point of view, I was shocked to realize that the vast majority relates Azerbaijan with a few novels and movies about the East; their only connection to the country comes from works such as T.E. Lawrence’s (Lawrence of Arabia) *Seven Pillars of Wisdom*, Rudolf Valentino’s portrayal of *The Sheik*, and, of course, the famous *Arabian Nights*. The image of the true East, and especially Azerbaijan, still struggles to intrude on the Western consciousness because it first has to filter through a layer of romanticism and ignorance. Furthermore, Azerbaijan is at a disadvantage

in the Western mind because the Caucasus is not treated as an important region to be discussed in history classes in the Canadian educational system, since it was geographically outside the British imperial sphere of influence; thus, the story of Azerbaijan is largely unknown to Canadians.

For these reasons, I feel a special intellectual and moral responsibility to portray “the true story Azerbaijan”, and to address the reality of Azerbaijani life in my work. Furthermore, in order to move towards the ultimate goal of creating a peaceful and cooperative world with harmony between nations, I believe it is necessary to understand, acknowledge, and appreciate one another’s cultural values and diversity; one way to do so is to study a multitude of cultures and to apply the knowledge we acquire in our work and our lives.

1 Dreyfuss. R. *Devil’s Game: HOW THE UNITED STATES HELPED UNLEASH FUNDAMENTALIST ISLAM* (New York, 2005) , 1-17

2 Ibid

A high-contrast, black and white photograph capturing a dynamic splash of dark liquid against a light, textured background. The splash is composed of numerous dark, irregular shapes, including elongated teardrops, thin filaments, and larger, more complex blobs. The background has a subtle, wavy texture, possibly representing water or a similar surface. The overall composition is abstract and energetic.

Chapter I: Introduction

## Introduction

*“Until the lions have their historians, tales of the hunt shall always glorify the hunter.”*

- Azerbaijani proverb



Fig 2.1 Old city Baku, Azerbaijan



Fig 2.2 Destroyed face of Lenin in Dagustu Park, Baku, after the fall of Soviet Union

## Introduction

When the Soviet Union began to collapse in 1989, many of its satellite countries found themselves in an unfamiliar position of independence. One of these 15 constituent or union republics, the oil-rich Azerbaijan, gained its independence from the Soviet Union in 1991; the transition was surrounded by political turmoil and took place against a backdrop of violence in the Nagorno-Karabakh region

*“A town is saved, not more by the righteous men in it, than by the woods and swamps that surround it.”<sup>1</sup>*

*Henry David Thoreau*

in particular. At last, a ceasefire was signed in 1994, which left 800,000 refugees and internally displaced persons (IDPs) scattered around the country and about one-seventh of Azerbaijan’s territory occupied. In the same year, Azerbaijan signed an oil contract worth \$7.4 billion USD with a Western consortium, which would become known as the “Contract of the Century.” Since then, Western companies have invested billions in the development of the country’s petroleum, construction, and

service sectors.<sup>2</sup>

The boom in construction and the real estate sector in Baku—a city of more than 2 million inhabitants—began almost a decade ago; it is dramatically transforming the urban face of the capital city. The ultimate vision is to transform Baku into a vibrant metropolis that combines the Old World charms of Istanbul with the flashy architectural style of Dubai. While investors and the nouveau riche of the capi-





Fig 2.3 The former Azerbaijani President, Hayder Aliyev, celebrating first modern oil production on November 12,1997.



Fig 2.4 Construction boom, Baku, Azerbaijan.



Fig 2.5 Bibi-Heybat, Baku, Azerbaijan.

tal see the boom in a positive light, a majority of the Azerbaijani people—especially local residents who have lived in the capital their whole lives—disagree. Many are concerned with the lack of urban planning or any overall development plan for the city; the development efforts seem utterly confused, with no clear objectives, goals, or any logical analysis

conducted in order to guide progress.<sup>3</sup> Meanwhile, a number of old residential districts have been torn apart to accommodate new construction. For example, two old districts were demolished in 2012 to pave the road to the new \$134 million Crystal Palace concert hall, situated on a point jutting out

into the Caspian Sea. Also, the new developments projects, such as upscale restaurants, exclusive designer boutiques, and nightclubs suggest that development is being targeted in favour of the burgeoning moneyed elite, riding high on the riches generated by the two-decade-long oil boom. Meanwhile, the majority of middle class, low income, and IDP

residents experience a markedly different reality; they have been pushed to the edge of the city with limited access to municipal services, since it has become too expensive for them to live where the new developments are happening. The lack of attention to and respect for public views and opinions about the recent architectural developments and expressions in Baku characterises the values promoted by the Azerbaijani government and the country's nouveau riche elite.<sup>4,5</sup>

In addition to these major social and urban problems, decades of environmental carelessness, negligence, and mismanagement have created severe environmental issues throughout Azerbaijan, which are expressed disproportionately in Bibi-Heybat, Baku. Located on the southeast fringe of Baku, adjacent to the city's showy new architectural phenomena, the historic Bibi-Heybat oil field is characterized by its rickety oil wells and facilities. Bibi-Heybat is also known to be one of the most polluted spots on Earth—whether on land or at sea—due to extensive exploitation of its resources by Europeans in the late 19th

century and by the Soviets during the 20th century. The major challenge in dealing with Bibi-Heybat is finding a way to transform this highly toxic site into a place that is useful and properly remediated: a dramatic melding of local history and the natural environment that becomes an integral part of the city's urban fabric.

This thesis aims to address Baku's environmental, social, and urban problems and enable the highly toxic Bibi-Heybat site to be redeveloped for better use.

Due to the size and complexity of contamination at the site, along with its size, the best method for remediating Bibi-Heybat is a combination of microbe base in situ<sup>6</sup> bioremediation and phytoremediation. However, the bioremediation process is lengthy, and it is hard to predict the pace of the clean-up effort. Therefore, to make the site accessible and usable for the public on a shorter timeline, it is best to add multiple hills and boardwalks to keep the contaminated areas inaccessible to the public until the remediation process takes

its course. Furthermore, adding hills helps the design of the park stay true to the nature of Azerbaijan and of its natural surroundings, which give ecologically and spiritually unique qualities to Bibi-Heybat.

Transformation will take about 50 years to complete. Throughout the first four stages, the site will be closed to public. In the first stage of remediation, the site will be cleaned up. During this phase, which take 3 years to complete, oil wells will be capped, and existing oil pumps, equipment and warehouse/facilities will be demolished. To create a lake inside the site, the bay will be closed up to make sure the polluted water of the Caspian Sea will not seep to the lake. Also, environmental quality tests will be done in stage to determine the depth of contamination.(See Fig 5.2, and Fig 5.7)

Throughout the next three phases, which takes eight years to complete, contaminated soil of the lake will be transferred to a different part in the site, the water in the lake will be drained. Approximately 45 cubic kilometer



of topsoil mixed with specific bacteria will be delivered to the site to cover the contaminated soil. (See Fig 5.2)<sup>7</sup>

In phase three, more topsoil will be delivered to the site to complete the earthwork. During this phase, circulation paths will be completed and compressed clay will be added to the bottom of the lake to prevent water loss through the ground. Patches of salt marshes will be added to the coastline to encourage the bird population and to protect the coastline during the tidal flooding.

Seeding will start in the phase four; selected crops with phytoremediation abilities (see Fig 5.10 page 94) will be selected to cultivate for remediation purposes and to help building up the poor soil. At the same time, aquatic plants will be introduced to the lake to help establish the lake water. By this stage, the salt marshes are stable and ready to support bird population on the coastline. By the end of this stage, the site will be open to the public to witness the revival of Bibi-Heybat. (See Fig 5.2 and Fig 5.11- 5.12)

The next phase will take 15 years to complete. At this stage the soil is ready for propagation of landscape. Native plants will be used extensively unless there is a need for non-native plants to remediate a specific pollutant. Moreover, aquatic animals and amphibians will be introduced to the lake. (See Fig 5.2, and Fig 5.13 - 5.14)

Construction of facilities such as Bibi-Heybat Museum, the cultural component of the park, and preparing the sports fields in Athletic Hill, the recreational component of the park, will start and finish during this period. (See Fig 5.19 image # 6, and Fig 5.47)

Last period, phase six, will take approximately 25 years and by end of this period landscape will include layered, multi-aged native woodland and grass fields with diverse plant species. Ecosystem will be revived by end of this period. (See Fig 5.2, Fig 5.4, Fig 5.15-5.18 and Fig 5.19 image # 1-7 and Fig 5.40 - 5.47)

Once the park is fully developed, Bibi-Heybat park will be a unique place for locale by providing spiritual, cultural, and recreational spaces in a natural setting which is rare in Baku.

The design exploration is focused on enhancing the quality of life in Baku by proposing an Olmstedian urban park in Bibi-Heybat that supports a variety of programs such as museums, sports, a children's park, and gardens that are accessible to everyone; it should be a symbolic expression of equality and diversity in a place where these values are deeply contested. The philosophy behind the recent developments in Baku—which has been designed to meet elite group standards—is that these upscale environments naturally will compel the rest of the populace to emulate their social betters; if that does not happen, widespread supervision and enforcement will effectively minimize unsuitable behavior. However, at its core, Bibi-Heybat Park development is based on the design philosophy of passive, restorative, and democratic recreational activities where nothing is fenced off, inaccessible, or exclusive.

Today, Azerbaijan is experiencing an economic boom; however, due to widespread corruption in the country and the region, the economy as a whole has not benefited as much as it might have done. In 2009, Transparency International's 2011 Corruption Perceptions Index placed Azerbaijan at 143 out of 180 countries in the world. The prime beneficiaries of this corruption are the Azerbaijani government and the new Azerbaijani elites. To many, the widening gap between rich and poor is the most obvious and direct result of the new energy boom.<sup>8</sup>

Urban landscape parks are vital social spaces that provide settings for an informal coming together of different groups where the natural environment engages people's attention, creating an active public realm where cross-class contact can occur. There is a huge demand for viable places in Baku, Azerbaijan, where people can meet, relax, and mix. However, in order to properly place this need in context, new developments and public spaces must take into account the sociological background of the country, as well as major political and

historical events that may need additional explanation.

### **Limitations**

Due to limited availability of unbiased resources and unco-operative Azerbaijani officials, who refused to hand over a single piece of related and specific information, the process of working on this thesis became extremely challenging. Therefore, I have been forced to rely primarily on handful books and online journalistic resources, existing outside of mainstream publishing and writing, in assembling this work.

Also, due to the inherent limitations of the scope of this work, some related issues have not been mentioned or mentioned briefly. Also, a few aspects of this work will be unknown considering the scale of the site and unknown factors related to remediation process since it is a very long process and the pace of remediation is hard to predict depending on depth of pollution and land's response to the treatment.

This thesis by no means suggests that the work includes and fully comprehends all aspects of the proposed Bibi-Heybat Park because the park is quite simply larger than the designer's will for authorship.

The intention of this work is to propose a robust framework which sets out a foundation for more an open-ended process for future formations and plans to take root.

- 1 "The Nature In Us", accessed October 28, 2012. <http://www.thenatureinus.com/2008/01/henry-david-thoreau-quotes.html>.
- 2 "THE CONTRACT OF THE CENTURY", [www.azerbaijan.az](http://www.azerbaijan.az), accessed October 5, 2012. [http://www.azerbaijan.az/\\_Economy/\\_Oil-Strategy/oilStrategy\\_04\\_e.html](http://www.azerbaijan.az/_Economy/_Oil-Strategy/oilStrategy_04_e.html)
- 3 "Azerbaijan construction boom: good or bad? ", [www.balcanicaucaso.org](http://www.balcanicaucaso.org), accessed October 13, 2012. <http://www.balcanicaucaso.org/eng/Regions-and-countries/Azerbaijan/Azerbaijan-construction-boom-good-or-bad>
- 4 Ibid
- 5 Huffington Post, accessed October 28, 2012. <http://www.huffingtonpost.com/huff-wires/20120523/eu-azerbaijan-eurovision-spotlight/>
- 6 Vidali, M. Pure Appl. Chem. Vol 73, No.7. Italy IUPAC 2001. Print
- 7  $45,000 \text{ km}^2$  (site area)  $\times$   $.001 \text{ km}$  (depth of topsoil) = 45 cubic kilometer
- 8 Democracy and NGO-s development Resources Centre, accessed October 28, 2012. <http://nakhchivanhumanrights.org/?p=260>





Chapter II: Major Historical Events

## Major Historical Events

*"Shared sorrows or tragedies bring joy."*

*- Azerbaijani proverb*

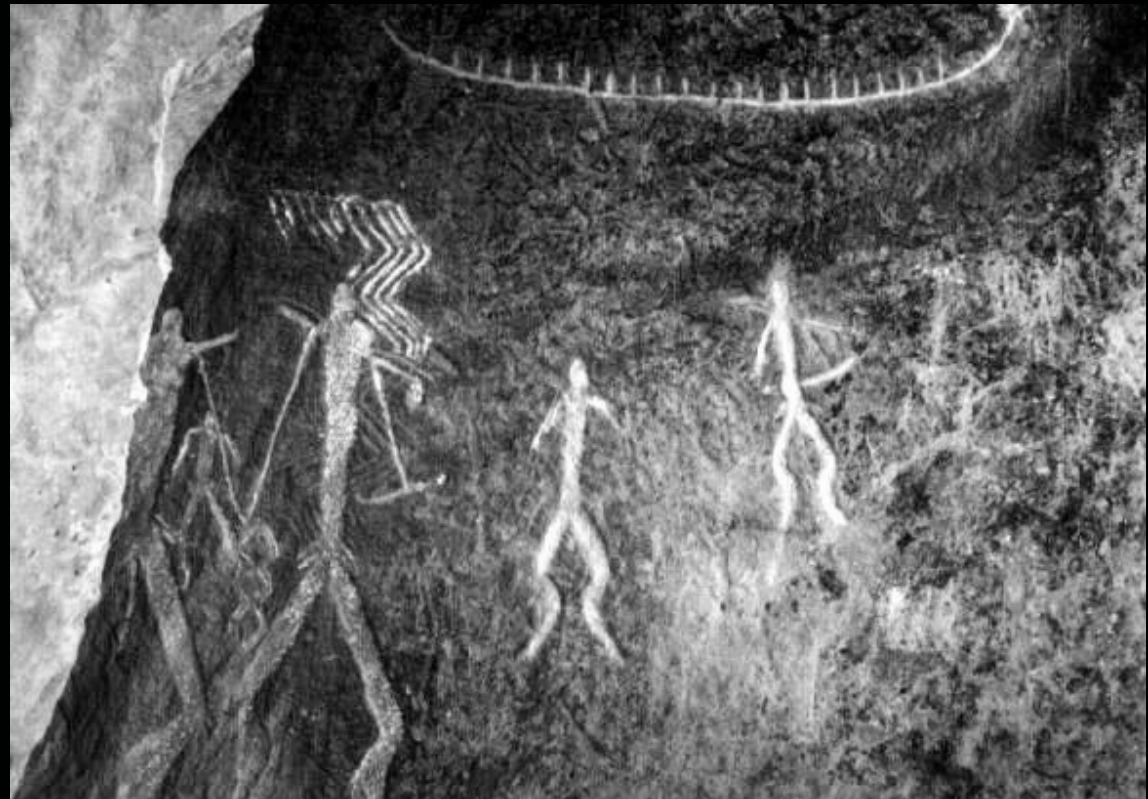


Fig 3.1 The rock engravings of Qobustan, Azerbaijan

## **Division of Azerbaijan**

In the early 19th century, Tsarist Russia successfully gained sovereignty over the entire South Caucasus in north of the Araz (Araks) River which divided Azerbaijan into two parts: the northern part was controlled by the Russian Empire and the southern part remained in Iran's possession.

In the 19th century, Russia did not interfere

with local affairs in Azerbaijan; instead, it focused on extracting commodities from the region while limiting its investment in the economy. This resulted in minimal migration of a Christian population into Azerbaijan. However, the discovery and subsequent exploitation of petroleum reserves transformed the capital of the northern part of Azerbaijan, Baku, into a major cosmopolitan and industrial centre in the Caucasus region. The oil boom brought an influx of Russians, and, later, other Europeans, into Baku, resulting in an immense Russian influence at the end of the 19th century. The unprecedented prosperity and economic growth created a huge wealth imbalance between the largely European capitalists (including the Nobel Brothers Petroleum Company, or Branobe, founded by Robert and Ludvig Nobel in Baku in 1876) and the local Muslim workforce. This economic inequality resulted in the emergence of Azerbaijani nationalist groups. Members, who were mainly educated in Europe and included many early Bolshevik activists, such as the young Joseph Stalin, promoted Azeri culture and language as an alternative to Russian and other foreign influences.<sup>1</sup>

Meanwhile, subsequent Tsarist governments held on to power in the Caucasus by using ethnicity and religion to retain control. The relations between Azerbaijanis and Armenians were the worst of many ethnic conflicts, since Russia actively pursued a massive Armenian settlement policy (especially in the Nagorno-Karabakh area), bringing Armenians from Persia and the Ottoman Empire and resettling them on Azeri land. This rapid reversal of the local demographics served to anger the indigenous Azeri population. Whenever hostilities broke out between the Ottomans and the Russians, the Orthodox Christian Armenians would eagerly wage war on behalf of the Russians. While the Azeris did not fight for the Ottomans in the 19th century, hostilities between Armenians and Azeris did break out in 1905-1906. This internal clash was deliberately provoked by Tsarist Russia to contain the growing threat of a Muslim revolution in the Caucasus.<sup>2</sup>

## **Democratic Republic of Azerbaijan**

Oil wealth became the main factor influencing

the actions of political groups in Baku following the 1917 revolution. After the Bolshevik Revolution, the nationalists initially seized control and attempted to destroy the Bolshevik power base in the oil industry; however, the Baku Bolsheviks, a mainly Russian and Armenian group, defeated the nationalists and declared a Marxist republic in Azerbaijan. In May 1918, Muslim nationalists declared the Azerbaijan People's Democratic Republic and the Army of Islam was formed to defeat the Bolsheviks in Baku. After a bloody fight with a coalition of Bolsheviks, Dashnaks (add notes) and Mensheviks (add notes), the Army of Islam, with substantial help from the Ottomans, marched into Baku in September 1918. The Bolshevik-Dashnaks-Menshevik coalition silently overlooked the massacres of local Muslims by Dashnak-Armenian militia. The British consul of the time in Baku, Mac Dowell, was an eyewitness who reported: "There were not any Muslims in the town except corpses." <sup>3, 4</sup>

Eventually, Azerbaijan declared itself a secular republic; it was the first successful democratic, secular republic in the Muslim world. During

Azerbaijan's first brief independence from 1918 to 1920, however, Armenians orchestrated a series of brutal attacks against Azerbaijanis. "Prime Minister Hovhannes Katchaznoui described how these conflicts eroded the resources of his fledgling republic: 'We were officially at war with Azerbaijan, because we were actually fighting with them in [Nagorno-Karabakh]. There were often clashes in Gazakh too... [M]any bloody battles were fought with the native Muslim inhabitants. And also there is no doubt that the attitude of Azerbaijan in this matter was hostile. Also it is indisputable that the native Muslim inhabitants had been acting against the Armenian state because they were encouraged by Turkey and Azerbaijan. What is important is that we had not been able to take the precautions either within our country or outside it, to secure our stand... We were not able to establish order by means of administrative methods in the Muslim regions; were obliged to use arms, send troops, demolish and massacre. We were not successful even in these; so much so that this failure shook the prestige of the central authority we lost and receded.' On

April 28, 1920, after the invasion of the Russian Red Army, hostilities with the Armenians ended and Azerbaijan and Armenia became part of the newly formed Soviet Union. Vladimir Lenin justified the invasion of Azerbaijan by claiming that "Soviet Russia could not survive without Baku's oil." <sup>5</sup>

## **Soviet Azerbaijan**

The Soviet Socialist Republic of Azerbaijan (SSRA) was formally an independent state government; however, Moscow had absolute control over the state. During the Soviet era, the rights of private land ownership and general private property were abolished; all the national resources of the country, including oil, became the property of the state. The vast oil reserves of Azerbaijan became the main source of the intensive post-World War I industrialization of the Soviet Union. In June of 1941, Hitler launched Operation Barbarossa to invade the Soviet Union and eventually capture the Baku oil fields in Azerbaijan; however, on May 8, 1945, the German army surrendered and the Red Army took over most of





Fig 3.2 Map of Caucasus area in first millennium BCE



Fig 3.3 Atropatena within state of the Sassanid Empire from 550 BCE to 224 CE



Fig 3.4 Azerbaijan during the Arab Caliphate from 5th Century CE to 11th Century CE



Fig 3.5 Azerbaijan in the 16th Century CE



Fig 3.6 Occupation of Northern Azerbaijan by Russian Empire in 19th Century CE



Fig 3.7 Mass Armenian settlement in Northern Azerbaijan by Tsarist Russia in 19th and 20th Century CE



Fig 3.8 Mammad Amin Rasulzade, President of Democratic Republic of Azerbaijan , 1918 - 1920.



Fig 3.9 Guba mass grave: a mass grave of Azerbaijani victims by both Armenian Dashnaks and Bolsheviks during the March days of 1918, in Guba, Azerbaijan.

East Europe.<sup>3</sup>

Under the iron-fisted Communist rule, which lasted 71 years, ethnic hatreds were suppressed but never eliminated. Since the Armenians were loyal allies to the Russian Motherland, the Soviets decided to stabilize and strengthen the presence of Armenians

in Western Azerbaijan, which had the added benefit of creating a buffer zone between Turkey and Azerbaijan and ultimately between the West and the USSR. This effort resulted in the mass deportation of Azerbaijanis from Western Azerbaijan from 1948 to 1953. As Turkic Muslims, the Azeris were seen as a potentially disloyal element within the Soviet

army; as a result, their military education and training largely left them at an initial disadvantage compared to the opposing Armenians. Many Armenians held high-ranking positions within the Soviet High Command before the war, and the composition of the 366th Motor Rifle Regiment was entirely ethnic Armenians. This fully formed and trained unit would play

a key role in the major battle for Nagorno-Karabakh.<sup>6</sup>

Toward the end of the 1980s, as the Soviet Union started to destabilize, old ethnic hatreds re-emerged. When Mikhail Gorbachev came to power and introduced his new policy of openness, Armenians took advantage of the policy to challenge Azerbaijan's sovereignty over Nagorno-Karabakh. Gorbachev, however, reaffirmed that there would be no change to the region's existing boundaries. Later on, Armenian separatists in Nagorno-Karabakh demanded to secede from Republic of Azerbaijan and unify with the Republic of Armenia. The situation subsequently escalated from peaceful protests and demonstrations to ethnically based inter-group violence. In 1988, the relationship between Armenians and Azeris in Sumgait worsened until Soviet troops restored order on March 1. From that point forward, the inter-ethnic violence continued to escalate and villagers—both Azeri and Armenian—began to accumulate arsenals and form militia. President Gorbachev understood the severity of the looming cri-



Fig 3.10 A poster in Soviet Azerbaijan during WWII. The poster reads: "Beware! Don't talk too much! Or we'll land you in jail!"

sis and dispatched Interior Ministry troops to the Caucasus in September of 1988.<sup>7</sup>

### Republic of Azerbaijan

The independence movement rapidly gained popularity in Azerbaijan. To address the situation, Soviet troops occupied Baku on January



Fig 3.11 Cadre from film, where Hitler's generals presented him a cake of the region - Baku and the Caspian Sea.

20, 1990, killing more than 120 Azerbaijanis; today, this day is known as "Black January," a reference and tribute to the Azerbaijani independence movement. Finally, in December of 1991, after a nationwide referendum, the Communist regime declared Azerbaijan an independent state. Meanwhile, the conflict over Nagorno-Karabakh escalated and many

Muslim Chechens took advantage of the burgeoning instability in Armenia and Azerbaijan to fight as volunteers alongside the Azeris in the region. On the Armenian side, there was no shortage of volunteers from their diaspora. Dashnak party hardliners from as far afield as North America and Western Europe paid their own passage to Armenia, where they enlisted in volunteer battalions to combat “the Turks.”<sup>8</sup>

Financing the war was an important matter for both Azerbaijan and Armenia. Although the Soviets had almost emptied the land-based Baku oil fields, the discovery of new offshore oil deposits promised to enrich the treasury of the new Republic of Azerbaijan. To offset this potential financial disadvantage, the Armenian lobby in the United States managed to persuade the U.S. Congress to pass Section 907 of the Freedom Support Act. Convinced by the Armenians that Azerbaijan was the heavy-handed aggressor in the conflict, Section 907 effectively imposed a complete arms embargo and ban on all military aid to Azerbaijan. As the historical record now shows, while the Americans were convinced of Arme-



Fig 3.12 Memorial for Black January victims in Baku.

nian victimization at the hands of the Azeris, the situation on the ground was exactly the opposite. Armenian military forces had enjoyed early success in Nagorno-Karabakh, reducing the Azeri efforts into just two pockets of resistance.<sup>9</sup>

One resistance effort was based in the village



Fig 3.13 The Martyrs Lane in Baku.

of Khojaly, which became the site of a severe conflict between the two groups. The 366th Motor Rifle Regiment was involved in the assault, as were many volunteers from Monte Melkonian’s paramilitary forces. Melkonian was one of the most prominent leaders of the Christian militias during the 1978 civil wars in Lebanon, and later became a key member of





Fig 3.14 Map of Republic of Azerbaijan



Fig 3.15 A helicopter rescue operation in Kelbajar.

the Armenian Secret Army for the Liberation of Armenia (ASALA); that group was responsible for assassination of Turkish diplomats around the world. Although accounts of the event differ slightly in the retelling, it is beyond dispute that a massacre was perpetrated against innocent Azeri civilians on the night of February 25-26, 1992. Against minimal resis-

tance, the 366th Regiment pushed into the Kelbajar enclave and forced the terrified residents to flee towards the nearest Azeri garrison in the city of Agdam. Azeri authorities list 613 civilians as having perished that night; of that number, 106 were women and 83 were children under 12.<sup>10</sup>

Thomas Goltz, an eyewitness, described the scene in Agdam:

*Elif Kaban of Reuters was stunned into giddiness. My wife Hicran was paralyzed. Photographer Oleg Litvin fell into a catatonic state and would only shoot pictures when I threw him at the subject: corpses, graves, and wailing women who*



Fig 3.16 Gathering precious items before fleeing the town.



Fig 3.17 Destroyed Agdam high school.



Fig 3.18 Fleeing from Armenian counter-offensive in Agdam.

*were gouging their cheeks with their nails. Yes, it required stomach, but it was time to work, to report: a massacre had occurred, and the world had to know... I looked for familiar faces, and thought I saw some people I knew... Other bodies, stiffened by rigor mortis, seemed to speak of execution: arms were thrown up, as if in permanent surrender. A number of heads lacked hair, as if the corps*

*es had been scalped. It was not a pretty sight... we returned to the government guesthouse... the deputy speaker of Parliament was one of the few government officials of any sort I saw there. He was interrogating two Turkmen deserters from the Stepanakert-based 366th Motorized Infantry Brigade of the Russian Interior Ministry forces. They had taken refuge in Khojaly a week before. The last*

*piece of the tragic puzzle suddenly dropped into place: it was not only the Armenians who had assaulted the doomed town, but the Russians... the two fled along with everyone else in the town, and were helping group of women and children through the mountains when they were discovered by the Armenians and 366th.<sup>11</sup>*



Fig 3.19 Surviving members of a large family.



Fig 3.20 Fleeing home with children in their arms.



Fig 3.21 Fleeing from the Armenian offensive forces.

The world press has written extensively about the Khojaly tragedy. In a report on March 1, 1992, the *Sunday Times* of London stated, “The Armenian soldiers have annihilated a thousand families.”<sup>12</sup> Moscow’s *Izvestiya* declared on March 4, 1992, that “The camera has demonstrated corpses of children with cut-off ears. Half of the face of a woman has been cut off. Men’s corps

*es were scalped.”*<sup>13</sup> On March 13, it quoted Major Leonid Kravets as saying, “I personally saw on a hill about hundred corpses. The corpse of a boy did not have a head. Everywhere were seen corpses of women, children, and old men, killed with special cruelty.”<sup>14</sup> London’s *Financial Times* wrote on March 14, 1992, that “General Polyakov has informed [us] that 103 servicemen

*of the Armenian nationality of the 366th regiment remained in Nagorno-Karabakh.”*<sup>15</sup> Meanwhile, *Le Mondell* of Paris wrote on the same day that, “The foreign journalist in Agdam saw the women and three scalped children with pulled-off nails among the killed people. This is not ‘Azerbaijani propaganda’, but reality.”<sup>16</sup>



The current president of Armenia, Serzh Sarkisian, argues that the Khojaly massacre was necessary because *“Before Khojaly, the Azerbaijanis thought that they were joking with us, they thought that the Armenians were people who could not raise their hand against the civilian population. We were able to break that [stereotype].”*<sup>17</sup>

During the Nagorno-Karabakh war, seven provinces of Azerbaijan were captured and the local Azerbaijani population was ruthlessly ethnically cleansed from their native land. The Khojaly massacre is considered the most horrific slaughter of the conflict.

By May 1994, Azerbaijan and Armenia were exhausted and looking for a way out. Russia and the Organization for Security and Cooperation in Europe (OSCE) orchestrated a ceasefire that was accepted by both parties. During the war, Azerbaijan lost 14,167 square kilometers of its land—almost 20 percent of the country’s territory. More than 30,000 people were killed and more than 837,000 people were displaced from their native land—over 10 percent of the population.<sup>18</sup>



Fig 3.22 khojaly massacre memorial statue in Baku

When the 1994 ceasefire was first brokered, the OSCE established the Minks Group to oversee and monitor the agreements. To date, the United Nations have passed a total of four resolutions calling upon the Armenians to withdraw their military forces from the occupied territories as the next step in resolving the Nagorno-Karabakh situation. The second

phase of the resolution requires the immediate resettlement of IDPs into their former homes. But with no threat of any international military force being deployed to enforce these resolutions, the Armenians have refused to pull back their forces. Fact-finding missions and OSCE reports repeatedly cite the fact that the Armenians continue to destroy existing

Azeri infrastructure while building their own facilities inside the occupied territories in flagrant violation of the ceasefire agreement.<sup>19</sup> Finally, after many years of continual aggression, blockade, and economic crisis, Azerbaijan is today experiencing political and economic stability. A major factor in this newfound stability was the discovery of huge offshore oil and gas fields, which brought many Western oil companies to the country, while interesting their governments in helping to establish a peaceful and secure state of affairs in the region. Azerbaijan's rapid economic growth can be attributed to large and growing oil exports, as well as some non-export sectors such as construction, banking, and real estate. The current global economic slowdown has affected Azerbaijan's economy dramatically, however; while in 2009, economic growth remained above 9 percent, it slowed down to 0.2 percent in 2011 as a result of dwindling oil prices. In recent years, the poverty rate has shrunk, but the development of Azerbaijan's non-energy sector remains largely inadequate. While trade with Russia and the other former Soviet republics has been slow, contracts are expand-

ing with Turkey, the United States, and the EU. The main obstacle impeding Azerbaijan's economic progress is convincing more foreign investors to invest in non-energy sectors so as to promote sustainable growth in the economy and spur employment, while the continuing conflict with Armenia over the Nagorno-Karabakh region also stymies growth by contributing to perceptions of political instability.<sup>20</sup>

During the past two centuries, there have been two major incidents that have shaped the map of the country and resulted in the widespread slaughter and forced expulsion of innocent civilians to other parts of the country and mainly Baku. The first incident occurred in the early 19th century when the Russian Empire took over northern part of Azerbaijan and slowly started settling Armenians inside the occupied Azerbaijani lands. The second conflict erupted between 1988-1994, known as Nagorno-Karabakh war, when crumbling USSR left a temporary power vacuum in the Caucasus, and the new republic of Armenia took advantage of the situation and occupied more than 20 percent of the

country's territory. During this war 30,000 people were killed and more than 800,000 people, about 10 percent of the population, were displaced and majority of the internally displaced persons were settled in Baku adding to the problem that Baku was already facing. It goes without saying that those conflicts and their aftermath continue to negatively impact the lives of many Azerbaijanis. To fully understand the complexity of the situation with which this thesis is dealing, the author believes it is essential for the readers to know the historical background of the problems Azerbaijan and Baku are enduring.

- 1 "About Azerbaijan", accessed October 15, 2012. <http://azmissioncoe.org/History.html>.
- 2 Scott Taylor, *Unreconciled Differences: Turkey, Armenia and Azerbaijan* (Ottawa: Esprit de Corps Books 2010), 135-136.
- 3 "Brief Azerbaijan History", accessed October 19, 2012. <http://www.azembassy.org.sa/About%20History.html>
- 4 "SPRING 1918: ARMENIAN TERRORISM AND THE TURKIC-MUSLIM GENOCIDE IN AZERBAIJAN", accessed October 20, 2012. <http://www.karabakh-doc.azerall.info/ru/azerpeople/ap053eng.php>
- 5 Scott Taylor, *Unreconciled Differences: Turkey Armenia and Azerbaijan* (Ottawa: Esprit de Corps Books 2010), 137-138.
- 6 Ibid, 138-145.
- 7 Ibid
- 8 Ibid
- 9 Ibid
- 10 Ibid
- 11 Thomas Goltz, *Azerbaijan Diary* (New York & London: M.E.Sharpe 1999), 123-124.
- 12 "Khojali Massacre", accessed September 10, 2012. <http://www.khojaly.org/reporters/>
- 13 Ibid
- 14 Ibid
- 15 Ibid
- 16 Ibid
- 17 Thomas De Waal, *Black Garden: Armenia and Azerbaijan through peace and war* (New York & London: New York University Press, 2003), 169-172.
- 18 Scott Taylor, *Unreconciled Differences: Turkey, Armenia and Azerbaijan* (Ottawa: Esprit de Corps Books 2010), 149.
- 19 Ibid
- 120 Azerbaijan economy, accessed September 18 2012, <http://azerbaijan.usembassy.gov/economic-data.html>



**Chapter III: Baku**

**Part I : Architecture**

**Part II : Bibi-Heybat**

**Part III : Demographics**

**Part IV : Current Problems**

## Part I: Architecture

“Someone’s end is someone’s beginning.”

- Azerbaijani proverb

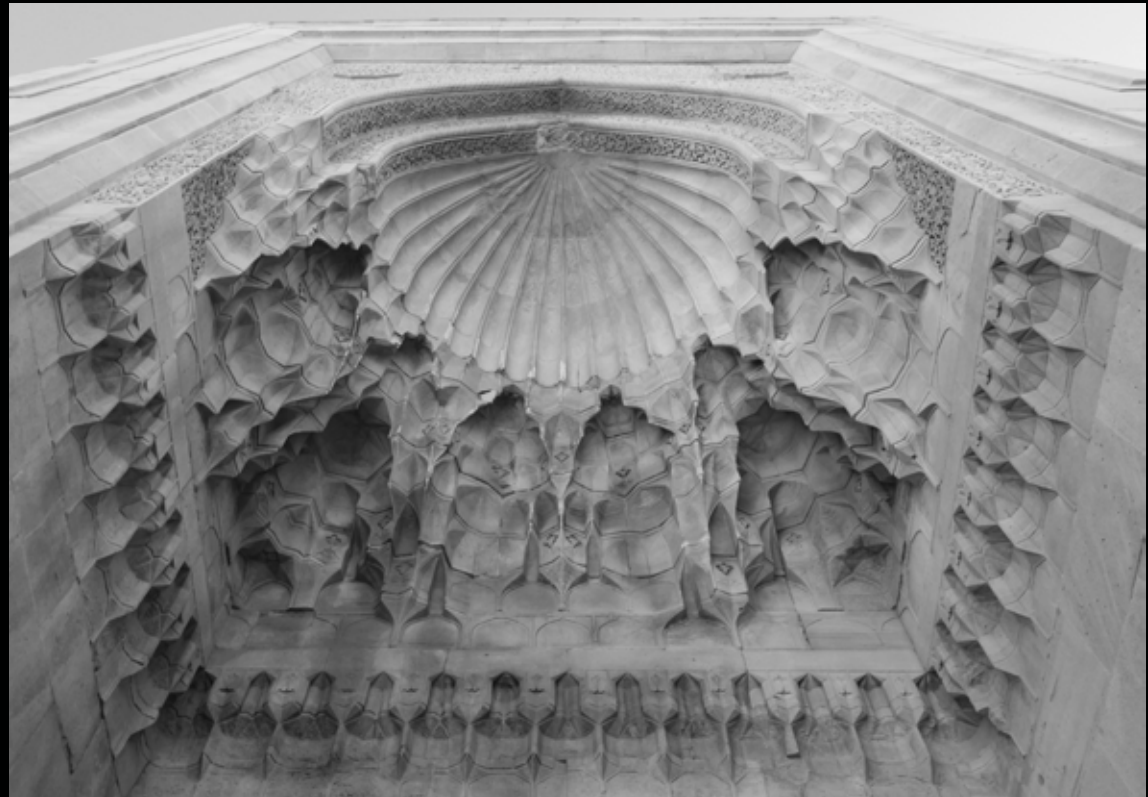


Fig 4.1 Stonemasonry in Palace of the Shirvanshahs, Baku, Azerbaijan

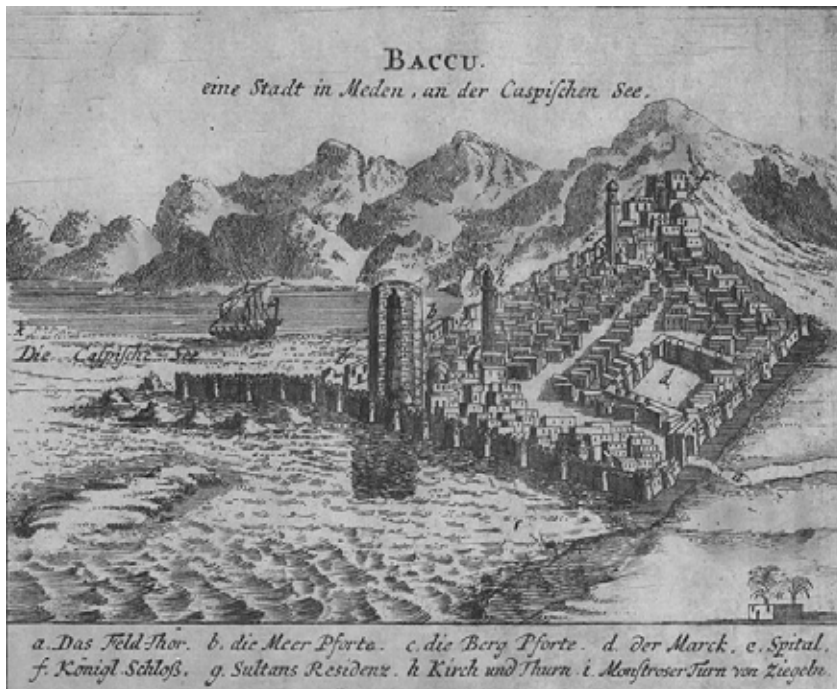


Fig 4.2 Baku before the oil boom in 1734 A.D.



Fig 4.3 Mansion of an oil baron in Baku in 1891.

## Oil and Architecture in Azerbaijan

Baku was a typical small medieval port on the Caspian Sea with only 7,000 inhabitants before the oil boom in the 19th century, which triggered the first construction explosion in the city. At that time, Baku did not play a significant role in the region compared to other important cities in the area, such as Tabriz,

Tbilisi, and Istanbul. However, after the occupation of Azerbaijan by Tsarist Russian forces, oil extraction increased substantially, which led to the construction of hundreds of spectacular new buildings by the oil barons of the time. A multitude of different buildings with different styles, such as neo-renaissance, neo-gothic, neo-baroque, and the pseudo-eastern style called “Moorish”—which uses elements

of the national architecture—were built in that era.<sup>1</sup>

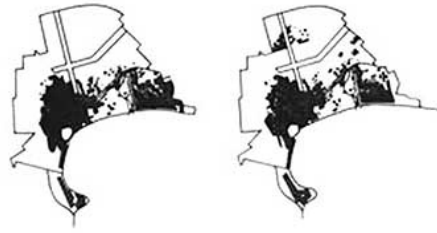
By the second half of the 19th century, Baku became a fully developed, sophisticated metropolitan center in the Caucasus. As a result of properly executed urban strategies, many parks; boulevards; buildings such as schools, hospitals, opera houses, and theaters; gov-



Beginning of Russian Period, 1806-1822



First Wave of Expansion, 1854-1878



Just after Oil Boom, 1898-1918



Just before Soviet Period, 1918

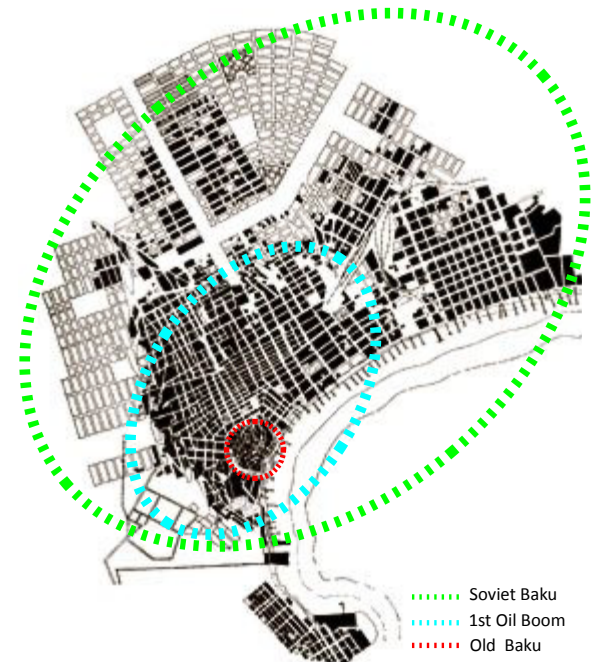


Fig 4.4 Urban development in Baku from 1806 to 2000

ernment buildings; mosques; and cathedrals were built, along with a safe water supply, sewers, and public transportation and railway systems. In the north of the city, industrial buildings, refineries, exploration facilities, a related manufacturing and transportation system, and housing for oil workers were built by the petroleum companies; this became the industrial district known as “Black City” (Gara

Shahar).<sup>2</sup>

The construction boom ended when the Bolsheviks overthrew the Democratic Republic of Azerbaijan in April of 1920. Private ownership and entrepreneurship were abolished and a completely new political, economic, and social atmosphere was introduced; these dramatic changes extended to the region’s archi-

tecture. All extravagant residences and personal belongings of the oil barons were confiscated and the grandiose buildings were partitioned into apartments and assigned to numerous families. The glory of the past was reduced to “communal dwellings.”<sup>3</sup>

During the “Decade of Transition”—the years between 1920 and 1930—many avant-garde



Fig 4.5 Next to the Maiden Tower stands the palatial former residence of oil baron Issa-bey Hajinski.



Fig 4.6 House of Government in Baku, also known as Baku Soviet Palace, was built in 1936 - 1952.

Soviet rationalists were in search of a New Soviet Man—in contrast to Le Corbusier’s modern man—and a socialist society to implement that ideal in the new Soviet republics. City planning was organized by Moscow and each city was assigned a master plan to be executed by urban planners and architects; these individuals and plans were highly influenced by architects such as Le Corbusier and

Moises Ginsburg. During this period, known as the Stalinist period, many solid, good-quality, large-scale public buildings and essential infrastructure projects were undertaken.<sup>4</sup>

From the 1950s through the 1980s, there was a special emphasis on creating the ideal communist city. Micro-regions (akin to suburbia), satellite cities, mass large-scale housing proj-

ects, wide avenues, standardization of building design and construction methods, and the introduction of prefabricated construction elements were characteristics of this period, although the projects stemming from the so-called Khrushchev and Brezhnev periods were often poorly done.<sup>5</sup>

As economy took a turn for the worse from





Fig 4.7 Palace of the Press, 1932, Baku, Azerbaijan.



Fig 4.8 Sabir Garden, 1963, Baku, Azerbaijan.

the late 1980s until the collapse of the Soviet Union in late 1991, all new projects came to a halt; even maintaining the city's existing buildings and aging infrastructure was no longer possible. After signing the "Contract of the Century" in 1994, however, a new era of development in Azerbaijan began, reminiscent of the first construction boom in Baku. So far, the second construction boom has been so

rapid that legislation—such as municipal ordinances like city zoning and building codes, and decrees issued by other appropriate governing bodies—has not been able to keep pace with construction. This has created a chaotic urban situation in many cities, and particularly in the capital of Baku, which is the epicenter of Azerbaijani construction and development.<sup>6</sup>



Fig 4.9 Flame Towers, 2011, Baku, Azerbaijan.

One of the first things any visitor to the city of Baku, Azerbaijan notices is the diversity of the culture and architecture. The urban developments of Baku before its independence can be explained in three horizontal rings: 1st ring the medieval Baku, 2nd ring the European section, which is no more than 5 km wide, and finally the 3rd ring, the Soviet urban plan (see Fig 4.4). However, unlike the previous urban developments that were horizontally stretched, the most recent urban development is vertical. Almost all the high-rise buildings in Baku, with but a few, have been built in the past 10-2 years. At the beginning of the second construction boom in Baku the majority of buildings were sub-standard and of low quality with bad design and finishes, but in the past 5-6 years more signature buildings, designed by famous architects such as Zaha Hadid, have taken all over the skyline of the city. Explaining different architecture styles and urban developments of the present, Soviet, and past Soviet helps readers to apprehend and appreciate the proposition envisioned by this thesis to create an alternate future for Baku.

## Part II: Bibi- Heybat

“ If oil is Queen, then Baku is her throne.”

- Winston Churchill

The traditional view of the oil industry in North America is that it started in the USA in 1859; however, the truth is that the first modern well was drilled in 1846 at Bibi-Heybat to a depth of 21 meters. Bibi-Heybat is located at the southeast fringe of Baku, Azerbaijan. Oil has been part of people’s lives for millennia in Azerbaijan.



Fig 4.10 Bibi- Heybat, Baku, Azerbaijan

## Early Extraction

The oil seeps at Baku have been known for millennia. Herodotus wrote that the Zoroastrians used oil (naphtha or nephtoi) in their temples, Ateshgah, around the 6th century BCE. Old Albanian writings suggest the presence of oil extraction operations on the Apsheron peninsula around the 7th century CE. Arabian scientists, including Abu-Istakhri (8th century), Ahmed Balazuri (9th century), Masudi (10th century), Abu-Dulaf, and Mohammed Bekran, pointed out early oil well extractions occurring from the 8th to the 13th century CE, again on the Apsheron peninsula. Masudi mentioned in his book, *Book of the Middle*, that "... In Baku there were two main sources: yellow and white... and black and dark blue oil, which were extracted. Incomes from each source made 1000 dirhams, that is, about 250 rubles a year".. <sup>7</sup>

Along with ancient chroniclers and Arabian scientists, well-known western historians and travelers such as Prisk of Pontus (5th century), Marco Polo (13th-14th centuries), and



Fig 4.11 The Baku Atashgah or Fire Temple in a suburb of Baku, Azerbaijan

O'Learius (17th century) have reported oil extractions on the Apsheron peninsula. According to Marco Polo, the Apsheron peninsula was dotted with oil wells, and the oil extracted was used for illumination and for healing purposes. <sup>8</sup>

Digging oil wells, using a method similar to digging water wells, became a lucrative busi-

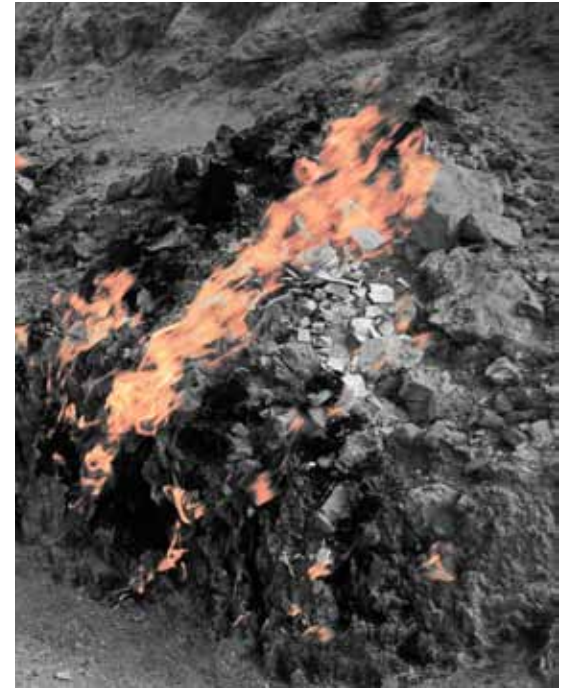


Fig 4.12 Yanar Dag or Fire Mountain, near Baku, Azerbaijan

ness for villagers on the peninsula. Based on historical documents, there were 120 oil wells with an average depth of two to three meters on the Apsheron peninsula. After extraction, the oil was stored in stone-lined holes and later delivered to warehouses. In 1870, there were 14 such warehouses in Baku alone. <sup>9</sup>



Fig 4.13 Hand-dug wells in Bibi-Heybat



Fig 4.14 Baku oil industry in 1890



Fig 4.15 Old oil wells in Bibi-Heybat

## Commercial Development

The first modern well at Bibi-Heybat was drilled in 1846, and the most productive oil well in those early days could provide around 10 barrels per day (bpd); however, by 1871, most oil wells produced 50 bpd. In the 1870s, dramatic changes in oil development technologies resulted in widespread oil-well drilling in

Azerbaijan; consequently, there were approximately 3,500 wells around Baku by 1913. At that time, the old legislation governing the relationship between the mineral-rights owners of the oil deposits (at that time, the Russian government) and the actual oil producers was abolished and new legislation was proposed, which allowed exploration on both private and public land with the permission of the

land owner.<sup>10</sup>

## Oil Boom

New economic conditions, springing up in the wake of expanded oil exploration and extraction, led to the development of the infrastructure of Azerbaijan's industrial, cultural, and educational systems. The launch of the target-



Fig 4.16 The Nobel Brothers' (Robert and Ludvig) Petroleum Company in Baku (1880 to 1920)



Fig 4.17 The Nobel Brothers' oil wells

ed exploration and development of the largest deposits then known in the world—with a volume of 500 million tons of oil in the 1870s—brought many businessmen to Azerbaijan's major oil fields, including Ramani, Sabunchi, Balakhani, and Bibi-Heybat; this exploration boom produced 6.2 million tons of oil in just 12 years.<sup>11</sup>

It was during the oil boom that Robert Nobel, the eldest brother in the Nobel family, visited Apsheron for the first time. Later on in 1875, the Nobel brothers (Ludvig, Robert, and Alfred, of Nobel Prize fame) started their activities in Azerbaijan's oil industry. By the end of the 1870s, Azerbaijan had become one of the world's major financial centres, and by the turn of the century, Azerbaijan accounted for

half of the world's oil production. There were three major oil companies that controlled oil fields in Azerbaijan: Shell, the Oil Production Society of the Nobel Brothers, and the Russian General Oil Society.<sup>12</sup>

### The Soviet Period

After the Russian Revolution in 1917, the Bol-





Fig 4.18 Baku during the oil boom

sheviks declared a Marxist republic in Azerbaijan and seized control of the oil industry; they promptly nationalized 165 independent oil companies. In 1918, after the declaration of the independent Azerbaijani Republic (which lasted from 1918-1920), the government of Azerbaijan denationalized the oil industry and returned the enterprises to their owners; however, after the invasion of Azerbaijan by

the Russian Red Army in 1920, the oil industry was nationalized again.<sup>13</sup>

In the 1920s, oil extraction steadily grew, the immense project of filling up Bibi-Heybat Bay was finished (1927), and Azerbaijan became a major scientific centre for oil science and technology. Azerbaijan's oil became the wellspring of massive post-World War I industrialization

of the Soviet Union.<sup>14</sup>

During World War II, Soviet forces destroyed Azerbaijan's oil industry to make sure it would not be seized by Hitler. It was, in fact, a critical resource: from 1941 to 1945, Azerbaijan produced 63.2 percent of the oil in the USSR, and energy independence was a key factor in securing victory over the Germans. After the

war, Moscow rebuilt the oil industry to increase its production capacity; this resulted in a steady increase in oil production from 1947 to 1968. Nonetheless, due to exploiting and exhausting the onshore fields in Azerbaijan, there was a gradual decrease in production from 1969 to 1985.<sup>15</sup>

## A New Oil Era

Political and economic factors contributed to a weakening of ties between the Soviet republics and Moscow in the 1990s, which changed the course of the oil industry. After the country gained independence in 1991, Azerbaijan's oil industry charted a new course for itself. Eliminating even semantic ties to its predecessor, it changed its name from that used by the USSR to become the State Oil Company of the Azerbaijani Republic (SOCAR). Soon after, it made an even greater change by transforming into a Western-style share-based organization. The oil company's structure and labour system were reorganized to increase oil production volume and the company's efficiency. On 20 September 1994, SOCAR and the West-

ern Oil Consortium signed a contract to develop Azerbaijan's oil fields, which became famous as the "Contract of the Century" according to the press. Today, SOCAR has 6,800 onshore and 1,400 offshore wells in operation; together, they produce 22 million tons of crude oil per year. Furthermore, on 10 November 1995, the Azerbaijani government signed a new oil contract relating to the Karabakh oil field, which is located under Azerbaijan's Caspian shelf and bears an estimated 80 to 120 million tons of oil. This is not Azerbaijan's only current reserve; in addition to the Karabakh oil field, the Shah-Deniz oil field is also located on the Caspian shelf, and holds an estimated 500 billion cubic metres of natural gas, 200 million tons of gas condensate, and 100 million tons of oil.<sup>16</sup>

Since the creation of the "Contract of the Century" and the signing of the deals on the Karabakh oil field and Shah-Deniz gas field, many international concerns have invested in the oil and gas sector. From 1996 to 2010, Azerbaijan collected \$60 billion in foreign investment in its oil and gas sector; by 2024, oil and gas rev-

enues are expected to reach \$200 billion.<sup>17</sup>

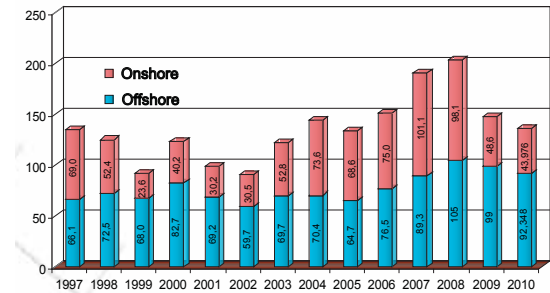


Chart 4.01 SOCAR onshore and off shore drilling (meters)

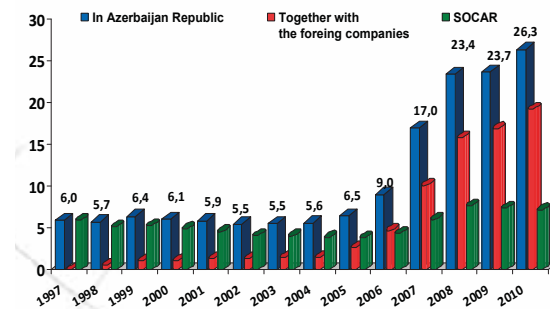


Chart 4.02 Oil production in Azerbaijan (min. ton)

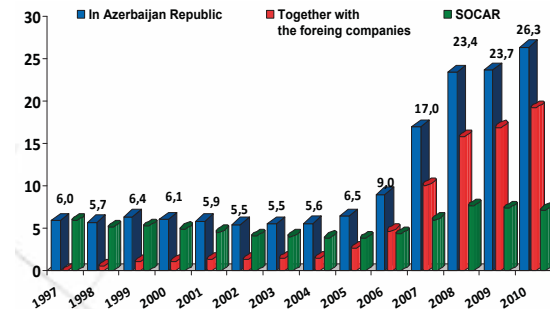


Chart 4.03 Gas production in Azerbaijan (billion m<sup>3</sup>)





Fig 4.19 Hands of workers on drilling well's pipes



Fig 4.20 Worker on drilling derricks and rigs



Fig 4.21 Reflection of blue-collar workers while praying



Fig 4.22 School children in front of the deserted facility



Fig 4.23 Fisherman with his nets in Bibi-Heybat

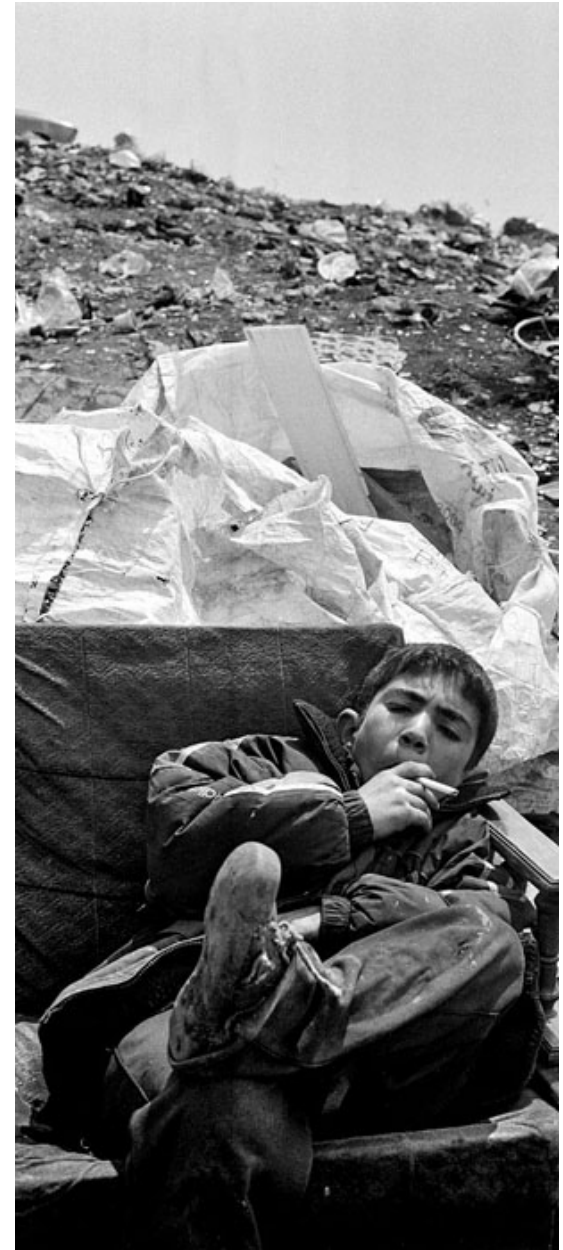


Fig 4.24 Twelve year old scavenger smoking a cigarette on the dump side in Bibi-Heybat, 2006



Fig 4.25 A man walks on the concrete road. A huge poster shows the current President of Azerbaijan, Ilham Aliyev (right) and his deceased father Heydar Aliyev

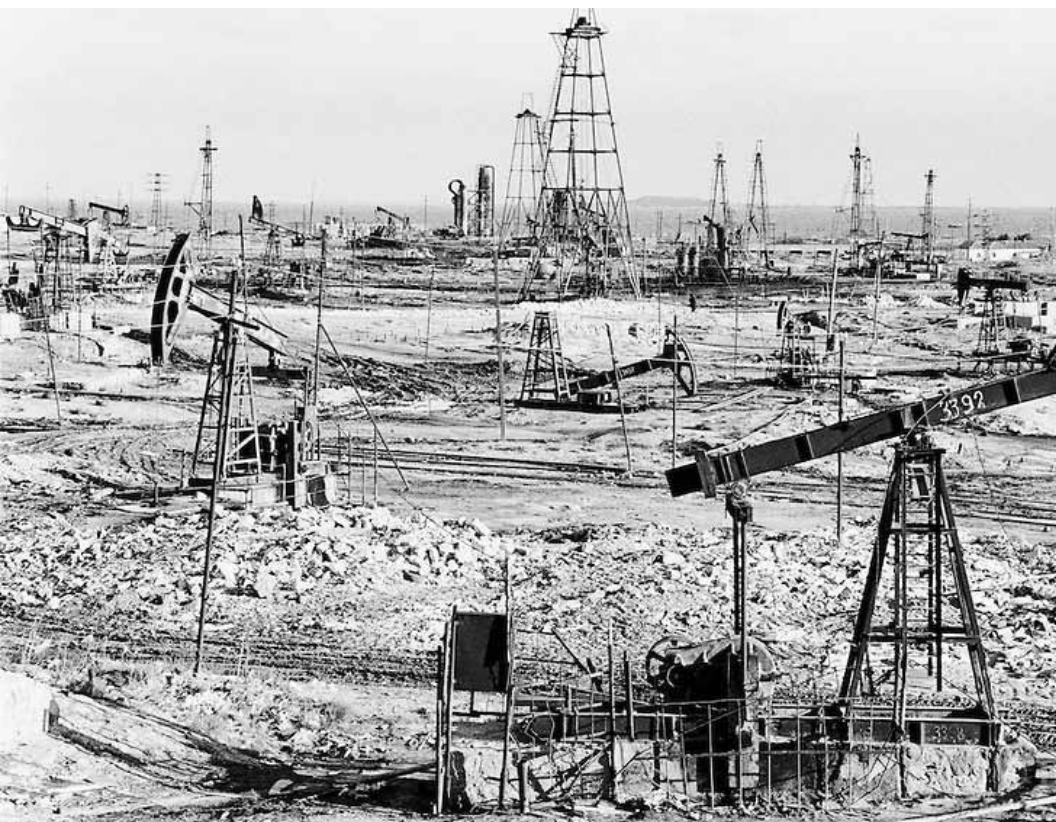


Fig 4.26 Neglected oil-extracting infrastructure



Fig 4.27 Spill and oil leakage in Bibi-Heybat



Fig 4.28 Dreary view of Caspian Sea



### Part III: Demographics

“ Look at the color of my face, bespeak how I am doing!”

- Azerbaijani proverb



Fig 4.29 Nizami Avenue. Baku, Azerbaijan.



Fig 4.30 Upscale Le Mirage night club. Baku, Azerbaijan. 2005



Fig 4.31 Ordinary people. Baku, Azerbaijan. 2011



Fig 4.32 Woman expecting a child in a refugee settlement in the unfinished emergency hospital building. Baku, Azerbaijan. 2010

## Population, Demographics, and Culture

In 2010, the population of Azerbaijan reached 9 million. Urban areas are particularly booming: the population growth rate in urban areas since 2003 is 2.9 percent, in contrast to 0.7 percent in rural areas. Baku is the most populated city in Azerbaijan, with approximately

2 million citizens, of whom 183,644 are internally displaced persons (IDP) and 93,400 are refugees. Due to a high infant mortality rate, there has been a decline in the percentage of the population consisting of children under 15 years old. The majority of the population (90.6 percent) in Azerbaijan is ethnically Azerbaijani; the remainder consists of small ethnic divisions such as Russian (1.8 percent), Arme-

nian (1.5 percent), lezgin (2.2 percent), and others (3.9 percent).<sup>18</sup>

Azerbaijan is a secular state that takes pains to ensure religious freedom. Most Azerbaijanis practice various forms of Islam, while about 4 percent of the population identifies as Christian (mainly hewing to the Russian Orthodox Church, Georgian Orthodox Church, and Mol-

lokans) or Jewish (mainly represented by Ashkenazim Jews, the Mountain Jews, and the Georgian Jews).<sup>19</sup>

A high percentage of Azerbaijanis have completed some form of higher education, especially in scientific and technical subjects. Baku is known as the country's centre of education because of its public universities (such as Azerbaijan Medical University, Azerbaijan State Economic University, Azerbaijan State Oil Academy, Azerbaijan Technical University, Azerbaijan University of Languages, Azerbaijan Architecture and Construction University, Baku Academy of Music, Baku Slavic University, and Baku State University), vocational schools, and private educational institutions. Many famous figures, such as Kerim Kerimov, head of the Soviet space program head; Lev Landau, winner of the 1962 Nobel Prize in physics; Lotfi Zadeh, who defined fuzzy logic; philosopher Max Black; cellist Mstislav Rostropovich; and world champion chess Grandmaster Garri Kasparov have been educated in Baku's public universities.<sup>20</sup>



Fig 4.33 Alim Qasimov is an Azerbaijani musician who has received numerous international accolades for his work, including being awarded the International Music Council-UNESCO Music Prize in 1999. According to *The New York Times*, "Alim Qasimov is simply one of the greatest singers alive."

Despite a long and difficult path to independence, strewn with cultural clashes and ethnic cleansing attempts, national traditions are well preserved in Azerbaijan. Among the most important parts of Azerbaijani culture are music, literature, folk dances, cuisine, architecture, cinematography, and the observation of Novruz Bayram, the traditional celebration of the ancient New Year. Baku has more

theatres and museums than all other cities in Azerbaijan combined. Meanwhile, the Azerbaijan State Academic Opera and Ballet Theatre, State's Philharmonic Hall, and Azerbaijan State Museum of Art are well known in the region.<sup>21</sup>

Most Azerbaijanis are employed in the private sectors. Agriculture is the most active sector,

followed by wholesale and retail sales and education. These sectors account for more than 60 percent of employment in Azerbaijan. According to official data provided by the Azerbaijani government, the country was not only untouched by the global financial crisis, but it even saw an improvement in its unemployment rate. During the crisis, the Azerbaijani unemployment rate dropped to 5.5 percent, lower than the global unemployment rate of 6.1 percent. Most of these new jobs—a full 96.3 percent—were created in the non-state and non-oil sectors; 5.3 percent of new jobs were created in construction, along with 5.8 percent in trade and repair, 2.6 percent in the processing industry, and 1.7 percent in agriculture and other sectors.<sup>22</sup>

Adaptability is an indispensable trait in this ever changing world. Azerbaijanis had to learn, understand, and adapt to a great variety of situations in the last two centuries. They have experienced impositions of culture, diverse behaviors and changes in leadership. Azerbaijanis have been able to handle diversity more easily than other countries in the re-

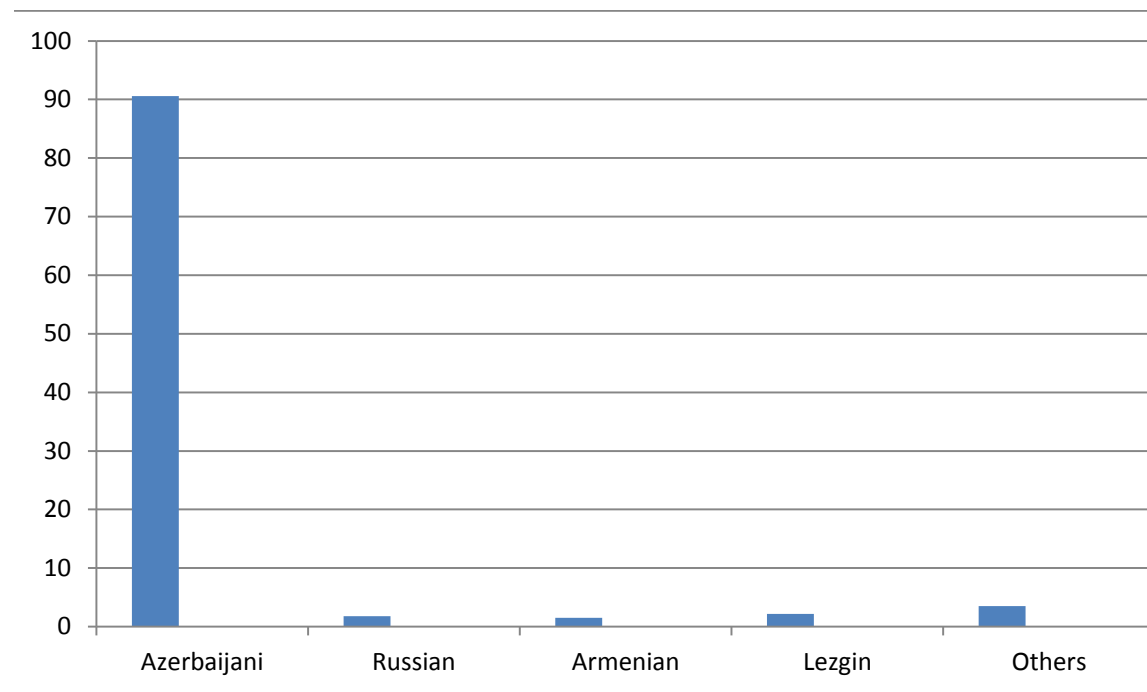


Chart 4.04 Ethnicity in Azerbaijan

gion. They have been protecting their culture and values since the Arab invasion in the 5th century CE up to the Armenian aggression in the 20th century CE. Since its independence Azerbaijan is still dealing with many issues and this thesis envisions people of Baku, especially the young generation initiating a step and step by step process leading to the full practice of their democratic rights through revitalization

of Bibi-Heybat urban park.





Fig 4.34 Fargana Qasimova, Alim Qasimov's daughter and student, is an accomplished mugham singer (a traditional improvisational style of Azerbaijan). She studied mugham at the Azerbaijan National Conservatory (1996-2000).



Fig 4.35 Aziza Mustafa Zadeh, also known in Europe as "The Princess of Jazz", or "Die Prinzessin des Jazz" or as "Jazziza", is an Azerbaijani singer, pianist and composer who plays a fusion of jazz and mugham (a traditional improvisational style of Azerbaijan) with classical and Avant-garde influences.



Fig 4.36 Azerbaijani traditional dance, Azerbaijan state dance ensemble

## Part IV: Current Problems

“Wise enemy is better than a foolish friend.”

- Azerbaijani proverb

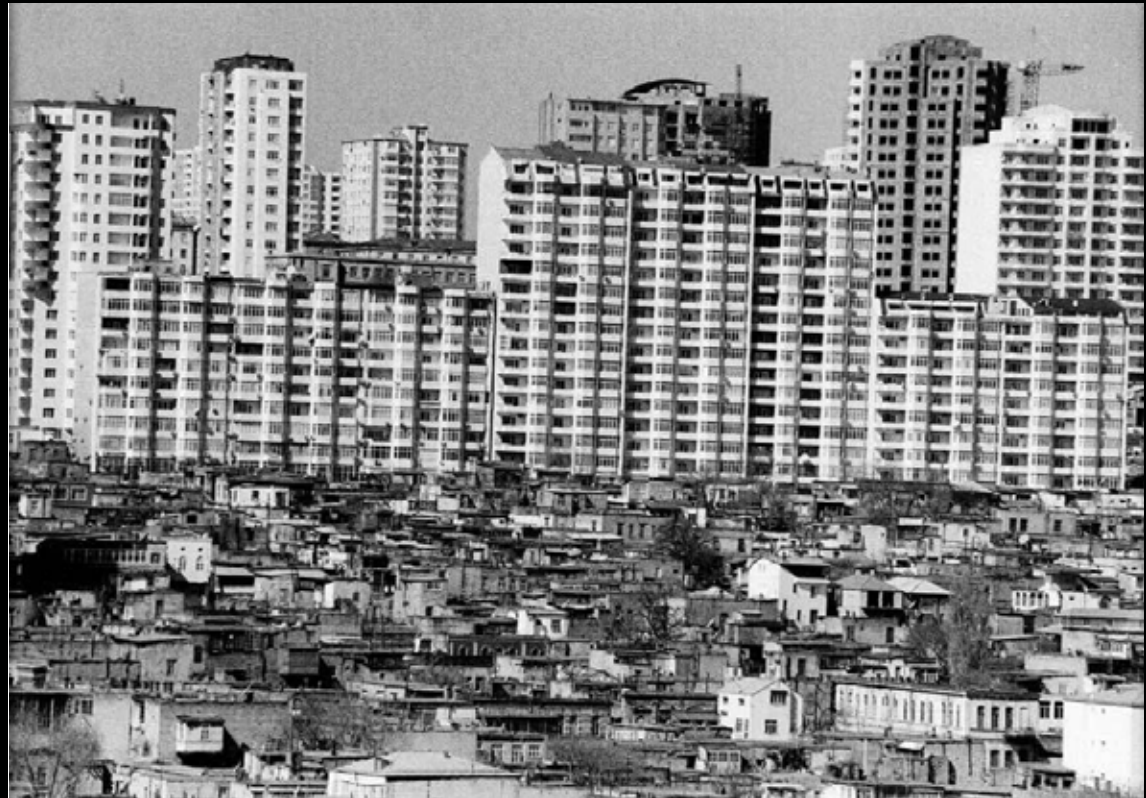


Fig 4.37 Construction boom in Baku, Azerbaijan.



Fig 4.38 Air pollution in Baku. View of Bibi-Heybat, the flag square, and Baku from Bibi-Heybat Mosque.

## Current Issues

During my visit to Baku in November 2011 while attending IDEA Conference (International Dialogue for Environmental Action, Nov. 25-27, 2011), I noticed a few issues such as environmental, urban, and social problems that seemed not to bother anyone else, although they were quite obvious to me. It took some

time for me to get the opportunity to inquire further, and when I had finally the chance to ask some questions, most people acted as though they didn't hear me, or changed the subject as quickly as they could. I decided to investigate the matter further, and soon realized that most people in Baku are, in fact, aware of the problems I had noticed, but did not feel comfortable talking to me about them

without knowing my motives. Ordinary people were afraid to talk because they were suspicious of me reporting on them to the government, while government officials were uncooperative because they did not know what I might do with the requested information—in fact, they seemed afraid that I was some sort of spy or muckraker, preparing to let the world know about all their secrets.



Fig 4.39 Bibi-Heybat. Baku, Azerbaijan.

After three days, I lost my voice due to the local air pollution. Far from putting a damper on my trip, however, this gave me an opportunity to walk around the city and visit Bibi-Heybat, and to observe how people interact in Baku. I started my walk from Baku's famous cornice, known as "Sahil," making it as far as a dead-end construction zone for Baku Crystal Hall.<sup>23</sup>

Unable to find a way to bypass the construction zones, I took a cab to get to Bibi-Heybat. There, I began to understand the true depths of the miscommunication over my interest in Azerbaijani affairs. After 10 minutes in Bibi-Heybat, during which I walked around the site and took pictures, I was arrested by SOCAR armed security personnel for unlawfully entering SOCAR's private land. When I asked if

they could show the no trespassing sign, I was forced to get in their car and was transported to their security headquarters. Thanks to my Canadian passport, I was let off lightly; my pictures were deleted and I was let go. Luckily, I had my zoom lens with me and I decided to go to Bibi-Heybat Mosque in order to take some pictures from there. After many days of walking around the city and talking to a few people



Fig 4.40 Nineteenth century oil gusher at Bibi-Heybat, Baku.

after gaining their trust, I realized that there are many pervasive sociocultural issues in the city, such as environmental problems, uneven distribution of wealth, and uncontrolled construction happening all over the city, that must be addressed for the good of the community and yet are being ignored for different reasons.



Fig 4.41 Kids playing in the polluted area in Baku.

Due to this lack of official willingness to address the issues present and the limited availability of unbiased resources about the ongoing issues in Azerbaijan, I have been forced to rely primarily on online journalistic resources, existing outside of mainstream publishing and writing, in assembling the following section. However, I am confident that these resources accurately reflect popular opinion among



Fig 4.42 Bibi-Heybat, Baku, Azerbaijan.

Baku residents.

### **Oil: Blessing or Curse?**

At one time, many people in Azerbaijan considered oil to be a sacred elixir with numerous healing properties. However, in these modern times, oil has mostly benefited the super-rich elite, those who controlled the production





**Land degradation**

- Soil degradation and erosion: pollution due to pesticides and/or heavy metals. Salinisation due to poorly maintained irrigation system and rise of water table
- Area affected by deforestation
- Pasture degraded by overgrazing
- Summer pasture
- Winter pasture

**Pollution due to oil production and industrial activities**

- Soils contaminated by pollution from oil production
- Obsolete Soviet drilling platforms threatened by Caspian Sea level rise.
- Dispersed oil pollution
- Large ageing Soviet industrial complex still generating pollution (mines, chemical and cement factories, thermal and metallurgical plants). Significant heavy metal contamination (soil and water).

**Water issues**

- Transboundary polluted waters
- Caspian Sea level rise
- Coastline already submerged (destruction of certain infrastructure)
- Coastline at risk of flooding
- Drinking water canal
- Tension between Russian Federation and Azerbaijan due to diversion of water from Samur River
- Decaying Soviet irrigation infrastructure damaging soil

**Transportation and communication**

- TRACECA (Transport Corridor Europe Caucasus Asia): Renovated or new multimodal transportation corridor (road, railroad, pipeline) and BTC (Baku-Tbilisi-Ceyhan): main oil pipeline route



- Sampling areas
- DDT concentration above ERL (1,600 pg/g)
- Lindane concentration above ERL (300 pg/g)
- Nickel concentration above ERL (21 µg/g)
- Chromium concentration above ERL (81 µg/g)

Note: Maximum nickel concentration in analyses has reached 63 µg/g. Note: Maximum chromium concentration in analyses has reached 126 µg/g.

Fig 4.43 (Left) Pollution in Azerbaijan.

Fig 4.44 (above) Pesticides and heavy metals in sediments.

and distribution systems and who, therefore, reaped the fortune these industries created. Problems of the sort generated by the discovery of oil are extremely complex, which makes it difficult to recognize, describe, or solve them. As a result of the situation's complex interdependencies, the effort to solve one aspect of a complex problem may often reveal or create other problems. Nowhere is

this more true than in attempting to reshape the fabric of the country's capital. During the recent construction boom, Azerbaijan, and especially Baku, have been faced with a major dilemma in which environmental and social issues are playing a major role.

**Environmental Problems**

Pollution is not a new problem in Azerbaijan. In fact, the contamination of the Caspian Sea from oil extraction in Baku started before the invasion of Azerbaijan by Tsarist Russia in the 19th century. Increasing the tempo of both resource exploitation and environmental decline, Russian imperial authorities rapidly auctioned off parcels of oil-rich land around Baku to private investors looking to engage in large-scale oil development. Soon after, levels of environmental contamination increased substantially.<sup>24</sup>

In his book, *Baku: An Eventful History*, J. D. Henry writes about an incident in Bibi-Heybat:

*Bibi-Heybat Oilfield*  
September 27, 1896

*“The next oil bed was struck at 714 feet when the oil began to spout with a record amount of power, driving upwards to a height of 224 feet. It gave a production at the rate of 30,000 poods per hour. (a pood is a Russian unit of weight equal to 36.11 pounds).*



Fig 4.45 Bibi-Heybat, Baku, Azerbaijan.

*“The Bakinskiya Izvestiya (a Baku newspaper) describes the scene: ‘From the town the fountain had the appearance of a colossal pillar of smoke, from the crest of which clouds of oil and sand detached themselves and floated away at a great distance without touching the ground. Owing to the prevalence of southerly winds, the oil was blown in the direction of Bailov Point, covering hill and dale with sand and oil, and drenching the houses of Bailove,*

*a mile and a half away.*

*“Nothing could be done to stop the outflow. The whole district of Bibi-Heybat was covered with oil, which filled up the cavities, formed a lake, and on the fifth day began pouring into the sea. The outflow during three days was estimated at 5,000 or 6,000 tons daily. On the sixth day the wind freshened, and the oil spray began flying all over the*



town. The square in front of the Town Hall of Baku was drenched with petroleum, which even fell on houses on the outskirts to the north.

*“The loss was prodigious. On the eighth day, the maximum was reached, the oil then spouting at the rate of 700,000 poods per day. To prevent the oil being totally lost, attempts were made to divert the stream away from the sea into some old wells.*

*“After the tenth day, it began to diminish, and by the fifteenth day, the engineers had it so far under control that the outflow was only 60,000 poods per day. Altogether, close to 12,000,000 poods are estimated to have come to the surface and most of this was lost for want of storage accommodation. The oil simply poured into the Caspian Sea and was lost forever to mankind.”*

*Henry, J. D. (1905)* <sup>25</sup>

From this poor beginning, the environmental situation became devastating during the Soviet period due to the Soviets' absolute disregard for environmental issues. Untreated sewage, mercury-contaminated sludge, and petroleum waste were routinely dumped into

the Caspian Sea during this time. Moreover, the Soviets used dangerously high concentrations of pesticides and fertilizers to boost Azerbaijan's agricultural output. Making matters even worse, emissions from petroleum and chemical industry activities caused severe air pollution in the major cities, which severely impacted the health of many Azerbaijanis. The consequences of such actions became apparent in the late 1980s when the high infant mortality rate and high rates of infectious diseases and cancer were linked to the chemicals used in growing cotton. Furthermore, a portion of Azerbaijan's drinking water supply—which is situated in neighbouring countries—is exposed to chemicals, radioactive materials, and other harmful substances. <sup>26</sup>

Unfortunately, even after Azerbaijan gained its independence, the energy sector was managed the same way as under Russian rule. This changed significantly with the signing of the “Contract of the Century.” As part of the arrangement, the Westerner investors provided SOCAR (the Azerbaijani state oil company)

with modern equipment that was more environmentally friendly than the old Soviet equipment; nonetheless, the old equipment remained in use and continue to leak. It goes without saying that a cleanup and remediation of this size has not been undertaken anywhere. As part of the cleanup plans, in 2006, the World Bank reached an agreement with the Azerbaijani president and other officials that would potentially offer a loan of \$50 million dollars earmarked for building capacity and performing an initial cleanup; the funds would be supplemented by money from the Azerbaijani government. Sadly, this operation is allegedly grossly mismanaged—at best, truckloads of earth are being tipped onto the contaminated ground at the edges of the oil-soaked areas and are being bulldozed over the spilled oil; this is clearly not a proper remediation technique. <sup>27</sup>

According to Mercer Human Resource Consulting's 2007 Worldwide Quality of Living Survey, the capital of Azerbaijan, Baku, was the world's lowest-ranking city for health and sanitation. By 2010, Baku had pulled itself up



Fig 4.46 Current Azerbaijani President Ilham Aliyev and his wife, Mehriban Aliyeva.



Fig 4.47 A girl who lives in a cardboard home in an unfinished emergency hospital building that has housed refugees since 1993. Baku, Azerbaijan, 2010.

by four index points; its place at the bottom was taken by storm-devastated Port-au-Prince in Haiti.<sup>28</sup>

In addition to oil spills and slicks, other environmental pollution, the degradation of agricultural soils, irrational use of natural resources, and a lack of proper recycling for industrial and household wastes are sources of serious

problems which have a negative impact on the public health and prosperity Azerbaijan.<sup>29</sup>

### **Social Problems**

The wealth from Azerbaijan's oil industry has barely contributed to the overall prosperity of the country or its people; generally, this oil wealth has profited only the small group of

people who control the means of production. Both local and foreign oil barons benefited from this money during the first oil boom, and in recent years, a new Azerbaijani elite has taken control of the wealth generated by the country's oil reserves.

Azerbaijani President Ilham Aliyev stated that the BTC pipeline<sup>30</sup> will generate roughly USD



Fig 4.48 Tsunami of government-founded construction in Baku.

\$140 billion in revenue over a 20-year period, while other government officials have promised that a fair share of the profits will be devoted to raising living standards in the country.<sup>31</sup> In 2005, a report by the IMF noted that about 45 percent of the Azerbaijani population lives below the country's poverty line, although the state brought in about USD \$2 billion in revenue during that same year.

This was an obvious sign to many observers outside the Azerbaijani government that the country's ruling elite has no inclination towards sharing Azerbaijan's oil wealth.

In Azerbaijan, the Oil Fund is accountable only to the president, who appoints its head and advisory council. Since 2002, Azerbaijan has joined an international anti-corruption effort

called the Extractive Industries Transparency Initiative which requires oil companies to publicly report payments to the Oil Fund; however, how the funds are spent and utilized cannot be monitored.<sup>32</sup>

### **Construction Problems**

The second construction boom in Baku start-



Fig 4.49 Heydar Aliyev Cultural Centre by Zaha Hadid, Baku. Opened May 12, 2012. This building is publicly funded (similar to most projects in Azerbaijan); however, it is not accessible to the public. It is used by selected people during special occasions. For example, I was not allowed to enter Hayder Aliyev Foundation (another “public” building) since I did not know anyone in the building!

ed after the signing of the “Contract of the Century” and developed so fast that the legislature—with a series of laws inherited from the Soviets—could not keep pace; especially in terms of municipal ordinances such as city zoning and building codes/regulations, and the establishment of various architectural commissions and other appropriate governing bodies. These fast construction developments took place as a reaction to the establishment of the Western oil companies in Baku, which

at that time did not look like a business-oriented city. Therefore, there was an urgent need to upgrade Baku’s old strategic service industries, including telecommunications, transportation, banking, insurance, and hotels.<sup>33</sup>

Since the most recent Master Plan for Baku was proposed in 1984, the city’s second construction boom rapidly became anarchic—there was no comprehensive strategy for urban planning or design. Between 2000 and

2005, more than 500 high-rise towers were erected, to say nothing of the thousands of new low-rise apartment buildings, which led to the establishment of an incredibly high population density in the center of the city. Most of the construction projects have been executed by government officials and nouveau riche developers in a haphazard, chaotic way rather than in a planned, deliberate, systematic, and scientific fashion. As a result, the recent trend for architectural megalomania

—possibly as a demonstration of financial power to the outside world and political authority to Azerbaijanis—and a tsunami of government-sponsored construction are dramatically transforming the urban face of Baku.<sup>34</sup>

The increased cost of living in the centre of Baku has pushed many low income families, including vast numbers of IDPs (Baku has the largest IDP population in Azerbaijan) to the edge of the city, where housing prices are more affordable. Outside Baku, there are signs of widespread unemployment and poverty; residents have to deal with old equipment, a lack of services, and the sudden interruption of utilities (water, gas, or electricity). Sadly, this is the norm rather than the exception.<sup>35</sup>

A Baku taxi driver calling himself Farhad commented: “The rich rule society and that means we don’t have access to the same parts of the city as they do. They drive the four-by-four cars and have access to big social events. We don’t.”<sup>36</sup>

Beautification of Baku during the new con-

struction boom is aimed to improve Azerbaijan’s image abroad which is a fair intention by the government. Internally though the projects beg the question, who is served by these projects if the new buildings do not serve the majority of the population one might further ask how the leadership of the country plans to deal with their needs and answer the questions that are vital to their well-being? No one is presently questioning the sustainability of the new constructions which are constantly changing Baku’s landscape erasing the old charm and beauty of Baku replacing it with new buildings. The vision is to transform Baku into a glamorous metropolis in the region; a city of wealth and stature with luxury cars, boutiques, and pricey real estate. It is quite clear that architects do not work for the 99% but only for the wealthiest and most powerful people in Azerbaijan; the question this thesis is trying to ask and answer is what if architects design for the 99%? While the country’s leadership indulges itself in these copious ideas, majority of people believe it is time for a real change and a need to re-evaluate the urban and architectural values

of current developments and adopt a more balanced and sustainable urban design strategies.



Fig 4.50 Government House (formerly Baku Soviet Palace) located in Azadliq(Freedom) square (formarly Lenin Square) in 1968, Baku.



Fig 4.51 Azadliq Square in 1993, Baku. Only a handful buildings were build in 25 years after official opening of the Government House.



Fig 4.52 Azadliq Square in 2005, Baku. The first wave of the construction boom. The Government House is no longer the most obvious building in Azadliq Square.



Fig 4.53 Azadliq Square in 2010 Baku. The Government House is lost amongst the surrounding tall buildings.

## New Luxury Construction Developments in Baku, Azerbaijan



Fig 4.54 Full Moon Rising complex by Heerim Architects



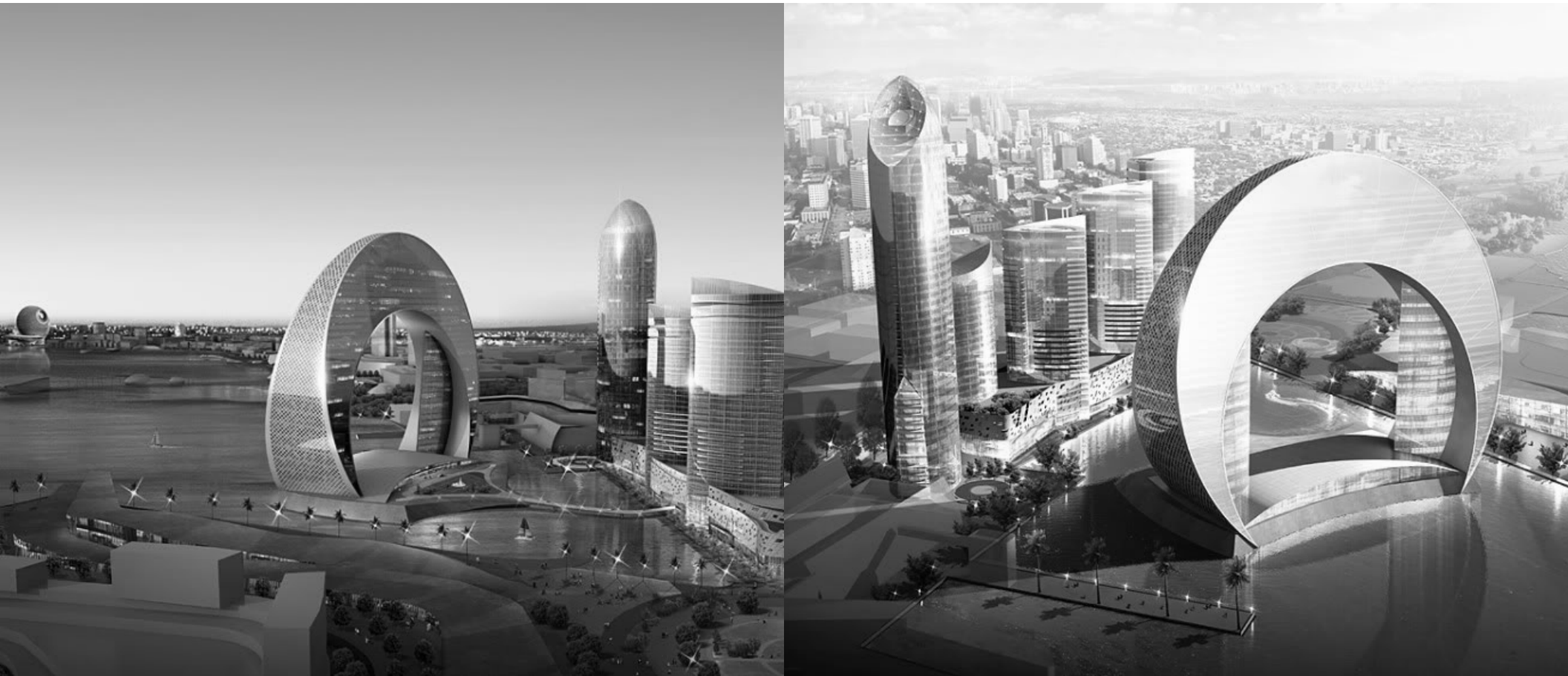


Fig 4.55 Crescent Tower by Heerim Architects



Fig 4.56 Azerbaijan Tower, intended to be the tallest building in the world at 1050m in Khazar Island



Fig 4.57 Sky Park by AZKOR - Under construction



Fig 4.58 Park Plaza by GS Engineering & Construction Ltd, On hold.



Fig 4.59 Zira Island Masterplan by Avrosti Holding



Fig 4.60 Crystal Hall of Baku, Azerbaijan by Architekten von Gerkan, Marg und Partner



Fig 4.61 Universiade Sports Center Shenzhen, China by Architekten von Gerkan, Marg und Partner





Fig 4.62 Azersu Tower by Heerim Architects & Planners Co. Ltd.  
Groundbreaking 2012, expected to complete in 2014, 20 Floors, Area 31860 m<sup>2</sup>



Fig 4.63 Black City Tower by Nicholas Bailey Architecture and Design  
280 Hectare urban redevelopment and retail/office towers



Fig 4.64 Central Bank Of Azerbaijan by Coop himmelblau Architecture  
Expected to complete in 2015, total area 359 m<sup>2</sup>



Fig 4.65 Trump Tower by ZQAN Construction  
33 storey tower, 130 m, mixed used, expected to complete in 2013



Fig 4.66 Waterfront Iconic Hotel by Atkins Global



Fig 4.67 SOCAR Tower by Heerim Architects & Planners Co. Ltd.  
42 floors, height 209m, cost USD \$235 million, Expected to complete in 2013



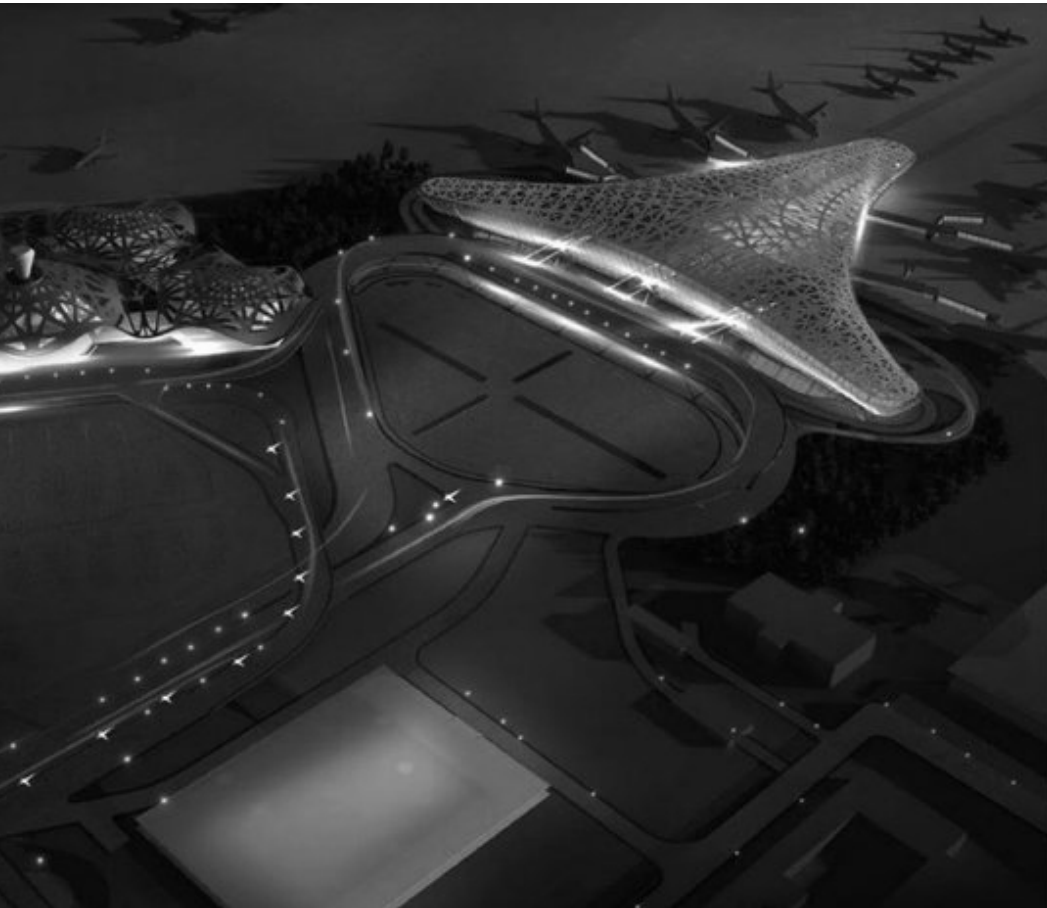


Fig 4.68 Hayder Aliyev International Airport by APM Ltd and Arup Group Ltd.  
Area 58,000 m<sup>2</sup>



Fig 4.69 Baku Port by Broadway Malyan and PASHA Construction LLC  
Area 375,000 m<sup>2</sup>, 3 Towers, 32 Floors each, High-end residential complex, Completed



Fig 4.70 POWERHOUSE & ENERGY Lounge Bar Club  
 by Developer/Contractor: PASHA Construction LLC.  
 Architects: Erginoglu & Calislar Architects  
 F&B Concept, Branding and Interior Designers: Blue Sky Hospitality



Fig 4.71 Aerial view of Power House and Energy Lounge Bar and Club Area: 7700 m<sup>2</sup>



Fig 4.72 The larger building (POWERHOUSE) has been designed to hold international events and musical performances with a capacity of 1500 people



Fig 4.73 The smaller building (ENERJI) is an entertainment destination with a seating capacity for 300 people over two floors with landscaped terraces over the Caspian.



Fig 4.74 POWERHOUSE & ENERGY Lounge Bar Club will be located at the end of Baku's famous corniche, a few minutes from the Government Flag Square and the Crystal Hall. At its opposite end, this site is adjacent to Bibi-Heybat



Fig 4.75 ENERJI BUILDING includes RED FIRE lounge bar with 150 seats on the ground floor and a terrace with 80 seats.





Fig 4.76 ENERJI BUILDING also includes BLACK DIAMOND Jazz & dining club, VIP lounge, whisky & champagne bar seats 90 people. Interior design is inspired by carbon and diamond, following the natural cycle of oil and energy in the earth's core.



Fig 4.77 POWERHOUSE BUILDING : Multipurpose event hall for 1500 people with several bars and a stage for live performance. The VIP lounge on the second floor offers 60 seats which directly connect to the Black Diamond club next door.

## Conclusion

One of the most democratic practices in which a society can engage is to have many public spaces forming an active public realm where cross-class and multicultural contact occurs. There is a huge demand for viable, accessible places in Baku where people may meet, relax, and mix. However, Baku's approach to public spaces leaves something to be desired. Since the latest construction boom has been handled by a small group of oil-rich elite, the public spaces they have sponsored and permitted are designed deliberately in a way to reduce the potential access of so-called undesirables; projects have been planned so that only one kind of person or class—often the new oligarchy or aristocracy—feels welcomed. The pattern of design and management in Baku today promotes exclusion instead of inclusion. Further, the number of urban public places is decreasing due to privatization, commercialization, and historic/cultural preservation efforts, which are harmful to democratic practices that depend on public spaces. Currently, the values and ideals of the common people

Fig 4.78 Construction boom in Baku 2011.







Fig 4.79 Poor neighborhoods are hidden behind stone walls and metal screens.

are being dismissed, since the local constituency has no political or economic power to challenge the ideals and values of the ruling group. Furthermore, the decisions being made reinforce the marginalization of the non-elite population. Various cultural and socio-economic factors aided or installed by the oligarchy have pushed more middle-class people to the edge of Baku, where basic services are obsolete, if they can be obtained at all. Moreover, the poor and IDPs have been shunted

out to satellite cities and shanty towns around Baku, where services simply do not exist.

The situation in the city centre has created more than a physical distance from the dirty parts of the city; a more powerful social distance has emerged that maintains the class bias. The divide is as clear-cut as the glass-and-metal skyline of booming Baku.<sup>37</sup>

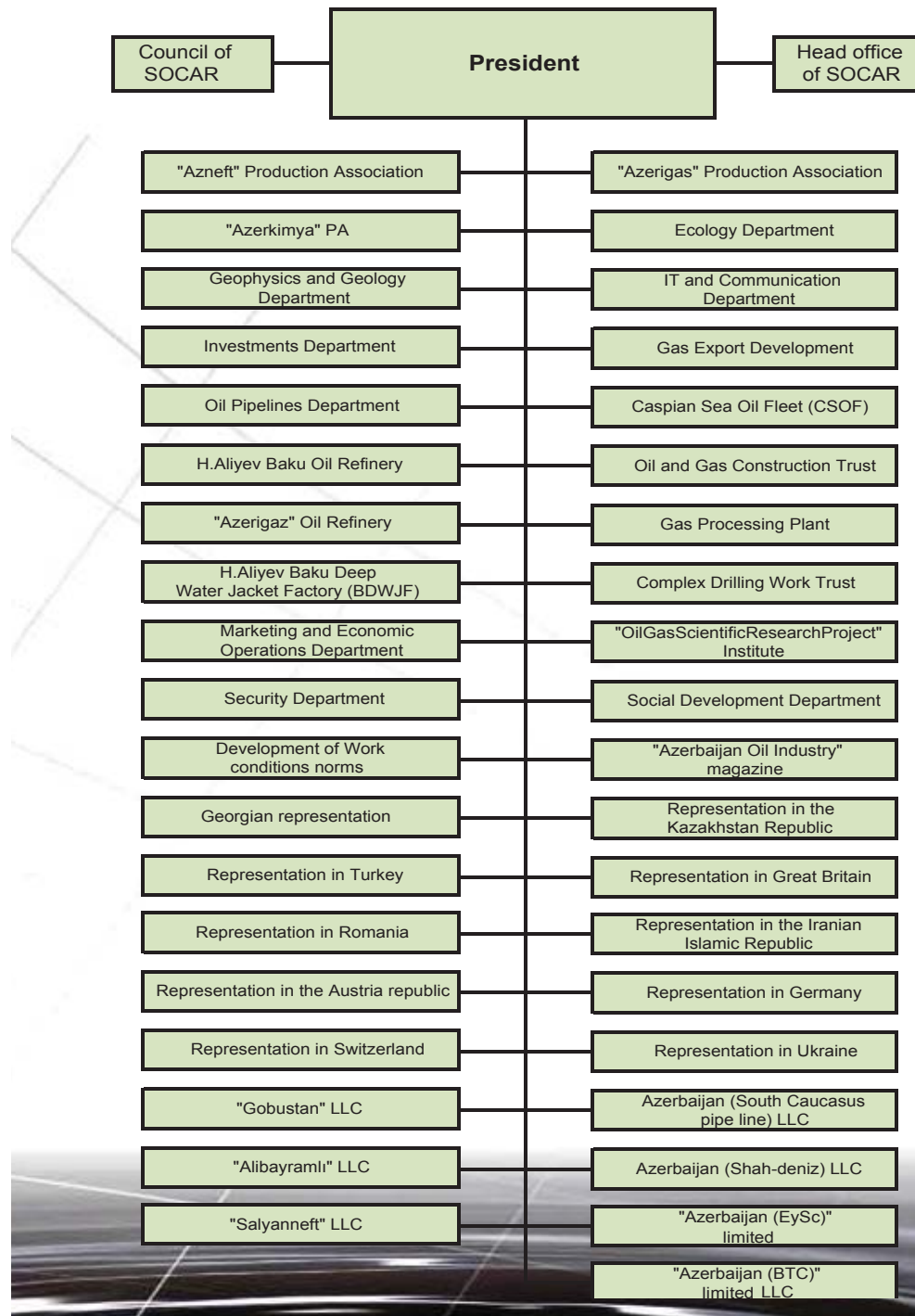


Chart 4.05 Structure of State Oil Company in Azerbaijan

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- 23 Crystal Hall was designed and built by Architekten von Gerkan, Marg und Partner, Alpine Bau Deutschland AG, and Nussli International AG for 2012 Eurovision Song Contest in Baku , it is a copy of Universiade Sports Center Shenzhen in China by the same designers in 2007. See figure 4.65.
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Chapter IV: Response

This thesis aims to create a new self-sustaining urban landscape in Bibi-Heybat that perpetuates the story of its industrial heritage while dramatically altering the locale's natural conditions through an extensive bioremediation program meant to neutralize or reverse much of the ecological damage done over the past 150 years. To complete the conversion of the site, the design also introduces different programs for public activities, allowing the reclaimed Bibi-Heybat to gain a new relevance in the lives of Baku's citizens.

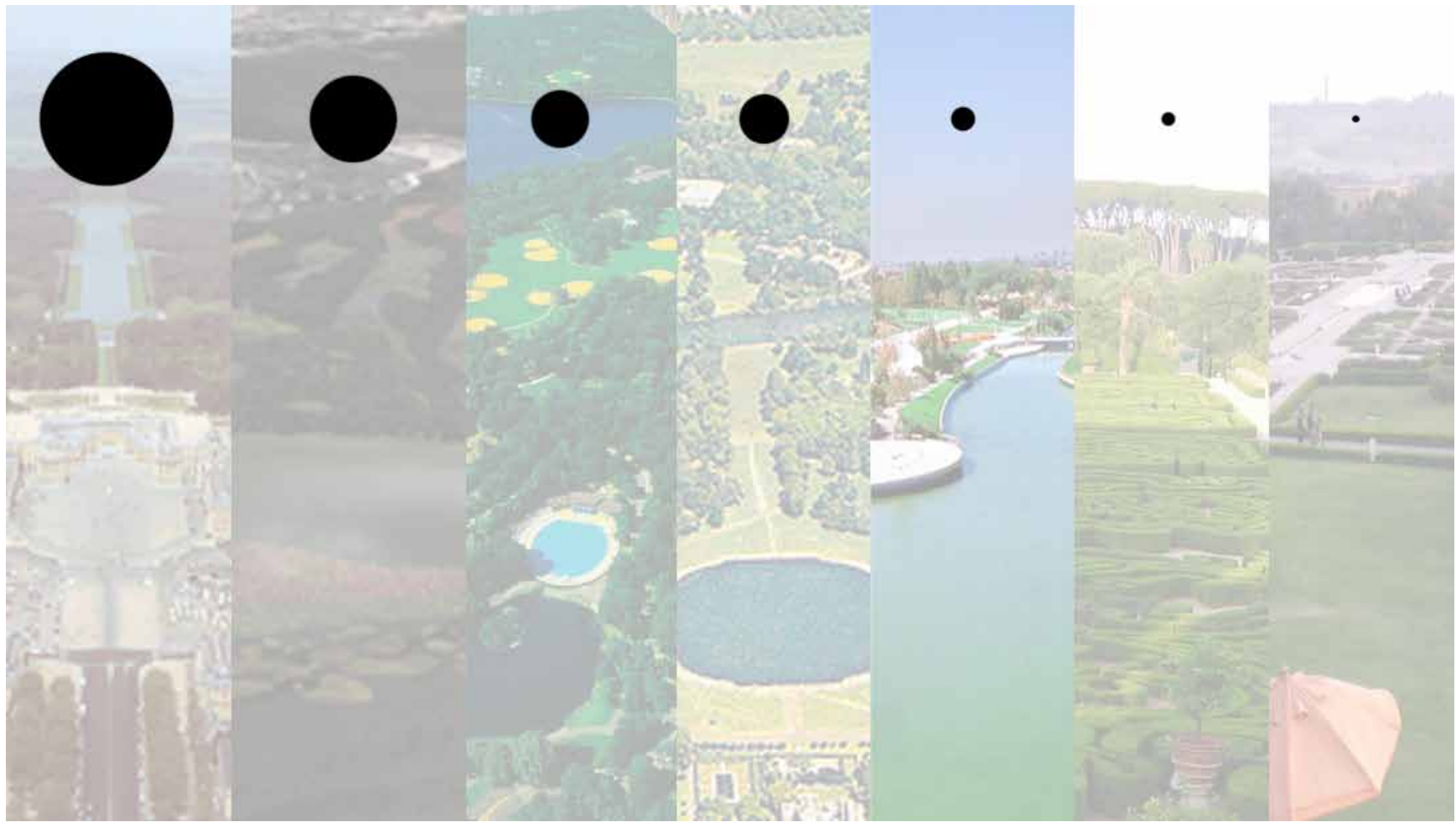
Bibi-Heybat will rise from the ashes, transforming from something discarded and dismissed into an attractive destination. It will be a place of transformation, of memory and metamorphosis; birth, death, and rebirth; hope despite loss—a living testament to the resilience of nature and its ability inspire human spirit, and a place which promotes democratic ideals in search of a better community, a tolerant and accepting sphere in which all are welcome.

This is, obviously, an immense undertaking.

Achieving the revitalization goals outlined here and transforming this former oil field site into a new, self-sustaining urban environment will take decades, but will offer considerable benefits to the residents of Baku and Azerbaijan as a whole.

The principles of restoring the natural ecology and creating an atmosphere of sustainability play an extensive role in the proposed landscape design of Bibi-Heybat Park. The most common approach to remediating contaminated soil involves digging up the contaminated earth and depositing it in a landfill or cap zone, thereby containing it in a restricted area; additional remediation may involve breaking down the pollutants by using high-temperature incineration and various types of chemical decomposition and treatments. However, these approaches are far from ideal—first, they simply transfer the problem of contamination to a new site. Once situated there, there is the cost of shipping the soil, capping the site, and maintaining and monitoring the area. The complexity of these methods limits their practical application to

## Response



Gardens of Versailles Paris, France 800 Hectares	Bibi - Heybat Park Baku, Azerbaijan 450 Hectares	Central Park New York, USA 341 Hectares	Hyde Park London, UK 253 Hectares	Harikalar Diyari Park Ankara, Turkey 130 Hectares	Villa Borghese Rome, Italy 80 Hectares	Al-Azhar Park Cairo, Egypt 30 Hectares
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Fig 5.1 Size Comparison Among Large Urban Parks

small-scale projects.

In contrast, the restoration of Bibi-Heybat is anything but small-scale: especially given the size, scope, and level of contamination, remediation represents an immense challenge in all aspects of the clean-up process. In order to appropriately manage the task, the area's transformation will occur in phases over the course of 50 years. These phases consist of several layers of design elements that operate independently.

The most suitable remediation method for Bibi-Heybat seems to be an amalgamation of bacteria-based in situ bioremediation and phytoremediation, which breaks down various contaminants into harmless components through natural biological activities. Since bioremediation is a lengthy process, and because it is hard to predict the pace of an organically based clean-up, multiple hills and boardwalks have been designed into the project to keep the contaminated areas out of reach of the public while still making sure that safe areas of Bibi-Heybat are accessible to public from

the earliest stages of transformation. Furthermore, hills put into action the principles of separation and subordination at the site, particularly through the use of serpentine paths through the landscape, where gentle meadows and easy curves acquire minimal attention to the process of movement.

The restoration of Bibi-Heybat will proceed through six phases: site cleaning, bioremediation, phytoremediation, infrastructure, programming, and adaptation; these steps will transform the park into a meaningful environment where the spirit of community and tolerance will be cherished.

### **Remediation Process**

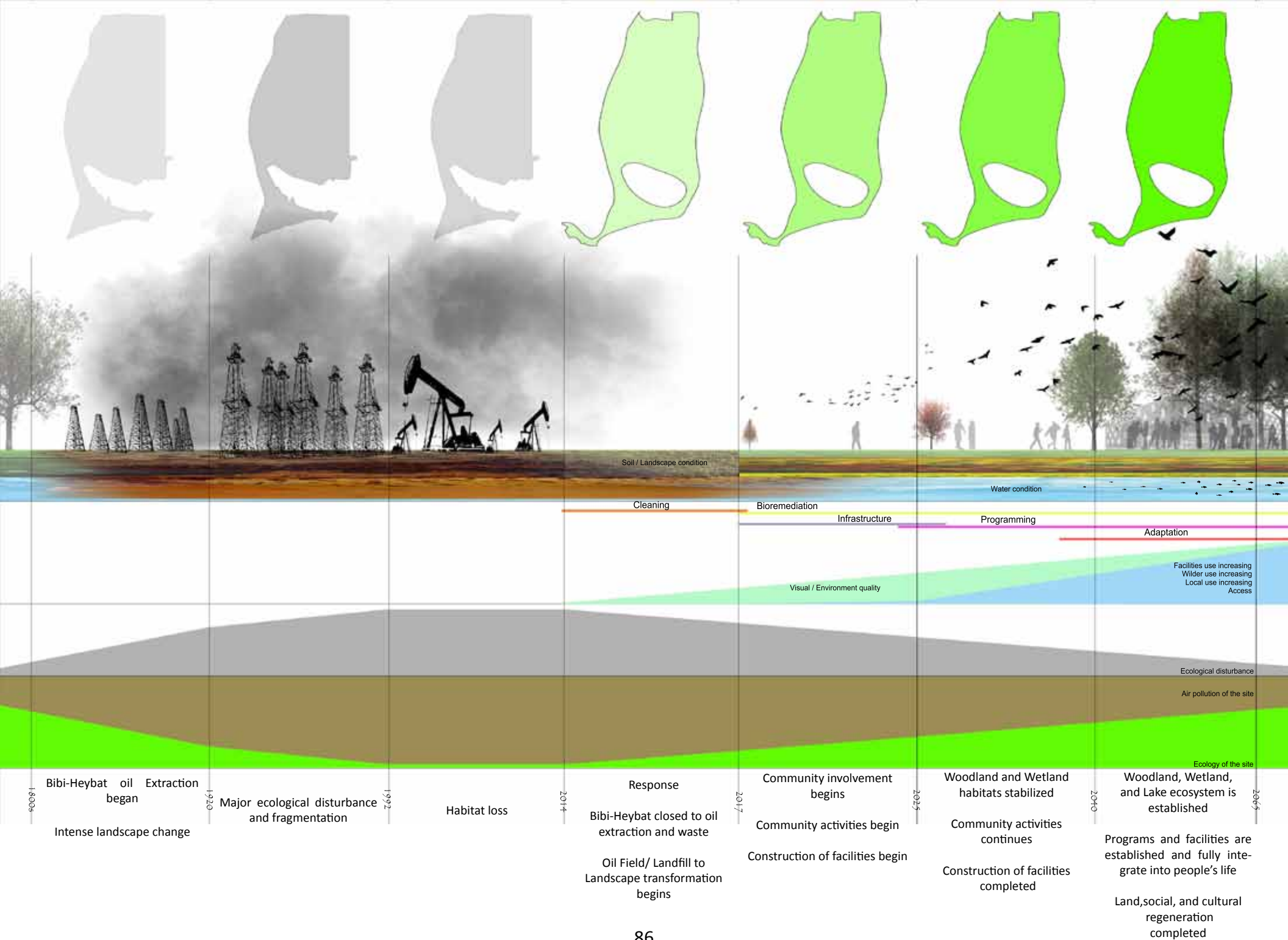
The goal for the first phase of transformation, which takes 3 years to complete, is to clean up the site, cap the oil wells, remove the existing oil pumps and equipment, demolish the existing warehouses and facilities, and closing up the bay to create a lake inside the park. (See Fig 5.2 , and Fig 5.7)

The site must be closed to public during this period and the environmental quality tests must be done extensively to determine the depth of contamination. This phase will create a physical framework for the next phases. (See Fig 5.2 and Fig 5.8-5.9)

The next three phases, phase two to four, will take eight years to complete. In phase two, the water in the lake will be drained and contaminated soil will be transferred to a different location in the site. Then large quantities of topsoil will be delivered to the site as a part of *in situ* bioremediation to cover the contaminated area. Approximately 45 cubic kilometer of topsoil is need to cover the contaminated site with a meter of topsoil mixed with specific bacteria to breakdown various contaminants to harmless components. <sup>1</sup>

In the next step (phase three), more topsoil will be delivered to the site to complete the landforms. Adding hills and manipulating the ground plane helps creating local enclosures. At end of this phase ,the main circulation path, loop roads, boardwalks (on land and the Cas-





pian Sea) will be completed. By examining the test results from phase one, selective species of plants will be selected to be cultivated for phytoremediation. (See proposed plant species with phytoremediation abilities Fig 5.10) Also, patches of coastal salt marshes will be placed in the coastline of the park for protection of the coastline during the tidal flooding and also to encourage the bird's population; however, due to extreme pollution of the Caspian Sea, author does not believe the full ecological benefits of salt marshes can be fulfilled. To make sure the lake retains the fresh water, a layer of compressed clay will be added to the bottom of the lake to prevent water loss through the ground.

In phase four, the seeding process will start. Using *strip cropping* and green manure, borrowed from agriculture practice, three crops will be selected (from the list of proposed plant species with phytoremediation abilities on Fig 5.10, page 94) to be cultivated to help the poor soil build organic material. This method will also help to control erosion, increase soil depth, and retain water for crop

growth which eventually will help to establish the grass fields. Aquatic plants will be introduced to the lake to prepare the lake water for introducing aquatic animals and amphibians. Salt marshes will be stable enough to provide shelter for the bird population. (See Fig 5.2 and Fig 5.11- 5.12 )

By this stage, the site will be opened to public to visit and experience this visually unique spacial spaces and witness the revival of Bibi-Heybat Park in each stage of its transformation. Also, communities can participate in cultivation and seeding process in different parts of the park and limited activities can start in this stage.

It will take approximately fifteen years for the next phase to accomplish its goals. By end of phase five woodland and wetland habitat will be established and community involvement and activities will be more extensive. Moreover, at this point lake water is stable enough to introduce aquatic animals and amphibians. (See Fig 5.2 and Fig 5.13- 14 )

At the beginning of this phase, the soil is enriched and ready for propagation of the landscape. Native plants will be used extensively for this purpose because they require less ongoing maintenance. Non-native plants will be used only if there is an absolute need to remediate a specific contaminant in the site. Once the phytoremediation is completed, the non-native plants can be replaced by the native plants. Most hills will be used for dense, stratified woodlands due to the greater soil depth requirement. Also, the plant communities will provide habitat for micro-organisms and wildlife to develop. The construction of Bibi-Heybat Museum , the cultural component of the park, and other recreational programs will start in this phase. The main recreational component of the park is the Athletic Hill which includes 3 soccer fields, 6 volleyball courts, and 12 tennis courts in response to public interest. (See Fig 5.19 image # 6, and Fig 5.47 )

During the last period, phase six which take 25 years, landscape will be established with layered, multi-aged native woodland and grass fields. The woodland communities will be

banded up the slopes and seedlings begin to self grow. Diverse plant species will be apparent all over the landscape. The lake has stable aquatic ecosystem in contrast of the Caspian Sea which virtually is a dead zone. Salt marshes will create a unique scenery along the coast line where the boardwalk sneaks through them. (See Fig 5.2 , Fig 5.4, Fig 5.15-5.18 and Fig 5.19 image # 1-7 and Fig 5.40 - 5.47)

Bibi-Heybat Park will become an exceptional social hub with unique ambience by providing a spiritual place (Bibi-Heybat Mosque and the landscape) cultural place (Bibi-Heybat Museum) and recreational spaces (Athletic Hill and the park) for locale. The combination of spiritual, cultural, and recreational hubs in a natural landscape setting is a unique set up for the city of Baku and Azerbaijan. (See Fig 5.5 image # 6, Fig 5.19 image # 6 , Fig 5.22- 5.39 )

Once the park is fully developed, the true value of Bibi-Heybat Park to people, city, country, and environment will be acknowledged and hopefully instead of recent megalomaniac architectural project, projects similar to Bibi-

Heybat Park will be promoted.

The re-colonization of the land by plants and people will work collectively with social re-colonization. Once established, the park will doubtless become a popular destination for Baku residents, especially for members of the surrounding lower-middle and working-class communities; it will offer them access to many memorable places with unique characteristics, interwoven into the park's framework. Activities available within the park will range from hiking, biking, and exploring the park's hidden corners, to social gatherings and cultural events.

B.H. Park and its natural scenery will be created out of the materials provided by nature, such as lakes, streams, pastures, sheep meadows, bike paths, promenades, curvilinear paths, and open fields, in conjunction with vernal recreational landscapes that will have the power to uplift the human spirit and support citizens' health—this is a necessary feature in direct response to the needs of rapidly growing Baku and its hectic lifestyle. B.H. Park

will offer places for outings, get-togethers, picnics, sports, and games. There will be areas where common people can exercise, play, and enjoy themselves. Lively crowds will engage in social activities in the shady groves and open pastures. The pastoral landscape, rising over gentle hillsides, emphasizes the calming scenery of meadows and pastures, a much-needed counterpoint to the bustle and sprawl of urban Baku.

Within the scope of the park's activities and events, there will be both unstructured visits and structured/supervised group experiences, including the creation of playgrounds, which will bring the benefits of wholesome recreation to people, especially children. Two parking lots lead visitors to the facilities and recreation grounds through the main curvilinear paths, one from Bibi-Heybat Mosque and the other from the new development on the park's north side. The wooded hills create extensive picnic areas where families can look out from a height toward the Caspian Sea. The promenade branches out at the southeast end of the site. On one branch, it flows into a boardwalk



Fig 5.3 The present state of Bibi-Heybat

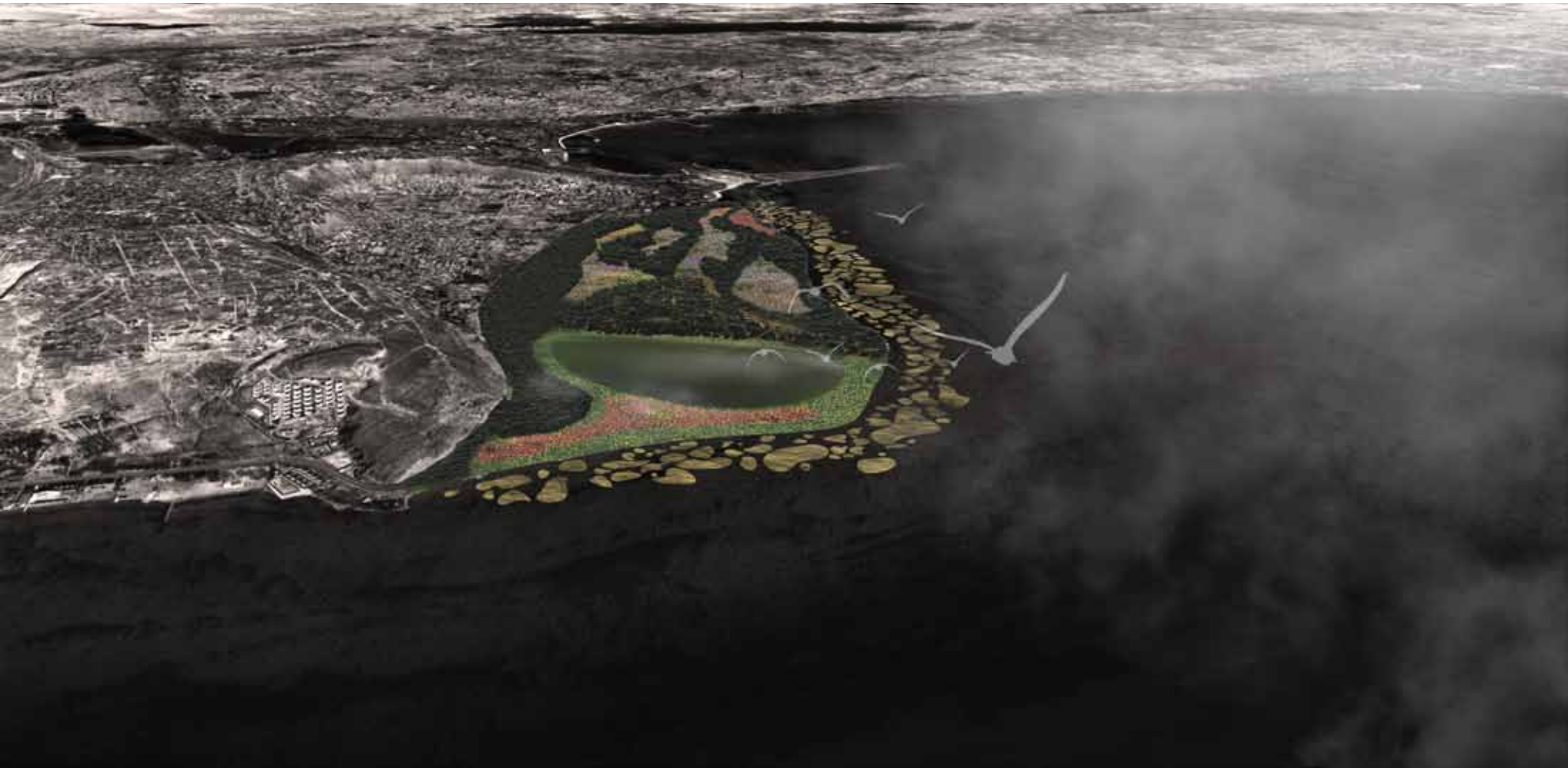


Fig 5.4 Bibi-Heybat (Future)





5 Powerhouse & Enerji Lounge Bar Club (Future)



5 Powerhouse & Enerji Lounge Bar Club (Future)



6 Bibi-Heybat Mosque



7 Bibi-Heybat Oil Field



Fig 5.5 Current state of Bibi-Heybat and its surroundings



1 Flag Square



2 Baku Crystal Hall



3 Old City Baku ( Icheri Seher)



4 Baku Corniche ( Sahil)



Fig 5.6 Existing Site and Dimensions



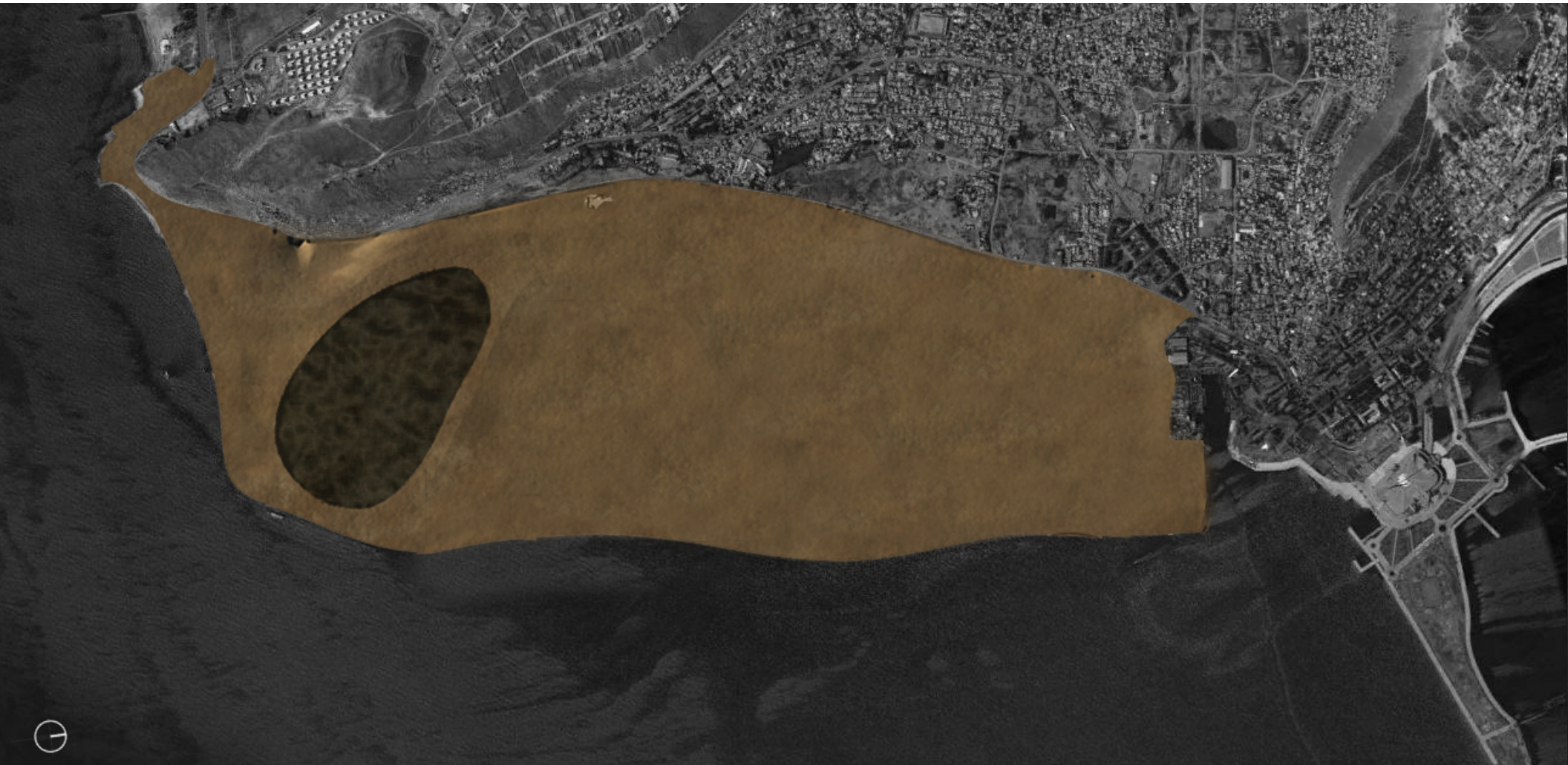


Fig 5.7 Remediation Process, Phase One



- **Timeline:** Three years from 2014 to 2017 to complete
- **Access:** Site will be closed to public
- **Cleaning:** Oil wells will be capped, existing oil pumps, equipment, facilities, and warehouses will be dismantled and/or demolished
- **The lake:** The bay will be closed off to create a lake
- **The coastline:** The coastline will be reshaped
- **Tests:** Extensive environmental quality tests will be done to determine the depth of contamination.

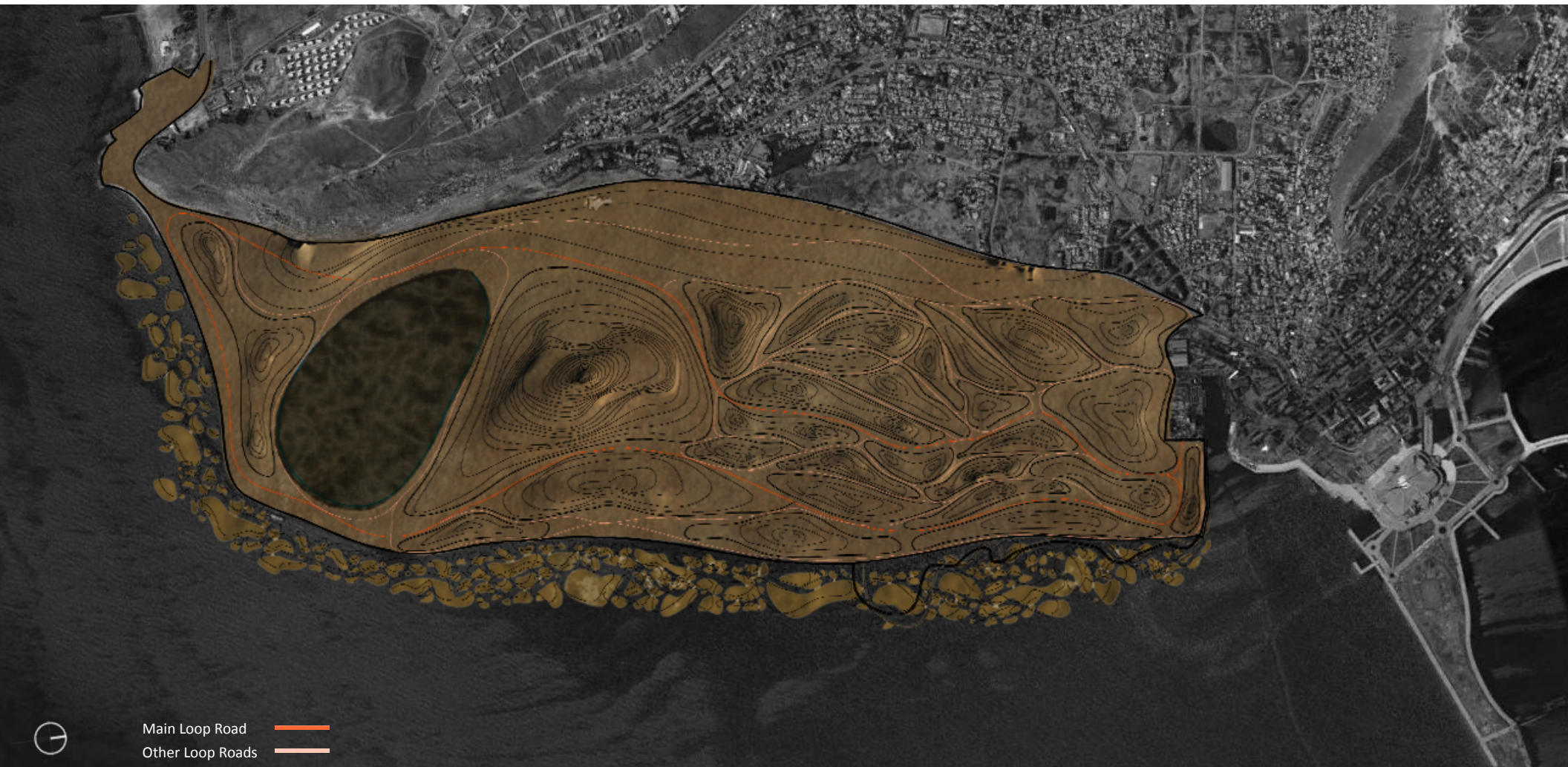
Fig 5.8 Remediation Process, Phase Two



- **Timeline:** Phases 2 to 4, Eight years from 2017 to 2025 to complete
- **Access:** Site will be closed to public
- **Earthwork:** Large quantities of topsoil mixed with specific bacteria will be delivered to the site
- **The lake:** Lake water will be drained



Fig 5.9 Remediation Process, Phase Three



- **Timeline:** Phases 2 to 4, Eight years from 2017 to 2025 to complete
- **Access:** Site will be closed to public
- **Earthwork:** More topsoil will be delivered to the site to complete the landforms
- **Infrastructure:** Main circulation path, loop roads, boardwalks, and hills will be completed
- **The lake:** Compressed clay will be added to the bottom of the lake to prevent water loss through the ground
- **The Coastline:** Patches of salt marshes will be added to protect the coastline during the tidal flooding and to encourage the bird's population.





Chives  
*Allium schoenoprasum*



Yarrow  
*Achillea millefolium*



Vetch  
*Vicia spp.*



Highland Bentgrass  
*Agrostis castellana*



*Poplar spp.*



Hairy Goldenrod  
*Solidago hispida*



White Lupin  
*Lupinus albus*



Giant Duckweed  
*Spirodela polyrhiza*



Northern Starwort  
*Stellaria calycantha*



*Populus spp.*



Sunflower  
*Helianthus annuus*



Indian Mustard Plant  
*Brassica juncea L. Czern*



White Rot Fungus  
*Phanerochaete chrysosporium*



*Senecia glaucus*



Pumpkin  
*Cucurbita*



Crested Wheat Grass  
*Agropyron cristatum*



Chinese Brake Fern  
*Pteris vittata benzilan*



Alpine Pennycress  
*Thlaspi Caerulescens*



Crude Oil



DDT



PCP



Metals



As



Cr



Cd

Species for Phytoremediation



Aspen  
*Allium schoenoprasum*



Blue Sheep Fescue  
*Festuca ovina*



Common Ragweed  
*Brassica oleracea*



*Artemisia scoparia*



Seapink Thrift  
*Armeria maritima*



Osage  
*Maclura pomifera*



European White Birch  
*Betula pendula*



Garden Orache  
*Atriplex hortensis*



White Clover  
*Trifolium pratense*



Eastern Cottonwood Tree  
*Populus deltoides*



Zucchini  
*Curcubita pepo*



Peace Lily  
*Spathiphyllum or Mauna Loa*



Devil's ivy  
*Golden pothos*



Common Ragweed  
*Brassica oleracea*



Dwarf Date Palm  
*Phoenix roebelenii*



Rapeseed Plant  
*Brassica napus*



Pine  
*Pinus*



Willow Tree  
*Salix*



Areca Palm



Common Wheat  
*Triticum aestivum*



Paul's Scarlet Rose  
*Rosa*



Reed Palm



Zn



Pb



Hg



PCB



TCE



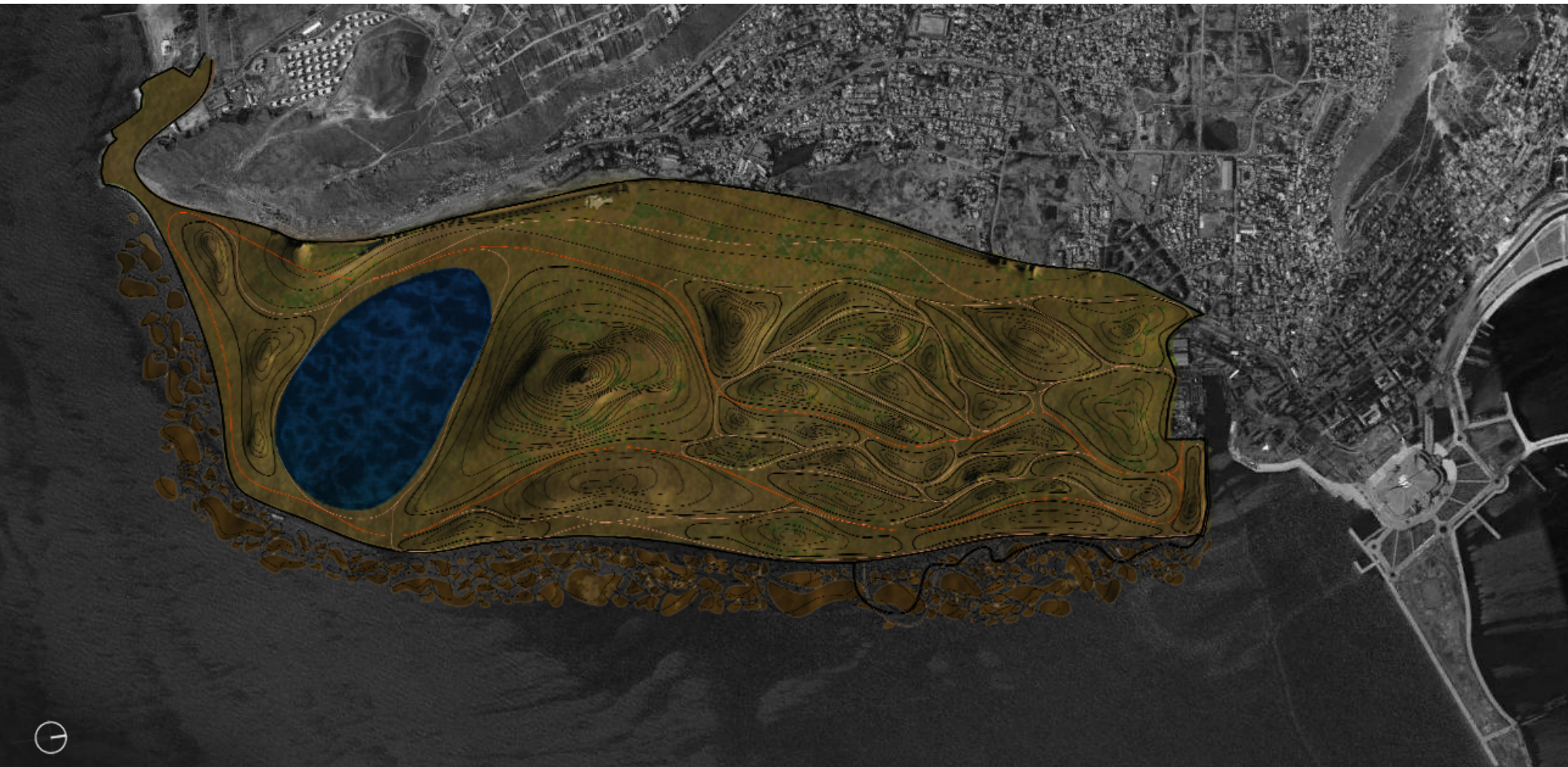
MTBE



Air



Fig 5.11 Remediation Process, Phase Four



- **Timeline:** Phases 2 to 4, Eight years from 2017 to 2025 to complete
- **Access:** Site will be closed to public
- **Seeding:** Selected plant species with phytoremediation abilities will be cultivated to build the poor soil
- **The lake:** Aquatic plants will be introduced to the lake

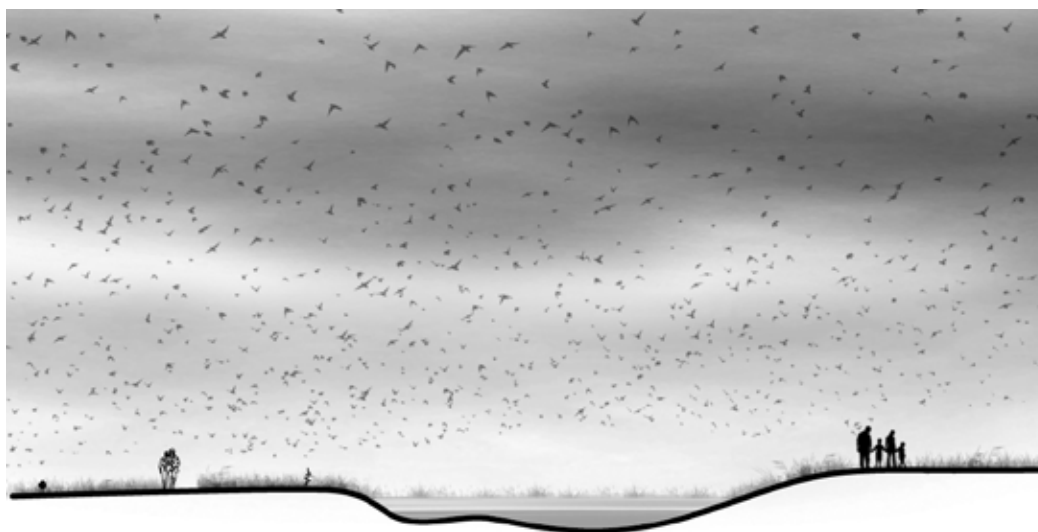


Fig 5.12 Development of Forest: Woodland begins to grow

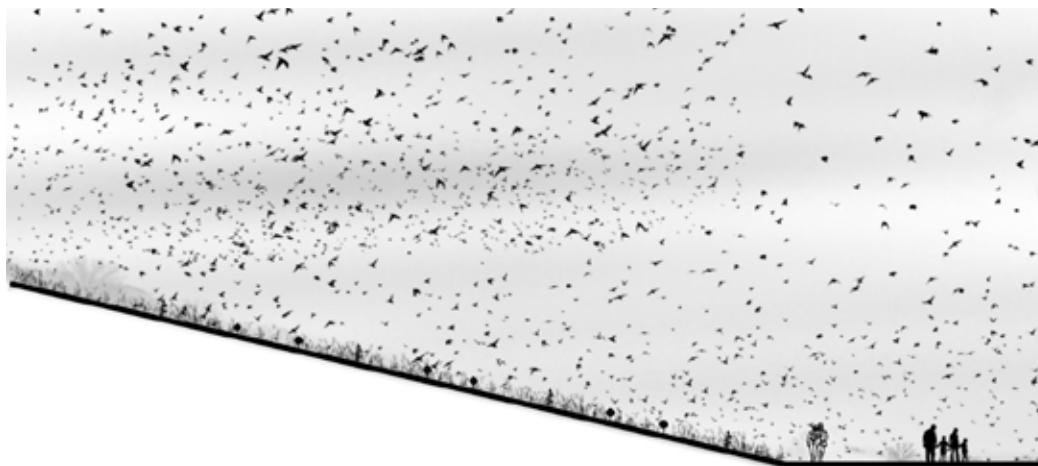
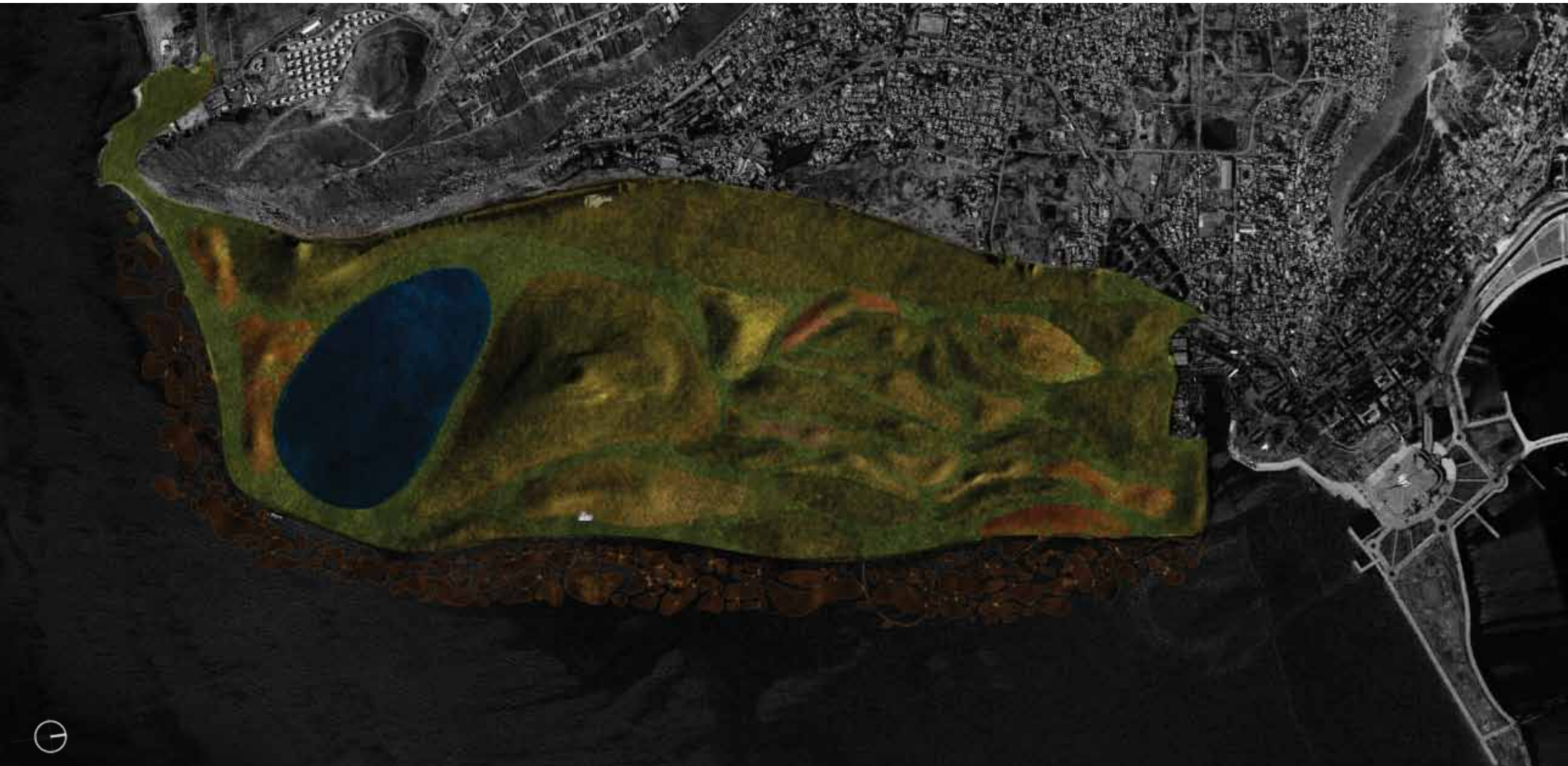




Fig 5.13 Remediation Process, Phase Five



- **Timeline:** Fifteen years from 2025 to 2040 to complete
- **Access:** Site will be open to public
- **Ecology:** Woodland and wetland habitat will be established. Aquatic animals and amphibians will be introduced to the lake
- **Facilities:** The construction of the facilities and programs will be completed
- **Community:** Activities and community involvements will be more extensive

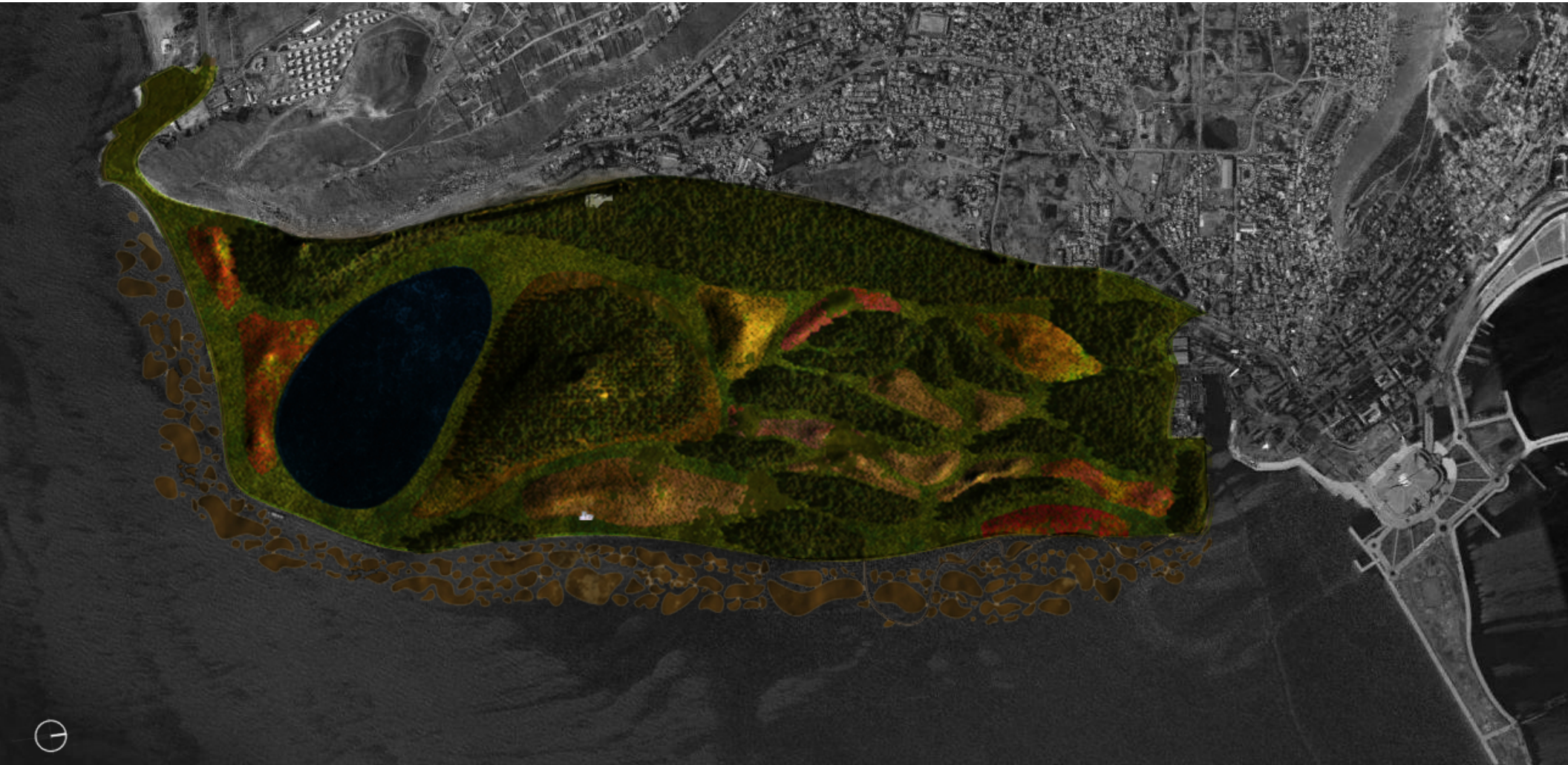


Fig 5.14 Development of Forest: Mature woodland





Fig 5.15 Remediation Process at the beginning of Phase Six: Woodland and Wetland habitat established



- **Timeline:** Twenty Five years from 2040 to 2065 to complete
- **Access:** Site will be open to public
- **Ecology:** Landscape will be established with multi-aged native woodlands and diverse plant species. The lake ecosystem will be established in contrast with the Caspian Sea
- **Facilities:** facilities and programs will be open to public
- **Community:** Bibi-Heybat Park will be a part of locale's lifestyle

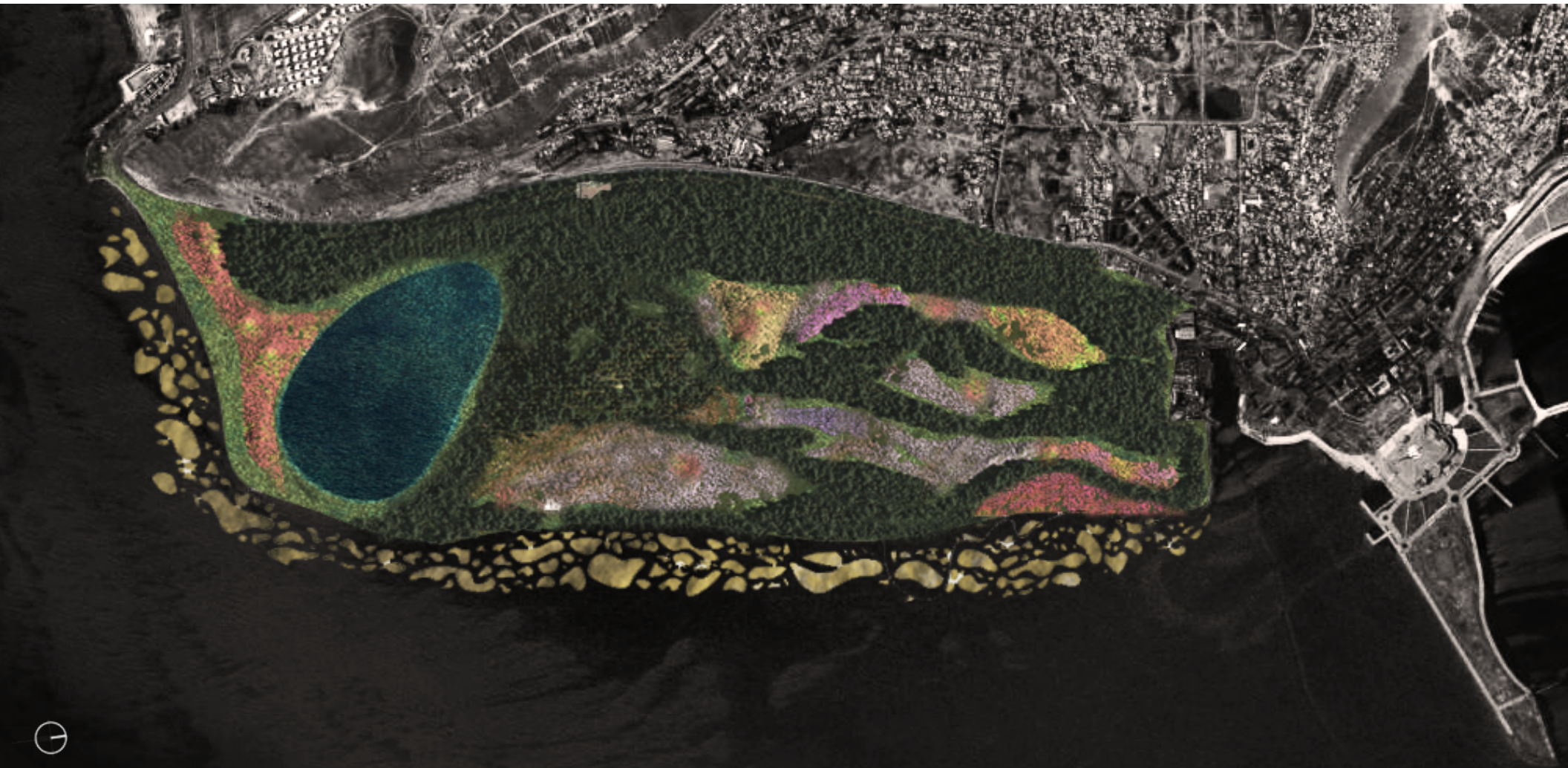


Fig 5.16 Development of Forest: Multi-aged woodland





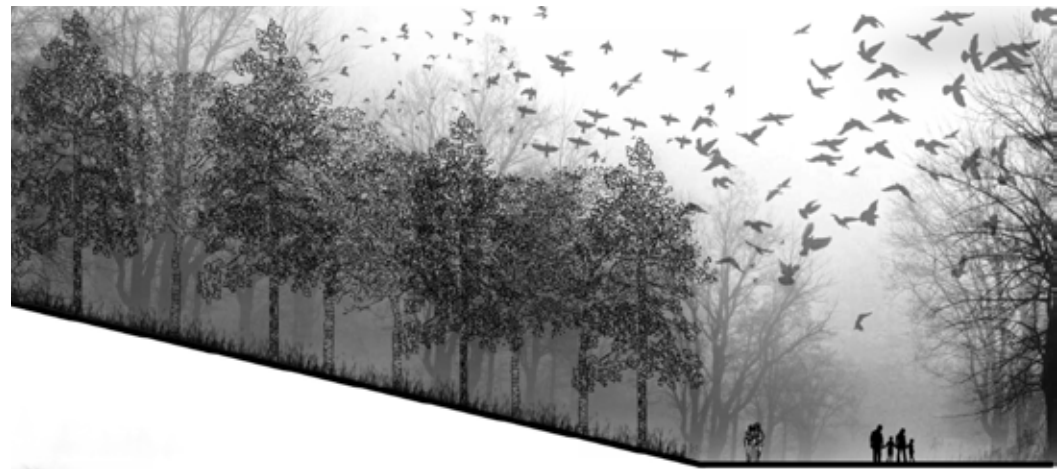
Fig 5.17 Remediation Process at the end of Phase Six



- **Timeline:** year 2065
- **Ecology:** Land regeneration will be completed



Fig 5.18 Development of Forest: Stratified woodland







5 Bibi-Heybat Park Prairies (Future)



6 Bibi-Heybat Park - Athletic Hill (Future)



7 Bibi-Heybat Museum - Main Gallery



7 Bibi-Heybat Museum - View from the Roof

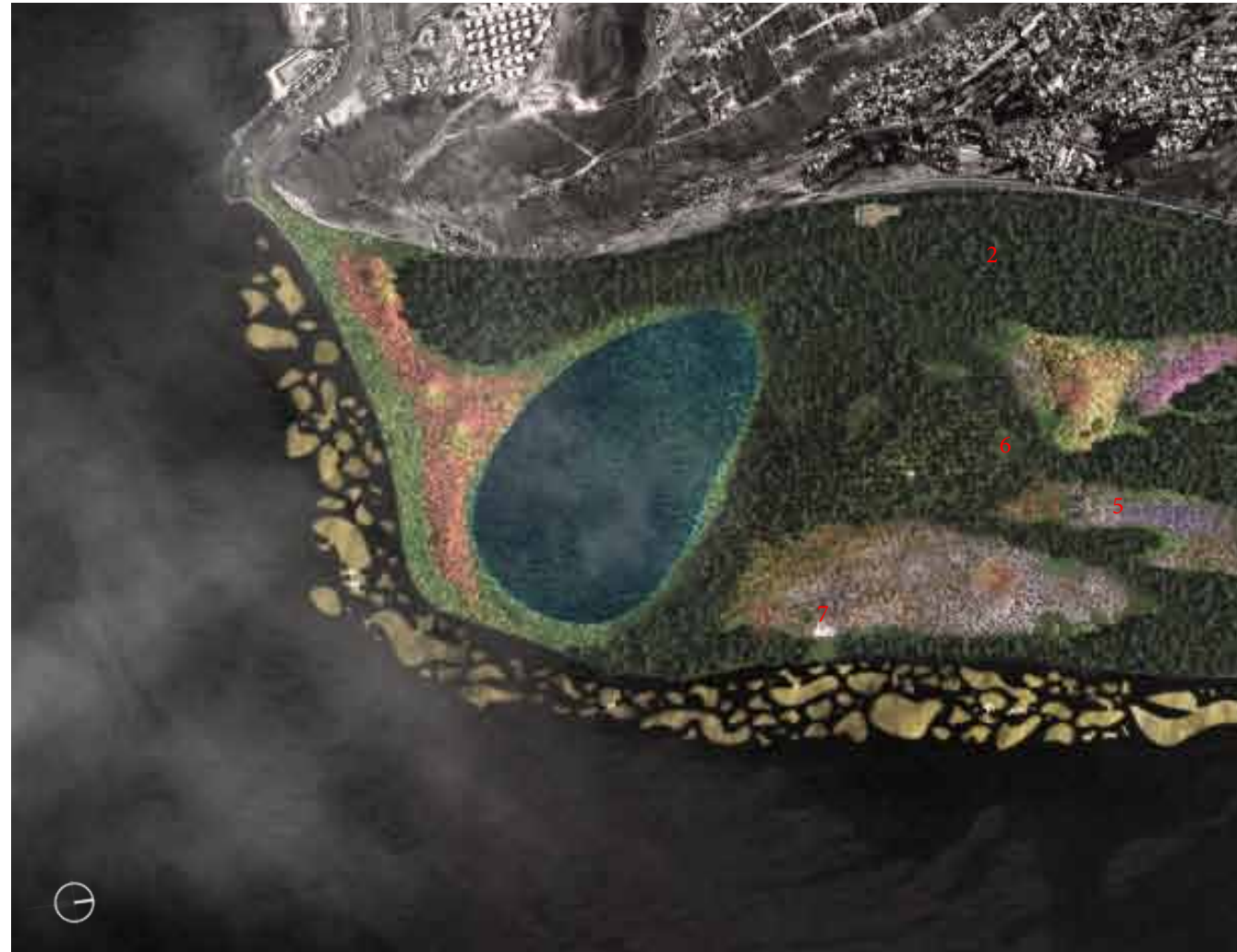


Fig 5.19 Bibi-Heybat Park (Future)





1 Bibi-Heybat Park - Interior View



2 Bibi-Heybat Park - Interior View

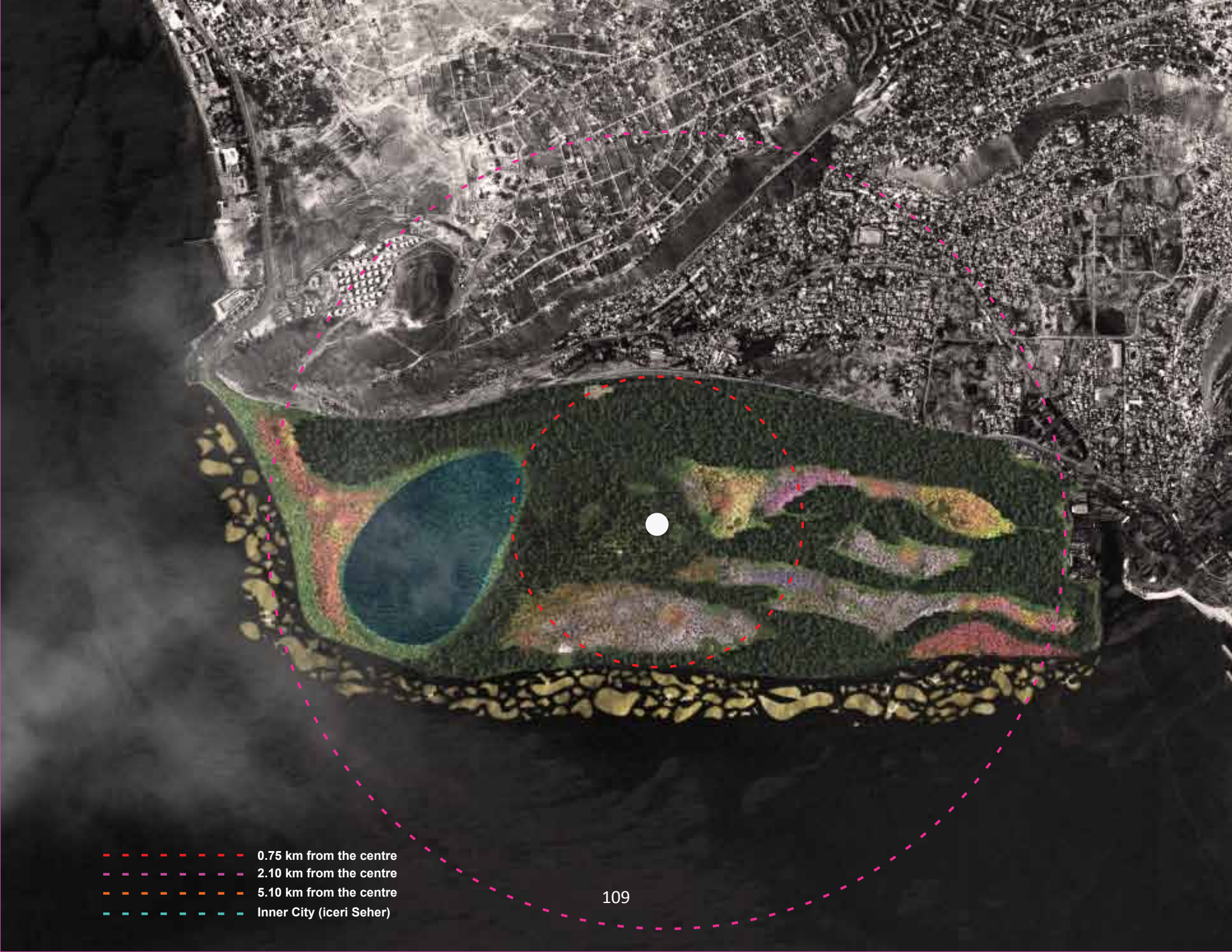


3 Bibi-Heybat Park - View from Salt March Boardwalk



4 Bibi-Heybat Park - Interior Park View





- 0.75 km from the centre
- 2.10 km from the centre
- 5.10 km from the centre
- Inner City (iceri Seher)





Kilometers	Miles	Fast	Moderate	Easy
1	0.62	7 min.	10 min.	12.5 min.
2	1.24	14 min.	20 min.	25 min.
3	1.86	21 min.	30 min.	37.5 min.
4	2.48	28 min.	40 min.	50 min.
5	3.11	35 min.	50 min.	62.5 min.
6	3.73	42 min.	60 min.	75 min.
7	4.35	49 min.	70 min.	87.5 min.
8	4.97	56 min.	80 min.	100 min.
9	5.59	63 min.	90 min.	112.5 min.
10	6.21	70 min.	100 min.	125 min.
11	6.83	77 min.	110 min.	137.5 min.
12	7.45	84 min.	120 min.	150 min.
13	8.07	91 min.	130 min.	162.5 min.
14	8.69	98 min.	140 min.	175 min.
15	9.32	105 min.	150 min.	187.5 min.
16	9.94	112 min.	160 min.	200 min.
17	10.56	119 min.	170 min.	212.5 min.
18	11.18	126 min.	180 min.	225 min.
19	11.80	133 min.	190 min.	237.5 min.
20	12.42	140 min.	200 min.	250 min.
<b>Half-marathon</b>				
21	13.1	147 min.	210 min.	262.5 min.
		2.5 hours	3.2 hours	4.4 hours
<b>Marathon</b>				
42	26.2	294 min.	420 min.	525 min.
		5 hours	7 hours	9 hours

Chart 5.01 Walking distance/time scope

Fig 5.20 Walking distance/time from centre of Bibi-Heybat Park



Fig 5.21 Bibi-Heybat Park Layers and programs

that stretches to the Caspian Sea and snakes through the salt marshes; on the other fork, it becomes a dirt path that meanders along the shore toward the woods beyond the hills and open fields where young people play soccer and volleyball, and where children ride their bikes while group of adults stroll along the dirt road, pausing to look at the sea.

### **Access Points**

The site is located between two existing popular destinations, Bibi-Heybat Mosque and Flag Square (Also Powerhouse & Energy Lounge Bar Club in the future Fig. 4.70 - 4.77). Fortunately, Baku is not a highly car-dependent community and public transportation is satisfactory. Nevertheless, this site must accommodate a large population of attendees arriving to the site by car.

The flag square and Crystal Hall at one end already providing the area with a large quantity of parking spaces. Also, Powerhouse & Energy Lounge Bar Club will be providing more park-

ing spaces in the future. (Fig. 4.70 - 4.77) However, there is a need to provide a parking for Bibi-Heybat Mosque, that offers access to the park by bicycle or on foot, with sufficient parking space for the visitors.

### **Athletic Park**

Athletic Hill is the largest component of the park with approximately 68 hectares of active recreational spaces and natural settings including three soccer fields, 6 beach volleyball courts, and 12 tennis courts.

Due to its proximity to Bibi-Heybat Mosque, one of the major access points and the spiritual component of the site, and Bibi-Heybat Museum, the cultural component, this large woodland area is designed as a major concentration of active recreational opportunities in response to public interest. In addition to special programs intended for this section, extensive pathways will be provided for walking, hiking, biking, and multiple uses.

A series of pedestrian trails will take the visitors towards the non active recreational areas such as picnic area and playground for pick up games in lowland areas. The south part of the hill facing the lake is envisioned as a lightly programmed natural area for passive recreational activities. As in all other areas of the park, comfort stations will be provided.

The result is a series of circuitous trails around and up onto the hill and destination trails to active, non active, and passive recreational activities that provide exceptional views of Bibi-Heybat Park's rich wildlife.

### **Bibi-Heybat Museum**

Bibi-Heybat Museum is hidden from the visitor's immediate view; instead, it is suggested by a series of unexpected walls coming through the landscape, inviting people to go for a walk with the walls or to follow them. The museum exhibits a special kind of control of nature, wherein the museum represents

the beginning of architecture itself. Echoing the contours of the surrounding landscape, the predominantly concrete building folds around itself and weaves the galleries and outdoors spaces in such a way as to create a unique place for human experience and interaction. The plan of the museum is compact, with an efficient layout that minimizes the building's footprint while maximizing its usable space and functionality, with different programs contained on three floors. The total floor area is about 4,400 square meters (over 47,000 square feet), with a footprint of approximately 7,100 square meters. Created with sustainability in mind, the overall window area is reduced without compromising function or the need for natural light. Moreover, wrapping the poured-concrete structure with ceiling to floor-height low-E glass helps to bring daylight deep inside the museum.

Visitors enter the building either from the east, through the ramps, or from the beach on the west side. The western wall is kept to a minimum and is mostly covered in earth. The outdoor open museum in the north provides

visitors with examples of different types of oil wells and artifacts from the Bibi-Heybat oil field's past. The southwest corner steps down to an outdoor café and patio, which makes a clear distinction between outside and inside spaces.

Inside and out, the black granite, living green wall, and polished white concrete symbolize the pollution, reawakening, and purity of the site, respectively. The gently sloping ramps leading to the museum begin on the building's west side; one ramp takes visitors down to the main gallery area on the second floor, while the other ramp takes visitors to the uppermost green roof. These green roofs help integrate the new building into the site, while minimizing its visual impact upon the remediated landscape. With each step on the walk down, visitors will experience the depth of pollution in contrast to the newly rejuvenated areas, symbolized by dark granite and the green wall. Then, visitors enter the main gallery area where the story of Bibi-Heybat is told by various artifacts. Inside, open walkways and glazed interior perimeters produce exten-

sive, enjoyable views throughout the building. The top floor area is a free zone where the public can enjoy the café with its outdoor terrace and wonderful views. The ground floor includes the art galleries, multipurpose meeting/exhibition spaces, and offices for tour guides, volunteers, and museum officials.

In the design of Bibi-Heybat Park, the goal was to balance nature and architecture, reality and imagination, disbelief and hope, sustainability and functionality, so as to create an inspiring place for people of Baku.



## **Bibi-Heybat Park and its components**

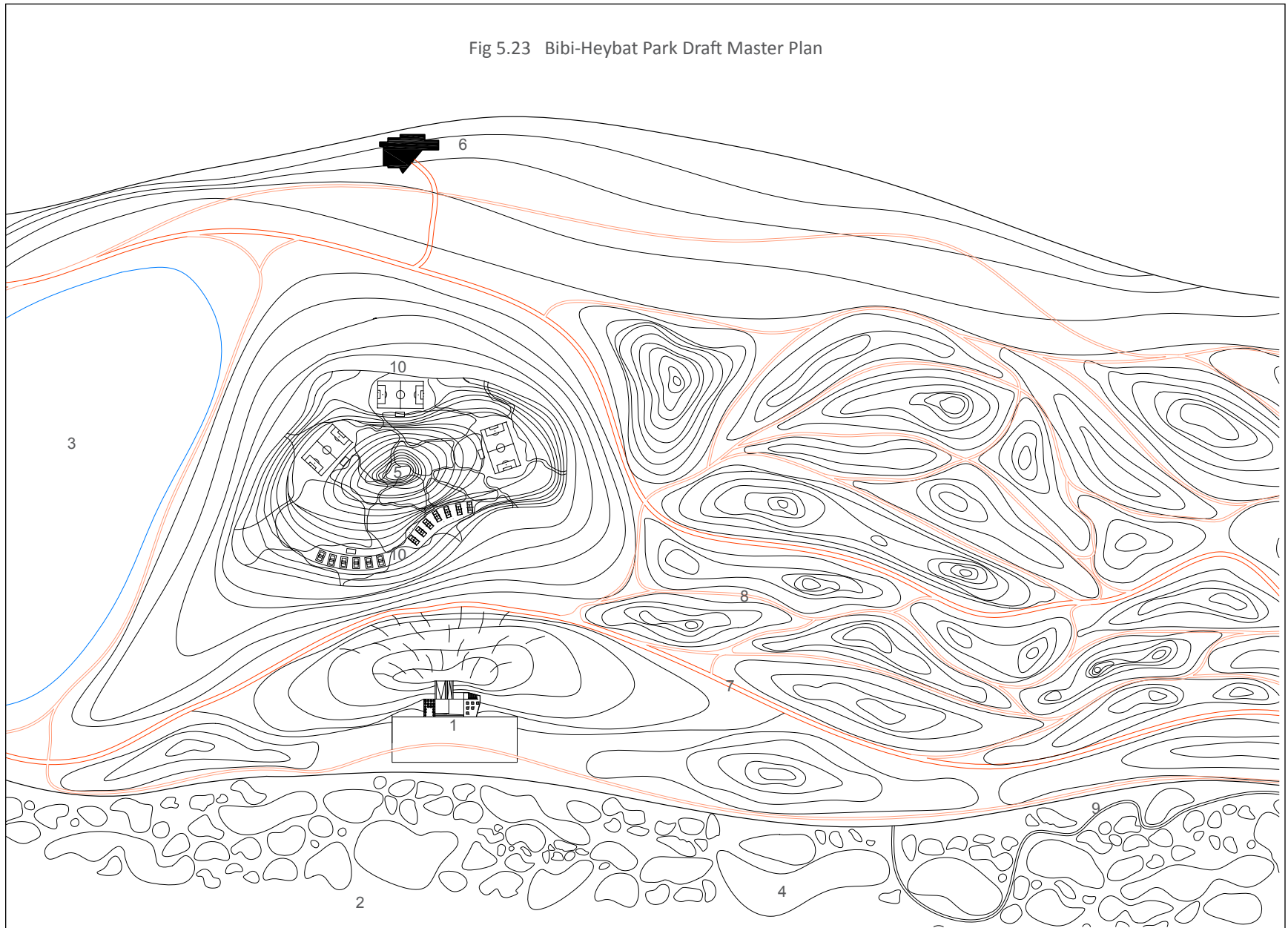
Fig 5.22 Bibi-Heybat Park Draft Master Plan



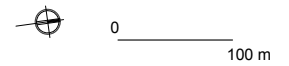
- |                      |                                       |
|----------------------|---------------------------------------|
| 1 Bibi-Heybat Museum | 6 Bibi-Heybat Mosque                  |
| 2 Caspian Sea        | 7 Powerhouse & Energy Lounge Bar Club |
| 3 Lake               | 8 Flag Square                         |
| 4 Salt Marsh         | 9 Baku Crystal Hall                   |
| 5 Athletic Hill      | 10 Corniche                           |

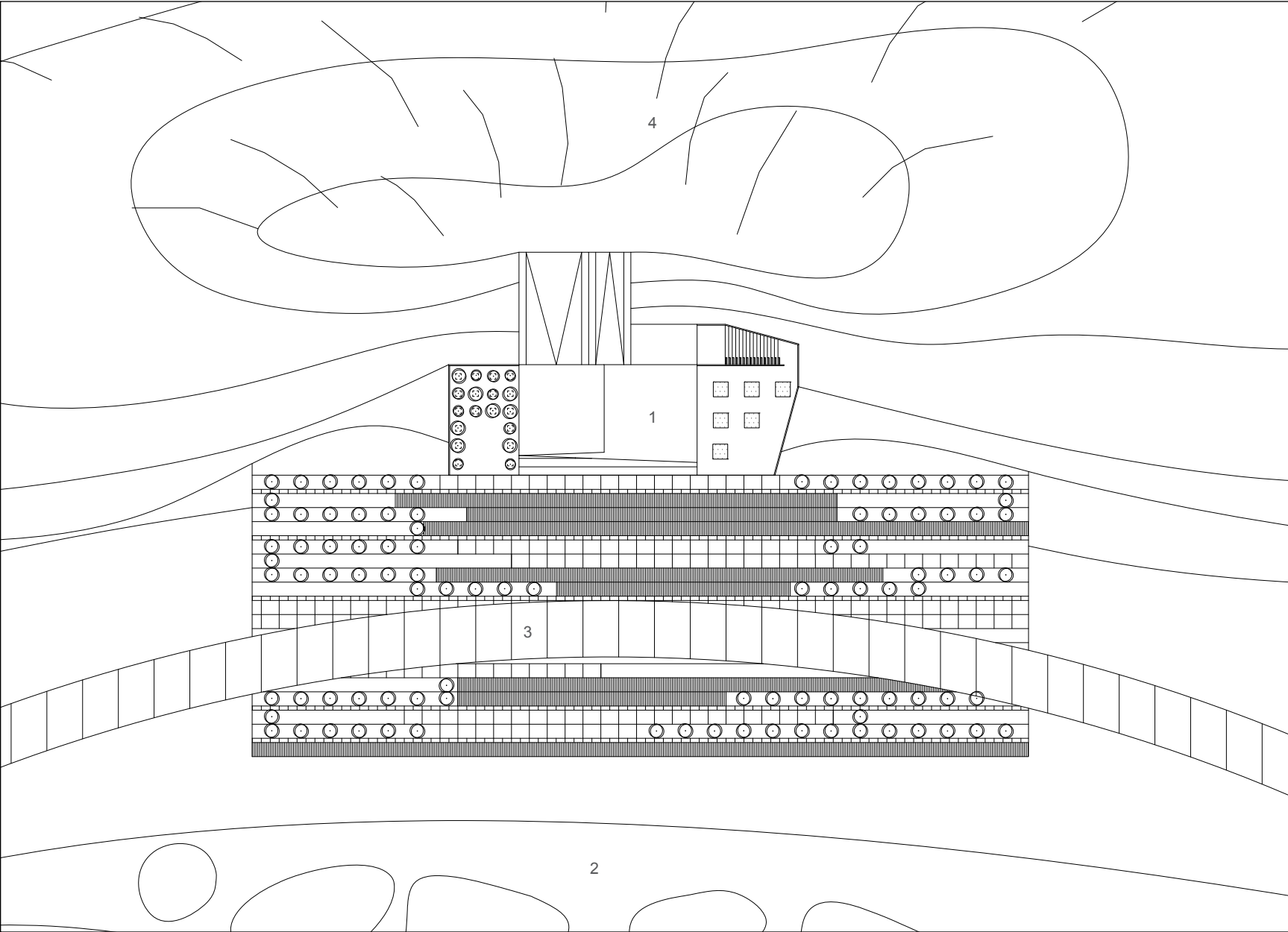
0 \_\_\_\_\_ 1 km

Fig 5.23 Bibi-Heybat Park Draft Master Plan

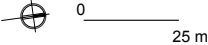


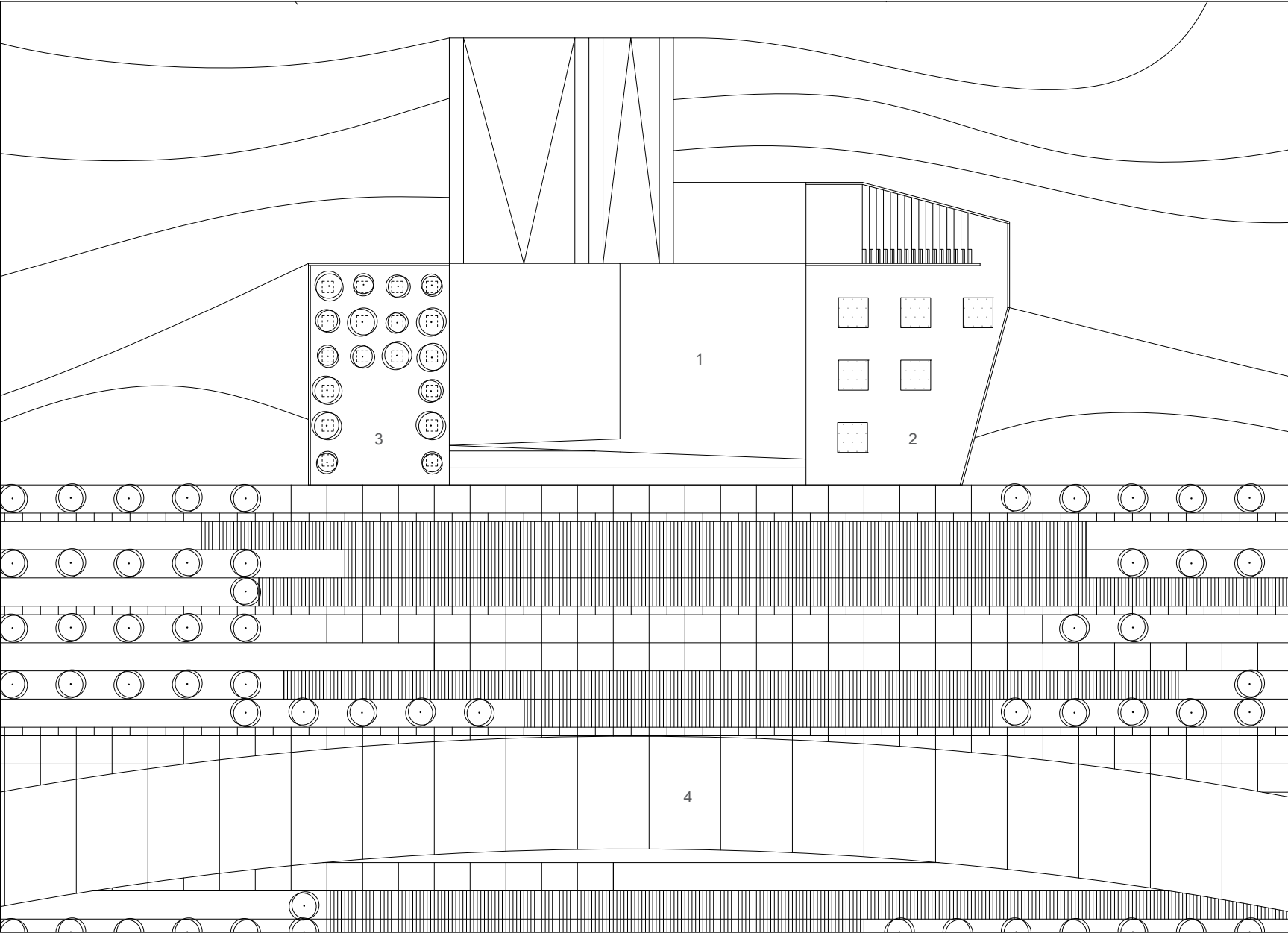
- |                      |                      |
|----------------------|----------------------|
| 1 Bibi-Heybat Museum | 6 Bibi-Heybat Mosque |
| 2 Caspian Sea        | 7 Main Loop Road     |
| 3 Lake               | 8 Other Loop Roads   |
| 4 Salt Marsh         | 9 Boardwalk          |
| 5 Athletic Hill      | 10 Sports Fields     |





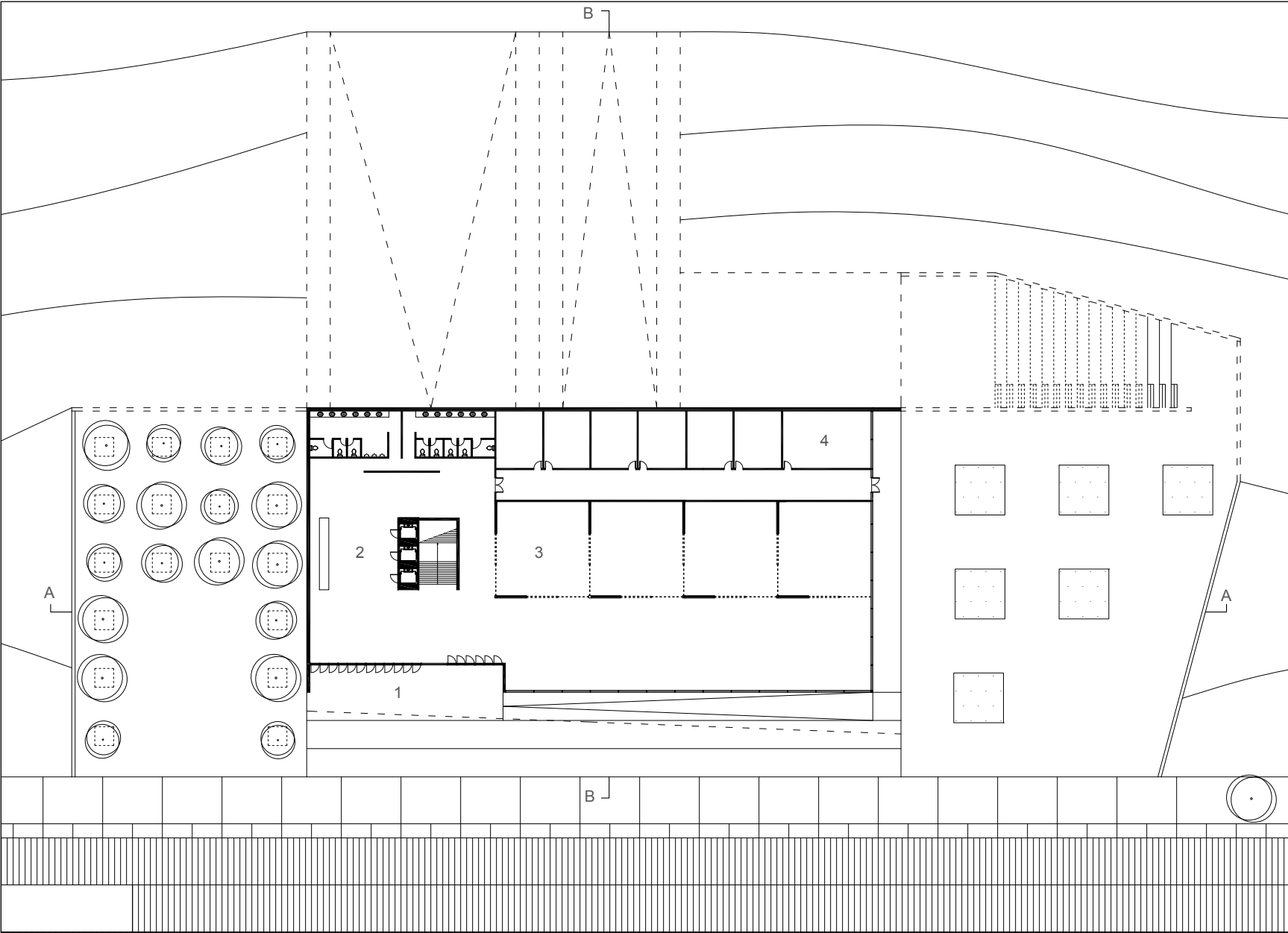
- 1 Bibi-Heybat Museum
- 2 Caspian Sea
- 3 Main Path
- 4 Stone Walls





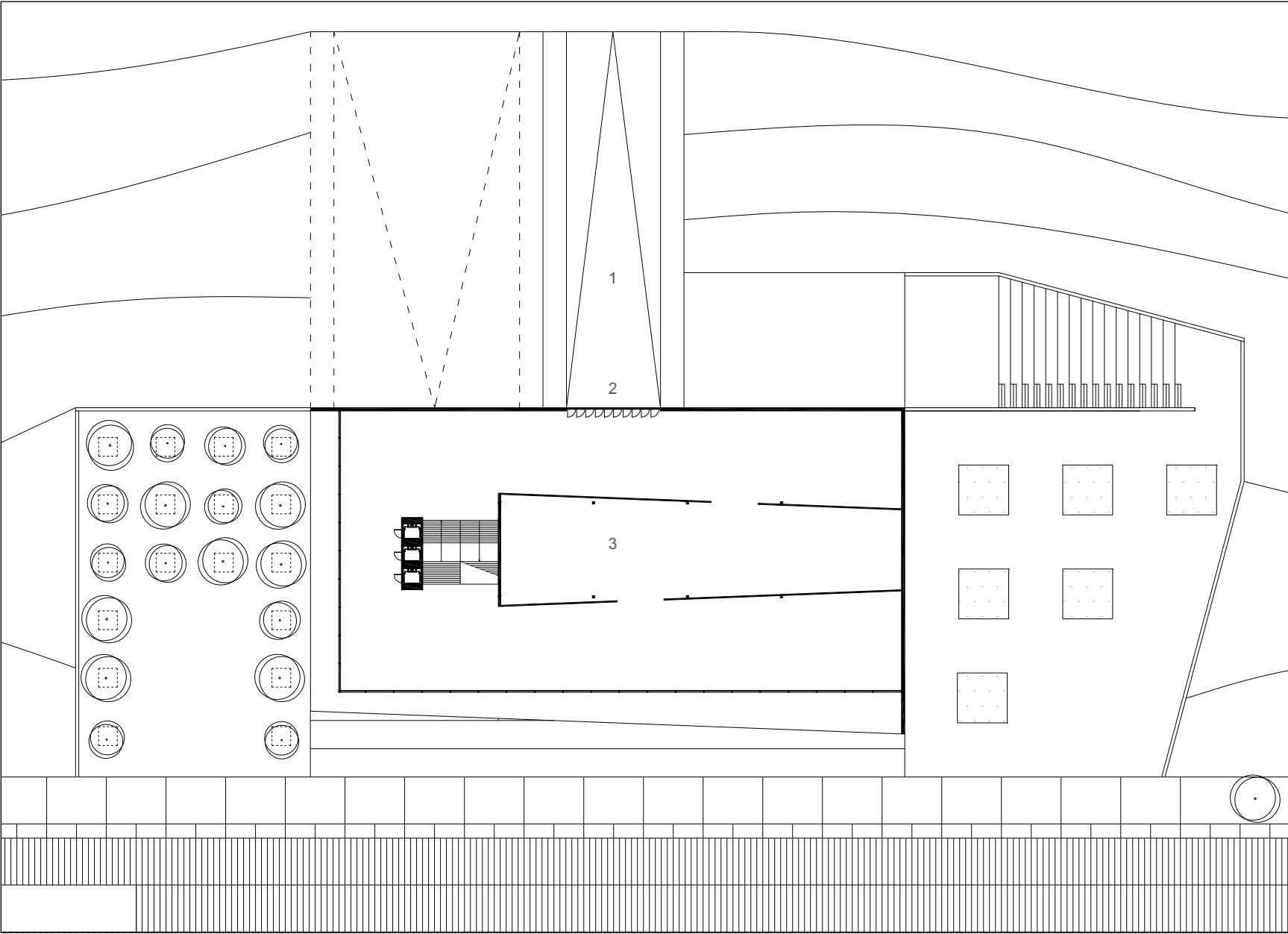
- 1 Bibi-Heybat Museum
- 2 Open Air Museum
- 3 Courtyard
- 4 Main Path





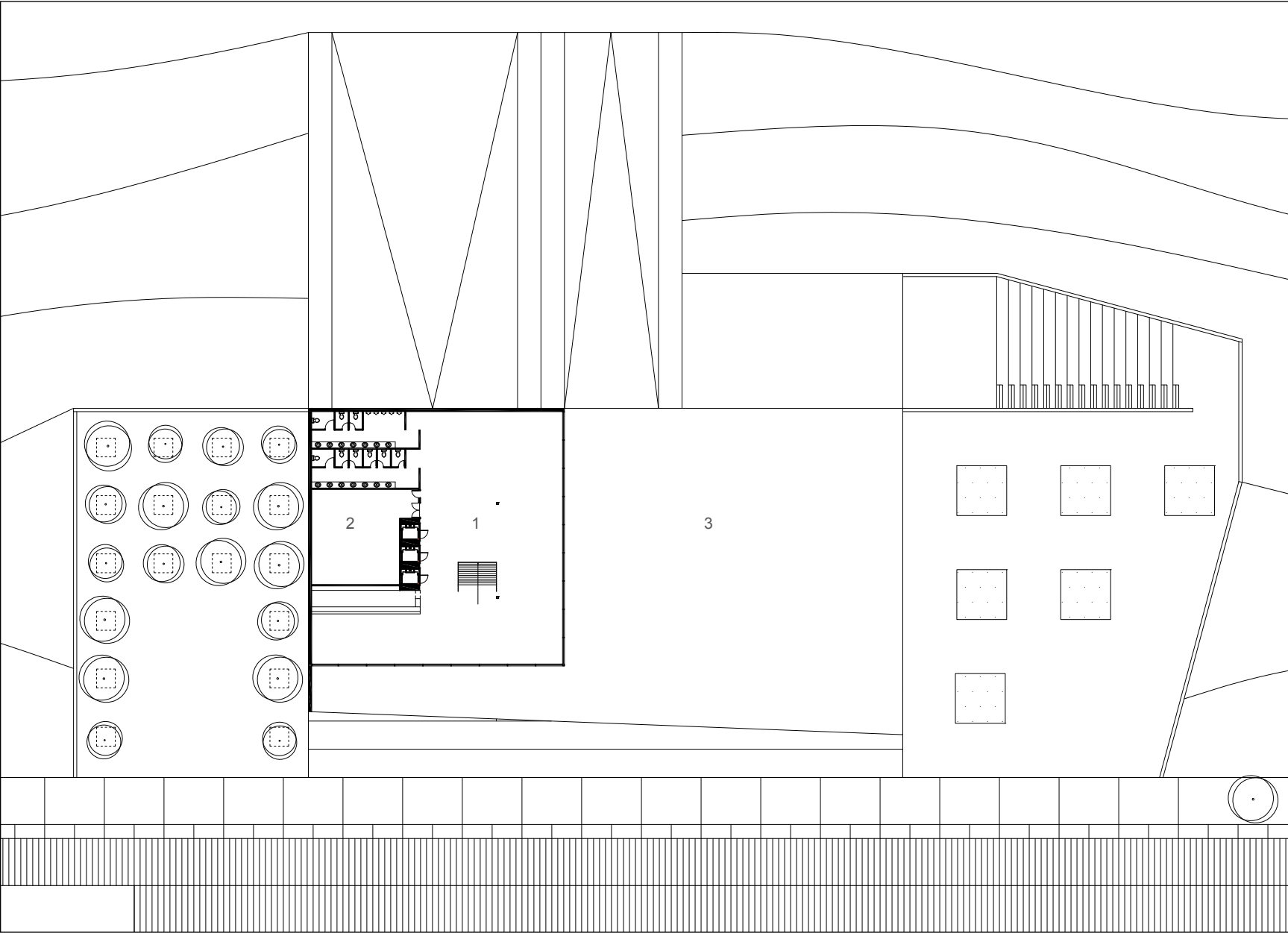
- 1 Entrance
- 2 Lobby
- 3 Multipurpose space
- 4 Office





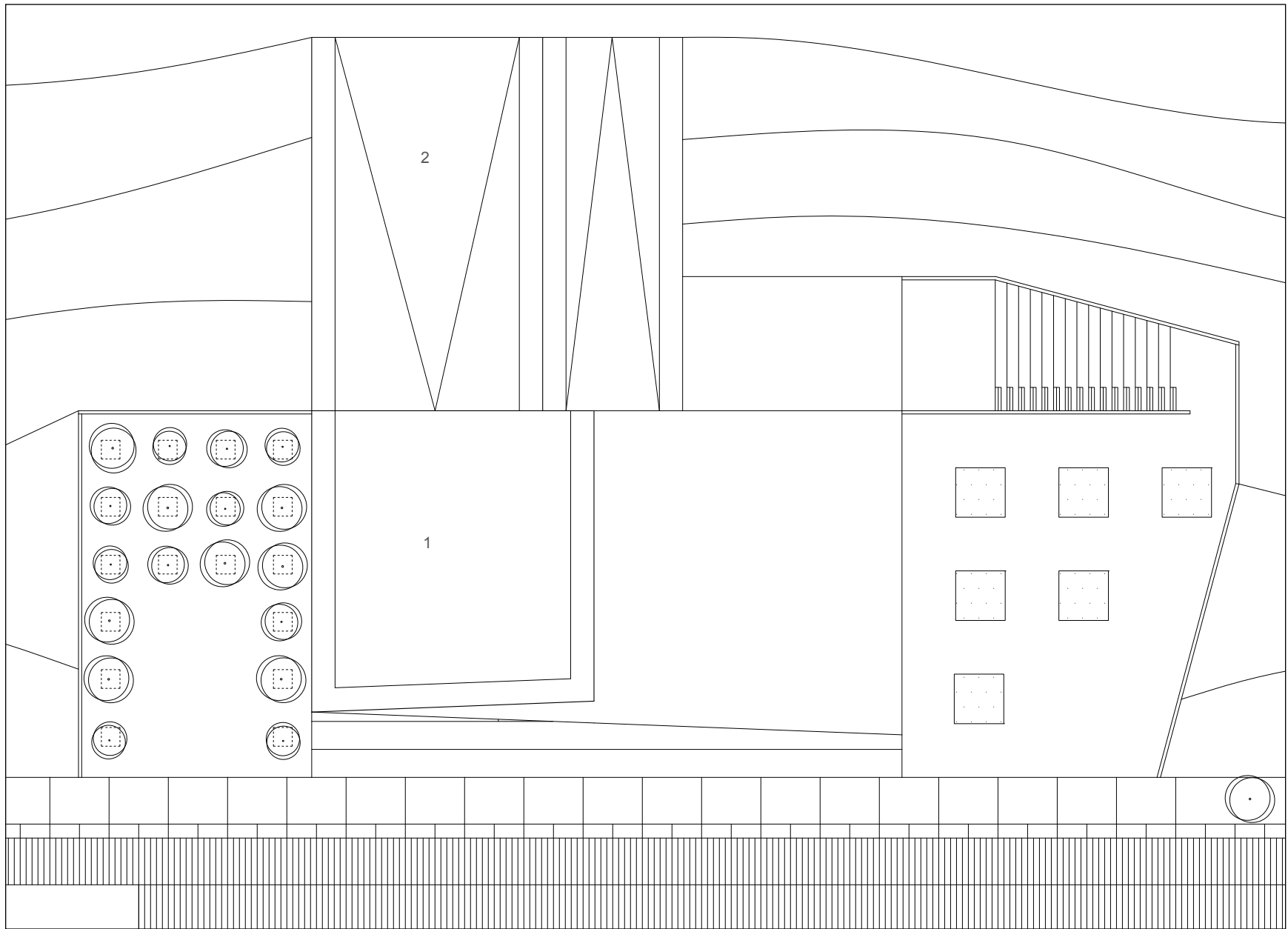
- 1 Ramp Down
- 2 Entrance
- 3 Gallery



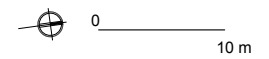


- 1 Casual Meeting Area
- 2 Kitchen
- 3 Green Roof





- 1 Green Roof
- 2 Ramp Up



Bibi-Heybat Museum



Fig 5.30 East Elevation

0 \_\_\_\_\_ 10 m

Bibi-Heybat Museum



Fig 5.31 South Elevation

Bibi-Heybat Museum

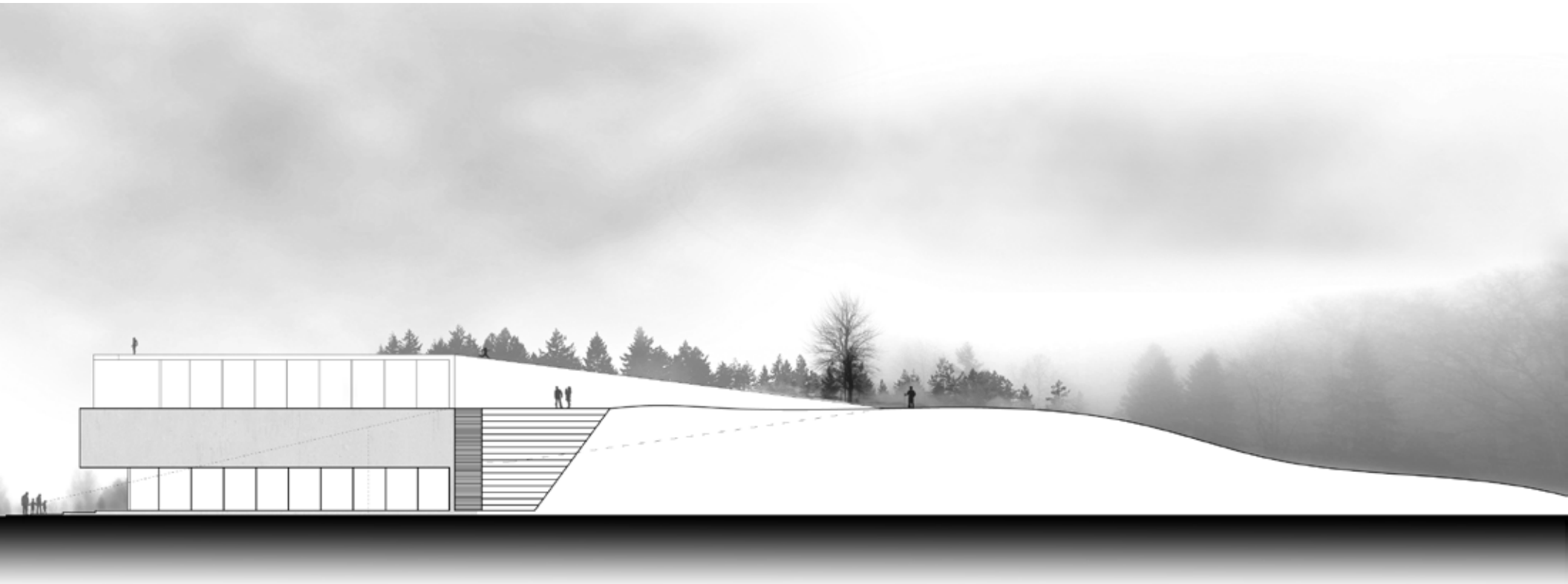


Fig 5.32 North Elevation

0 ————— 10 m



Bibi-Heybat Museum



Fig 5.33 West Elevation

0 \_\_\_\_\_ 10 m

# Bibi-Heybat Museum



- 1 Casual Meeting Area
- 2 Kitchen / Bar
- 3 Main Gallery
- 4 Multipurpose space
- 5 Lobby

Fig 5.34 Section A-A



0 \_\_\_\_\_ 10 m

Bibi-Heybat Museum



- 1 Terrace
- 2 Main Gallery
- 3 Multipurpose space
- 4 Office
- 5 Ramp Down
- 6 Ramp Up

Fig 5. 35 Section B-B





Bibi-Heybat Museum



Fig 5. 36 Approaching Bibi-Heybat Museum from North



Bibi-Heybat Museum



Fig 5. 37 Approaching Bibi-Heybat Museum from South

Bibi-Heybat Museum



Fig 5. 38 Bibi-Heybat Museum - Main Gallery Area - Second Floor



Bibi-Heybat Museum



Fig 5. 39 Bibi-Heybat Museum - Main Gallery Area - Second Floor



Bibi-Heybat Park



Fig 5. 40 Bibi-Heybat Park - Rebirth



Bibi-Heybat



Fig 5. 41 Current state of Bibi-Heybat

Bibi-Heybat



Fig 5. 42 Current state of Bibi-Heybat



Bibi-Heybat Park



Fig 5. 43 Bibi-Heybat Park - Rebirth



Bibi-Heybat Park



Fig 5. 44 Bibi-Heybat Park - Rebirth



Bibi-Heybat



Fig 5. 45 Current state of Bibi-Heybat



Fig 5. 46 Bibi-Heybat Park - Rebirth





Fig 5. 47 Bibi-Heybat Park - Rebirth

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## Conclusion

Transformation has been the major theme throughout this thesis proposing a remediation of the highly polluted Bibi-Heybat oil field, which has been like a scar upon Baku's history; changing it into a better place for everyone has been the main focus from beginning to end. Urban and social problems also played an important role in developing the themes in the thesis, helping the reader to grasp the full picture of the current situation in Baku. The first section reviewed the history

of Azerbaijan from ancient times to the present, providing an overview of the significant events that have shaped the country. The second section paid more attention to Baku itself, illustrating the main themes and problems of the metropolis, along with their roles, importance, and how they have influenced the city or vice versa. The third section addressed these issues by proposing a plan to transform Bibi-Heybat into a large Olmstedian Urban Park that enriches people's lives through landscape and architecture.

The greatest challenge of the work arose from the difficulty in gathering information about various issues from the uncooperative Azerbaijani government, which left this author to use any available resources to complete this work. Also, at this time, this thesis acknowledges the limits of this work by not including other significant factors related to the proposal. The challenges in remediating Bibi-Heybat for new public uses are enormous. In fact, the full scope of the project cannot be determined without advanced testing to uncover the depth of pollution at the site; only

then can appropriate ecological restoration methods be chosen for use within the field, supplemented by emergent management and cultivation techniques.

Other issues related to the park have not been mentioned in this work due to the inherent limitations of the scope of a thesis. Among these are the expenses related to designing and building an appropriate urban park, along with the later attendant expenses of operating and managing the site. If there is no healthy budget provided for maintaining Bibi-Heybat Park, the project's existence could be jeopardized. Without significant governmental and fiscal support, during the hard economic times and fiscal cutbacks, Bibi-Heybat Park could quickly fall into a state of despair and disregard, turning the city's backyard into a place of illicit purposes, violence, dumping, and urban wilderness. To guarantee the future of the park, there is a need for stewards, involved constituents, experienced managers, and reasonable funding.

Large parks such as Bibi-Heybat Park are com-

plex dynamic systems where the proffered physical, cultural, and experiential delights are the main reason for their creation; the ecological, operational, and programmatic aspects of parks are less obvious and well known. Considering that parks are designed, constructed, built, and cultivated, and are not simply natural places, they are subject to considerations similar to any landscape design work, such as geological, material, organizational, programming, and management changes—and these aspects may be considerable, given the vast scale and timeline involved.

This thesis by no means suggests that the work includes and fully comprehends all aspects of the proposed Bibi-Heybat Park because the park is quite simply larger than the designer's will for authorship. If it is a healthy, active environment, the park will naturally evolve into more multivalent and unpredictable configurations and expressions than anyone could anticipate at the outset. The author's intent was to create a framework and foundation, which is neither too complicated nor too open nor too weak, and which sets out a basis for

more a open-ended process for future formations and plans to take root. This work, with its geometry, material, and organizational dynamics, will be the basis for Bibi-Heybat Park's diversity, growth, and meaningful interactivity for the future. The park's framework has been set up in a way that is robust enough to lend structure and identity, while being flexible enough to adapt to changing demands and ecologies over time, thus providing a truly dynamic environment for the people of Baku.

This document is just a glimpse into a introspective plan of Bibi-Heybat transformation to the most significant and lively open space destination for the residents of Baku. Bibi-Heybat with its tidal salt marshes, scenic trails, play fields and playgrounds will be an important asset for the city and the region. By demonstrating the importance of the parks and open spaces for the community, neighborhoods, and the city; Bibi-Heybat Park will be reminiscent movement for many other great parks in the future.

## Epilogue

While working on Rethinking Bibi-Heybat I was asked how my approach is any different from the recent trend of urban developments in Baku? Have I considered an alternative future for the site? What are the options for remembering the site in its damaged condition? Therefore, I always kept those questions in mind while trying different scenarios and schemes for design of Bibi-Heybat Park. I also asked myself if memory of people, especially the 99%, should be represented in the

park, or, more importantly, if their history is erased, is it possible that the new park will not be used by them. Since access to majority of the new developments is limited due to cultural patterns or economically discrimination for majority of Baku residents, the proposed design took income, visitation patterns, park use, circulation, and transportation into consideration while providing access for all social groups.

By providing a safe and vast natural space in the heart of the city, the social interaction of diverse groups could be easily maintained. Moreover, the proposed programs in the park accommodate different social groups to experience and value the park, which is essential to sustaining cultural and social diversity.

The key question is whether this democratic experiment, manifested in physical landscape form, launched in Baku could be sustained over time and in the midst of social changes? The Fate of any project in Azerbaijan is dependent on the upcoming presidential election and resolution of the issues following

from the Nagorno-Karabakh war which are the main political concerns at the moment. Those issues can drive Azerbaijan into crisis by compromising the new economic boom and its offspring, the construction boom. I highly doubt the 1% would easily let go of the power and wealth they have in hand. Most likely there will be turmoil and, possibly, power shift in Azerbaijan. The future of Bibi-Heybat will change indefinitely if and when this power shift happens. If the new government produces a new elite group, there is not much hope for the existing pattern to change; however, if the power shift brings true democracy with democratic standards to the country, then there is hope for the future of Azerbaijan and Baku. If true democracy comes to Azerbaijan and people feel the democracy then participating in transforming Bibi-Heybat becomes their legacy for future generations; a remarkable physical manifestation of the cultural shift toward democracy.

Another important aspect of Bibi-Heybat Park is the symbolic communication of the cultural meaning and importance of the site. As I men-

tioned in chapter III part II, Bibi-Heybat is the black Jewel of the country. Azerbaijan would not be where it is now without its oil, which all started in Bibi-Heybat when the entrepreneurs from all over the world came to Baku to start their oil business. The oil from Bibi-Heybat brought wealth and fame to the oil barons and Baku and created many jobs for people of Azerbaijan especially Baku residence.

Bibi-Heybat is not like any other site; its situation, amidst chaotic agglomerations of rusty oil wells and infrastructure lines, appears as a torn figure with numerous different problems. So, how much of these abandoned colossuses of steel should be kept as a symbolic gesture for remembering the site? Is it possible to use the power of Bibi-Heybat's remnant patterns of infrastructure and industrial relics as landmarks and nourish the genius loci of the site? Historic layers of use had left their physical marks through industrial imprints, altered conditions, and environmental contamination. However, the biggest question for me during the design was whether to consider these disturbed and complex conditions for

their creative potential or as a nuisance that should be erased or camouflaged.

At the beginning of design process, I proposed to keep and reuse most of the existing industrial structures by transforming them into parts of the park. However, based on my research and analysis and due to extreme contamination of the site, I ultimately decided to clean up the site and proposed a cultural centre, Bibi-Heybat Museum, devoted mostly to tell the story of Bibi-Heybat in the past, present and the future.

Another idea was to keep patches of land inside the site to show the past and process of transformation along the circulation paths for visitors to experience the history of the site while walking through the park. This was the most appealing idea to me but I was not sure if it was possible and was concerned about the risks of keeping a large contaminated area in a remediated urban park.

There was one more proposal that suggested giving about one acre land to 30,000 families

to build their own house and garden in a sustainable way. However, I feel this is not the best approach because first, Baku has so many housing projects that most of them are unoccupied; therefore, there is not a lack of housing in Baku. Second, the cleaning and making the site safe for people to live in Bibi-Heybat is another big question. Cleaning and remediating the site is extremely difficult and must be done by professionals and expertise which will take a long time to bring the site in a condition to let people live there. Third, why restrict the site to only limited group while a different approach can offer the park for everyone? Fourth, since the main goal of Azerbaijani government is to beautify Baku, I highly doubt the current government will allow this proposal to take place.

During the past 2 years, many ideas came or were suggested to me to implement in the design of Bibi-Heybat Park which were legitimate and made me rethink my approach over and over again. I still believe my final design decision has more to offer for everyone, healing and memorable experiences for the visi-





Fig 5.48 The initial proposed scheme for Bibi-Heybat Park

to build their own house and garden in a sustainable way. However, I feel this is not the best approach because first, Baku has so many housing projects that most of them are unoccupied; therefore, there is not a lack of housing in Baku. Second, the cleaning and making the site safe for people to live in Bibi-Heybat is another big question. Cleaning and remediating the site is extremely difficult and must be done by professionals and expertise which will take a long time to bring the site in a condition to let people live there. Third, why restrict the site to only limited group while a different approach can offer the park for everyone? Fourth, since the main goal of Azerbaijani government is to beautify Baku, I highly doubt the current government will allow this proposal to take place.

During the past 2 years, many ideas came or were suggested to me to implement in the design of Bibi-Heybat Park which were legitimate and made me rethink my approach over and over again. I still believe my final design decision has more to offer for everyone, healing and memorable experiences for the visi-

tors than other schemes.

Nature in the park is the most important healing part of the my design and as Albert Einstein said “Look deep, deep into nature, and then you will understand everything better....”.

Nature has the many healing powers. It allows visitors to escape from the ordinary into the sublime world where the sensations come alive enabling them to feel better and enjoy a stolen moment of pleasure in the midst of Baku’s hectic lifestyle.

This peaceful environment helps visitors to clear their thoughts and images while breathing in the fresh, clean air and as their minds gently clear, stop the chaos for a while, instead allowing contemplation, reflection and inspiration to flow in their place. Bibi-Heybat Park’s natural settings provide visitors with a beautiful environment to walk, hike, jog, or cycle to make them feel good physically and mentally.

The power of regeneration in Bibi-Heybat is its most important message to the people of

Baku. Nature will go preserve and visitors will see signs of new growth, as saplings sprout and form clusters out of the blackened earth. It will remind people that as nature renews itself continually, people can influence their journey through difficult times; this is particularly true for the poor, working class residents, and IDPs. The nature in combination with Bibi-Heybat Mosque, Athletic Hill, and Bibi-Heybat Museum will offer more profound memorable and cultural experiences for the visitors than any other place in the city of Baku.

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