Embedded Boundaries

by

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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

This thesis is an investigation of landscape as boundary: a study of its formation, inhabitation, and symbolic meaning. The study is situated in a valley located south of Jerusalem's Old City walls; known as both Gei Ben-Hinnom and Wadi al-Rababa, it is an ethnic, cultural, socioeconomical, and mythological boundary.

In the ethnically polarized Jerusalem, valleys often act as boundaries between Jewish and Palestinian populations. For nineteen years an official no-man's-land divided the Hinnom/Rababa Valley, a result of an armistice agreement between Israel and Jordan. Since the 1967 annexation of East Jerusalem to Israel, the valley has transformed into a boundary between the two populations. Responding to this boundary, the thesis addresses an urgent need for a wastewater treatment facility, proposing new infrastructure as a vehicle to explore the ability of architecture to embody multiple narratives. By documenting built form, geology, hydrology, history, and mythology, the thesis illustrates the Hinnom/Rababa Valley as the space of the in-between, neither east nor west, bridging the urban hilltops with the underworld. The boundary partakes in both and neither sides simultaneously. Building on its multiplicity of meanings – of its 'stories so far' – the thesis attempts to re-imagine a new relationship to the ground.

embed
verb

(1) fix firmly and deeply in a surrounding mass. (2) implant (an idea or feeling).

Compact Oxford English Dictionary

Acknowledgements

I would like to thank my supervisor Dr. Anne Bordeleau for her thoughtful criticism and continuous encouragement, for giving me the freedom to explore while keeping me on track. I thank my committee members - Dereck Revington, Lola Sheppard, and Dr. Robert Jan van Pelt - for sharing their varied knowledge and interests and making this process a richer experience. I would like to extend my gratitude to Liat Margolis, my external reader, for her time and insight.

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To my mother

Table of Contents

fig.0.1.

list of figures

all images by author unless otherwise noted

introduction

ground
noun

(1) the solid surface of the earth. (2) grounds - an area of enclosed land surrounding a large house. (3) grounds - factors forming a basis for action or the justification for a belief.

Compact Oxford English Dictionary

fig.0.2. view of the Hinnom/Rababa Valley, looking east (opposite)

Jerusalem has been conquered, destroyed, and rebuilt repeatedly in its four thousand years of existence. In the last one hundred years the city has been the epicentre of a territorial conflict between Jewish Israelis and Palestinians. Designated by the UN as an international city in the 1947 partition plan, Jerusalem was nevertheless divided between Israel and Jordan, following the 1949 armistice agreement. Jerusalem existed as a divided city until the 1967 war in which Israel gained control over the entire city and subsequently annexed some 70 sq. kilometres of land which lay east of the armistice line, known as the Green Line. Israeli law was imposed on that eastern part of Jerusalem, and that area became, at least officially, an integral part of the municipality. Out of the 70 sq. kilometres annexed to Jerusalem, 6 km were part of the Jordanian controlled Jerusalem, and the rest included 28 towns and villages around the city along with areas belonging to the Bethlehem and Beit Jala municipalities, all of which were now to become part of the newly expanded metropolis. Resident status was given to all those present in a census conducted following the annexation; individuals *not present at the time of the census lost their right to reside in Jerusalem*[1]. Permanent residents were able to apply for citizenship provided they were not citizens of another country, had some knowledge of Hebrew and were willing to swear allegiance to the state. For political reasons, most of the residents chose not to request Israeli citizenship[2]: many of the 250,000 Palestinians living in Jerusalem today (a third of the city's population) are not citizens and therefore do not hold equal rights.

1 B'Tselem, *Legal status of East Jerusalem and its residents*, http://www.btselem.org/english/Jerusalem/Legal_Status.asp

2 B'Tselem.

Today, both the status and boundaries of Jerusalem remain as contested as ever. The international community does not recognize Jerusalem as the capital of Israel, and sees East Jerusalem as part of the occupied territories. Following the eruption of the Second Intifada in 2000, Israel began the planning and construction of a 723 kilometre long separation barrier which partially follows the 1949 armistice line around the West Bank, and is partially within the occupied territories, separating Jewish cities and settlements from Palestinian population. The eight metre-high concrete wall, currently still under construction, surrounds East Jerusalem and the near-by Jewish settlements thereby separating Palestinian neighborhoods inside Jerusalem from those behind the wall. The separation barrier, constructed to prevent suicide bombers from coming into Israel from the West Bank, is consequently limiting the mobility of thousands of Palestinians who now require permits to see their families, reach their workplace, or tend to their crops. Referred to as the 'separation' or 'security fence' by the Israeli administration or as the 'Apartheid wall' by Palestinians, the wall is the subject of continuous controversy, protests, court appeals, and violence.

But even within the 'unified' city, Jerusalem remains to this day a network of fragments, as Philip Misselwitz and Tim Rieniets describe in their recent book,

> *...the notion of the city as the 'unified city' remains fragile rhetorical acrobatics. In reality, residents of the city do not experience the urban territory as a continuum, but conduct their everyday lives with almost completely separate socioeconomic, cultural and spatial systems*[3].

The constructed buffers between Jewish and Palestinian areas in Jerusalem include walls, fences, roads, and bridges to name a few. The separation is further amplified by the natural topography of Jerusalem, where valleys designated as parks or open space separate neighbourhoods from one another. Zoning of open space in Jerusalem is used to preserve historical sites, municipal recreation spaces and scenic areas that preserve the character of the city, include both agricultural and nature reserves. In many cases these spaces act as buffers

3 Misselwitz, Philipp and Tim Rieniets, *Cities of Collision: Jerusalem and the Principles of Conflict Urbanism*, (Boston, Basel: Birkhäuser, 2006), 26.

between Jewish and Palestinian population and sometimes serve to limit the expansion of Palestinian neighbourhoods, prevent their territorial continuity, or secure land for future expansion of Jewish neighbourhoods[4].

The variety and quantity of buffers is indicative of Jerusalem's existence as a frontier, bearing similarities to the condition of the entire West Bank. In 1967, with the removal of the border between two sovereign states, the entire disputed territory became a frontier where the struggle for control now takes place. From both political and military perspectives, a frontier condition is inherently different from a static border. In his work, architect Eyal Weizmann maps and analyzes the frontier conditions of the West Bank. He offers the following definition:

> *The frontier is antithetical to fortified lines. Against the geography of stable, static places, and balance across sovereign borders, the frontier is a space of "flow". It is a military and political pattern of elastic and shifting geography, a zone of contact that cannot be represented by lines.... If sovereign borders are linear and fixed, frontiers are deep, fragmented and elastic*[5].

The frontier in and around Jerusalem includes a multitude of buffers or boundaries, operating at many levels, both physically and psychologically. These range from the aggressive separation barrier, to immaterial boundaries such as the apprehension of being outside of one's homogenous zone, fearing harassment or violence[6].

The difference between Palestinian and Jewish areas is first made apparent by two distinct housing typologies which vary in their social structure, topographic condition, orientation, street access, and even in details such as roof types, or mechanical equipment. Beyond the residential architecture, the disparity between the ethnically

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4 Khamaisi Rassem, "Villages Under Siege", *Cities of Collision: Jerusalem and the Principles of Conflict Urbanism*, (Boston, Basel: Birkhäuser, 2006), 123.

5 Eyal Weizmann, "Principles of Frontier Geography", *Cities of Collision* , 85.

6 Romann, Michael, and Alex Weingrod, *Living Together Seperatly: Arabs and Jews in contemporary Jerusalem*, (New Jersey: Princeton University Press, 1991), 69.

polarized neighbourhoods can be seen in the public realm, most notably in the neglect of infrastructure and services in Jerusalem's Palestinian neighbourhoods. Lack of investment, first by the Jordanian authorities, and presently by the municipality, has left roads, sidewalks, sewage and water pipes to deteriorate over the past 43 years. The number of amenities and services such as parks, swimming pools, libraries and sport facilities is especially low in East Jerusalem.

The complete separation maintained between the two ethno-national groups in the city is reflected in this passage by Romann and Weingrod, concluding their sociological research of the subject in 1991:

> *one of the most striking features of the united city is that an Arab or Jewish identity can be attributed to all neighbourhoods, public functions, commercial establishments, and even basic consumer goods. There is very little that appears to be neutral or that can be given a different label: practically everything is categorized as either "Jewish" or "Arab"*[7]

In this polarized city where nothing is neutral, the boundary valleys are perhaps some of the only places that could possess an ambiguous identity. And although the valley landscape would have different readings or different roles in the narrative of the two groups, it can not be easily labeled Jewish or Palestinian and therefore has the potential to offer a layered or hybrid understanding of place.

The focus of this research is one of these aforementioned valleys, known as Gei Ben Hinnom, or Wadi al-Rababa in Hebrew and Arabic respectively. The valley begins across from the old city's Jaffa Gate and wraps around the southern slopes of Mount Zion, where it connects to the Kidron valley (or Wadi en Nar) in the east, dropping over a hundred metres in elevation on its way. Because of its location along the Green Line, the surrounding communities of Hinnom/Rababa Valley present two types of neighbourhoods typical to Jerusalem, a Jewish neighbourhood and a Palestinian town-turned neighbourhood, as well as a third more uncommon type of a mixed Jewish/Palestinian neighbourhood with an internal boundary.

7 Romann and Weingrod, 221.

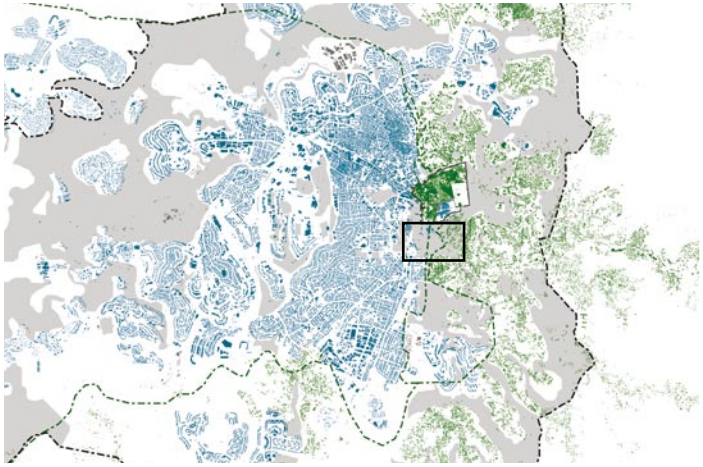


fig.0.3. location of Hinnom/Rababa Valley along the Green Line

Surrounded by these three neighbourhoods, the Hinnom/Rababa Valley exists between two ethno-national and socioeconomic polarities. As such, this thesis's design proposal attempts to create a space which celebrates the state of in-between, of being amid two worlds but belonging to neither. The proposal addresses an urgent need for wastewater treatment infrastructure; using this infrastructure as a vehicle to explore the ability of architecture to embody multiple narratives, and to present ones that are beyond the immediate political narratives.

The proposal for a wastewater treatment is intended to resolve an ongoing crisis in which wastewater from parts of East and West Jerusalem, as well as surrounding communities including Bethlehem, dispose their sewage into the Kidron/ en Nar valley, where it flows, mostly untreated, southeast to the Dead Sea. Along its route, the wastewater pollutes not only the surface landscape, but also filters down to the groundwater which is the most important source of fresh water in this area.

The municipality's plans for a treatment plant have existed for years, but were never carried out. One of the obstructions to their execution remains the cooperation required between Israeli officials and the Palestinian Authority, as the wastewater is generated in areas controlled by both parties. The thesis proposes a smaller scale treatment plant which would only remedy a small part of the problem, but which could be implemented immediately without coordination between the Palestinian Authority and the state of Israel, and would use a minimal amount of energy. The wastewater treatment will double as a rain-harvesting and groundwater recharge infrastructure, taking advantage of the natural topography and hydrology of the valley.

Beyond the utilitarian aspect of the proposal, the goal of the intervention is not to try to bring people together, but to create an architecture that acknowledges multiplicity. The thesis attempts to explore and express a contradiction inherent to the proposal: it offers both unifying narratives (of ecology for example) and opposing narratives (expressing separate contradictory national and religious narratives).

The wastewater treatment plant can be seen as an addition of yet another boundary to the site, dividing east from west, while at the same time water flowing west-east becomes a connective element. Similarly, the programmatic choice of civic infrastructure which serves all of the surrounding residents and has a positive effect even beyond the site, down the stream, is yet another connective element.

The Hinnom/Rababa Valley, known also as the valley of Gehenna, holds many dark narratives with a history of being a necropolis, a dump site, purgatory, slums, and a site of human sacrifice. The word hell originates in both Hebrew and Arabic from the name Gehenna. Because the valley is outside of homogenous space, outside of urbanity, it offers an opportunity to reflect on the world one has just stepped out of and giving one a different perspective on the surrounding environment. In fact, there are a number of traditions of prophets, hermits, and saints, coming to the valley to find isolation and to communicate with higher powers. The narrative of water infrastructure is in itself symbolic, with water being a symbol of duality and boundary. The proposal of civic infrastructure right at the foot of the holy mountain is also significant in that it celebrates a structure built to serve the citizens in a city where they have been said to exist for it, and not vice versa.

The thesis document is divided into three parts. The first, Boundary, describes the various ways in which the valley acts as a boundary; politically, environmentally, and metaphysically. The second chapter, Stone, illustrates the materiality of the valley. It explores the cumulative layering of the stones and rocks which make up the site and meanings and symbols attached to them by different groups over time. The third chapter, Water, briefly outlines the significant role water has played in the history of Jerusalem and the Hinnom/Rababa area in particular from political, religious, and symbolic perspectives. The present wastewater crisis in southeast Jerusalem is described as the programmatic context for the design proposal and its raison d'être. The chapter concludes with a detailed illustration of the proposal as it addresses these infrastructural needs.

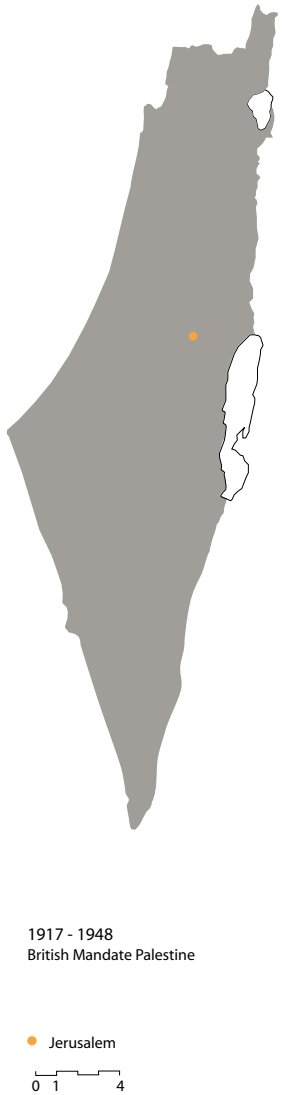
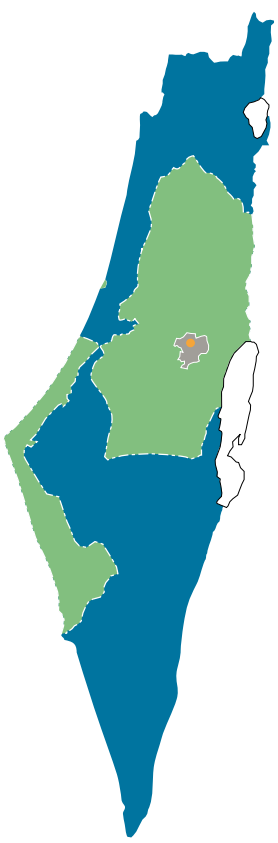


fig.0.4. transformation of national boundaries

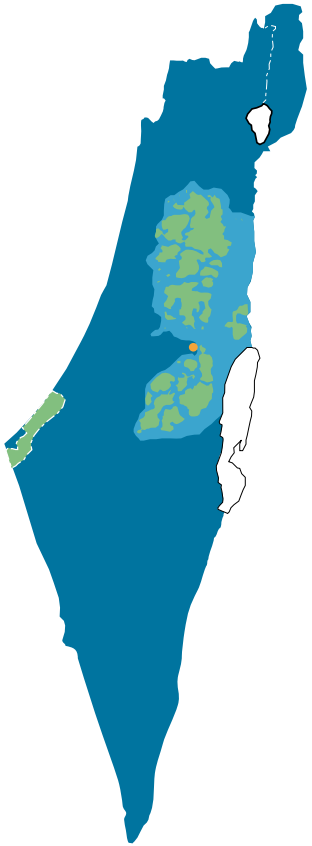


1947
UN Partition Plan
(resolution 181, dated 29 Nov. 1947)

- Jewish State
- Arab State
- Jerusalem corpus separatum - international regime administered by the UN

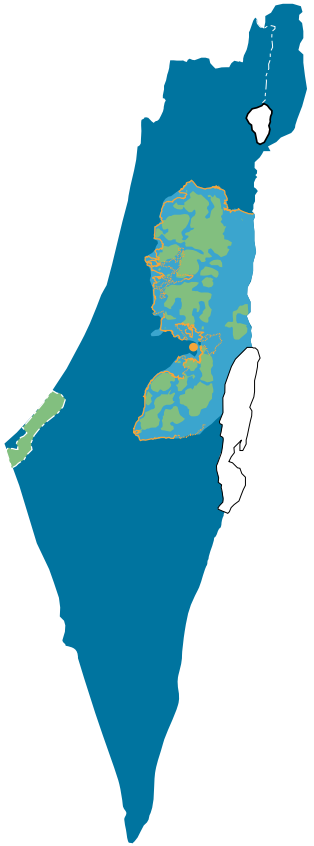
1949 - 1967
Armistice Agreement
(border also known as the 'Green Line')

- State of Israel
- Jordanian / Egyptian Controlled Territory



1993 - 2000
post Oslo Agreement

- State of Israel
- Oslo Area C - full Israeli control
- Oslo Area A+B - full/partial Palestinian Authority control



2001 - Present
Separation Barrier Construction

- State of Israel
- Oslo Area C - full Israeli control
- Oslo Area A+B - full/partial Palestinian Authority control
- Separation Barrier
- Barrier planned/under construction

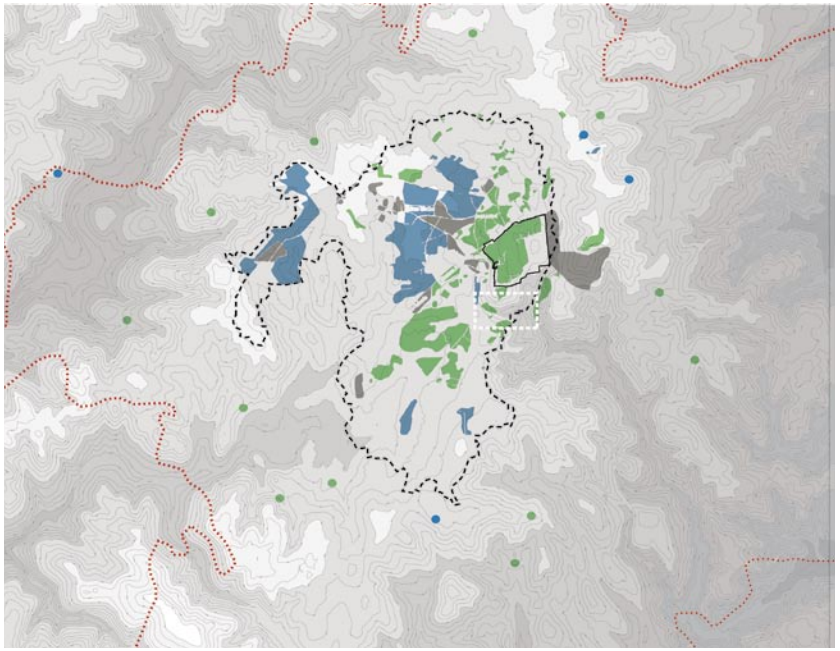


fig.0.5.

1947 - British Mandate

Old City

Municipal Boundary

Proposed Border - UN Corpus Separatum

Jewish

Palestinian

Mixed

Hinnom/Rababa Valley

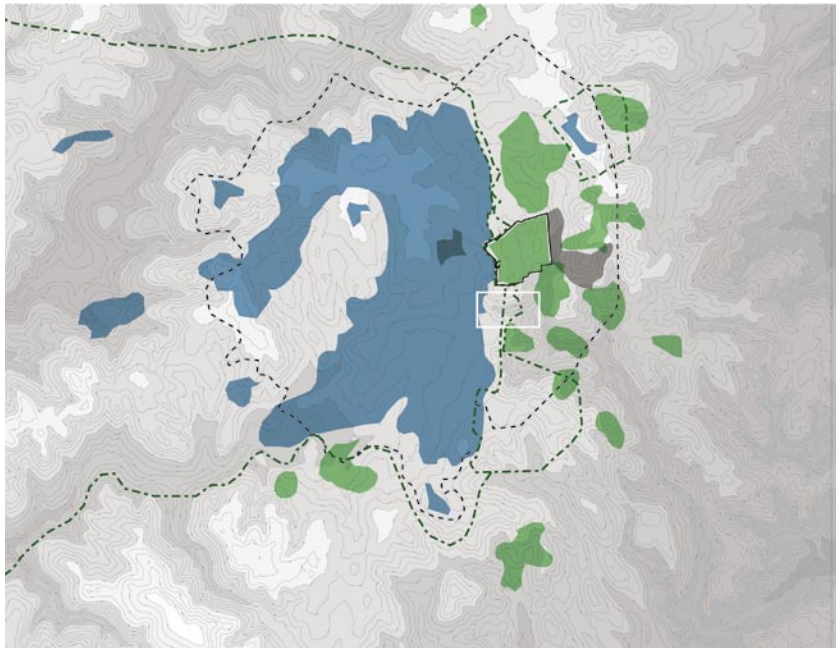


fig.0.6.

1967 - Divided City

Old City

Municipal Boundary (Israeli city, Jordanian city)

1949 Armistice Line (Green Line)

Jewish

Palestinian

Hinnom/Rababa Valley

fig.0.5. - fig.0.8. transformation of municipal boundaries

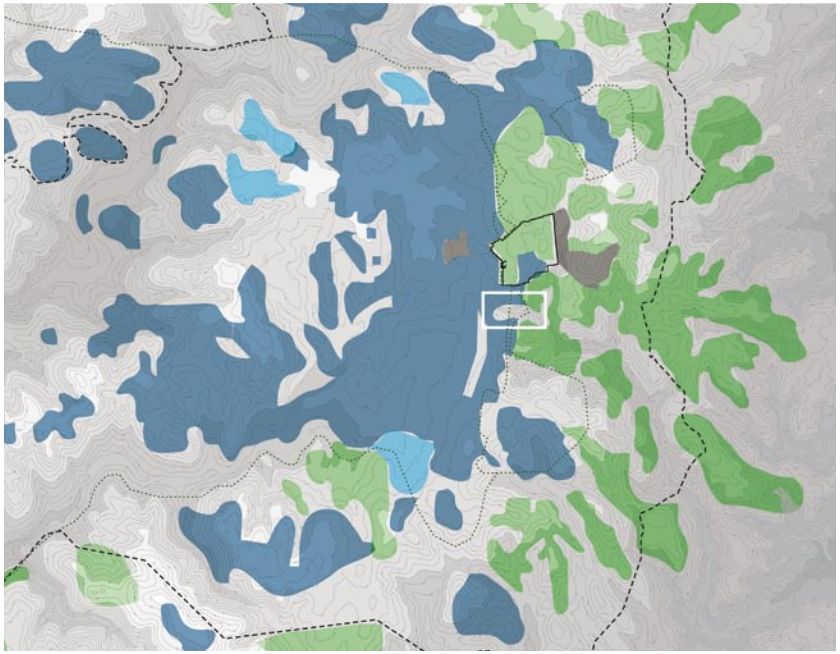


fig.0.7.

2001 - Reunited City

Old City
Municipal Boundary
Jewish
Palestinian
Cemetery
Industrial Zone
Hinnom/Rababa Valley

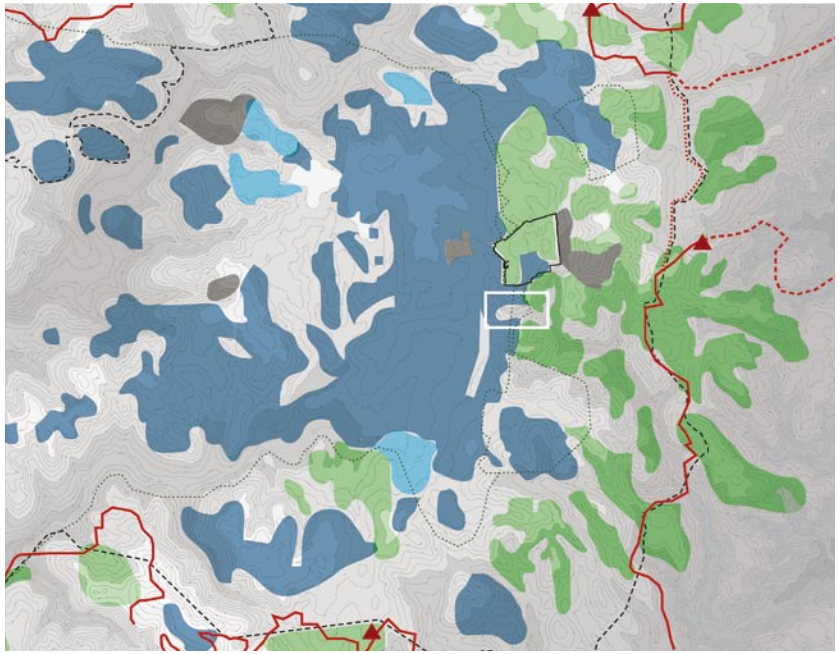


fig.0.8.

2006 - Walled City

Old City
Municipal Boundary
Separation Barrier - Constructed
Separation Barrier - Planned/Under Construction
Major Checkpoint
Jewish
Palestinian
Cemetery
Industrial Zone
Hinnom/Rababa Valley

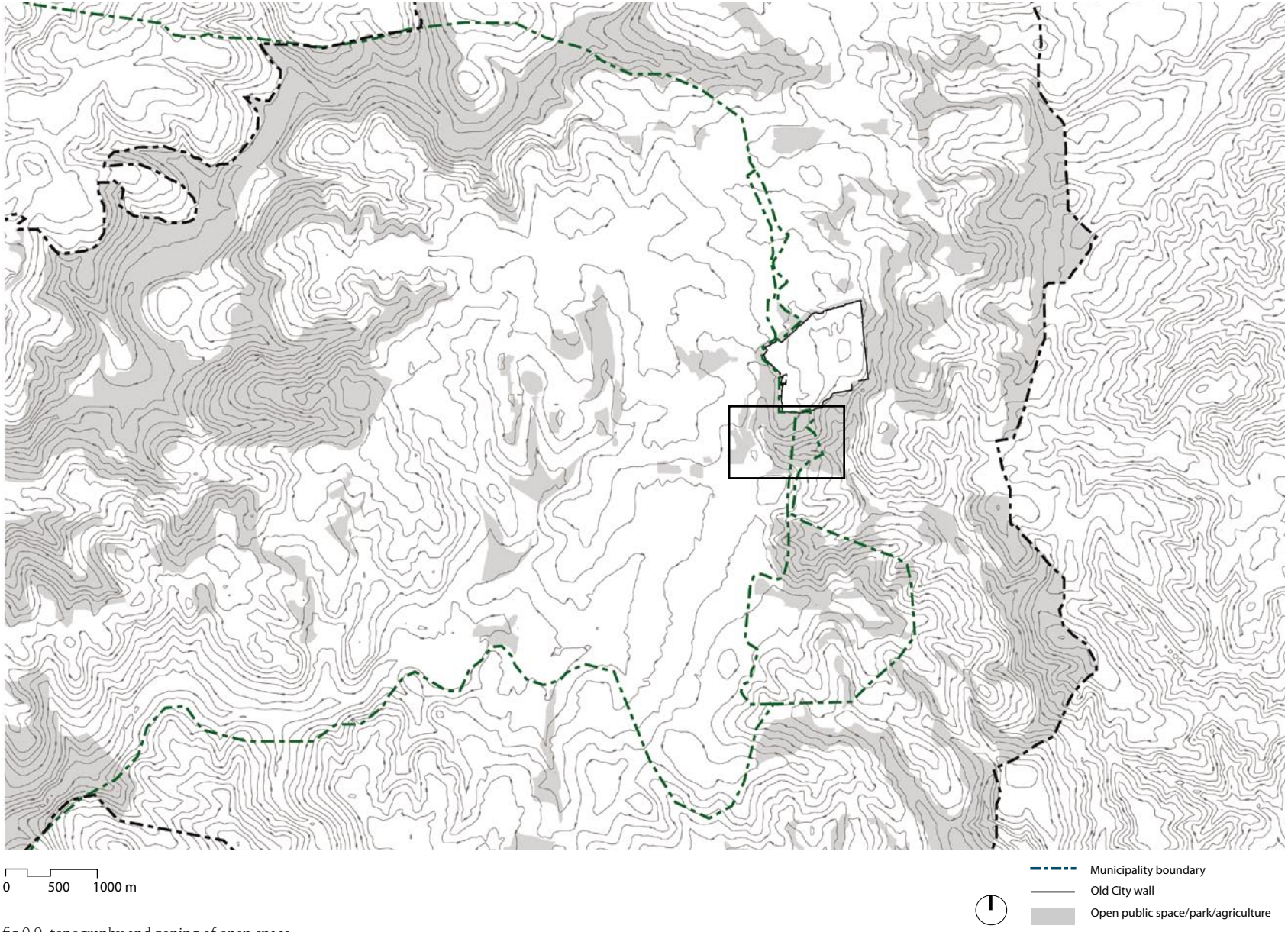


fig.0.9. topography and zoning of open space

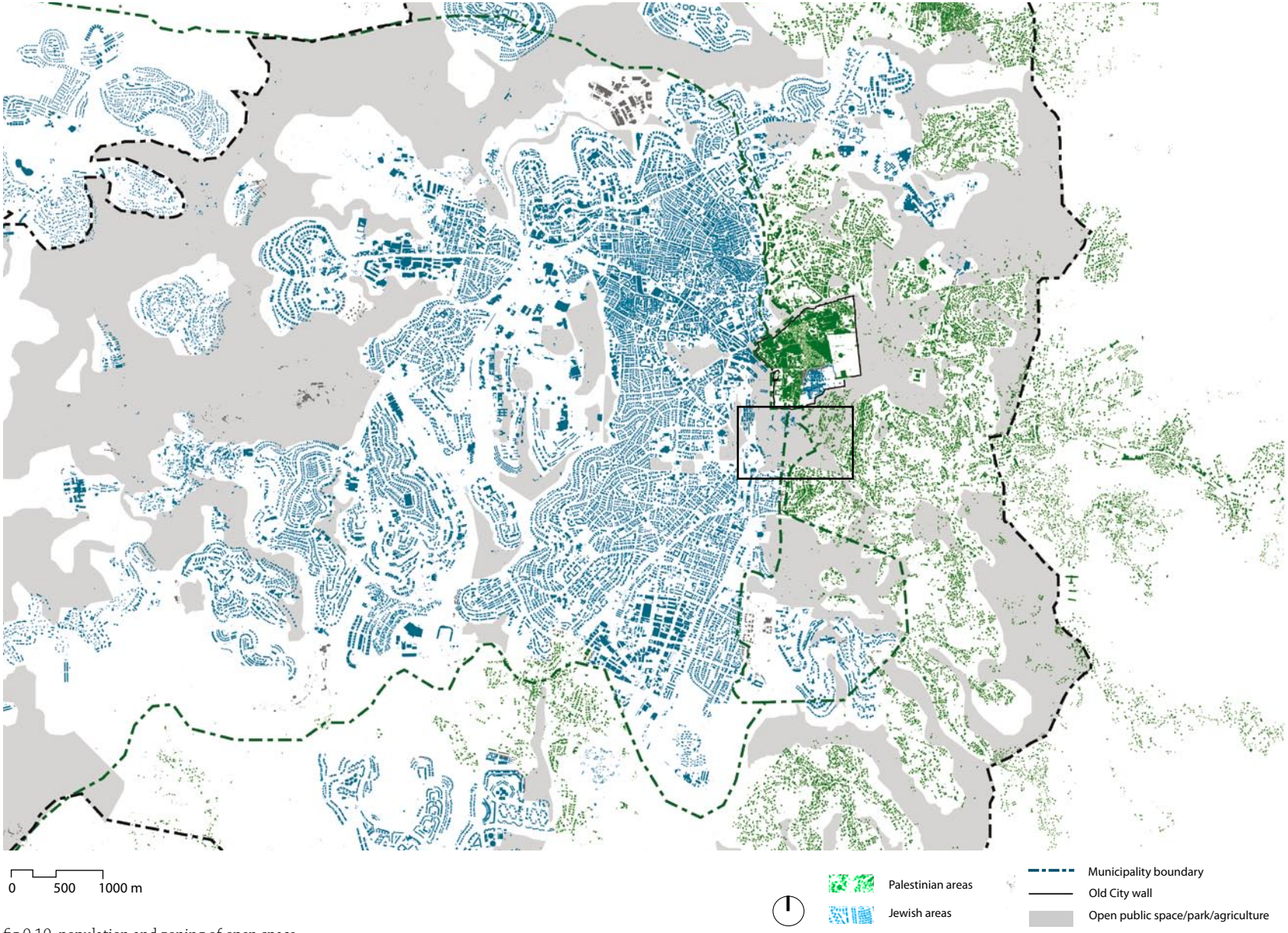


fig.0.10. population and zoning of open space

boundary

Crossing over to the "other side" is a highly conscious act that is often avoided, just as manifestations of avoidance and obstruction of intercommunal relationships are widely practiced in many everyday situation

(Romann and Weingrod, Living Together Separately)

Wedged between Jerusalem's Old City and the surrounding residential fabric, between Jewish and Palestinian Jerusalem, and between the holy city and its surrounding tombs, is Ben Hinnom Valley, also known as Wadi al-Rababa. This seemingly abandoned buffer zone houses some of the oldest archaeological remains of the city; evidence of the thousands of years of human occupation now accumulated at its edges. This chapter describes the valley as a frontier marked by boundaries of all kinds: national, religious, ethnic, cultural, socioeconomical, ecological, and mythological. Lines both visible and invisible.

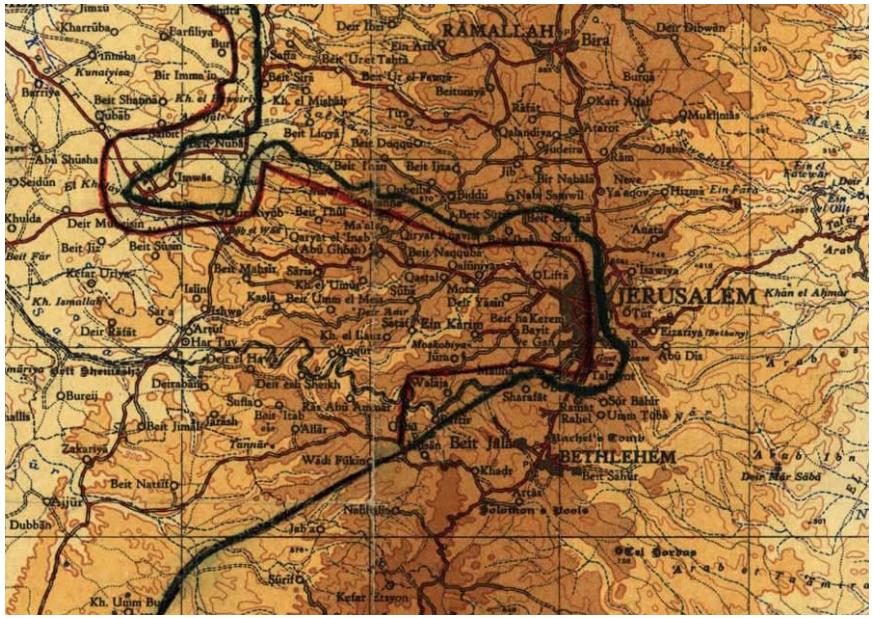


fig.1.1. 1949 Armistice map - detail, Jerusalem area

fig.1.2. 1949 Armistice map outlining the 'Green Line'

political boundaries

The aftermath of the 1948 Arab-Israeli War saw a series of armistice agreements signed between Israel and neighbouring Egypt, Jordan, Syria and Lebanon. Known to Israelis as 'Milhemet Ha'atzmaut' (War of Independence) and 'al-Nakba' (the disaster) to Palestinians, the 1948 war shaped the borders of a newly formed Jewish state. Disregarding the UN partition plan, the armistice divided the area between the Jordan River and the Mediterranean, leaving the city of Jerusalem divided, just west of the Old City, between the State of Israel and Jordanian Kingdom. Included in the Israel-Jordan agreement signed between Generals Moshe Dayan and Abdallah al-Tal, was an armistice map, drawn with a green china marker at a scale of 1:20,000[1]. The line, as marked, was to become the border between the Jordanian-controlled West Bank and the state of Israel. For the following 19 years, Jerusalem remained a divided city. At first, physical barriers were only erected outside the urban fabric. However, this changed through the 1960s as a preventative measure to counter occasional shooting incidents between Israeli and Jordanian guard posts facing each other along the city border[2]. These incidents typically occurred when residents unknowingly crossed to the other side of the city, or when soldiers stationed on either side of the line had different understandings as to where exactly the border was located. The ambiguity of this border definition was, in part, a consequence of the tip of the china marker used on a map of such a large scale. At 1:20,000 the agreed-upon line translated to a realized width of approximately 60 to 80 metres. In central Jerusalem this meant entire streets and homes became territorially disputable, and the technicalities of scale and line weight became of national interest.

1 Benvenisti, Meron, *Jerusalem : the torn city* (Jerusalem: Isratypeset, 1976), 88.

2 For an overview on the negotiation on the width of the line see: Benvenisti, Meron, *City of stone : the hidden history of Jerusalem* (Berkeley: University of California Press, 1996), 56-63.

fig.1.3. Army border post in Yemin Moshe

(1) Old City Wall (2) Mount Zion (3) Yemin Moshe (4) Abu-Tor (5) Silwan

Green line

no-man's-land

fig.1.4.

The area of the Hinnom/Rababa Valley was one of the ambiguous territories in question. Fences were erected in the no-man's-land three separate times before an agreement was reached on where the border would lie:

> *In the Hinnom Valley, where there was no demarcation line on the Dayan – al-Tal map – due apparently to the grease pencil's having skipped – three successive fences were put up and taken down because the Israelis and Jordanians could not reach an agreement as to positioning*[3]

These fences defined a 400 metre-wide no-man's-land which divided the Hinnom/Rababa Valley between Israel and Jordan, for the duration of the 19 armistice years. This zone took up much of the valley's area, extending north, bisecting Mount Zion on its way up the hill to the Old City's walls. At that time, the Old City was controlled by the Jordanians, and the no-man's-land folded around the walls, emerging again in front of Jaffa Gate. South of the valley, the no-man's-land narrowed and extended to the neighbourhood of Abu-Tor. This neighbourhood, also known as Thori to its Palestinian residents, was founded in the late 19th century by Arab residents[4]. Simultaneously, a Jewish neighbourhood, Beit Yosef (named after one of its founders), had also been established at the western edge. However, the turbulence of the 1920s, the distance from the centre of Jewish life and the proximity to the Arab settlement, resulted in the gradual departure of Jewish residents for more densely populated Jewish neighbourhoods[56]. And so Beit Yosef was absorbed into an expanding Abu-Tor.

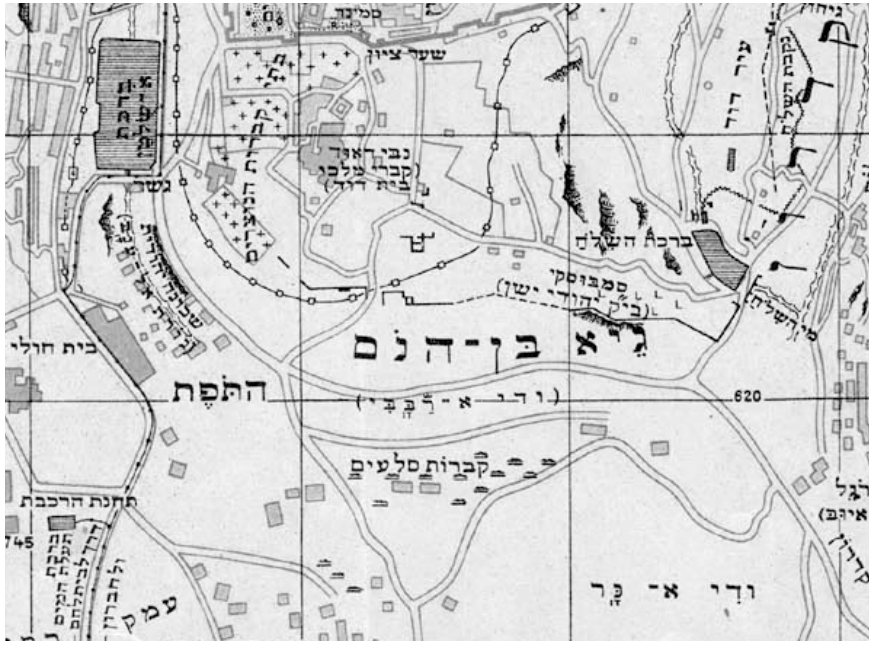
Conquered by Israel in 1948, the upper west portion of Abu-Tor was renamed 'Givat Hanania' (Hanania's Hill). Over time, Jewish residents settled in

3 Benvenisti 1976, 61.

4 According to 15th century accounts, *Abu-Tor* refers to an officer in Saladin's army named Ahmed al-Kudsi who excelled in battles against the crusaders and received the hill as a reward. He was known to ride a bull, and was therefore name Abu-Tor. Other accounts link the word Tor to the god Ba'al (Molech) who was worshiped in the valley below, where human sacrifices were made to a statue of a bull or a calf.

5 Bibar, Yehoash, *Gei Ben Hinnom ve Nahal Kidron* (Jerusalem: Yad Izhak Ben-Zvi, 1991), 30.

6 Gafni, Reuven, "Shchunot Ha-Emek Ha-Ne'elamot", *Etmol* 187 (2006), 41-43.



In this 19th century Hebrew map of Jerusalem the houses of Shama'a are drawn just south of the Sultan's Pool. The neighbourhood here is mistakenly labelled 'Jorat al-Anab, which existed just north of the pool. The valley itself is labelled as Gei Ben-Hinnom with the Arabic name, Wadi a Rababi, in brackets below. The map also identifies the area below Shama'a as 'Tophet', the site known in Hebrew scriptures as the place of human sacrifice to the god Molech.

fig.1.5.

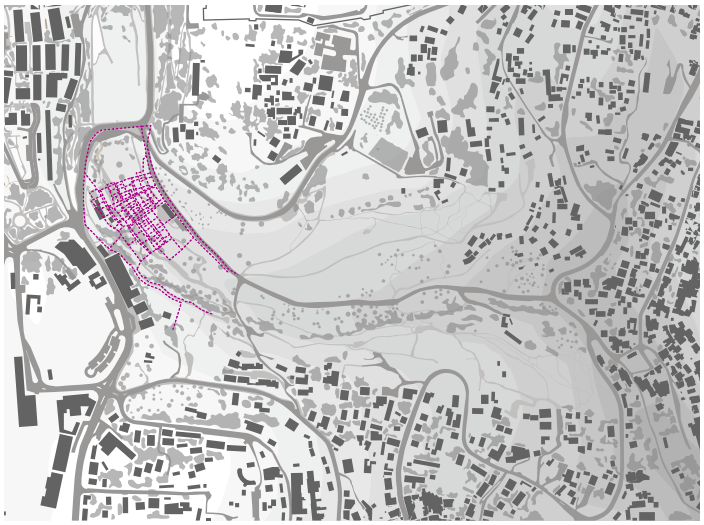


fig.1.6. lot lines in the valley today still register the houses of Shama'a,

abandoned Palestinian homes, gradually migrating closer to the Green Line. Most new residents were illegal squatters, immigrants from Eastern Europe as well as many Iranian and Moroccan Jews, who later legalized the ownership status[7]. This was not an uncommon practice, as only those who had no better housing solution were willing to take that risk. Although both Israel and Jordan were striving to maintain the status quo, areas along this line remained a dangerous place, as soldiers stationed across the fence occasionally fired at each other[8]. This was especially true when residents were exposed, in plain view, to the opposite party. Just north of Abu-Tor, the neighbourhood of Shama'a experienced a similar fate.

Fairly unknown and described by historians as the 'missing neighbourhood', Shama'a was founded in 1900 when 25 Jewish families of mainly Kurdish descent built their homes in the upper valley near Hebron Road[9]. The houses became known as Shama'a, which some argue is distortion of the French name of the nearby Akeldama (Champ du Sang). The Hebrew name originally given to the neighbourhood was Sha'arei Tzion, meaning Gates of Zion for the nearby Mount Zion[10]. After growing to house 70 families before the 1920s, it eventually experienced a similar fate to Beit Yosef, as Jewish residents once again began leaving due to attacks on homes and residents by the local Palestinian population. By the 1930's the residential population was entirely Palestinian, and it continued to expand.

After 1948, with the Arab population now east of the armistice line, families of Middle-Eastern Jews moved in and squatted in the abandoned houses of Shama'a. During the 1960s, the municipality tried to evacuate the squatters, but they refused to leave without being given alternate housing. Despite exposure to

7 Romann, Michael and Alex Weingrod, *Living together separately : Arabs and Jews in contemporary Jerusalem* (Princeton, N.J.: Princeton University Press, 1991) , 64.

8 Benvenisti 1996, 274.

9 Gafni, 41-43.

10 Gafni, 41-43.

fig.1.7. key plan (left), fig.1.8. Shama'a early 20th century (right)

fig.1.9. Shama'a before its demolition, ca. 1969 (left), fig.1.10. Shama'a today (right)

fig.1.11. Zurich Park and the Alpert Music School - the site of Shama'a today (left), fig.1.12. a young girl from Silwan walking home near remains of a Jordanian bunker (right)

fig.1.13.

the Jordanian soldiers stationed on top of the old city wall, the squatter families remained in Shama'a until 1967, when the neighbourhood was finally evicted and demolished[11]. Standing on the green lawn of Zurich Park today, it is almost impossible to tell this was once a neighbourhood. A single building stands on the green patch at the north part of the Hinnom/Rababa Valley. This remnant once housed one of Shama'a synagogues and was left standing at the request of Mayor Teddy Kollek[12]. Today, it houses a unique music school and youth orchestra comprised of both Jewish and Palestinian children. Another surviving structure is the Jerusalem Cinematheque; housed in three homes on Hebron Road which were retrofitted in the early 1980s as part of Kollek's vision to create a 'Cultural Mile' of public institutions along Hebron Road.

The two remaining houses of Shama'a are not the only physical sign of the armistice years in the Hinnom/Rababa Valley. Crossing the sky, framed over the valley by the surrounding hills, a cable stretches from the top of Mount Zion Hotel, across the valley towards Mount Zion itself. This was a cable car which served Israeli forces during the 1948 war, when the building served as an English eye hospital. During the nights, the car transported equipment, medicine, and ammunition to the soldiers stationed on Mount Zion, and was lowered to the bottom of the valley and hidden during the day. The cable car has since been maintained and preserved as an artefact of military heritage.

In the southeastern part of the valley, remnants of a Jordanian bunker can still be found looking out over the valley. IN the centre of the valley, the road rising up from the valley towards Abu-Tor was the path used by the Israeli border patrol. On the north side of the valley a road known as the 'Pope's Road' winds up the slopes of Mount Zion. This road was paved within the no-man's-land with special permission from the UN and Jordan in honour of the Pope's visit to the Holy Land in 1967. This allowed for access to the mountain's holy sites which

11 Gafni, 41-43.

12 Meiron, Eyal and Doron Bar, *Planning and conserving Jerusalem, 1973-2003 : the challenge of an ancient city* (Jerusalem : Yad Izhak Ben-Zvi, 2009), 184.

would have otherwise been secluded in the no-man's-land.

More than the few physical remains of the former border, the most significant indicator of the geopolitical past is the surrounding population which continues to live on this 'seam line'. During the divided years, the city's population was almost completely separated between the two sides – one main exception was Beit Safafa, an Arab village divided by the Green Line. Even so, in 1950, only 1,930 non-Jews were counted within the western, Israeli Jerusalem, and only one Jewish woman married to an Arab man was living in the east[13].The Palestinian population of the Jerusalem area was dramatically and tragically affected by the 1948 war. Of the many thousands of Palestinian refugees who fled or were expelled from areas conquered by Israel, 28,000 found refuge in East Jerusalem[14], either squatting or living first in tents and caves, then in mud huts:

> *Hebron villagers also gravitated to the city [Jerusalem] but often found housing only in the poor crowded section of the city, like Silwan. In many cases, they squatted in abandoned buildings along the Green Line, just as Moroccan Jews did on the other side of the city.*[15]

By 1952 about half of the post-war Palestinian population had left the city for Amman[16], the West Bank, and other countries. Both during and after the war, many of the wealthy families who were able to leave, left Jerusalem. And so, of the 45,000 Palestinians left in the city in 1952, many were either displaced

13 Wasserstein, Bernard, *Divided Jerusalem : the struggle for the Holy City* (New Haven : Yale University Press, 2001), 179.

14 UNWRA estimates there were 750,000 Palestinian refugees at the end of the war; however this number is disputed to be both higher and lower by different groups and scholars. As well, the number and scale of instances in which Palestinians were driven out of their homes by Israeli forces as opposed to fled has been the topic of much controversy, particularly in the last 20 years with the rise of the 'new historians' in Israel who revisited the history of the 1948 war.

15 Friedland, Roger, *To rule Jerusalem* (New York : Cambridge University Press, 1996), 248.

16 Benvenisti 1996, 189.

refugees or new immigrants from Hebron[17]. These major changes in the population, combined with a lack of interest from the Jordanians to invest in the economy and infrastructure of the city, brought about the economic decline of East Jerusalem. This was especially true in comparison to the western half of the city where Israel was investing in its new capital, bringing government offices, creating jobs, and developing the economy. In the final year of the Jordanian rule of the city, only 70 per cent of East Jerusalem was connected to the electrical grid, and only 40 per cent had running water, as compared to the fully serviced West Jerusalem[18].

On June 11th 1967, with signing of the ceasefire that ended the Six-Day War, Israel, who had conquered the West Bank from Jordan, announced that it was officially annexing the eastern half of Jerusalem. The barriers along the Green Line were hastily removed, in fear that the UN might intervene. On opposite sides of the former frontier the two groups, isolated for 19 years, were now residents of the same city. Even with the border gone, the ethnic division created along the Green Line was now a socioeconomic one as well. The gap between east and west Jerusalem was vast. In comparison: on the eve of the 1967 war, the average number of persons per room was 2.4 in East Jerusalem versus 1.6 in West Jerusalem. Similarly, the average annual income in West Jerusalem was four times that of East Jerusalem[19].

More than 40 years after the forced reunification of Jerusalem, and after many efforts by Israeli administration to expand the city borders, move Jewish population to East Jerusalem and create a new de-facto border in the form of the separation barrier, the Green Line is still present in some parts of the city. This boundary remains legible in the Hinnom/Rababa Valley, coming down from the old city and extending south through Abu-Tor, separating the Jewish western Abu-Tor from the eastern, Palestinian Abu-Tor. Some elements located west of

17 Benvenisti 1996, 189.

18 Benvenisti 1996, 189.

19 Benvenisti 1996, 190-191.

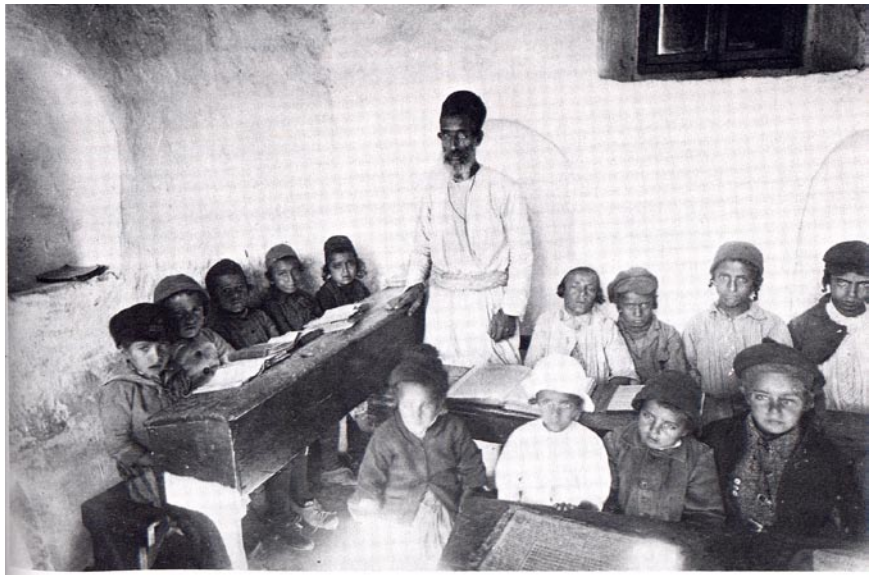


fig.1.14. Silwan, early 20th century (top), fig.1.15. a Yemenite *Cheder* in the village (bottom)

fig.1.16. Jerusalem Cinematheque

fig.1.17. Jerusalem Cinematheque before its renovation

the line are the retrofitted Mount Zion Hotel and the city's cinematheque, a public park with a green lawn, and beyond Hebron Road, Jewish neighbourhoods such as Yemin Moshe or Mamilla, which were restored and renovated housing for the many wealthy, foreign Jews who come to spend their holidays facing the impressive Old City view. East of the Green Line, a large, dense group of houses appear to be stacked one atop another. These houses make up Silwan, one of the poorest neighbourhoods in the city.

Silwan was a village which was part of Jordanian Jerusalem and was annexed to Israel in 1967. Accounts in the early 20th century describe it as a lush agricultural area[20]. In its expansion, Silwan absorbed the remaining structures of a former Jewish Yemenite settlement. The modest linear houses were constructed in 1885 by philanthropists to assist the struggling Yemenite community. Like the neighbouring residents of Silwan, they made their livelihood predominantly in agriculture as well as in stone cutting. The village was abandoned in the 1930s due to rising tension with the surrounding Arab population and British pressure, and was taken over by residents of Silwan following the 1948 war[21]. But the village expanded and became urbanized, receiving waves of refugees from both the 1948 and 1967 wars, as well as a more recent influx of Palestinians from nearby areas that chose to move within the city boundaries for practical administrative and legal reasons[22]. Silwan today is a dense and under- serviced urban area, with deficient infrastructure and 50,000 residents, half of which are under the age of 15.

The poor state of infrastructure within Silwan is symptomatic of all East Jerusalem neighbourhoods. Although the municipality has upgraded its

20 Yas, Jeffery, "(Re)designing the City of David: Landscape, Narrative and Archaeology in Silwan", *Jerusalem Quarterly* 7 (2000).

21 Bibar, 37.

22 The violent events of the first Palestinian Intifada beginning in 1987, brought about increased security measures affecting Palestinian mobility in many parts of East Jerusalem. The frequent "closures" of these communities led to an influx in migration to Palestinian areas inside the municipal boundaries, where residents were entitled to work and move freely in Jerusalem and receive other resident benefits (see Khamaisi, "Villages Under Siege" in *City of Collision*). The proximity of Silwan to the city centre produced a dramatic increase in density during the early 1990s.

fig.1.18. Silwan in the early 20th century (left), fig.1.19. Silwan today (right)

infrastructure in the eastern part, an analysis of the municipal budget reveals a significant gap in investment between West and East Jerusalem, especially considering East Jerusalem was already neglected when it came under Israeli control in 1967. In recent years, less than 10% of the municipal budget was devoted to East Jerusalem, despite representing one third of the city's tax paying population[23].

One of the challenges was the lack of Palestinian representation in the municipality, and was particularly significant in the early 'reunification' years. Very few Palestinians chose to participate in any Israeli institution including the political system. Following the 1967 war, the municipality established a special position in the mayor's office to handle matters pertaining to Palestinian residents. This administrator was responsible for communicating with the *Mukhtars*, the heads of villages and neighbourhoods. But perhaps the very existence of this position points to the ambivalent attitude the municipality has shown towards this part of the city. For the city's administration, East Jerusalem has continuously, and perhaps conveniently, been both a part and not a part of the city, as former Mayor Teddy Kollek acknowledged in this 1990 interview:

> *We said things that were just talk, and carried them out. We repeatedly promised to give the Arabs in the city rights equal to those enjoyed by the Jews in the city – it was all empty words… For Jewish Jerusalem, I accomplished something over the past 25 years. For East Jerusalem… nothing. Cultural centres? Zilch. Yes, we provided them with sewage and we improved the water delivery system, but why? For their benefit? To make their lives better? Not at all. There were a few cases of cholera there, and the Jews panicked that it might come their way, so they improved the sewer system and the water system against the cholera*[24]

In many ways the extent of Jerusalem's new infrastructure inscribes a boundary of Jewish areas of the city. Although the city in general is somewhat neglected

23 B'Tselem, http://www.btselem.org/english/Jerusalem/Infrastructure_and_Services.asp

24 Hilal, Jane and Sandra Ashhab, "The H2O Factor", *City of Collision : Jerusalem and the principles of conflict urbanism* (Basel ; Boston: Birkhäuser, 2006), 189.

compared to other major urban Israeli centres; as one moves from west into east Jerusalem, sidewalks disappear, side roads are unpaved, and waste is not East Jerusalem, sidewalks disappear, side roads are unpaved, and waste is not properly removed. There are about forty-five public parks in East Jerusalem as compared to one thousand in the West. The city's public transportation system is completely separate, operating from different terminals servicing distinct zones. However, the boundary of infrastructure is constantly being manipulated with the expansion of Jewish settlements to the East. Highways, bridges, tunnels, and water pipes, stretch like limbs from the city centre to settlements, often bypassing around, over or under Palestinian areas along the way.

In some instances, it is not the extent of infrastructure which creates a boundary, but its very existence. Such is the case of Hebron Road, passing just west of the Hinnom/Rababa Valley. Within Jerusalem, the road generally follows the dividing line between Jewish and Palestinian population. As it passes near the Old City, the busy four-to-six lane road is thickened by tunnels and ramps, encumbering pedestrian traffic and increasing the division between East and West Jerusalem. This road is part of national highway 60, connecting all the major Palestinian West Bank cities. However, continuous movement along this road as it extends north and south of the city is not possible due to a series of army checkpoints controlling road access[25].

At the opposite end of the valley, Silwan, unlike most of East Jerusalem, has witnessed a gradual change over the past 20 years. Silwan is unique in its location, stretching from the southern Mount of Olives in the east, across the Kidron/a-Nar Valley to the ancient, and today almost invisible, Tyropoeon Valley - part of the Holy Basin which surrounds the old city. Silwan is not only adjacent to the holiest sites of the city, the Temple Mount or Haram al-Sharif, but it exists partially above an area identified as the earliest settlement in Jerusalem, dating as far back as 5000 BCE. This is the site recognized as the Ophel by 19th century archaeologists, and known today as City of David (Ir David) to Israelis

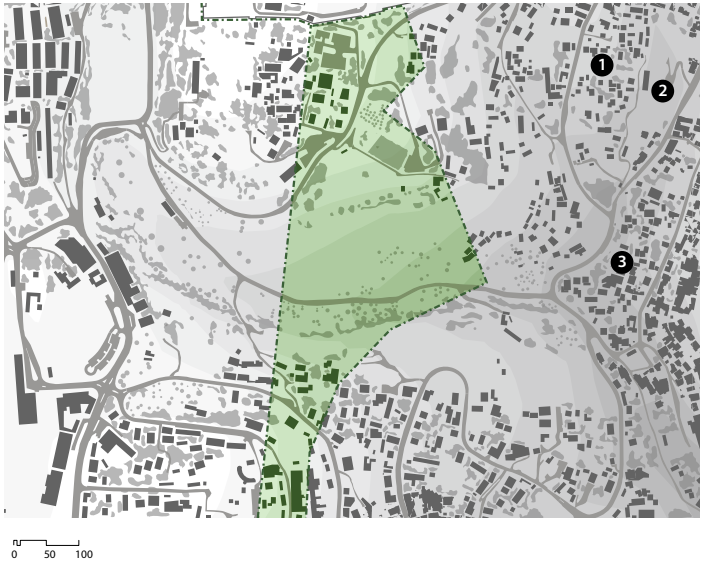
fig.1.20. Hebron Road as a boundary

25 Pullan et al., "Jerusalem's Road 1: An inner city frontier?" *City* Vol. 11, No.2 (2007).

fig.1.21. road work in Silwan, 2009

and tourists, and as Wadi Hilwe to the Palestinian residents of this section of Silwan. Parts of this area have been excavated over and over again since the days of the Ottoman rule, when in 1867 Charles Warren discovered an underground water shaft. The site continued to be excavated sporadically under Israeli rule until the early 1990's, when a private group named Elad (El Ir David, To the City of David) was granted authority by the State of Israel to manage the important archaeological site.

Elad's declared goal is to strengthen the Jewish connection to Jerusalem[26]. Along with managing, funding, and expanding the City of David's Archaeological Park, the group is also involved in assisting Jews to gain ownership of property and settle in and around Silwan. In the past few years, Elad has been increasingly criticized by archaeologists and political activists for their unscientific and biased management of the archaeological digs, for their selective presentation of information in the visitor centre, for expanding the excavation illegally while endangering nearby houses, and for the questionable methods of gaining property in the area[27]. Elad has also initiated development plans for the valley area in collaboration with the municipality, including some major completed and in-progress infrastructural upgrades. Some of these public works projects have certainly benefited both residents and visitors of Silwan. In 2006, major upgrades to roads and sewage lines leading to Silwan from Hebron Road though the Hinnom/Rababa Valley were completed. The project included the removal of one thousand truckloads of waste from the valley, as well as the creation of a network of paths, retaining walls, and restoration of indigenous vegetation. Clearing one of the main accesses to the village from what was not only an



(1) Wadi Hilwe (2) Ir David - City of David (3) al-Bustan

fig.1.22.

26 City of David, http://www.cityofdavid.org.il/IrDavidFoundation_Eng.asp

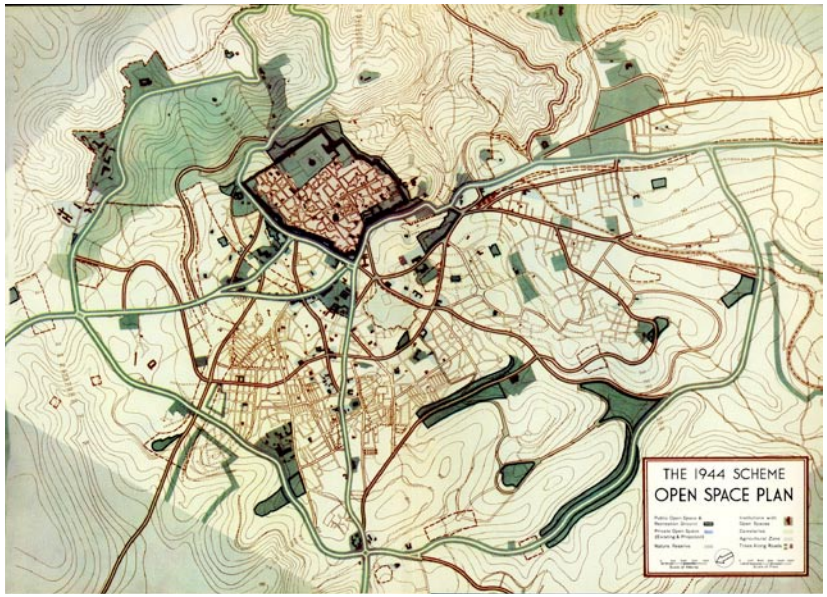
27 For a description of Elad's activity in the City of David see their webpage:
http://www.cityofdavid.org.il/about_eng.asp.
For recent media coverage of the controversy surrounding their activity see:
March 2009, "Archaeology in Jerusalem 1967 – 2008" Raphael Greenberg, *Public Archaeology*.
May 1, 2008, "Archaeologists for hire" Yigal Bronner , *The Guardia*n.
March 16, 2008 "City of David tunnel excavation proceeds without proper permit" Meron Rapoport , *Haaretz*.
March 2, 2008 "Digging too deep?", Michael Green, *The Jerusalem Post*.

eyesore but an environmental hazard, is undoubtedly a welcomed change to this part of the city. However, looking at the overall pattern of open space, paths, archaeological parks and Jewish settlements it becomes evident that they are part of an attempt to disrupt the territorial continuity of Arab presence around the Old City and thereby create a new spatial reality that will hinder any attempt to create a Palestinian capital in East Jerusalem in future agreements[28].

Infrastructure, especially in Jerusalem, is always political. Paving new roads might be welcomed by the local Palestinian population, but it often signifies the boundary between Jewish and Palestinian Jerusalem is shifting. In Silwan, for example, the roads and sidewalks that have been renovated are those used by tourists to access the archaeological site. On a typical visit to the City of David, visitors will arrive at the entrance to the archaeological site located near the Old City wall at the top of Wadi Hilwe. The first stop on the tour is often a lookout point allowing visitors to locate the site within the larger valley system and historic landscape; the platform which looks out over the houses of Silwan on the opposite slope is sometimes used by Israeli security forces during periods of violence or tension. From there, visitors will then move through the different excavations to the Warren shaft (or Hezkia's Tunnel) where they walk through the channel which brought water to the ancient city from the nearby Gihon or Virgin's Spring. Finally, the visitors emerge from the tunnel at the foot of the hill near the spring where they either get back on their tour bus, or they walk back up the hill through a street lined with patterned paving stones. Visitors normally do not see the typical streets of Silwan and the poverty that surrounds the archaeological park from close up. There is almost no interaction with the local population which has also reduced potential economical benefits for the residents of Silwan from the large tourist traffic.

Another, perhaps less visible boundary between Palestinian and Jewish areas in Jerusalem is the zoning or designation of open space, a particularly sensitive

28 for an example of media discussion on recent developments in the Holy Basin see: Bronner, Ethan and Isabel Kershner, "Parks Fortify Israel's Claim to Jerusalem", *The New York Times,* May 9, 2009.



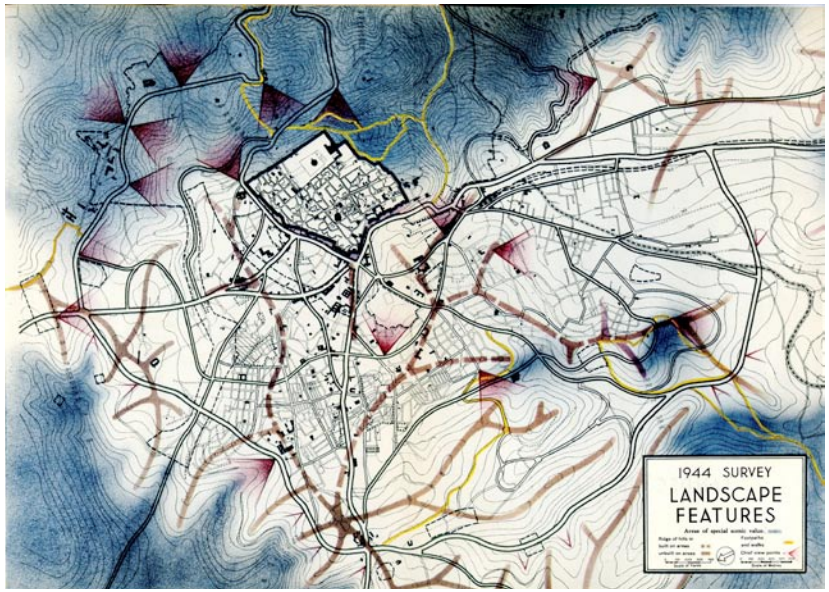


fig.1.23. 1944 British master plan by Kendall - open space (left), fig.1.243. 1944 British master plan by Kendall - views and landscape features (right)

fig.1.25. zoning of 'open space'

issue around Silwan. A large portion of Silwan exists within the valleys which surround the Old City; part of the Holy Basin. This ring of valleys surrounding the city has been designated as open space and preserved as a 'visual basin' since the first city plan under the British Mandate. Drawn by the British in 1918 soon after they took hold of the city, the first comprehensive city plan designated the Holy Basin as 'prohibited building zone' in attempt to protect the city's special character:

> *Taking a cue from many ancient cities in Europe, where fortifications were enhanced by a ring of parks encircling the walls, MacLean suggested that the Old City be surrounded by parks in order to protect it from modern urban development. MacLean's proposal, similar in this respect to subsequent British plans, showed a deep concern for preserving the city's character and its historic buildings. His protective interest in the Old City was born of his desire to preserve the sanctity in the face of the growing secular city developing towards the west.* [29]

MacLean's 1918 plan, like all plans that followed, was centred on the Old City with main streets radiating north, south, and west. The hills surrounding the Old City to the east were designated as a restricted building zone, in an attempt to preserve the rural nature of the surrounding landscape that would act as backdrop for viewing the Old City from the west. It is interesting to note the orientation in which the plans were presented; east pointing up, orienting the Old City as being seen from the west, with East Jerusalem in the background (this orientation was typical in early Christian maps such as T-O maps and *mappa mundi*)[30]. A zoning plan approved in 1976, also designated the Holy Basin as a public park (in part a national, and not municipal park), but it extended the zoning of open space northeast to include the Mount of Olives area and beyond. The lower portion of Silwan as well as the Wadi Hilwe area fall within this zone. Consequently, this dense populated area is officially a non-residential area with construction prohibited within it.

29 Meiron and Bar, 18.

30 Scafi, Alessandro, *Mapping paradise : a history of heaven on earth* (Chicago : University of Chicago 2006), 89.

Throughout the 1980s and 1990s the pressure of the growing Arab population in East Jerusalem and the limited area allotted by the municipality for expansion led to the construction of illegal housing in all of East Jerusalem, including many in the open areas around Silwan and in the lower area of the village, known as al-Bustan. All 88 houses of al-Bustan were built without a planning permit, but no legal action was taken until 1994 when the municipality challenged this status quo by initiating legal action against 23 homeowners. As of 2004, all 88 houses were slated for demolition, but primarily due to international pressure, mass demolitions were not carried out. Instead it was limited to a few single houses. Today, plans are currently underway to create a national park on the area of al-Bustan. Called King's Garden (the word Bustan means garden, or orchard, in both Hebrew and Arabic), this would be an extension of the City of David archaeological park and would connect to the 'King's Valley' east of the old city as part of a larger tourists' trail.

Recent tension revolving Al-Bustan and its impending demolition orders as well as archaeological excavation around the City of David Park are evidence to the continuous manipulation of boundaries around the Valley. Whether they are modern or ancient remains, new infrastructure or parks, these physical and spatial indicators of the forces acting within the frontier zone are ubiquitous. They vary in both stability and visibility.

fig.1.26. fence around construction/excavation across from City of David.

The area of the Hinnom/Rababa Valley, today densely layered with boundaries, is said to have been a political border millennia ago. In the Old Testament, the Book of Joshua describes a border in the valley of Hinnom separating two of the twelve tribes of Israel in a period estimated to be 12th century B.C.:

> *Joshua 5:18 Then the border went up the valley of Ben-Hinnom to the slope of the Jebusite on the south (that is, Jerusalem); and the border went up to the top of the mountain which is before the valley of Hinnom to the west, which is at the end of the valley of Rephaim toward the north*

fig.1.27.

fig.1.28. view from Mount Zion looking south east to the Hinnom / Rababa Valley and the desert beyond

Ecological Boundaries

Beyond its religious and political significance, Jerusalem's historical importance could be partially attributed to its strategic location on the Judean hills. The city sits in a relatively narrow passage between the Judean and Sumerian ranges on a north-south axis, (connecting Hebron and Bethlehem to the south with Ramallah and Nablus to the north), as well as a climatically convenient east-west passage from the coastal plane to Jericho and Amman beyond[31]. The city's strategic topographical location also places it along the watershed divide which runs down the centre line of the Judean and Sumerian hills, dividing the West Bank. Water draining away from the city's hill flows either west to the Mediterranean, or east to the Dead Sea. This dividing line runs just west of the Old City, where the Hinnom/Rababa begins. The valley is the easternmost branch of a large watershed, a system of Wadis, or dry creek beds, which drain rainwater through the Judean Desert to the Dead Sea. Standing on Mount Zion atop the Hinnom/Rababa Valley, the changing landscape in the distant is immediately visible. In his book *Hill of Evil Counsel*, Israeli novelist Amos Oz describes the feeling of standing at the edge of the desert, looking out from nearby Mount Scopus:

> *The city and the mountains seemed amazingly quiet. Minarets and domes in the Old City, buildings overflowing down the slopes of gray hills in the new town, here and there tiled roofs, empty plots, olive trees, and apparently not a soul in Jerusalem. Only the dry wind in the woods behind me, and birds chattering calmly from the British military cemetery.*
>
> *But on the other side lay the desert. It was literally at my feet.*

31 Elisha, Efrat and Allen Noble, "Planning Jerusalem", *American Geographical Society* 78 (1988), 387-404.

> *A neglected, rock-strewn terrain dotted with pieces of news-paper, thistles, and rusting iron, a wasteland of limestone or chalk. In other words, from the scenic point of view Mount Scopus is the threshold of the desert. I have a horror of this propinquity between myself and the desert. Over there are forsaken valleys, rocks baking in the sun, shrubs sculpted by the wind, and there are scorpions in the crevices of the rocks, strange stone huts, minarets on bald hilltops, the last villages.*

The dramatic change in the landscape Oz is recounting is visible throughout the eastern edge of the city. The regional surface water divide cuts through Jerusalem and divides the landscape into two climactic zones. The western side is a Mediterranean climate, while the eastern side of the divide is a rain-shadow climate with limited amounts of soil and plant coverage[32]. This area east of Jerusalem called 'Sfar Hamidbar' (or desert edge) is a unique ecological zone, with distinctive geology, flora and fauna. The 'last villages' Oz is referring to are the furthest permanent settlements east of Jerusalem. Beyond them were mainly Bedouin communities, nomadic tribes who reside in the area to this day. Most Bedouins in this region no longer migrate, but struggle to maintain their distinct culture and way of life. The contrast across this cultural boundary is undoubtedly not as dramatic today as it was during the British Mandate when the story is set. At that time, travelers coming from the desert, the Dead Sea, or beyond, arrived in Jerusalem via a road which ran trough the Hinnom/Rababa Valley and circled Mount Zion to arrive at Jaffa Gate[33]. In this sense the valley was the city's gateway to and from the desert. Today, even with highways extending into the desert and permanent towns and settlements existing east of the city, the desert's edge remains a visible boundary.

The ecological boundary of the desert is continuously affected by human intervention. As discussed, construction of Jewish settlements and expansion of Palestinian towns has blurred this line to a certain extent. But perhaps more significantly, planting has greatly affected the landscape in Jerusalem's

32 Arkin, Yaacov and Amos Ecker, *Geotechnical and Hydrogeological Concerns in Developing the Infrastructure Around Jerusalem* (Jerusalem : Geological Survey Of Israel, 2007).
33 Bibar, 24.

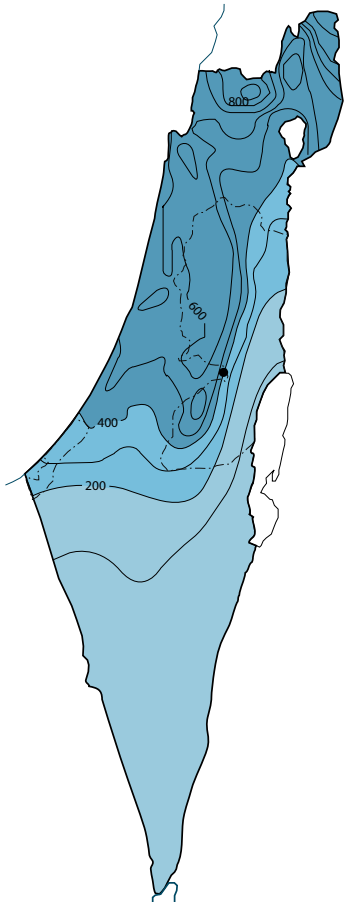


fig.1.29. precipitation and climate

Mediterranean Climate
Semi Arid Climate
Arid Climate
Annual Rainfall (mm)

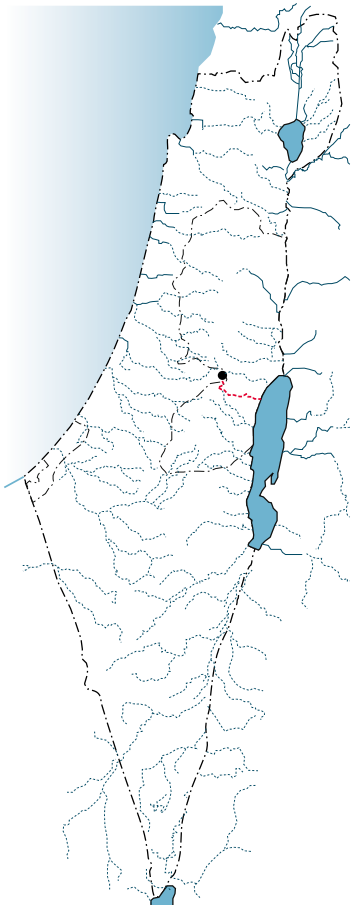


fig.1.30. rivers and wadis

River
Dry Riverbed (Wadi)
Kidron Valley / Wadi En Nar

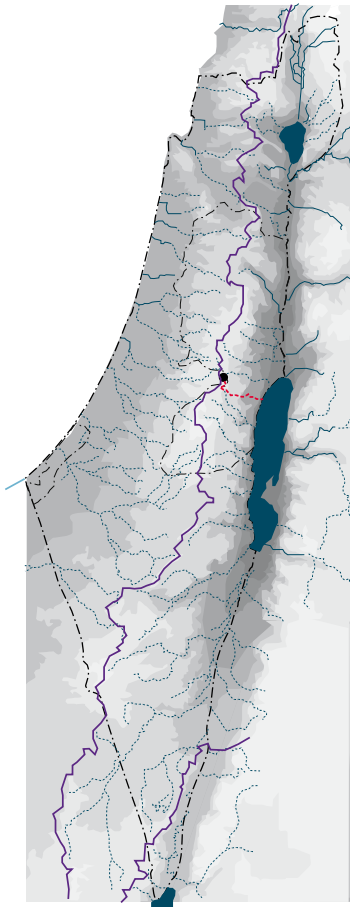


fig.1.31. topography and watersheds

River
Dry Riverbed (Wadi)
Kidron Valley / Wadi En Nar
Watershed Divide

+ 1,600 m
+ 800 m
sea level
- 400 m

periphery. In the 'frontier' of Jerusalem, planting is a political tool used by both Israelis and Palestinians as a means of attaining control over land. Israel's afforestation policy is administered by the Jewish National Fund, which has been purchasing and developing land in Israel with support of Jewish diaspora for over a hundred years. Their afforestation endeavors, particularly up to the 1990s, focused on planting of non-native pine trees for recreational purposes, although the political goals of land possession are stated in JNF publications and reports[34]. JNF's pine forests can be seen clearly around Jerusalem as where they form the city's 'green belt', creating recreation areas around the city along sections of the Green Line and around new Jewish settlements beyond the Green Line such as Ma'ale Adumim. The forested area in this region particularly stands out as a blurring of the natural desert edge. In many areas of disputed land, Palestinians have similarly responded with planting of new olive trees mainly for the purposes of land claiming, as agriculture is nowadays a secondary income source in the Jerusalem periphery[35].

The destruction of trees has also changed the landscape around Jerusalem. In both the last and the previous Intifada, Palestinian trees around highways have been uprooted for 'security reasons' as they provided a hiding place for attacks on both army and civilian Jewish vehicles. During the First Intifada, several forests around the Green Line were subject to repeated arson, instigated by neighbouring Palestinian communities protesting the authorities's land grab through afforestation[36].

In the frontier landscape east of Jerusalem, the desert boundaries continue to be redrawn by political forces, and nature is caught up in the national conflict. In these artificial ecological boundaries, where pine trees, olive trees, and the bare rocky ground meet, *trees are used as tools, almost as if they were weapons*[37].

34 Cohen, Shaul Ephraim, *The politics of planting : Israeli-palestinian competition for control of land in the Jerusalem periphery*. (Chicago : University of Chicago Press, 1993), 112.

35 Cohen, 130.

36 Cohen, 122-129.

37 Cohen, 121.

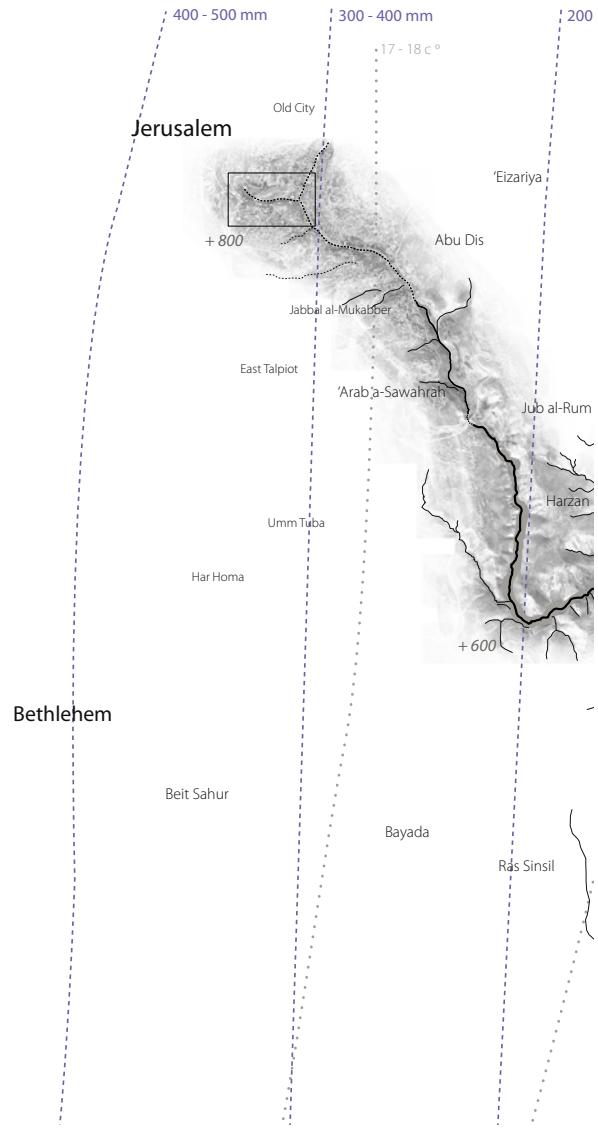


fig.1.32. Kidron Valley / Wadi en Nar

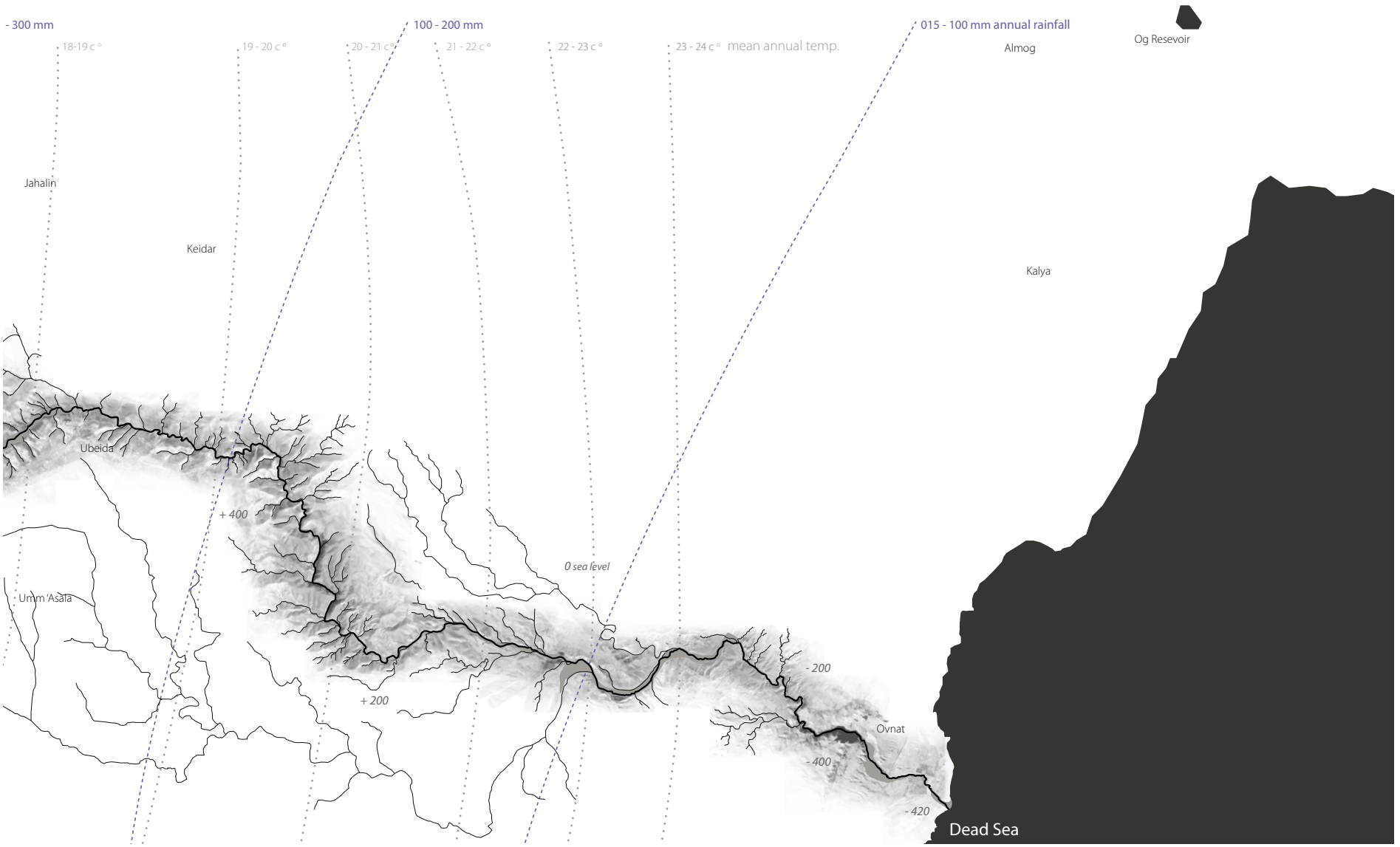

- 300 mm
100 - 200 mm
015 - 100 mm annual rainfall
18-19 c °
19 - 20 c °
20 - 21 c °
21 - 22 c °
22 - 23 c °
23 - 24 c °
mean annual temp.
Og Resevoir
Almog
Jahalin
Keidar
Kalya
Ubeida
+ 400
0 sea level
Umm 'Asala
+ 200
- 200
Ovnat
- 400
- 420
Dead Sea

fig.1.33. olive trees meet pine trees in this valley along the Green Line between Bayt Surik and Mevaseret Tsiyon (see opposite for location)

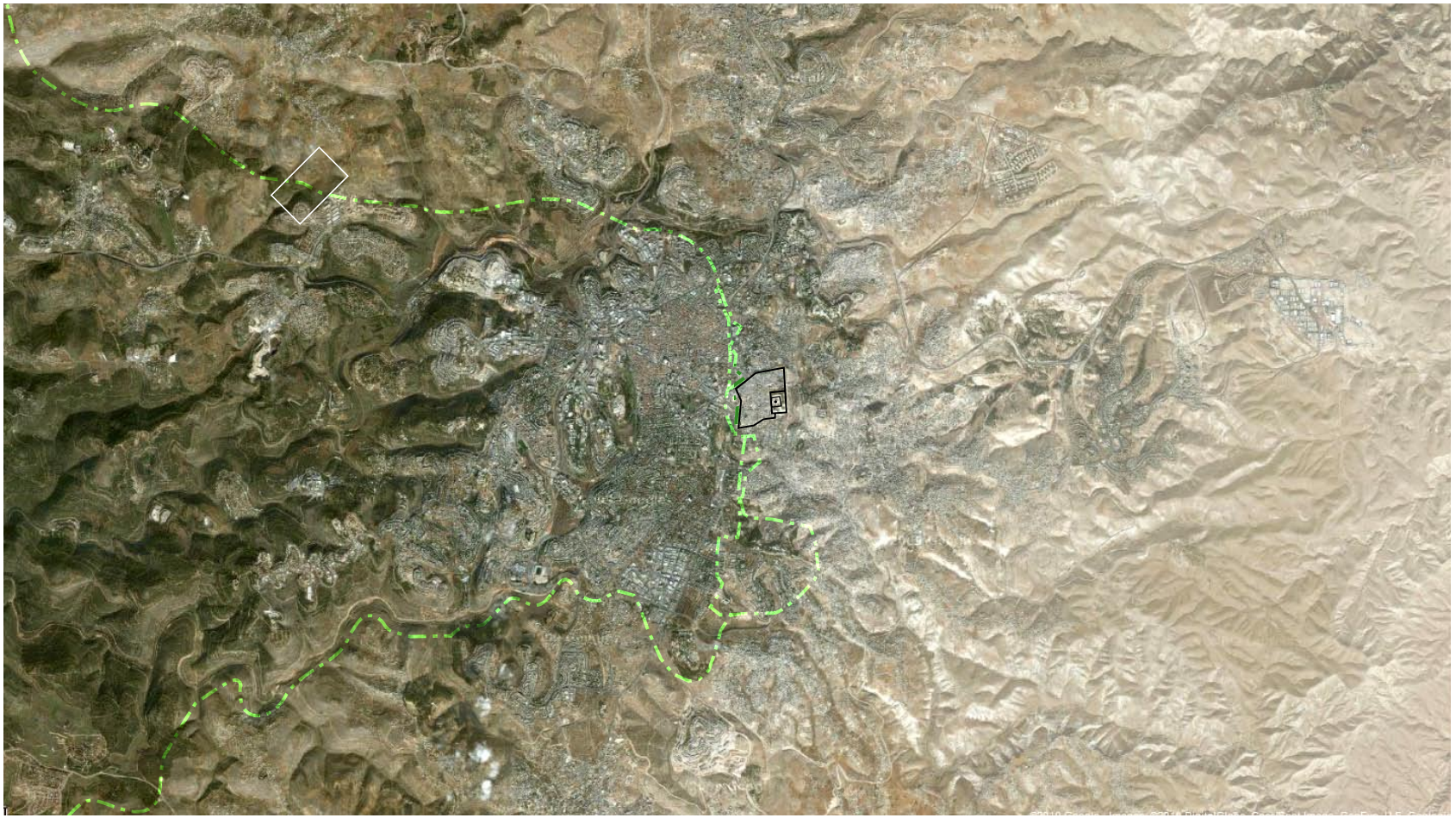


fig.1.34. planting - aerial photograph of Jerusalem area relative to the Green Line

fig.1.35. burial caves in the valley cliffs

Metaphysical Boundaries

Until the 19th century, the city of Jerusalem was contained entirely within the ancient walls which surround the Old City. With the exception of nearby agricultural communities, which were not considered part of the city, it was only in the modern era that small communities began leaving the protected, but increasingly crowded environment behind the wall and settled in nearby hills. The walls seen around the Old City today were for the most part constructed during the 16th century by Suleiman the Great, Sultan of the Ottoman Empire. The city grew from the small fortified hill settled around 1200 BC. Its walls have been demolished and rebuilt, expanded and reduced through more than 3000 years. But the walls have always remained above the ring of valleys which surround the city. The Valley of Yehoshafat or Wadi Siti Maryam located to the east of the city is joined by the Hinnom/Rababa Valley which circles the city to the west and south, to make up the city's Holy Basin.

The limestone cliffs lining the valleys of the holy basin have been used as a burial ground since the First Temple period (1006-586 BCE). The rock-hewn tombs which puncture the surrounding slopes to this day include a variety of burial forms, many of them used by the city's wealthy families for generations. Several Second-Temple period cave complexes were found intact in a lower portion of the valley. These were named Akeldama tombs, as they were found in an area held by Christian tradition to be the site of Judas Iscariot's death. According to two different traditions Judas either hung himself, or fell and died bleeding on the ground in this steep area of the Hinnom/Rababa Valley. The name Akeldama is Aramaic for "Field of Blood", and is one of the names for this site. The other is "Potter's Field", named for the clay soil which is said to have been found here and used by local potters. According to Christian verse, Judas died in this field

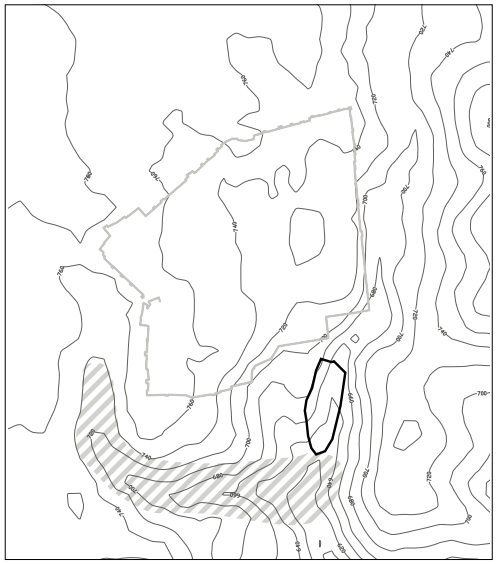


fig.1.36. city walls ca. 1000 B.C.

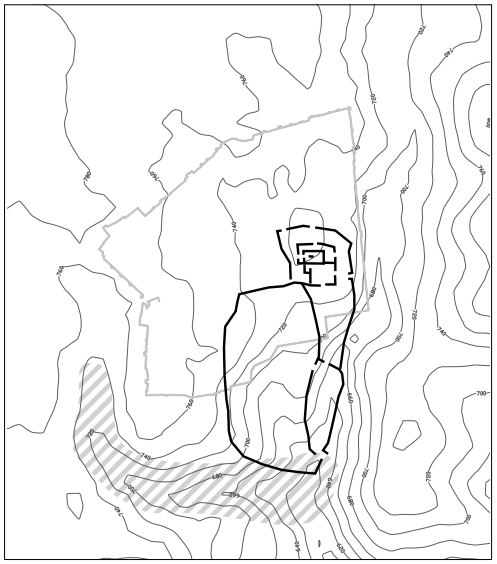


fig.1.37. city walls ca. 950 B.C.

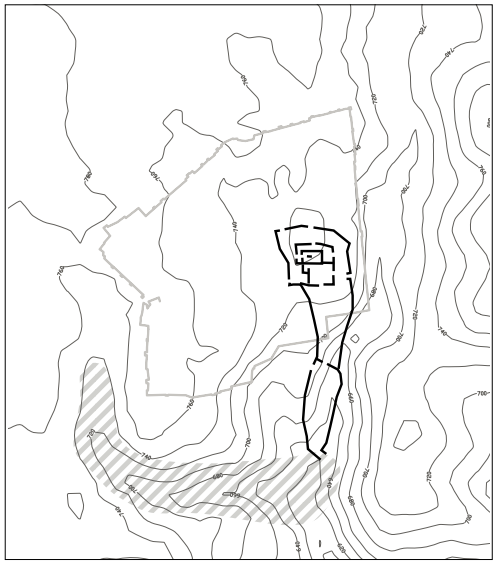


fig.1.38. city walls ca. 435 B.C.

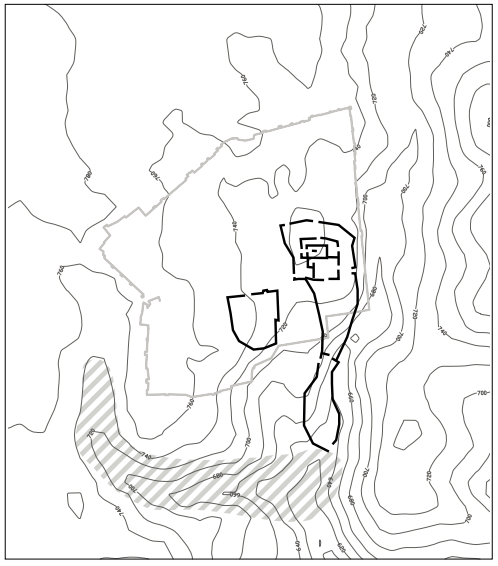


fig.1.39. city walls ca. 160 B.C.

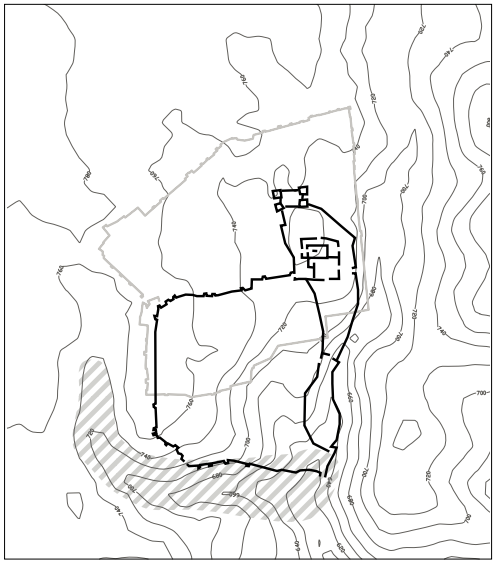


fig.1.40. city walls ca. 40 B.C.

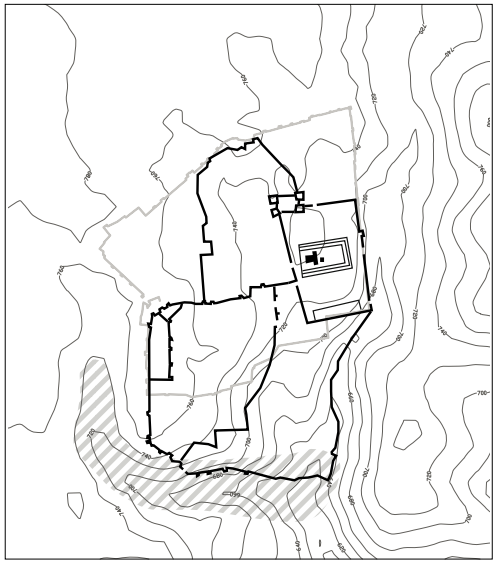


fig.1.41. city walls 4 B.C.

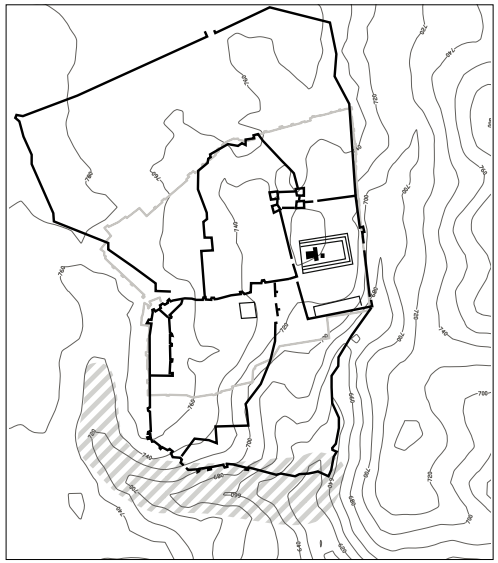


fig.1.42. city walls ca. 44 A.D.

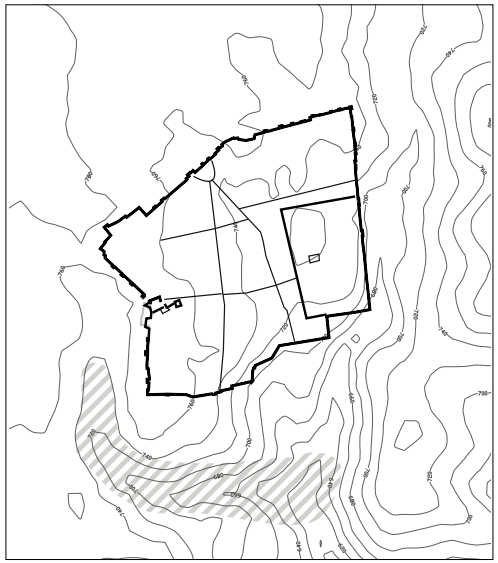


fig.1.43. city walls ca. 135 A.D.

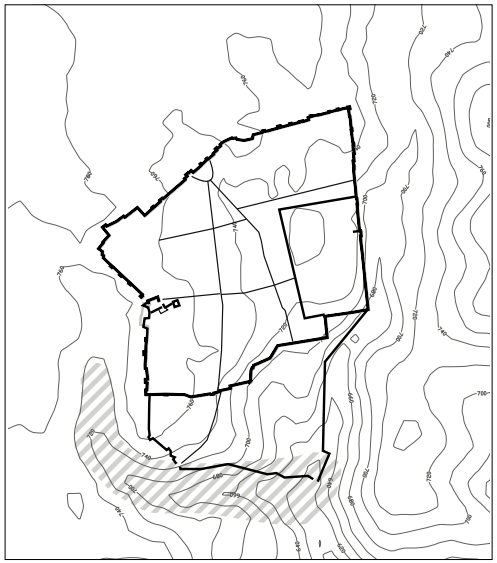


fig.1.44. city walls ca. 350 A.D.

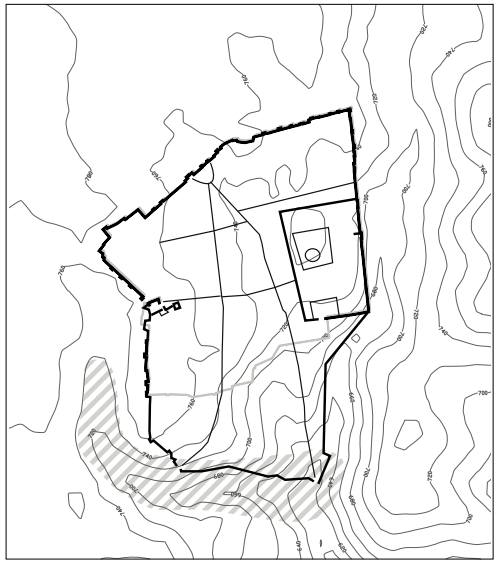


fig.1.45. city walls ca. 1000 A.D.

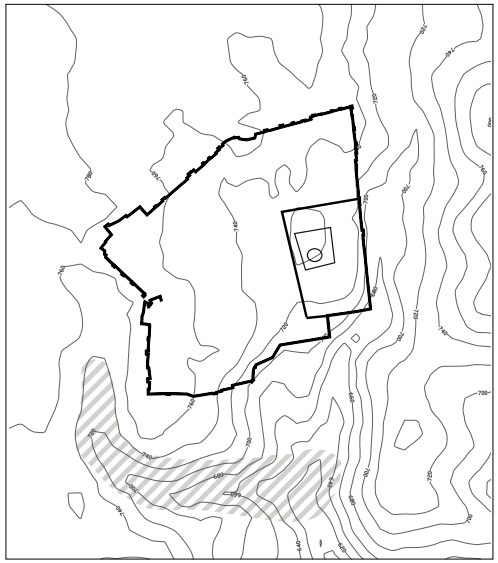
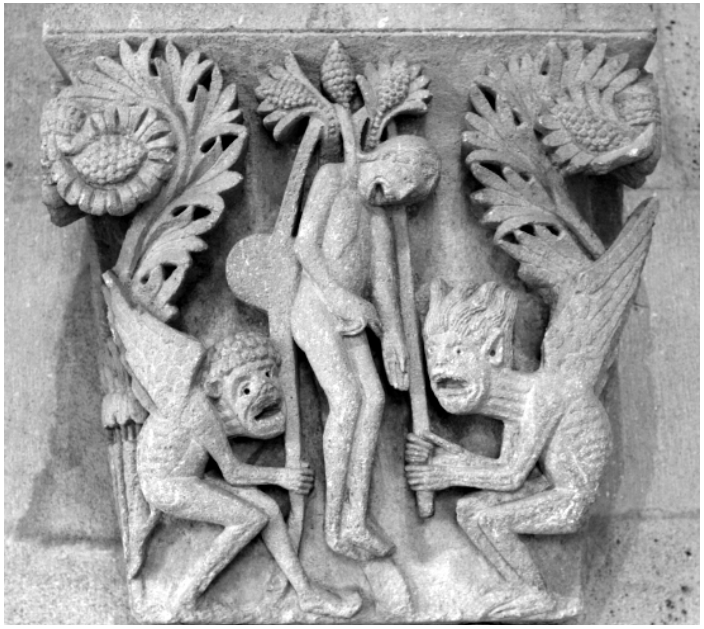


fig.1.46. city walls 1517 A.D.

The city walls were constructed, demolished and rebuilt throughout Jerusalem's existence, but the Hinnom/Rababa Valley has always been extra-mural.

fig.1.47. more than one thousand truck-loads of waste were removed form unofficial waste dump the valley during the 2006 clean-up and development project



Acts 1:18: *Now this man acquired a field with the reward of his wickedness, and falling headlong he burst open in the middle and all his bowels gushed out.*

fig.1.48. Romanesque capital from Autun Cathedral showing the hanging of Judas

which had either been purchased with the coins received in exchange for his betrayal, or by priests with the money he surrendered in repentance for his deeds. The field was used for the burial of pilgrims in later periods.

As the city's necropolis, the valley was a site of various rituals. Jewish tradition describes the 'cult of the dead' worshipping in the valley. Members of the cult would sit near or inside caves and communicate through prayer with spirits of the dead, receiving guidance and prophecies. Other practices of the cult include sleeping in the caves in hopes of receiving a dream-vision, as well as consuming ritual meals there[38]. One of the more famous rituals enacted in the valley according to Jewish tradition was the sacrifice of children to the god Molech in a place called Tophet. This ritual, said to have been practiced and supported by some Jewish kings, was performed outside the city as it was forbidden by God. The word Tophet in Hebrew is believed to be derived from the word toph, meaning drum, which the worshippers used to drown the screams of the human sacrificed[39]

Like the necropolis, another activity designated for the extra-urban space was the disposal of waste. Throughout its existence and up to the 20th century, Jerusalem disposed of its waste by dumping it outside its walls. This included carcasses and possibly criminals sentenced to death; their bodies disposed in the valley. Imagining the sight of the valley cliffs filled with tombs and valley bed covered in waste and bones, along with stories of human sacrifice, it is not surprising to find the valley in many prophetic texts in the Old Testament. Some prophecies refer to the valley as the site where sinners will be eventually punished:

> Jeremiah 19:6 *therefore, behold, the days come, says Yahweh, that this place shall no more be called Topheth, nor The valley of the son of Hinnom, but The valley of Slaughter.*

38 Heider, George C.. T*he cult of Molech : a reassessment (*Sheffield *:* Journal for the Study of the Old Testament 1985), 383-400.

39 Day, John, *Molech : a god of human sacrifice in the Old Testament* (Cambridge England: Cambridge University Press, 1989) 115.

The prophecies refer to the site as the physical place where either God himself, or using enemy armies, will destroy all sinners. The imagery of death and fire in the rocky valley that emerges from these histories resembles many depictions of hell and the underworld we know today. Talmudic sources in Judaism locate the gateway to hell in the Hinnom Valley (although hell is not a term used in early scriptures). And in fact, it is commonly held, although disputed by some linguists, that the etymology of the word Gehenna is derived from Gei Ben Hinnom (literally the valley of the son of Hinnom). Similarly, the Arabic word for hell is Jahannam.

The ancient tombs on the Mount of Olives and within the Hinnom/Rababa Valley are all found on the slope opposite to the Old City. The cemeteries on Mount Zion, which during Hellenic, Byzantine, and early Muslim periods was contained inside the city walls, are from later periods. We can therefore see not only the city wall, but the valley bed itself separating the city from the necropolis, separating the dead from the living. Dividing the holy city atop the holy mountain and the hell buried in the rocky slopes below, the valley can also be understood as purgatory - a boundary between heaven and hell.

fig.1.49. Fallen angels in Hell, John Martin, c. 1841 (left), fig.1.50. View of Old City across Hinnom / Rababa Valley (right)

stones

Stone
noun

(1) hard, solid non-metallic mineral matter of which rock is made. (2) a small piece of stone found on the ground. (3) a piece of stone shaped for a purpose, especially to commemorate something or to mark out a boundary.

Compact Oxford English Dictionary

fig.2.1.

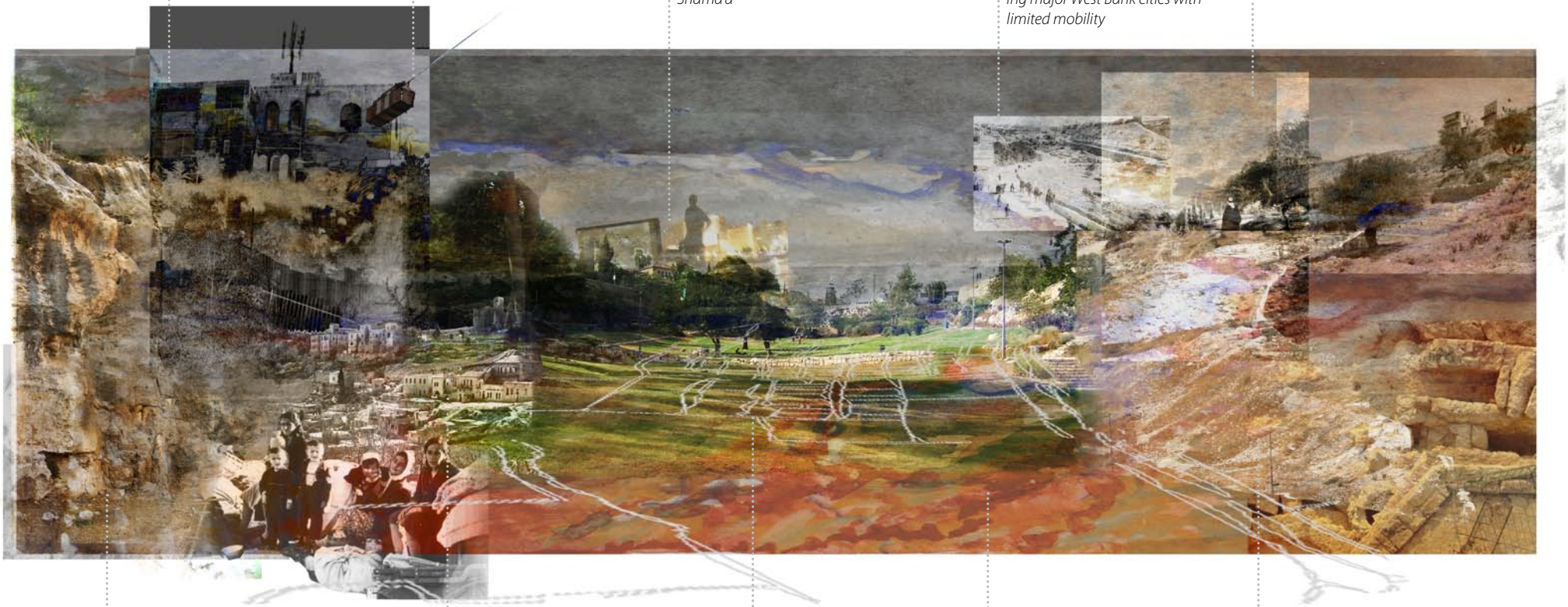


fig.2.2. urban development (A)

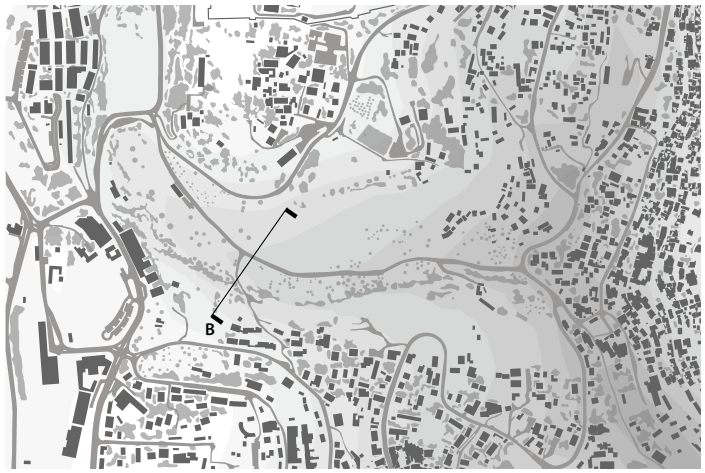


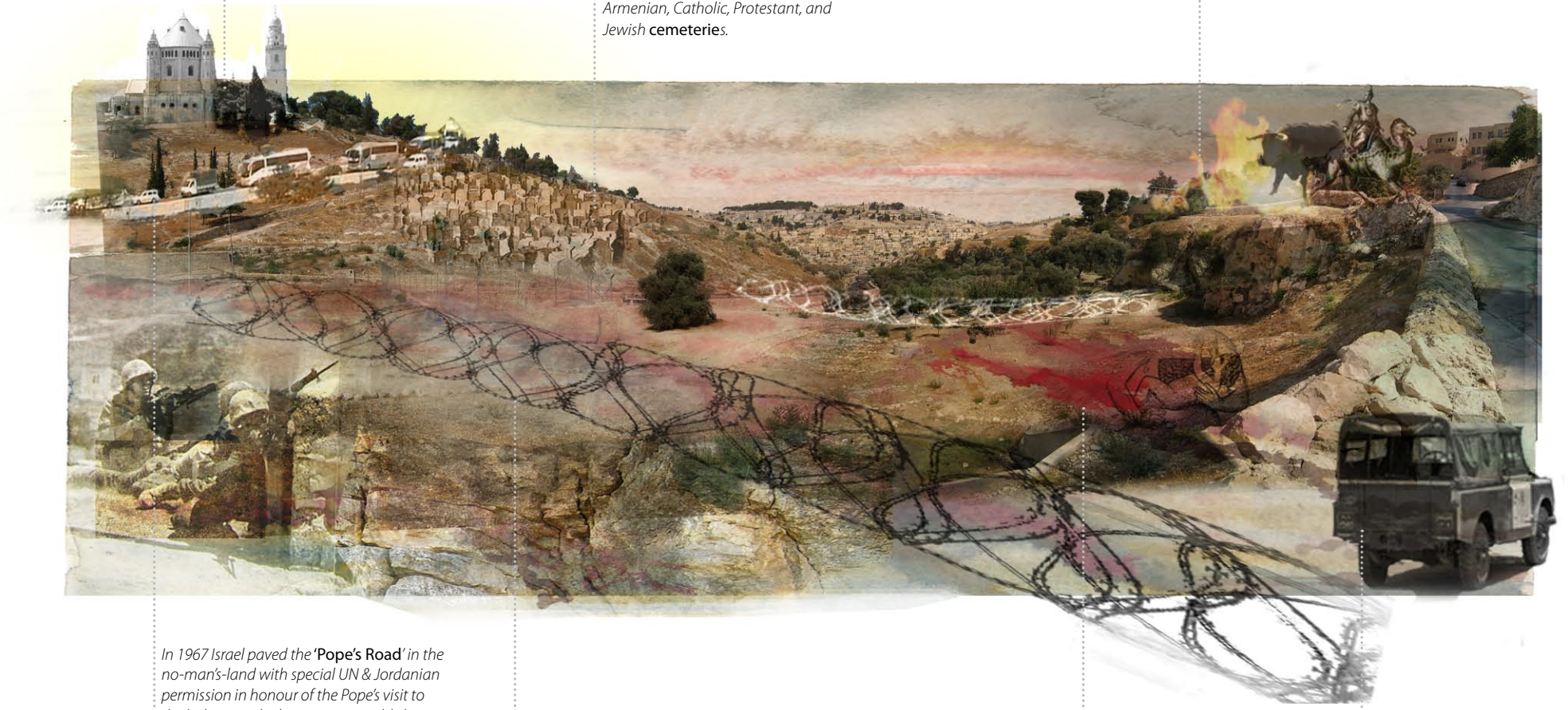
fig.2.3.

embedded boundaries

Abbey of the Dormition *(Hagia Maria Sion) and* David's Tomb *are some of the holy sites on* Mount Zion

Mount Zion houses Greek Orthodox, Armenian, Catholic, Protestant, and Jewish cemeteries.

The Palestinian neighbourhood of Abu-Tor *looks over the valley from the south, it is said to be named after one of Saladin's generals, nicknames 'father of the bill' (Tor), or alternatively for the human sacrifice to the god Molech who often appears as a Minotaur*



In 1967 Israel paved the 'Pope's Road' *in the no-man's-land with special UN & Jordanian permission in honour of the Pope's visit to the holy sites which were inaccessible by vehicle. Today the road is often busy with tourist traffic.*

The Green Line (*Israel-Jordan border 1949-1967). Three fences were built and taken down before an agreement was reached as to where the border s and the no-man's-land between them shall pass*

According to Jewish tradition the valley was a site of human sacrifice to the god Molech, *when cult members would pass children through fire*

Army vehicles patrolled *this road along the no-man's-land during the divided years*

fig.2.4. no-man's-land (B)

fig.2.5. key plan

Throughout most of the year, when the weather is warm, the south-facing slopes of Mount Zion are barren

The existing road which passes through the valley was used by **caravans arriving from the Judean Desert,** *heading towards Jaffa Gate*

Almond trees *are common in the lower valley portions. Shaded by the southern cliffs, this part of the valley is the more fertile one*

Mediterranean Cypress *are found on the upper slopes and were often planted around cemeteries*

Olive trees *are common in the lower portion of the valley*

Recently constructed **concrete retaining walls** *are faced with local stone to appear as the older stone walls. the new walls are constructed to control erosion, water runoff and allow pedestrian and vehicular access*

Many of the **stone retaining walls f***ound in the valley are over a hundred years old., they are typical features of local agriculture*

During the short rainy season green grasses and weeds cover the valley slopes

fig.2.6. fertile land (C)

fig.2.7. key plan

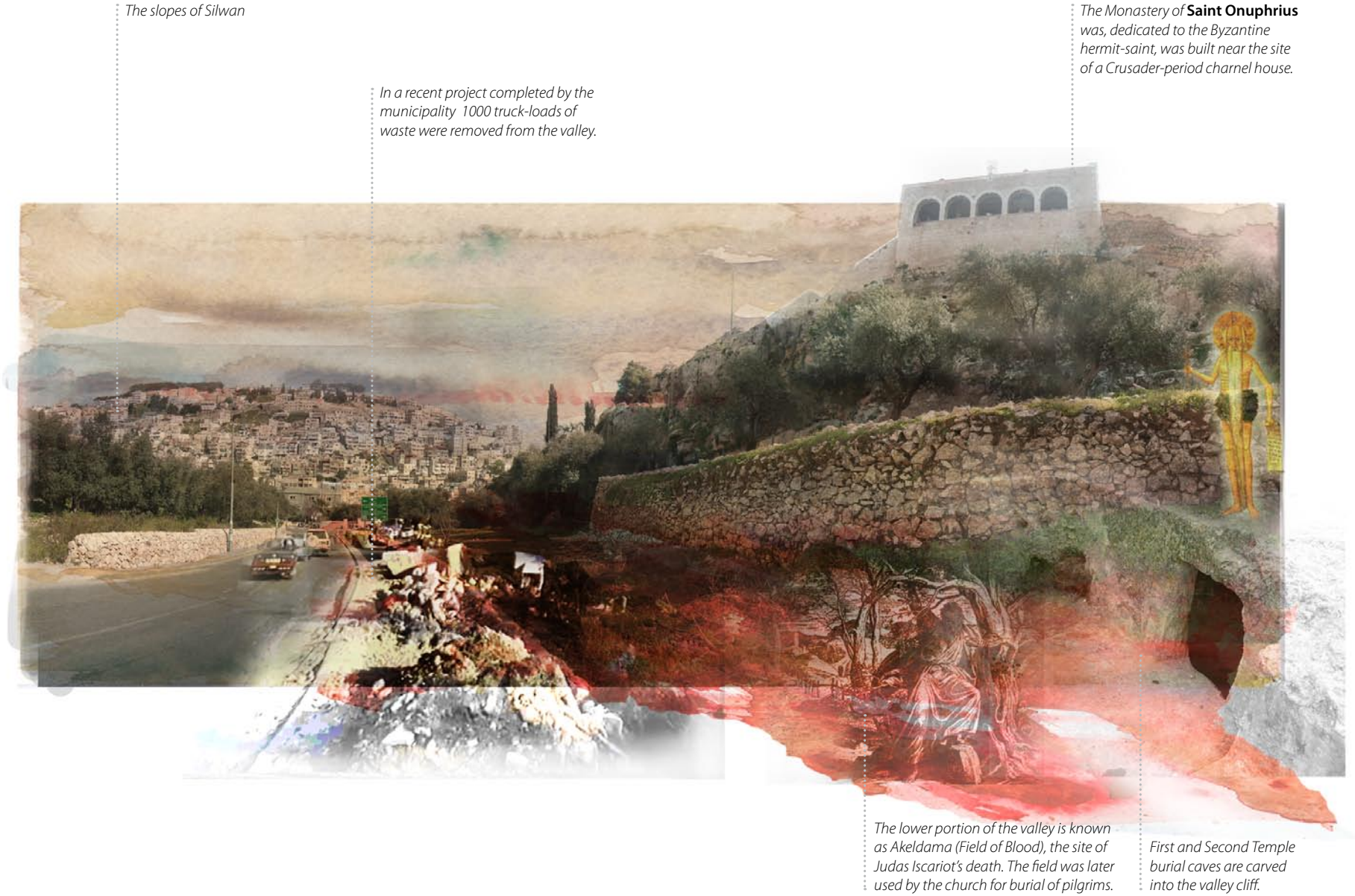


fig.2.8. the abject (D)

fig.2.9. strata in the valley's western cliff: old and new terraces, cliffs and karsts, natural and man-made embedded boundaries

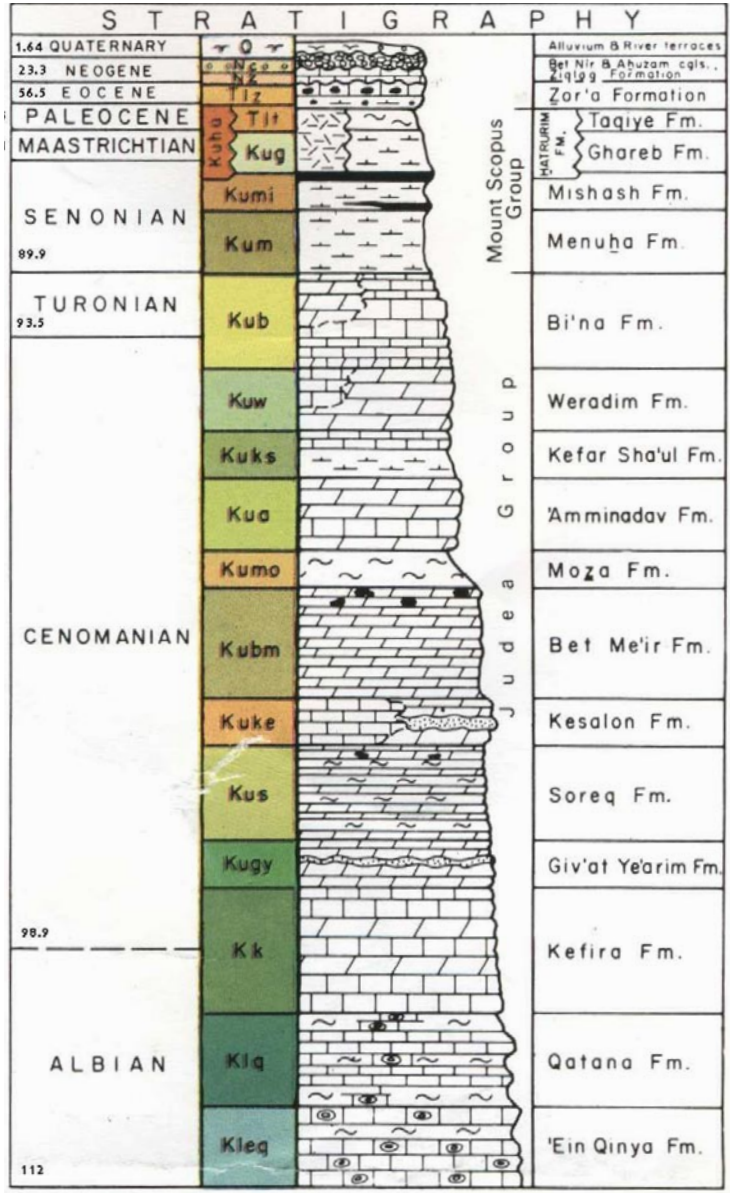


fig.2.10. stratigraphy of the Jerusalem Mountains

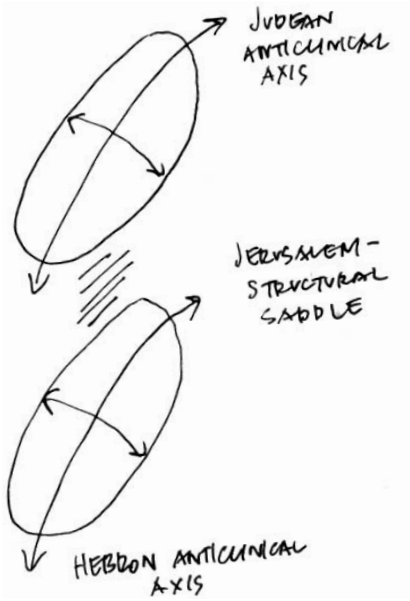


fig.2.11. formation of the Judean and Hebron Mountains

Strata

For although we are accustomed to separate nature and human perception into two realms, they are, in fact, indivisible. Before it can even be a repose for the senses, landscape is the work of the mind. Its scenery is built up as much from strata of memory as from layers of rock.

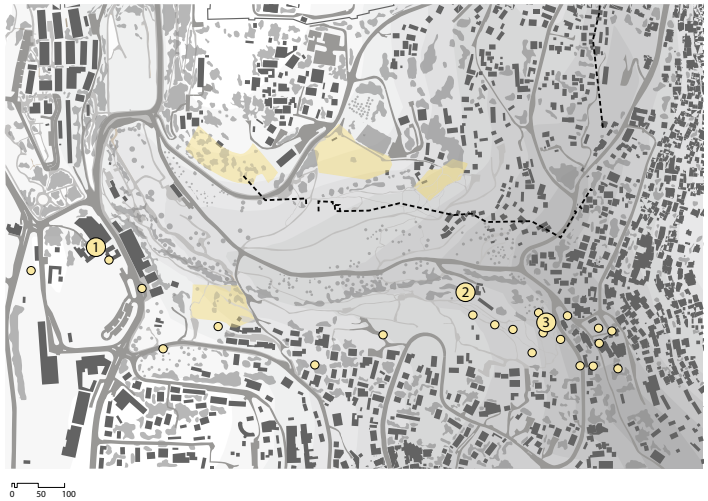
(Simon Schmaa, Landscape and memory)

The story of the rocks which make up the Holy City begins 200 million years ago when the Tethys Sea covered most of the Middle East and deposited layers of mineral calcite over the entire region. In the Jerusalem area, this layer of carbonate deposition, of decayed marine organisms, was nearly a kilometre deep[1]. The pressure created by tectonic movement lifted the layers to form a mountain range which today extends north-south between the Mediterranean and the Jordan River. The layers of deposition shifted about two axes, forming both the Judean Mountains and the Hebron Mountains, with the Jerusalem area saddled between them. Layers of limestone and dolomite which make up the hills of Jerusalem and clad all of its buildings, are known today as a symbol of the "City of Stone". The golden hue of these rocks as the sun sets over the city is iconic, captured on postcards sold at every tourist stand.

Of the four different types of stones found around Jerusalem, the most well known, and the one which possibly had the biggest formal impact on the city, is the Meleke Stone, which is Arabic for 'Royal'. This type of stone was used in the construction of many of the city's iconic buildings of various periods, particularly Roman and Islamic. The Meleke rock is soft when first exposed to air, but hardens over time; a property which allowed builders to carve the stone with relative ease

1 Arkin Yaacov and Ecker Amos, *Geotechnical and Hydrogeological Concerns in Developing the Infrastructure Around Jerusalem* (Jerusalem : Geological Survey Of Israel, 2007).

fig.2.12. Gei Ben Hinnom, Wilson, 1880



(1) First Temple tombs, Katef Hinnom (2) Akeldama charnel house
(3) Akeldama tombs

cemetery

tomb

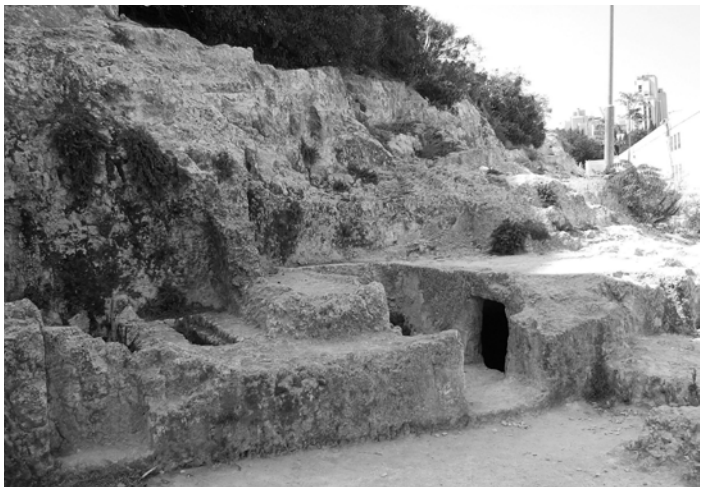


fig.2.13. tombs location (top), fig.2.14. First Temple tombs in Katef Hinnom (bottom)

while still achieving a durable and lasting structure. This Meleke limestone was not only reserved for lavish constructions such as the Second Temple; it was also the material out of which tombs, both modest and grand, were created. Burial sites are scattered around the Holy Basin, with some of the more elaborate ones being found in the Yehoshafat/Sitti Maryam Valley. These feature large scale carved monuments or façades, while the tombs in the Hinnom/Rababa Valley are typically caves or catacombs hidden among the surrounding cliffs.

Some of the early tombs are found on the west end of the valley, hidden between the newly constructed Begin Heritage Centre and the Scottish Church of St. Andrews. This rocky slope, now cut off from its surrounding landscape, was once a strategic point outside the weapon range of the ancient city, and as such was a camping point for several armies who were preparing to attack the city – including those of Pompey and Titus[2]. Excavations during the 1970s revealed carved stone slabs with a special indentation for the dead, where the deceased would be left for the first 12-month mourning period. After a year, the skeletal remains would be transferred to a stone repository adjacent to the slab. These were used for generations, with all family bones collected in the same hollowed repository.

The excavations revealed a variety of artefacts, from First Temple amulet scrolls of the Jewish Priestly Blessing to weapons and ammunition belonging to the Ottoman Army[3]. The continued use and inhabitation of the rock-hewn tombs is a recurring practice in the Hinnom/Rababa Valley, such as in the tombs of Akeldama, located near the 'Field of Blood' in the lower valley. Three of these caves were accidentally discovered during road repairs in 1989. The excavation was carried hastily in only three days due to 'technical and security reasons'; the latter surely related to the first Intifada which began two years previous[4]. Nevertheless, it revealed three multiple-chamber caves created during the

2 Barkai, Gabriel, "Hafirot Katef-Hinnom Be-Yeryshalayim", *Kadmoniot* 68, (1984).

3 Barkai.

4 Avnî, Gid`ôn, *The Akeldama tombs : three burial caves in the Kidron Valley, Jerusalem* (Jerusalem: Israel Antiquities Authority, 1996)

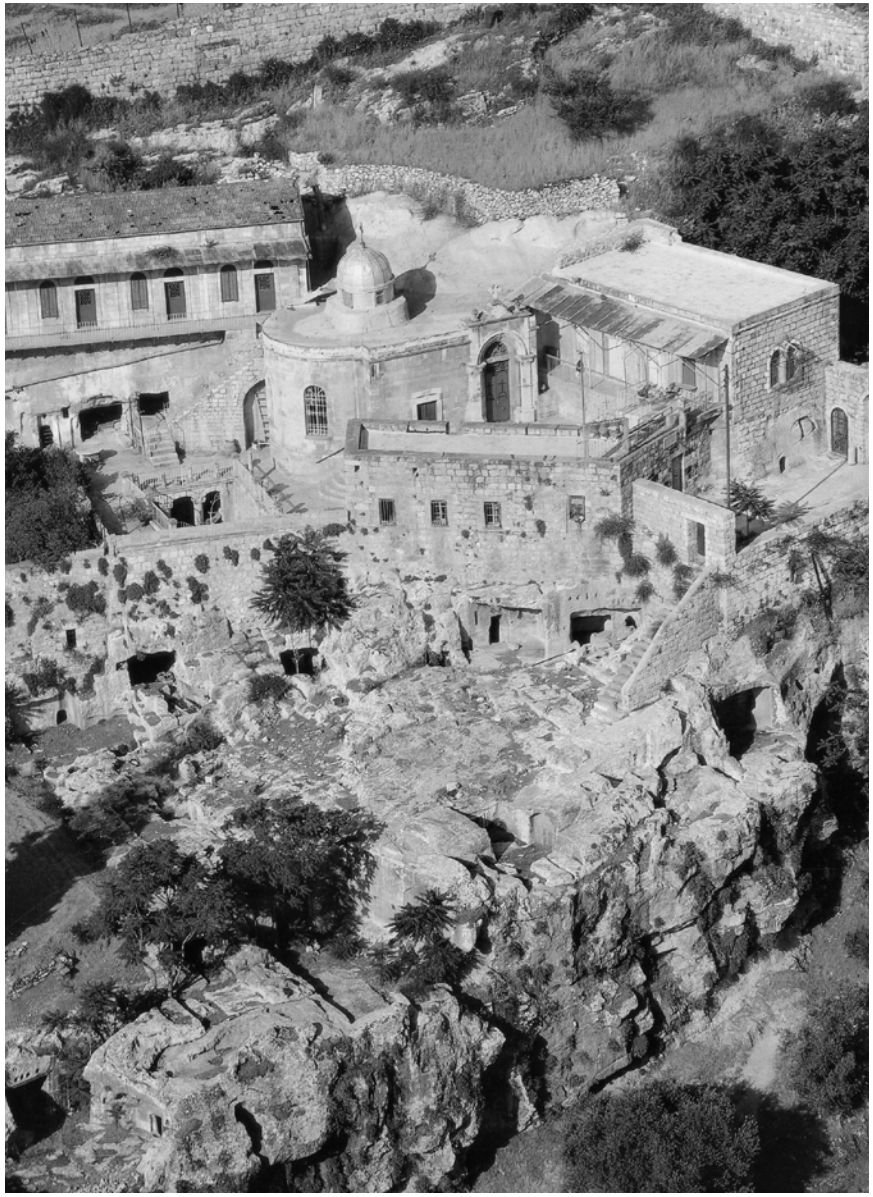


fig.2.15. Saint Onuphrius, built into the existing rock and caves

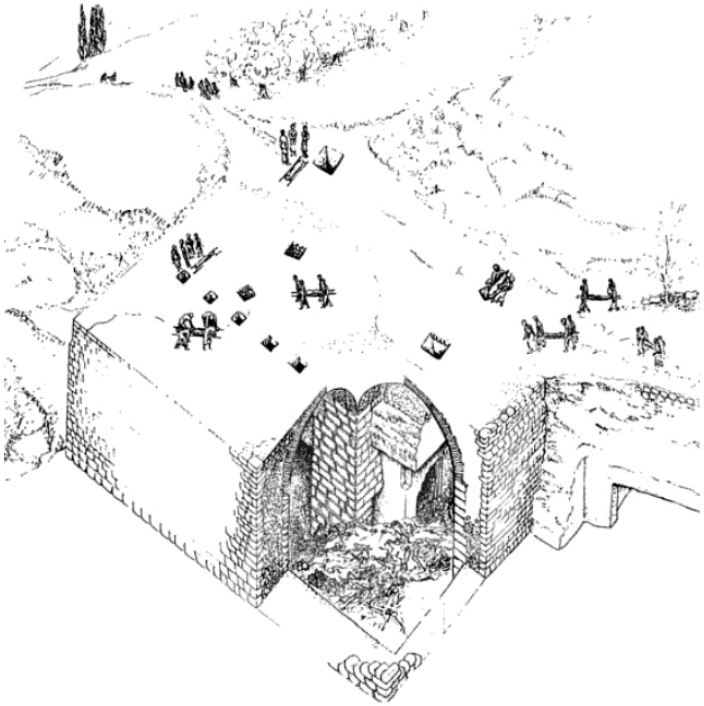


fig.2.16. section through Akeldama charnel house

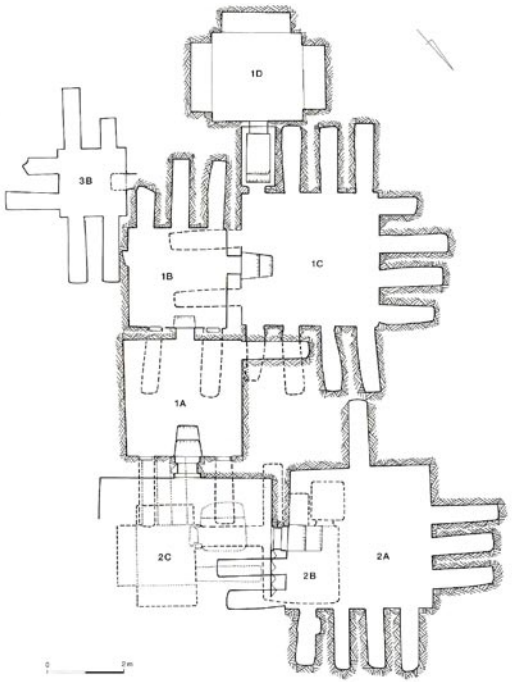


fig.2.17. plan of Akeldama tombs, showing all three tomb levels overlapped

Second Temple Period and reused for burials in the Late Roman and Byzantine Periods. Surprisingly, later generations, showing great respect to the original creators of the tombs, left the Second Temple remains of both humans and rich artefacts undisturbed[5]. Like many other burial sites in the necropolis, the tombs of Akeldama provided shelter for monks and hermits who secluded themselves in the valleys. The larger tombs east of the Old City in particular, are known to have housed large monastic communities[6].

On the rocky cliff of Akeldama, ancient tombs were incorporated into a small Greek-Orthodox convent built in 1892 and dedicated to the 4th century hermit Saint Onuphrius (said to have lived and died in a rocky cavern in the Sinai Desert)[7]. The church itself, as many other spaces in the convent, was built by enclosing an existing cave with a more traditional façade. As such, the entire complex of the convent, constructed in Jerusalem Stone, seems to emerge out of the rocks. Even when moving through the courtyard it is difficult to tell where cliffs end and walls or floors begin, as natural and man-made rocks appear woven together.

Burial around Akeldama continued at least to the 17th century[8]. In 1143 the field was granted by the patriarchs to the nearby St. John Hospital. The Hospitallers carried the bodies of pilgrims who died in their hospital through David's Gate (Jaffa Gate) down to the valley, where they were cast into a charnel house through one of the small square openings in the vaulted chamber[9]. The chamber was partially carved into the rock and incorporated existing tombs. Its remains still stand today at the southwest corner of the convent. Strangely enough, some sources claim that much of the soil on this site was shipped to Pisa during the

5 Avnî.

6 Ussishkin, David, *The village of Silwan : the necropolis from the period of the Judean kingdom* (Jerusalem: Israel Exploration Society u.a., 1993), 346-358.

7 Biber, Yehoash, *Gê' Ben Hînnôm we-nahal Qidrôn siyyûr be-mabbat sifrûtî* (Yerûsalayim: Hôs. Yad Yishaq Ben-Sevî, 1991) 33.

8 Avnî.

9 Boas, Adrian J., *Jerusalem in the time of the crusades : society, landscape and art in the Holy City under Frankish rule* (London ; New York: London ; New York : Routledge, 2001) 185.

fig.2.18. catacomb used for storage inside Saint Onuphrius

fig.2.19. the catacomb church of Saint Onuphrius

12th century for the construction of the Camposanto Cemetery. This was due to an extraordinary quality the soil was said to possess: the ability to decompose bodies within one to three days without causing any foul smells[10].

Over and again, the amalgamation of ancient tombs into the built fabric and their appropriation for new uses is revealed at every corner of the Holy Basin. Like the charnel house and the convent, the houses of Silwan today hold layers upon layers of continued reuse. The houses evolved from temporary monastic and nomadic shelters to the permanent and elaborate structures visible today, with tombs and caverns integrated as both interior and exterior spaces. A 1983 survey of Silwan analyzes the evolution of the houses, deciphering what today appears as an indistinguishable mass of rocks and building[11]. It notes some houses as being literally built into existing caves, while others, built away from the cliff, used the caverns as sheltered exterior space for animals or storage. Some of the public streets occur at the space between the cliff and house. When seen from across the valley, the resulting urban form could appears as a random or spontaneous wall of houses. But the internal logic of Silwan is dictated by the lines of the cliff, which do not always follow the lines of the overall topography. The construction along these 'diagonal' cliffs, the circulation around them, and the subsequent expansion around the original houses are what create this unique formal arrangement.

A significant housing surge in Silwan during the 1990s expanded the neighbourhood west and south of the original village. These newer houses do not incorporate existing tombs and follow a more generic Palestinian housing typology. However, their orientation relative to the topography and their stone cladding create an almost seamless transition in urban form. And so, the new houses of Silwan continue to add to the layered growth of the steep rocky mass.

10 Boas, 185-7.

11 Shiloni, Yontan, *Ha-Kfar Silwan Seker Klali*, (Jerusalem : Jerusalem Municipality, 1983).

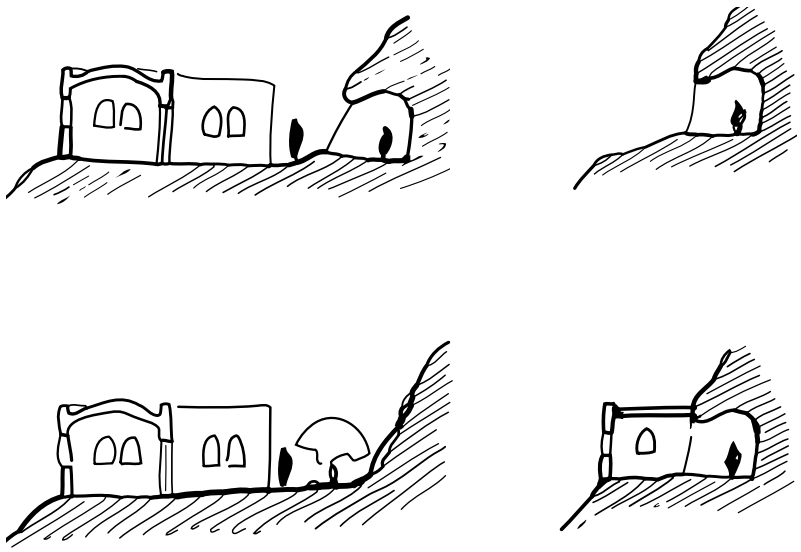


fig.2.20. dwelling of the Musa family, Silwan tomb, 1970's (left), fig.2.21. typical early tomb and cave use (right)

fig.2.22. Silwan

fig.2.23.

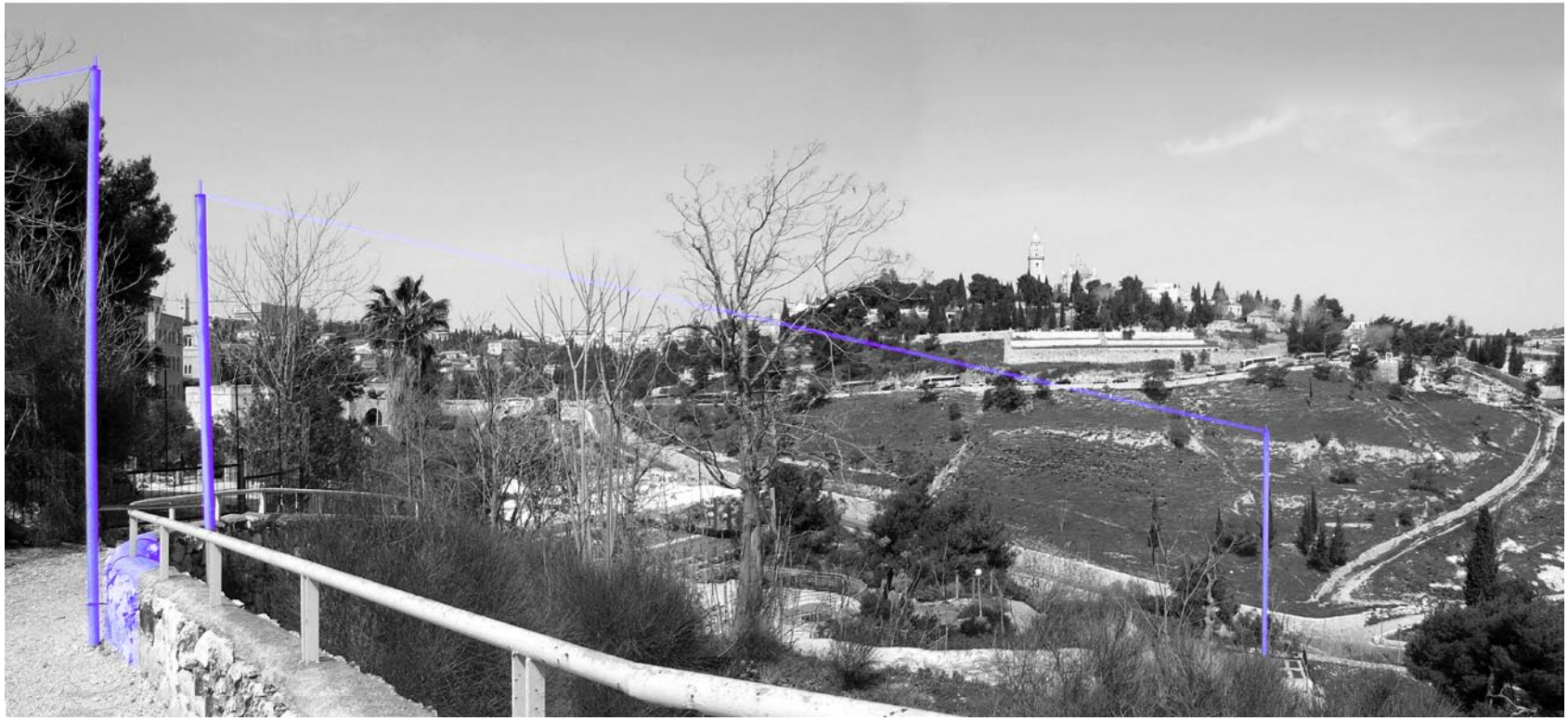


fig.2.29. eruv, western Abu-Tor (Givat Hannania)

edges

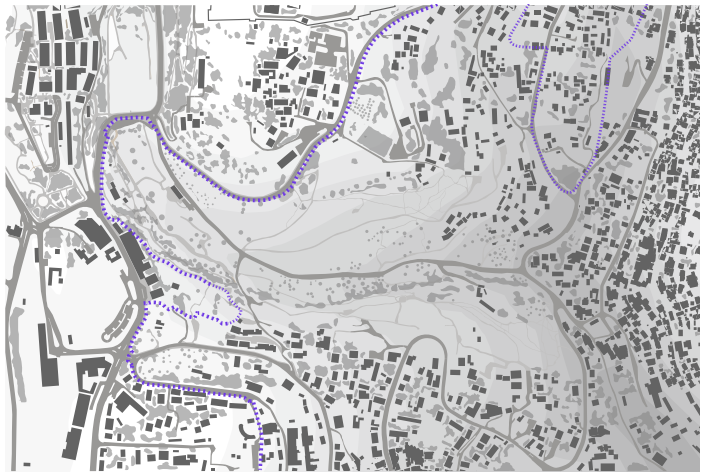


fig.2.25. circling the city, the Jerusalem eruv winds around valley

The topographical edges of the Hinnom/Rababa Valley dissolve today into the recently constructed luxury residences of David's Village across from Jaffa Gate. Moving south along Hebron Road (as it winds down the valley, crossing it atop the damn of the Sultan's Pool) the large open space of the valley is revealed. North of the Sultan's Pool, the topographic drama is partially hidden beneath walls and roofs, but when the road crosses the valley to its west bank, the valley turns east and the ground sinks and disappears in the distance. From this vantage point, one which many Jerusalemites are familiar with as they drive along this main arterial road, the bottom of the valley is hidden and all that is revealed at the other end are the dense houses of Silwan, hanging on the steep slopes. Hebron Road, and the retaining wall which supports it across the valley, form the perceived western edge of the Valley, like a balcony looking out to the landscape. That same retaining wall (clad with the typical Jerusalem limestone) supports another type of edge, a religious Jewish boundary called eruv.

The eruv of Jerusalem, a symbolic line which defines the extent of private domain, circles the upper portion of Mount Zion and continues along Hebron Road to western Abu-Tor. The eruv marks the boundary of a collective private domain. It signifies the mixing or adding-up of private parcels and public space between them to create a continuous private domain to which the laws of the Sabbath apply. According to laws of the Sabbath, movement in public domain is highly restricted. Redefining space as private means that different laws are applied to that space. Many activities which would otherwise be prohibited are therefore allowed, the main one being the permission to carry objects. Today, eruvin surround every Jewish city in Israel, as well as many Jewish communities abroad. It is typically created by a series of fences, walls, or posts with a

fig.2.28. eruv, Hebron Road

wire stretched between them constructed and maintained by local religious institutions. In Jerusalem the main eruv expands to include Jewish settlements outside the central Jewish cluster.

The eruv is an abstraction of an enclosure, a permanent urban space idealized in the form of the Temple before its destruction. The enclosure is an abstracted roof over the city, marked by its continuous edge – a wall, and the wall is in turn interpreted as a series of doors. Each door is comprised of two vertical elements representing the door posts, and a horizontal element representing the lintel. The measurement of the opening between the two posts is modeled after the door into the holiest space of the Temple, ten cubits high and three cubits wide[12].

In the Talmud, space is described as a dichotomy of the private and the public, the desert and the Temple. As Manuel Herz and Eyal Weizman describe in "the City and the Desert"

> *The city - referring to the displacement of the desert - is transformed by the eruv on the Sabbath into a representation of the Temple and thus from the public into the private domain. If the eruv area is understood as the Temple of Jerusalem, the outer area is the desert, and movement into the eruv is an act of wandering which culminates in the appropriation of a place[13].*

Since the eruv circles the Hinnom/Rababa Valley to the west, it essentially inscribes the valley as the 'desert' beyond. The northwest edge of the valley, defined by the retaining wall which doubles as the eruv, is therefore the city's edge, the desert's boundary. The retaining wall which lines the western edge has few access points, mainly used by the occasional tourist (typically Jewish Israelis or foreigners) or by nearby residents of Silwan and Abu-Tor who walk across the valley to or from the public transportation on Hebron Road.

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12 Smith, Barry, "On Place and Space : The Ontology of the Eruv", *Cultures: Conflict – Analysis – Dialogue*, (Frankfurt: Ontos Verlag, 2007).

13 Herz, Manuel and Eyal Weizman, "Between City And Desert", *AA Files 34*, (1997).

fig.2.24. steps along southern cliff (left), fig.2.27. view from Mount Zion Hotel, revealing the valley's east-west and north-south polarities (right)

fig.2.26. valley edges

As the road swerves away from the valley, a cliff forms the southern edge of the valley with the houses of Abu-Tor looking over its edge. Although a road connects the neighbourhood above down to the valley, the edge of the cliff draws a line which separates the activity of the neighbourhood overhead from the quiet landscape beneath. The vertical separation is similarly maintained on the north edge of the site, with the steep southern slopes of Mount Zion. The upper portion of the mountain is surrounded by a busy road which leads to the eastern entrances to the Old City and the Temple Mount/Haram al Sharif. Beneath the observation points along the road is a steep and fairly bare slope. While a clear boundary exists on the north and south end of the valley, with urban activity occuping only upper areas, the eastern edge of the valley is blurry, with houses of Al-Bustan and Wadi Hilwe spilling into the valley's bed. Here, where the Hinnom/Rababa Valley meets the Kidron/en Nar Valley, the open and often desolated terrain becomes dense and animated.

The valley's boundaries described above could be understood as the creation of dichotomous edges along the two cardinal axes. On the north-south axis, the opposition of Mount Zion and the Old City to the north with the necropolis cliff and the Hill of Evil Counsel beyond to the south, creates a dichotomy between the sacred and profane. During the summer months, this opposition is further emphasized by the somewhat contradictory image of the bare slopes of the south-facing Mount Zion, with the comparably lush vegetation in the shade of the opposite valley cliff. On the east-west axis, the valley edges create socioeconomical polarization, with Silwan on the east facing an upscale hotel and cultural institutions to the west. The opposition here is articulated by the apparent 'gap' as the steep and curved bed of the valley disappears when viewed from either side, creating a perceived void.

fig.2.30. - fig 2.31. cliff details

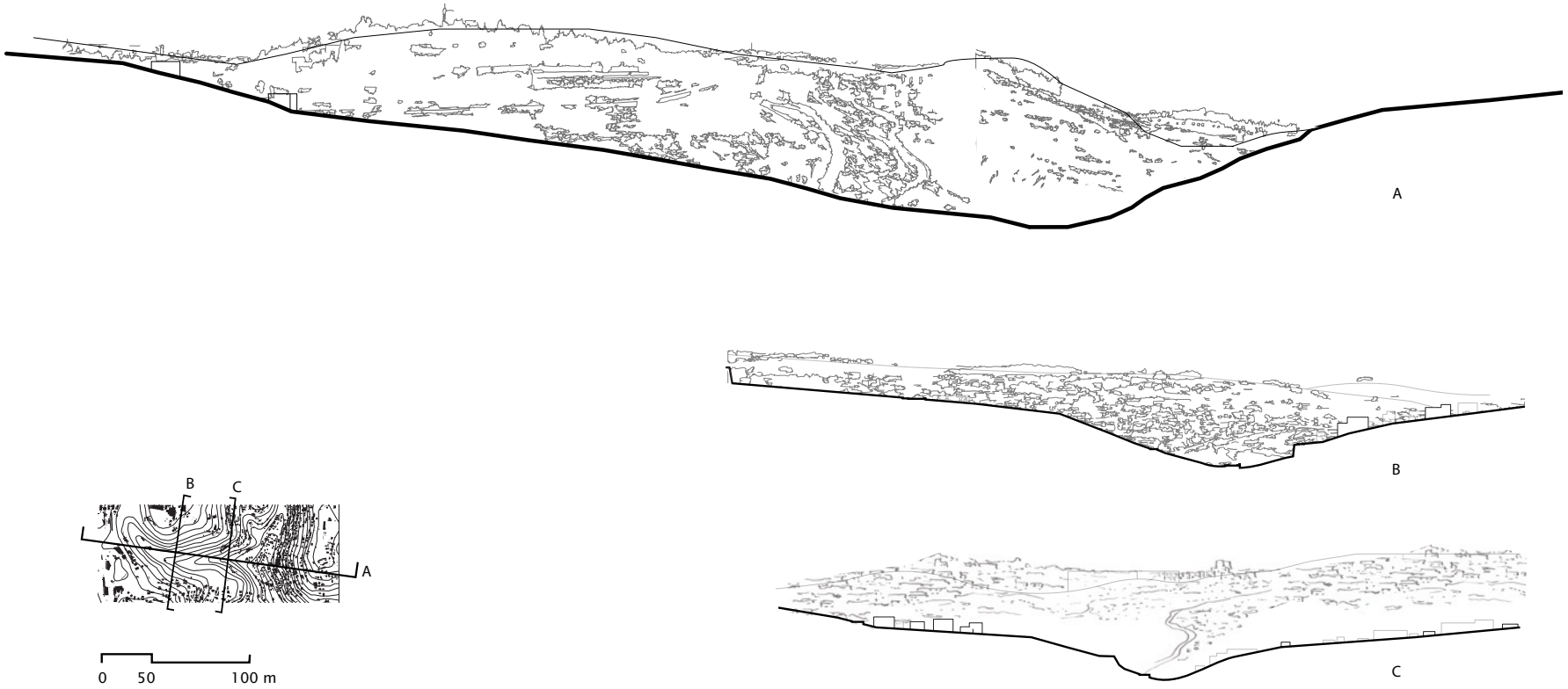

fig.2.32. east-west section (top), fig.2.33. transverse section looking east (centre), fig.2.34. transverse section looking west (bottom)

To live in Jerusalem is to feel
the weight of stones. Stone walls around the City.
Solemn stones in the digs. Hard-hitting stones.
Names chiseled on stone lids over the dead.

Look on my works, ye Mighty, and despair!
That bleakness when I walk through ruins below
the Temple Mount/Haram al-Sharif,
below the sun and moon of the Dome and Al-Aqsa,
when I touch the colossal stones hurled down
by the Romans who smashed the Temple and sacked the city,
when I lay the palm of my hand on pitted history.

Sometimes, writing, I watch the words grow heavy
when I place them in rows on the page.
Deliver me from a city built on the site of a more ancient city,
whose materials are ruins, whose gardens are cemeteries.
Whose people are desperate in their claims.

Sometimes I need to be nowhere. A place
without history.

A life of wandering
like the desert generation of Moses.
The wandering Jew. But that brings me
back into history.

Sealed rooms. Windows
criss crossed with tape so the glass won't shatter.
A dark noose of memory around my neck.
Coffins covered with flags and flags
burning. I need to be nowhere

(from *Sanctum,* Shirley Kaufman)

fig.2.35. climbing Mount Zion (opposite)

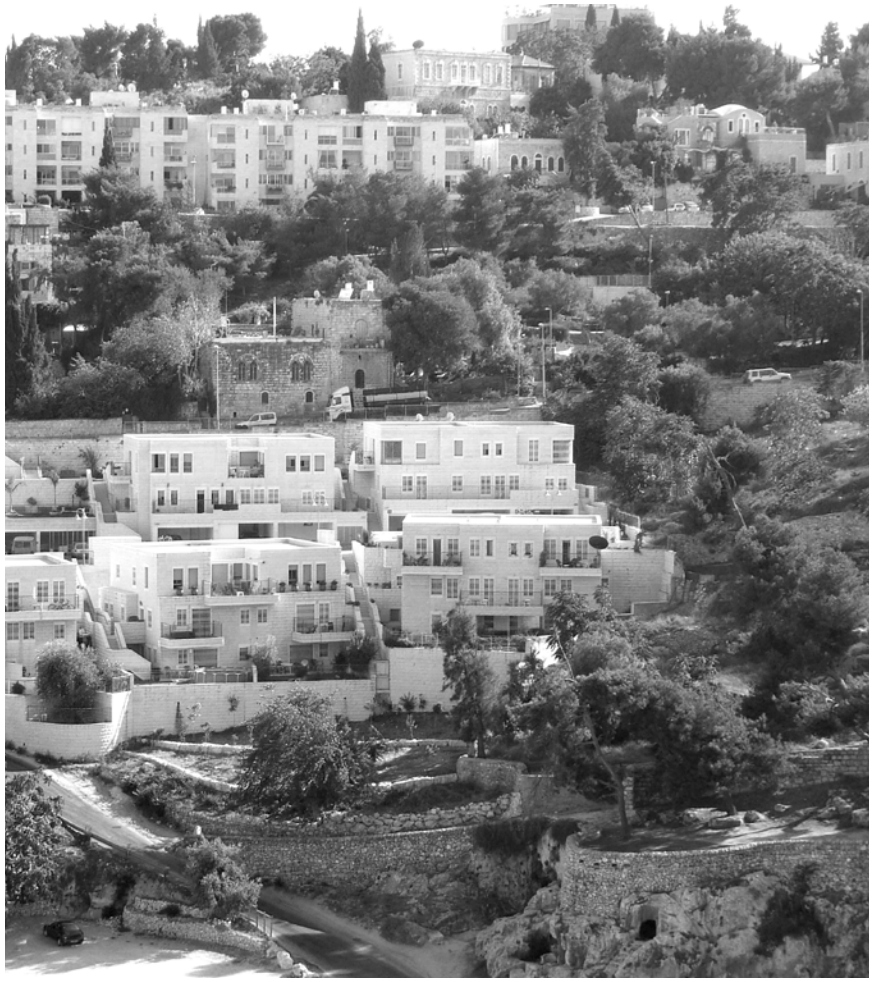

fig.2.36. Jerusalem stone - tombs, houses, and retaining walls - southern valley slope

two memories

The chronicles of Jerusalem are a gigantic quarry from which each side has mined stones for the construction of its myths – and for throwing at each other.

(Benvenisti, City of Stone)

In his essay on "The Subversion of Jerusalem's Sacred Vernacular", Eyal Weizmann articulates the political implications of the city's historic by-law that maintains that every building should be clad with square, natural local stone:

> *If the city itself is holy, then, in the contemporary context, the totality of its buildings, roads, vegetation, infrastructure, neighbourhoods, parking garages, shops, and workshops is holy. A special holy status is reserved for the ground. And if the ground is holy, its relocation as stones from the horizontal (earth) to the vertical (walls), from the quarries to the facades of buildings, transfer holiness further. As Jerusalem's ground paving of stone climbs up to wrap its facades, the new "ground topography" of holiness is extended. When the city itself is holy, and when its boundaries are constantly being negotiated, redefined, and redrawn, holiness becomes a planning issue*[14].

The city's holy status to both Jews and Muslims has long been a central argument in the rhetoric of the conflict. The use of Jerusalem stone, a material identified with the ancient city, in every part of the city, extends the entire city's boundary as a single visually continuous urban unit associated with its holy centre. The politically contested boundaries of the city therefore render an otherwise merely architectural or aesthetic question of cladding, highly political. As Weizmann

14 Weizmann, Eyal, "The Subversion of Jerusalem's Sacred Vernacular", Sorkin, Michael, *The next Jerusalem : sharing the divided city* (New York: Monacelli Press, 2002).

fig.2.37. palimpsest - a house in Silwan

puts it, like the 'stare of Medusa', the British by-law petrified a growing city forever enslaved by its holy status. Jerusalem today is identified with the local stone, and due to the city's fundamental role in the Jewish faith, the stone has become associated with Judaism and the 'Land of Israel'. Many official Israeli institutions, whether in Jerusalem or elsewhere, are clad with limestone similar to the 'Jerusalem stone', and Jewish institutions throughout the world have incorporated the stone into their buildings[15]. Wanting to preserve the city's character, the British regulation inadvertently fixed the image of Jerusalem with the local stone, associating it not only with historical landmarks and holy sites, but with Palestinian housing typology in and around the city.

The use of local stone is an inherent part of the regional Palestinian vernacular. There is a certain irony in Weizmann`s assertion that the stone by-law solidifies Israel's claim to the greater Jerusalem area, in that it simultaneously applies what is also a typical feature of Palestinian construction. But this example of 'circular' symbolism is only one of many. As construction techniques have changed in recent decades, limestone is no longer used as a building material, but solely as cladding. Palestinian construction in Jerusalem also adopted this method, constructing the building in concrete and cladding it with limestone. Another architectural element occasionally emulated in residential Palestinian construction is the red-tiled roof, a European tradition which today is a symbol of the Jewish middle class house[16]. Beyond materiality, Jewish adaptations of residential Palestinian typologies include elements such as stone arches and the mashrabiya, a privacy and shading screen[17].

Adaptation of architectural elements from Palestinian vernacular extend beyond the private residence and has occupied a central place in the Israeli professional

15 examples of institutions clad with 'Jerusalem stone' include: the parliament building, supreme court, foreign ministry, and municipality building.

16 for a discussion on changes in middle class Palestinian housing using the example of Furadis see Cohen, Shelly and Tulah `Amir , *Tsurot megurim : adrikhalut ve-hevrah be-Yisrael* (Tel Aviv: Hargol : `Am `oved, 2007).

17 Misselwitz and Rieniets, 150.

discourse. The evolution, or search, for an Israeli architectural style is saturated with politics, particularly in Jerusalem[18]. A decade after the founding of Israel, sabra (Israeli born) architects initiated attempts to localize architecture, shifting away from the modernist style brought in from Europe by the founding generation. Like many of their colleagues abroad, these emerging practitioners followed the zeitgeist of preoccupation with place-making, rootdeness, and connection to the environment as manifested in the vernacular. These questions, echoing Heidegger's ontological definition of place, took on particular national interests[19]. The emerging style found 'nativeness' in Arab typology,

> *Like Arab words in Hebrew slang…the evocation of 'the Arab village' in Israeli architectural culture was a protest to which sabra aimed to identify themselves as natives by appropriating 'the Arab village'.*[20]

After 1967, with the exposure of Israeli public to the Wailing Wall and the Jewish quarter, the architectural model was no longer referring to a generic vernacular, but expressed direct connection to Jewish roots. Israeli architecture and archaeology were now serving a similar cause, *While architects were seeking locality on the ground, archaeologists sought Jewish history underneath its surface*[21]. The village of Silwan as it existed in the post-1967 era, was seen as an example of the biblical landscape of ancient Jerusalem and was therefore designated as part of the Holy Basin for preservation. The houses of Silwan were considered an important link to ancient building traditions[22].

Through the 1960s and 1970s, the architectural discussion evolved to the questioning of the architect's responsibility for the creation of place, makom;

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18 In her work, Israeli architect and historian Alona Nitzan-Shiftan traces the discourse and its relationship to the Palestinian vernacular, looking at large scale housing projects in the city from the 1950's to the present.

19 Nitzan-Shiftan, Alona, "Seizing Locality", Sufian, Sandy and Mark LeVine, *Reapproaching borders : new perspectives on the study of Israel-Palestine*, (Lanham: Rowman & Littlefield Publishers, 2007).

20 Nitzan-Shiftan.

21 Nitzan-Shiftan.

22 Nitzan-Shiftan.

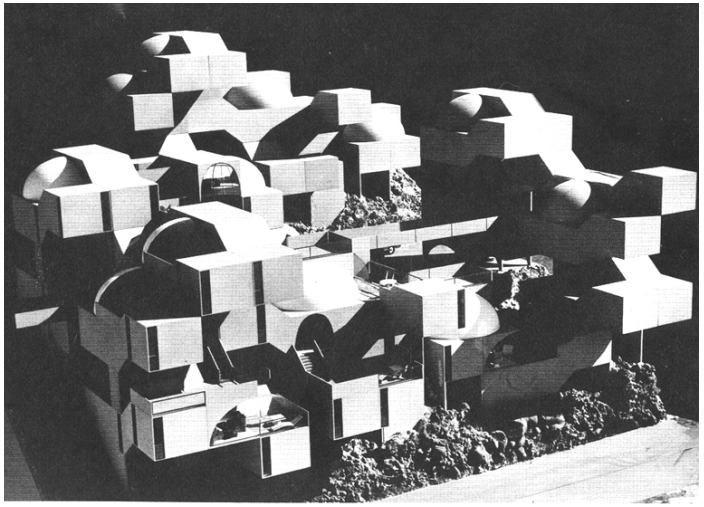


fig.2.38. Israel Habitat, Moshe Safdie, 1969 (top),

fig.2.39. Image of Palestinian village, as referenced by Safdie (bottom)

a way to symbolically and emotionally nationalize a territory. This discourse included Moshe Safdie's Habitat-inspired housing and Ram Karmi's writing on the question of belonging. Theorists have termed this approach 'Mediterraneanism', referring to a more generic 'original dwelling'. The concept was applied to the expanding Jerusalem where large housing projects were broken up to smaller masses, terracing along slopes as opposed to towering over them. Nitzan-Shiftan points to a dark irony where architects of post-1967 settlements in Jerusalem looked to the Palestinian village as inspiration, but at the same time were blind to the dispossession that was occurring as part of that same construction; projects *whose style, even in Israeli culture, was derogatively coined neo-Oriental, crusade, or – worst of all – postmodern*[23]. In recent years there has been a noticeable return to modernism and the tradition of Tel-Aviv in the 1920s and 1930s. Perhaps it was the two Palestinian intifadas and a failed peace process which prompted architects to disassociate from the contested locality and move away from the question of place-making.

Israeli architecture's search for locality in Jerusalem can be framed around the relationship to the local stone. On the one hand the stone represents a lineage to ancient Jewish roots of the city, while on the other hand there is an ambivalent relationship to the stone as a symbol of the Palestinian vernacular. To Palestinians, stones are 'the substance of life', the walls, fences, roofs and fields which make up the traditional village. The rocky terrain of the West Bank and coastline relates to a Palestinian memory of the landscape before it was urbanized by Jewish Israelis[24]. During the first intifada in the 1980s stones were commonly used as a weapon in clashes against the IDF. The stones became a symbol of the uprising and resistance to occupation. For both Jews and Palestinians, the struggle of proofing an identity and a connection to the land is laden with symbols. Whether they are architectural monuments or landscape

23 Nitzan-Shiftan.

24 for a comprehensive study of this symbolism in Palestinian poetry and literature see:
Parmenter, Barbara M., *Giving voice to stones : place and identity in Palestinian literature* (Austin: University of Texas Press, 1994), 117.

features, there is often symmetry between the symbols of the two sides. The Dome of the Rock and the Wailing Wall, the stones of archaeology and the stones of a village ruins, the olive branch of peace and the olive tree of harvest. In the political rhetoric of land ownership, symbols acquire two opposing meanings. As Palestinian Poet Mahmud Darwish poignantly observed, the struggle over a homeland is *the struggle of two memories*[25]; two histories of the same land, two competing meanings for each symbol.

25 Parmenter, 1.

fig.2.40. gate in Abu-Tor, doors painted in honour of a pilgrim's return from haj (left), fig.2.41. gate in Mahane Yehuda, "If I forget thee, O Jerusalem, let my right hand wither" (right)

In this city the dead are mightier than the living. The myths of the ancient forefathers are the essence of local politics, and on the shoulder of the living the heritage of past generations weighs as heavily as their tombstones

(Benvenisti, City of Stone)

fig.2.42. (opposite)

water

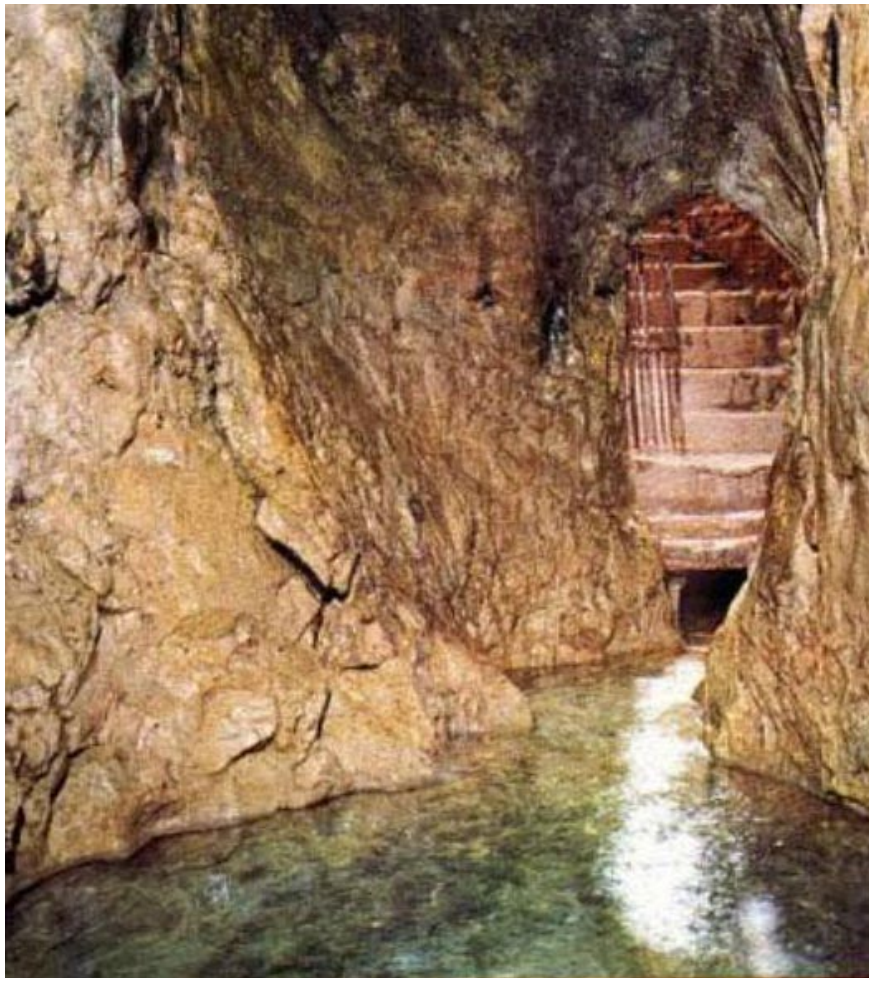


fig.3.1. Hezkiah's tunnel

groundwater

(1) Gihon Spring (2) Siloam Pool (3) 'Ein Rogel / Bir Eyyub
(4) Sultan's Pool (5) drinking fountain

aqueduct
Hezkiah's Tunnel
Siloam Channel

fig.3.2. wells and aqueducts

The ancient city of Jerusalem, like many other settlements in the region, is said to have been founded near a spring, on a southern sloping spur of the Temple Mount. The Gihon spring (Ai'n Oum al-Darj, Ai'n Sitti Maryam, or the Virgin's Fountain), located in the Valley below was the centre of the Canaanite settlement, beginning around 3000-2800 BCE. The spring supplied drinking water as well as irrigation for local agriculture in the valley, and was the only permanent water source to the city[1]. While Jerusalem is not located in an arid area, its position on a rocky terrain dividing the watershed means that rainwater quickly drains east and west of the city. At an elevation of approximately 700 metres above sea level, it was nearly impossible to dig wells deep enough to reach the aquifer. Cisterns for rainwater harvesting were commonly used to collect runoff even up to the modern era. However, as the city grew and developed upward towards the Temple Mount, the vital spring water had to remain accessible and protected. As such, the Canaanites, and later the Israelites, who ruled the city constructed three systems to guarantee the water supply to the growing population. The first was Warren's Shaft Installation, a horizontal channel allowing the water to flow east and to be accessed via a 12.3 metre deep subterranean well[2]. The system was constructed in parallel with the first city wall somewhere during the period between 1700 - 1300 BCE. A second installation was an above ground channel known as Siloam Channel. Finally, a third system, known as Hezekiah's Tunnel, is attributed to the Judean King Hezekiah who constructed it in preparation for the Assyrian siege in 701 BCE[3]. This latter underground aqueduct transferred

1 Gill, Dan, "Subterranean Waterworks of Biblical Jerusalem: Adaptation of a Karst System", *American Association for the Advancement of Science* (1991) 1467-1471.

2 Gill, 1467-1471.

3 Reich, Ronny and Eli Shukron, "Reconsidering the Karstic Theory as an Explanation to the Cutting of Hezekiah's Tunnel in Jerusalem", *The American Schools of Oriental Research* (2002), 75-80.

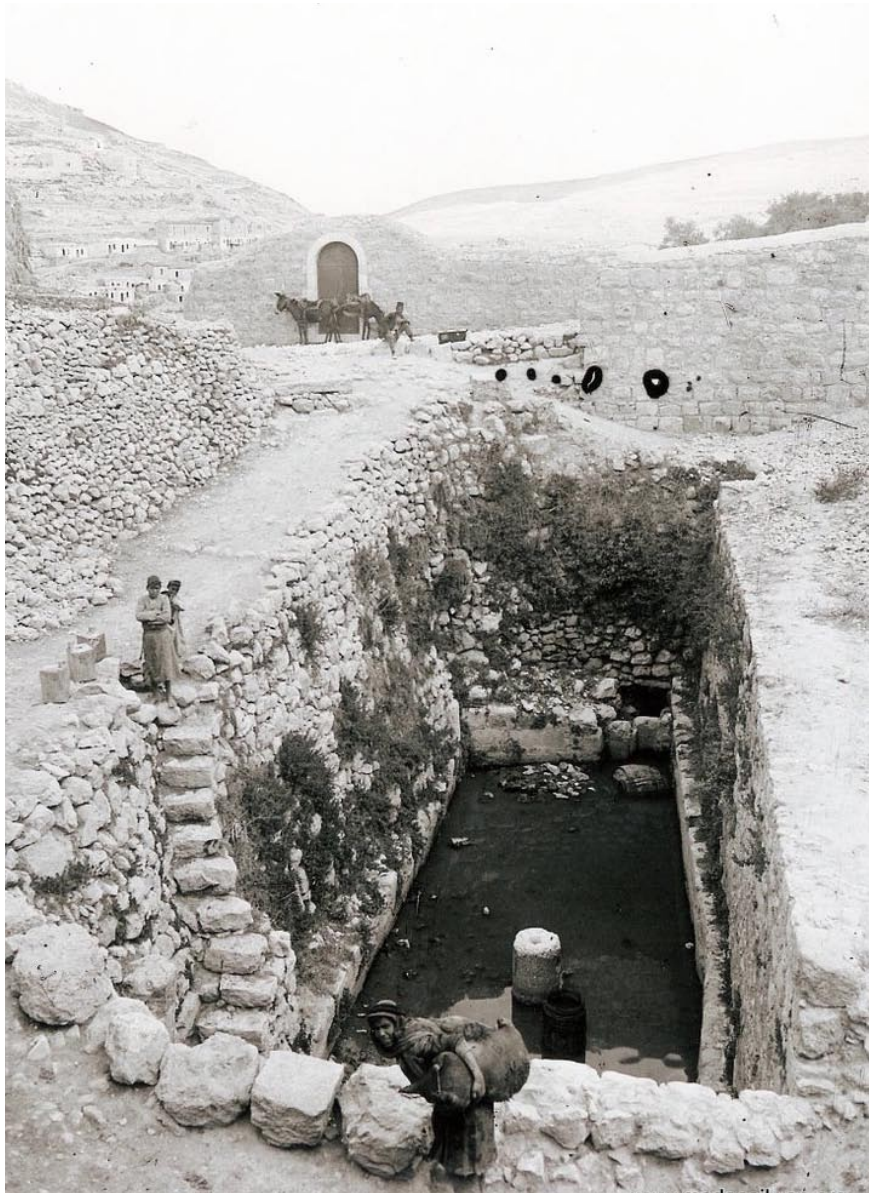


fig.3.3. Siloam Pool

the intermittent spring water to an intramural storage pool, known as Siloam Pool (Silwan Pool, Shiloach Pool), and its completion was commemorated in an inscription, undiscovered until the late 19th century[4].

The Hebrew name Gihon ('the gushing') refers to the pulsating flow it once possessed. It spouts out of a fractured karst; a typical topographic feature in the limestone landscape of the Judean Mountains[5]. This specific karst occurs between two layers of sedimentary rocks: a lower layer of nearly impervious dolomite (Mizzi Ahmar) which lay beneath an evenly porous bed of Meleke limestone. Water trickling through the Meleke is forced to move on top of the dolomite rock, forming karsts along the boundary line. When the water encounters faults or cracks in the harder layer, it creates a vertical passage. This, in turn enlarges over time due to the course of water running through it[6]. The gushing-Gihon- is therefore a result of siphonic action occurring within the karst. Some geologists dispute the commonly held opinion that the subterranean Warren's Shaft system was entirely man-made, arguing that they were an adaptation of a naturally occurring karst system[7].

Whether natural or man-made, the ancient water systems continued to be a vital water source for the area's residents until the pre-modern era, as a source of drinking water and irrigational water for crops in the lower valley. However, it should be mentioned that even in ancient times additional sources would have been required to satisfy the totality of the city's needs. Two separate aqueducts, the first built by the Hasmoneans and the second by the Romans, carried water

4 The Siloam inscription was carved out of its original location and was transferred as Ottoman property to Istanbul, where it still stands today. The ancient Hebrew inscription describes the completion of the tunnel's construction which was conducted simultaneously from both ends.

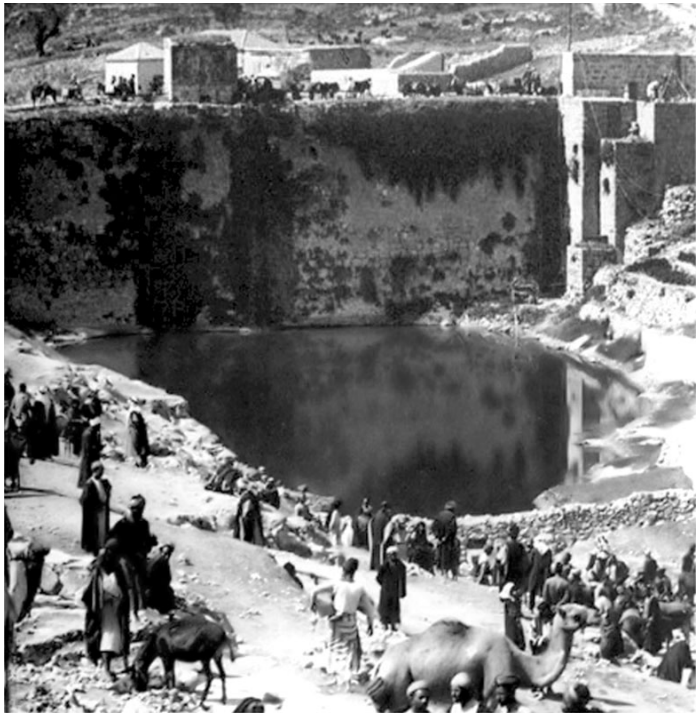
5 Arkin, Yaacov and Amos Ecker, *Geotechnical and Hydrogeological Concerns in Developing the Infrastructure Around Jerusalem* (Jerusalem : Geological Survey Of Israel, 2007).

6 Gill, 1467-1471.

7 see also: Lancaster, Steven P. and Long G. A., "Where They Met: Separations in the Rock Mass near the Siloam Tunnel's Meeting Point", *The American Schools of Oriental Research*, (1999) 15-26. , for debate regarding the date and authorship see: Rogerson, John and Philip R. Davies, "Was the Siloam Tunnel Built by Hezekiah?", *The American Schools of Oriental Research*, (1996) 138-149.

fig.3.4. drinking fountain (Sabil) by Sultan's Pool on Hebron Road

fig.3.5. Sultan's pool as performance space



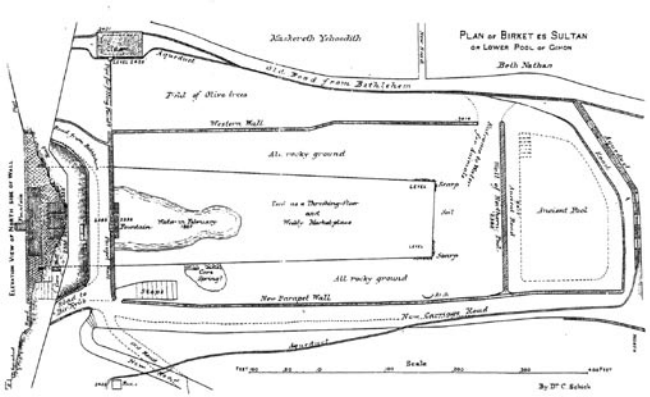


fig.3.6. cattle market in the Sultan's pool (top),

fig.3.7. Plan of Birket es Sultan, 1898 by Conrad Schick (bottom)

in from a spring located ten kilometres south of the city, near Bethlehem. Upon reaching the city the water was collected in large pools such as Birket Israel, Hezekiah and Mamilla Pools, from which it could be further distributed. Passing through two 300-400 metre-long tunnels, the Hasmonean aqueduct was intermittently utilized for nearly two thousand years. Although retrofitted with pipes by the Ottomans and later again by the British, by the mid twentieth century it was no longer in use.

Outside the walls, in the Hinnom/Rababa Valley, stands the Sultan's Pool, named after Sultan Suleiman I, who performed major renovation to the ancient pool in the 16th century. Today, the pool serves as an outdoor music and film venue, but much of its original presence is buried under an accumulation of dirt. Until the late Ottoman Period, the pool was used to water the crops and orchards in the lower valley and even hosted a weekly market. Dr. Conrad Schick, an architect writing for the Palestine Exploration Fund, surveyed the pool in 1898[8]. He described a sixty foot high southern wall which acted as a dam/bridge, the expansion of which some years previously led to a partial destruction of a mosque. Today, a public drinking fountain (Sabil) dedicated by the Sultan in 1520 is the only remnant of the original structure. The Sabil was fed by the lower aqueduct which circled around the pool, crossing the Hinnom/Rababa Valley raised above an arcuated bridge. Schick had estimated that the water draining into the pool from the surrounding area passed through a secondary smaller pool, contained within the large sunken rectangle, where dirt could settle, before pouring over to the main pool for storage. Remains of the aqueduct and the subsequent clay pipes are still found today along the slopes of Mount Zion as it continues towards the walled city.

During the later Ottoman period the supply from the aqueduct was not constant, and Jerusalem's residents relied heavily on rainwater cisterns which existed throughout the city. In periods of drought, they purchased water from Palestinian or Jewish Yemenites of Silwan and other nearby villages who sold

8 Schick, C., "Birket es Sultan", *Palestine Exploration Fund, Quarterly Statement* (1898), 224-229.

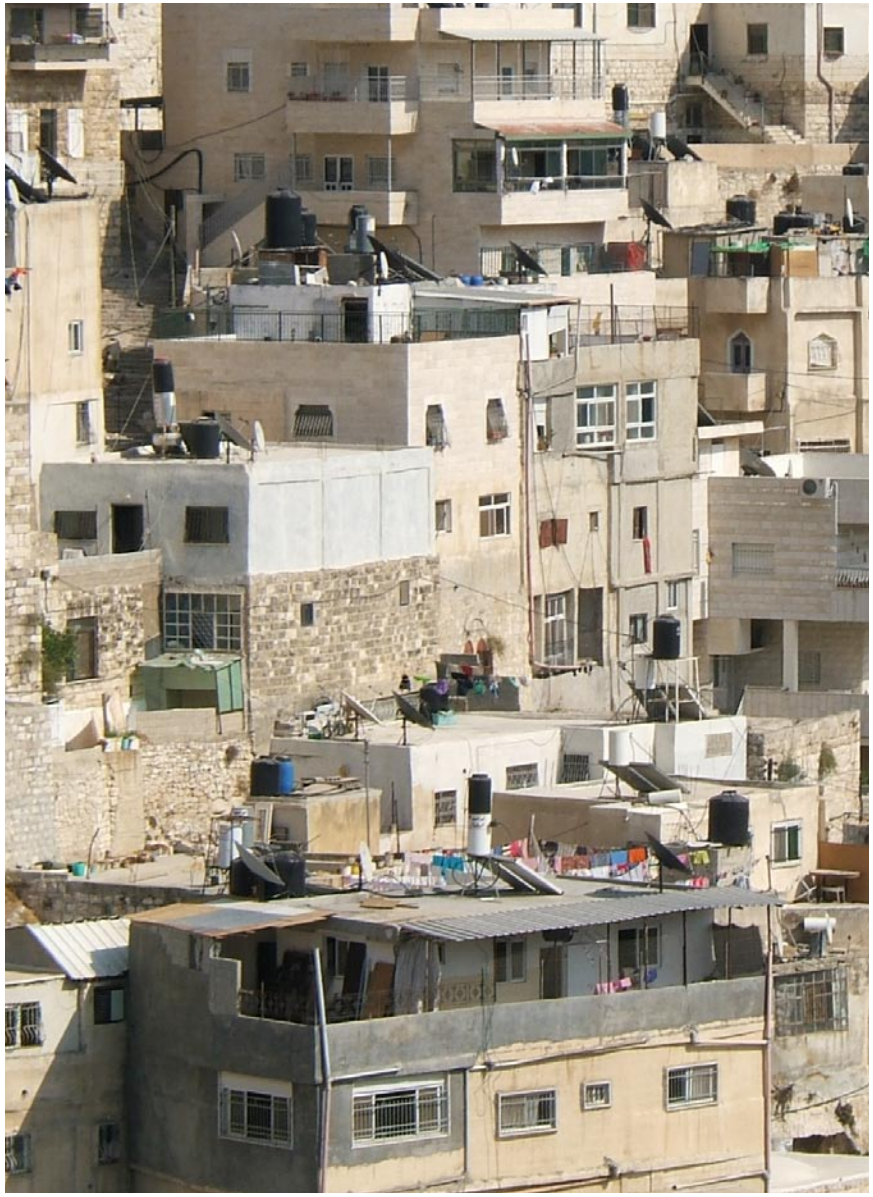


fig.3.8. water tanks atop Silwan houses

spring water[9]. Eventually, the British modernized the city's water supply, renovating the aqueduct with modern pipes, and providing another line from springs located northwest of the city.

Today Jerusalem receives most of its water from the national water company Mekorot, which delivers water from wells in the coastal plane and Sea of Galilee through the National Water Carrier. Further distribution of this water is the function of the municipal company Gihon, unsurprisingly named after the iconic spring. Some areas in the northern portions of East Jerusalem are served by The Jerusalem Water Undertaking, a Palestinian company operating from Ramallah and Al-Bireh, established during Jordanian rule[10]. Many areas in East Jerusalem today are still not connected to any municipal water supply; this is in part due to construction of homes without permits (for circumstances described previously). With no permit the house must rely on pirated supply, either directly through neighbouring connections or transferring from neighbours using other methods. It is estimated that 160,000 Palestinians residents have no connection to the water network[11]. A common sight in Palestinian neighbourhoods of the city, and a distinguishing feature from Jewish neighbourhoods, are the black water tanks on residential roofs - Jewish houses typically have white water tanks with solar panels for heating. Palestinian houses use a similar, yet passive, heating technique, utilizing the black plastic tank to absorb the sun's energy. The larger tanks are also there to hold larger amounts of water in case of a sudden shortage, or in cases where the house has no water connection, they are used to store water brought from elsewhere.

9 Yellin, David, and Benyamin Rivlin, Yerushalayim shel temol (Jerusalem: ha-Va`ad le-hotsaat kitve David Yelin, Hotsaat R. Mas, 1972), 89.

10 Jerusalem Water Undertaking website: http://www.jwu.org/newweb/etemplate.php?id=96

11 The Association for Civil Rights in Israel, *East Jerusalem – Facts and Figures*, (2008).

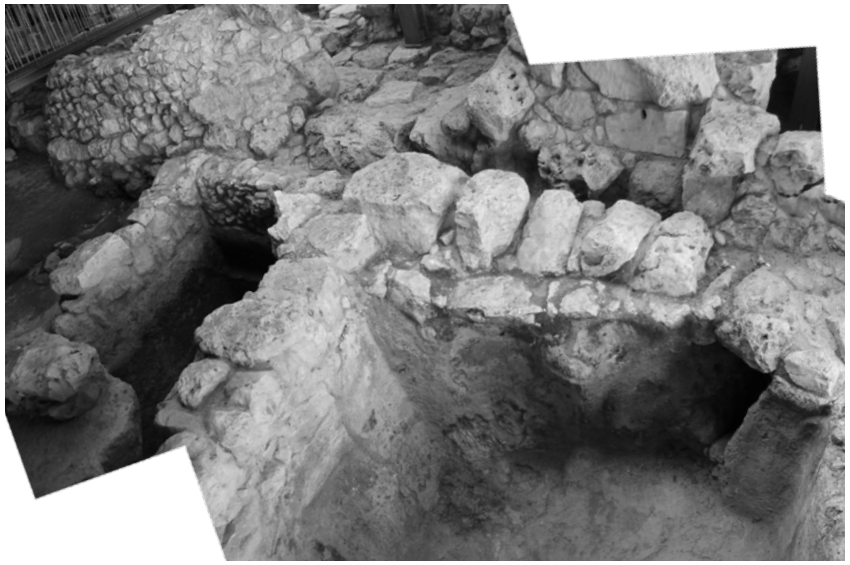


fig.3.9. excavated cisterns in the City of David Archeological park (left), fig.3.10. irrigated crops in Kidron/en-Nar, early 20th century (right)

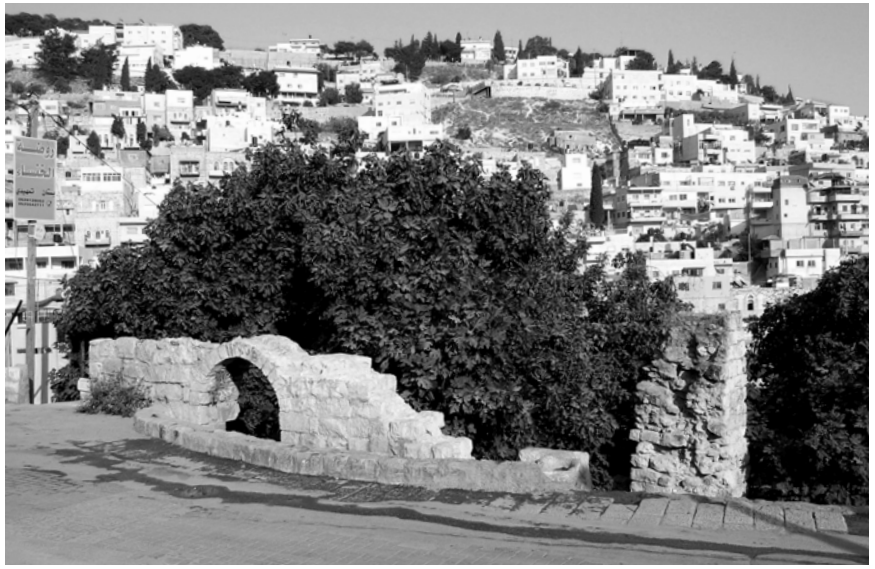


fig.3.11. run - off water from the Siloam pool, 2009 (left), fig.3.12. well near Siloam pool (right)

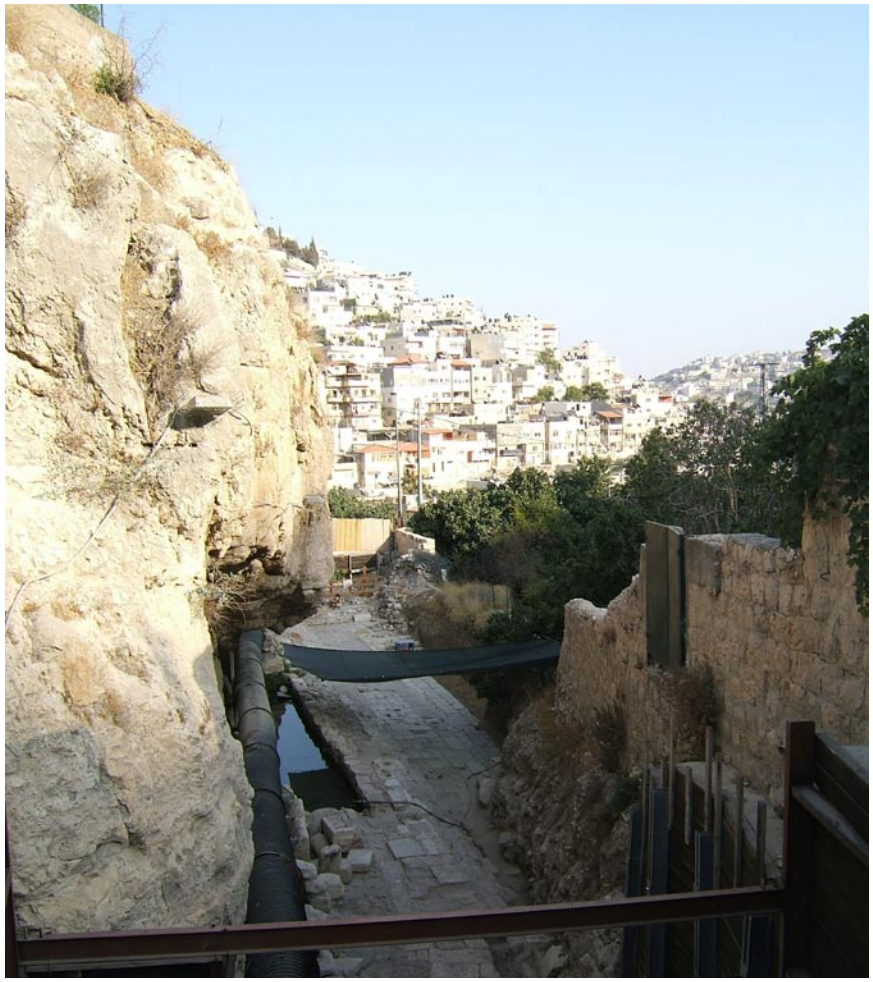


fig.3.13. ongoing excavations in lower Siloam pool

holy water

Intrinsic to the origins of Jerusalem, the Gihon spring and the pool of Siloam also feature prominently in the traditions of all three monotheistic religions. In the Christian faith, the Pool of Siloam is known as the site of one of the miracles performed by Jesus. The Gospel of John describes how Jesus healed a blind man by covering his eyes in mud and washing them with the water of the pool:

> (John 9:11) *He answered and said, "A man who is called Jesus made clay, and anointed mine eyes, and said unto me, 'Go to the pool of Siloam and wash.' And I went and washed, and I received sight."*

Here the name Siloam or Shiloah (meaning 'sent') is understood in some interpretations as a sign of the Messiah, or the "one who has been sent"[12].

For Muslims, the spring of Silwan embodied a link between Jerusalem and Mecca. Al-Muqaddasi, a local Arab geographer writing in the Islamic period, noted that the residents of Silwan congregated around the spring every year to celebrate the Night of 'Arafat, when, as they believed, the water from holy Zamzam well in Mecca would flow underground and emerges from the spring of Silwan[13]. The day of 'Arafat is the second day of the Hajj, the pilgrimage to Mecca, commemorating Muhammad's Farewell Sermon on the Mount of 'Arafat. It is a day of fasting in repent for one's sins. Describing the connection between the two springs, Al-Nabulusi, a 17th century writer from Damascus, compared Mecca and Jerusalem to the eyes of the world and the Zamzam and Silwan as the source of their tears

12 Koester, Craig R., *Symbolism in the fourth Gospel : meaning, mystery, community* (Minneapolis: Fortress Press, 2003), 107-8.

13 Le Strange, Guy, 1854-1933, *Palestine under the Moslems : a description of Syria and the Holy Land from A.D. 650 to 1500* (New York: New York : AMS Press, 1975) 221.

(the word 'ayn in Arabic means both 'spring' and 'eye')[14]. He writes:

> *The saltiness of the eye's water is evidently true*
> *Not out of imperfection, but rather of perfection.*
> *For this reason Zamzam's water is salty*
> *And so is Silwan's; both are refreshingly cold.*
> *These are the two eyes of the earth,*
> *One of the right, the other of the left.*
> *The right is in Mecca, the left in Jerusalem,*
> *Yet all the worlds are mere imagination.*[15]

The well of Zamzam is said to have miraculously appeared when God answered the cry of the thirsty infant Ishmael, son of Abraham. This tradition points to layers of symbolism which extend beyond the physical purifying qualities of water that are intrinsic to so many religious rituals.

In Jewish tradition, the Gihon spring is linked to the Temple Mount through the celebration of Simchat Beit HaShoeivah (festival of the water drawing). The ritual involves the pouring of water drawn from the Gihon over the Temple's altar during the week of Sukkot, one of the three annual pilgrimage festivals. Sukkot is celebrated in the month of Tishrei, at the beginning of the rainy season, when God judges the rainfall for the year. The joyous celebration, performed even today in the absence of the Temple, involves singing and dancing by large crowds of Jewish pilgrims. Author Karen Armstrong elaborates on the symbolism of the festivities in her survey of the religious history of Jerusalem:

> *A particularly vibrant festival was the feast of the Water Drawing, which symbolically united the upper and lower worlds. Israelite cosmology now [during Herod's reign] conceived of the earth as a capsule surrounded by water: the upper waters were male, while the*

14 Akkach, Samer, "Religious Mapping and the Spatiality of Difference", *Thresholds* 25,(2003),74-75.
15 Abd al-Ghani ibn Ismail al-Nabulusi, quoted in: Samer 2003, 75.

> *dangerous, subterranean waters were female, like Tiamat[16]: they cried out to be united. As Jerusalem was the "centre" of the world, it was a place where all the levels of existence could meet. Once a year, the "stoppers" to the underworld would be symbolically opened and the upper and lower waters mingled, while the people rejoiced. Later the rabbis would say that whoever had not experienced this festival had never known joy in his life.[17]*

These rituals practiced during the festival recount the creation of the world, the rituals being secondary to the myth itself[18]. The Book of Genesis describes the second day of creation when God fixes the firmament, as the division of *the waters from the waters*. Many creation stories involve the division of water. In the Koran, for example, water is the first element from which God creates *every living creature*. Both of these myths relate to even earlier Mesopotamian creation myths[19]. In Jewish tradition, the lower water (the Tehom, or Deep) is kept underground since the creation of the world, weighed down by the foundation stone beneath the Temple. The rise of groundwater is linked to rainfall which the water-drawing ritual is calling for. The rain is a blessing, but the waters below are dangerous. When King David set out to build the temple, digging to find untouched soil, he disturbed the stone and waters of the deep surface, threatening to drown the world[20]. The union of the dark waters below with the waters above, of the female and male waters, is similarly seen as the cause of the great flood[21].

The image of the union between upper and lower water relates to a more universal mythology of the duality of water. The division of water to 'upper' and 'lower', masculine and feminine, demonstrates the archetypal duality of water. Ivan Illich,

16 Tiamat was the goddess of the sea and primordial chaos in Babylonian mythology.

17 Armstrong, Karen, *Jerusalem : one city, three faiths* (New York: Knopf, 1996), 137.

18 Patai, Raphael, *Man and temple, in ancient jewish myth and ritual.* (London: T. Nelson, 1947), 33.

19 de Châtel, Francesca, Water sheikhs & dam builders : stories of people and water in the Middle East (New Brunswick, N.J.: Transaction Publishers, 2007), 25.

20 Patai, 55-58.

21 Patai, 65.

fig.3.14. signage in the Siloam Pool (top), fig.3.15. Friday afternoon rituals in Siloam Pool (bottom)

the Austrian philosopher, examines an evolution of the imagination of water, and points to this dualism, suggesting that *The flood, the blood, the rain, milk, semen, and dew, each of the waters has an identical twin*[22]. As water moves between opposites, it is a boundary negotiating opposite worlds. Illich points to another common religious myth, the journey of the dead through water which separates the world of the dead from that of the living, and the present from the past[23]. The formation of contemporary political boundaries along rivers or other bodies of water is another demonstration of 'other worlds' which lay beyond water. French philosopher Gaston Bachelard, who wrote about the 'material imagination' of water, sees it as embodying change and time. He argues: *Water is a truly transitory element. It is the essential, ontological metamorphosis between fire and earth*[24].

The waters of Siloam continues today to hold overlapping mythologies as the spring waters remains both a religious and tourist destination. However, as religious symbols evolve into national ones, this pool becomes a point of friction, another boundary in the frontier of the Holy Basin. Today the Siloam/ Shiloah Pool is property of the Jerusalem Islamic Waqf (Islamic endowment, or trust), but frequented also by Jewish visitors and worshippers – orthodox Jews from the vicinity who come to bathe, to purify, in the spring water. Recently, on Friday afternoons, the time of the traditional ablution (Tvila, or Immersion) in preparation for the Sabbath, men come to the pool where they bathe naked, asking other female visitors to leave and thus thwarting their visit. Speculation in local press related one of these types of incidents, which occurred at the pool in summer of 2009, to a violent clash which ended in shooting later that day[25]. Here, a trivial activity of bathing in a spring becomes just another source of contention in the extremely flammable Silwan.

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22 Illich, Ivan, H2O and the waters of forgetfulness : reflections on the historicity of "stuff" (Dallas: Dallas : Dallas Institute of Humanities and Culture, 1985), 27.

23 Illich, 30.

24 Bachelard, Gaston. *Water and Dreams: An Essay on the Imagination of Matter*, (Dallas: Pegasus Foundation, 1983), 6.

25 Medzini, Ronen, "Breichat Hameriva Be-Mizrah Yerushalayim", *ynet*, 04/10/2009, http://www.ynet.co.il/articles/0,7340,L-3784236,00.html

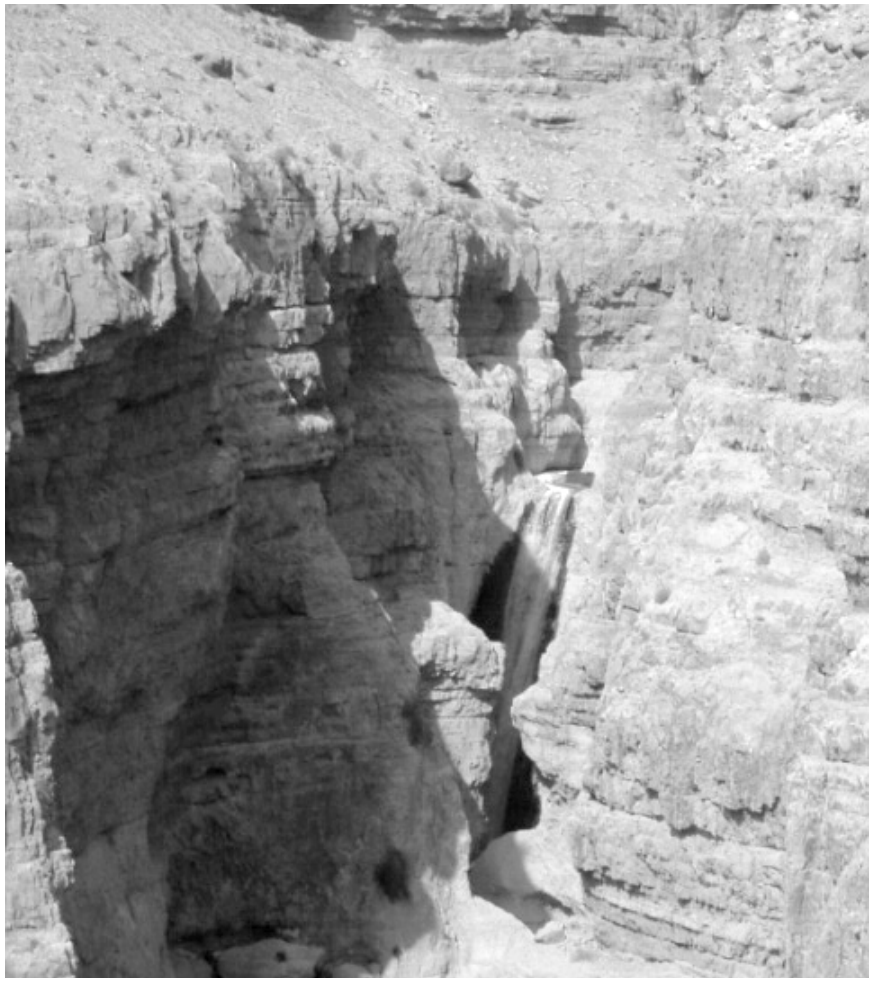


fig.3.16. sewage flowing in the Kidron / en-Nar Valley

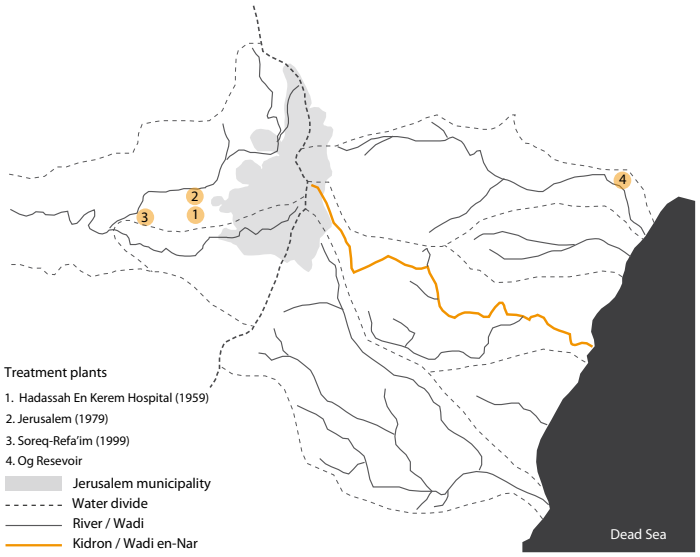


fig.3.17. watershed and wastewater treatment plants, Jerusalem area

wastewater

As we have seen, the challenges in Jerusalem's water supply continued from ancient times to the present day, where they became bound in a national-political struggle over territory. The disposal of the city's wastewater, while being a challenge in the past, has become an even greater concern in recent decades due to the continued growth of population. Poor sanitary conditions inside the overcrowded Old City was a major impetus for movement outside the city wall, as cholera spread and polluted water sources. It was another small cholera outbreak in 1970 which pushed the municipality to upgrade some of the outdated infrastructure the Jordanians had left behind in East Jerusalem[26]. For many years the city's sewage was either absorbed in sceptic tanks, or flowed away from the city untreated into rivers and streams. This finally changed when in 1959, Israel established the first treatment plant near Hadassah Ein Karem Hospital, west of the city[27]. Presently, three plants treat the wastewater which flows west of the water divide, while only one plant treats some of the water flowing east. Forty-four per cent of Jerusalem's annual 39 million cubic metres (mcm) of sewage flow east. Less than half of this sewage is treated in the Og reservoir near the Dead Sea, while the remaining 10.2 mcm flow untreated into the Kidron/a-Nar Basin in southeast Jerusalem[28]. This volume of sewage, nearly a quarter of the city's total annual waste, is comparable to the volume of 4080 Olympic swimming pools annually. Wastewater from the city has been released into the Kidron Valley since the 1940s. This flow is defined today by the Israeli Ministry of the Environment as the *greatest wastewater nuisance in Israel*[29].

26 Misselwitz and Rieniets, 391.

27 Arkin and Ecker.

28 Hareuveni, Eyal, "Foul Play – Neglect of Wastewater Treatment in the West Bank", B'Tselem (2009).

29 Environmental Protection Ministry, http://www.sviva.gov.il/bin/en.jsp?enPage=BlankPage&enDisplay=view&enDispWhat=Zone&enDisp.Who=waste_jer&enZone=waste_jer

This pollution has great consequence for both human and natural systems, above and below the ground. The sewage affects the flora and fauna downstream. It pollutes crops farmed downstream by small Bedouin communities, as well as water consumed by livestock. During the winter months, with rainwater being washed into the wadi, some of the wastewater reaches the Dead Sea and pollutes it. During the long summer months, a large amount of the water evaporates leaving toxins and bacteria behind. Throughout the year, sewage infiltrates the ground where it has a particularly devastating effect. This infiltration pollutes the Mountain Aquifer, one of the most important water sources to both Israelis and Palestinians[30]. As an example, four wells in the Jerusalem area have closed down in recent years due to groundwater pollution[31]. The environmental impact of the pollution is further aggravated by the redirection of many natural water sources for drinking and irrigation purposes. Water which once flowed through rivers and wadis is captured in pipes, thereby significantly reducing groundwater recharge and contributing to the shrinkage of the Dead Sea. Groundwater recharge is already naturally a challenge in this environment as the rainwater from the mountains naturally flows down to the Judean Desert in flash floods, and so reduction in the little filtration that does exist is significant.

Plans for the development of a treatment plant for the Kidron Basin have been in progress for decades, but have not materialized. One of the main challenges to the execution of the various proposals is the required coordination between Israeli ministries and the Palestinian Authority. About ten per cent of the waste pouring into the Kidron/a-Nar Basin comes from Beit Sahur, Abu Dis, 'Eizaria, and neighbourhoods of eastern Bethlehem[32]. These Palestinian communities are A and B areas (as defined by the Oslo Agreement), which means they are under either complete or partial control of the Palestinian Authority. The remaining ninety per cent of the wastewater comes from both Jewish and Palestinian neighbourhoods in the Jerusalem jurisdiction. The separation barrier around

30 Hareuveni.

31 Arkin and Ecker.

32 Hareuveni.

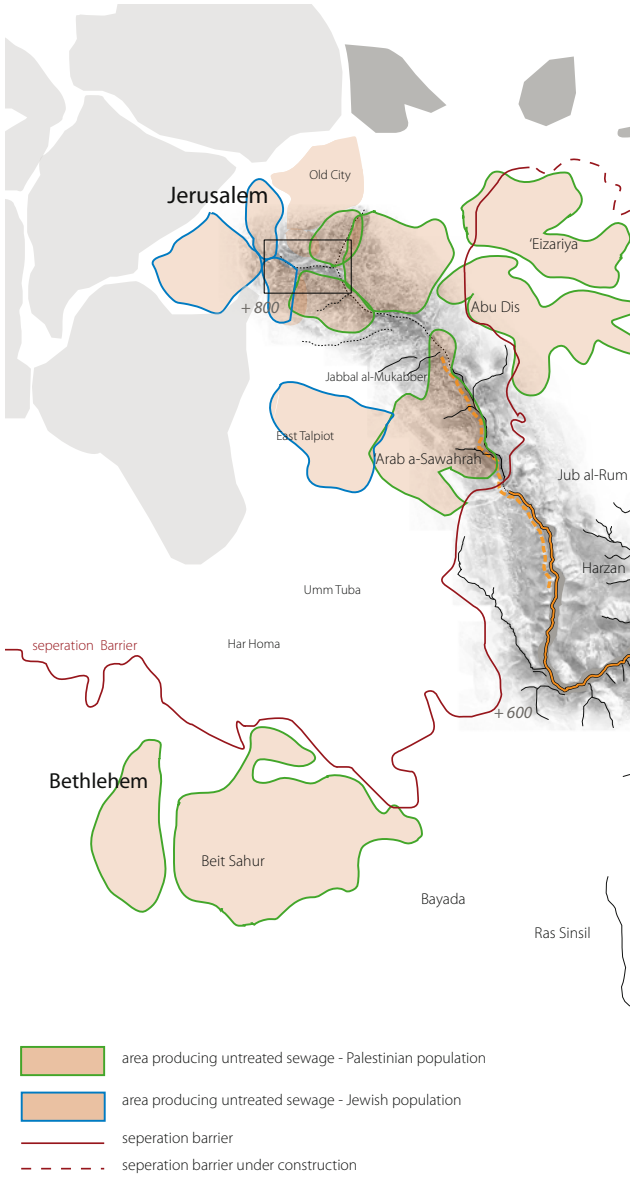
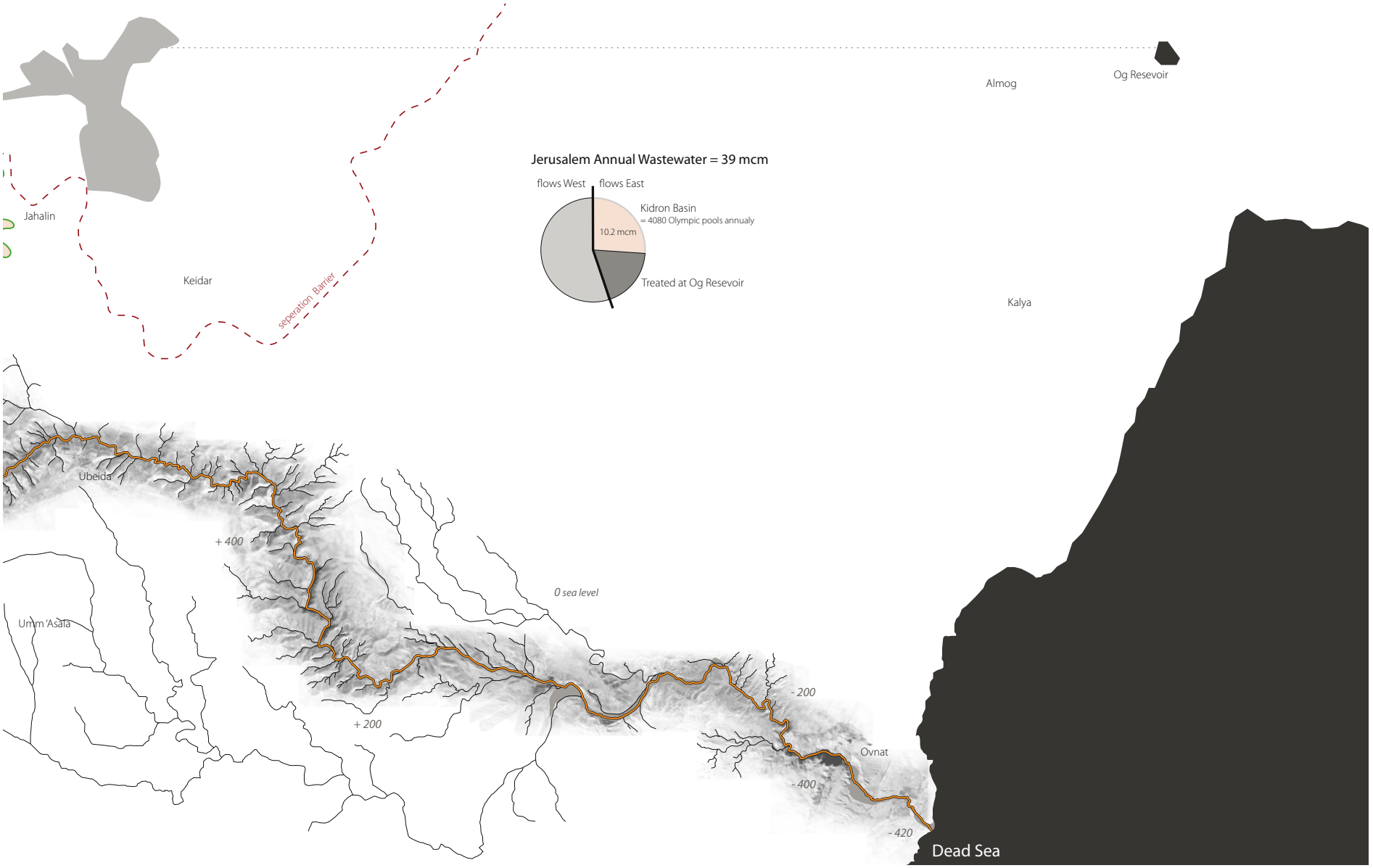


fig.3.18. Kidron/en-Nar watershed


Almog
Og Resevoir
Jerusalem Annual Wastewater = 39 mcm
flows West
flows East
Kidron Basin
= 4080 Olympic pools annualy
10.2 mcm
Treated at Og Resevoir
Jahalin
Keidar
seperation Barrier
Kalya
Ubeida
+ 400
0 sea level
Umm 'Asala
+ 200
- 200
Ovnat
- 400
- 420
Dead Sea

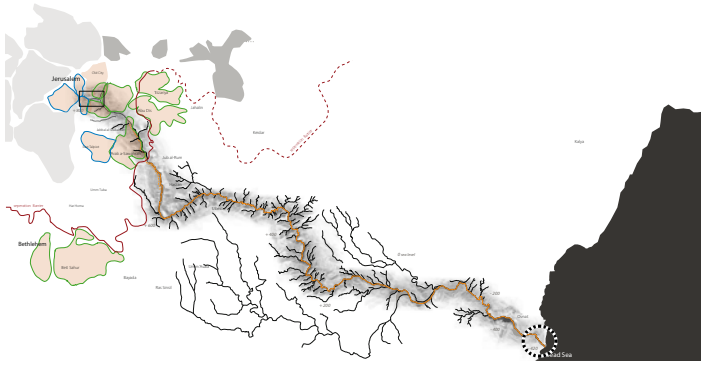


fig.3.19. sewage pipe at the mouth of Kidron / en-Nar Valley (left), fig.3.20. sewage pipe near the Dead Sea shore (centre), fig.3.21. waste carried by sewage and flood water near Dead Sea shore (right)

Jerusalem divides these two groups. Like many similar instances throughout the West Bank, the cooperation required between Israeli and Palestinian officials controlling 'islands' of population and territory has continued to fail[33]. While many of the Israeli settlements in the West Bank have partial or no treatment facilities for various reasons, plans to develop such facilities in some cases failed due to proposed pipes cutting through Palestinian controlled territory. The Palestinian Authority considers the settlements illegal and therefore refuses to normalize its relation to them in any way[34]. Israel, on the other hand claims that although funding from donor countries was offered to the Palestinian Authorities to develop treatment facilities, they have hardly developed any[35]. In some instances, Israel developed infrastructure which treats sewage coming from the West Bank into Israel, and have deducted the cost of the treatment from tax money which it collects for the Palestinian Authority[36].

Some recent initiatives by Friends of the Earth Middle East (FoEME) involving transboundary water cooperation have succeeded despite all odds. This non-profit organization which includes Israeli, Palestinian and Jordanian professionals *promotes solutions to shared environmental problems as part of advancing efforts for peacebuilding in the region*[37]. Their philosophy of 'Environmental Peacebuilding' addresses broad issues through local initiatives rooted in the local people and their culture[38]. Projects carried out under their 'Good Water Neighbours' initiatives, paired small communities across boundaries throughout the region. These initiatives achieved some degree of success where others failed. It seems that initiatives at more localized level, such as between small municipalities, allow for a higher degree of cooperation by avoiding involvement of high-ranking officials. While they continue to address issues on a regional level, they offer an

33 Hareuveni.

34 Hareuveni and, National Water Council, *Detailed Institutional and Technical Report Regarding the Water Sector in Palestine,* (Palestinian Water Authority, 2007).

35 Rashut Hama'im, *Sugiat Hama'im Bein Yisrael la-Palestinim,* (Medinat Yisrael, 2009).

36 Alexander River initiative, treating water from Nablus.

37 FoEME, *Finding Solutions Investigative Report*. (Amman/Bethlehem/Tel-Aviv : FoEME, 2005).

38 FoEME, *Environmental Peacebuilding- Theory and Practice*, (Amman/Bethlehem/Tel-Aviv: FoEME, 2008).

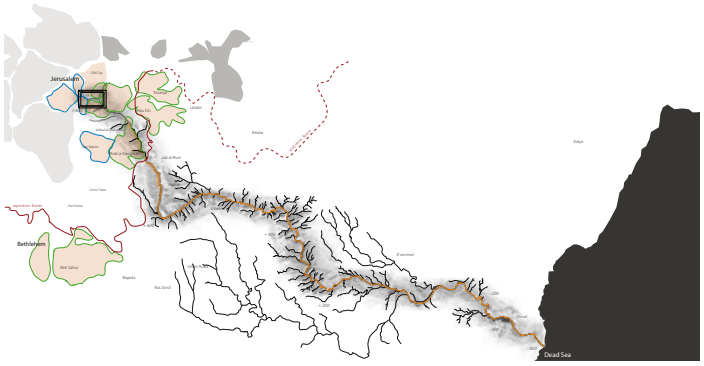
interesting precedent for resolution of transboundary wastewater pollution.

Building on the success of FoEME's localized water projects, this thesis proposes a wastewater treatment facility to be located in the Hinnom/Rababa Valley. The intervention will treat residential wastewater to the north, west, and south of the site as permitted by topographic conditions. Located at the origin of the Kidron/en-Nar watershed, this new facility will return its outflow to the existing sewage line feeding the Wadi, diluting contaminated sewage water collected down stream. The design is perceived as a prototype for similar projects that could be created along the wadi. The cumulative effect of local and incremental treatment of wastewater would dilute the level of contaminants in the hydrological system, thereby reducing ground water pollution and renewing the flow of water into the shrinking Dead Sea.

The placement of civic infrastructure within the Holy Basin stands as a reminder of the daily necessities of the City's residents. The proposed program emphasizes the valley's existence in opposition to its surroundings by placing sanitary infrastructure at the foot of the holy mountain. It is an architecture that benefits the local population, as opposed to funding local spiritual or national monuments.

As author Karen Armstrong describes, in Jerusalem *history is a dimension of the present*[39]. In a city where the past weighs so heavily over everyday life, continuously being proved or disproved in political rhetoric, the present is often neglected. In his poem *Tourists*, Israeli poet Yehuda Amichai expresses his frustration at those moments when monuments and archaeology take precedent over living human beings:

> *Once I was sitting on the steps near the gate at David's Citadel and I put down my two heavy baskets beside me. A group of tourists stood there around their guide, and I became their point of reference. "You see that man over there with the baskets? A little to the right of his*



39 Armstrong, xiii.

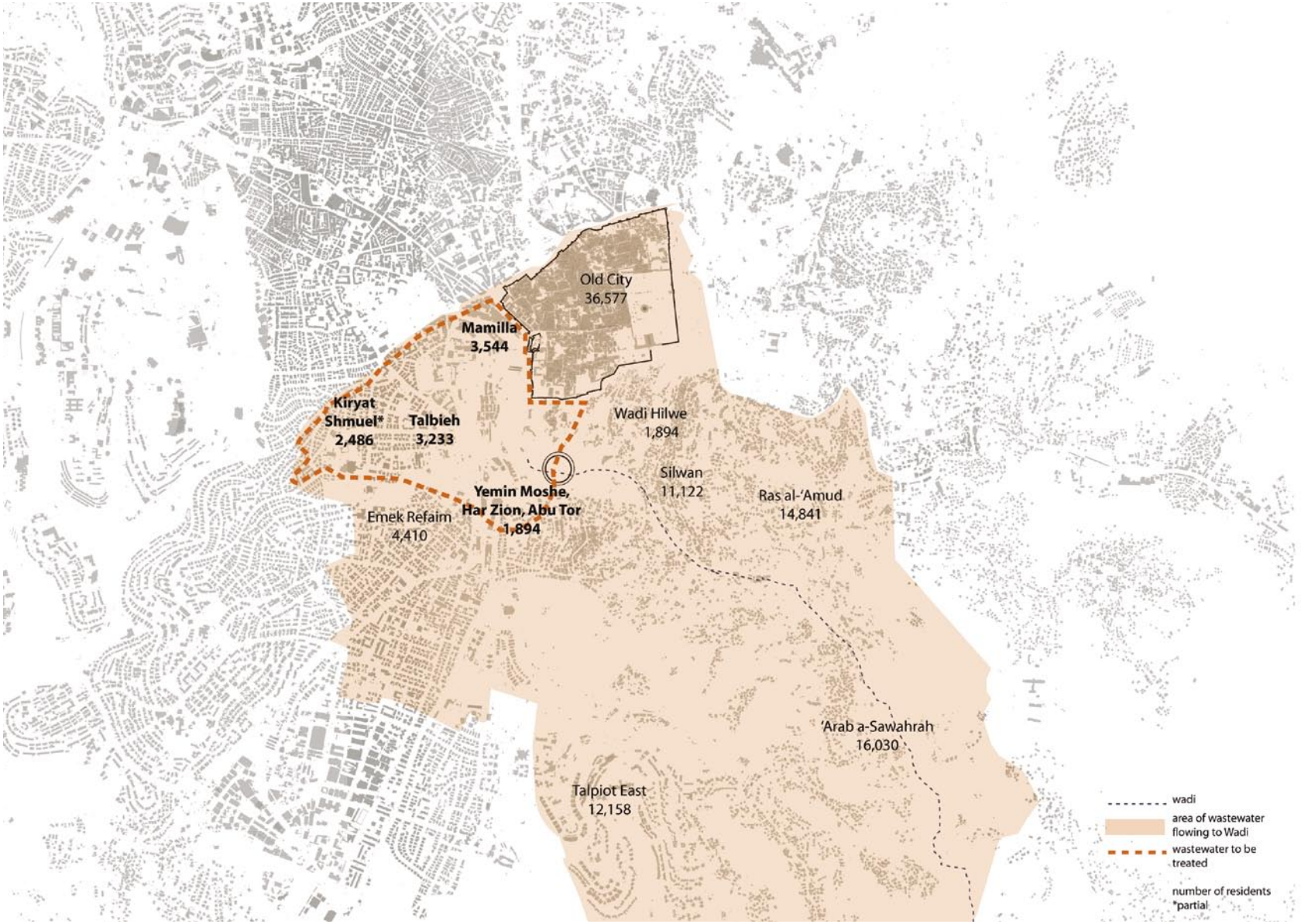

Old City
36,577
Mamilla
3,544
Kiryat
Shmuel*
2,486
Talbieh
3,233
Wadi Hilwe
1,894
Silwan
11,122
Ras al-'Amud
14,841
Yemin Moshe,
Har Zion, Abu Tor
1,894
Emek Refaim
4,410
'Arab a-Sawahrah
16,030
Talpiot East
12,158
wadi
area of wastewater
flowing to Wadi
wastewater to be
treated
number of residents
*partial

fig.3.22.

head there's an arch from the Roman period. A little to the right of his head." "But he's moving, he's moving!" I said to myself: Redemption will come only when they are told, "Do you see that arch over there from the Roman period? It doesn't matter, but near it, a little to the left and then down a bit, there's a man who has just bought fruit and vegetables for his family." [40]

The infrastructural program contrasts with the site context, not only in its productivity, but also in its dark, unholy purpose. The expression of sewage water, above and below the surface is consistent with the valley's history as the space of the abject: the necropolis, the dumpster, purgatory, the site of human sacrifice, the garbage dump, the space of the corporeal and the profane. The representation of the abject in the valley's landscape creates a shared point of reflection. Being neither object nor subject[41], we cannot claim ownership over the abject; it cannot be 'Jewish' or 'Palestinian'. The presence of human waste, which has always flowed under the site, but is now being treated and represented, creates an otherness which transcends the political dichotomy of 'us' and 'them'.

The design reveals the valley as the in-between, a frontier containing multiple boundaries: ethnic, religious, cultural, political, socioeconomical, ecological and mythological. It is a boundary between life and death, the holy and the profane, between the 'I' (or 'We') and 'the Other'. Perpetuating a certain level of ambiguity, the proposal oscillates between connection and separation - it is both a wall and a bridge. It creates an opportunity to dwell in the in-between. It is water which is both a divisive and a unifying element. Here, disconnected from the urban context, is a place to imagine the other and reflect on our relation to the ground.

40 Amichai, Yehuda, Chana Bloch, and Stephen Mitchell, *The selected poetry of Yehuda Amichai / edited and translated from the Hebrew by Chana Bloch and Stephen Mitchell* (Berkeley : London : University of California Press. 1996),137.

41 Kristeva, Julia, Powers of horror : an essay on abjection. (New York: Columbia University Press, 1992).

fig.3.23. (opposite)

Abu Qais rested his chest on the damp ground, and the earth began to throb under him, with tired heartbeats, which trembled through the grains of sand and penetrated the cells of his body. Every time he threw himself down with his chest to the ground he sensed that throbbing, as though the heart of the earth had been pushing its difficult way towards the light from the utmost depths of hell, ever since the first time he had lain there.

(Men in the Sun, Ghassan Kanfani)

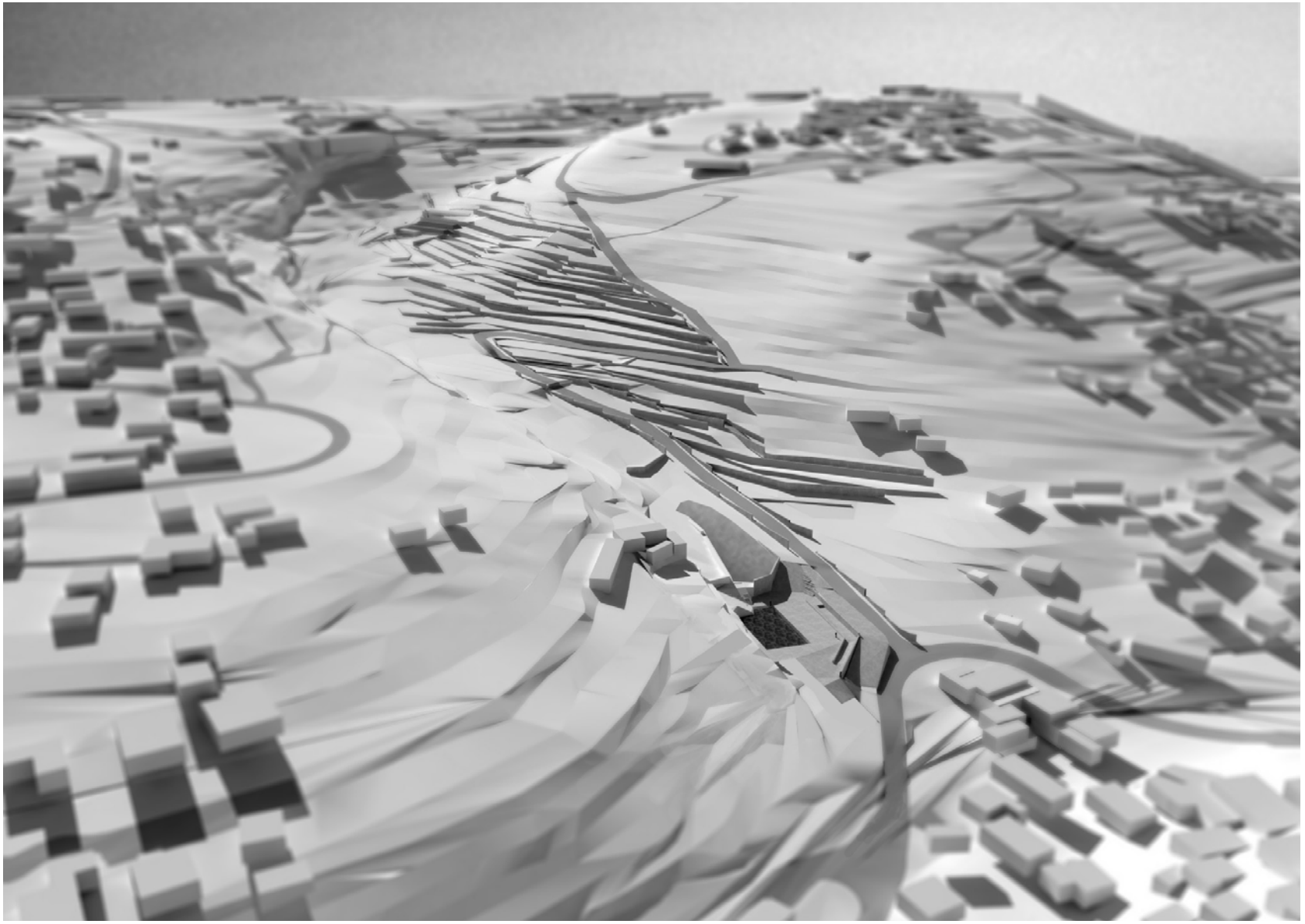


fig.3.24. aerial perspective looking west

And again, as always in the Land of Israel, the stones boil,
the earth doesn't cover.
And again my brothers are calling from the depths.

Cropped-eared dogs scream in the night
to the passing foreigner
and their brothers answer them.

And again, as always in the Land of Israel,
the headstones are dangerous.
Many of the dozers see a ladder.

The moon is large and rouses
women poets and other moonstruck sleepwalkers
and the ones laying in ambush doze on the crossroads, as always.

And again, as always in the Land of Israel,
the Gate of Mercy is still locked
and the gravestones are in the shadow of the wall.

And an Elul sun and mountains dripping nectar*
and the hills melting away
and honey flowing.

And again, as always in the Land of Israel,
eyes peek from the palm-shaped charms
and before morning the valley fills with fog
and in the watermelon season the sea is stormy.

And again, as always in the Land of Israel.
the roads hurt from the footsteps of pilgrims
and God feels at home
and my brothers are calling from the depths.

And fire power
and night power
and a needle that will not pass through
and a feather in the mountains.

And again, as always in the Land of Israel,
the stones remember.
The earth does not cover
Justice cuts through mountains

(Current Account, Chaim Gouri)

*Last month of the Hebrew calendar

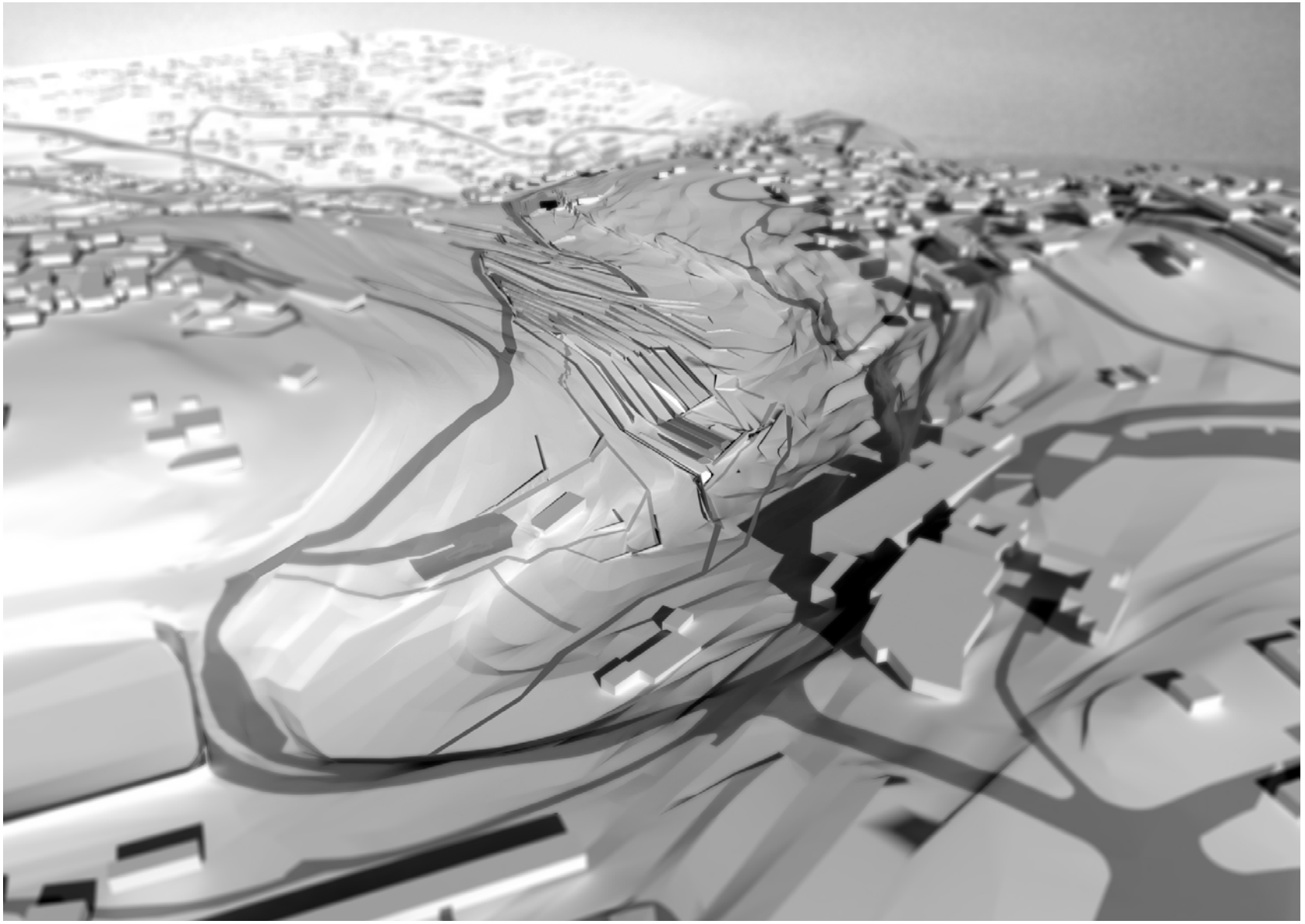


fig.3.25. aerial perspective looking east

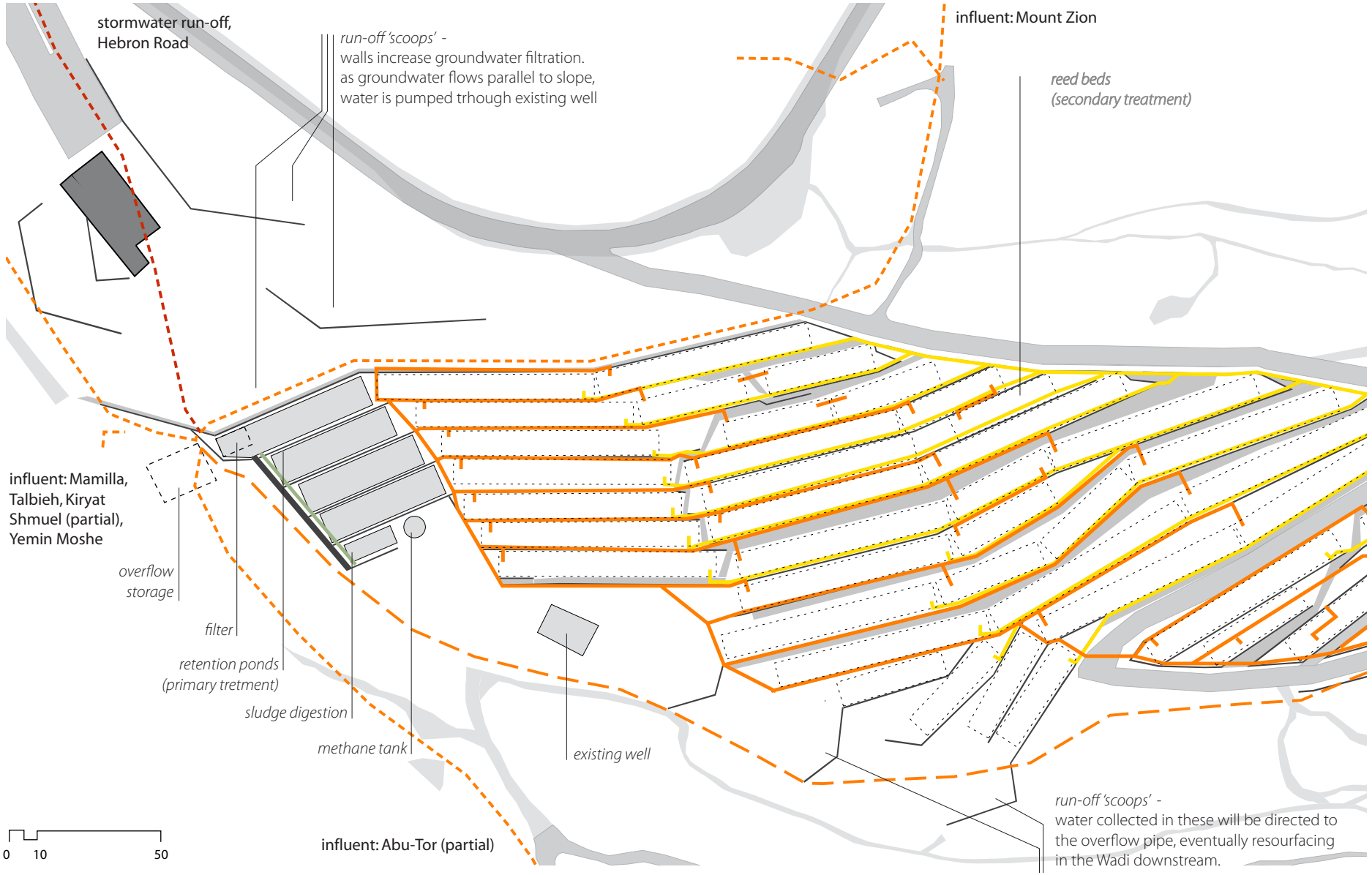
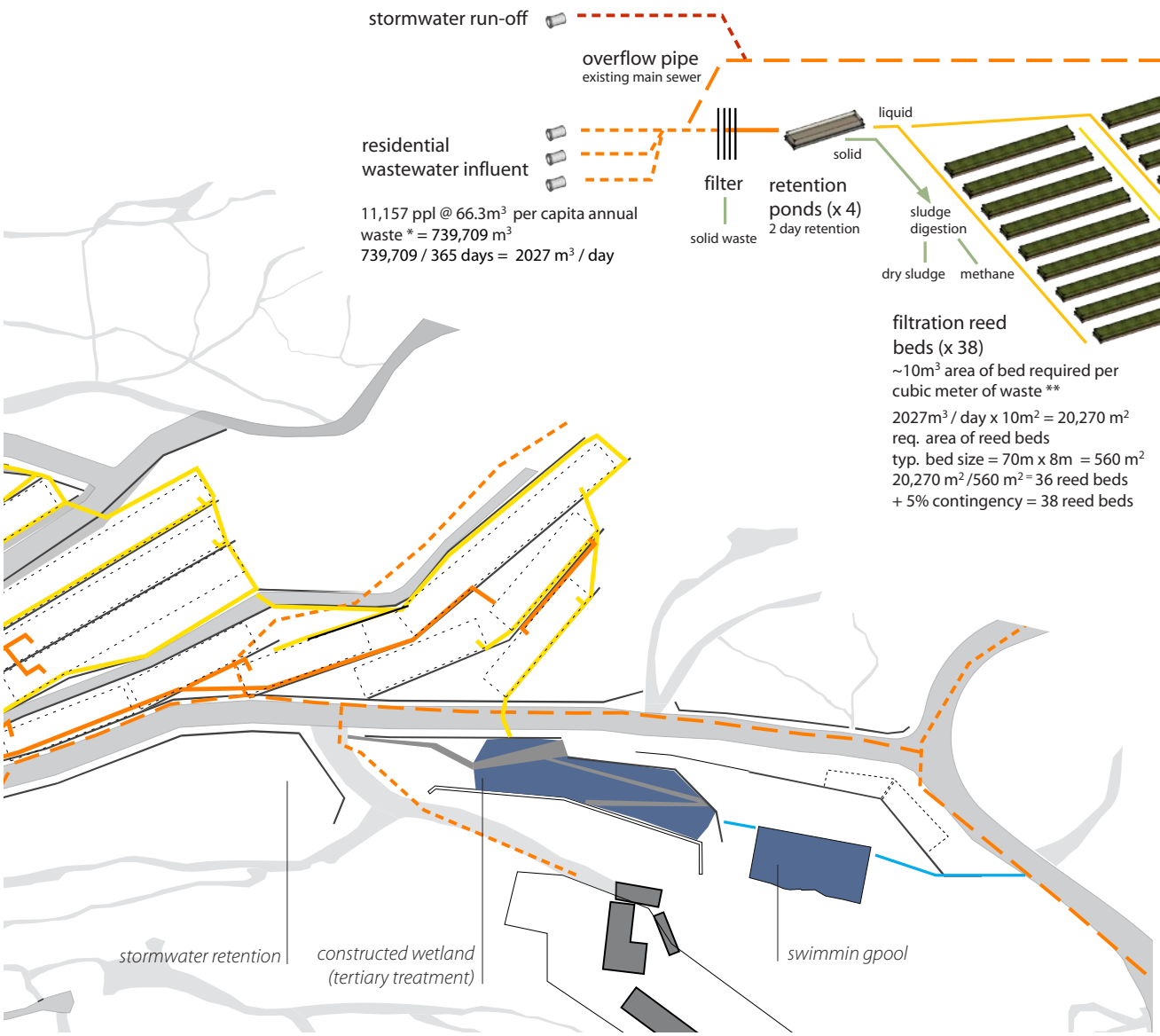
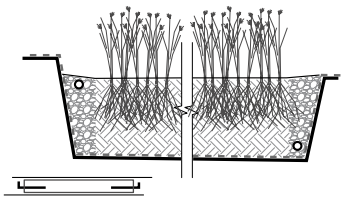


fig.3.26. system diagram





typical reed beds section ***

* based on: Dauber, Yosef, *Annual water consumption report for 2008* (Israel Water Authority, 2009)

** precedent: GTZ ecosan team. *Constructed wetland Haran-Al-Awamied, Syria. (2005).*

*** detail adapted from: Center for Environmental Research Information (U.S.), *Design manual : Constructed wetlands and aquatic plant systems for municipal wastewater treatment*. (1988).

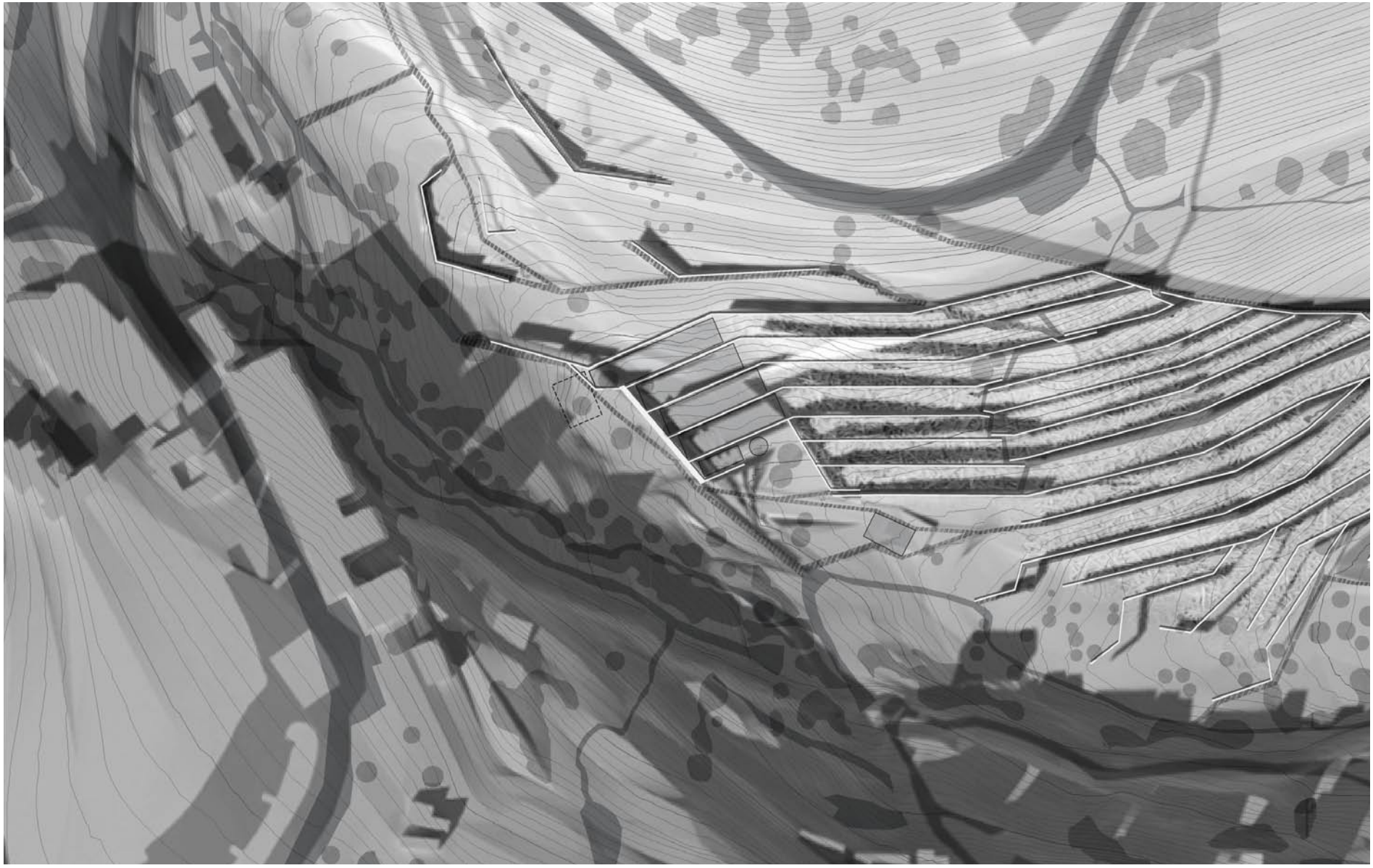


fig.3.27. site plan

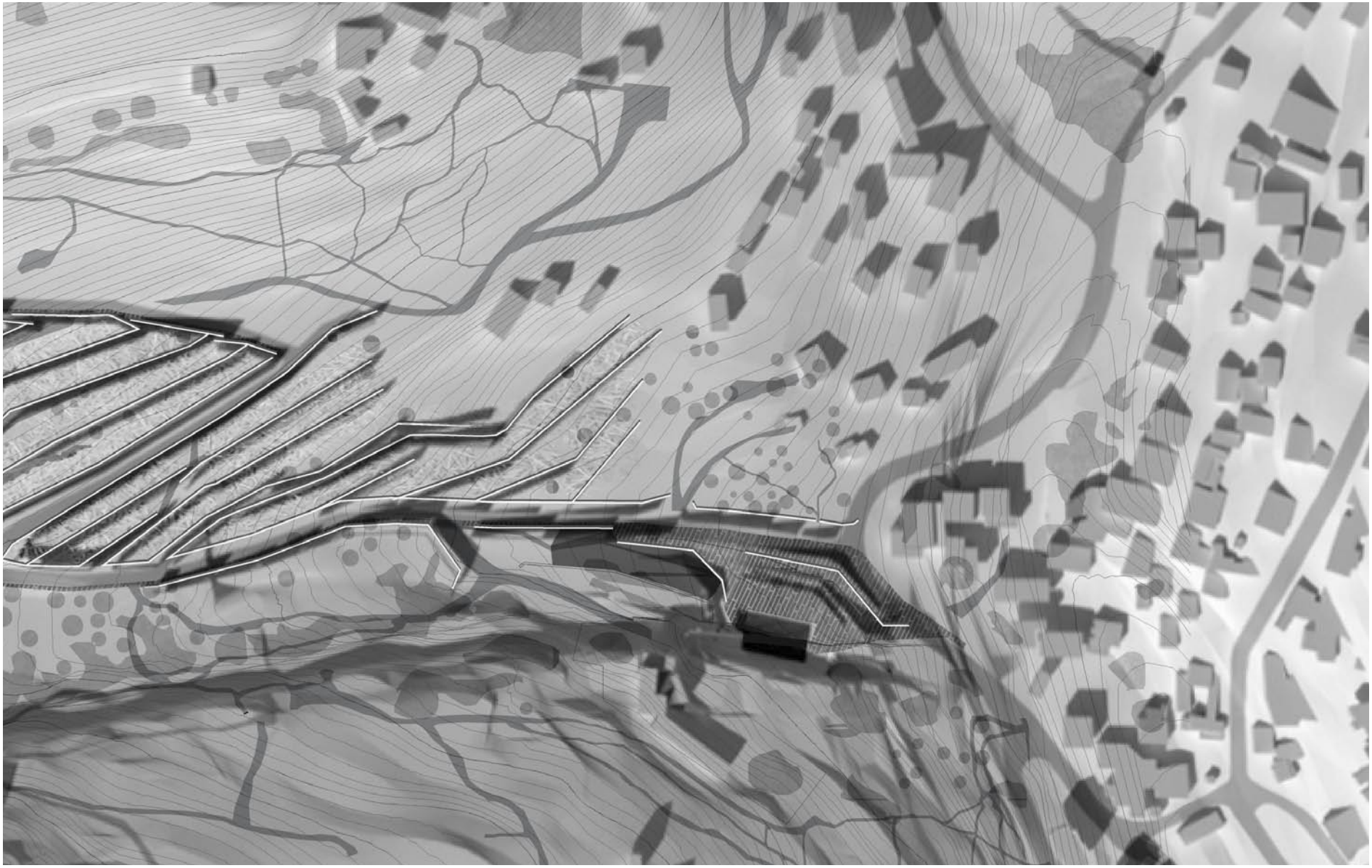
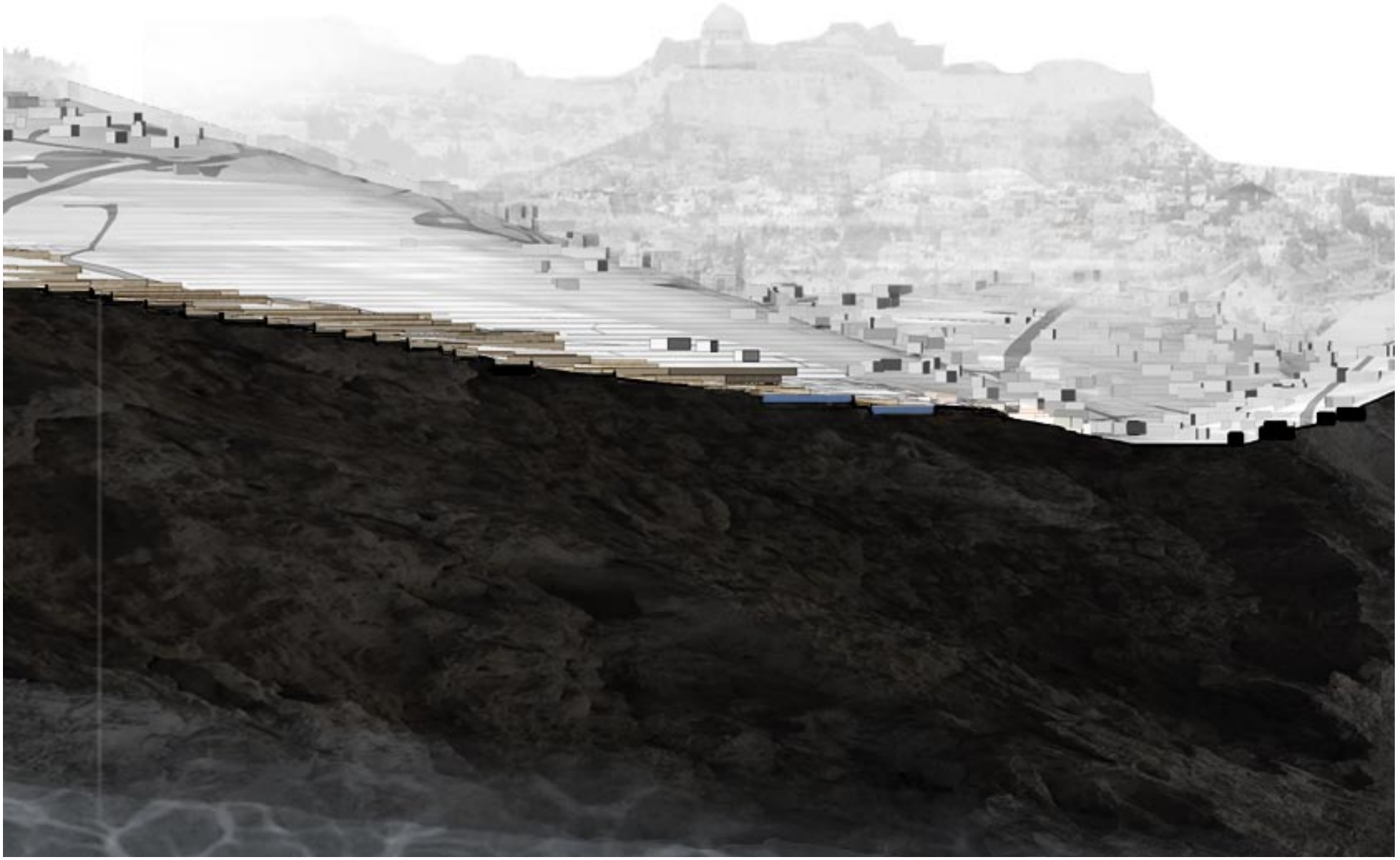


fig.3.28. east-west section, looking north towards the Old City

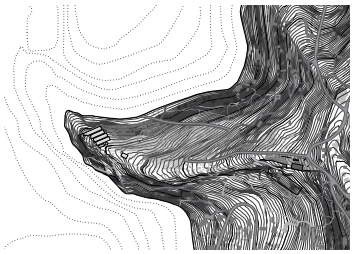
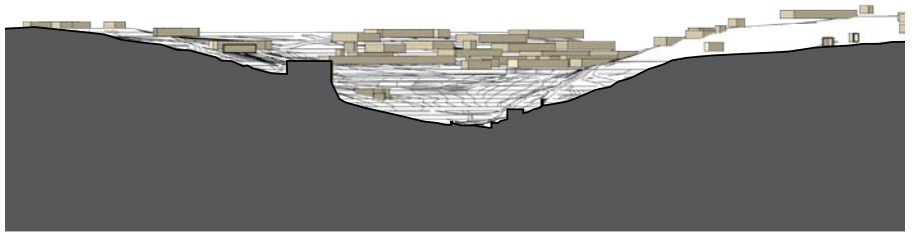


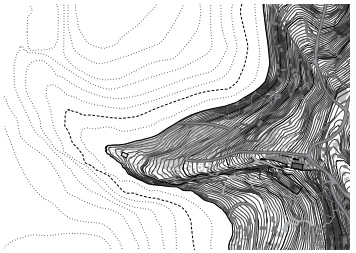
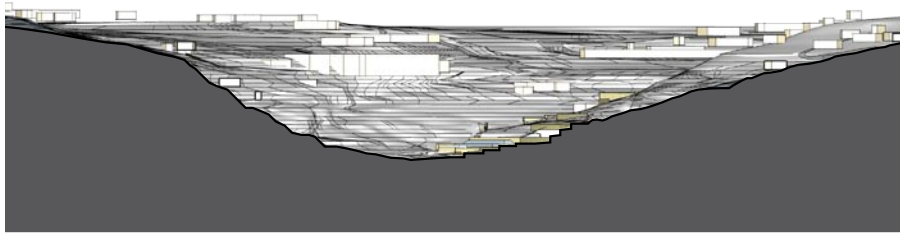
Shama'a
(collect)

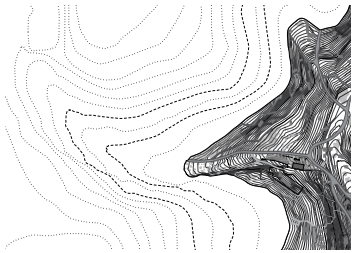
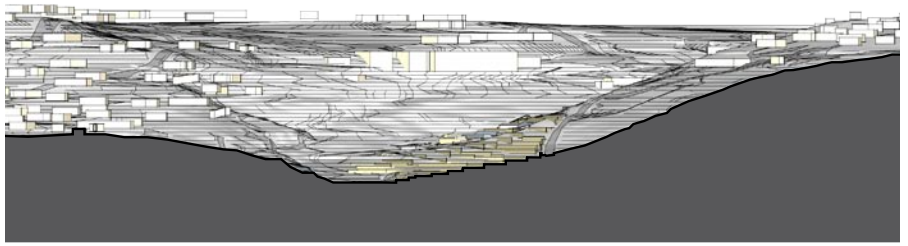
no-man's-land
(traverse)

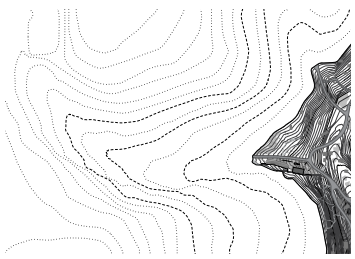
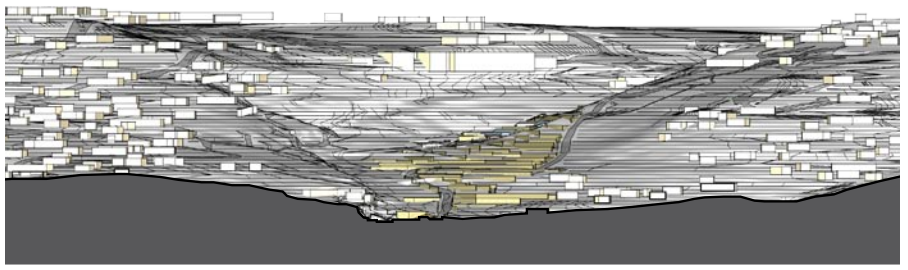
Akeldama
(collect)

fig.3.29.

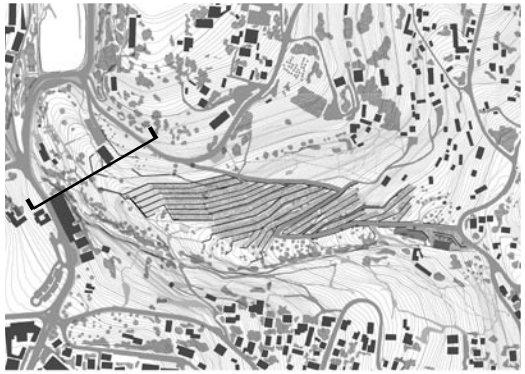




Shama'a (collect)



The upper section of the valley is home to the existing Alpert music school, serving both Palestinian and Jewish youth. New retaining walls create an informal performance space.

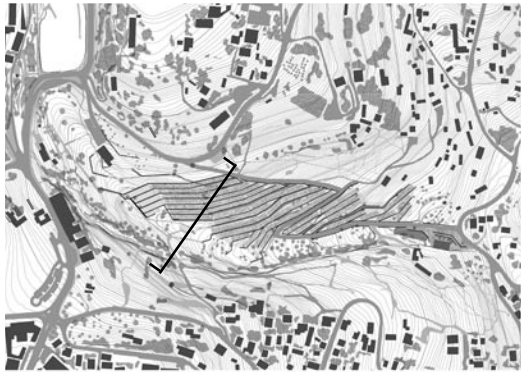
fig.3.30.

fig.3.31.

fig.3.32. material palette

fig.3.33.

no-man's-land (traverse)



Spanning the length of the valley, the concrete terraces striate the existing slopes. A system of new paths connects to an existing network, running alongside the walls and offering spaces to pause.

fig.3.34.

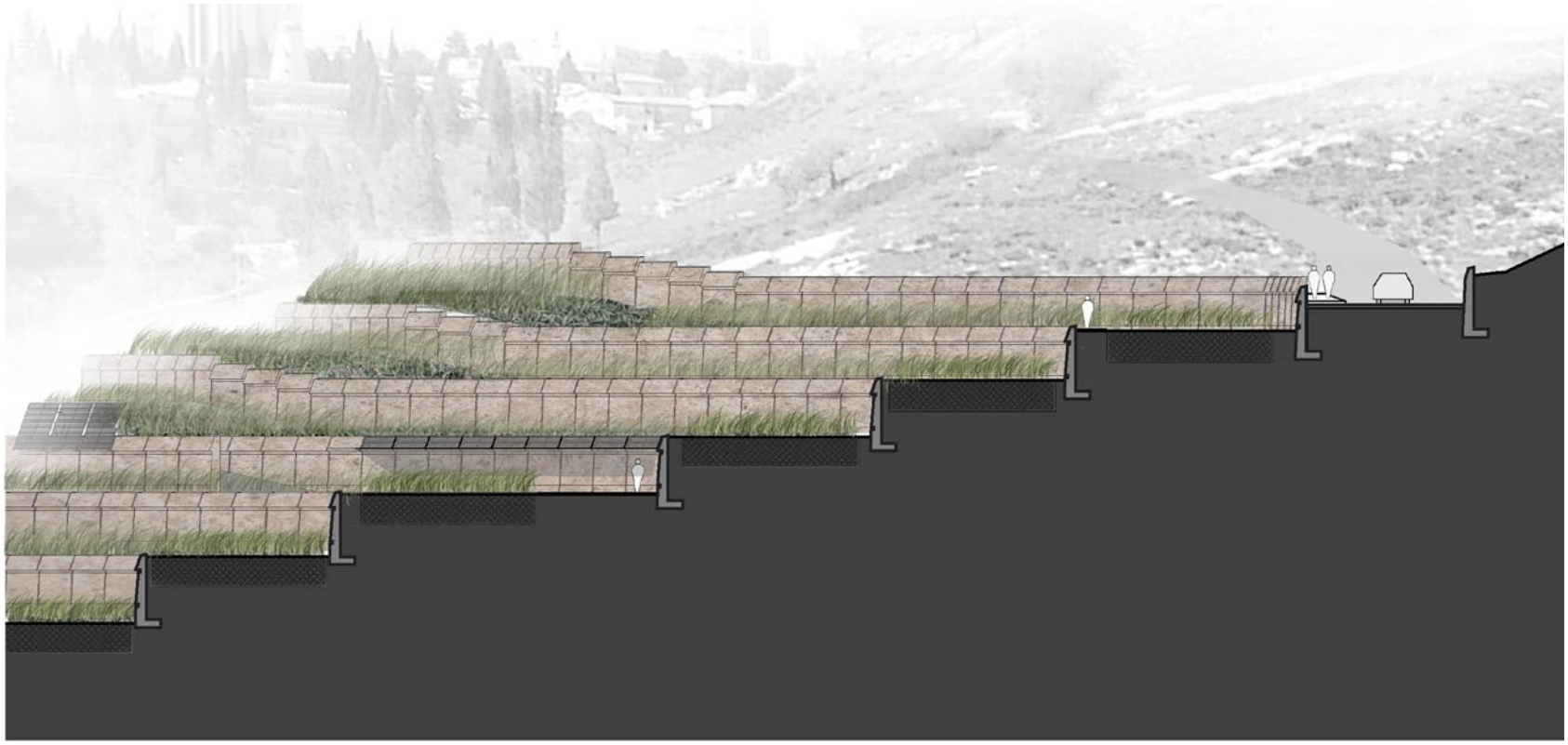


fig.3.35.

fig.3.36.

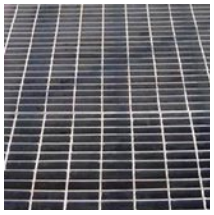




fig.3.37.

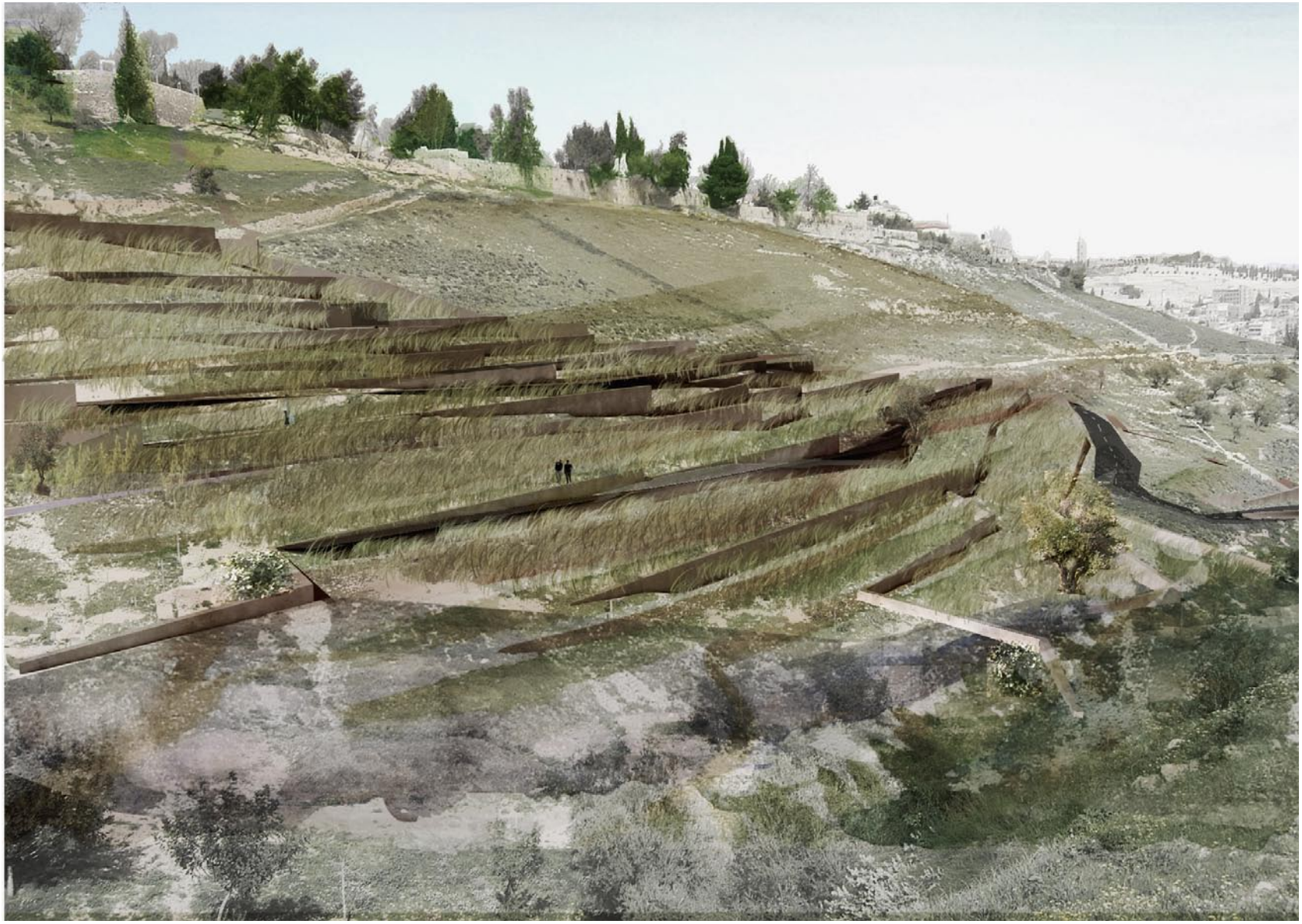
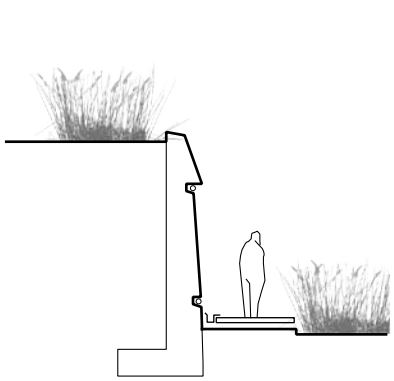
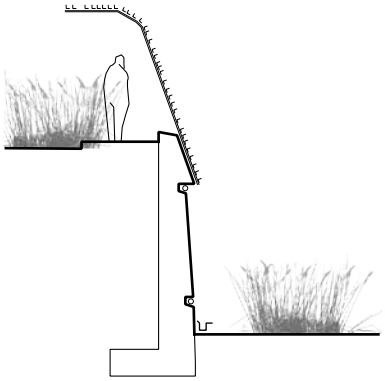


fig.3.38.





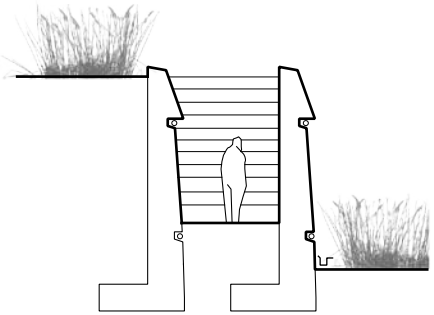
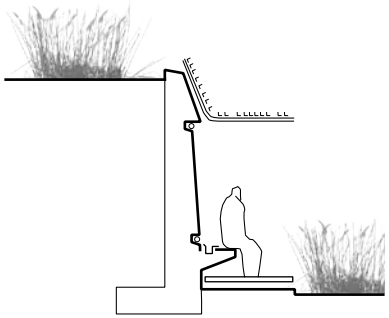
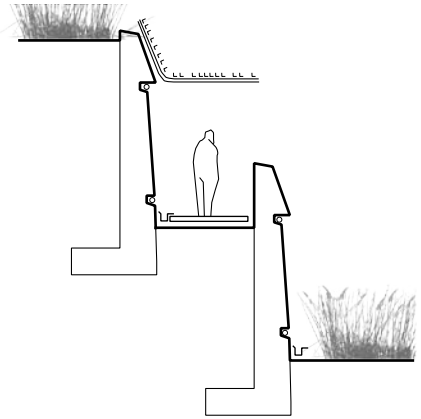
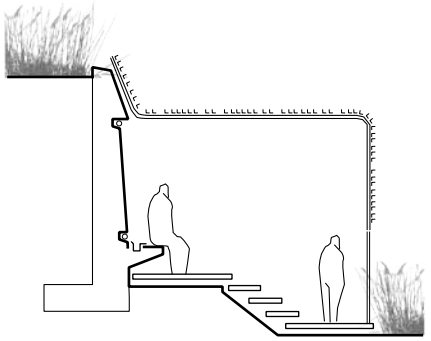
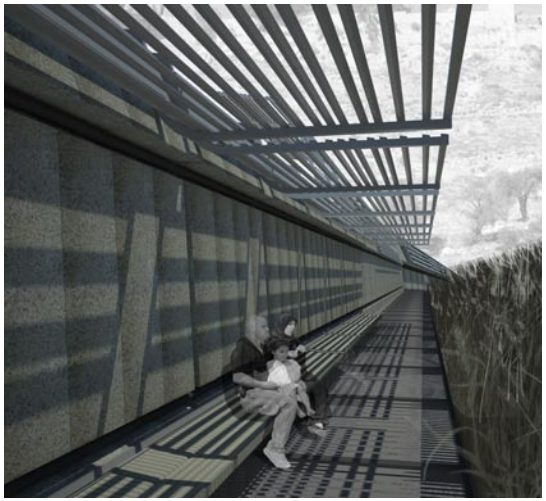


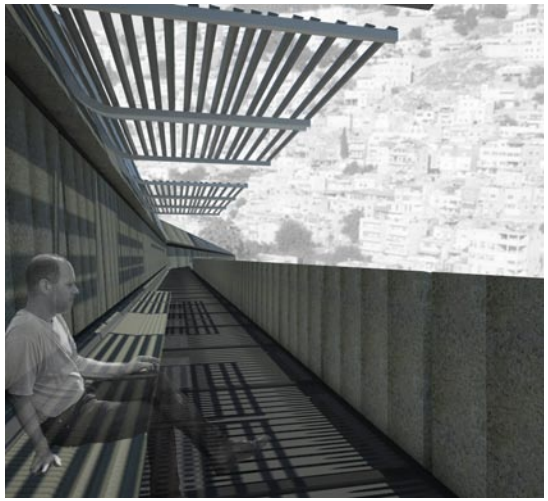
fig.3.39. retaining walls / paths typology



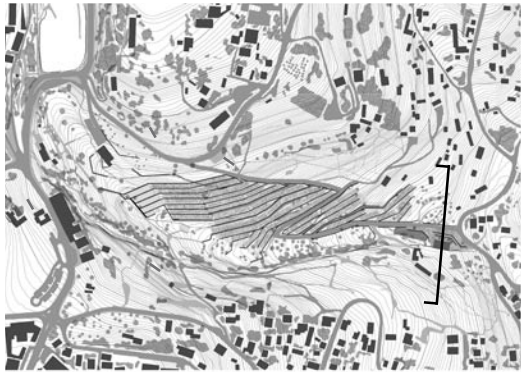








Akeldama (collect)



At the bottom of the valley, at a point of both collection and arrival, a pool.

fig.3.40.

fig.3.41.

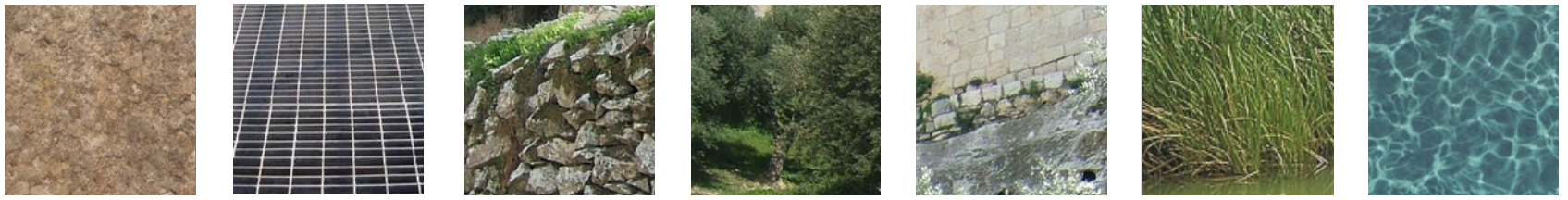
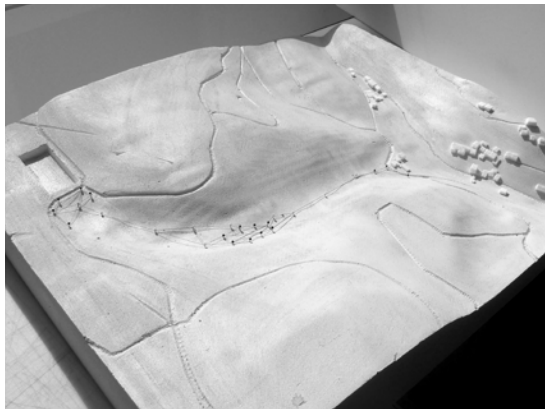
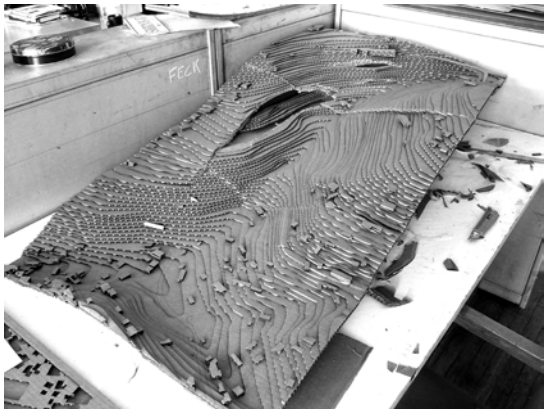
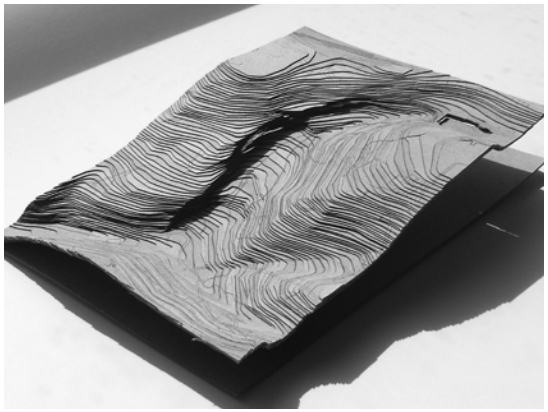


fig.3.42. material palette

fig.3.43.

afterword

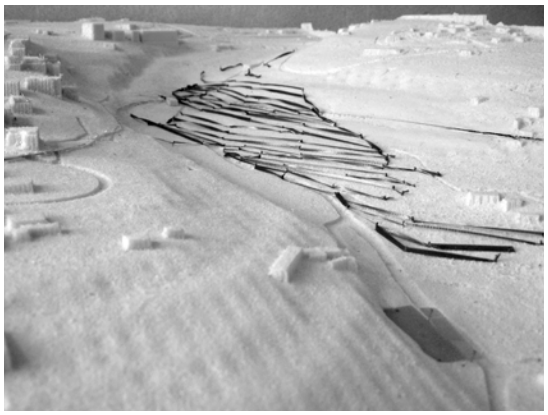


fig.3.44. process models

I am wary of the words pessimism and optimism. A novel does not assert anything; a novel searches and poses questions. [...] The stupidity of people comes from having an answer for everything. The wisdom of the novel comes from having a question for everything [...] In any case, it seems to me that all over the world people nowadays prefer to judge rather than to understand, to answer rather than ask, so that the voice of the novel can hardly be heard over the noisy foolishness of human certainties.

(Milan Kundera)[1]

This thesis attempts to walk the line between architecture and novel, between answers and questions, reality and utopia. Design is a fundamentally optimistic act; ultimately when we construct spaces we offer an 'answer'. As architects, we do not have the privilege of the novelist to merely reflect. We critically observe the world around us, but then we participate in it; we act. This is our trap. How then do we approach a contested site? Can a design be an instrument for posing questions? Can architecture offer us new ways to understand the complexity of space?

My approach to this work was analogous to my physical encounter with the site. When I first came to see the valley I saw it from afar, standing on the roof of Mount Zion Hotel, unsure whether I should venture inside. Although I was born and raised in Israel, I was not so familiar with Jerusalem and therefore hesitated to walk into areas I perceived as unsafe. A week later I returned to the site, this time walking down the valley, but only to a certain point. Half way down, the terrain became steeper and bent east; it was

1 Kundera Milan, *The book of laughter and forgetting* (New York: A.A. Knopf, 1980) "Afterword: A Talk with the Author"

fig.3.45. plan showing accumulated mapped data

difficult to see what lay ahead. I felt I was about to cross an invisible boundary. When I looked at the map I realised I was standing at the western edge of the Green Line, the edge of what was a no-man's-land. It was astonishing to experience how an abstract political construction of a border which no longer physically exists could be perceived so precisely. On subsequent visits, I progressed further into the valley, past the Green Line, eventually walking through Silwan itself on the eastern edge of the site.

The design process had a similar progression; I felt the site was so charged and contested that I did not know where or how to begin. There were two aspects to this hesitation. Considering that Jerusalem and the West Bank are synonymous today with the term 'military urbanism', my first hesitation regarded the political implications of the intervention: the implication of acting in a disputed frontier with an uncertain political future. Although I acknowledged early on in the process that the larger political questions here lay outside the scope of architecture, the design would inevitably have to address them by nature of its location. My second reservation was how much should one intervene in the site, if at all. What fascinated me about the site was, in part, its state of abandonment; it was a void within the city. I did not want to 'fill up the void', so to speak. And so, the process of this thesis became a process of searching for an appropriate program and scale of intervention, of finding a way for architecture to engage social and political questions, but not assuming that it could solve them.

As I explored the history of the site I came across multiple contradicting narratives of the city and the valley. Trying to grasp and represent these was disorienting at first. This was not only because it brought into question the many histories embedded in me personally, but also because as designers (especially in an academic environment) we tend to construct a simplified linear narrative when we approach each project, choosing what aspect of the context, of the ground, we respond to. The writings of British geographer Doreen Massey, discuss the implication of conceiving space as a simultaneity of stories-so-far[2]*. If space is the product of interrelations, of contemporaneous plurality that is always under construction, how can we understand*

2 Massey, Doreen B., *For Space* (London: Sage, 2005), 9.

or imagine it? How does it reflect on politics, or on architecture?

> *What might it mean to reorient this imagination, to question that habit of thinking of space as surface? If, instead, we conceive of a meeting-up of histories, what happens to our implicit imaginations of time and space?*[3]

This thesis was my first attempt at addressing these questions. With each step of the design process, with each map and diagram, more questions were generated. I am only now beginning to grasp how this understanding of space can affect the process of design. However, reading Massey's text made me realise what I did ***not*** *want to do. I did not want to design a 'Forest of Peace' or a 'Garden of Tolerance'*[4]*; I did not want to paint a utopian picture, thereby ignoring the true complexity of the site and its histories. The power of the site is that the eeriness implied in its stories still haunts the strangely isolated place, even as it exists today. The design proposal therefore strived to intensify these embedded memories without constructing a singular narrative.*

I cannot outline a specific method for approaching a contested site, a frontier, or any space with contradicting or overlapping histories. I found that simply by choosing to address multiplicity, to research and document it, that those stories would inherently become absorbed into the design. Even if they are not consciously directing the design, they inevitably inform our choices of program, materials, and form. Here, the choice of program came about by documenting the infrastructure around the valley as a form boundary, discovering an imbalance that could be addressed through architecture. The material and formal qualities of the proposal both contrast and coalesce into the surrounding landscape.

Discussing the project as it developed, it became evident that the treatment of wastewater related to other aspects of the site I was not initially conscious of. The purging of water in the valley of Gehenna, the site associated with purgatory, linked

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3 Massey, 4.

4 both of these are names of parks which exist in Jerusalem, south of the Hinnom/Rababa Valley. For an essay on the Forest of Peace see: Jones, Rachael Leah, "The Heart of the Matter", Misselwitz and Rieniets, *City of collision : Jerusalem and the principles of conflict urbanism* (Basel ; Boston: Birkhäuser, 2006), 234-235.

the tradition of the purging of souls to the physical reality of purging waste; it was yet another state of in-between. Similarly, locating a wastewater facility at the foot of the Temple Mount could be seen as a spatial expression of the 'water of the deep', the Tehom, discussed in the previous chapter. If the foundation stone separated the heavenly waters embodied in the Temple from the dark waters beneath it, those dark waters were now signified by the design proposal, in the valley beneath the holy mountain.

Certain aspects of the project developed not only unconsciously, but contrary to my intentions. I did not set out to design public space. Although the area is open to the public, I did not see it as a place of gathering, but rather one of isolation. The resulted combination of programs created a space where assembly could occur with a certain level of surreal discomfort. Referring back to Massey's discussion on the nature of public space, I realised that perhaps this was the most appropriate form of a shared space for this polarized boundary:

> *The very fact that [public spaces] are necessarily negotiated, sometimes riven with antagonism, always contoured through the playing out of unequal social relations, is what renders them genuinely public.*[5]

From the designer perspective, we should acknowledge that we always design space, whether private or public, for some imagined, but specific, user. By profiling this user, we are necessarily excluding others, no matter how subtle that exclusion is[6]*. Jerusalem is filled with spaces of unequal social relations. Whether it is by physical barriers, or fear, the spaces are almost always identified as belonging to one side or the other, Jewish or Palestinian. Perhaps the juxtaposition of sewage with circulation and recreation, producing a universal level of discomfort, could allow the valley to be truly public.*

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5 Massey, 153.

6 see Wigley, Mark, "Blood Stained Urbanism", Ghent Urban Studies Team, *Post ex sub dis : urban fragmentations and constructions* (Rotterdam: 010 Publishers, 2002).

I *should acknowledge that despite my efforts to study and represent the site's multiplicity, my own bias has certainly affected the work throughout, whether it is my ability to read original texts in Hebrew but not in Arabic, or my personal background as Jewish Israeli. There is no neutral ground here. This bias, or perhaps this ignorance, is what led me to choose the site in the first place. Ironically, I chose this valley because of its apparent stability: it was a boundary between Jewish and Palestinian populations that has maintained relatively stable demographics since 1967, without separation walls or settlements in the valley proper. I thought it was a relatively 'neutral' space to investigate a void between the two populations. As I learned about the valley, I realised that what I saw as a void was in fact more frequently described as 'explosive' or as a 'mine field'.*

The situation in Silwan unfolded as I was working on the thesis: demonstrations, violence, construction, demolition, digging and paving, were occurring even when I was visiting the site. Each article I read made me uncertain of the whole project. Questions of politics were now compounded by ecological and architectural questions, many of which still remain unanswered. As much as I thought of this project as a novel, as a way of questioning myself through writing and drawing, at some point I had to start ignoring the unfolding events on the site and put aside new information I discovered. I needed to stop and collect the drawings and questions in a book. As Milan Kundera put it, I had to be stupid again; I had to have an answer. It is inevitably what we do when we design.

fig.3.46. (opposite)

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