Hiriya: Place and Symbol

Research thesis

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The author of this thesis states that the research, including the collection, processing and presentation of data, addressing and comparing to previous research etc., was done entirely in an honest way, as expected from scientific research that is conducted according to the ethical standards of the academic world. Also, reporting the research and its results in this thesis was done in an honest and complete manner, according to the same standards.

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PUBLICATIONS

Paper 1

Galia Limor-Sagiv and Nurit Lissovsky. 2023. "Place and Displacement: Historical Geographies of Israel's Largest Landfill." *Journal of Historical Geography,* 80, 32-43. (Q1). https://www.sciencedirect.com/science/article/abs/pii/S0305748823000014

Paper 2

Galia Limor-Sagiv and Nurit Lissovsky. 2023. "The Trash has Gone – The Trash Mountain Remains: A New Look at the International Design Competition for the Rehabilitation of Hiriya Landfill in Israel." *Landscape Research*, 48 (3), 354-374. (Q2). https://www.tandfonline.com/eprint/WCBRYT2ZSNHD4Y7PUKM8/full?target=10.1080/01426397.2022.2144181

Paper 3

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Paper 4

גליה לימור-שגיב ונורית ליסובסקי. 2022. "קריסתו של נוף חיריה: 1948 – 1963", *קתדרה: לתולדות ארץ-ישראל וייישובה*, 182 (תשרי תשפ"ג, אוקטובר 2022), עמ' 111-138.

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Hiriya, 1999. Source: Albatross: Duby Tal, Moni Haramati

CONTENTS

CONTENTS (cont.)

CONTENTS (cont.)

LIST OF FIGURES

Paper 2

Paper 3

ABSTRACT

This study focuses on Hiriya, the waste mountain and the area around it, and the major upheavals it has endured over the last hundred years which completely changed the character of this landscape. The research perceives of Hiriya both as a physical space and as a cultural symbol, examining two landscape dramas that created long-term rippling effects across this area. The first drama unfolded following the 1948 war, when the Arab village of Al-Khairiya was destroyed and its residents deported. New Jewish immigrants settled in the village homes and a large transit camp was built in the adjoining space. But within a few years, Tel Aviv municipality began a landfill operation there, which led to neglect and pollution, and harmed the surrounding nature, landscape, and people. The second drama unfolded some five decades later, when the decision was made to close the landfill, rehabilitate the mountain, and turn the entire area of approximately 8,500 dunams into a metropolitan nature park (Ariel Sharon Park). This process initiated the recovery of a damaged and decaying area, and led to social, environmental, and infrastructural recovery.

The research makes use of hitherto unexplored written and visual archival documents, press articles, interviews with key figures, and photographic analysis. It is conducted within a broad theoretical framework of landscape research that draws on different complementary fields of knowledge of history, culture studies, and infrastructure. At the heart of this study are two driving factors: the critical observation of waste as a dynamic actor in the landscape, which both violates environmental and social world orders yet also retains opportunities for restoration and renewal, and the understanding of landscape architecture as an agent of change in space and time.

ABBREVIATIONS

I.S.A - Israel State Archives

C.Z.A - Central Zionist Archives

H.H.A - The Haganah Historical Archives

T.A.M.A - Tel Aviv Municipality Archive

D.D.T.A.A - Dan District Towns Association Archive

1.0. INTRODUCTION

1.1 Thesis Goals and Structure

This study focuses on the region of Hiriya, in central Israel, as a physical site and as a cultural symbol. It follows the changes that occurred there over the last one hundred years, focusing on two dramatic scenic turns, both of which had far-reaching influence and expressed cultural perceptions and political agendas.

The first drama occurred when Al-Khairiyah, a typical Arab village on the coastal plain of Palestine, was destroyed in the 1948 war and its residents expelled. The destroyed houses were repopulated by newly-arrived Jewish immigrants; thereafter, a large transit camp (*ma'abara* in Hebrew) was established nearby. Several years later, the Tel Aviv landfill was established on the site – a step which altered the area beyond recognition and turned it into a neglected, polluted and polluting zone, and harmed the environment and the people in a way that sealed its fate for decades to come. The second drama took place fifty years later, when the Israeli government decided to cease operation of the landfill, rehabilitate the waste heap, and turn the entire area into a metropolitan nature park – known today as the Ariel Sharon Park. These decisions initiated the recovery of an ailing, debilitated area, and created a landscape transformation that led to a new social, environmental and infrastructural future.

The Hiriya site (including the infamous landfill) is located south of Tel Aviv and Ramat Gan, on the Ayalon river, between two major roads (routes 1 and 4). It rises to 60 meters (80 meters above sea level) at the heart of a vast plain, and covers around 450 dunams. The waste heap is located in the southeast corner of the new Ariel Sharon Park, which covers around 8,000 dunams. It contains about 16 million cubic meters of waste, which keeps sizzling, digesting and exhaling greenhouse gases. Over the years it became an iconic image, a "trash mountain" inspiring reluctance, curiosity, legends and artistic expression.

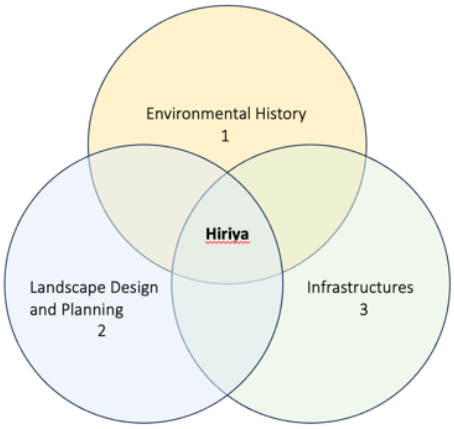
The study contains three chapters, each with a different fundamental argument, and each of which were accepted and published as articles in leading academic journals.

1. The first chapter is an historical overview of the waste infrastructure established at Hiriya in the early 1950s, which resulted in the continuous neglect of the area, injured the landscape and the environment and made it uninhabitable for years to come.
2. The second chapter analyses the 2004 international competition for the rehabilitation and design of the trash mountain as a rare moment in time, between destruction and

recovery, when the future image of the trash mountain was being discussed. The apogee of that period was the international competition, held in 2004, for the design and recovery of the waste heap, which was won by the German landscape architect, Peter Latz. The major claim is that the waste, which comprises both the physical mountain and an iconic symbol of neglect, remained marginal in the design competition, despite the fact that it was central to the processes of environmental pollution, and the future public open space.

3. The third chapter outlines the decision to close the landfill in the 1990s due to the damage it had caused to other central infrastructures – especially to Ben Gurion Airport and the surrounding main roads; it was not solely the result of an evolution in the Israeli environmental discourse and recognition of the damage caused. The creative landscape planning, led by Latz, turned the renewal of the trash mountain and its surroundings into a catalyst for the recovery of the entire region. Moreover, it contributed to the prosperity of other infrastructures in the area, including water and drainage management and advanced mass transportation, and created an ecological corridor and a space for culture and leisure for the weaker neighborhoods of the southern metropolis.

The three chapters are distinct, yet complementary; together they describe how a symbol of neglect and pollution was reborn into a masterpiece of recovery and environmental renewal. They also analyze how a no-man's-land became a valuable piece of land, fought over by real-estate sharks, as a new planning discourse emerged that preserves open spaces and ensures a balance between built-up areas and nature.



1.2 Literature Review

This is a multidisciplinary study which deals with topics anchored in various fields of knowledge, with part linear part non-linear processes that occur in tandem. The different disciplines on which this study focuses through the prism of landscape research are history, environmental studies, geography, social and cultural studies, landscape design and planning, waste and infrastructure.

Landscape Research

Landscape research focuses on the various aspects of landscape and their rapport with nature and culture, with society and memory. It also deals with the inherent scenic meanings that envelope natural processes and human actions, and the mark they leave on a site over time. Recent studies have sought to reveal the myths and meanings that are folded into the landscape framework through which we look, and the objects we look at. This approach exposes the hidden political agendas and interests as well as the way culture mediates between landscape and society (Meinig, 1979; Greider & Garkovich, 1994; Schama, 1995; Cosgrove, 1998; Cosgrove & Daniels, 1988; Mitchell, 2002, 2009; Lissovsky, 2006; Sar-Shalom et al., 2010). In the Israeli context, landscape research has dealt, *inter alia*, with key points as a tool to study the country (Helphand, 2014), and the political implications inherent in the design of sites of national significance, such as the Mount Scopus campus of the Hebrew University of Jerusalem, Mount Hermon, and the city of Tel Aviv, to mention just a few (Levin, 2011; Ram, 2011; Berger, 1998, 2022; Azaryahu, 1995, 2005, 2013).

History, Geography

The first part of this thesis documents and analyzes the inception of Hiriya landfill in the 1950s. It relies on historical, geographical, social and cultural research on the period, which reveals far-reaching changes in the area, including studies on immigration and institutional mechanisms (Golan, 1996, 1997, 2006; Rotbard, 2005; Marom, 2009). In addition, this study derives from research dealing with spatial changes and cultural erasure around the world, and in Israel/Palestine specifically, and from research on the establishment of a new national identity through space (Khalidi, 1992; Benvenisty, 1997; Ganem, 2018; Azaryahu, 2013; Shamir, 1996; Kadman, 2008; Falah, 1996). In this context, this research also develops out of studies dealing with settler colonialism and the unique Israel/Palestine case, as well as the case of Hiriya as a spatial means to establish mechanisms of power and repression (Wolfe, 1999, 2006, 2016; Elkins & Pedersen, 2005; Robinson, 2004; Veracini, 2006; Lloyd, 2012; Lloyd &

Wolfe, 2016; Algazi, 2010, 2017; Stamatopoulou-Robbins, 2012; Salamanca, 2016; Sabbagh-Khoury, 2018; Porter & Yiftachel, 2019; Yiftachel, 2020).

Environmental History

This new field of research challenges the historical discourse in terms of its correlation with ecology and humanity's impact over the years (Radkau, 2008). Several studies address the transformations that have taken place in the environmental history of Israel (Wolfson, 2016; Hasson, 2016; De Shalit, 2004; Tal, 2006; Feitelson, 2009), and in the delicate interrelation between Zionism and environmental perceptions (De-Shalit, 1995; Tal, 2002, 2008a, 2008b). Others deal with environmental activism and the identity of environmental activists (Tal, 2006; Sela-Sheffi, 2011; Sela-Sheffi & Zardaz, 2015; De-Shalit, 2016; Shani, 2017; Furst, 2018).

Waste, Waste and Culture, Social Borders

Waste, a byproduct of most human activities, is a small sub-discipline in environmental history (Tammemagi, 1999). Waste treatment carries health, social and environmental impacts, with no simple solutions. Due to the reduction of open spaces around cities and the difficulty locating landfills, spatial planning is required (Melosi, 2005, 2008, 2020; Engler, 1995, 2004); Tarr, 1996; Weber, 2012). Among these, several studies deal with the history of waste and sewage around the globe (Tarr, 1996; Melosi, 2004; Engler, 1995, 2004), including mandatory Palestine (Helman, 2007; Karlinsky, 2012; Balslev, 2016).

Leading sociologists wrote about symbolic borders and the process of establishing symbolic capital (Bourdieu, 1984, 1985; Elias, 1994; Bryson, 1996; Lamont, 1995), and they provide a suitable theoretical reference for discussing issues of waste and society. Studies from the last decade address the consequences of landfills' location on society (Bauman, 2004, 2013; Mckee, 2015), waste and environmental justice (Bullard, 1983; Lee, 2019; Hurley, 1995; Pellow, 2004), the cultural meanings of waste (Thompson, 2017; Gille, 2007; Douglas, 2003; Rotbard, 2005; Kristeva, 1980; Liboiron, 2021, 2022; Hawkins, 2006) and the relevance of waste to the Anthropocene era (Bubandt et al., 2018; McNeill, 2001; Resnick, 2021; Waterton and Saul, 2021).

Studies of waste in Israel have mostly focused on the economic aspects (Ayalon et al., 2006; Holzer et al., 2009; Broitman, et al., 2012), sociological-behavioral aspects (Fried, 2017) and the perception of cleanliness in the public space and the functioning of local authorities (Tal, 2006; Negev, 2016), and educational aspects to prevent dirt (Ostrovsky, 2016; Elhasid, 2016).

Studies in other disciplines have focused on contamination related to the Hiriya landfill (McBean, 1995; Shani, 2003), on the environmental conflict of the landfill and its evacuation (Feitelson, 1996), on managerial aspects related to reducing waste (Gan, 2003), on economic aspects of the restoration of the landfill (Shani, 2003), and on the influence of multinational factors on the design of the urban space in Jerusalem and Tel Aviv-Jaffa, including the involvement of the Beracha Foundation in the design of Hiriya and Ariel Sharon Park (Ronen-Rotem, 2010).

Water

Hiriya is situated on the banks of two rivers, the Ayalon, a dominant and powerful river in the center of Israel, and the Shafirim. Because of Hiriya's centrality in the landscape, and its central role in the planning of Ariel Sharon Park, this study also considers the history of water treatment in Israel. Israel's approach to streams tended to disconnect the water from their natural basin (Feitelson, et al., 2014) and many streams have become the country's sewer pipes, destroying local habitats and using the natural water for drinking and agriculture (Tal & Katz, 2012) or as transportation infrastructure (Feniger & Kozlovsky, 2021).

Infrastructures

Recent generations of scholars have contributed many studies on complex infrastructural systems of water, transportation, electricity and more – projects that changed the face of the world, and promoted new political and economic agendas. Most of these studies were generated by vast engineering, economics, or hydrology projects that were hardly studied by historians, architects or sociologists. However, in the last two decades, scholars of the humanities, social sciences and the arts have started to address these subjects and their political, social, cultural and environmental implications (Hughes, 1993; Graham & Marvin, 2001; Larkin, 2013; Appel et al., 2018).

Landscape Rehabilitation

In the last generation, an increasing proportion of landscape architecture projects have addressed the design and recovery of brownfields, thus leading to the publication of a growing number of studies focusing on these sites from different perspectives. These studies present different approaches to the rehabilitation of contaminated areas (Engler, 2004; Berger, 2006). Others examine issues related to soil, water, biological habitats, education, community and city resilience (Reed, 2005; Rosenberg, 2009; Lister, 2010; Venart, 2011). Some even try to propose strategies to deal with the climate crisis and with social and cultural changes (Corner, 1999;

Berger, 2006; Engler, 1995, 2004). So far there has only been scant research on the restoration of brownfields in Israel, mostly in the field of landscape architecture (Alon-Mozes, 2009, 2014; Milgrom, 2009) rather than from historical, social or cultural perspectives.

The literature on Hiriya includes various textual and visual sources, among them two catalogs of exhibitions related to the design of the mountain (Hiriya in the Museum, 1999; Hiriya in the Museum 2, 2004), and the Sharett documents for the planning of the park (Principles of Planning Ayalon Park, 2003). To these one should also add the following: Martin Weyl's book, *On Stench and Beauty*, in which he describes the events which led to the landfill's shut-down and the establishment of the park[1] (Weyl, 1999); Ram Loevy's film, "Fourteen Notes on Garbage Mountain," which accompanied the preparation of the first exhibition; a book, commissioned by Ariel Sharon Park, describing the story of the mountain, the exhibitions, the district planners, etc. (Shaltiel, 2018); and photographic documentation of the changes to the area (Weyl, 2011). Seminal to the current research are three articles by Tal Alon-Moses, a landscape architecture researcher, dealing with the establishment of Ariel Sharon Park. The first discusses the international competition for the rehabilitation of the landfill in a bid to show the relationship between the local versus the international practice of landscape architecture (Alon-Mozes, 2009); the second deals with the establishment of the park in accordance with the evolving environmental discourse in Israel (Alon-Mozes, 2012); the third claims that the planning of the park expresses ecological concepts that permeated the planning discourse (Alon-Mozes, 2014).

Despite this research, only a few historical studies deal with the history of waste treatment in Isarel (Tal, 2006). Those which discuss the British Mandate period focus on cleanliness in the growing cities (Helman, 2007), on the sewage of Tel Aviv (Karlinsky, 2012) and on the geographical-historical aspects of the Tel Aviv landfill in Mikve Israel (Balslev, 2016, 2019). Of these, I would mention the pioneering research of the Mikve Israel landfill, which combines anthropological, archeological, geological, and geographic research, as well as research on collection (Elor, 2023). Research on the history of waste treatment in Israel, which until the late 1990s was dumped or buried in improvised and unregulated sites, is scarce, and most of it is included within studies in other fields (Tal, 2006; Ronen-Rotem, 2010). The largest and most famous of these waste-treatment sites was Hiriya, which served Tel Aviv and other cities in the

[1] Dr. Martin Weyl, chairman of the Beracha Foundation and former director of the Israel Museum Jerusalem, wanted to prioritize the issue of waste in the Israeli public discourse. The Beracha Foundation had invested large sums of money in other environmental projects in Israel.

region from 1953 until 1998. Despite being central and a national symbol of failed waste treatment and environmental neglect, not a single historical study has been dedicated to Hiriya to this day. Similarly, no historical research was devoted to the transformation of the area into a huge metropolitan park with its far-reaching effects on the entire area. The present study is a first step towards remedying this situation.

Large Parks

In recent years, the value of large urban parks has increased, and many studies examine their contribution to the density, infrastructures and general life of today's urban sprawl. These parks, which cover more than 2,000 dunams ($2km^2$), are often located on the edge of urban centers and provide a wealth of experience for visitors, which includes the creation of a collectivity, a dramatic show of nature, the influence of and on the micro-climate, an ecological corridor and a variety of habitats, vistas, intimate or communal meeting places, theaters, etc. Thanks to such large parks, big cities turn into rich, diverse, pleasant spaces and are supported in confronting climate change (Corner, 2007). The growth and densification of cities turn brownfields, including abandoned factory sites, former landfills and deserted neighborhoods, into the potential for creating parks that cut into great swaths of built-up urban space. The academic literature sheds light on various aspects of planning, design and maintenance of large parks, in terms of their great importance and the challenges they pose (Corner, 2007; Czerniak, 2007).

Several studies focus on open areas and parks in Israel (Kaplan, 2000; Hahn, 2005; Halfhand, 2014). Recent research has examined parks in Israel, such as Shirili Gilad-Ilsar's doctoral thesis on the environmental and planning history of the Yarkon Park (Gilad-Ilsar, 2015), in which she examined the landscape production process of the Yarkon river in Tel Aviv and the perceptions of nature vis-a-vis its transformation into an urban park. Other studies deal with the values of restoring natural heritage landscapes, such as calcareous hills, oak forests, winter puddles, etc., (Hahn, 2005; Shalem, 2019). Another new issue the planners and landscape architects of the new parks face is water and drainage, but this has not yet received scholarly attention. Herzliya Park, designed by Barbara Ahronson, is located in a historical area of flooding, and preserves the winter pools, drainage channels and biodiversity that are unique to the site. Gazelle Park in Jerusalem, designed by Rachel Wiener Architects, was established thanks to a call to deal with water overload at the Sorek Wastewater Treatment Plant, and aside from being a green lung in the heart of the capital, it also preserves a herd of gazelles, and offers a unique nature experiment for citizens to view.

In Israel, recent outline plans are crucial in this regard: TAMA 1, approved in May 2019, consolidates and synchronizes previous outline plans, and emphasizes the preservation of seashores, national parks, forests, streams, nature reserves and other protected areas. TAMA 35 defined the planning policy up until 2020, in a bid to respond to the needs of construction and development while maintaining open areas and land reserves – including metropolitan parks. TAMAM 5/3, approved in 2004, established principles for the Ayalon Park (later renamed Ariel Sharon Park, after the prime minister who helped establish it).

1.3 Research Methods

The study of Hiriya and its surroundings, and the far-reaching transformations it has undergone over the course of a century, are suited to qualitative research methods that incorporate different disciplines, mainly history, environmental history, cultural and social studies and landscape design and planning.

Throughout the study, I have used a research method developed for landscape reading, that incorporates critical reading of written and visual diverse archival sources, aerial photos, photos and maps, combined with academic literature, press reports and interviews with people who lived in the area or played a major role in turning it into a park. The various disciplines are explained below.

History and environmental history

Incorporates archival tools to describe and reconstruct the various aspects of the history of the area: the surrounding villages, chief among them the Arab village of Al-Khairiya, the Jewish village built on its ruins, the immigrant transit camp, the establishment of the Dan regional garbage site, and the waste-treatment methods that were discussed at the time, all followed two generations later by the decision to stop landfilling and turn the area into an integrated nature park.

The research method developed here combined critical reading of diverse written and visual archival sources, including from official archives that preserve relevant historic documents, and private archives with documents relevant to the 2004 competition for the design of Hiriya. These were analyzed together with historic and rare aerial photos taken from the beginning of the twentieth century until the 1960s. They include rare photos of the compost plant in Hiriya and historic maps which leave some trace of the changes in the landscape. In addition, a thorough reading of press reports led to further details and understanding of the events in

question, and to the reactions of the people and the media during those years. Interviews with people who lived in the area during the 1950s further explicated the processes and atmosphere of the time.

The events which occurred fifty years later were studied by combining analysis of engineering documents, workshop papers, proposals for the competition and interviews with the landscape architects and judges who participated in the competition.

These rich and diverse primary sources were critically read with secondary academic literature relevant to the aftermath of the 1948 war; settler-colonialism and the case of Israel/Palestine; waste sites and their implications on society and weak communities in particular; infrastructures and their political meanings; rehabilitating brownfields and the benefits to society and nature, and more.

Cultural and social studies

Documentation from this field reveals the consequences of establishing a waste site next to the disadvantaged neighborhoods of the metropolis. The materials used explore how boundaries are drawn and already-poor populations are weakened further, and the cultural and social meanings of waste.

Landscape studies

This area of study outlines the processes described in my research in terms of their impact on the landscape, from the delicate relationship between the Palestinian village and the topography and streams around it; the transit camp that ignored the prevailing conditions of the terrain and the establishment of the landfill and the enormous damage it caused; to the decision to stop landfilling and restore the entire area, and the international design competition that transformed it into a large public park using green infrastructure and promoting new social and environmental agendas.

Landscape rehabilitation

Materials from this field allowed for a critical comparison with other polluted sites around the world, which have encouraged regional recovery.

All these fields of knowledge are interwoven into the three articles, but with different focus in each. Thus, the first article draws mainly on history, analyzing the events that took place in the Hiriya area during the first decade after the establishment of the State of Israel (1948-1960), using environmental-sociological historical methods of research, including archival

documents, periodicals, interviews with residents of the area during the researched period, photographs, aerial photographs and maps.

The second article analyzes the role of waste in the 2004 international design competition for Hiriya's rehabilitation. It employs analysis and evaluation tools and of landscape and landscape design using public and private archival documents, the competition protocols, engineering reports, the competition planning documents, the proposals submitted to the competition, interviews with the landscape architects who participated in the competition, and with the judges, and analysis of the winning proposal.

The third article examines the cessation of landfilling at Hiriya and the establishment of Ariel Sharon Park, within the broad context of engineering and green infrastructure studies, combined with landscape architecture, environmental history and planning theories. The research uses primary and secondary sources that analyze changes in the Israeli planning system; the approach to water sources and streams; the national plan for waste treatment; the development of the environmental discourse, and approaches to the restoration and design of brownfields, together with interviews with professionals who were involved in the transformation of the region.

1.4 Principal sources

The resources on which this research draws include a wide variety of written and visual materials related to Hiriya, dating back a hundred years. They were accessed in official archives, some of which had never been unexplored, and private collections opened specifically for this research. Documentation was sent via old computers, or explored in private homes and offices. Hundreds of press reports stretching over eight decades, in Hebrew and English, were read and interviews were conducted with various professionals involved in the transformation of Hiriya, landscape architects and judges involved in the 2004 competition, and residents of the area (see Appendix). Finally, as these materials were deciphered and analysed, parallel extensive searches were undertaken for rare photographs, aerial photographs, maps, sketches, planning proposals and other visual material.

Institutional Archives

- Israel State Archives: files on Al-Khairiyeh village; Hamesubim village and the transit camp; correspondents between village residents and the Tel Aviv municipality and governmental ministries.

- The Central Zionist Archives: files on Al-Kairiyeh village, Hamesubim village; transactions and plans regarding the division of the area; correspondence between the residents in the area and government ministries, including the Jewish Agency.
- The Haganah Historical Archives: Surveys of Arab villages.
- Tel Aviv City Municipality Archive: meetings and correspondence regarding the waste treatment of Tel Aviv, including the new landfill in Hiriya, the methods used and firms that operated it.
- Dan Region Association of Towns Archive: correspondence on the operation of the landfill in Hiriya.

Private Archives

- Attorney Yoram Samuel's office: documents and correspondence regarding the transformation of Hiriya into a public park, including international workshops, the 2004 competition and exhibition, legal contracts and more.

Photographs and maps

- Survey of Israel: historical aerial photos, maps.
- The map collection Department of Geography, Tel Aviv University: historical aerial photos, maps.
- Laor Archive, the National Library: historical maps.
- The Central Zionist Archives: plans and maps.
- Hillel Shuval family collection: photos of the compost plant in Hiriya.
- Press reports: daily and weekly newspapers in Hebrew and English published in Palestine and subsequently in Israel during the last hundred years. Articles on the area of Hiriya before and after the 1948 war, on the problems of waste nationally and locally, the solutions, lawsuits against the landfill, the transformation of Hiriya and the massive actions taken to heal the hazard, the vision and the counter-pressures on the area.

Interviews

Residents of Havat Shalem, Hiriya and Saqiya transit camps, contestants and judges in the Hiriya international design competition, key official figures in the transformation of the area into public park, and partners in the restoration process. (For a comprehensive list of the interviews see appendix).

Design Plans

Design and planning workshops.

Engineering reports.

Design proposals of the landscape architects who participated in the 2004 competition.

Final plans for the rehabilitation of the trash mountain and the entire plan.

Israel Planning Administration. TAMA 1.

https://mavat.iplan.gov.il/SV4/1/99000257545/310.

Israel Planning Administration. TAMAM 5.

https://mavat.iplan.gov.il/SV4/1/99001666/310

Israel Planning Administration. TAMA 16.
https://www.gov.il/he/departments/policies/national_outline_plan_16.

Israel Planning Administration. TAMA 31.

https://www.gov.il/he/departments/policies/01mar19983357.

Israel Planning Administration. TAMA 35.
https://www.gov.il/he/departments/general/tama_35_docs.

Israel Planning Administration. TAMAM 3/5 Ayalon Park, change no. 3.
https://mavat.iplan.gov.il/SV4/1/99001892/310

2.0 FINDINGS

This PhD thesis is based on three major papers, two of which are published in leading academic journals, and a third which is forthcoming. A fourth article, in Hebrew, was published in *Cathedra*, the leading historical journal in Israel. (See appendix 1-4). The three articles deal with the same geographical and symbolic place. They follow the development of Hiriya chronologically, and address various interrelated issues beyond the site itself, seeing it as a symbol of a much wider range of phenomena.

1. Galia Limor-Sagiv and Nurit Lissovsky. 2023. "Place and Displacement: Historical Geographies of Israel's Largest Landfill." *Journal of Historical Geography,* 80, 32-43. (Q1). https://www.sciencedirect.com/science/article/abs/pii/S0305748823000014
2. Galia Limor-Sagiv and Nurit Lissovsky. 2022. "The Trash has Gone – The Trash Mountain Remains: A New Look at the International Design Competition for the Rehabilitation of Hiriya Landfill in Israel." *Landscape Research*, 48 (3). (Q2). https://www.tandfonline.com/eprint/WCBRYT2ZSNHD4Y7PUKM8/full?target=10.1080/01426397.2022.2144181
3. Galia Limor-Sagiv, Nurit Lissovsky and Naomi Angel. 2022. "Israel's Largest Landfill Rehabilitation: Creative Landscape Design as a Catalyst for a Functioning Metropolis." *Planning Perspectives*. (Q2). https://doi.org/10.1080/02665433.2023.2272752

- The citation format differs between the three articles, due to the instructions of each journal in which the corresponding article was published.

2.1 HISTORICAL GEOGRAPHY OF ISRAEL'S LARGEST LANDFILL

This chapter was published as: Galia Limor-Sagiv and Nurit Lissovsky (2023), "Place and Displacement: Historical Geographies of Israel's Largest Landfill", *Journal of Historical Geography,* 80, 32-43.

https://www.sciencedirect.com/science/article/abs/pii/S0305748823000014#preview-section-recommended-articles

Abstract

This article explores the role of space in facilitating forms of political power, as shown in the destruction of landscape in the center of Israel by the Hiriya landfill. That failed infrastructure wrecked the delicate legacies of mankind and nature, thus sealing the area's fate as a city's repellent dumping ground that attracted all kinds of liminal activities. After the 1948 war, which resulted in the establishment of the state of Israel, the destruction of hundreds of Palestinian towns and villages and the erasure of their people's legacy, Tel Aviv begun dumping its household waste near an Arab village, the residents of which had been expelled during the conflict. The authorities promised the local inhabitants d Jewish newcomers and refugees in the nearby transit camp, as well as local city dwellers d a new and modern compost plant, but the plant's opening was repeatedly postponed. This article reveals the rapid changes that occurred in the early 1950s in the Hiriya area, and how insistence on a modern, technologically based solution to waste treatment, suffused with Zionist ideology, resulted in the creation of an infamous site that became a symbol for environmental, infrastructural, social and health hazards. Drawing from diverse unexplored textual and visual archival sources, including aerial photographs, historical maps, printed texts and interviews, we argue that this combined method of landscape reading is crucial for understanding such a tragedy of landscape. Our study of the Hiriya landfill points to the challenges posed by infrastructure, and contributes to future research into post-industrial sites, including landfills, quarries, airfields, mines and factories.

Keywords: Landfill, Landscape, Waste, Infrastructure, Hiriya, Indigenous, Palestine, Zionism

Introduction

Looking out the window on a flight to Israel, one cannot miss the unusual sight that appears while approaching Israel's Ben-Gurion airport. Located in the heart of the country, about six miles southeast of the Tel Aviv-Yafo metropolitan area, an oddly-shaped, 200-foot-high hill rises above the surrounding plain (Fig. 1). It is neither rock nor soil, but rather twenty-one million cubic yards of garbage, known to Israelis as *Hiriya* — the largest landfill in Israel. The word *khairiyyah* in Arabic means 'good' and refers to the fertile lands of the region cultivated by Arab farmers who have lived there for generations and who named their village after it. However, in Hebrew it is associated with the word *ḥara* ('shit'), partly because in the Israeli consciousness the place has become a byword for stench, ugliness and appalling neglect.

The village of Al-Khairiyyah, like other Arab villages in the area, was destroyed in the 1948 war (Israel's war of independence/the Palestinian *nakba*), and its residents ousted. The war and the establishment of the state of Israel resulted in a political-demographic change, which was also reflected in a dramatic geographical rupture. As a result of the war, in the subsequent years, hundreds of Palestinian cities and villages were destroyed, and their lands and property expropriated. Some of them were turned into Jewish cities and villages, while others were buried under forests and parks. In this process, one ethnic space was erased and replaced by another. In the case of Al-Khariyyah, the Arabs who had lived in that area were displaced and deported. Shortly after the war, the Tel Aviv-Yafo Municipality began dumping its household waste on the site and subsequently other towns in the area joined in. The landfill — which was built on the banks of the Ayalon River — grew for about fifty years without proper treatment, until it covered an area of some 111 acres. Soon, it became a large, ugly eyesore in the heart of the country, and one of Israel's largest environmental, infrastructural, and social hazards. It was fifty years before Hiriya's landfill was finally closed in 1998 because of the flocks of seagulls that circled for food and endangered planes flying in and out of the nearby airport. Subsequently, the hill and surrounding area were restored, and the large garbage dump was transformed into a green metropolitan area known as Ariel Sharon Park.[1]

In this article we describe the dramatic changes, and their implications, in the landscape of the Al-Khairiyyah region during Israel's first decade. A careful analysis of textual and visual archival materials shows how a typical Palestinian agricultural tract on the outskirts of

[1] On the historical chapter concerning the transformation of Hiriya landfill into a public park, see: G. Limor-Sagiv and N. Lissovsky, The trash has gone–the trash Mountain remains: a new look at the international design competition for the rehabilitation of the Hiriya landfill in Israel. *Landscape Research*, (2023b) 1-21.

expanding towns was totally disrupted within a few years. Three new independent entities converged at the site: an agricultural farm, a transit camp and the landfill, overshadowing what had been there before — the land, the stream, the village houses and the life within and around them. The farm, camp and landfill created a new type of landscape, but it was the growing landfill that dominated both visually and symbolically from the 1950s on.

Hiriya is the largest, most well-known landfill in Israel — and the largest in the Middle East — yet, its history and the transformation of extensive agricultural tracts into an enormous landfill have received little scholarly attention.[2] Its prominent location in the center of the country, at the nexus of two central highways, and its centrality in the popular Israeli discourse on stench and neglect stand in stark contrast to the dearth of scholarly interest it has engendered, and to the numerous studies that have dealt with Israel's first decade. Thus, in order to discuss the deterioration and its consequences of this landscape, we first describe the historical, spatial and social events that occurred at the site before and after the 1948 war and during the following decade. Looking back over Hiriya landfill's lifespan of sixty years, we concentrate on its first decade, as it was during those dramatic years when its landscape was utterly transformed; whereas the years following saw mainly an accumulation of neglect and pollution. Rehabilitation came only two generations later.

An in-depth study of Hiriya raises more general questions about landscape infrastructures, landfill reclamation, and the politics and ethics of landscapes, which are all relevant to similar sites elsewhere in the world. Our study describes a palimpsest of injustice and marginalities, drawing insights from historical, cultural, social and ecological studies relating to previous landscape studies focused on infrastructure and landfills.[3] The study reveals processes of decision-making relating to waste and power, and sheds light on those who bore the burden of

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[2] See: A. Tal, *Pollution in a Promised Land*, California, 2002; B.A. Lawson, *Garbage Mountains: The Use, Redevelopment, and Artistic Representation of New York City's Fresh Kills, Greater Toronto's Keele Valley, and Tel Aviv's Hiriya Landfills*, PhD diss., University of Iowa, 2015; T. Alon-Mozes, The international competition for the reclamation of the Hiriya landfill: a national Israeli symbol in the 'global' arena, *Landscape Review* 13(1) (2009) 31—46; T. Alon-Mozes, Ariel Sharon Park and the emergence of Israel's environmentalism, *Journal of Urban Design* 17(2) (2012) 279-300; H. Davis, The breathing land: on questions of climate change and settler colonialism, in: *The Routledge Companion to Contemporary Art, Visual Culture, and Climate Change*, 2021, 204-213.

[3] On the concept of palimpsest and the partial erasure and rewriting of landscapes see: W.G. Hoskins, *Making of the English Landscape,* London*,* 2021.p. 4.

a life of pollution in the periphery and on the forms of life that were destroyed.[4] It argues that waste infrastructure served as a tool of power and played a role in devaluing the region and its people.[5] We examine Hiriya through the lens of landscape studies, and focus on the waste infrastructure's effect on humans and nature.

Geographer Carl Sauer defined *landscape* as 'an area composed of a unique union of physical and cultural forms', and his approach was adopted by recent scholars who expanded its meaning to encompass physical, social, economic, ideological and political aspects.[6] In recent decades, a series of interdisciplinary studies explored the varied and even opposing ways to understand landscape, thus examining political, critical and cultural agendas.[7] A few studies emphasized issues of power, inequality and conflict in the making of cultural and public landscapes.[8] Accordingly, we rely on studies from other fields, such as environmental history, history of waste treatment, the establishment of an immigrant society, and more. Although Israel is neither a colony nor a typical case of settler colonialism, we made use of the theoretical framework of settler colonialism to better analyze and understand the events which occurred in Hiriya.[9] The state of Israel was established by Jewish newcomers, many of them refugees,

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[4] Famous theoreticians dealt with the concept of waste, wasting, classification and purity. See for example: M. Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*, 2003; G. Hawkins, *The Ethics of Waste: How We Relate to Rubbish*, 2006; J.O. Reno and M. Thompson, *Rubbish Theory: The Creation and Destruction of Value*, New Edition, 2017.

[5] On processes which turned empty or undeveloped areas into land perceived as available for colonial takeover, or as spaces that could absorb the worst of human activity in the modern world, see: Z. Bauman, *Wasted Lives: Modernity and its Outcasts*, Cambridge, 2004; M. Liboiron, Waste colonialism, *Discard Studies* (2018); M. Liboiron, and J. Lepawsky, *Discard Studies: Wasting, Systems, and Power*, 2022, 21; M. Liboiron, Pollution is colonialism, in: *Pollution Is Colonialism*, 2021.

[6] The word *landscape* in its original form (*landskip*; *landschaft*) underscored its visual appeal and tended to link to beauty, based on the tools and rules of art (painting, photography, theater). Modern landscape research seeks to expand the meaning of *landscape* from 'image' and 'picture' to a space that encompasses physical, social, economic and political aspects. On the various approaches to the term *landscape*, see: C.O. Sauer, *The Morphology of Landscape*, Berkeley, CA, 1925, 19-53; D.W. Meinig, The beholding eye: ten versions of the same scene, in: D.W. Meinig (Ed), *The Interpretation of Ordinary Landscapes*, Oxford, 1979, 33-48; D.E. Cosgrove, *Social Formation and Symbolic Landscape*, New Jersey, 1984; J.B. Jackson, *Discovering the Vernacular Landscape*, New Haven, CT, 1984; J. Corner (Ed), *Recovering Landscape*, New York, 1999; S. Schama, *Landscape and Memory*, London, 1995.

[7] On various approaches to the field of landscape as a central theme of cultural geography, see: J. Wylie, *Landscape*, 2007.

[8] Wylie, *Landscape,* 190-191. Actions taken on the ground can preclude or promote a healthier life. See: J. Corner and A. MacLean, *Taking Measures Across the American Landscape*, New Haven, 1996; J. Corner, Recovering landscape as a critical cultural practice, in: J. Corner (Ed), *Recovering Landscape: Essays in Contemporary Landscape Architecture*, New York, 1999, 1-26.

[9] On Settler Colonialism see: P. Wolfe, *Settler Colonialism*, 1999; P. Wolfe, Settler colonialism and the elimination of the native, *Journal of Genocide Research* 8(4) (2006) 387—409; C. Elkins and S. Pedersen (Eds), *Settler Colonialism in the Twentieth Century: Projects, Practices, Legacies,* 2005; L. Veracini, *Settler Colonialism*, 2010.

who did not aspire to gain wealth for a mother-nation, or to promote their culture overseas. However, they did aspire to situate themselves in the country as the indigenous element, considering Eretz Israel/Palestine their biblical–historical homeland and the only place that could offer them a potential home. They also saw it as a land without a nation. As will be seen below, the hierarchical relations created after 1948, the processes of land and resource appropriation and cultural elimination of indigenous peoples deserves a special focus which benefits from postcolonial analysis.[10] Distinguishing the Israeli/Palestinian case from specific cases of colonialism may explain the motives, but does not defend its outcomes. Using these concepts enables us to present the events as part of a continuing process rather than a single historical event, and to reveal how such a spatial transformation constructed social relationships between Jews and Palestinians and between ethnic groups within Jewish society.[11]

An interpretive-critical synthesis of aerial photographs, historical maps, written documents, interviews, and site observations enables us to reveal visible and hidden parts that accumulated over time, and to compose a layered image and multiple narratives and meanings. While the case of Hiriya is specific to Israel/Palestine history, and focuses on a twentieth-century post-war infrastructure, the issues raised and the methods used to illustrate changes over time are of global interest. They can serve as a framework for similar investigations dealing with the ramifications of waste treatment and other post-industrial activities for the human and natural environment, and for studies of postcolonial methods and their implications on the landscape and society.

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[10] Settler colonialists are characterized by their aim of self-determination in the land they have settled, and by their desire to situate themselves as the indigenous element. As a result, indigenous people often suffer from violence and deportation. During the twentieth century, Palestinian territory was increasingly populated by Jews, with some support from the British Mandate that was in place between 1917-1948. This process reached its peak with the 1948 war. For recent studies on the Israel/Palestine case of settler colonialism, see: S.N. Robinson, *Occupied Citizens in a Liberal State: Palestinians under Military Rule and the Colonial Formation of Israeli Society, 1948-1966*, 2004; L. Veracini, *Israel and Settler Society*, 2006, 25-40; D. Lloyd, Settler colonialism and the state of exception: the example of Palestine/Israel, *Settler Colonial Studies* 2(1) (2012) 59-80; D. Lloyd and P. Wolfe, Settler colonial logics and the neoliberal regime, *Settler Colonial Studies* 6(2) (2016) 109—118; P. Wolfe, *Traces of History: Elementary Structures of Race*, 2016; O. Yiftachel, *Ozma ve-adama – Israel Palestine bein ethnocratia ve-apartheid*, Tel Aviv, 2020; G. Algazi, Kvar be-eiropa: machshvot al colonialism hityashvuty, medievaly ve-moderny, *Zmanim* 137 (2017) 116-133; G. Algazi, Meya'ar Gir le-um Hiran: hearot al hateva vcoloniali ve-shomrav, *Theoria ve-Bikoret* 37 (2010) 232-253; A. Sabbagh-Khoury, Colonialism hityashvuti, nekudat hanabat hayelidit ve-hasociologia shel yetzur yeda be-Israel, *Theoria ve-Bikoret* 50 (2018) 391-418. On current denial and displacement of Bedouins in Israel see: Algazi, Meya'ar Gir le-um Hiran, 245; Sabbagh-Khoury, Colonialism hityashvuti, 395; Yiftachel, *Ozma ve-adama*, 27.

[11] Yiftachel, *Ozma ve-adama*, 17.

Groundwork for Enduring Blight

Recent studies which focus on post World War II infrastructure projects from the social sciences and humanities' perspective, show their complex, political and aesthetic characteristics. They emphasize the infrastructures' impingement on daily life, their linkage to progress and development, and how their failure to deliver often obscures social gaps and political agendas.[12] Waste, unlike other urban supporting infrastructures, removes something undesirable, with negative value — thus devaluing the place where it ends up. It was usually dumped outside city limits, along rivers or swamps and on sites most often inhabited by powerless populations with no claims to the land. By the mid-eighteenth century, waste disposal became the responsibility of municipalities and governments, who started looking for ways to treat it, and who were subsequently supported by the sanitary movement in the late nineteenth century. Once waste is removed from city and society, it is out of sight and out of mind of those to whom it once belonged, unless treated improperly therefore becoming a nuisance.[13]

In France, the UK and the US in the 1920s and 1930s, a modern hygienic landfilling system was developed, which included dumping in layers and covering waste with soil, ashes or dirt to prevent germs, fires and bad odors. This method created the main distinction between order, hygiene and modernity, and disorder. Such modern landfills were often located next to settlements thereby reducing costs and maximizing profits. However, until the 1960s, incineration and composting were the leading waste-treatment processes in the West.[14]

Waste-treatment methods and their inherent values were developed in European countries and soon spread to North America. This point is crucial in understanding those methods and values in colonies, where the colonizers imposed their conception and application of sanitation, waste

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[12] See for example: T.P. Hughes, *Networks of Power: Electrification in Western Society, 1880-1930,* Baltimore, 1993; S. Graham and S. Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition,* London, 2001; B. Larkin, The politics and poetics of infrastructure, *Annual Review of Anthropology* 42 (2013) 327-343; N. Anand, A. Gupta and H. Appel, Introduction: temporality, politics, and the promise of infrastructure, in: N. Anand, A. Gupta and H. Appel (Eds), *The Promise of Infrastructure,* Durham, 2018, 1-38.

[13] Vijay Gidwani claims that according to the capitalist agenda, wasteful 'natures' are territorialized in the bid to facilitate an ordered society that secures the value of capital and property. V. Gidwani, Value struggles: waste work and urban ecology in Delhi, in: *Ecologies of Urbanism in India: Metropolitan Civility and Sustainability*, Hong Kong, 2013b, 177.

[14] On the history of waste treatment, see: M. Engler, Waste landscapes: permissible metaphors in landscape architecture, *Landscape Journal* 14(1) (1995) 11-25; J.A. Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective*, Akron, 1996; M.V. Melosi, *Garbage in the Cities: Refuse, Reform, and the Environment*, Pittsburgh, 2005; M.V. Melosi, *The Sanitary City: Environmental Services in Urban America from Colonial Times to the Present*, Pittsburgh, 2008; H. Weber, Landfills, modern, in: C.A. Zimring and W.L. Rathje (Eds), *Encyclopedia of Consumption and Waste: The Social Science of Garbage* (Vol. 1), 2012.

and pollution on the local population as tools for ordering and governing. Therefore, waste treatment followed different trajectories in Europe to the colonies, where sanitation infrastructure, with its various political and other meanings, aggravated the social and racial segregation, attached to waste infrastructure.[15]

In its first decade (1948—1958), the young state of Israel faced the urgent need for housing, employment, and infrastructure for the hundreds of thousands of immigrants who had arrived on its shores. The national master plan included the establishment of accelerated infrastructure projects, yet waste infrastructure was not included.[16] We claim that just as a bridge, dam or sewage pipes change the local geography and landscape, and impact the local communities, the poor infrastructure at Hiriya transformed its surroundings beyond recognition. It laid the foundation for the area's neglect and dysfunction in the following decades, involving displacement and erasing local histories.[17]

The Arab village of Al-Khairiyyah was situated about five miles east of Jaffa, on a hill of *kurkar* (calcareous sandstone) 66 feet above sea level, a few hundred yards north of the Ayalon River. It belonged to the Jaffa precinct (Figures 2, 3). Archeological excavations have identified the village as the site of Bene Beraq, mentioned in the Bible and in post-biblical literature. In 1944—1945, under the British Mandate, the village owned 3,378 acres, and had 1,420 inhabitants.[18] During the Ottoman period, the village had been known as Ibn Ibraq (probably, the Arabized form of the Hebrew name), but in 1924, after the modern town of Bnei Brak was established, the village residents changed its name to Al-Khairiyyah to differentiate themselves from the Jewish settlement nearby. The village economy was based on livestock and agriculture, including cereals, citrus and other fruit orchards. Most of the area was characterized by clay alluvial soils used for dryland agriculture; the soil close to the river

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[15] On current studies on waste treatment in the colonies, see for example: S. Legg, *Spaces of Colonialism: Delhi's Urban Governmentalities,* 2008; C. McFarlane, Governing the contaminated city: infrastructure and sanitation in colonial and post-colonial Bombay, *International Journal of Urban and Regional Research* 32(2) (2008) 415-435.

[16] See: A. Sharon, *Tichnun physi be'Yisrael*, Jerusalem, 1952; A. Golan, Hityashvut be'asor ha'rishon be'medinat Yisrael, in: C. Tzameret and H. Jablonka (Eds), *Ha'asor ha'rishon: 1948-1958*, Jerusalem, 1997a, 83-102.

[17] Anthropologist Brian Larkin notes that infrastructures are physical formations or entities that provide a basis for the functioning of other entities, thereby making them into a system. B. Larkin, The politics and poetics of infrastructure, 329.

[18] The League of Nations approved the British Mandate over the territories of Palestine and Transjordan, which had both been part of the Ottoman Empire under the Sykes–Picot Agreement before the first world war. The British civil administration in Palestine began in July 1920 and ended on 15 May 1948. Under the Mandate, both Jewish and Palestinian national movements arose, evoking protests and riots between both groups and against the British rulers.

remained uncultivated and wild vegetation grew in part of the area that was typical of the Mediterranean. Citrus growing increased over the years and reached its peak at the end of the Mandate period, when it covered a large proportion of the area. Around the villages there were almonds, vines, figs, sabras, dates, bananas and vegetables, and in the fields wheat, grain and legumes.[19] An illustration made in the early 1940s, as part of a survey conducted by members of the *haganah*, shows the village houses standing on a hill, with a few solitary date palms next to other trees and shrubs. [20][21] The delicate topographic contours of the landscape blended with the surrounding orchards (Fig. 4), and bore the hallmarks of a traditional Arab village.[22] It lay close enough to the Wadi Musrara (Ayalon River) riverbed, which was dry in summer, to enjoy the fertile soil of the land, but sufficiently distant so as not to be flooded during the winter rains. The geographer D.W. Meinig defined this landscape created by the interaction of a natural system with human activity as 'landscape as habitat', describing man's adjustment to nature and his manipulation of it in gentle and productive ways for his own use.[23] Regional plans dating back to the British Mandate, which were approved after the establishment of the state of Israel, defined the area as Crown Land, not subject to any local authority. It was designated as an agricultural area, on which construction and development were prohibited, so it could function as a floodplain of the Ayalon River and protect the growing city of Tel Aviv against floods.[24]

An aerial photograph taken by the German Air Force in 1918 supports the typical image of a village of land-owning farmers (*fellahin*). It was surrounded by non-contiguous agricultural

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[19] The sandy areas had artemisia absinthium, helianthemum and other plants; the alluvial soil or grumusol areas had calicotome villosa, ziziphus, sarcopoterium spinosum and cirsium (thistle), among others; the sandstone had coridothymus capitatus (thyme), sarcopoterium spinosum and thymelaea hirsuta. Among the trees, there were carob, ficus and ziziphus. With the urban development and human agriculture in the area, the natural vegetation was affected, and prosopis farcta appeared near the cultivated areas. See: R. Kark and L. Shay, *Summary of a Geographical and Historical Survey of the Ayalon Park Area, 1800—1948* (an internal study of Ayalon Park), Tel Aviv, 2001, 2, 3.

[20] The *Haganah* was the largest paramilitary organization of the Jewish community during the British Mandate.

[21] The few written testimonies about the village of Al-Khairiyyah include: W. Khalidi, *All That Remains: The Palestinian Villages Occupied and Depopulated by Israel in 1948*, Washington, DC, 1992;

Mustafa murad al-dabagh, biladna Falastin, al-juza' al-awal al-qism al-awal, dar al-talia'h, Beirut, 1965; *Skarei ha'haganah: skira clalit shel ha'kfar al-Khairiyyah*, The Haganah Historical Archives (HHA), 105/135; *Tik ha'kfar Yazor*, HHA, 2 / Kfar / 8; https://www.palestineremembered.com/Search.html#gsc.tab=0&gsc.q=al-khayriyya&gsc.sort=

[22] Y. Ben-Artzi, Ha'nof ha'kafri ha'masorti ve ha'hadash be'eretz Yisrael me'maof ha'tzipor, in: B.Z. Kedar and A. Danin (Eds), *Hisha me'rehok: tzilumei avir ve dimutei lavian ke'kelim be'heker ha'aretz*, Jerusalem, 2000, 173-201, 173.

[23] D.W. Meinig, The beholding eye. P. 34.

[24] Lydda District Regional Outline Planning Scheme, 6, 1942, Ministry of the Interior, Tel Aviv Planning Bureau.

plots (Fig. 5). An aerial photo from 1944 (Fig. 6) reveals that the village had expanded, in particular along the roads leading to and from it. New roads and agricultural plots had appeared alongside, and in fact all the surrounding lands were tended, although most were used for extensive farming and only a few were irrigated. The division of the plots into large blocks, with a secondary division into narrow strips, was typical of Arab villages in the country, giving it an appearance that assimilated with the landscape.

Al-Khairiyyah was one of several villages east of Jaffa captured by Jewish forces during the 1948 war. The inhabitants were expelled from their homes and lands, and subsequently the Jewish state refused to allow them back.[25] Most of the village houses were destroyed in the fighting, and only a few remained habitable. A year later, in the spring of 1949, new immigrants and demobilized soldiers settled into them. They fixed up the houses, grew vegetables and raised goats, and by early 1951 the village numbered some sixty families.[26] At the same time, HaZera Cooperative, a company that grew and supplied seeds to meet the increasing demand for food for Israel's rapidly growing population, established its first farm (the Shalem Farm) one hundred yards west of the village.[27]

The 1948 war is readily apparent in an aerial photograph taken in the fall of 1949, in which most of the village houses have been destroyed, and the lands appear to be untended. To the west, the first buildings of the Shalem Farm have appeared, adjoining cultivated plots that are clearly different from those of the former Arab village (Fig. 7).

Although the village was partially inhabited, the village ruins harbored robbers who buried their loot there and infiltrators from across the border with the Jordanian West Bank.[28] In the winter of 1953, a four-year-old girl was murdered and her corpse was found among prickly pear bushes not far from some ruined Arab houses; several pairs of children's shoes were also found nearby, increasing the suspicion that other murders had taken place there.[29]

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[25] On discussions about the area, see: B. Morris, *The Birth of the Palestinian Refugee Problem, 1947-1949*, Cambridge, 1987.

[26] T. Weinstock, Ha'kapitan me'Hiriya, *Haboker* (23 September 1949) 21; Local Government Division, Dept. of Immigrant Communities, to the Kfar HaMesubim Council, 12 March 1953, Israel State Archives [hereafter I.S.A.], C-61 - 1973; N. Elhanani, Chairman of the Kfar HaMesubim Council to D. Rosen, Director of the Dept. of Immigrant Communities, Ministry of the Interior, 17 March 1953, I.S.A., C-61 - 1973.

[27] N. Mimar, Havat shalem (ha'Zera) – me'kiyum le'kayamut: shimur hava hakla'it ve hasavata le'mercaz mevakrim be'park Ariel Sharon, *Atarim Magazine* 6 (2016) 151—156.

[28] Hitnagshuyot im mistanenim leyad Tel Aviv ve-besvivot Netanya, *Haaretz*, (25 October 1949), 4; Hapeulot hachorphyot shel hamishtara lehisul knufiot haportzim, *Hatzofe*, (2 December 1953), 3.

[29] Mistaefet hachakira sviv haretzach be-Ramat Gan, *Haaretz*, (19 February 1953), 1.

The area around the village of Al-Khairiyyah, as with many other occupied and destroyed Arab villages, lay at the heart of the conflicting aims of national and local authorities: between national population dispersal plans and local towns' desire and need to grow.[30] Soon after the 1948 war, the Israeli government decided to resettle these villages to prevent the return of the Palestinian residents. It established mechanisms for transferring Palestinian land ownership into Jewish hands thus transforming the space.[31]

Wasted Landscapes as a Political Tool[32]

During the British Mandate period, the Tel Aviv Municipality dumped household waste in a lot next to Mikveh Israel,[33] south of Tel Aviv, while searching for technological solutions for urban waste. Local residents complained about the bad smells and, supported by doctors, argued that the landfill was a source of mass disease.[34] Therefore, in 1950, the decision was made to dispose of Tel Aviv's waste next to the village of Al-Khairiyyah, south-east of Tel Aviv, and to establish an experimental waste-treatment plant there. [35]

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[30] Israel's first decade and the loss of Palestinian agricultural land and property was described in various studies. See: A. Golan, The demarcation of Tel Aviv-Jaffa's municipal boundaries following the 1948 war: political conflicts and spatial outcome, *Planning Perspectives* 10(4) (1995) 383-398. Insight into the host of factors involved can be gleaned from a report on the period from 1 January 1951 through 31 March 1952 in the Central Zionist Archives, file 425-441. G. Falah, The 1948 Israeli-Palestinian war and its aftermath: the transformation and de-signification of Palestine's cultural landscape, *Annals of the Association of American Geographers* 86(2) (1996) 256—285; A. Golan, The transformation of abandoned Arab rural areas, *Israel Studies* 2(1) (1997b) 94-110; A. Golan, War and postwar transformation of urban areas: the 1948 war and the incorporation of Jaffa into Tel Aviv, *Journal of Urban History* 35(7) (2009) 1020-1036; M.R. Fischbach, *Records of Dispossession: Palestinian Refugee Property and the Arab-Israeli Conflict*, 2003. See also: E. Brotzkus, *'Ha'halamot' she'hayu le'arim: al hanisionot le'tichnun ezorei hityashvut ve'klitat aliyah be'shanim 1948—1952*, Jerusalem, 1986.

[31] The Development Authority, in charge of national planning, was permitted to purchase 'absentee property', and was entitled to sell lands to the government, the Jewish National Fund (JNF) and to local authorities. Therefore, the JNF purchased 50 million acres in 1948 and 1950, including the lands of Al-Khairiyyah. For more on the procedures of change of land ownership and the urban and agricultural change, see: footnote 30; also see: A. Golan, Tefisat karka aravit al yedey yeshuvim yehudim be-milhemet ha'atzmaut, *Cathedra* 63 (1992) 122-154; A. Golan, *Shinuy merchavy – tozaot milchma: hashtachim ha'arvim lesheavar be-mesinat Israel, 1948–1950*, (2001).

[32] A detailed discussion of the residents' struggle is given in the Hebrew version of this article.

[33] Mikveh Israel, established in 1870 east of Jaffa, is Israel's oldest agricultural school. Yaron Balslev described the history of the Tel Aviv landfill at Mikveh Israel in: Y. Balslev, Ir ivrit im ashpa ivrit: Hatipul bapsolet shel Tel Aviv be'tkufat ha'mandat, *Israel: Journal of the Study of Zionism and the State of Israel, History, Culture, Society* 24 (2016) 271-300; Y. Balslev, Magav rikavon ve'efer: ma'avak revisionisti be'mizbelet Tel Aviv, *Et-Mol: Journal of the History of the Land of Israel and the People of Israel*, 263 (2009) 9-12. For further research on the history of waste treatment in Israel, see also: A. Tal, *Ha'sviva be'Yisrael: mashabei teva, ma'avakim ve'mediniut – me'reshit ha'zionut ve'ad ha'mea ha-21*, Tel Aviv, 2006; A. Helman, *Or ve'yam ha'kipuah: tarbut Tel Avivit be'tekufat ha'mandat*, Haifa, 2007; N. Karlinsky, Jaffa and Tel Aviv before 1948: the underground story, in: M. Azaryahu and I. Troen (Eds), *Tel Aviv*, *The First Century: Vision, Designs, Actualities*, Bloomington, 2012.

[34] Iriyat Tel Aviv neeshemet be'zilzul be'briut ha'toshvim, *Maariv* (28 March 1950) 3.

[35] Tochnit pituach shel iryat Tel Aviv behekef shel 40 million lirot, *Davar* (10 April 1950) 4.

In June 1952, the Tel Aviv Municipality signed an agreement with Green & Co, the local franchisee of the Boggiano Pico Italian method of turning waste into fertilizer.[36] This method was successfully implemented in London in the early 1940s, and in Beirut. Green & Co tried to establish plants in Tel Aviv, Haifa and Jerusalem, but was stopped by the 1948 war and lack of economic viability.[37] Thus, the issue of waste incorporates a continuous process of concepts and methods being inherited from the British Empire, thereby illustrating how the state of Israel adopted approaches from the Mandate years.[38]

In early 1951, a transit camp was established between the reoccupied village and the Shalem Farm, to accommodate new immigrants. [39][40] The village of Al-Khairiyyah was renamed Kfar HaMesubim as part of a national initiative to give Hebrew names to Jewish settlements, thereby signifying new birth and effectively eliminating the lands' indigenous heritage.[41] However, the new name did not last and the place was always known as Hiriya.[42] Thus, the ruins of the former Arab village accommodated immigrants who arrived in Israel in 1949—1950, and the transit camp accommodated those that came in 1951—1952. In the summer of 1952, the two

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[36] Hamefakeach hasanitary el Y. Nasibi, mazkir ha'ir, (25 November 1949), Tel Aviv Municipality Archive 1362; Hatipul be-ashpa ha'ironit – maskanot ve vaada haben misradit, (23 February 1950), Tel Aviv Municipality Archive 5/4/2; Tosefet le'heskem, July 1968, Dan District Towns Association Archive (DDTAA).

[37] Balslev, Historia Svivatit Ironit Be-Eretz-Israel ba-Machatzit ha-Rishona shel Hamea Haesrim: Tel-Aviv Kemikre Mivchan, 1909-1948, PhD diss., Tel Aviv University, 2017, 205.

[38] Many of the Zionists who arrived in Palestine brought European urban planning concepts, such as the City Garden by Ebenezer Howard and Tel Aviv's famous urban plan during the British Mandate designed by British architect Parrick Geddes. In addition, many German architects implemented Bauhaus concepts around the country, among them Arie Sharon who subsequently designed Israel's first national master plan. See: G. Biger, A Scotsman in the first Hebrew city: Patrick Geddes and the 1926 town plan for Tel Aviv, *Scottish Geographical Magazine* 108(1) (1992) 4-8; M. Zaidman and R. Kark, Garden cities in the Jewish yishuv of Palestine: Zionist ideology and practice 1905—1945, *Planning Perspectives* 31(1) (2016) 55-82; A. Nitzan-Shiftan, Contested Zionism-alternative modernism: Erich Mendelsohn and the Tel Aviv chug in Mandate Palestine, *Architectural History* 39 (1996) 147-180.

[39] No documents showing the precise date were found in the archives.

[40] Transit camps (*maabarot* in Hebrew) were temporary settlements, established in Israel in the 1950s, usually on the outskirts of established towns, to provide housing for immigrants who arrived during the great wave of immigration following the establishment of the state of Israel.

[41] Vaad kefar ve-ma'abarat Hiriya el misrad hapnim, (11 June 1952), National Archives file 3 – 1973/71. On the replacement of Arabic names in post-war Israel/Palestine, see: M. Benvenisti, *Sacred landscape: the buried history of the Holy Land since 1948*, 2000; M. Azaryahu and A. Golan, (Re) naming the landscape: the formation of the Hebrew map of Israel 1949-1960, *Journal of Historical Geography* 27(2) 2001 178-195.

[42] On sites which retained their Arabic names and were seen in a negative light: G. Huneida, Heichan kulam!: dialectica shel mechika ve-bniya be-proyekt ha-coloniali ha-tzioni, *Zmanim* 138 (2017) 102-115.

communities numbered 1,329 adults and 700 children in all.[43] About two-thirds of the camp's residents were immigrants from Islamic countries, who hardly knew any Hebrew, had no social or family ties with Jews who had arrived before the war and were characterized by their cultural background which differed from that of the 'old' established society.[44]

A photograph (Fig. 8) from the fall of 1951 shows that some of the village houses had been rebuilt, the agricultural plots cultivated, the roads restored, and a large road had been paved east of the village. The most noticeable change in the landscape is the large transit camp to the west, its southern border tangential to the Ayalon River. Close to the village, one sees tents next to rows of canvas structures and several public buildings (a school, preschool and clinic), toilets and showers.

In the meantime, the proposed plan for the garbage site raised considerable concerns among residents, doctors and the Medical Association, who all protested against the establishment of the landfill site in the vicinity of the camp and the village.[45] Nevertheless, on 8 February 1952, the plot was reserved by the planning authorities for waste collection and a compost plant for Tel Aviv. On the same occasion, the Ministry of Transportation, Postal Services, Telegraph and Radio was allocated most of the built-up sections of the village and surrounding areas for a radio station — a decision which sealed the fate of the site.[46]

On learning from the newspaper that a landfill was about to be established nearby, the Hiriya Residents' Council expressed surprise at the decision that had been made without consulting the thousands of residents already living in extremely unhygienic conditions. They begged the authorities not to establish the landfill, and threatened to oppose it by every means at their disposal.[47] The deputy mayor replied that the location of the garbage site had been decided about a year earlier by an inter-ministerial committee, and that the site would not pose a hazard.

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[43] Kfar HaMesubim Council to the Ministry of the Interior, Dept. of Immigrant Settlements, 11 June 1952, I.S.A., C-71/1973; N. Elhanani, Chairman of the Village Council, to D. Rosen, Director of the Dept. of Immigrant Settlements, Ministry of the Interior, 17 March 1953, I.S.A., C-61 - 1973; Village Council to the Dept. of Immigrant Settlements, 26 September 1952, I.S.A., C-71/1973.

[44] M. Katchensky, Ha'ma'abarot, in: M. Naor (Ed), *Olim ve-Ma'abarot – 1948-1952*, Jerusalem, 1986, 75.

[45] Tosefet le'heskem, July 1968.

[46] Letter from I. Rokah to Y. Gurion, Director of the Development Authority, 10 January 1952, Tel-Aviv Municipal Archive 5 / 4 / 2; Parti-cal me'yeshivat hamelia shel reshut hapituach, 8 February 1952, 425 S41, C.Z.A; Haktza'at karka le'isuf ashpa ve mifal compost be'Hiriya, 26 February 1952, DDTAA.

[47] Kfar HaMesubim Council to the Tel Aviv Municipality, 23 April 1952, I.S.A.

In his letter, the mayor also reprimanded the representatives of the transit camp for the harsh language they had used in their letter.[48]

The residents did not give up, however, and pointed out that not a single doctor had been present on the inter-ministerial committee, and that at the time of the decision the site was deserted but it had since been populated. They further noted that although they resided in ramshackle housing in an outlying district, their health and dignity were as important as those of any other citizen.[49] They appealed for help in another letter to the Ministry of Health, explaining that many of them were immigrants from Middle Eastern countries, suffering from various illnesses, which would only be exacerbated by the landfill.[50] The Ministry of Health replied that once the waste-treatment plant was established, it would eliminate hazards to those living just a few yards away, and even more so to the residents of the Hiriya transit camp.[51]

On a different front, residents of the transit camp had to contend with the winter flooding of the Ayalon River (Fig. 9) and with the authorities' efforts to eliminate the camp itself.[52] Over 700 families in Hiriya lived in dilapidated tents of various kinds that were not replaced with wooden barracks, as had been the case in other transit camps in the area. The fall of 1952 was one of strikes and demonstrations in many of the transit camps in Israel, allegedly led by the Hiriya camp residents, who lamented the shameful way they were being treated by the authorities and asked for financial support to move to permanent housing. They were told that Hiriya camp was exposed to floodings, and that it was intended for a radio station. In addition, all camps on the Lydda-Tel Aviv route would be eliminated, as they make the country's main transportation road unsightly.[53]

At the same time, and despite repeated protests by the residents of the village and the transit camp, on 15 February 1953 the process of transferring Tel Aviv's garbage to its new location

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[48] Deputy Mayor of Tel Aviv to the Hiriya Village and Transit Camp Council, 8 May 1952, I.S.A., C-72/1973; Director of the Sanitation Dept., Ministry of Health, to the Village Council, 15 May 1952, I.S.A., C-72/1973.

[49] Kfar HaMesubim Council to the Tel Aviv-Yafo Municipality, 18 May 1952, I.S.A., C-72/1973.

[50] Hiriya Village and Transit Camp Council to the Ministry of Health, 18 May 1952, I.S.A., C-72/1973.

[51] Dept. of Sanitation, Ministry of Health to the Dept. of Immigrant Settlements, Ministry of the Interior, 26 May 1952, I.S.A., C-72/1973.

[52] Based, on interviews with Hiriya transit camp tenants: Viza Meir, 8 December 2019; Shosh Avraham, 12 December 2019; Ezra Shaked, 15 December 2019; Latif Dori, 15 December 2019.

[53] Mishlachat Ma'abarat Hiriya el yoshev-rosh ha'knesset, sarim, miflagot ve-itonut, (25 October 1952) Archion Hamedina G-1900; Alafim shavtu ve-hefginu ba'maabarot betviaa lehachlif ohalim betzrifim ve-shikun-keva, *Kol Ha'am* (28 October 1952) 1; Shevitot ve-hafganot ba-ma'abarot, *Maariv* (27 October 1952) 1.

at Hiriya began. The Tel Aviv Municipality issued a tender for proposals for the waste treatment pending the establishment of Green & Co.'s plant.[54]

An aerial photograph from the summer of 1956 shows that the village area and parts of the transit camp had shrunk (Fig. 10), while to the west, the Shalem Farm, with its extensive agricultural fields, is highly visible. The most dramatic change in the landscape is at the confluence of the two streams. Small hills have appeared on what used to be a plain, with roads, paths, trees, and service buildings beside them. Such was the appearance of the nearly four-year-old landfill from the air.

The temporary method of treating waste in Hiriya in those years did not solve the residents' problems.[55] The newspapers reported that doctors were buckling under the strain of patients complaining of inexplicable fatigue, nausea and other ailments, which were linked to the noxious fumes wafting in from the landfill. Tel Aviv's mayor at the time, Haim Lebanon, remarked that it had not yet been proved that anyone had died as a result of these problems. The press of the time noted that it was incomprehensible why the Tel Aviv Municipality did not build a closed incinerator, where all the garbage could be burned without the odors plaguing the surroundings — as was done in other cities around the world.[56]

The agreement between the Tel Aviv Municipality and the compost firm was extended and in 1956, a small experimental plant for waste-to-fertilizer was established with the aim of developing it further (Fig. 11).[57] In 1958, the agreement with Daman, which had purchased the rights from Green & Co., was extended and, later that year, Daman announced that it had received the credit to purchase the necessary equipment from the Dutch firm Dorr-Oliver but

[54] Me'boker le'boker – me'Dan ve ad Eilat, *Haboker* (10 March 1953) 3; Ha'ashpa be'Gush Dan – deshen ashir, *Haboker* (19 August 1955) 7.

[55] Green & Co.'s temporary waste-treatment method included separating the trash into organic and non-organic streams, crushing the organic matter in machines, stacking it in mounds and watering it, so that within a few hours it fermented at a high temperature that was supposed to destroy all the fly larvae that had developed. In addition, aerobic fermentation was carried out using oxygen and turning the mounds every few days to prevent bad odors and gases. See: D. Sneh, Director of the Housing Dept. at the Ministry of Labor to Akiva Govrin, Chairman of the Labor Committee, 24 June 1955, Issue-9/54173; Hetzi million-ton ashpa toseset, *Zmanim* (4 August 1955) 4.

[56] M. Geffen, Ha'mizbela ha'ironit marila alaphei toshvim be'Tel Aviv, *Al-Hamishmar* (6 June 1955) 2.

[57] Deshanim organim el hanhalat ha'iriya, (31 January 1963), Tel Aviv Municipality Archive, 5/3/2.

had not yet obtained the necessary permits (see below). In the meantime, five firms were licensed to treat the old, dry waste, but were prohibited from treating fresh waste.[58]

Throughout the 1950s, complaints and demands to relocate the landfill continued unabated, and some turned into lawsuits.[59] The largest was submitted in 1959 by thirty residents from the transit camp and Tel Aviv. Among the witnesses were doctors who attested to the health damage caused by the gases spreading from the landfill into the city, and city residents who complained of difficulties sleeping and concentrating, along with dizziness, nausea, suffocation, loss of appetite and fatigue because of the smells.[60] But the most troubling testimonies were those of the transit camp residents who told of garbage trucks arriving every five minutes, jackals and snakes, cockroaches in their food, and fires that lasted for days on end — and all within one hundred yards of a school and preschool.

However, the Tel Aviv Municipality's lawyer brought in dozens of witnesses, including professors of medicine, zoology and hygiene, who argued that the existing system at Hiriya was satisfactory, and that during their visit to the site they had been impressed by its cleanliness and orderliness. A chemist and two doctors of public medicine argued that dry garbage does not spread odors beyond twenty feet and that garbage fumes and smoke do not cause bronchitis. The judge accepted the expert testimonies that the existing method was adequate.[61]

In the meantime, the company that won the contract to process the waste had difficulty obtaining the permits to purchase equipment. Thus, the starting date for construction of the

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[58] The following sources are taken from the DDTAA unless stated otherwise: The first agreement was signed on 30 June 1952 between the Tel Aviv-Yafo Municipality and Green & Co; on 19 April 1956 it was transferred from Green & Co to Daman, and transferred again on 23 February 1961 from Daman to Organic Fertilizers: Hoze chacira ben Rashut Hapituach le-Iriyat Tel Aviv, (20 November 1955); Hoze chacira 12395 ben rashut hapituach le-iriyat Tel Aviv (4 January 1957); Haarachat ha-hoze le-ibud ha'hashpa ha'tria lezevel organi (1 April 1958); Mifal le'ibud ashpa ironit (22 September 1958); Duman ba'am el iriat Tel Aviv, ishur al kabalat ashrai (18 December 1958); Ishur chachirat karka le'hakamat mifal le'miyun ve-ibud ha'ashpa be-Hiriya (22 May 1960); Tosefet la'heskem me-30 June 1952 ve-tosefet la'heskem me-27 June 1960 ben iriyat Tel Aviv le deshanim organim hevra ba'am (July 1968). Ha'mifal le-ibud ha'ashpa shel Tel Aviv-Yafo yukam toch shnatayim, *Shearim* (27 May 1958) 3; N. Lavie, Inyaney ha'rechot sviv Tel Aviv, *Haaretz* (10 August 1958) 2; Nechtam ha'heskem le'hakamat ha'mifal le'ibud ashpat ha'ir, Tel Aviv (nd), Tel Aviv Municipality Archive, 5/4/2.

[59] Letters to the Editor, *Davar* (6 June 1957) 2; Letters to the Editor, *Davar* (23 June 1957) 2; Tovim haavarat mizbelet Hiriya, Lamerchav (17 November 1957) 4.

[60] Y. Sinai, Mishpat al rechot ra'im, *Herut* (29 May 1959) 6.

[61] Sinai, Mishpat al rechot, 6; Y. Sinai, Adam ve zevel – zevel adif, *Herut* (5 June 1959) 6.

treatment plant was extended indefinitely and it's opening repeatedly postponed. In May 1960 it was announced that the treatment plant would be established within a year and a half.[62]

Given these conditions, it is hardly surprising that anyone who could left the area. In the summer of 1955, there were 414 families (around two thousand people); in 1956 only 280 remained. An aerial photograph from early 1958 (Fig. 12) reflects the precipitous decline of the village, and the continued growth of the landfill.[63] An aerial photograph from 1959 shows that only two of the village houses were still standing, nearly all the transit camp structures had been dismantled, and several more paths and trees had been added to the landfill (Fig. 13). A 1963 photograph reveals that not a single house in the former Arab village remained, the transit camp had been completely dismantled, and a large structure had been erected in the landfill; next to it were rows of elongated mounds centered around a narrow device that was spreading the organic waste in a circle (Fig. 14).

Landscape as an Agent of Modernity

Infrastructure projects are technological projects born of a growing urbanism and established for the benefit of town and country residents. The infrastructures established by imperialist countries in their colonies symbolized their power as occupiers, and were intended to stand out against the dilapidated local infrastructures.[64] But when the universal solutions embedded in colonial agendas and practices and based on an allegedly defined order and rules becomes an uncontrollable environmental hazard, the infrastructure becomes a key factor in violating the landscape and its histories, and a danger to human life.[65] A failing infrastructure, therefore, not only perpetuates civic deprivation, but often carries the symbolic function of taking control of

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[62] The following were found in the DDTAA: Heskem chachira, 20 November 1955; Heskem chachira No. 12395, 4 January 1957; Harchavat hachoze le'ibud haashpa hatria lezevel organi, 1 April 1958; Mifal le'ibud ashpa ironit, 22 September 1958; Ishur al teudat ashrai, 18 December 1958; Ishur chakirat karka le'hakamat mifal le'miun ve ibud haashpa be'Hiriya, 22 May 1960; Tosefet le'heskem, July 1968; Ha'Mifal le'ibud ha'ashpa shel Tel Aviv-Yafo yukam toch shnataim, *Shaarim* (27 May 1958) 3; N. Lavie, Inyaney ha' rechot sviv Tel Aviv, *Haaretz* (10 August 1958) 2; Ushar ha'heskem al machon le'nitzul ashpa, *Haaretz* (24 May 1960) 5.

[63] S. Sheva, 50,000 ha'nishkachim: ashpa neged anashim, *Al-Hamishmar* (10 June 1955) 3; Z. Matityahu, Or Yehuda likrat ha'horef ha'hamishi, *Al-Hamishmar* (29 November 1955) 2; Y. Hengali, Kosher Food Inspector at the transit camp, to Rabbi Orenstein, Deputy Director of the Ministry of Religious Services, 3 June 1956, Issue-17/6353, I.S.A; Ministry of Religious Services to the Ramat Gan Religious Council, 20 May 1959, Issue-8/6340, I.S.A.

[64] On visibility and infrastructure, see: A. Carse, Nature as infrastructure: making and managing the Panama Canal watershed, *Social Studies of Science* 42(4) (2012) 539-563; R. Mrázek, *Engineers of Happy Land: Technology and Nationalism in a Colony*, New Jersey, 2018.

[65] Such processes characterize the post-World War II era in which infrastructure took precedence over the landscape, and centralization and technocracy sidelined ecological and social concerns. See: P. Bélanger, Landscape as infrastructure, *Landscape Journal* 28 (1) (2009) 79-95.

nature and disciplining citizens.[66] The composting plant in Hiriya was supposed to solve the waste problem in a modern technological fashion, to produce agricultural fertilizer and to become the jewel in the crown of a national enterprise. It was based on a vision of modernity and economic efficiency achieved through technology, and accorded with the agriculture-oriented Zionist vision of an effective means of removing waste from the city.[67] This was a continuation of the approach to urban waste treatment initiated during the British Mandate. But the delayed and failed opening of the plant made a mockery of that lofty vision, and Hiriya became a symbol of failure in waste treatment and a stark example of failed infrastructure. The waste that was supposed to be safely channeled away from the city ended up as foul air plaguing the heart of the metropolis.[68] Hiriya, is, therefore, an example of how infrastructures must be examined in terms of their political, economic and social functions.[69]

The photographs and written documents about Hiriya attest to a rapid takeover of the area, which its new owners saw as empty land, or which they acted to empty thereby eliminating its human heritage. They attest to the agendas of the Israeli authorities who promoted a particular vision of the young state and its conflicting values of rapid housing development, agriculture

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[66] On the political and social aspects of infrastructures, see for example: Larkin, Politics and poetics of infrastructure; S.J. Collier, *Post-Soviet Social: Neoliberalism, Social Modernity, Biopolitics*, New Jersey, 2011. Vijay Gidwani states that 'waste', 'value' and 'property' were a triad at the heart of the colonial discourse in Bengal. 'Waste' represented a category of land for tax but also an approach to the native community and the superiority of the colonizers over the colonized. In that sense, 'waste' related to "'useless species': 'idle lands' and 'indolent behaviour', that had to be purged", only by the force of a good government, economy and industry. See: V.K. Gidwani, 'Waste' and the permanent settlement in Bengal, *Economic and Political Weekly* (1992) 39-46, 40, 44.

[67] Heike Weber states that until the 1970s, landfilling was way behind other scientific and technological developments, and the technology that produced items in the landfill were ahead of those that produced the landfill itself. Those landfills were a live experiment. It was only in the 1970s, with the rise of environmental awareness that science started focusing on landfilling (Weber, Landfills, modern).

[68] Hughes argues that infrastructure forms the foundation for operating large-scale modern economic and social systems that organize daily life. In his view, these systems start as small, independent entities, but when one controls the others, or when they combine to form a network, they become infrastructure. See: Hughes, *Networks of Power*.

[69] On the British imperial involvement in the establishment of the airport in Palestine, see: R. Shamir, British interwar airspace in the Middle East: the forgotten airport of Lydda, *Journal of Historical Geography* 76 (2022): 23-33; On the political and social aspects of infrastructures, see for example: Larkin, Politics and poetics of infrastructure; S.J. Collier, *Post-Soviet Social: Neoliberalism, Social Modernity, Biopolitics*, New Jersey, 2011.Vijay Gidwani states that 'waste', 'value' and 'property' were a triad at the heart of the colonial discourse in Bengal. 'Waste' represented a category of land for tax but also an approach to the native community and the superiority of the colonizers over the colonized. In that sense, 'waste' related to "'useless species': 'idle lands' and 'indolent behaviour', that had to be purged", only by the force of a good government, economy and industry. See: V.K. Gidwani, 'Waste' and the permanent settlement in Bengal, *Economic and Political Weekly* (1992) 39-46, 40, 44.

and the proposed solution to the problem of urban waste.[70] These aggressive processes reshaped the space, impacted society and demonstrated the material presence of urbanization. For the young state they were synonymous with 'development' and 'progress'.[71] Thus, historically, part of the area had been used for human habitation, but the landfill drove away all its residents.[72] Even when the residents of the village and the transit camp repeatedly asked to be recognized as a permanent settlement, the planning authorities decided that only the landfill would receive permanent status.[73]

The events that took place in the Hiriya area in the first decade of the state of Israel — the distribution of land to neighboring municipalities, with a large tract belonging to no local authority whatsoever, and the refusal to establish a permanent settlement — all clearly point to an agenda of leaving the landfill where it was and getting the people out. Moreover, the decision to dump the city's garbage in a former Palestinian village whose residents were displaced in an act of war, next to major roads and a transit camp, and not far from Tel Aviv-Yafo's poorest neighborhoods, inflicted incessant harm on an already weak and vulnerable population.[74]

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[70] On the Israeli transit camps as a modernist practice of planning and control by weakening the residents and eliminating their identity, see: R. Kozlovsky, Temporal states of architecture: mass immigration and provisional housing in Israel, in: S. Isenstadt and K. Rizvi (Eds), *Modernism and the Middle East: Architecture and Politics in the Twentieth Century*, Seattle, WA, 2008, 139-160.

[71] L. Porter and O. Yiftachel, Urbanizing settler-colonial studies: introduction to the special issue, *Settler Colonial Studies* 9(2) 2019 177-186.

[72] Based on interviews with Shalem Farm tenants Edna Kaploshnik on 7 November 2019, and Sarah Bash on 10 October 2019: The farm held possession of the land until the early 2000s, but its permanent occupants left in the mid-1960s and those who replaced them stayed only for short periods. Over the years, the farm's few residential buildings gradually fell into neglect and were abandoned. The HaZera company subsequently went from being a minor to a major player in the site's history, but that story lies beyond the scope of this article.

[73] So far, no images of the area in question have been found in the various photographic collections between 1951-1956, when the Tel Aviv Municipality began dumping its waste in Hiriya, thus sealing its fate for decades to come. The absence of aerial photographs highlights the importance of using a variety of archival and historical sources to clarify landscape-related issues.

[74] A municipal report from 1949 outlined the remote neighborhoods of Tel Aviv and their difficulties in being disconnected from the city center. The neighborhoods of south-east Tel Aviv suffered the most: poor sanitation, lack of infrastructure and inadequate public transportation. South Tel Aviv had been absent from the priorities established by the city, which had systematically degraded those areas in order to turn them into the metropolis's hazard zone. Moreover, Tel Aviv Municipality had let those neighborhoods die slowly by promoting big regional plans while ignoring the citizens' complaints, until those areas became inhabitable. This is similar to the events at Hiriya, where plans for household waste were prioritized over the residents' daily suffering. See: S. Rotbard, *Ir levana, ir shehora*, Tel Aviv, 2005, 121; N. Marom, *Ir im konseptsia: metachnenim et Tel Aviv*, Tel Aviv, 2009, 228, 235-238.

Locating the landfill specifically near these areas made Hiriya a clear case of environmental injustice.[75]

Reflections and Insights

Zionism was a rescue project for a people that had suffered racism, deportation and genocide, and that aspired to resettle in the country it saw as its historic homeland. This project was based on a profound transformation of the physical and social landscape that caused the displacement of indigenous Arab people and the repopulation of the country, thereby appropriating its resources and changing its histories. It also included the oppression of weak groups in Israeli society, mainly non-European newcomers.

Sanitary infrastructures (in this case, waste) are often a means of devaluing lands and societies. Constructing a landfill on the ruins of an Arab village, and in proximity to a transit-camp, is an extreme case of such devaluation.[76] While Tel Aviv, the new settler city, was perceived as modern, liberal and democratic, connected to global markets and agendas, its urban infrastructures played a central role in the displacement and elimination of indigenous geographies. The manner in which Tel Aviv dumped its waste outside the city existed well before the founding of the state of Israel. Establishing the landfill at Hiriya expresses, therefore, the shift from a colonial to a post-colonial phase while maintaining imperial methods and plans.

Locating the landfill at Hiriya was made possible by the large tracts of land that the new state now controlled. These areas have undergone rapid and sweeping change, ethnically, socially, spatially and scenically; they soon became a no-man's-land blighting the lives of everyone around them. The Hiriya landfill entrenched the symbolic boundaries between those forced to suffer its adverse effects and those who remained beyond its malign influence, and effectively

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[75] The term 'environmental justice' refers to the application of social justice to environmental issues. Proponents of this movement point to an unequal distribution of environmental hazards among different population groups, with the vulnerable being exposed to higher levels of environmental pollution due to their proximity to pollution sources, which become 'sacrifice zones'. Disposal of waste in landfills reduces pollution in cities and enhances public health and quality of life, but it is harmful to the population living nearby. Studies conducted in the United States have shown a clear link between the location of landfills and waste dumps and the dwellings of vulnerable populations — especially racial and ethnic minorities — to a degree that is disproportionate to their percentage of the general population. See for example: R.D. Bullard, Solid waste sites and the black Houston community, *Sociological Inquiry* 53(2-3) (1983) 273-288; C. Lee, *Toxic Waste and Race in the United States*, Oxfordshire, 2019, 10—27; A. Hurley, *Environmental Inequalities: Class, Race, and Industrial Pollution in Gary, Indiana, 1945-1980,* North Carolina, 1995; D.N. Pellow, *Garbage Wars: The Struggle for Environmental Justice in Chicago*, 2004.

[76] On the Palestinian case and how the built environment and urban infrastructure are used in the formation of Israel, see: S. Stamatopoulou-Robbins, *Waste Siege: The Life of Infrastructure in Palestine*, 2019; E. Weizman, *Hollow Land: Israel's Architecture of Occupation*, 2012; O.J. Salamanca, Assembling the fabric of life: when settler colonialism becomes development, *Journal of Palestine Studies* 45(4) (2016) 64-80.

defined the center and the margins.[77] Thus, multi-layer margins were created in the heart of Israel. This is no wonder, as waste plays a central role in establishing the relations between centers and peripheries, thus maintaining the unity, functionality and continuity of the center. It enables the political-economic and social system to persist, untroubled and unthreatened. Moreover, these margins emphasized crucial aspects of the daily functioning of the new state, and were thus not marginal but central to environmental-social governance.[78] Furthermore, in this process, human beings also became redundant and disposable, to be kept out of sight and out of the sociopolitical order. Vinay Gidwani claims that certain people, places and products are disposed of as wasteful and redundant, and he related this transformation of common property to profit-seeking societies in which other forms of value are subordinated to the accumulative logic.[79] It was only in the late 1990s, with the decision to stop dumping waste at Hiriya, rehabilitate the site and turn it into a park, when the area's fate took a new turn.[80]

The combination of aerial photographs and written documents demonstrates how, prior to and at the start of the British Mandate, the mosaic of the Hiriya area was transformed in a sequence of changes with a gentle human intervention into a delicate system of agricultural activity that relied on the benefits of water and fertile soil. During the years of the British Mandate, the area saw vast growth in settlement and citrus cultivation.[81] The landscape mosaic created in the early 1950s, however, was a patchwork of entities that disregarded local landscape conditions and trampled over its organic elements. In this violated landscape, the legacies of the Arab village residents who had lost their homes, property and land, was erased in a political-cultural act; the presence, life and culture of the residents of the transit camp — all refugees from pogroms in Islamic countries and the holocaust in Europe who were displaced again and again — were eliminated as well, leaving no trace of the Arab village, the transit camp or the natural landscape that had accommodated them. With them went the finely tuned lifestyles that had

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[77] P. Bourdieu, The market of symbolic goods, *Poetics* 14(1-2) (1985) 13-44; P. Bourdieu, *Distinction: A Social Critique of the Judgement of Taste*, London, 1984.

[78] S. Randeria, Global designs and local life worlds: colonial legacies of conservation, disenfranchisement and environmental governance in postcolonial India, *Interventions* 9(1) (2007) 12-30.

[79] V. Gidwani, Six theses on waste, value, and commons, *Social & Cultural Geography* 14(7) (2013a) 773-783.

[80] For the international competition for the rehabilitation of Hiriya, which took place on 2004, see: G. Limor-Sagiv and N. Lissovsky, The trash has gone–the trash Mountain remains: a new look at the international design competition for the rehabilitation of the Hiriya landfill in Israel. *Landscape Research*, (2023b) 1-21.

[81] On the changes in the geography of the area, see: Kark and Shay, *Summary of a Geographical and Historical Survey* 2001. As landscape ecologist Richard Forman points out, the landscape is a mosaic of local ecosystems — topography, solar conditions, water sources and soil types. See: R.T.T. Forman, 'Foundations', land mosaics: the ecology of landscapes and regions, in: F.O. Ndubisi (Ed), *The Ecological Design and Planning Reader*, Washington, DC, 2014, 222.

been forged to suit life in a seasonal floodplain of clay, *hamra*, sand and *kurkar* soils. The landscape at Hiriya is a case of political, social, ecological and cultural violation so blatant that the site that emerged became a byword for destruction.

In sum, the events that occurred in just a few years on a relatively small tract of land, reflect much longer and broader historical processes.[82] They show how the empirical materials collected from a liminal territory of Israel that reshaped the landscape demonstrate highly complex, political and global elements. Hiriya is therefore a clear example of aggressive landscape-changing processes and their implications on various groups in society.

[82] On hidden political agendas within the landscape, see: D.E. Cosgrove and S. Daniels (Eds), *The Iconography of Landscape: Essays on the Symbolic Representation, Design, and Use of Past Environments,* Cambridge, 1988; D. Mitchell, Cultural landscapes: the dialectical landscape — recent landscape research in human geography, *Progress in Human Geography* 26(3) (2002), 381-389.

Figures

Fig. 1. Hiriya Landfill, 2004. Source: Dan Region Association of Towns

Fig. 2. Survey of Palestine, 1946. Source: Eran Laor Cartographic Collection, The National Library of Israel

Fig 3. The villages of Al-Khairiyyah, Saquia, Yazur and Salama. British map from 1935. Source: Israel govmap, www.govmap.gov.il

Fig. 4. Al-Khairiyyah village from an observation post on the Ayalon River. Source: Village Yazur file, The Haganah Historical Archives, 8/Kfar/2

Fig. 5. The village of Ibn Ibraq (Al-Khairiyyah), 1918.
Source: Bavarian 304 Squadron. Younes & Soraya

Fig. 6. Al-Khairiyyah village, 12 December 1944. Source: Maps Collection, Geography Department, Tel Aviv University

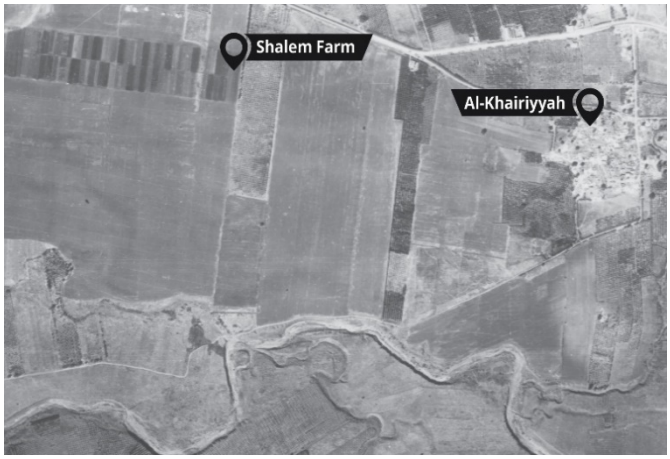

Fig. 7. Destroyed village of Al-Khairiyyah and Shalem Farm, 1 January 1949. Source: Survey of Israel

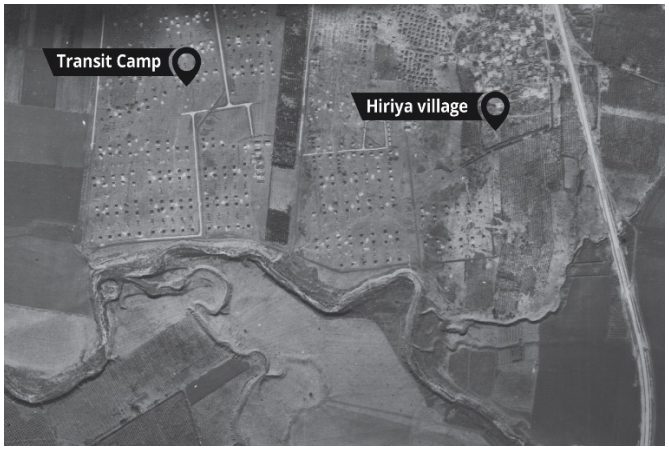

Fig. 8. Hiriya village and the transit camp, 11 November 1951. Source: Survey of Israel

Fig. 9. Floods in the Hiriya Transit Camp, 1955. Source: Central Zionist Archives

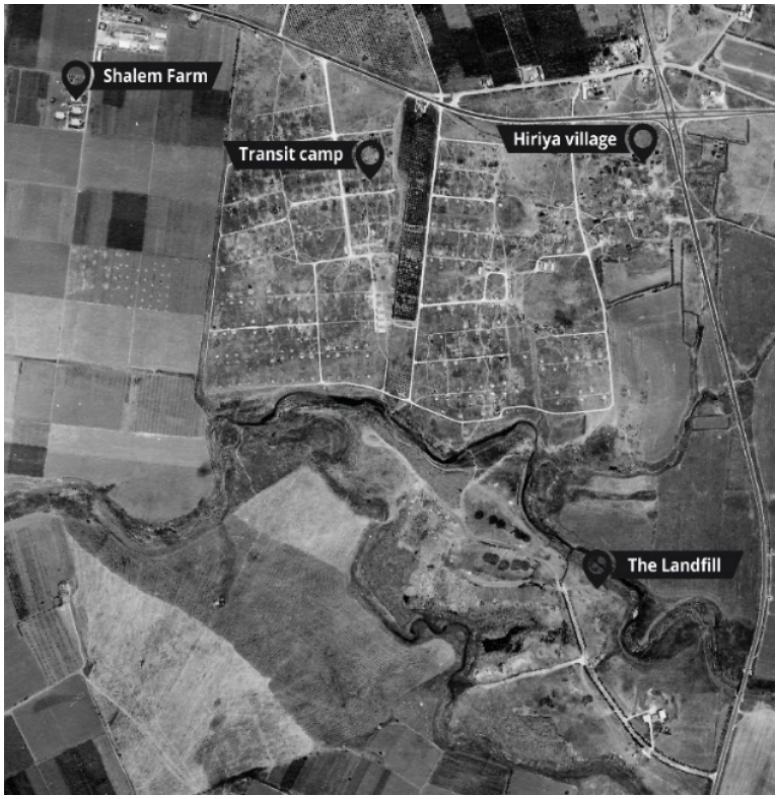

Fig. 10. Hiriya village, transit camp, Shalem Farm and the landfill, 3 August 1956. Source: Survey of Israel


מראה המכון הנסיוני לקומפוסטציה בתל־אביב. בפנים הבנין מכונת ריסוק האשפה, ומשמאלו תחנת סטישים בליסטית.

Fig. 11. Hiriya compost plant, 1956. Source: Hillel Shoval, courtesy of the photographer's family

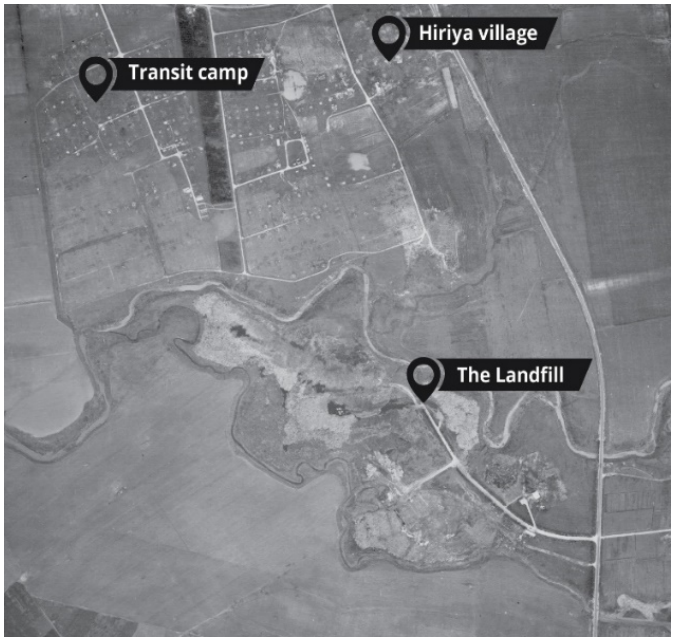

Fig. 12. Hiriya village (top right), transit camp (left) and the landfill, 9 January 1958. Source: Survey of Israel

Fig. 13. The landfill and transit camp, May 1959. Source: Maps Collection, Geography Department, Tel Aviv University

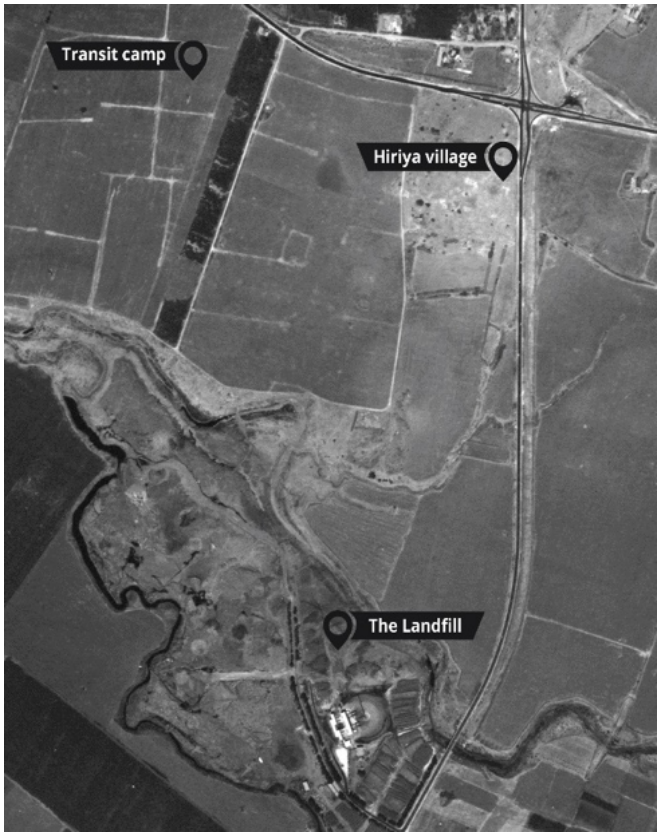

Fig. 14. The landfill, transit camp and the remains of the village, 1963. Source: Maps Collection, Geography Department, Tel Aviv University

2.2 THE REHABILITATION OF HIRIYA: INTERNATIONAL DESIGN COMPETITION

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https://www.tandfonline.com/eprint/WCBRYT2ZSNHD4Y7PUKM8/full?target=10.1080/01426397.2022.2144181

Abstract

Hiriya landfill, in central Israel, served Tel Aviv for 50 years and became a byword for neglect and ugliness until it was recently transformed from an environmental hazard, into a beautiful park. This article explores the idea and experience of waste, as concept and matter, and its representations in the 2004 international design competition for Hiriya's rehabilitation. Addressing the global issue of rehabilitating wasted sites, the competition encouraged landscape architects to address a polluted past and outline new cultural and ethical meanings in the reclaimed public space. Drawing from unexplored textual and visual sources, and combining landscape architecture with cultural studies on waste, we reveal that few of the 14 proposals touched upon the complexity of waste, with its cultural, ethical and social attributes. The winning entry by Peter Latz turned the mound into a striking monument to trash, but minimised the visitors' idea and experience of the waste itself.

Keywords: Hiriya, Landfill, Landscape Architecture, Competition, Culture and Waste, Nature Park, Landscape Rehabilitation

Introduction

Hiriya, the main rubbish dump in Israel, is situated at the country's most central point, on the outskirts of the Tel Aviv-Yafo metropolis and the confluence of the Ayalon and Shapirim rivers. It is a huge mound, rising to 200 feet, extending over 112 acres, and its unique silhouette became a familiar sight to passersby on Israel's main highways 1 and 4, and to passengers landing or taking off from nearby international Ben Gurion Airport, the main point of entry to Israel. Hiriya's role as greater Tel Aviv's main landfill began shortly after the founding of the

State of Israel in 1948, and soon it became a blight on the environment and the landscape, and hazardous to health and to the quality of life of the residents of the area.[1]

Hiriya has even become synonymous with stench and filth, evoking the Hebrew slang word *hara*, meaning 'shit'. The stench from the site extended over ever-greater distances, outlining geographical and symbolic boundaries between those living nearby and those who escape its effects (Bourdieu, 1984, 1985). A dramatic turn occurred in 1998, when the government decided to stop dumping garbage at Hiriya, thus bringing to an end 50 years of accumulated waste and stench, and giving a new future to the area's disadvantaged residents and the violated landscape.

Waste, as a product of our consumer culture and a producer of sociocultural processes, has been the focus of various studies in the last decade (Hawkins & Muecke, 2002; Douglas, 2003; Bauman, 2004; Hawkins, 2006; Gille, 2007; Thompson, 2017). Waste exposes social values and agendas—some are visible, others hidden or unconscious. This article examines the complex, obscured place of waste as revealed in the 2004 international design competition for Hiriya's rehabilitation. The competition, the biggest of its kind in Israel, addressing a currently hot topic, constituted a rare moment when landscape architects, as agents of culture, addressed our offensive polluting past and outlined our future public spaces.[2]

The story behind the competition is hidden in dusty archives and was never before fully explored.[3] We uncovered a host of sources such as correspondence, protocols, engineering reports, design workshop, and professionals' notes, and compared them with competition proposals and in-depth interviews with the competition participants and judges.[4] Combining these textual, visual and oral resources, we looked in particular into the ways in which the issue of waste as a physical material, a concept, and a planning experience was confronted in the competition proposals and the judges' criteria. This framework of exploration can serve as a

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[1] About the construction of the landfill in the early 1950s see**:** Limor-Sagiv, G. and Lissovsky, N. (2022). Krisato shel nof: Hiriya ba'asor harishon la'medina, *Cathedra,* 182, 111-138. (In Hebrew).

[2] The article's focus is on the competition. Implementation of the winning proposal took over a decade and was the result of a rare cooperation between several governmental authorities. This is beyond the scope of this article but it is fully explored in another (forthcoming).

[3] On previous studies on the competition see: Alon-Mozes, 2009 and 2012, in which she examines the tension between the local and the global in the competition proposals and discusses the emergence of environmental thinking in Israel as exemplified in the Hiriya affair; See: Lawson, (2015), in which he analyses three large landfills which underwent rehabilitation and were turned into ambitious parks: Fresh Kills in NYC, Keele Valley in Toronto and Hiriya in Tel Aviv. In a personal essay titled "Hiriya: On stench and beauty" (2010) (Hebrew), Martin Weyl describes the events surrounding the turn of Hiriya.

[4] We confirm that all interviewees have agreed for extracts to be published and for their identities to be known.

reference for the study of landfill rehabilitations and the creative and advanced ways in which the 'negative' industrial past should be integrated and enhanced in modern cultural landscapes.

Moreover, since waste is a major cause of greenhouse gas emissions, research on landfill rehabilitation is urgent and challenging around the globe. While the world's wealthiest countries are investing in solutions to trash mountains, in developing countries about 90% of waste is still dumped in open sites or incinerated (Kaza et al., 2018). Israel is an outlier: signatory to the Paris Accords (2015) to reduce greenhouse gas emissions, nonetheless it is one of the worst offenders among Western countries in terms of waste production, with over 80% of its waste still (in 2022) in landfills emitting gasses. Understanding the role of waste rehabilitation may contribute to sustainable planning and management of landfills and brownfields in Israel and around the world. In this article, we will first briefly describe the issue of landfill rehabilitation, the history of Hiriya's rehabilitation and the introduction of the otherwise-undiscussed theme of waste into the public discourse. We will then concentrate on the international competition, the proposals and the insights derived from it.

From hazard to leisure

Together with the decision to terminate the landfill operation in 1998, the Israel Planning Administration decided to convert some 2000 acres surrounding Hiriya into a metropolitan public park with advanced green infrastructures to support urban needs.

Located at the heart of an otherwise highly dense urban conurbation, the site had been left undeveloped due to unique historical circumstances, which had designated it as a floodway and hydrologic supporting structure for the expanding cities (Lydda District Regional Outline Planning Scheme, 6, 1942, Ministry of the Interior, Tel Aviv Planning Bureau) during the British Mandate. The new conversion plan protected the area from future construction and preserved it as a green lung for southern Tel Aviv. The newly named Ariel Sharon Park, after the prime minister who had pushed for its initial creation, was inaugurated in 2007.

Thus, Hiriya joined other internationally more familiar landfills that posed environmental, health and scenic hazards, and which were also rehabilitated and transformed. The best known of these is Fresh Kills, which for about 50 years (1948–97) served as the main landfill of New York City's five boroughs. In the past decade, Fresh Kills has been evolving into a spacious park—designed and led by James Corner/Field Operations—after a complex ecological rehabilitation (Corner, 2005; Melosi, 2020). Similar examples include the Olympic Park in Munich (early 1970s), Stockley Park near London (late 1980s), Byxbee Park in Palo Alto

(1991) and Al-Azhar Park in Cairo (2005) which became a catalyst for the social, economic and cultural sustainability of a congested and financially strapped city. These and dozens of other landfills around the world have been converted from hotspots of pollution and disease into vibrant, green lungs of regeneration (Hansjakob & Grzimek, 1972; Walker & Owen, 2003; Krinke, 2003; Salama, 2008) and engendered scholarly discussion on planning wasted sites.[5] The creative design of Duisburg Park in Germany (a post-industrial site, not a landfill) designed by Latz between 1990-2002, and the Groundswell Exhibition at the Museum of Modern Art in New York that presented rehabilitation sites around the world, stimulated public interest.

Peter Reed, curator of the Groundswell Exhibition emphasized the role of landscape architects in 'reinventing' old and neglected sites. The museological presentation of projects that have undergone a transformation has further expanded the perception of the landscape and public awareness regarding the places in which we live, and has underscored their role as agents of change (Reed, 2005).

From the backyard to the Tel Aviv Museum of Art

Shortly after Hiriya stopped operating as a landfill, a groundbreaking initiative in the form of an international art exhibition addressing the rehabilitation of Hiriya was launched at Tel Aviv Museum, led by Dr. Martin Weyl—chairman of the Beracha Foundation and former director of the Israel Museum in Jerusalem. Weyl sought to open Israel up to international environmental and visual thinking and expand the discussion of waste—which hitherto had been limited to its environmental, health and social aspects—to the artistic realm (Weyl, 2010).

Part of the change in the essence of an object as it transforms into waste is its move to another site: the trash can or recycling bin and finally the landfill, all located at the margins, at the end of the street, or at the edge of the city (Gille, 2007). A representative of the cultural-artistic elite, Weyl wished to extend the symbolic boundaries of his milieu beyond the imaginary centre of Tel Aviv to include the underprivileged, disregarded sectors of the population in whose vicinity the waste is dumped. He used the power of art to transform the Israeli discourse and its agenda. When Hiriya—the icon of trash and embodiment of geographical, social and cultural fringes—is put on display in the Tel Aviv Museum of Art, its definition changes, as does that of the society that dedicates an exhibition to it, and reverses the normal course that garbage follows—taking it from the margins to the centre.

[5] See: Corner, 1999; Kirkwood, 2003; Berger, 2006; Meyer, 2007.

The exhibition (1999-2000) sought to bring new content and form to the trash mountain. It featured 19 works by local and international artists, architects, landscape architects and designers. Most of the works addressed garbage as a material and conceptual entity, and as a reflection of consumer culture and modern society's ills.[6] They also suggested various, even contradictory, visions of the trash mountain, some conceptual or even philosophical, others practical.[7]

The exhibition was also innovative in that it introduced into the debate the link between art and the public space by addressing an infamous open space that itself becomes an artwork. Thus, Hiriya is part of a long tradition of 'earth art' that cannot be placed within a museum, gallery or park, but is itself transformed into a site-specific work of art. The landscape of the trash mountain became a place, a material and a medium of artistic expression, and the artists became agents of healing and restoration of the violated land and nature (Smithson & Smithson, 1996).

The exhibition encouraged the idea of turning Hiriya into a park and led to collaborations between various bodies and interests.[8] In 2001, at an international design workshop, the park vision was presented with the trash mountain at its centre. The workshop sought a design that would promote the site as a place for recreation and education where the trash mountain would be a focal point and a symbol of environmental awareness and rehabilitation after years of destruction and neglect (Tochnit metar mechozit 5/3, 2004; Angel & Weyl, 2001; Plesner, Guggengeim & Kaplan, 2002).

In August 2002, another more limited workshop was held that included Peter Latz (Sadnat Tichnun, 2002). Alongside the artistic-architectural vision, consultations were held with specialists in waste decomposition in an effort to understand the changes the trash mound would undergo, and to formulate appropriate recommendations to stabilise it. The huge quantity of waste at the site precluded its removal, and the steep slopes required stabilising to prevent another collapse of waste into the Ayalon River, as had happened in 1997-98. The

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[6] For information on the Hiriya exhibition, see: M. Weyl (Curator), *Hiriya in the Museum*, Tel Aviv Museum of Art, 2004.

[7] Landscape architect Shlomo Aronson sought to establish a bird park whose structure would consist of pipes that pumped out the methane gas trapped in the landfill. Architects Ulrik Plesner and David Guggenheim, and urban planner Mordechai Kaplan, proposed turning the no-man's-land surrounding the trash mountain into a nature park.

[8] The exhibition brought together the Dan Region Towns Association, the Beracha Fund, environmental organisations, heads of local authorities and government ministers. Meanwhile, the Tel Aviv District Planning Committee, headed by Naomi Angel, sought to merge the undeveloped areas of Hiriya with a view to turning them into a metropolitan park, and to create infrastructure for runoff and flooding. This would be coupled with efforts, which had begun in early 1998, to rehabilitate the Ayalon River that flows to the foot of the trash mound.

decision was made to maintain Hiriya's familiar profile as a prominent landmark by bolstering the existing slopes to create more moderate inclines (Plesner et al., 2002).

In January 2003, a workshop was held with 30 planners from Israel and abroad, with the aim of developing a master plan for the park. Besides rehabilitating the trash mound, the plan would give prominence to a new recycling park and centre for environmental education, which were slated for construction at the foot of the mound, together with a waste transit station (Angel & Weyl, 2004). Although public discourse on environmental issues was just emerging at the time, waste as an outcome of an economic-cultural, global and national system was centre-stage in the planners' vision. The education and recycling centre were included in the preliminary stages, acknowledging that artistic and architectural information may not necessarily change habits, and something more profound was required.

The design competition and the elusiveness of waste

To raise public awareness, an international competition for the redesign of the trash mountain was announced in September 2004. The design guidelines emphasised the park's purpose as a place of recreation and leisure, a landmark and national symbol, and a means of developing environmental awareness, rehabilitation and renewal. It was agreed that, rather than incorporating any formal sports facilities, the new park would encourage nature activities. Priority would be given to proposals that included artists' input, to simple humanistic designs involving natural and recycled materials, and to plans embodying a vision of optimism and even fantasy while preserving the landscape (Memorandum, 2004; Public competition with invitees, 2004). A detailed engineering brief included guidelines for stabilising the slopes; treating leachate and runoff that could contaminate the soil, groundwater and nearby streams; an explanation of methane gas treatment emanating from the waste, and safety rules for visitors.

Surprisingly, the waste itself—the very stuff of the mound and the primary reason for the design—was not mentioned explicitly or implicitly in the guidelines. This is all the more striking since the mound's table-like contour and the enormous pile of foul-smelling, polluting waste were familiar to everyone. Was the waste not mentioned because it was self-evident, or was this indicative of a conscious or unconscious desire to repress this aspect of the site's past?

Fourteen proposals were submitted to the competition, mostly from design firms who had been invited to tender: Shlomo Aronson, Braudo-Maoz, Segal-Raayoni and Dan Zur of Israel; Peter Latz of Germany; Vista of the Netherlands; Bargmann, Smith, Starr, Laderman-Ukeles of the

United States, and Manuel Ruisanchez of Spain. Some had also participated in the preliminary workshop. Other proposals were submitted after the competition was publicized in the media (see Appendix 1). Each (anonymously submitted) proposal comprised four panels and a text that presented the park's vision.

The jury, chaired by Niall Kirkwood of Harvard University,[9] included architects Baruch Baruch and Adam Mazor, landscape architect Tamar Darel-Fossfeld, art curator Suzanne Landau and former Supreme Court President, Meir Shamgar—the latter as a public representative who lent the proceedings an air of state authority. The jury's decision was published a month later, and the proposals were displayed at the Tel Aviv Museum of Art.

Most proposals preserved the mound's unique shape, and all incorporated engineering, hydrological and ecological aspects into the design. Some included the recycling and environmental education centres with a focus on the nature of waste, the history of the landfill and a future vision of recycling and waste-to-energy systems. However, although many preserved the site's *genius loci*, only a handful touched upon the issue of waste in the design, either in the visitor experience, or in an ideological-educational statement in the accompanying text.

The proposals

A careful analysis of the different proposals shows what we term "the absent presence" of waste. We first discuss entries which hardly touched upon the issue of waste, then those which discussed it in artistic or educational terms, followed by those that tried to confront the past and those that challenged the current discourse, and we conclude with the winning entry. We do not discuss entries which omitted the issue of waste altogether (expect for the second prize-winning proposal).

The design by Dan Zur and Studio de Lange (Proposal #16, Second Prize) completely concealed the trash mound by covering it with a green envelope, constructed on a symmetrical grid of thematic gardens. Benz Kotzen's design (Proposal #23, Third Prize) reconceived the mound as a butterfly park for diverse species that would embody a transformation of life in the

[9] Niall Kirkwood FASLA Chairman of the Department of Landscape Architecture, Graduate School of Design at Harvard University has studied the issue of waste management for many years, and has been involved in landfill rehabilitation projects around the world. Thus, he has continued the research and work of well-known landscape architect George Hargreaves. Kirkwood was among the first in the world to introduce the engineering-infrastructural element to the academic field of landscape architecture, thereby linking landfill infrastructure and ecology with design and culture (interview with Niall Kirkwood, 11 March, 2021). See: Kirkwood, 2003; Czerniak, Hargreaves & Beardsley, 2007.

wild. Formulating landscape as an aesthetic natural realm derives from eighteenth-century cultural attitudes towards beauty and sublimity. Both Zur/de Lange's and Kotzen's proposals demonstrate what scholar Vittoria Di Palma coined an 'anti-picturesque', a landscape that repels and therefore calls for transformation (Di Palma, 2014, 2017).

Some entrants devoted parts of the mound to educational exhibitions commemorating Hiriya, and created sculptures conceptualising waste. For example, Manuel Ruisanchez (Proposal #19), suggested turning the roundabout leading to the mound into a 'cultural link' that would both reveal 'garbage archaeology' and host temporary art exhibitions. Similarly, the MAS team (Proposal #18, Honourable Mention) suggested that the inclined entrance to Hiriya 'serve as a ramped exhibition space for displaying the archaeology of Israel's Waste Repository'. Although expressed in the text, this was not reflected in the design (interview with Matanya Sack, 13 April 2021).

Bruce Levin (Proposal #14, Third Prize) proposed the construction of a 32 ft. high 'waste wall' of solid, sorted waste girdling the top of the mound, with a steel base covered with layers of shredded concrete debris—glass, bottles, pulped rubber and tires—and topped with bundles of plastic waste to provide an observation deck overlooking greater Tel Aviv; this would be the highlight of the visit to the site (interview with Bruce Levin, 22 April 2021).

In a similar vein, Segal-Raayoni (Proposal #13) proposed reflecting the history of Tel Aviv's waste in a winding route up the incline, with windows at regular intervals displaying items characteristic of different periods in Israel's history. This proposal used waste as an inspiration for flexible structures that could adapt to changes in soil conditions and would be designed like snack wrappers (interview with Itamar Raayoni, 12 April 2021).

Notably, these proposals presented waste as an inert museum object, odorless and harmless, and almost the opposite of its actual ever-changing and environmentally hazardous nature. Proposing that the waste be sorted, arranged by type and placed behind glass also detached it from the chaotic nature of the landfill, the contents of which are devoid of any rules or order.

Several proposals suggested using part of the mound to educate visitors about its past and the waste that is integral to it. For example, Braudo-Maoz (Proposal #24) invited visitors to peek inside the mound from the pit that had formed at its summit. They could also view the various accumulated layers through recesses along the perimeter path around the mound, in which objects from different periods would be displayed. This would necessitate a design intervention, since presenting the 'real thing' would soon end in a decayed mess. So Braudo-

Maoz also proposed showing the waste-related processes, firstly by revealing the pipes carrying the methane gas, and by using the gas to illuminate the mound. The firm's guiding principle was to produce a *recover story*, not a *cover story* (interview with Aliza Braudo, 18 April 2021). This proposal demonstrates a maturity in brownfields redesign: from the call for greening recovered sites, to foregrounding the visibility of histories and processes of remediation (Meyer, 2007; De Almeida, & Smith, 2019).

Benz Kotzen (Proposal #23) who sought to turn the mound into a butterfly park, proposed turning the fissure that had evolved into an open-air museum. There, visitors could wander between walls of historic trash and gain insights into waste disposal and sustainability. Kotzen envisaged the interior of the mound as a living museum showing the changes that garbage undergoes, and revealing the dynamic life in nature without exposing visitors to its dangers.

The plan submitted by the Tsurnamal-Bar-Lev team (Proposal #12) went further than the others in its approach to waste, seeking to express the 'essence of Hiriya as a landfill' (Weyl & Hadar, 2005, p. 62). Visitors would experience a landscape that had been created in the successive layers of the mound of trash, which they themselves had produced. The issue of waste also featured in the title, *Hiriya Park: A Valley of Rejected Objects*. Visitors would be invited to roam between places in no particular order and rummage through a pile of detritus. The open museum space would be intended to evoke an uncanny feeling: strange, pleasing yet discomfiting, familiar yet foreign (interview with Vardit Tsurnamal, 9 February 2021). Such an approach exposes our environmental secrets, doubts and insecurities, or what Elizabeth K. Meyer calls the uncertainty of large parks (Meyer, 2007).

Two proposals alluded in different ways to time—namely, to the decades during which Hiriya had gradually evolved, and to future years when the waste would continue to decompose at the heart of the mound. Shlomo Aronson's proposal (#20) saw the waste as a dominant component that reveals a protracted process that must not be forgotten. However, the waste in his proposal found no explicit expression as a substance.

Shimon Margolin's proposal (#17) was the most ideologically radical, and the simplest and cheapest in terms of execution. It stood in stark contrast to all the others by stating: Let's not do anything, and neither bring visitors there, nor climb to its summit (interview with Asif Berman, 2 June 2021):

> *It is time to let nature be itself. We can allow ourselves to presume that the slopes will slide until they will naturally stop, that the gas that comes out of the mountain will*

> *diminish. It is time to be observers, not actors.... Our belief is that Hiriya should not be covered by a blanket of flowery green. Our proposal is to avoid all planning or engineering to make the place more hospitable for humans. Our only plan for the next fifty years is to take a pause from the compulsion to do. A pause, to let Hiriya reconstruct itself, might teach us to take time to contemplate the meaning of our action for the environment. A time for Hiriya can be a time for us to heal*
> (Weyl & Hadar, 2005, p. 94).

Margolin's is the only bid that treats waste directly, comprehensively and explicitly. It is an ideological rather than a design or rehabilitation proposal, and its purpose and importance inhere in its declarative mindset-changing approach. Naturally, this and other proposals that did not offer a comprehensive solution for implementation were dropped in the first round of assessments (Pratei kol shiput hatacharut, 2004).

The winning proposal, by Peter Latz (Proposal #25), did not address the waste as a conceptual or design element; indeed, it may be argued that it ignored the fact that the mound was made of waste. Latz disregarded the engineering recommendations for stabilising the slopes because they would obscure the mound's distinctive identity. Instead, he offered a creative solution to preserve its iconic shape by moderating the slopes and repositioning the streams around it. His solution was to turn the entire mound into a huge environmental sculpture—an enormous monument to trash—thereby changing its perception from a symbol of neglect to a symbol of renewal (interview with Ulf Glänzer, 1 June 2021).

Latz understood that with the changing seasons the mound gets soaked in the rain then dries out in the heat, and this causes structural changes. Since rainwater and leachate seep to the bottom and contaminate the soil and adjacent streams, he proposed enclosing the lowest section within a battery of construction debris to prevent the contamination seeping out. Latz demonstrated, as he had in Duisburg Nord, how to turn engineering into design while acknowledging symbols of the past and processes that occur over time (Rosenberg, 2009).

Although Latz made creative use of recycled materials, waste, references to past pollution and the harms inflicted by consumer culture were not included in his proposed visitor experience, nor was his technical solution for removing the methane gas that was kept hidden from the park's visitors for safety reasons (interview with Glänzer, 1 June 2021). Waste as a scourge of our time that creates extensive pollution comes under the aegis of the centre for environmental education; waste as a resource for renewable energies fuels the activity of the recycling

industries park. Both centres are located at the foot of the mound but are not necessarily part of the visit; nonetheless, they are intentionally kept in sight of visitors walking along the top of the mound (Weilacher, 2007).

Remembering without smelling

Whereas museums and archives preserve what culture delineates as worthy of maintaining for future generations, landfills do the opposite: they filter out and hide whatever is deemed worthless and therefore rejected or suppressed. The power to make these decisions often lies with the establishment. In this regard, introducing the trash mound into the realm of art has largely determined how Hiriya will be remembered and presented in the public space (Thompson, 2017; Girot & Imhof, 2016; Engler, 2004).

A critical analysis of the proposals submitted to the 2004 competition with those at the exhibition five years earlier attests to changes in the conceptual and design emphases in thinking about the landfill. The discussion, conducted mainly among landscape architects, shifted from an artistic, open, multi-disciplinary, theoretical discourse that saw a polluted site as a space for a museum, to a professional-design discourse and the framing of an open public space as a park. The artistic aspect diminished with the need to move from abstract artistic ideas to a design that encompassed the engineering, ecological and economic practice of rehabilitation and establishing the park.

At the same time, there was another notable change. The works displayed at the first *Hiriya at the Museum* exhibition saw the event as an opportunity to use waste to broaden discussion of modern society's ills. Conversely, none of the proposals except those by Margolin and Tsurnamal-Bar-Lev treated waste as a major issue. Margolin's display left the trash mound standing, without any intervention whatsoever, whereas Tsurnamal-Bar-Lev turned it into an 'other' uncanny space, at once familiar and alien. The other proposals either ignored the issue, or relegated it to secondary or marginal status, thereby also changing the nature of the waste from an environmental hazard into a pleasing visual and olfactory presentation. Margolin and Tsurnamal-Bar-Lev transcended the mainstream and the competition program by proposing plans that challenged the current discourse.

Waste as a conceptual entity and a material outcome poses dilemmas for design and culture. Turning the polluting past into a living memory means leaving decades of accrued debris in place. In the case of Hiriya, this is neither dry waste nor the plastic, computers, cans and bottles

that leading artists placed at the centre of their proposals.[10] It is organic rotting waste that attracts insects and flies, emits a sour stench and induces breathing difficulties. The nature of this waste required the landfill to be closed and the hazard treated—and yet its very closure transformed the waste from a living entity into an inanimate object. The solution, which was essential for the safety and enjoyment of visitors, made the waste and the experience of encountering it incomplete and inadequate. Turning Hiriya into a museum, as some proposals suggested, presented the waste as a thing of the past rather than a dynamic entity that, due to microbial activity, continues to change at the heart of the mound, even after the landfill was closed.

The issue of waste hardly rates a mention in the competition judging process; the judges apparently sought a proposal that would deliver a comprehensive plan giving Hiriya a 'positive' image. Judge Shamgar is quoted as saying: '[T]he new park must not be a monument to garbage'. He believed that it should attract people with shady nooks and various attractions. In the final stage of the competition, as the discussion focused on the top four finalists, he supported Zur/de Lange's and Kotzen's proposals to turn the hill into a 'land of gardens' and a 'butterfly park' (respectively), by blanketing it with images unrelated to the site's context and thereby softening the iconic topography. Baruch also supported Zur/de Lange's design, but disagreed with the idea of disguising the mound and hiding its past. Conversely, Landau supported Latz's proposal, while Kirkwood wavered between Zur/de Lange's and Latz's proposals, which represented opposing approaches. Darel-Fossfeld thought that Hiriya should not be obscured as a site and embodiment of an unsustainable lifestyle, and initially supported the proposals of Tsurnamal-Bar-Lev and Team SUDS (which did not reach the final stage). She wanted to understand whether the technological devices would become an educational tool. Over two days of discussions (8–9 September 2004), the judges debated whether to obscure or even suppress the site's unwholesome past by turning it into an untroubled romantic landscape, or to preserve the landfill's formal attributes (interviews with judges; see also: Pratei kol, 2004; Memorandum, 2004). Latz's proposal only caught the judges' attention at an advanced stage, but once it did, they found it met many of the preliminary criteria. The simple, feasible proposal offered an original solution to the summit of the trash mound, and imposed no financial or maintenance burden on the authorities.

[10] See for example: Thomas Hirschhorn, Zbel Manifesto, Wang Zhiyuan, Tim Noble and Sue Webster.

From the interviews with the judges 17 years later (allowing for the tricks memory may play over such an interval), it is apparent that they were persuaded that Latz's design neither placed undue emphasis on the mound, nor negated its existence. Darrel-Fossfeld and Landau thought that the rehabilitated Hiriya should serve as an example for other violated places and emphasised its educational value. Baruch believed that the mound should be a symbolic, architectural-design entity. Everyone recalled that Shamgar had remained steadfast in his opposition to Latz's proposal, which left the mound's profile largely intact, thereby trying to preserve its memory. Shamgar's position echoes 'the rehabilitation approach' (Engler, 1995) which restores an area to its former state and purges its pollution.

Moreover, as Hiriya integrates necessary waste infrastructure with public space, it embodies a rare instance among the rehabilitated landfills in the world. The waste has not completely gone away, and the connection between past, present and future remains.[11] In that sense, Hiriya echoes other common approaches (Engler, 1995) that combine mitigating the hazards by converting the site to other uses (a public park); emphasising the site's polluted past and highlighting the lessons learned (through the centre for environmental education); using it as the foundation for regional resilience and community growth (a green infrastructure to solve flooding problems).

Landscape as a tool for shaping identity: A critical perspective

Anthropologist Mary Douglas (2003) describes waste as everything that is unclassifiable and out of place, a definition that sociologist Zsuzsa Gille (2007) expanded to include everything that is spoiled. Waste is a product of certain materials and social processes, and an element that establishes social, economic and cultural order. Sociologist Zygmunt Bauman (2013) states that late modernity has been characterised by its classification of everything anomalous in society as waste: the desired versus the rejected, normal versus pathological, healthy versus sick. Whenever waste is collected, he claims, the boundary between what is deemed worthy and what is wrong or repressed is redrawn. Waste is thus a good lens through which social values and dilemmas may be observed.

Recent research on the Anthropocene exposes the remnants of past human errors—or 'ghosts'—and the ways in which they still impact humans and their environment. Looking at the interrelations between humans and nonhumans in the Anthropocene can complicate our

[11] See details of the Northeast Coastal Park in Barcelona, Spain, designed by Abalos & Herreros, which combines municipal waste-management facilities with a public park and beach (Reed, 2005, pp. 144-147).

understanding of Hiriya's role. The gigantic mountain is a vivid ghost, a silent witness of our past errors, recalling our ecosystem's intense fluctuation and our current massively polluting way of life. However, the new park, with its central monument of loaded meaning, demonstrates our heritage of intervention in a typical area of Mediterranean nature: from gentle agriculture to a brutal takeover and heavy pollution of land, soil, air and water, followed by massive infrastructural renovation of a green lung (McNeill, 2001; Bubandt, & Tsing, 2018; Resnick, 2021; Waterton, 2021).

This raises a critical question: Did the competition guidelines, the design solutions proposed and the criteria that guided the competition judges attest only to design and engineering considerations that would make Hiriya attractive and safe? Or are they a reflection of how our culture still refuses to recognise its harmful products, which Gille defines as a negative attitude toward waste that heightens the urge to expunge it? Does the externalized nature of waste change its characteristics when landfills are recovered and redesigned, and does the abstraction of space reveal or hide the social, cultural, historical, ecological and political attributes of trash? (Ghosn, & Jazairy, 2014). Just as we place garbage in tightly tied plastic bags, which we quickly distance from our personal environment, don't we also prefer to wrap the mound in a seasonal mantel, a natural covering, in a bid to distance the hazard—physically and conceptually—from our social and cultural surroundings?

The term 'habitus',[12] which defines the boundaries between individuals or groups in society, can be extended in this case to include waste. Bodily habits profoundly demonstrate the assimilation of identity and belonging and translate social structures into tastes (Elias, 1994). In this study, we claim that waste is an extension of food insofar as it is its inverse and, like food, relates to the body and senses. Weyl's initiative and his assertion that waste no longer lies beyond the preserve of the elite but is part of the capital of Israeli culture, must be interpreted in this light. The prestige associated with art has expanded the discussion of waste and brought together partners from diverse spheres of interest. It has also guaranteed the quality of the design of the future park.

Five years passed between the art exhibition and the final decision regarding Hiriya's rehabilitation. This decision stipulated that waste would continue to be sorted at Hiriya, and that those interested in the environmental aspects of the landfill could visit the education centre

[12] According to Pierre Bourdieu (1984, 1985), 'habitus' is the set of perceptions, behaviors, tastes and preferences of individuals in society who accept the structures of the social group to which they belong.

and recycling park. However, the mound itself would only represent the waste in the abstract. This approach upholds the assertion by Michael Thompson, theorist of science, that an item is only valuable when someone with authority deems it so (Thompson, 2017). Once artists and curators stated that waste had value, it took centre stage; nonetheless, when landscape architects designed the site, the waste was relegated to the recycling park.

Traditionally, discussions about landscape and landscape design revolve around beauty, high culture, centres of power and national and cultural identity; they are not accustomed to dealing with the dirty and the ugly. Throughout history, landscape has been seen as a refuge from the hardships of the present, from the din of the city and from technology; landscape architects create beautiful places that fulfill 'visual dreams' rather than confronting past transgressions. However, contemporary landscape architecture requires a cultural vision beyond purely formal or ecological design; and, as Corner puts it, examining environmental blights in isolation from their sociocultural contexts may repair past damage but will not address the social and cultural problems that caused that damage (Corner, 1999).

Conclusion

After 70 years, Hiriya has been reborn: from an ugly frog, it has become a handsome prince The process of its renewal—from artists' exhibition, through actual design, competition and rehabilitation workshops—attests to its physical and ecological transformation, and to the change in Israeli society's self-perception as no longer being willing to tolerate such sights and smells at the heart of the country.[13] This is in parallel with a corresponding initiative by the Planning Administration to preserve the landfill's surroundings by turning them into a metropolitan park, and granting this neglected area south of Tel Aviv-Yafo a status similar to large parks in other major cities in Israel and around the world, thus making it a source of pride and pleasure.[14] Hiriya is a seminal example of a huge landfill in a socially deprived area that was a blight and environmental hazard until the authorities and various social and cultural circles intervened.[15] Although it brings progressive thinking to the area in landscape,

[13] Norbert Elias's work on the development of dining etiquette in medieval Europe (Elias, 1994) may help to explain the cultural transformation of Israeli society. Many Israelis still remember the days when Hiriya was an active landfill; however, today we find it incomprehensible that Israeli society treated with equanimity the gradual growth of the stinking mound of trash, with flocks of birds hovering above it, at the entrance to Tel Aviv.

[14] Post-industrial sites also called brownfields, wastelands, drosscapes or manufactured sites are the centre of several recent studies. See for example, Corner, 1999; Kirkwood, 2003; Berger, 2006; Meyer, 2007.

[15] On the human outcomes of climate change and the Anthropocene era, with a focus on its exacerbation of the vulnerability of ecosystems and poor people, see also Nixon, 2011.

ecological, infrastructural, technological and educational terms, it does not seek to eliminate the past or highlight the costs of the present production culture and its ramifications for landscape. The international competition and ensuing rehabilitation process gained media exposure and public involvement, which are both important in their own right and as a precedent for other locations in the future. However, it is noteworthy that the problems associated with waste are only growing, given its ever-rising volume, the types of materials involved and the complexity of treating them. Moreover, the attempt to present Hiriya as a model of rehabilitation has not been entirely successful because even today, 24 years after its closure, Israel's waste continues to overflow; transporting it from the central region to the periphery has only put it out of sight without fully appreciating the damage it causes. Hiriya facilitates discussion of the landscape as a product of culture and of landscape architecture as an agent of change that creates and enriches culture, calls for action and allows surrounding communities to forge an identity and meaning. Rehabilitating damaged places is, therefore, about the past, but it is no less about envisioning and shaping the future.

Figures

Figure 1. Hiriya mountain before the rehabilitation, May 2003. Source: Dan Region Association of Towns

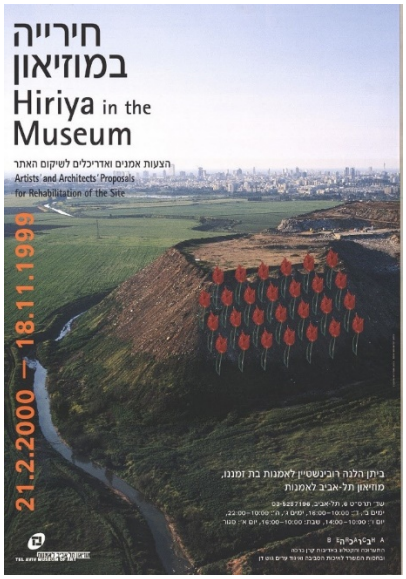


Figure 2. Poster, Hiriya in the Museum. Source: Albatross: Duby Tal, Moni Haramati (front cover)

Figure 3. Hiriya in the Museum II. Proposals for the public competition for detailed landscape design of the landfill, 2004. Source: Tel Aviv Museum of Art

Figure 4. Proposal. Zur-Wolf Landscape Architechts & Studio de Lange. Source: Dan Zur / De-Lange Studio

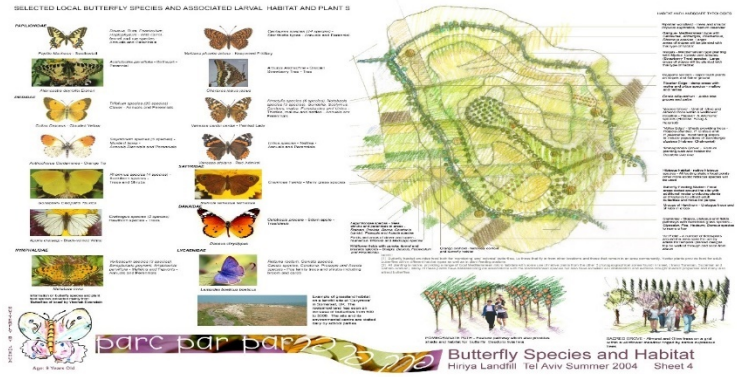


Figure 5. Proposal. Benz Kotzen. Source: Benz Kotzen Sustainable Landscape Architecture

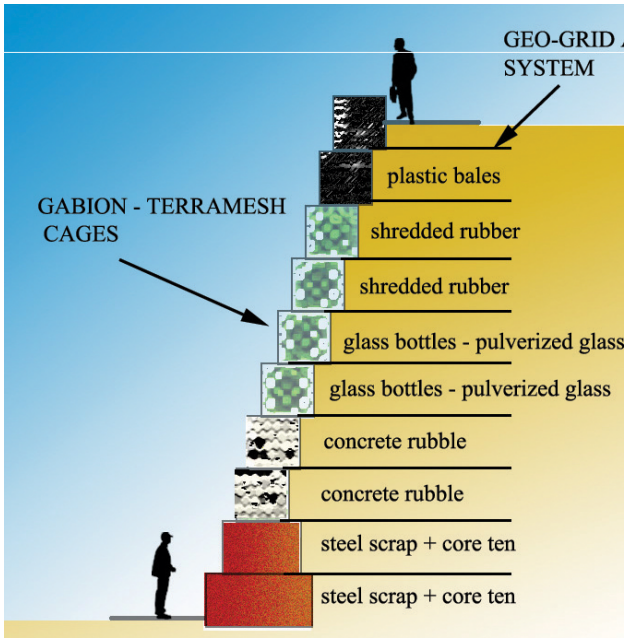


Figure 6. Proposal. Bruce Levin. Source: Bruce Levin K.S.M. Landscape Architects

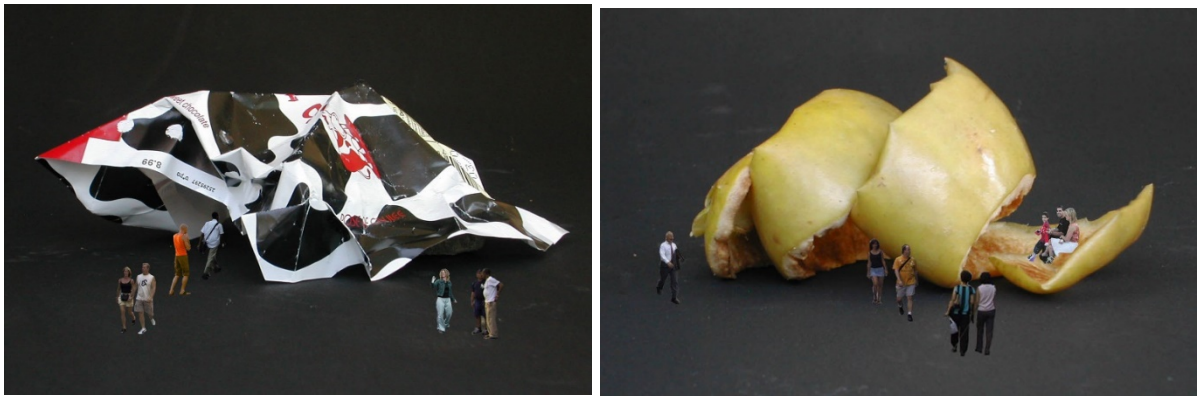
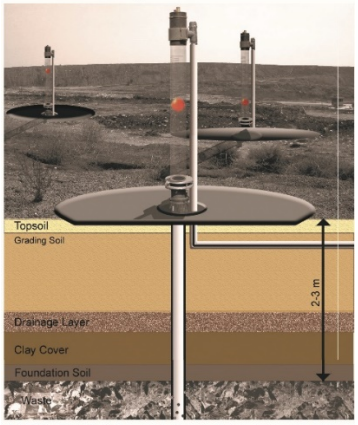


Figure 7. Proposal. Segal Raayoni. Source: Segal-Raayoni Landscape Architecture and Urban Design Ltd

View 1 - The Layered Crevice

View 2 - The Garb-Age Crater



The Bio-Gas Ball

Figure 8. Proposal. Braudo-Maoz. Source: Braudo-Maoz Landscape Architecture Ltd

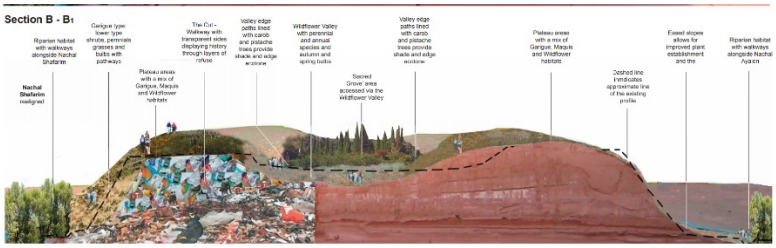


Figure 9. Proposal. Benz Kotzen. Source: Benz Kotzen Sustainable Landscape

Figure 10. Proposal. Tsurnamal-Bar-Lev. Source: Tsurnamal-Barlev Landscape Architecture, with Havi Livneh and Dorona Yogev

Figure 11: Proposal. Shimon Margolin. Source: Shimon Margolin Architecture Ltd

Figure 12. Proposal. Latz and Partners. Source: Latz and Partners

Figure 13. Hiriya landfill after the rehabilitation. Source: Ariel Sharon Park, Albatros

Figure 14. Observation from the top of Hiriya facing Tel Aviv. Source: Galia Limor-Sagiv

Figure 15. Ariel Sharon Park and the cities surrounding it. Source: Ariel Sharon Park

Interviews with judges

Tamar Darel-Fossfeld: 2 February 2021

Baruch Baruch: 8 February 2021

Suzanne Landau: 16 February 2021

Neil Kirkwood: 11 March 2021

Interviews with contestants

Vardit Tsurnamal: 9 February 2021

Itamar Raayoni: 12 April 2021

Matanya Sack: 13 April 2021

Aliza Braudo: 18 April 2021

Bruce Levin: 22 April 2021

Ulf Glanzer: 1 June 2021

Asif Berman: 2 June 2021

Interviews with design partners

Naomi Angel, Tel Aviv District Planner in the former Planning Administration, 14 December 2020, 29 December 2020, 5 January 2021.

Martin Weyl, Chairman of the Beracha Foundation, former director of the Israel Museum, 28 January 2020.

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2.3 LANDSCAPE DESIGN AS A CATALYST FOR SUSTAINABLE INFRUSTRACTURE

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Abstract

Urban rehabilitation of brownfields advances cities' resilience and contributes to residents' wellbeing and nature preservation. This article explores the transformation of one such site—Hiriya, once the largest landfill in Israel—into a large metropolitan park. The rebirth of the area, taken to new levels by the design of German landscape architect Peter Latz, combines a regional solution to problems exacerbated by climate change, drainage, and transportation and brings social recovery to neglected neighbourhoods in the southern Tel Aviv metropolis. We argue that the success of Hiriya's transformation was a national-scale event, resulting not only from an evolved Israeli environmental discourse but from parallel processes including a maturing national planning system, a new approach to water and streams, and an overdue national plan for waste treatment problems resulting from threats to vital infrastructures. Using a range of textual and visual documents, the article examines the processes that led to the transformation of Hiriya and looks at how an excellent design turned Hiriya from a brownfield on the outskirts of the cities into a lively, green, functioning space in an urban setting, thereby providing a regional, even a global, model for creating sustainable spaces.

Keywords**:** Large Park, Brownfields rehabilitation, Landfill, Green Infrastructure, Landscape Design

Introduction

Hiriya, a municipal landfill site in the centre of Israel, has undergone major upheavals discussed in previous research by the authors of this study. The current research relates to the transformation of Hiriya and the surrounding area into the Ariel Sharon park. Established in 2007 and designed by landscape architect Peter Latz, the park stretches across 2,000 acres and is one of the largest environmental rehabilitation projects in the world (Fig. 1). It functions as

a green lung for the Tel Aviv-Jaffa metropolis, the country's most populated region, and offers leisure areas for approximately five million citizens living in the nearby cities (Fig. 2). Like similarly rehabilitated sites around the world, the park—formerly a marginal area, unwelcoming, and dangerous to the public—was converted into a pleasant public space. Its function has changed completely due to advanced creative planning and design which have transformed the area into an urban-supporting space addressing flood control, nature conservation, eco-system services and leisure activities through nature-based solutions. The case described and analyzed in this article is a work in progress and an indicator of history in the making identified in real time by the authors.

In this article, we claim that the decision to cease operating the notorious landfill infrastructure, was driven by other infrastructures—namely, the airport and roads—as well as by a shift in the environmental discourse. The threat to the airport came from birds, but also from the rivers which flow to the foot of the garbage mound and, during winter flooding, blocked the main transportation routes. We show how recovering the waste infrastructure—the jewel in the crown of a national waste-management program—initiated a practical and symbolic process of salvaging other malfunctioning infrastructures and enabled the surrounding neglected areas to recover, too; recovering the waste infrastructure also provided solutions to other problems in the area. Latz, who was chosen in 2004 to design the recovered landfill, and again in 2009 to design the entire park, emphasized the now-iconic mound rather than concealing it, and turned it into a catalyst for a healthy, functioning metropolis.

Hiriya, the enormous garbage heap 60 meters (200 feet) high, in the middle of the park, started operating soon after the Arab village Al-Khairiyyah was destroyed following the 1948 war of Israel's independence and Palestine's *nakba*. Fifty years of stench, environmental health hazards and landscape blight finally came to an end, not only as a result of environmental policy but also because the massive annual migration of birds, mainly flocks of seagulls, from Africa to Europe and back, would circle the garbage looking for food, thereby endangering the airplanes landing and taking off from Ben-Gurion Airport nearby. Hiriya, once a symbol of environmental and social neglect, has become a symbol of environmental and cultural recovery. The transformation of the mound of garbage was the symbolic start of the new park's construction. A wound in the landscape thus became a huge monument to our polluting past and an indicator of a healthier environmental discourse going forward.

The area known today as Ariel Sharon Park is the Ayalon river's floodplain. Dry in the long summers and powerful in winters, its fertile lands attracted human settlement for thousands of

years. The new park utilizes the vast areas which had been kept open due to historic circumstances, for the benefit of the southern Tel Aviv-Jaffa metropolis. The plan for the new park was to retain six million cubic metres of floodwater from the Ayalon river—which threatens to paralyze the city's transportation with flooding each year—and to construct an additional train track to accommodate future passenger numbers.

Exploring diverse textual and visual documents, including workshop preparations, Latz's own designs, archive materials, and interviews, we will identify the factors that led to the dramatic transformation of the Hiriya area.[1] We will also examine how an excellent design turned a once-in-a-century phenomenon like Hiriya from a brownfield on the outskirts of the cities into a lively, green, functioning space in an urban setting. This design transformed the existing green infrastructures into a rich experiential landscape, incorporating recreation, sport, leisure, flood control, nature conservation, education, and art, next to a functioning waste transit station and recycling plants. Thus, we will claim, Hiriya is a case study showing the crucial importance of landscape architecture in times of climate change, densifying population and degrading natural resources. Landscape architects are the conductors coordinating architecture, engineering, water management, ecology, food and culture.

The article comprises four main sections, a conclusion and reflections. The first section offers a short review of pivotal landscape projects, which turned brownfields into parks, on various scales and using different methods; it also includes a brief review of large parks as urban-supporting infrastructures, in terms of their social, environmental, and climate-change aspects. The second section briefly describes the historical-geographical history of the Hiriya area which, after the establishment of the landfill, turned into a socially and environmentally neglected zone. The third section analyzes several parallel national-scale developments, which accelerated the decision to cease operation of the landfill and establish a large new park. The fourth section describes and analyzes the creative landscape park, explaining how one project combined a multitude of activities from planning and design to the implementation of various different infrastructures as well as social and cultural activities. The article ends with a short conclusion and reflections.

[1] The methodological approach used in this article is a combination of Narrative Research and Case Study Research, in which the investigator explores a bounded system over time, through detailed data collection involving multiple sources of information. J. W. Creswell, and C. N. Poth, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (Sage Publications, 2016), 53-54, 73.

Large Parks as Infrastructure

Infrastructures are an integral part of modern urban life. Electricity, water and sewage systems, airports, roads and trails, telecommunications networks, and waste collection form the technical basis of our current living conditions. Until recently, infrastructures were at the heart of engineering, hydrology, and economics studies, but in the last decade they have received scholarly attention from the humanities, social sciences, and the arts.[2] The global transition from an industrial to a commodity-based economy has resulted in many abandoned infrastructures, in and outside cities, which are unattractive, unusable, and often polluting. These range from small-town lots to landfills, old airports, quarries, factories, abandoned ports, and dwelling compounds; and whereas they once supported urban life, they now threaten it.

In the last decade, the rehabilitation of these sites has made huge progress, focusing mainly on abandoned industrial and infrastructure lands, mining wasteland, and landfills, in many cases using nature-based solutions.[3] Landfills are among the most visible indications of our consumption culture in the landscape. Locating them next to poor neighborhoods makes them invisible and even more challenging to rehabilitate. In her notable book, *Designing America's Waste Landscapes*, landscape architect and scholar Mira Engler examines waste and sewage infrastructures in a bid to understand how we shape our landscape. She reviews the history and theory of waste sites in the US and analyzes plans to change public perceptions.[4] Another example is the regeneration of landfills in China, divided into four categories: expo parks, sports and recreational parks, country parks, and ordinary urban parks.[5]

These locations are an opportunity for random urban social interactions or recreation that help us reconnect with nature in concreted zones. Examples include: the Seattle Gasworks Park, 1975 (Richard Haag), which transformed a space for gas equipment storage into a park using advanced soil rehabilitation methods; Schouwburgplein (Theater Square), Rotterdam, 1996

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[2] T.P. Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Johns Hopkins University Press, 1993); S. Graham and S. Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (London & New York: Routledge, 2001); B. Larkin, "The Politics and Poetics of Infrastructure," *Annual Review of Anthropology* 42 (2013): 327-343; N. Anand et al., "Introduction: Temporality, Politics, and the Promise of Infrastructure," in *The Promise of Infrastructure*, eds. N. Anand, A. Gupta and H. Appel (Durham & London: Duke University Press, 2018), 1-38.

[3] Y. Song et al., "Nature Based Solutions for Contaminated Land Remediation and Brownfield Redevelopment in Cities: A Review," *Science of the Total Environment* 663 (2019): 568-579; X. Zheng and N.G. Kirkwood, "Landscape Architecture and Sustainable Remediation," in *Sustainable Remediation of Contaminated Soil and Groundwater* (Butterworth-Heinemann, 2020), 301-324.

[4] M. Engler, *Designing America's Waste Landscapes* (Johns Hopkins University Press, 2003).

[5] See Zheng and Kirkwood, "Landscape Architecture and Sustainable Remediation."

(Adrian Geuze), built above a carpark; Seonyudo Park, Seoul, 2002 (Seo Ahn Total Landscape), transformed concrete tanks into ponds for wetland plants and grasses, producing an intense natural visitor experience integrated with old industrial waste-treatment infrastructure; Hadiqat As-Samah (Garden of Forgiveness), Beirut, 2006 (Gustafson Porter Ltd), built on a city compound destroyed during Lebanon's civil war, with archaeological layers offering a shared heritage of cultural diversity; the Olympic Sculpture Park, Seattle, 2007 (Weiss/Manfredi Architects), which transformed a fuel storage and transfer station into a park connecting city zones.[6]

On a larger scale and relevant to this discussion are Crissy Field in San Francisco, by Hargreaves Associates, which transformed an army airstrip into a vast urban public park, removing tons of hazardous materials and recovering the area's tidal marches; Duisburg-Nord Landscape Park in the Ruhr District, Germany, by Latz + Partner, which turned an industrial steelworks into a large park commemorating Germany's polluting past by maintaining and converting the industrial facilities into playgrounds and sporting facilities, using advanced methods of soil and water purification (Weilacher, 2007); Fresh Kills Lifescape in Staten Island, New York, by James Corner/Field Operations, which transformed a huge landfill into a parkland, based on a long-term strategy using natural processes to recover severely polluted lands.[7]

These polluted sites evoke a particular interest: some remove the hazard (Crissy Field), while others treat it on the site itself (Fresh Kills) by purifying or replacing the soil. The question is, how much of the polluting past to reveal, both in terms of the engineering required and the social, cultural, and educational benefits, and how much of the site's genius loci (even those that are negative) to expose (Duisburg-Nord). These are recovery projects with both ecological and infrastructural elements as well as social and historical implications. They transform iconic spaces of waste and dereliction into usable sites that recollect and interpret the past, and forge collective identities.[8]

Some of these sites function as large parks. 'Large parks are extensive landscapes that are integral to the fabric of cities and metropolitan areas, providing diverse, complex, and

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[6] Song et al., "Nature Based Solutions."

[7] J. Corner, "Lifescape–Fresh Kills Parkland," *Revista Topos: International Review of Landscape Architecture and Urban Design* 51 (2005), 14-21.

[8] E.K. Meyer, "Uncertain Parks: Disturbed Sites, Citizens, and Risk Society," in *Large Parks*, eds. J. Czerniak and G. Hargreaves (Princeton Architectural Press, 2007), 59-85.

delightfully engaging outdoor spaces for a broad range of people and constituencies'.[9] From the eighteenth century, large parks were established on empty, undeveloped land on the city outskirts. However, since the late twentieth century, large tracts are scarce, so planners, politicians, and designers are obliged to be creative when turning large, neglected, or polluted sites into public parks.

Large parks enable social activities which create society and belonging in crowded cities. Their scale offers visitors a vast theatre of weather, plants, and geology under the open sky. Along with their social and cultural aspects, large parks have a crucial ecological role, moderating temperatures and creating local habitats for vegetation and wildlife. Those 'green lungs' clean, refresh, and enrich urban life;[10] this is evident, for example, in Parc de la Villette in Paris, 1987 (Bernard Tschumi), River Park, Los Angeles, 2000 (George Hargreaves), Del-Rio-Manzanares, Madrid, 2006 (West 8), and Lake Ontario Park, Canada, 2013 (James Corner/Field Operations).

Such parks often solve the adjacent metropolis' infrastructural problems, as in the case of the pivotal Riverside Park on New York City's Upper West Side, 1874 (Frederic Law Olmsted and Robert Moses), built on a train system that connected different parts of the city and Flushing Meadows Park, Queens, 1939 (Gilmore David Clarke and Michael Rapuano), which recovered an ash dump and marsh land for New York City's world fair in 1939.

Recent examples in Israel of open areas that solve infrastructural problems are Herzliya Park, 2009 (Barbara Aronson), which transformed a marsh; the Gazelle valley, Jerusalem, 2015 (Rachelle Wiener Landscape & Architecture), which controls winter flooding, preserves a herd of local gazelles, and provides an urban nature park in the middle of a crowded city; the rehabilitation of Kidron stream (Tsurnamal-Turner), which provides good water for desert citizens, and Haifa Bay (Sack-Reicher), which recovers Haifa's contaminated industrial site.

Groundwork for Ongoing Neglect

The area with which this article deals accommodated the ancient biblical Bene Beraq, and subsequently the Arab village Ibn Ibraq, renamed Al-Khairiyyah in 1924, meaning 'the good' and recalling its fine soil. Al-Khairiyyah was situated on a hill about eight kilometers east of Jaffa and several hundred meters north of the Ayalon river. During the British Mandate (1920-

[9] J. Corner, "Foreword," in *Large Parks*, eds. J. Czerniak and G. Hargreaves (Princeton Architectural Press, 2007), 11.

[10] Corner, "Forward"; J. Czerniak, "Speculating on Size," in *Large Parks*, eds. J. Czerniak and G. Hargreaves (Princeton Architectural Press, 2007), 19-33.

1948), the village owned 3,378 acres and had 1,420 inhabitants.[11] The area was designated as Crown Land,[12] namely public land set aside for government/public purposes and not attached to any municipality, in a bid to maintain its drainage function during the annual floodings that threatened the southern neighbourhoods of Tel Aviv. The designation secured the area against all future construction.

Ariel Sharon Park also includes the lands of Mikve Israel, established in 1870 as the first Jewish agricultural school in Palestine and the first Jewish settlement outside Jerusalem. Located southeast of Jaffa, it taught agriculture to young Jews in order to establish villages and agricultural and farming life around the country.[13] Over the years, Mikve Israel has become a symbol of Jewish agriculture in Israel and a historic landmark. In order to protect it and its cultural heritage, the Mikve Israel Agricultural School Law was enacted in 1976, ensuring its continued operation as an agricultural school and protecting the designation of the land.

Returning to Al-Khairiyyah: like other villages east of Jaffa and most villages and towns in the entire Palestinian area, it was captured by Jewish forces during the 1948 war, and its inhabitants were expelled.[14] Thereafter, the village houses were populated by Jewish soldiers and immigrants, while one hundred metres westward, HaZera Cooperative—an innovative company which cultivated seeds—established its first farm (the Shalem Farm) to meet the increasing demand for food for Israel's rapidly growing population. Later, a transit camp was established nearby to accommodate new immigrants; it remained there for almost ten years and its residents suffered harsh living conditions.

In 1953, despite numerous protests, Tel Aviv's domestic waste started to be dumped on a plot next to the village and the transit camp. The waste kept piling up in the landfill and the opening of a planned compost plant was repeatedly delayed; when it did finally open at the beginning of the 1960s, it failed to solve the metropolis' waste problem. From its inception, the landfill

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[11] W. Khalidi, *All That Remains: The Palestinian Villages Occupied and Depopulated by Israel in 1948*. Institute for Palestine Studies, 1992.

[12] Crown Lands are public land in British dominions or colonies. They usually include land set aside for various government or public purposes. In many cases, Crown Lands were used for future town planning and infrastructures such as airports, military bases, and other public utilities, or for future development and the protection of nature resorts.

[13] D.J. Penslar, "French Influences on Jewish Agricultural Settlement in Palestine (1870-1914)" *Cathedra* (1991), 37-54, (Hebrew).

[14] B. Morris, *The Birth of the Palestinian Refugee Problem, 1947-1949*. Cambridge University Press, 1987.

raised grave concerns among residents and doctors, but nonetheless the landfill continued to expand for another 50 years.[15]

Over the decades, the area functioned as agricultural land, but it was perceived as appropriate for other polluting infrastructures, such as parking lots for municipal refuse trucks and buses, a power substation, wholesale market, football stadium, and new roads, among others. All these huge, proposed infrastructures would only have further exacerbated its already-poor quality. Its location, next to Tel Aviv's poorest neighborhoods, turned it into a backyard and no-man's-land.

The Ayalon river and its Shafirim tributary, which flow at the foot of the garbage mound, added to the threat from the bird migration mentioned earlier. As the mound kept growing, it gradually pushed up against the rivers and eventually the south-western slope merged with the riverbank. The rivers were unregulated and unprotected, and this resulted in waste repeatedly toppling from the mound into the creeks.

Moreover, the two rivers are dry during the long summers and wet and stormy in the short winters (the Ayalon can flow at a rate of 400 cubic metres per second), and they have flooded the southern parts of Tel Aviv almost every winter for decades; they also threaten central Israel's main roads. In the winter of 1997/8, heavy rains created fissures on the top of the garbage mound, and piles of waste on the north slope collapsed into the nearby stream blocking its flow (Fig. 3). Not only was the river polluted, but there was also a greater danger than ever that highway 4, a central route, and Ben-Gurion airport and the surrounding settlements would be flooded. These dramatic winter events accelerated the closure of Hiriya landfill, and led to a national plan for this hazardous space (Fig. 4).[16]

A New Era

Approaches to the country's nature and environment have changed over time. The early twentieth-century Zionists perceived the historic land as empty, waiting for its nation to colonize it and restore its nature. The national return to the historic land was seen as the route

[15] More on the events in the area after 1948 and the establishment of the Hiriya landfill can be found in: G. Limor-Sagiv, and N. Lissovsky, "Place and Displacement: Historical Geographies of Israel's Largest Landfill," *Journal of Historical Geography*, 80 (2023), 32-43.

[16] Zevik Landau (former CEO of the Yarkon Drainage Authority), in discussion with the author, December 24, 2019.

to redemption.[17] The 1948 war resulted in the mass displacement of Palestinians and the destruction of hundreds of their towns and villages. Israeli control over the newly possessed territories not only included demographic change but also a cultural and agricultural transformation of the land on which the new nation, gathered from around the world, was built.[18]

The move from a romantic to a more public-health, scientific approach, based on legislation and land-use planning, has gradually taken place.[19] It began in 1951 with the Sharon Plan (named after Arieh Sharon, who conceived and designed it), Israel's first national outline of the framework for the country's population dispersion in the northern and southern periphery; this plan also created the hierarchical network of settlements, towns, and cities, and promoted plans for residence, industry, agriculture, and transportation. In addition, the plan envisioned a series of parks, consistent with the Jewish National Fund's recommendation of a network of six large parks.[20] The establishment in 1953 of the Society for the Protection of Nature in Israel marked a new stage in environmental activism. The Council for the Prevention of Noise and Air Pollution was established in 1961, and the Kanovitch Law (against air and noise pollution) was enacted the same year, marking a focus on health and preservation of natural areas. Subsequently, in 1963, Israel established the Nature Reserves Authority and the National Parks Authority, and thereafter, in 1989, the Environmental Protection Service, later the Ministry of the Environment.[21]

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[17] Avner De-Shalit, "From the Political to the Objective: The Dialectics of Zionism and the Environment," *Environmental Politics* 4, no. 1 (1995): 70-87; A. Tal, *Pollution In a Promised Land* (University of California Press, 2002); Yoav Galai, "Narratives of Redemption: The International Meaning of Afforestation in the Israeli Negev," *International Political Sociology* 11, no. 3 (2017), 273-291.

[18] D. Rabinowitz, "An Acre Is an Acre Is an Acre? Differentiated Attitudes to Social Space and Territory on the Jewish-Arab Urban Frontier in Israel," *Urban Anthropology and Studies of Cultural Systems and World Economic Development,* 21, no. 1 (1992), 67-89; A. Golan, "The Transformation of Abandoned Arab Rural Areas," *Israel Studies*, 2, no. 1 (1997), 94-110; G. Falah, "The 1948 Israeli-Palestinian War and its Aftermath: The Transformation and De-signification of Palestine's Cultural Landscape, *Annals of the Association of American Geographers*, 86, no. 2 (1996), 256-285; M.R. Fischbach, *Records of Dispossession: Palestinian Refugee Property and the Arab-Israeli Conflict* (New York: Columbia University Press, 2003); D.E. Orenstein, C. Miller and A. Tal, eds, *Between Ruin and Restoration: An Environmental History of Israel* (University of Pittsburgh Press, 2012).

[19] D.E. Orenstein and E. Silverman, "The Future of the Israeli Environmental Movement: Is a Major Paradigm Shift Underway?" in *Between Ruin and Restoration: An Environmental History of Israel* (University of Pittsburg Press, 2012), 357-382.

[20] A. Tal, "Natural Heritage: Leisure Services in Israel's National Parks, Forests, and Nature Reserves," in *Israeli Life and Leisure in the 21st Century*, eds. M.J. Leitner and S.F. Leitner (Sagamore Publishing, 2014).

[21] B. Furst, "Ecology, Environment, Sustainability: The Development of the Environmental Movement in Israel," *Cultural and Religious Studies*, 4, no. 4 (2016), 238-253.

These developments notwithstanding, in terms of environmental issues Israel still lagged behind other developed countries. It was only in the 1980s, under western—mainly American—influence, that the romantic-nationalistic approach to nature was challenged. A scientifically based environmental approach, focusing primarily on public health, led to a series of laws in the 1990s relating to air quality, waste, water, and more.[22] In addition to the public health focus, a more sustainable development approach emerged, calling for equilibrium between the use of natural resources and nature's ability to renew itself, and linking environmental and social justice.[23] This new approach, led by environmental organizations and activists, had an impact on the legal system and planning authorities.[24] It opposed the establishment of new towns and settlements, enhanced an urban-density agenda, and called for multidimensional environmental planning and policy making, while integrating social issues into the environmental agenda.[25]

In the 1990s, several complementary processes occurred in the Israeli public discourse and practice. The first, described above, was the increase in environmental organizations, a shift in consumer patterns, and an updated educational agenda, all of which led to a series of new laws concerning air pollution, water contamination, and noxious gasses after years of neglect.[26]

The second process marked a revolution in the Israeli planning system, new national land-use planning, and the creation of several advanced national outline plans. It is doubtful whether such changes would have occurred without the mass immigration to Israel from the ex-Soviet Union in the early 1990s, which threatened to permanently alter the physical and social landscape of the country through short-term planning. It was the first time since the 1950s that

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[22] A. Tal, *Pollution In a Promised Land*, (University of California Press, 2002).

[23] Tal, *Pollution in a Promised Land*; Tal Alon-Mozes, "Ariel Sharon Park and the Emergence of Israel's Environmentalism," *Journal of Urban Design*, 17, no. 2 (2012), 279-300; Orenstein and Silverman, "The Future of the Israeli Environmental Movement."

[24] R. Alterman, "National-level Planning in Israel: Walking the Tightrope Between Centralization and Privatization," in *National-level Planning in Democratic Countries: An International Comparison of City and Regional Policy-making*, ed. R. Alterman (England: Liverpool University Press, 2001), 257-300; A. Tal, "Space Matters: Historic Drivers and Turning Points In Israel's Open Space Protection Policy," *Israel Studies*, 13, no. 1 (2008), 119-151; D. Shmueli et al., "Scale and Scope of Environmental Planning Transformations: The Israeli Case," *Planning Theory & Practice*, 16, no. 3 (2015), 336-362.

[25] S.M. Dromi and L. Shani, "Love of Land: Nature Protection, Nationalism, and the Struggle Over the Establishment of New Communities in Israel," *Rural Sociology*, 85, no. 1 (2020), 111-136; Orenstein and Silverman, "The Future of the Israeli Environmental Movement"; Furst, "Ecology, Environment, Sustainability."

[26] I. Greenspan et al., "Environmental Philanthropy: Is It Similar to Other Types of Environmental Behavior?" *Organization & Environment*, 25, no. 2 (2012), 111-130; G. Sagy and A. Tal, "Greening the Curriculum: Current Trends in Environmental Education in Israel's Public Schools," *Israel Studies*, 20, no. 1 (2015), 57-85; Dromi and Shani, "Love of Land."

a serious attempt at national-scale planning had been proposed. The first (five-year) national outline plan 31 (TAMA 31) was designed rapidly to meet an immediate need. It laid the foundations for land-use planning and development, restrained the housing aspirations of some of the ministries, and protected Israel's open spaces. A subsequent initiative created during the 1990s (Israel 2020) was an ambitious strategic plan designed by over 250 senior members of the professional and academic community, with the cooperation of thirteen government ministries and state authorities; it included almost every sphere of public policy relating to spatial development. Israel 2020 provided a new set of concepts and language, and raised the discussion to a new level. All of its principles were adopted by national outline plan 35 (TAMA 35) that focused on construction, environment, development, and conservation, and was approved by the Israeli government in 2005. TAMA 35 defines the planning policy and layout of settlements in Israel and aims to respond to the development needs of the country's population while preserving open spaces and land reserves for future generations. It protects the country's natural history—nature reserves and forests, which until then were acknowledged as important, and agricultural lands, which were not—in a country where rising population density poses a huge national challenge. The outline plan for the Tel Aviv district, TAMAM 5, initiated in the late 1990s, was aimed at ensuring the efficient functioning of the central metropolis of Israel, and its role as a leader of economic and cultural activity. It identified the crucial role of parks—first among them the Ariel Sharon Park—urban renewal, and public transportation as national targets.

These plans showed decision makers the usefulness and creativeness of planning, and they acquired budgets for new planning enterprises.[27] The next stage in this important evolution was the creation of national outline plan 1 (TAMA 1), which embraced most of the previous local and thematic plans, and provided a clear, unified scheme that assured protection and preservation of open, natural areas. TAMA 1 was prepared in 2012 and approved by the government in 2020.

The third process initiated a new approach to streams and rivers, which had in previous decades become sewage conduits, harming or destroying local aquatic habitats. The natural water flow was exploited for agricultural use or drinking.[28] Due to the lack of water in the Middle East,

[27] Alterman, "National-level Planning in Israel"; A. Tal, "Space Matters: Historic Drivers and Turning Points In Israel's Open Space Protection Policy," *Israel Studies*, 13, no. 1 (2008), 119-151.

[28] A. Tal and D. Katz, "Rehabilitating Israel's Streams and Rivers," *International Journal of River Basin Management*, 10, no. 4 (2012), 317-330.

the state of Israel has owned, regulated, and managed its water resources since its early days. In the last three decades, Israel has been more preoccupied than ever with streams, urban runoff, and flood-risk management, foregrounding this issue in the strategic and statutory discourse, and embedding eco-hydrological approaches in its planning. Recognition of the streams' serious conditions led to the establishment, in 1993, of a new national directorate for river restoration, which began influencing government and planning institutions' decisions, and the national and district outline plans. Subsequently, regional administrations were established to rehabilitate 30 streams, and the mission of stream development and rehabilitation was conducted under the auspices of statutory drainage authorities. In subsequent years, an environmental system for water resources and stream-basin management was promoted, ensuring an understanding of streams and their basins as complex ecosystems whose restoration and preservation involve complex cooperation and actions.[29] In 2003, the natural environment was included in Israel's water law as one of the legitimate recipients of fresh water. In addition, new standards for waste-water treatment were set, and desalination infrastructures were established.[30] These, along with pollution reduction in streams, habitat restoration, and the implementation of sustainable methods for restraining floods, have improved Israel's streams. The Yarkon, the main river into which the Ayalon flows, has its own drainage authority, which was established in 1997.[31]

The fourth process consisted of major progress in the national approach to waste treatment, which until then had been managed by the local municipalities. The new national outline plan (TAMA 16) standardized the measures and criteria for establishing and maintaining landfills. The new plan closed unregulated landfills that did not meet the new environmental and health standards—the largest and most famous of which was Hiriya. According to the new plan, most of Israel's central cities' waste was to be sent to the Negev in the country's southern periphery. In addition, the Ministry of Environmental Protection promoted laws, regulations, and incentives to reduce the waste sent to landfills and increase recycling.[32] In 1998, it was decided

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[29] O. Ayalon et al., *Evaluating the Activity of the Directorates for Stream Restoration in Israel* (Samuel Neaman Institute, 2019) (Hebrew).

[30] E. Feitelson, and G. Rosenthal, "Desalination, Space and Power: The Ramifications of Israel's Changing Water Geography," *Geoforum*, 43, no. 2 (2012), 272-284.

[31] Zeevik Landau (former CEO of the Yarkon Drainage Authority), in discussion with the author, December 24, 2019.

[32] I. Nissim et al., "From Dumping to Sanitary Landfills–Solid Waste Management in Israel," *Waste Management*, 25, no. 3 (2005): 323-327; S. Daskal and O. Ayalon, "Treatment of Municipal Solid Waste in Israel: Barriers, Removal of Barriers and Value Accelerators," *Ecology and Environment*, 11, no. 4 (2020), 6-12, (Hebrew).

that Hiriya landfill would cease operations. It would become a transit station and industrial park for sorting and channeling waste to energy plants, and transporting the remainder to new, sanitized landfills in the southern desert.[33]

Thus, the decision to close Hiriya landfill, rehabilitate the surrounding stream, and turn the entire area into a park resulted not only from an environmental discourse acknowledging the negative effects of untreated waste on humans and nature. It was an exceptional decision, derived from the events described above: the threat to the nearby airport by foraging birds, the unstable trash mound threatening to collapse into the rivers and flood main transportation routes, and the understanding of the importance of open green areas.

However, the gap between official policy and its actual application left a vacuum with no responsible leader or financier, and the closure of Hiriya revealed that no authority had the vision, motivation, or funds to recover the area and plan its future.[34] It is, therefore, interesting to ask how such processes come about; which players are crucial, what agendas they pursue, and what tools they use to enhance their vision and targets.[35] In the case of the transformation of Hiriya, it is evident that it would not have taken place without visionaries who appreciated the magnitude of the hour, expressed the need and acted for a total change of the landfill area.[36] The leading figures in this process were Martin Weyl, Yossi Farhi, then Tel Aviv district planner in the Interior Ministry, and his successor Naomi Angel, Danny Sternberg (deceased), first CEO of the government company in charge of the park and the engineer of Dan Region Association of Towns, and Zevik Landau, former CEO of the Yarkon Drainage Authority. The scope of this article does not permit mention of everyone involved.

Soon after Hiriya stopped operating as a landfill, in 1998, an international art exhibition displaying proposals for its rehabilitation was launched at Tel Aviv Museum. The exhibition was curated by Dr. Martin Weyl, chairman of the Beracha Foundation and former director of the Israel Museum in Jerusalem, who wanted to prioritize the issue of waste in the Israeli public

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[33] Tal, *Pollution in a Promised Land.*

[34] O. Ronen-Rotem, "The Impact of International Philanthropic Foundations on the Urban Environment in Jerusalem and Tel Aviv-Jaffa" (PhD diss., Tel Aviv University, 2010), (Hebrew); Martin Weyl (Chairman of the Beracha Foundation, former director of the Israel Museum), in discussion with the author, January 28, 2020.

[35] On transformations in the Israeli planning system, see: E. Feitelson, "Shifting Sands of Planning in Israel," *Land Use Policy*, 79 (2018), 695-706.

[36] On the case of Jerusalem after the 1967 war and its redesign and planning by architects as agents of spatial, visual and material ideas and beliefs, see: A. Nitzan-Shiftan, *Seizing Jerusalem: The Architectures of Unilateral Unification* (University of Minnesota Press, 2017).

discourse.[37] At the same time, and unbeknown to the parties, the Tel Aviv District Office of the Planning Authority was working on TAMAM 3/5, the plan for the area of Hiriya. The preparation of the plan was led by Ulrich Plessner, in collaboration with David Guggenheim and Moti Kaplan. As the parties became aware of the work being done in tandem, it was only natural that the plan would also be presented at the exhibition, as it laid the outlines for a metropolitan park, and enabled discourse between the various authorities regarding Hiriya.[38] At the same time, the Tel Aviv District Office of the Planning Authority and the planning department of the Ministry of Environmental Protection initiated the protection of the area around Hiriya as a green lung for the Tel Aviv area.

Subsequently, a series of international design workshops with various experts envisioned a large new park with the trash mound at the centre, an industrial recycling park, and a centre for environmental education. In September 2004, an international design competition for the rehabilitation of Hiriya took place, in which Latz + Partner won first prize. Latz chose to preserve the iconic shape of the trash mound by repositioning the streams around it and slightly moderating the slopes, which turned the trash heap into a huge environmental sculpture, or a monument to waste. In addition, he proposed enclosing the lowest part of the mound with a battery of construction debris, thereby preventing the contaminated leakages from reaching the soil.[39]

As the plans matured, finances were sought to protect the open areas. In November 2004, the plan to build the 2,000-acre park was approved (TAMAM 3/5). However, the idealistic concept of providing an open space for leisure and sport, and keeping the last green land in the area, was challenged by other interests. The Hazera firm, which had leased 250 acres there for many years, resisted the plans claiming that it could only be financed by building a new suburb. This was supported by then-Minister of Industry Trade and Labor, Ehud Olmert, but met fierce opposition from a coalition of environmental organizations, the Beracha Foundation, Dan Region Association of Towns, and the nearby residents. It was only through the intervention of then-Prime Minister Ariel Sharon, who visited the mountain in July 2003 and was stunned by

[37] M. Weyl, "Hiriya: al tzachana ve'yofi" [Hiriya: On stench and beauty] (Tel Aviv, Israel: Am Oved, 2010).

[38] M. Weyl, "Hiriya in the Museum: Proposals by Artists and Architects for the Site's Rehabilitation," (Tel Aviv, Israel: Tel Aviv Museum of Art, 1999).

[39] On the international design workshops and the landscape architecture competition held in 2004, see: G. Limor-Sagiv and N. Lissovsky, "The Trash Has Gone–the Trash Mountain Remains: A New Look at the International Design Competition for the Rehabilitation of the Hiriya Landfill in Israel, *Landscape Research*, 48, no. 3 (2023), 354-374.

the beautiful view, that the plans for a park (with no new suburb) were officially approved, and given final authorization in April 2005.[40] Sharon would probably not have intervened without the extensive lobbing activity of his son, Omri, then leader of the Green Lobby in the Knesset, who convinced his father to support the plan which does not allow construction at all.[41] Thereafter, Ayalon Park was known as Ariel Sharon Park, in tribute to the prime minister who had ensured its existence. Hazera was asked to leave the area but refused, and the issue ended up in court. A widely publicized trial began, in which Ehud Olmert was accused of accepting bribes from Hazera to promote its real-estate initiative. He was convicted, fined, and sentenced to prison.[42]

The Plan: Extra Large, Large, Medium, Small

In this section, I will describe the way in which Ariel Sharon Park was and still is administered, the regional and design plans that were applied to the entire area, and the enormous infrastructure projects that came about as a result.

Ariel Sharon Park was first implemented by the Dan Regional Association of Towns, and financed by the government and the Beracha Foundation. The involvement of the Beracha Foundation, and of Weyl in particular, was central to the policy, planning, and design processes, and enhanced and accelerated the process tremendously, enabling one of Israel's largest environmental initiatives.[43]

The Ariel Sharon Park company was established in 2005 as a government company subject to the Ministry of Environment rather than to any municipality that might misuse it. It is entitled to plan, develop, manage, coordinate and maintain the entire park, with an internal budget based on donations, estates, state budget, local authorities and revenues from ventures. The entire project is being handled by three leading landscape architecture firms: Latz & Partner, which designed the master plan of both the mound and the entire park; Studio-MA, which

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[40] Martin Weyl in discussion with the author January 28, 2020.

[41] The massive lobbying by Omri Sharon was covered extensively in the Israeli media. See for example: Z. Rinat, "If Ted Turner Would Come to the Mountain," *Haaretz*, November 4, 2007. https://www.haaretz.co.il/gallery/2007-11-04/ty-article/0000017f-e4bc-d75c-a7ff-fcbd6f150000; N. Dvir, "The Magic Mountain," *Haaretz*, May 27, 2007.

https://www.haaretz.com/2010-05-27/ty-article/the-magic-mountain/0000017f-dbbb-d3ff-a7ff-fbbba9890000

[42] J. Lis, "Ex-Olmert Confidant Held Over Corruption Charges," *Haaretz* April 8, 2010. https://www.haaretz.com/2010-04-08/ty-article/ex-olmert-confidant-held-over-corruption-charges/0000017f-f792-d044-adff-f7fbaa0a0000?lts=1669189984206

[43] Ronen-Rotem, "The Impact of International Philanthropic Foundations."

operates the works on the mound, the entrance to the park, and the Cofer river park; and Braudo-Maoz Landscape Architecture, which operates the entire park's master plan and the biodiversity park together with a team of various professionals.

Meanwhile, the regional plan, TAMAM 3/5, was applied to the entire area. Its main goals were: (1) to create conditions for the development of a metropolitan park for the use of residents of southern Tel Aviv; (2) to establish principles for the rehabilitation and preservation of land as a flood plain for the Ayalon and Shafirim rivers; and (3) to set out guidelines for the rehabilitation of the Hiriya waste site; determine instructions for the construction of a waste treatment and recycling centre, and preserve the character and heritage of the Mikve Israel agricultural school. This regional plan stated that no permit would be granted for construction or any other use of the park. In addition, the area would accommodate two main sewage channels (from north Tel Aviv, Ramat Gan, Givataim, and Bnei Braq), as well as train and metro lines to serve Israel's main cities.[44]

Against this administrative background, Peter Latz created a design that covers 2,000 acres, and accommodates the Hiriya mound and recycling park, Ariel Sharon Park, and the Mikve Israel area. It is situated next to Begin Park and the Safari, creating a contiguous open green space (Fig. 5). Located at the centre of Israel's most populated region, it is a local site which plays an almost national role and any change in this area has impact across the country.

According to Latz's plan, the streams at the foot of Hiriya first needed to be diverted away from the trash. Thereafter, the rehabilitation of the trash mound could commence and, subsequently, the planning and design of the entire park.

The recovery and design of Ariel Sharon Park is an ambitious, thirty-year project aimed at connecting the cities of Tel Aviv, Ramat Gan, Or Yehuda, Bnei Brak, and others. A harbinger of the phenomenon of metropolitan parks in Israel, it is a large park serving multiple cities and communities, with various functions.[45] The vision of recovering the southern parts of the Dan

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[44] Tzadik Eliakim (of Eliakim Architect Ltd., and planner of the Mikve Israel outline plan), in discussion with the author, December 16, 2019.

[45] The movement for open large natural areas emerged in Europe and North America in the 19th century, in acknowledgment of the need for leisure spaces next to the growing cities, and for a gateway from their pollution. On metropolitan parks and changes in their paradigm, see: R. C. Retzlaff, "The Illinois Forest Preserve District Act of 1913 and the Emergence of Metropolitan Park System Planning in the USA," *Planning Perspectives*, 25, no. 4 (2010), 433-455; J. Veitch, A. Carver, G. Abbott, B. Giles-Corti, A. Timperio, and J. Salmon, "How Active are People in Metropolitan Parks? An Observational Study of Park Visitation in Australia," *BMC Public Health*, 15, no. 1 (2015), 1-8. On metropolitan parks in Israel, see: E. Feitelson, "Metropolitan Recreation Areas: The Background to Metropolitan Parks," *Planning*, 6, no. 2 (2009), 81-83 (in Hebrew); I. Hann (ed), *Metropolitan Parks and Recreation Areas in Israel*, (The Jerusalem Institute for Israel Studies, 2011), (in Hebrew).

metropolis also poses a great functional challenge, as the park is surrounded by Israel's highways and consists of a huge area to construct and maintain. Seven pedestrian and vehicle routes are planned to connect the park to the nearby neighborhoods and cities in the future.[46] This long-term landscape-architectural project is still underway and works were postponed for several years due to corruption scandals, police investigations and audit reports on the management of the park, and then started again.[47]

The resulting infrastructure projects relate not only to waste-management, but also to water-management and drainage, as well as sports and leisure activities.

The dominant factor in the design and planning of Ariel Sharon Park is the drainage of the Ayalon river, which takes up most of the park's space, and the management of the Ayalon and its tributaries the Shafirim and Cofer rivers. Thus, the park is an engineering-architectural project based on ecological principles, which was planned to hold six million cubic metres of water. The rivers' canyons (wadis) were dramatically widened with relatively moderate slopes to regulate the water flow and enable habitats to develop. In terms of topography, the lower areas are designed for drainage, and the higher sections are for visitors' use (Figs. 9.1, 9.2). The park's margins are dedicated to sport and leisure, at its heart is water management.

Water and transportation collide at the Ayalon River. Ariel Sharon Park is divided by the Ayalon Project, which includes the Ayalon river's concrete canal, the main entrance to Tel Aviv from the south, a highway, and a railway. Israel's first national plan, the Sharon Plan, issued in 1951, outlined a system of parks in which the Ayalon river was a green belt connecting Hayarkon Park in north Tel Aviv to a new park in the south of the metropolis. However, the ecological plan turned into an infrastructural corridor for central transportation lines, and the river was narrowed into a concrete channel, which disregarded its ecological value and only partly resolved the problem of its annual flooding. Over the years, two competing strategies were proposed to address the Ayalon flooding: diversion and conservation. The first recommended diverting the river to the sea before it reached the city, in a canal beneath the fields of Mikve Israel. The second plan, by TAHAL, Israel's water planning agency, proposed prioritizing water conservation as part of a national plan for water security. It was suggested that the Ayalon river

[46] Amir Lotan in discussion with the author, January 12, 2023.

[47] On the corruption in Ariel Sharon Park, see: A. Hofstein, "Corruption is Delaying the Drainage Solution in Tel Aviv," *The Times of Israel*, March 2, 2020 (in Hebrew), https://www.zman.co.il/77297/popup/

be included in a national damming project, in which seven reservoirs upstream would moderate the irregular flow, and a pumping station would transfer water to a larger carrier.[48]

In terms of the mountain of waste at Hiriya, the issue of waste treatment and the safety of the trash mound had to be resolved first in order to progress the entire project: planning and building required solutions to the terrain's instability that was caused by the subsidence resulting from the decomposition of the waste. Latz's first design principle was to maintain the iconic shape of the mound, thereby highlighting rather than avoiding the injustice Hiriya had caused, and using its value in the functionality and design of the area. Consequently, there was no construction at the top. To ensure the sustainability of the project, all the materials used were taken from the site itself, or from the recycling plant.

The slopes of the mound posed a major problem because they were steep and threatened the rivers, so they first needed to be stabilized. The engineers advised moderating them, but Latz suggested stabilizing the mound with recycled construction waste forming a belt around it, and diverting the rivers further away. The banks of the creek are also stabilized with the same materials. Stabilizing the mound also enabled its transformation into a public park. Latz's design that maintains the original topography of the mound turned it into a national icon. He divided the mound into an oasis at the lowest section that absorbs all the runoff in a lake, and an upper level with a visitors' centre, and café, offering an impressive vista (Fig. 6). The upper level is divided into several parts, which collectively take the runoff from the mound to underground pools. These sections of the mound are gradually being covered and sealed, both to protect the upper soil from polluting gases that rise up from the waste, and to prevent any seepage of runoff to the mound. Above these are groves which suck the water up from the underground pools. However, the mound is unstable and sinking at a rate of 1.3 millimetres a month, and the pergola at the top from where visitors can enjoy the view (Fig. 7) moves about 1.4 millimetres south each month. The polluting gases are mainly methane (CH4)—a by-product of unregulated landfills—and are formed by the decomposition of organic matter in anaerobic conditions that is collected in more than eighty wells 12-27 metres deep. The gas is carried to a nearby textile factory. The leachates are collected in a peripheral piping system leading to the foot of the mound, where they are biologically treated and transferred to the

[48] R. Kozlovsky and N. Feniger, "Landscapes of Calculation: The Design Agency of Methods of Assessment at the Ayalon Project," *Landscape Research*, 46, no. 1 (2021), 77-95.

regional sewage system.[49] The design uses recycled construction materials thereby creating unique biological habitats (Figs. 8.1, 8.2).

Regarding the plan of the whole park, it is noteworthy that the original landscape of the plain was flat, and it was with considerable effort that the landscape architects convinced the various stakeholders to create a more diverse topography in the valley. This included islands with rich and varied vegetation, all intended to slow and/or prevent drift. This topographical design constitutes a nature-based solution to flooding, and shows that this is not an eighteenth-century English landscape but rather a post-industrial environment that, inter alia, correlates with the trash mound.[50]

In accordance with the original master plan, there is a balance between how the soil was dug up and redistributed in piles within rather than outside the park. The eight million cubic metres of soil dug from the area have been used to create the new topography outside the flooding area. Latz's second design principle required Hiriya's mound to be visible from each of the main roads surrounding it, hence the redistributed soil was piled up to a moderate height so as not to hide Hiriya's iconic mound. This design also enables visitors to enjoy nature undisturbed by noisy roads. Although in the last decade the original master plan for the park was somehow neglected due to its size and cost, as the need for a fourth trail arose to meet the growing use of trains in the Tel Aviv metropolis, the plan was revived with some changes. The Ayalon channel was too narrow to contain both the trails and the water flow, therefore the National Committee for the Planning and Construction of National Infrastructures ordered the pooling volume in the park to be increased in order to minimize water levels in the channel during extreme weather events.[51]

The Ariel Sharon Park is a unique project as it demonstrates an impressive combination of planning, drainage, and ecology in one landscape-architectural huge scheme. It makes the urban supporting infrastructure and engineering principles part of the environment, in accordance with the design, the central idea being to hold the runoff water. In order to prevent winter flooding of the southern neighbourhoods, when the water flow exceeds 400 cubic meters

[49] T. Latz, "Rehabilitation of the Hiriya Landfill, Tel Aviv," *Ri-Vista. Research for Landscape Architecture*, 16, no. 1 (2018), 54-67; Ulf Glanzer (of Latz & Partner), in discussion with the author, June 1, 2020; Amir Lotan (of Studio MA), in discussion with the author, December 22, 2022 and January 12, 2023.

[50] Aliza Braudo (landscape architect, and managing partner of Braudo-Maoz Landscape Architecture), in a lecture attended by the author, January 21, 2021 and November 14, 2021; Amir Lotan in discussion with the author, December 22, 2022 and January 12, 2023.

[51] Zeevik Landau in discussion with the author, December 24, 2019.

per second, a hydraulic dam, located where the river enters the channel, closes and the water flows backwards into one huge and several smaller retention ponds. When the flooding ends, the water is released slowly back into the channel, allowing it to integrate with other man-made structures.[52] Thus, in dry months the park will change shape and accommodate visitors across most of its expanse; in wet months the water will become a natural visual celebration of environmental recovery and good functioning.

Thus, Ariel Sharon Park fulfils a variety of functions. The park's plan also includes the historic Mikve Israel, icon of the agricultural legacy, and the agricultural area to the north—a fundamental infrastructure for the future; a lake, amphitheatre, promenade, cafés, sport facilities, and an archaeological site lie to the east. The extensive development areas are intended for recovering ecological systems, and include a natural winter pool, a bird sanctuary, bicycle trails, walking and jogging trails, and more. In addition, the park is located on the birds' migration route, thereby creating a unique open green area for them to rest and feed. There are plans to put a photovoltaic roof hundreds of thousands of metres wide on the parking lots to provide electricity to the surrounding neighbourhoods and create a financial resource for the park.[53]

The Ariel Sharon Park, a large park with various functions, incorporates many infrastructures, including water, drainage, ecology, leisure, waste treatment, renewable energy, transportation, and more (Fig. 10). It was established on an area damaged by a failed waste infrastructure, which had blocked the functioning of other systems in the area that can now flourish. These, in turn, enable the development of yet other infrastructures for the future. The landscape can adapt to the climate and no longer functions solely as an aesthetic open area.

Conclusion and Reflections

The common approach to polluted sites is to acknowledge that we came, destroyed nature, came to our senses, recovered the land, and atoned for our sins. Hiriya offers a different perspective, telling a less linear story: it describes the complex relationship between city and nature, nature and infrastructures, infrastructures and cities, and between different infrastructures.

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[52] Tzadik Eliakim in discussion with the author, December 16, 2019; Aliza Braudo, on a tour attended by the author, January 21, 2021, November 14, 2021.

[53] Alon Amram (Director of the Engineering Department, Ariel Sharon Park), at a lecture attended by the author, November 14, 2021.

Infrastructures inhabit our physical surroundings, forming the basis of cities and life on this planet. When those infrastructures become brownfields, they create large unattractive, polluting, unused, and unwanted sites, which threaten the cities, and are often associated with additional environmental and social hazards, and attract illegal activities.[54] Careful creative planning and design by professionals from various disciplines can turn such sites into instrumental spaces that contribute to a rich urban life.

Hiriya landfill failed as an urban-supporting waste-treatment infrastructure, thereby threatening other major infrastructures, namely the nearby airport, main roads, and flood plains. The rehabilitation of the landfill and the establishment of the new park were a result of several large, dramatic processes, which occurred in tandem: a shift in the national planning system, environmentally oriented and public awareness, a new approach to streams and rivers, a national plan for waste treatment and landfills, and the cooperation of outstanding players with vision and courage. These finally converged to form one unique crucial site.

The plan's aim was to construct a twenty-first-century park that would address various urban needs, with an ambitious drainage plan—rare in its enormous scale, even globally—thus creating a unique social-ecological metropolitan park. The plan is unique in that it was not motivated by financial or engineering considerations, but by the wish to transform a polluted and polluting landscape into a man-made engine for the recovery of the natural environment and the wellbeing and functioning of the surrounding cities.[55] It is also unique because it involved a range of planning, ecology, hydrology, and drainage professionals, headed by a landscape architect (Latz) rather than by an engineer, planner or architect, as is more usually the case.

Hiriya and Ariel Sharon Park are a wonderful example of how to maximize a site's benefits and indeed, in subsequent years, served as a model for other projects dealing with water, polluted sites, and growing communities in Israel. Defined as a waste-treatment site, thus profiting from its proximity to the country's most populated areas—huge amounts of waste are delivered to a recycling centre nearby, treatment costs are reduced, and the hazard has become a resource. Keeping the waste facilities inside the new park makes the waste and its iconic mound part of the park's mainstay.

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[54] M. DePass, "Brownfields as a Tool for the Rejuvenation of Land and Community," *Local Environment*, 11, no. 5 (2006), 601-606.

[55] Amir Lotan in discussion with the author, December 22, 2022, January 12, 2023.

Climate change poses serious challenges to cities around the world. Heat waves, extreme rainfall, air pollution, and biodiversity reduction threaten human well-being, while urban centres face growing population density and traffic increase, and must address land conversion and the decrease in open green areas. Urban green spaces, and large parks in particular, are essential for city recreation, sport, social encounters, biological conservation, cultural identity, and natural solutions to cities' infrastructural problems.[56] They prevent urban sprawl, support historically deprived communities, repair environmental injustice, and strengthen urban resilience against the extreme negative consequences of climate change. Ariel Sharon Park confronts climate change by combining leisure with water and smart transportation infrastructures, alongside a regional ecological corridor and open natural area which cool the surrounding urban mass. Large parts of the park are dedicated to rewilding as well as human activities, and the plan includes winter-pond preservation, wild-animal support, and vegetation beside the urban areas.

As open green spaces become rarer, brownfields gain in value, and knowledge regarding their recovery and regeneration increases. Landscape architects are capable of handling social, cultural, ecological, and physical aspects, and therefore play a leading role in rehabilitating contaminated sites.[57] Landscape architects provide a comprehensive balance between human activities and nature's needs. Such sustainable development enables sustainable transportation, environmental preservation, renewable energy, waste management, and issues of urban resilience. Relevant to Hiriya, in this context, is the potential of wetlands during rises in sea levels, flash floods, and other extreme climatic events.[58]

As explained above, the nature-based solution of a large park created an engineering infrastructure for drainage which, in turn, created a social, cultural, and ecological infrastructure, together with agricultural, transportation and electrical infrastructures, on the

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[56] T. McPhearson et al., "Advancing Understanding of the Complex Nature of Urban Systems," *Ecological Indicators*, 70 (2016), 566-573; Song et al., "Nature Based Solutions."

[57] Zheng and Kirkwood, "Landscape Architecture and Sustainable Remediation."

[58] T. Yigitcanlar and D. Dizdaroglu, "Ecological Approaches in Planning for Sustainable Cities: A Review of the Literature." *Global Journal of Environmental Science and Management*, 1, no. 2 (2015), 159-188. On adaptation to extreme environmental changes such as water-related hazards, practiced in three projects in China using the methods and tools of landscape architecture—Tianjin Qiaoyuan Wetland Park, Yanweizhou Park, and Qunli Stormwater Wetland Park—designed by Beijing landscape studio Turenscape, see: A. Perepichka and I. Katsy, "How Landscape Infrastructures Can Be More Resilient. Positive Practice of Wetland Urban Adaptation to Stormwater Extreme Events in China," (July 2016). https://www.academia.edu/27411600/How_landscape_infrastructures_can_be_more_resilient_Positive_practice_of_wetland_urban_adaptation_to_stormwater_extreme_events_in_China.

site of a rehabilitated waste-treatment plant. It created a park in a historically deprived part of Tel Aviv, and provided an open green area in a country which is becoming increasingly crowded.[59] Peter Latz described Duisburg-Nord Park as an oasis—a space where people encounter and consider the transformation of old industrial sites.[60] The 'oasis' at Hiriya is both a real place on the trash mound and the story of how human effort transcended the damage caused to landscape and nature.

Looking to the future, large parks face large challenges: they are expensive to design and construct, and even more so to maintain and manage. As complex and dynamic systems, they are greater than the plan their designer devises, and must address different interests, authorities, and politics. Ecologically, large scale is an advantage, but unlike Central Park in NYC or Bois de Bologne in Paris, for example, which have enjoyed unlimited space since their inception, Ariel Sharon Park confronts the challenge posed by those who insist that it should accommodate housing to finance its ambitious design. The three administrative bodies of the park (the Ariel Sharon Park Company, the Dan Region Association of Towns, and the Mikve Israel School) aimed to make it financially sustainable, confronting issues inherent in the park's vision, and addressing various interest groups that have little in common. The rehabilitation of Hiriya turned the neglected and polluted area into a valuable land-resource, turning the whole process into an incisive discussion on our urban planning, and giving rise to a vision which hopefully will be achieved.

[59] On the challenges of Israel's parks and nature reserves, including financing, wildlife management, accommodating different communities, etc., see: Tal, "Natural Heritage."

[60] P. Latz, "Landscape Park Duisburg-Nord: The Metamorphosis of an Industrial Site," in *Manufactured Sites*, ed. Niall Kirkwood (London & New York: Spon Press, 2003), 159.

Figures

Fig. 1. Israel. Source: Google Maps

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Fig. 1.1 Tel Aviv-Yafo region and Ariel Sharon Park. Source: Google Maps

Fig. 2. Ariel Sharon Park. Source: Latz + Partner

Fig. 3. Hiriya and the Ayalon river, December 1997.
Source: Dan Region Association of Towns

Fig. 4. Hiriya landfill, 2002. Source: Dan Region Association of Towns

Fig. 5. Components of Ariel Sharon Park. Source: Ariel Sharon Park

Fig. 6. The lake and the café at the top of Hiriya. Source: Studio-MA

Fig. 7. The pergola at the top of the mountain. Source: Studio-MA

Fig. 8.1. Recycled construction materials in Hiriya park. Source: Latz + Partner

Fig. 8.2. Recycled construction materials in Hiriya park. Source: Ariel Sharon Park

Fig. 9.1. Ariel Sharon Park masterplan. Source: Latz + Partner

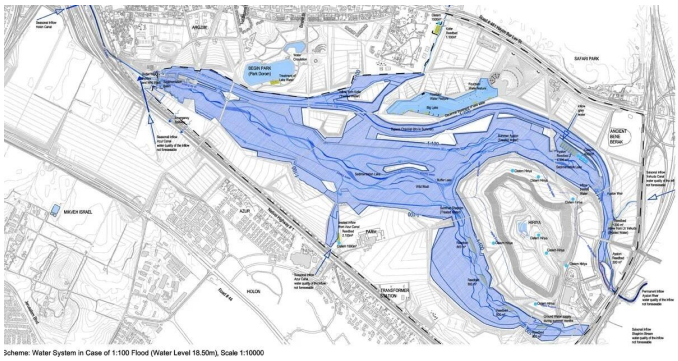

Fig. 9.2. Water system in Ariel Sharon Park. Source: Latz + Partner

Fig. 10. Ariel Sharon Park. Source: Ariel Sharon Park

Interviews

Alon Amram (Director of the Engineering Department, Ariel Sharon Park), at a lecture attended by the author, November 14, 2021.

Aliza Braudo (landscape architect, and managing partner of Braudo-Maoz Landscape Architecture), in lectures attended by the author, January 21, 2021 and November 14, 2021; and on tours attended by the author, January 21, 2021, November 14, 2021.

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Ulf Glanzer (Latz & Partner), in discussion with the author, June 1, 2020.

Amir Lotan (of Studio MA), in discussions with the author, December 22, 2022 and January 12, 2023.

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3.0 DISCUSSION

3.1 Beyond Space and Time

My research examines Hiriya as a place and a symbol. The boundaries of the physical place stretch way beyond the 60-meter-high waste mountain, encompassing the nearby cities of Tel Aviv-Jaffa, Ramat Gan, Or Yehuda, Azor and Holon, the streams, agricultural fields, and historical buildings. The symbolic boundaries expend in time and image, from the period of Mandatory Palestine to the state of Israel today (2023) in the twenty-first century. Both these boundaries incorporate environmental neglect and creative restoration; social weakness and urban resilience; waste pollution and innovative recycling plants.

However, nothing in this story is rosy or deterministic. Unlike popular American movies, which begin with disaster and end with redemption, this work thwarts any linear, one-dimensional narrative. It may be tempting to surrender to the narrative in which we, Israelis, in the fervor of settlement and progress, sinned against our land and polluted it until the air that rose from it soured our breath. And then, after too many years of indifference, neglect and incompetence, came to our senses and harnessed all the power of vision and creativity to heal our land, ourselves and our future.

Yet, this is not the theme of this work. The story it tells may have a beginning in time, and in the benign state of the place it deals with, but it has no end because the project for the restoration of Hiriya and the establishment of Ariel Sharon Park will continue for many years to come. Similarly, there is no end to the extent of the park's influence as its impact ripples through its own "blue line" on the map and beyond the surrounding neighborhoods and cities. Just as the waste that makes Hiriya – the same waste that continues to accumulate on the mountain and feed the efficient factories at its foot – has no end. The quantity and type of waste are only increasing at a dizzying pace: a small portion is recycled and returned in a useful form, but most of it travels to the Negev, to be buried there, far away, for eternity.

3.2 Findings

Below I will summarize the findings of the three articles:

3.2.1 **"Place and Displacement: Historical Geographies of Israel's Largest Landfill"** describes and analyzes the events that took place in the Hiriya area in the first decade after the establishment of the State of Israel (1948-1960). It examines the role of space in the creation

of political power, as demonstrated by the process of landscape destruction at the center of Israel, near the Hiriya landfill. The 1948 war, which resulted in the establishment of the State of Israel, ended with a dramatic spatial change, the destruction of hundreds of Palestinian towns and villages and the erasure of their heritage. Shortly after the war, the Hiriya landfill was established to treat the municipal household waste of Tel Aviv. It was located next to the Arab village of Al-Khairiyeh, whose residents were expelled during the 1948 war.

The failed waste-treatment infrastructure destroyed the delicate texture of the site, erasing a multi-layered human heritage and the fine nature that characterized the area. This act sealed the fate of the region as a no-man's-land abandoned to marginal activities and various hazards. Government ministries and Tel Aviv municipality assured the local residents – most of them Jewish immigrants and refugees who lived in the transit camp nearby – as well as the residents of the city, that no harm would come to them from the landfill, and that a new and advanced waste-treatment plant would soon be established to solve all their waste problems in a modern and efficient manner. But the opening of the promised compost plant was repeatedly postponed, and the site of the infamous waste mound continued growing and soon became a regional hazard.

The article reveals the rapid changes that took place in the early 1950s in the Hiriya area. It shows how insistence on a modern, technological solution to waste treatment steeped in Zionist ideology – thus creating fertilizer for agriculture and trying to promote economic prosperity – led instead to the creation of a dangerous and notorious place, a symbol of environmental, social, health and infrastructural hazards.

3.2.2 **"The Trash has Gone – The Trash Mountain Remains: A New Look at the International Design Competition for the Rehabilitation of Hiriya Landfill in Israel"** presents a second chapter in the dramatic story of Hiriya. It examines waste both as a concept and a material, and concentrates on its representations in the 2004 international competition for the design and planning of the Hiriya landfill. The competition encouraged landscape architects to treat the polluted site with its bleeding past, and outline new cultural and ethical meanings for it as a rehabilitated public space. The study uses hitherto unexplored written and visual sources, including the competition protocols and planning documents, and engineering reports, as well as interviews with the landscape architects who had participated in the competition and its judges. Theoretically, this article combines landscape architecture with cultural studies on waste. It reveals that only a few of the 14 proposals submitted to the competition addressed the complexity of waste and its cultural, ethical and social properties. The winning proposal, by

the renowned German landscape architect, Peter Latz, turned the trash mound into a towering monument, but the idea and experience of the waste remained more or less in the margins. This article contributes to future studies on the global issue of restoring contaminated and violated sites, and it encourages reconsideration of the main polluting factors created by consumption culture.

This second article focuses on an important moment in time when, using landscape architecture as cultural design, Israel stopped to examine its polluting past and outlined a healthier future. This is a unique moment when we see how a society chose to face up to its own history and design its public spaces anew for future generations, as spaces for leisure and recreation, but also as places of memory and education for a more sustainable lifestyle.

3.2.3 **"Israel's Largest Landfill Rehabilitation: Creative Landscape Design as a Catalyst for a Functioning Metropolis"** examines the transformation of Hiriya from a polluting, neglected and failed waste infrastructure, which negatively impacted other central infrastructures, into a large metropolitan park. It reveals the dramatic landscape transformation in correlation with changes in the Israeli planning system, as well as in the approach to water resources and streams, the national plan for waste management, developments in the Israeli environmental discourse and changes in the approach to recovering and planning brownfields. The German landscape architect Peter Latz was chosen to rehabilitate the trash mound and subsequently plan the entire area of around 8,000 dunams ($8km^2$) around it. His creative design combines a regional solution for drainage and flood prevention, enables the establishment of other central infrastructures, such as mass transportation routes, and accelerates the recovery and growth of historically neglected neighborhoods in the southern metropolis of Gush Dan. This study argues that the decision to close Hiriya resulted not only from a maturing environmental discourse, but also from parallel processes, including the maturation of the Israeli planning system, a new approach to streams and water and a national program for waste treatment.

The article analyzes a variety of written and visual documents, including the preparations for the planning workshops, Latz's detailed plans, archival materials and interviews with key figures involved in the transformation of the region. It shows how a successful design transformed Hiriya from a violated no-man's-land on the outskirts of the cities into a vibrant, green and functioning space in an urban environment. The planning turned the existing green infrastructures into a rich experiential landscape, which combines leisure, recreation, sports, water runoff and flood management, nature conservation, education and art, alongside waste

infrastructure and recycling plants. The study claims that the restoration of the waste infrastructure at Hiriya has transformed the area making it lively and healthy, and creating the basis for the prosperity of other infrastructures. In this way, the park resolves a variety of different issues, strengthens the resilience of the cities around it and is better equipped to deal with the impacts of climate change by contributing a solution to extreme weather, creating an ecological corridor and enriching the biological diversity.

The recovery of the Hiriya waste mountain and the entire area around it is a microcosm of a complex process at national level of administrative changes along with new concepts regarding the protection of the environment. It offers important insights that can be used in the future transformation of other contaminated sites into thriving parks.

3.3 Success and Failure

As the story of Hiriya unfolds, we see that the site stands as a symbol of phenomena far beyond its reach. The destruction of Hiriya symbolizes the dramatic spatial changes in the landscape that took place after 1948, and the political, social and economic meanings that derived from them. Like other agricultural and rural areas that were expropriated after the war and stood in contrast to the developing cities – Tel Aviv being the first – the area of Hiriya was perceived as undeveloped, abandoned Arab territory, situated in what was then a peripheral corner of the country and therefore out of sight and mind,[61] and easy to turn into a dump. The transformation of the Arab village of al-Khairiyah into a dump for the central cities of Israel realized an economic-Zionist vision of turning garbage into fertilizer, but in fact it was a continuation of the imperial British way of treating the waste from growing modern cities. The bitter failure of that vision soon turned Hiriya into a stinking abscess in the heart of the developing country, and a symbol of the country's attitude towards its own land and its weaker inhabitants.

This was not the only failure. Aldo Leopold, an American scientist, intellectual and pioneer of the US environmental movement, saw the floodplains as living extensions of their rivers, something the river can reclaim whenever it chooses. The construction and development of the floodplain of the Ayalon river, which ignored its flood-related features, made the residents of the transit camp that was built there in the early 1950s miserable, and continued to exact a

[61] On the transformation of backyards into landfills, see for example the case of Fresh Kills which became New York's main landfill: M.V. Melosi, *Fresh Kills: A History of Consuming and Discarding in New York City* (NY: Columbia University Press, 2020) 17-18.

heavy price in life and property among future generations. Here, too, Hiriya serves as a symbol of the rapacity and arrogance inherent in the disregard for the area's prevailing conditions, and of much broader processes and approaches across the country in general.

Fifty years later, Hiriya was reborn. The measures taken to close the landfill were accelerated due to the damage that birds were causing to the nearby airport and surrounding main roads. However, this could not have happened without the tectonic movements that occurred on several levels in the environmental and planning discourse in Israel. Therefore, Hiriya has also become a symbol of environmental recovery, of maturity in the national planning system and recognition of the need for open spaces, of the national program for the treatment of waste and landfills, and a leading symbol of river restoration and flood management.

This is not to say that all of these have been a resounding success. The place of the environment in the Israeli discourse remains marginal and the State of Israel averts its gaze from environmental hazards, and neglects its role in dealing with global climate change which has severe impacts locally. The national planning system still prefers establishing new settlements over urban density, and new infrastructures are built at the expense of open spaces and natural assets. The rate of waste production in Israel is one of the highest among OECD countries. Despite the beneficial changes that have been implemented, about 80 percent of waste ends up in landfills and a significant portion in illegal incinerators scattered across the country, polluting the soil and air, harming people and nature, and emitting greenhouse gases. The restoration of the Ayalon river floodplain, and its centrality in solving the floods of the southern Dan metropolis, is an important sign of a restorative (and partly controversial) approach to the country's streams. It confronts extreme rain events, which are expected to occur almost every winter according to climate change models, preventing flooding of the southern neighborhoods of Tel Aviv and ensuring the main routes are not blocked. However, most streams in Israel still suffer from neglect and pollution and cause flooding in many settlements.

The 2004 international competition for the restoration and design of Hiriya and its transformation into a leisure park was the culmination of an inspiring process, which heralded a new chapter in the history of landscape design in Israel. Progressive cosmopolitan ideas, environmental concepts and practices of rehabilitating brownfields gave impetus to the competition in its early stages, and it attracted leading professionals and talents from Israel and around the world. Thus, in my eyes, the competition stood for something greater than itself: the positive momentum the competition introduced into the local discourse concerning environmental hazards and landscape planning; the decision to deal with the environmental

hazards of the past – the waste in this case – but nonetheless to ignore the appalling political and social hazards of the past, namely, the erasure of the Palestinian heritage and the Jewish village, and the injustices of the transition camp that disappeared without a trace. The restoration of the trash mountain could also have been an opportunity to restore the repressed memory of Zionism, but the participants stuck firmly to the topic at hand, addressing only the landfill. Apart from that, the competition also symbolized the evasion or disregard of the mountain's essence and the waste issue which, since the closure of the landfill until today, has only become a burning and more complex problem. The discussions and proposals regarding the perception of the mountain were only partly dedicated to the root of the problem, thereby reflecting the general failure in Israel to treat waste appropriately. It is also indicative of an international consumer culture that consumes resources without being able to restore them, pollutes the earth and depletes its values.

The centrality of Hiriya in Israel's geography thus reflects its centrality in Israel's history and character.

3.4 Innovations and Contribution

This thesis looks critically at the past, present and future of Hiriya as a geographical place and a cultural symbol. It examines the politics, culture and environment related to its founding and the planning and visionary aspects reflected in its restoration. Thus, the thesis is bound to make a significant contribution to landscape research in its various aspects: landscape history, landscape architecture, landscape infrastructures and landscape planning and rehabilitation.

Hiriya has undergone various turning points in the last century, which make it a prominent test-case in the discussion of other, even larger, such spatial phenomena. So far, no historical, cultural or visual study of this area has been undertaken. Topics such as the 1948 war and the sweeping changes it brought to the area's population and ways of life, the erasure of the residents' rights and culture, and sterilization of the area's original character, which enabled it to be turned into the metropolis' dump and allowed the entire area to become a neglected, hazardous backyard were documented and analyzed here for the first time as actors in the landscape drama. This study is a significant addition to the existing knowledge on Hiriya, and to the research methods which combine written and visual archival sources, academic literature and analysis of landscape images.

Sites like Hiriya confront us with a great challenge due to the potential that exists in turning them into valuable areas. Hiriya, therefore, joins many sites around the world which, in the post-industrial era, became scenic wounds with negative impacts on cities, landscape and nature. With the growth and densification of cities, alongside the evolving environmental discourse, those sites have become inspiring natural spaces within the urban environment.

Waste, with the related consumption-culture values and implications for the environment and humans, is also becoming a central issue. Many studies deal with engineering, economic and environmental aspects of waste and landfills, but only a few deal with its human aspects and their connection to environmental studies. There are also a few studies that examine how waste and waste-disposal sites affect the landscape, and the strategies and implications of landfill rehabilitation. Therefore, this study's contribution inheres in the research's critical observation of the waste as a dynamic actor in the landscape, one that violates ecological, political, social and cultural orders, but also has the potential for restoration and regeneration. In addition, it presents landscape architecture and landscape architects as change agents for complex spatial problems. In that sense, this study recognizes landscape architects as change agents who can turn hazard into resource, and who have abundant tools to confront and tackle complex issues and problems.

Future research may focus on Hiriya in popular culture (poems, songs, movies, books and the visual arts), or expand the scope and scale into the rehabilitation of open areas and rivers in Israel, through landscape design competitions (such as the Ga'aton river which floods the city of Nahariya every year, Tel Aviv's coastal park, which preserves a unique sea-shore habitat) or the restoration of national infrastructures (including waste infrastructures) in the desert, the country's backyard. Other and relevant future studies might focus on and compare the hundreds of landfills established over the years outside Israeli cities; newly improvised landfills recently established in open areas; waste that adorns the Israeli landscape like a protected species that must not be picked; and the restoration of streams, purification of impurities, and more. These directions can deepen the understanding of a crowded country that struggles to preserve its open natural areas against the need to provide dwellings and infrastructures for the growing population.

The study may also serve as a reference for subsequent studies of issues related to brownfields, which have been increasing following the second world war, and particularly in the last two or three decades with changes to the global economy. Turning those sites into benevolent, restorative areas will contribute to the prosperity of communities and to addressing the impacts

of climate change. These landscapes are a reflection of historical events, cultural perceptions and political agendas. The changes they are now undergoing reflect changes in public discourse, in perceptions related to relationships between city and nature, and between people and the environment, as well as community involvement.

EPILOGUE

In this thesis, I have tried to portray both a physical and a cultural place. A place defined by people who change and reinvent it as they come and go. It was a journey in space and time that passed through a central place in Israel, but under different conditions could also have passed through any other central place in the world, as history is not a private, local story. In the end, behind the great successes described in this thesis, there also hides a shameful failure; behind the progress and vision are also injustice and abuse.

The place discussed here can also be described as supporting human settlement, that was subsequently grossly violated by a failed waste infrastructure that made the area unfit for human habitation, and a hazard to anyone living in its vicinity. Subsequently, after 50 years of suffering and failure, it has become a place that supports the city and its residents, providing them with nature for the wellbeing of mind and body, protecting them from floods, providing efficient transportation, agricultural areas and ecological infrastructure. Therefore, the first chapter describes and analyses the violation; the second chapter analyses the moment of decision and the creative thinking regarding the directions taken to restore Hiriya, while the third chapter describes the restoration itself. Thus, methodologically in chapter two, the thesis shifts to a cultural discussion of human/society-waste relations, and the Anthropocene era and its footprint on the landscape.

Thus, Hiriya explores a change of perception regarding the meaning and role of the landscape as a cultural product. No longer a pastoral, nostalgic landscape, nor one that tells of a romantic or national past, but rather the icon of a polluting past and of massive political intervention in the landscape. In this context, Hiriya is particularly interesting, as it is simultaneously a rare case of a designed, organic and a symbolic-associative cultural landscape.[62] It is a designed cultural landscape, since Hiriya is an entirely man-made mound, the result of deliberate waste dumping over half a century, and it has subsequently also become a man-made park.

[62] https://whc.unesco.org/en/culturallandscape/

Concomitantly, Hiriya is a continual organic landscape that represents the culture and lifestyles of a society that still functions in this way. Hiriya is also a symbolic-associative cultural landscape since its image and content carry long memories of other days; it is a symbol of processes and perceptions that go far beyond its physical presence.

As part of the discussion on landscape architecture in Israel, Hiriya's restoration and the Ariel Sharon Park project were landmarks in the planning and design of landscapes in Israel, which emerged in two ways: in the restoration of brownfields and in the planning of large parks. Peter Latz, the German landscape architect chosen to design the mountain and the park, had already won international fame for his design of the iron and steel factories in Duisberg Nord in western Germany. Dan Zur, who won the second prize with Studio De-Lenga, also won the Israel Prize for Architecture and is a prolific landscape architect in Israel. However, some of the Israeli landscape architects who participated in the competition were then taking their first steps in the field, and later became leaders in brownfield rehabilitation, based on their involvement in the competition, among other things. For example, Aliza Braudo and Ruth Maoz planned and designed rehabilitated waste sites (Park Midron Yafo, Sea View Park in Bat Yam); Vardit Tsurnamal, with her associate Michal Turner, became the leading landscape architects in Israel in quarry restoration; and Matanya Sack planned the restoration of streams and parks created alongside them (Beer Sheva river, Hakishon river). Hiriya created ripples, and was perhaps even a foreshadowing of the restoration of violated landscapes. A local theory for landscape restoration as a process of design, planning and financing began to be assembled in the wake of Hiriya's rehabilitation.

In conclusion, this is a study of a violated site and its restoration opens a major chapter in the history of landscape in Israel. It serves as a mirror for developments on several levels, including scenic, historical, cultural, political and environmental perspectives, and it connects planning, landscape architecture, geography, history, society and culture, in a way that makes it possible to examine other brownfields in Israel and the world, where contradictions and distortions have accumulated over the years.

In his poem *Garbage*, (1994), poet A.R. Ammons suggests that "garbage must be the poetry of our time." Garbage, he claims, raises awareness of our way of life with its negative effects. Thus, we are forced to act, to treat the symptoms, but mainly to change our vision, to understand that the malady contains the redemption.

garbage has to be the poem of our time because
garbage is spiritual, believable enough

to get our attention, getting in the way, piling
up, stinking, turning brooks brownish and

creamy white: what else deflects us from the
errors of our illusionary ways, not a temptation

to trashlessness, that is not too far off, and,
anyway, unimaginable, unrealistic: . . .

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INTERVIEWS

Residents of Havat Shalem

Sarah Bash, 10 October 2019

Edna Kapeloshnik, 7 November 2019

Residents of Hiriya and Saqiya transit camps

Viza Meir, 8 December 2019

Shosh Avraham, 12 December 2019

Ezra Shaked, 15 December 2019

Latif Dori, 15 December 2019

Judges in the Hiriya international design competition

Tamar Darel-Fossfeld: 2 February 2021

Baruch Baruch: 8 February 2021

Suzanne Landau: 16 February 2021

Neil Kirkwood: 11 March 2021

Contestants in the international design competition

Vardit Tsurnamal: 9 February 2021

Itamar Raayoni: 12 April 2021

Matanya Sack: 13 April 2021

Aliza Braudo: 18 April 2021

Bruce Levin: 22 April 2021

Ulf Glanzer: 1 June 2021

Asif Berman: 2 June 2021

Official figures in the transformation of the area into public park

Naomi Angel, Tel Aviv District Planner in the former Planning Administration, 14 December 2020, 29 December 2020, 5 January 2021

Martin Weyl, Chairman of the Beracha Foundation, former Director of the Israel Museum, January 28, 2020

Zevik Landau, former CEO of the Yarkon Drainage Authority, December 24, 2019

Aliza Braudo, landscape architect, and managing partner of Braudo-Maoz Landscape Architecture, in lectures attended by the author, January 21, 2021 and November 14, 2021; and on tours attended by the author, January 21, 2021, November 14, 2021

Amir Lotan, Studio MA, December 22, 2022, January 12, 2023

Tzadik Eliakim, Eliakim Architect Ltd., planner of the Mikve Israel outline plan, December 16, 2019

Alon Amram, Director of the Engineering Department, Ariel Sharon Park, at a lecture attended by the author, November 14, 2021

5.0 APPENDICES

5.1 Galia Limor-Sagiv and Nurit Lissovsky. 2023. “Place and Displacement: Historical Geographies of Israel’s Largest Landfill.” *Journal of Historical Geography,* 80, 32-43.

5.2 Galia Limor-Sagiv and Nurit Lissovsky. 2023. “The Trash has Gone – The Trash Mountain Remains: A New Look at the International Design Competition for the Rehabilitation of Hiriya Landfill in Israel.” *Landscape Research*, 48 (3), 354-374.

5.3 Galia Limor-Sagiv, Nurit Lissovsky and Naomi Angel. 2023. “Israel’s Largest Landfill Rehabilitation: Creative Landscape Design as a Catalyst for a Functioning Metropolis.” *Planning Perspectives*. (Q2). Accepted, Oct, 12, 2023.

5.4 גליה לימור-שגיב ונורית ליסובסקי. (2022). ״קריסתו של נוף חירייה: 1948 – 1963״, *קתדרה: לתולדות ארץ-ישראל וייישובה*, 182 (תשרי תשפ״ג, אוקטובר 2022), עמ׳ 111-138.

Journal of Historical Geography xxx (xxxx) xxx

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Place and displacement: Historical geographies of Israel's largest landfill

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ABSTRACT

This article explores the role of space in facilitating forms of political power, as shown in the destruction of landscape in the center of Israel by the Hiriya landfill. That failed infrastructure wrecked the delicate legacies of mankind and nature, thus sealing the area's fate as a city's repellent dumping ground that attracted all kinds of liminal activities. After the 1948 war, which resulted in the establishment of the state of Israel, the destruction of hundreds of Palestinian towns and villages and the erasure of their people's legacy, Tel Aviv begun dumping its household waste near an Arab village, the residents of which had been expelled during the conflict. The authorities promised the local inhabitants — Jewish newcomers and refugees in the nearby transit camp, as well as local city dwellers — a new and modern compost plant, but the plant's opening was repeatedly postponed. This article reveals the rapid changes that occurred in the early 1950s in the Hiriya area, and how insistence on a modern, technologically based solution to waste treatment, suffused with Zionist ideology, resulted in the creation of an infamous site that became a symbol for environmental, infrastructural, social and health hazards. Drawing from diverse unexplored textual and visual archival sources, including aerial photographs, historical maps, printed texts and interviews, we argue that this combined method of landscape reading is crucial for understanding such a tragedy of landscape. Our study of the Hiriya landfill points to the challenges posed by infrastructure, and contributes to future research into post-industrial sites, including landfills, quarries, airfields, mines and factories.

Looking out the window on a flight to Israel, one cannot miss the unusual sight that appears while approaching Israel's Ben-Gurion airport.[1] Located in the heart of the country, about six miles southeast of the Tel Aviv-Yafo metropolitan area, an oddly-shaped, 200-foot-high hill rises above the surrounding plain (Fig. 1). It is neither rock nor soil, but rather twenty-one million cubic yards of garbage, known to Israelis as *Hiriya* — the largest landfill in Israel. The word *khairiyyah* in Arabic means 'good' and refers to the fertile lands of the region cultivated by Arab farmers who have lived there for generations and who named their village after it. However, in Hebrew it is associated with the word *ḥara* ('shit'), partly because in the Israeli consciousness the place has become a byword for stench, ugliness and appalling neglect.

The village of Al-Khairiyyah, like other Arab villages in the area, was destroyed in the 1948 war (Israel's war of independence/the Palestinian *nakba*), and its residents ousted. The war and the establishment of the state of Israel resulted in a political-demographic change, which was also reflected in a dramatic geographical rupture. As a result of the war, in the subsequent years, hundreds of Palestinian cities and villages were destroyed, and their lands and property expropriated. Some of them were turned into Jewish cities and villages, while others were buried under forests and parks. In this process, one ethnic space was erased and replaced by another. In the case of Al-Khariyyah, the Arabs who had lived in that area were displaced and deported. Shortly after the war, the Tel Aviv-Yafo Municipality began dumping its household waste on the site and subsequently other towns in the area joined in. The landfill — which was built on the banks of the Ayalon River — grew for about fifty years without proper treatment, until it covered an area of some 111 acres. Soon, it became a large, ugly eyesore in the heart of the country, and one of Israel's largest environmental, infrastructural, and social hazards.

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[1] This article was developed from an earlier version in a Hebrew journal: G. Limor-Sagiv and N. Lissovsky, Krisato shel nof: Hiriya ba'asor harishon la'medina, *Cathedra* 182 (2022) 111–138.

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0305-7488/

Fig. 1. Hiriya landfill, 2004. Source: Dan Region Association of Towns.

It was fifty years before Hiriya's landfill was finally closed in 1998 because of the flocks of seagulls that circled for food and endangered planes flying in and out of the nearby airport. Subsequently, the hill and surrounding area were restored, and the large garbage dump was transformed into a green metropolitan area known as Ariel Sharon Park.[2]

In this article we describe the dramatic changes, and their implications, in the landscape of the Al-Khairiyyah region during Israel's first decade. A careful analysis of textual and visual archival materials shows how a typical Palestinian agricultural tract on the outskirts of expanding towns was totally disrupted within a few years. Three new independent entities converged at the site: an agricultural farm, a transit camp and the landfill, overshadowing what had been there before — the land, the stream, the village houses and the life within and around them. The farm, camp and landfill created a new type of landscape, but it was the growing landfill that dominated both visually and symbolically from the 1950s on.

Hiriya is the largest, most well-known landfill in Israel — and the largest in the Middle East — yet, its history and the transformation of extensive agricultural tracts into an enormous landfill have received little scholarly attention.[3] Its prominent location in the center of the country, at the nexus of two central highways, and its centrality in the popular Israeli discourse on stench and neglect stand in stark contrast to the dearth of scholarly interest it has engendered, and to the numerous studies that have dealt with Israel's first decade. Thus, in order to discuss the deterioration and its consequences of this landscape, we first describe the historical, spatial and social events that occurred at the site before and after the 1948 war and during the following decade. Looking back over Hiriya landfill's lifespan of sixty years, we concentrate on its first decade, as it was during those dramatic years when its landscape was utterly transformed; whereas the years following saw mainly an accumulation of neglect and pollution. Rehabilitation came only two generations later.

An in-depth study of Hiriya raises more general questions about landscape infrastructures, landfill reclamation, and the politics and ethics of landscapes, which are all relevant to similar sites elsewhere in the world. Our study describes a palimpsest of injustice and marginalities, drawing insights from historical, cultural, social and ecological studies relating to previous landscape studies focused on infrastructure and landfills.[4] The study reveals processes of decision-making relating to waste and power, and sheds light on those who bore the burden of a life of pollution in the periphery and on the forms of life that were destroyed.[5] It argues that waste infrastructure served as a tool of power and played a role in devaluing the region and its people.[6] We examine Hiriya through the lens of landscape studies, and focus on the waste infrastructure's effect on humans and nature.

Geographer Carl Sauer defined *landscape* as 'an area composed of a unique union of physical and cultural forms', and his approach was adopted by recent scholars who expanded its meaning to encompass

[2] On the historical chapter concerning the transformation of Hiriya landfill into a public park, see: G. Limor-Sagiv and N. Lissovsky, The trash has gone—the trash Mountain remains: a new look at the international design competition for the rehabilitation of the Hiriya landfill in Israel. *Landscape Research*, (2023).

[3] See: A. Tal, *Pollution in a Promised Land*, California, 2002; B.A. Lawson, *Garbage Mountains: The Use, Redevelopment, and Artistic Representation of New York City's Fresh Kills, Greater Toronto's Keele Valley, and Tel Aviv's Hiriya Landfills*, PhD diss., University of Iowa, 2015; T. Alon-Mozes, The international competition for the reclamation of the Hiriya landfill: a national Israeli symbol in the 'global' arena, *Landscape Review* 13(1) (2009) 31–46; T. Alon-Mozes, Ariel Sharon Park and the emergence of Israel's environmentalism, *Journal of Urban Design* 17(2) (2012) 279–300; H. Davis, The breathing land: on questions of climate change and settler colonialism, in: *The Routledge Companion to Contemporary Art, Visual Culture, and Climate Change*, 2021, 204–213.

[4] On the concept of palimpsest and the partial erasure and rewriting of landscapes see: W.G. Hoskins, *Making of the English Landscape*, London, 2021.p. 4.

[5] Famous theoreticians dealt with the concept of waste, wasting, classification and purity. See for example: M. Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*, 2003; G. Hawkins, *The Ethics of Waste: How We Relate to Rubbish*, 2006; J.O. Reno and M. Thompson, *Rubbish Theory: The Creation and Destruction of Value*, New Edition, 2017.

[6] On processes which turned empty or undeveloped areas into land perceived as available for colonial takeover, or as spaces that could absorb the worst of human activity in the modern world, see: Z. Bauman, *Wasted Lives: Modernity and its Outcasts*, Cambridge, 2004; M. Liboiron, and J. Lepawsky, *Discard Studies: Wasting, Systems, and Power*, Cambridge MA, 2022, 21; M. Liboiron, *Pollution Is Colonialism*, Durham NC, 2021.

physical, social, economic, ideological and political aspects.[7] In recent decades, a series of interdisciplinary studies explored the varied and even opposing ways to understand landscape, thus examining political, critical and cultural agendas.[8] A few studies emphasized issues of power, inequality and conflict in the making of cultural and public landscapes.[9] Accordingly, we rely on studies from other fields, such as environmental history, history of waste treatment, the establishment of an immigrant society, and more. Although Israel is neither a colony nor a typical case of settler colonialism, we made use of the theoretical framework of settler colonialism to better analyze and understand the events which occurred in Hiriya.[10] The state of Israel was established by Jewish newcomers, many of them refugees, who did not aspire to gain wealth for a mother-nation, or to promote their culture overseas. However, they did aspire to situate themselves in the country as the indigenous element, considering Eretz Israel/Palestine their biblical–historical homeland and the only place that could offer them a potential home. They also saw it as a land without a nation. As will be seen below, the hierarchical relations created after 1948, the processes of land and resource appropriation and cultural elimination of indigenous peoples deserves a special focus which benefits from postcolonial analysis.[11] Distinguishing the Israeli/Palestinian case from specific cases of colonialism may explain the motives, but does not defend its outcomes. Using these concepts enables us to present the events as part of a continuing process rather than a single historical event, and to reveal how such a spatial transformation constructed social relationships between Jews and Palestinians and between ethnic groups within Jewish society.[12]

An interpretive-critical synthesis of aerial photographs, historical maps, written documents, interviews, and site observations enables us to reveal visible and hidden parts that accumulated over time, and to compose a layered image and multiple narratives and meanings. While the case of Hiriya is specific to Israel/Palestine history, and focuses on a twentieth-century post-war infrastructure, the issues raised and the methods used to illustrate changes over time are of global interest. They can serve as a framework for similar investigations dealing with the ramifications of waste treatment and other post-industrial activities for the human and natural environment, and for studies of postcolonial methods and their implications on the landscape and society.

Groundwork for enduring blight

Recent studies which focus on post World War II infrastructure projects from the social sciences' and humanities' perspective, show their complex, political and aesthetic characteristics. They emphasize the infrastructures' impingement on daily life, their linkage to progress and development, and how their failure to deliver often obscures social gaps and political agendas.[13] Waste, unlike other urban supporting infrastructures, removes something undesirable, with negative value — thus devaluing the place where it ends up. It was usually dumped outside city limits, along rivers or swamps and on sites most often inhabited by powerless populations with no claims to the land. By the mid-eighteenth century, waste disposal became the responsibility of municipalities and governments, who started looking for ways to treat it, and who were subsequently supported by the sanitary movement in the late nineteenth century. Once waste is removed from city and society, it is out of sight and out of mind of those to whom it once belonged, unless treated improperly therefore becoming a nuisance.[14]

In France, the UK and the US in the 1920s and 1930s, a modern hygienic landfilling system was developed, which included dumping in layers and covering waste with soil, ashes or dirt to prevent germs, fires and bad odors. This method created the main distinction between order, hygiene and modernity, and disorder. Such modern landfills were often located next to settlements thereby reducing costs and maximizing profits. However, until the 1960s, incineration and composting were the leading waste-treatment processes in the West.[15]

Waste-treatment methods and their inherent values were developed in European countries and soon spread to North

[7] The word *landscape* in its original form (*landskip*; *landschaft*) underscored its visual appeal and tended to link to beauty, based on the tools and rules of art (painting, photography, theater). Modern landscape research seeks to expand the meaning of *landscape* from 'image' and 'picture' to a space that encompasses physical, social, economic and political aspects. On the various approaches to the term *landscape*, see: C.O. Sauer, *The Morphology of Landscape*, Berkeley, CA, 1925, 19–53; D.W. Meinig, The beholding eye: ten versions of the same scene, in: D.W. Meinig (Ed), *The Interpretation of Ordinary Landscapes*, Oxford, 1979, 33–48; D.E. Cosgrove, *Social Formation and Symbolic Landscape*, New Jersey, 1984; J.B. Jackson, *Discovering the Vernacular Landscape*, New Haven, CT, 1984; J. Corner (Ed), *Recovering Landscape*, New York, 1999; S. Schama, *Landscape and Memory*, London, 1995.

[8] On various approaches to the field of landscape as a central theme of cultural geography, see: J. Wylie, *Landscape*, 2007.

[9] J. Wylie, *Landscape,* 190–191. Actions taken on the ground can preclude or promote a healthier life. See: J. Corner and A. MacLean, *Taking Measures Across the American Landscape*, New Haven, 1996; J. Corner, Recovering landscape as a critical cultural practice, in: J. Corner (Ed), *Recovering Landscape: Essays in Contemporary Landscape Architecture*, New York, 1999, 1–26.

[10] On Settler Colonialism see: P. Wolfe, *Settler Colonialism*, London, 1999; P. Wolfe, Settler colonialism and the elimination of the native, *Journal of Genocide Research* 8(4) (2006) 387–409; C. Elkins and S. Pedersen (Eds), *Settler Colonialism in the Twentieth Century: Projects, Practices, Legacies,* 2005; L. Veracini, *Settler Colonialism*, Houndsmills, 2010.

[11] Settler colonialists are characterized by their aim of self-determination in the land they have settled, and by their desire to situate themselves as the indigenous element. As a result, indigenous people often suffer from violence and deportation. During the twentieth century, Palestinian territory was increasingly populated by Jews, with some support from the British Mandate that was in place between 1917 and 1948. This process reached its peak with the 1948 war. For recent studies on the Israel/Palestine case of settler colonialism, see: S.N. Robinson, Occupied Citizens in a Liberal State: Palestinians under Military Rule and the Colonial Formation of Israeli Society, 1948–1966, unpublished PhD thesis, 2004; L. Veracini, *Israel and Settler Society*, 2006, 25–40; D. Lloyd, Settler colonialism and the state of exception: the example of Palestine/Israel, *Settler Colonial Studies* 2(1) (2012) 59–80; D. Lloyd and P. Wolfe, Settler colonial logics and the neoliberal regime, *Settler Colonial Studies* 6(2) (2016) 109–118; P. Wolfe, *Traces of History: Elementary Structures of Race*, London, 2016; O. Yiftachel, *Ozma ve-adama – Israel Palestine bein ethnocratia ve-apartheid*, Tel Aviv, 2020; G. Algazi, Kvar be-eiropa: machshvot al colonialism hityashvuty, medievaly ve-moderny, *Zmanim* 137 (2017) 116–133; G. Algazi, Meya'ar Gir le-um Hiran: hearot al hateva vcoloniali ve-shomrav, *Theoria ve-Bikoret* 37 (2010) 232–253; A. Sabbagh-Khoury, Colonialism hityashvuti, nekudat hanabat hayelidit ve-hasociologia shel yetzur yeda be-Israel, *Theoria ve-Bikoret* 50 (2018) 391–418. On current denial and displacement of Bedouins in Israel see: Algazi, Meya'ar Gir le-um Hiran, 245; Sabbagh-Khoury, Colonialism hityashvuti, 395; Yiftachel, *Ozma ve-adama*, 27.

[12] Yiftachel, *Ozma ve-adama*, 17.

[13] See for example: T.P. Hughes, *Networks of* Power*: Electrification in Western Society, 1880–1930,* Baltimore, 1993; S. Graham and S. Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition,* London, 2001; B. Larkin, The politics and poetics of infrastructure, *Annual Review of Anthropology* 42 (2013) 327–343; N. Anand, A. Gupta and H. Appel, Introduction: temporality, politics, and the promise of infrastructure, in: N. Anand, A. Gupta and H. Appel (Eds), *The Promise of Infrastructure,* Durham, 2018, 1–38.

[14] Vijay Gidwani claims that according to the capitalist agenda, wasteful 'natures' are territorialized in the bid to facilitate an ordered society that secures the value of capital and property. V. Gidwani, Value struggles: waste work and urban ecology in Delhi, in: A. Rademacher and K. Sivaramakrishnan (Eds), *Ecologies of Urbanism in India: Metropolitan Civility and Sustainability*, Hong Kong, 2013, 177.

[15] On the history of waste treatment, see: M. Engler, Waste landscapes: permissible metaphors in landscape architecture, *Landscape Journal* 14(1) (1995) 11–25; J.A. Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective*, Akron, 1996; M.V. Melosi, *Garbage in the Cities: Refuse, Reform, and the Environment*, Pittsburgh, 2005; M.V. Melosi, *The Sanitary City: Environmental Services in Urban America from Colonial Times to the Present*, Pittsburgh, 2008; H. Weber, Landfills, modern, in: C.A. Zimring and W.L. Rathje (Eds), *Encyclopedia of Consumption and Waste: The Social Science of Garbage* (Vol. 1), 2012.

America. This point is crucial in understanding those methods and values in colonies, where the colonizers imposed their conception and application of sanitation, waste and pollution on the local population as tools for ordering and governing. Therefore, waste treatment followed different trajectories in Europe to the colonies, where sanitation infrastructure, with its various political and other meanings, aggravated the social and racial segregation, attached to waste infrastructure.[16]

In its first decade (1948–1958), the young state of Israel faced the urgent need for housing, employment, and infrastructure for the hundreds of thousands of immigrants who had arrived on its shores. The national master plan included the establishment of accelerated infrastructure projects, yet waste infrastructure was not included.[17] We claim that just as a bridge, dam or sewage pipes change the local geography and landscape, and impact the local communities, the poor infrastructure at Hiriya transformed its surroundings beyond recognition. It laid the foundation for the area's neglect and dysfunction in the following decades, involving displacement and erasing local histories.[18]

The Arab village of Al-Khairiyyah was situated about five miles east of Jaffa, on a hill of *kurkar* (calcareous sandstone) 66 feet above sea level, a few hundred yards north of the Ayalon River. It belonged to the Jaffa precinct (Figs. 2 and 3). Archeological excavations have identified the village as the site of Bene Beraq, mentioned in the Bible and in post-biblical literature. In 1944–1945, under the British Mandate, the village owned 3378 acres, and had 1420 inhabitants.[19] During the Ottoman period, the village had been known as Ibn Ibraq (probably, the Arabized form of the Hebrew name), but in 1924, after the modern town of Bnei Brak was established, the village residents changed its name to Al-Khairiyyah to differentiate themselves from the Jewish settlement nearby. The village economy was based on livestock and agriculture, including cereals, citrus and other fruit orchards. Most of the area was characterized by clay alluvial soils used for dryland agriculture; the soil close to the river remained uncultivated and wild vegetation grew in part of the area that was typical of the Mediterranean. Citrus growing increased over the years and reached its peak at the end of the Mandate period, when it covered a large proportion of the area. Around the villages there were almonds, vines, figs, sabras, dates, bananas and vegetables, and in the fields wheat, grain and legumes.[20] An illustration made in the early 1940s, as part of a survey

Fig. 2. Survey of Palestine, 1946. Eran Laor cartographic collection, The National Library of Israel.

conducted by members of the *haganah*, shows the village houses standing on a hill, with a few solitary date palms next to other trees and shrubs.,[21] The delicate topographic contours of the landscape blended with the surrounding orchards (Fig. 4), and bore the hallmarks of a traditional Arab village.[22] It lay close enough to the Wadi Musrara (Ayalon River) riverbed, which was dry in summer, to enjoy the fertile soil of the land, but sufficiently distant so as not to be flooded during the winter rains. The geographer D.W. Meinig defined this landscape created by the interaction of a natural system with human activity as 'landscape as habitat', describing man's adjustment to nature and his manipulation of it in gentle and

[16] On current studies on waste treatment in the colonies, see for example: S. Legg, *Spaces of Colonialism: Delhi's Urban Governmentalities,* Oxford, 2007; C. McFarlane, Governing the contaminated city: infrastructure and sanitation in colonial and post-colonial Bombay, *International Journal of Urban and Regional Research* 32(2) (2008) 415–435.

[17] See: A. Sharon, *Tichnun physi be'Yisrael*, Jerusalem, 1952; A. Golan, Hityashvut be'asor ha'rishon be'medinat Yisrael, in: C. Tzameret and H. Jablonka (Eds), *Ha'asor ha'rishon: 1948–1958*, Jerusalem, 1997, 83–102.

[18] Anthropologist Brian Larkin notes that infrastructures are physical formations or entities that provide a basis for the functioning of other entities, thereby making them into a system. B. Larkin, The politics and poetics of infrastructure, 329.

[19] The League of Nations approved the British Mandate over the territories of Palestine and Transjordan, which had both been part of the Ottoman Empire under the Sykes–Picot Agreement before the first world war. The British civil administration in Palestine began in July 1920 and ended on 15 May 1948. Under the Mandate, both Jewish and Palestinian national movements arose, evoking protests and riots between both groups and against the British rulers.

[20] The sandy areas had artemisia absinthium, helianthemum and other plants; the alluvial soil or grumusol areas had calicotome villosa, ziziphus, sarcopoterium spinosum and cirsium (thistle), among others; the sandstone had coridothymus capitatus (thyme), sarcopoterium spinosum and thymelaea hirsuta. Among the trees, there were carob, ficus and ziziphus. With the urban development and human agriculture in the area, the natural vegetation was affected, and prosopis farcta appeared near the cultivated areas. See: R. Kark and L. Shay, *Summary of a Geographical and Historical Survey of the Ayalon Park Area, 1800–1948* (an internal study of Ayalon Park), Tel Aviv, 2001, 2, 3.

[21] The *Haganah* was the largest paramilitary organization of the Jewish community during the British Mandate. The few written testimonies about the village of Al-Khairiyyah include: W. Khalidi, *All That Remains: The Palestinian Villages Occupied and Depopulated by Israel in 1948*, Washington, DC, 1992; Mustafa murad al-dabagh, biladna Falastin, al-juza' al-awal al-qism al-awal, dar al-talia'h, Beirut, 1965; *Skarei ha'haganah: skira clalit shel ha'kfar al-Khairiyyah*, The Haganah Historical Archives (HHA), 105/135; *Tik ha'kfar Yazor*, HHA, 2/Kfar/8; https://www.palestineremembered.com/Search.html#gsc.tab=0&gsc.q=al-khayriyya&gsc.sort=.

[22] Y. Ben-Artzi, Ha'nof ha'kafri ha'masorti ve ha'hadash be'eretz Yisrael me'maof ha'tzipor, in: B.Z. Kedar and A. Danin (Eds), *Hisha me'rehok: tzilumei avir ve dimutei lavian ke'kelim be'heker ha'aretz*, Jerusalem, 2000, 173–201, 173.

Fig. 3. The villages of Al-Khairiyyah, Saquia, Yazur and Salama. British map from 1935. Source: Israel govmap, www.govmap.gov.il.

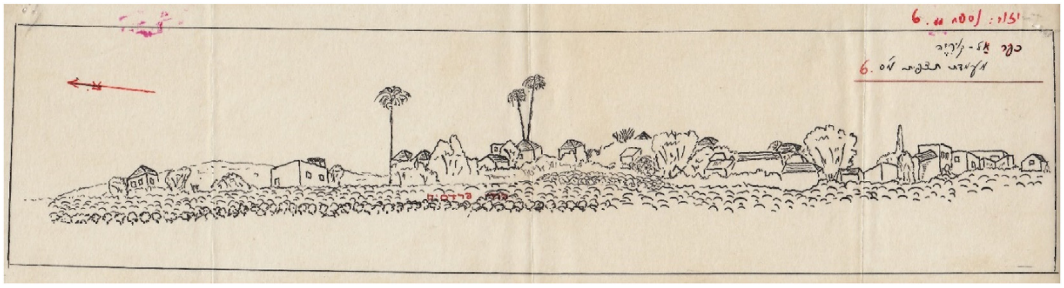

Fig. 4. Al-Khairiyyah village from an observation post on the Ayalon River. Source: Village Yazur file, The Haganah Historical Archives, 8/Kfar/2.

productive ways for his own use.[23] Regional plans dating back to the British Mandate, which were approved after the establishment of the state of Israel, defined the area as Crown Land, not subject to any local authority. It was designated as an agricultural area, on which construction and development were prohibited, so it could function as a floodplain of the Ayalon River and protect the growing city of Tel Aviv against floods.[24]

An aerial photograph taken by the German Air Force in 1918 supports the typical image of a village of land-owning farmers (*fellahin*). It was surrounded by non-contiguous agricultural plots (Fig. 5). An aerial photo from 1944 (Fig. 6) reveals that the village had expanded, in particular along the roads leading to and from it. New roads and agricultural plots had appeared alongside, and in fact all the surrounding lands were tended, although most were used for extensive farming and only a few were irrigated. The division of the plots into large blocks, with a secondary division into narrow strips, was typical of Arab villages in the country, giving it an appearance that assimilated with the landscape.

Al-Khairiyyah was one of several villages east of Jaffa captured by Jewish forces during the 1948 war. The inhabitants were expelled from their homes and lands, and subsequently the Jewish state refused to allow them back.[25] Most of the village houses were destroyed in the fighting, and only a few remained habitable. A year later, in the spring of 1949, new immigrants and demobilized soldiers settled into them. They fixed up the houses, grew vegetables and raised goats, and by early 1951 the village numbered some sixty families.[26] At the same time, HaZera Cooperative, a company that grew and supplied seeds to meet the increasing demand for food for Israel's rapidly growing population, established its first farm (the Shalem Farm) one hundred yards west of the village.[27]

The 1948 war is readily apparent in an aerial photograph taken in the fall of 1949, in which most of the village houses have been destroyed, and the lands appear to be untended. To the west, the first buildings of the Shalem Farm have appeared, adjoining cultivated plots that are clearly different from those of the former Arab village (Fig. 7).

Although the village was partially inhabited, the village ruins harbored robbers who buried their loot there and infiltrators from

[23] D.W. Meinig, The beholding eye. P. 34.

[24] Lydda District Regional Outline Planning Scheme, 6, 1942, Ministry of the Interior, Tel Aviv Planning Bureau.

[25] On discussions about the area, see: B. Morris, *The Birth of the Palestinian Refugee Problem, 1947–1949*, Cambridge, 1987.

[26] T. Weinstock, Ha'kapitan me'Hiriya, *Haboker* (23 September 1949) 21; Local Government Division, Dept. of Immigrant Communities, to the Kfar HaMesubim Council, 12 March 1953, Israel State Archives [hereafter I.S.A.], C-61 - 1973; N. Elhanani, Chairman of the Kfar HaMesubim Council to D. Rosen, Director of the Dept. of Immigrant Communities, Ministry of the Interior, 17 March 1953, I.S.A., C-61 - 1973.

[27] N. Mimar, Havat shalem (ha'Zera) – me'kiyum le'kayamut: shimur hava hakla'it ve hasavata le'mercaz mevakrim be'park Ariel Sharon, *Atarim Magazine* 6 (2016) 151–156.

across the border with the Jordanian West Bank.[28] In the winter of 1953, a four-year-old girl was murdered and her corpse was found among prickly pear bushes not far from some ruined Arab houses; several pairs of children's shoes were also found nearby, increasing the suspicion that other murders had taken place there.[29]

The area around the village of Al-Khairiyyah, as with many other occupied and destroyed Arab villages, lay at the heart of the conflicting aims of national and local authorities: between national population dispersal plans and local towns' desire and need to grow.[30] Soon after the 1948 war, the Israeli government decided to resettle these villages to prevent the return of the Palestinian residents. It established mechanisms for transferring Palestinian land ownership into Jewish hands thus transforming the space.[31]

Wasted landscapes as a political tool[32]

During the British Mandate period, the Tel Aviv Municipality dumped household waste in a lot next to Mikveh Israel,[33] south of Tel Aviv, while searching for technological solutions for urban waste. Local residents complained about the bad smells and, supported by doctors, argued that the landfill was a source of mass disease.[34] Therefore, in 1950, the decision was made to dispose of Tel Aviv's waste next to the village of Al-Khairiyyah, south-east of Tel Aviv, and to establish an experimental waste-treatment plant there.[35]

In June 1952, the Tel Aviv Municipality signed an agreement with Green & Co, the local franchisee of the Boggiano Pico Italian method of turning waste into fertilizer.[36] This method was successfully implemented in London in the early 1940s, and in Beirut. Green & Co tried to establish plants in Tel Aviv, Haifa and Jerusalem, but was stopped by the 1948 war and lack of economic viability.[37] Thus, the issue of waste incorporates a continuous process of concepts and methods being inherited from the British Empire, thereby illustrating how the state of Israel adopted approaches from the Mandate years.[38]

In early 1951, a transit camp was established between the reoccupied village and the Shalem Farm, to accommodate new immigrants.[39,40] The village of Al-Khairiyyah was renamed Kfar HaMesubim as part of a national initiative to give Hebrew names to Jewish settlements, thereby signifying new birth and effectively eliminating the lands' indigenous heritage.[41] However, the new name did not last and the place was always known as Hiriya.[42] Thus, the ruins of the former Arab village accommodated immigrants who arrived in Israel in 1949–1950, and the transit camp accommodated those that came in 1951–1952. In the summer of 1952, the two communities numbered 1329 adults and 700 children in all.[43] About two-thirds of the camp's residents were immigrants from Islamic countries, who hardly knew any Hebrew, had no social or family ties with Jews who had arrived before the war and were characterized by their cultural background which differed from that of the 'old' established society.[44]

A photograph (Fig. 8) from the fall of 1951 shows that some of the village houses had been rebuilt, the agricultural plots cultivated, the roads restored, and a large road had been paved east of

[28] Hitnagshuyot im mistanenim leyad Tel Aviv ve-besvivot Netanya, *Haaretz*, (25 October 1949), 4; Hapeulot hachorphyot shel hamishtara lehisul knufiot haportzim, *Hatzofe*, (2 December 1953), 3.

[29] Mistaefet hachakira sviv haretzach be-Ramat Gan, *Haaretz*, (19 February 1953), 1.

[30] Israel's first decade and the loss of Palestinian agricultural land and property was described in various studies. See: A. Golan, The demarcation of Tel Aviv-Jaffa's municipal boundaries following the 1948 war: political conflicts and spatial outcome, *Planning Perspectives* 10(4) (1995) 383–398. Insight into the host of factors involved can be gleaned from a report on the period from 1 January 1951 through 31 March 1952 in the Central Zionist Archives, file 425–441. G. Falah, The 1948 Israeli-Palestinian war and its aftermath: the transformation and de-signification of Palestine's cultural landscape, *Annals of the Association of American Geographers* 86(2) (1996) 256–285; A. Golan, The transformation of abandoned Arab rural areas, *Israel Studies* 2(1) (1997) 94–110; A. Golan, War and postwar transformation of urban areas: the 1948 war and the incorporation of Jaffa into Tel Aviv, *Journal of Urban History* 35(7) (2009) 1020–1036; M.R. Fischbach, *Records of Dispossession: Palestinian Refugee Property and the Arab-Israeli Conflict*, 2003. See also: E. Brotzkus, *'Ha'halamot' she'hayu le'arim: al hanisionot le'tichnun ezorei hityashvut ve'klitat aliyah be'shanim 1948–1952*, Jerusalem, 1986.

[31] The Development Authority, in charge of national planning, was permitted to purchase 'absentee property', and was entitled to sell lands to the government, the Jewish National Fund (JNF) and to local authorities. Therefore, the JNF purchased 50 million acres in 1948 and 1950, including the lands of Al-Khairiyyah. For more on the procedures of change of land ownership and the urban and agricultural change, see: footnote 30; also see: A. Golan, Tefisat karka aravit al yedey yeshuvim yehudim be-milhemet ha'atzmaut, *Cathedra* 63 (1992) 122–154; A. Golan, *Shinuy merchavy – tozaot milchma: hashtachim ha'arvim lesheavar be-mesinat Israel, 1948–1950*, (2001).

[32] A detailed discussion of the residents' struggle is given in the Hebrew version of this article.

[33] Mikveh Israel, established in 1870 east of Jaffa, is Israel's oldest agricultural school. Yaron Balslev described the history of the Tel Aviv landfill at Mikveh Israel in: Y. Balslev, Ir ivrit im ashpa ivrit: Hatipul bapsolet shel Tel Aviv be'tkufat ha'mandat, *Israel: Journal of the Study of Zionism and the State of Israel, History, Culture, Society* 24 (2016) 271–300; Y. Balslev, Magav rikavon ve'efer: ma'avak revisionisti be'mizbelet Tel Aviv, *Et-Mol: Journal of the History of the Land of Israel and the People of Israel*, 263 (2009) 9–12. For further research on the history of waste treatment in Israel, see also: A. Tal, *Ha'sviva be'Yisrael: mashabei teva, ma'avakim ve'mediniut – me'reshit ha'zionut ve'ad ha'mea ha-21*, Tel Aviv, 2006; A. Helman, *Or ve'yam ha'kipuah: tarbut Tel Avivit be'tekufat ha'mandat*, Haifa, 2007; N. Karlinsky, Jaffa and Tel Aviv before 1948: the underground story, in: M. Azaryahu and I. Troen (Eds), *Tel Aviv, The First Century: Vision, Designs, Actualities*, Bloomington, 2012.

[34] Iriyat Tel Aviv neeshemet be'zilzul be'briut ha'toshvim, *Maariv* (28 March 1950) 3.

[35] Tochnit pituach shel iryat Tel Aviv behekef shel 40 million lirot, *Davar* (10 April 1950) 4.

[36] Hamefakeach hasanitary el Y. Nasibi, mazkir ha'ir, (25 November 1949), Tel Aviv Municipality Archive 1362; Hatipul be-ashpa ha'ironit – maskanot ve vaada haben misradit, (23 February 1950), Tel Aviv Municipality Archive 5/4/2; Tosefet le'heskem, July 1968, Dan District Towns Association Archive (DDTAA).

[37] Y. Balslev, Historia Svivatit Ironit Be-Eretz-Israel ba-Machatzit ha-Rishona shel Hamea Haesrim: Tel-Aviv Kemikre Mivchan, 1909–1948, PhD diss., Tel Aviv University, 2017, 205.

[38] Many of the Zionists who arrived in Palestine brought European urban planning concepts, such as the City Garden by Ebenezer Howard and Tel Aviv's famous urban plan during the British Mandate designed by British architect Parrick Geddes. In addition, many German architects implemented Bauhaus concepts around the country, among them Arie Sharon who subsequently designed Israel's first national master plan. See: G. Biger, A Scotsman in the first Hebrew city: Patrick Geddes and the 1926 town plan for Tel Aviv, *Scottish Geographical Magazine* 108(1) (1992) 4–8; M. Zaidman and R. Kark, Garden cities in the Jewish yishuv of Palestine: Zionist ideology and practice 1905–1945, *Planning Perspectives* 31(1) (2016) 55–82; A. Nitzan-Shiftan, Contested Zionism-alternative modernism: Erich Mendelsohn and the Tel Aviv chug in Mandate Palestine, *Architectural History* 39 (1996) 147–180.

[39] No documents showing the precise date were found in the archives.

[40] Transit camps (*maabarot* in Hebrew) were temporary settlements, established in Israel in the 1950s, usually on the outskirts of established towns, to provide housing for immigrants who arrived during the great wave of immigration following the establishment of the state of Israel.

[41] Vaad kefar ve-ma'abarat Hiriya el misrad hapnim, (11 June 1952), National Archives file 3–1973/71. On the replacement of Arabic names in post-war Israel/Palestine, see: M. Benvenisti, *Sacred landscape: the buried history of the Holy Land since 1948*, 2000; M. Azaryahu and A. Golan, (Re) naming the landscape: the formation of the Hebrew map of Israel 1949–1960, *Journal of Historical Geography* 27(2) 2001 178–195.

[42] On sites which retained their Arabic names and were seen in a negative light: G. Huneida, Heichan kulam!: dialectica shel mechika ve-bniya be-proyekt ha-coloniali ha-tzioni, *Zmanim* 138 (2017) 102–115.

[43] Kfar HaMesubim Council to the Ministry of the Interior, Dept. of Immigrant Settlements, 11 June 1952, I.S.A., C-71/1973; N. Elhanani, Chairman of the Village Council, to D. Rosen, Director of the Dept. of Immigrant Settlements, Ministry of the Interior, 17 March 1953, I.S.A., C-61 - 1973; Village Council to the Dept. of Immigrant Settlements, 26 September 1952, I.S.A., C-71/1973.

[44] M. Katchensky, Ha'ma'abarot, in: M. Naor (Ed), *Olim ve-Ma'abarot – 1948–1952*, Jerusalem, 1986, 75.

Fig. 5. The village of Ibn Ibraq (Al-Khairiyyah), 1918. Source: Bavarian 304 Squadron. Younes & Soraya Nazarian Library, University of Haifa.

Fig. 6. Al-Khairiyyah village, 12 December 1944. Source: Maps Collection, Geography Department, Tel Aviv University.

the village. The most noticeable change in the landscape is the large transit camp to the west, its southern border tangential to the Ayalon River. Close to the village, one sees tents next to rows of canvas structures and several public buildings (a school, preschool and clinic), toilets and showers.

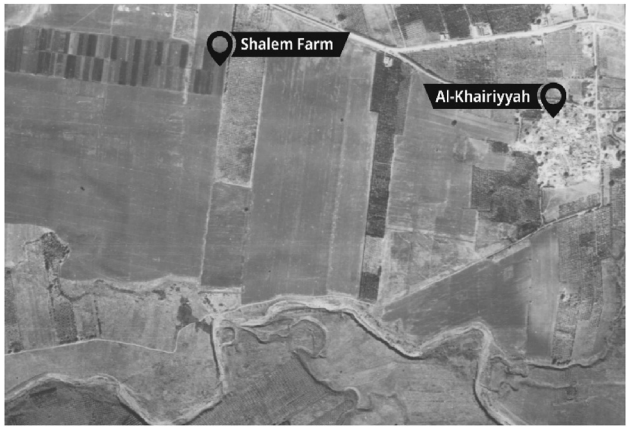

Fig. 7. Destroyed village of Al-Khairiyyah and Shalem Farm, 1 January 1949. Source: Survey of Israel.

Fig. 8. Hiriya village and the transit camp, 11 November 1951. Source: Survey of Israel.

In the meantime, the proposed plan for the garbage site raised considerable concerns among residents, doctors and the Medical Association, who all protested against the establishment of the landfill site in the vicinity of the camp and the village.[45] Nevertheless, on 8 February 1952, the plot was reserved by the planning authorities for waste collection and a compost plant for Tel Aviv. On the same occasion, the Ministry of Transportation, Postal Services, Telegraph and Radio was allocated most of the built-up sections of the village and surrounding areas for a radio station — a decision which sealed the fate of the site.[46]

On learning from the newspaper that a landfill was about to be established nearby, the Hiriya Residents' Council expressed surprise at the decision that had been made without consulting the thousands of residents already living in extremely unhygienic conditions. They begged the authorities not to establish the landfill, and threatened to oppose it by every means at their disposal.[47] The deputy mayor replied that the location of the

[45] Tosefet le'heskem, July 1968.

[46] Letter from I. Rokah to Y. Gurion, Director of the Development Authority, 10 January 1952, Tel-Aviv Municipal Archive 5/4/2; Parti-cal me'yeshivat hamelia shel reshut hapituach, 8 February 1952, 425 S41, C.Z.A; Haktza'at karka le'isuf ashpa ve mifal compost be'Hiriya, 26 February 1952, DDTAA.

[47] Kfar HaMesubim Council to the Tel Aviv Municipality, 23 April 1952, I.S.A.

garbage site had been decided about a year earlier by an inter-ministerial committee, and that the site would not pose a hazard. In his letter, the mayor also reprimanded the representatives of the transit camp for the harsh language they had used in their letter.[48]

The residents did not give up, however, and pointed out that not a single doctor had been present on the inter-ministerial committee, and that at the time of the decision the site was deserted but it had since been populated. They further noted that although they resided in ramshackle housing in an outlying district, their health and dignity were as important as those of any other citizen.[49] They appealed for help in another letter to the Ministry of Health, explaining that many of them were immigrants from Middle Eastern countries, suffering from various illnesses, which would only be exacerbated by the landfill.[50] The Ministry of Health replied that once the waste-treatment plant was established, it would eliminate hazards to those living just a few yards away, and even more so to the residents of the Hiriya transit camp.[51]

On a different front, residents of the transit camp had to contend with the winter flooding of the Ayalon River (Fig. 9) and with the authorities' efforts to eliminate the camp itself.[52] Over 700 families in Hiriya lived in dilapidated tents of various kinds that were not replaced with wooden barracks, as had been the case in other transit camps in the area. The fall of 1952 was one of strikes and demonstrations in many of the transit camps in Israel, allegedly led by the Hiriya camp residents, who lamented the shameful way they were being treated by the authorities and asked for financial support to move to permanent housing. They were told that Hiriya camp was exposed to floodings, and that it was intended for a radio station. In addition, all camps on the Lydda-Tel Aviv route would be eliminated, as they make the country's main transportation road unsightly.[53]

At the same time, and despite repeated protests by the residents of the village and the transit camp, on 15 February 1953 the process of transferring Tel Aviv's garbage to its new location at Hiriya began. The Tel Aviv Municipality issued a tender for proposals for the waste treatment pending the establishment of Green & Co.'s plant.[54]

An aerial photograph from the summer of 1956 shows that the village area and parts of the transit camp had shrunk (Fig. 10), while to the west, the Shalem Farm, with its extensive agricultural fields, is highly visible. The most dramatic change in the landscape is at the confluence of the two streams. Small hills have appeared on what used to be a plain, with roads, paths, trees, and service buildings beside them. Such was the appearance of the nearly four-year-old landfill from the air.

The temporary method of treating waste in Hiriya in those years did not solve the residents' problems.[55] The newspapers reported that doctors were buckling under the strain of patients complaining of inexplicable fatigue, nausea and other ailments, which were linked to the noxious fumes wafting in from the landfill. Tel Aviv's mayor at the time, Haim Lebanon, remarked that it had not yet been proved that anyone had died as a result of these problems. The

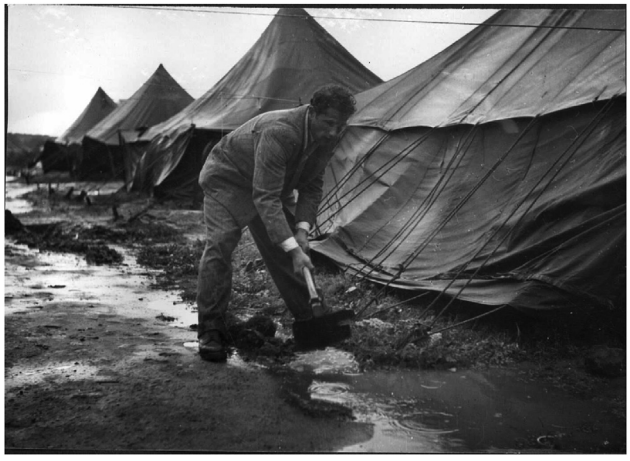

Fig. 9. Floods in the Hiriya transit camp, 1955. Source: Central Zionist archives.

Fig. 10. Hiriya village, transit camp, Shalem Farm and the landfill, 3 August 1956. Source: Survey of Israel.

[48] Deputy Mayor of Tel Aviv to the Hiriya Village and Transit Camp Council, 8 May 1952, I.S.A., C-72/1973; Director of the Sanitation Dept., Ministry of Health, to the Village Council, 15 May 1952, I.S.A., C-72/1973.

[49] Kfar HaMesubim Council to the Tel Aviv-Yafo Municipality, 18 May 1952, I.S.A., C-72/1973.

[50] Hiriya Village and Transit Camp Council to the Ministry of Health, 18 May 1952, I.S.A., C-72/1973.

[51] Dept. of Sanitation, Ministry of Health to the Dept. of Immigrant Settlements, Ministry of the Interior, 26 May 1952, I.S.A., C-72/1973.

[52] Based, on interviews with Hiriya transit camp tenants: Viza Meir, 8 December 2019; Shosh Avraham, 12 December 2019; Ezra Shaked, 15 December 2019; Latif Dori, 15 December 2019.

[53] Mishlachat Ma'abarat Hiriya el yoshev-rosh ha'knesset, sarim, miflagot ve-itonut, (25 October 1952) Archion Hamedina G-1900; Alafim shavtu ve-hefginu ba'maabarot betviaa lehachlif ohalim betzrifim ve-shikun-keva, *Kol Ha'am* (28 October 1952) 1; Shevitot ve-hafganot ba-ma'abarot, *Maariv* (27 October 1952) 1.

[54] Me'boker le'boker – me'Dan ve ad Eilat, *Haboker* (10 March 1953) 3; Ha'ashpa be'Gush Dan – deshen ashir, *Haboker* (19 August 1955) 7.

[55] Green & Co.'s temporary waste-treatment method included separating the trash into organic and non-organic streams, crushing the organic matter in machines, stacking it in mounds and watering it, so that within a few hours it fermented at a high temperature that was supposed to destroy all the fly larvae that had developed. In addition, aerobic fermentation was carried out using oxygen and turning the mounds every few days to prevent bad odors and gases. See: D. Sneh, Director of the Housing Dept. at the Ministry of Labor to Akiva Govrin, Chairman of the Labor Committee, 24 June 1955, Issue-9/54173; Hetzi million-ton ashpa toseset, *Zmanim* (4 August 1955) 4.

press of the time noted that it was incomprehensible why the Tel Aviv Municipality did not build a closed incinerator, where all the garbage could be burned without the odors plaguing the surroundings — as was done in other cities around the world.[56]

The agreement between the Tel Aviv Municipality and the compost firm was extended and in 1956, a small experimental plant for waste-to-fertilizer was established with the aim of developing it further (Fig. 11).[57] In 1958, the agreement with Daman, which had purchased the rights from Green & Co., was extended and, later that year, Daman announced that it had received the credit to purchase the necessary equipment from the Dutch firm Dorr-Oliver but had not yet obtained the necessary permits (see below). In the meantime, five firms were licensed to treat the old, dry waste, but were prohibited from treating fresh waste.[58]

Throughout the 1950s, complaints and demands to relocate the landfill continued unabated, and some turned into lawsuits.[59] The largest was submitted in 1959 by thirty residents from the transit camp and Tel Aviv. Among the witnesses were doctors who attested to the health damage caused by the gases spreading from the landfill into the city, and city residents who complained of difficulties sleeping and concentrating, along with dizziness, nausea, suffocation, loss of appetite and fatigue because of the smells.[60] But the most troubling testimonies were those of the transit camp residents who told of garbage trucks arriving every five minutes, jackals and snakes, cockroaches in their food, and fires that lasted for days on end — and all within one hundred yards of a school and preschool.

However, the Tel Aviv Municipality's lawyer brought in dozens of witnesses, including professors of medicine, zoology and hygiene, who argued that the existing system at Hiriya was satisfactory, and that during their visit to the site they had been impressed by its cleanliness and orderliness. A chemist and two doctors of public medicine argued that dry garbage does not spread odors beyond twenty feet and that garbage fumes and smoke do not cause bronchitis. The judge accepted the expert testimonies that the existing method was adequate.[61]

In the meantime, the company that won the contract to process the waste had difficulty obtaining the permits to purchase equipment. Thus, the starting date for construction of the treatment plant was extended indefinitely and it's opening repeatedly postponed. In May 1960 it was announced that the treatment plant would be established within a year and a half.[62]

Given these conditions, it is hardly surprising that anyone who could left the area. In the summer of 1955, there were 414 families (around two thousand people); in 1956 only 280 remained. An aerial photograph from early 1958 (Fig. 12) reflects the precipitous decline of the village, and the continued growth of the landfill.[63] An aerial photograph from 1959 shows that only two of the village houses were still standing, nearly all the transit camp structures had been dismantled, and several more paths and trees had been added to the landfill (Fig. 13). A 1963 photograph reveals that not a single house in the former Arab village remained, the transit camp had been completely dismantled, and a large structure had been erected in the landfill; next to it were rows of elongated mounds centered around a narrow device that was spreading the organic waste in a circle (Fig. 14).

Landscape as an agent of modernity

Infrastructure projects are technological projects born of a growing urbanism and established for the benefit of town and country residents. The infrastructures established by imperialist countries in their colonies symbolized their power as occupiers, and were intended to stand out against the dilapidated local infrastructures.[64] But when the universal solutions embedded in colonial agendas and practices and based on an allegedly defined order and rules becomes an uncontrollable environmental hazard, the infrastructure becomes a key factor in violating the landscape and its histories, and a danger to human life.[65] A failing infrastructure, therefore, not only perpetuates civic deprivation, but often carries the symbolic function of taking control of nature and disciplining citizens.[66] The composting plant in Hiriya was supposed to solve the waste problem in a modern technological fashion, to produce agricultural fertilizer and to become the jewel in the crown of a national enterprise. It was based on a vision of modernity and economic efficiency achieved through technology, and accorded with the agriculture-oriented Zionist vision of an

[56] M. Geffen, Ha'mizbela ha'ironit marila alaphei toshvim be'Tel Aviv, *Al-Hamishmar* (6 June 1955) 2.

[57] Deshanim organim el hanhalat ha'iriya, (31 January 1963), Tel Aviv Municipality Archive, 5/3/2.

[58] The following sources are taken from the DDTAA unless stated otherwise: The first agreement was signed on 30 June 1952 between the Tel Aviv-Yafo Municipality and Green & Co; on 19 April 1956 it was transferred from Green & Co to Daman, and transferred again on 23 February 1961 from Daman to Organic Fertilizers: Hoze chacira ben Rashut Hapituach le-Iriyat Tel Aviv, (20 November 1955); Hoze chacira 12395 ben rashut hapituach le-iriyat Tel Aviv (4 January 1957); Haarachat ha-hoze le-ibud ha'hashpa ha'tria lezevel organi (1 April 1958); Mifal le'ibud ashpa ironit (22 September 1958); Duman ba'am el iriat Tel Aviv, ishur al kabalat ashrai (18 December 1958); Ishur chachirat karka le'hakamat mifal le'miyun ve-ibud ha'ashpa be-Hiriya (22 May 1960); Tosefet la'heskem me-30 June 1952 ve-tosefet la'heskem me-27 June 1960 ben iriyat Tel Aviv le deshanim organim hevra ba'am (July 1968). Ha'mifal le-ibud ha'ashpa shel Tel Aviv-Yafo yukam toch shnatayim, *Shearim* (27 May 1958) 3; N. Lavie, Inyaney ha'rechot sviv Tel Aviv, *Haaretz* (10 August 1958) 2; Nechtam ha'heskem le'hakamat ha'mifal le'ibud ashpat ha'ir, Tel Aviv (nd), Tel Aviv Municipality Archive, 5/4/2.

[59] Letters to the Editor, *Davar* (6 June 1957) 2; Letters to the Editor, *Davar* (23 June 1957) 2; Tovim haavarat mizbelet Hiriya, Lamerchav (17 November 1957) 4.

[60] Y. Sinai, Mishpat al rechot ra'im, *Herut* (29 May 1959) 6.

[61] Y. Sinai, Mishpat al rechot, 6; Y. Sinai, Adam ve zevel – zevel adif, *Herut* (5 June 1959) 6.

[62] The following were found in the DDTAA: Heskem chachira, 20 November 1955; Heskem chachira No. 12395, 4 January 1957; Harchavat hachoze le'ibud haashpa hatria lezevel organi, 1 April 1958; Mifal le'ibud ashpa ironit, 22 September 1958; Ishur al teudat ashrai, 18 December 1958; Ishur chakirat karka le'hakamat mifal le'miun ve ibud haashpa be'Hiriya, 22 May 1960; Tosefet le'heskem, July 1968; Ha'Mifal le'ibud ha'ashpa shel Tel Aviv-Yafo yukam toch shnataim, *Shaarim* (27 May 1958) 3; N. Lavie, Inyaney ha' rechot sviv Tel Aviv, *Haaretz* (10 August 1958) 2; Ushar ha'heskem al machon le'nitzul ashpa, *Haaretz* (24 May 1960) 5.

[63] S. Sheva, 50 000 ha'nishkachim: ashpa neged anashim, *Al-Hamishmar* (10 June 1955) 3; Z. Matityahu, Or Yehuda likrat ha'horef ha'hamishi, *Al-Hamishmar* (29 November 1955) 2; Y. Hengali, Kosher Food Inspector at the transit camp, to Rabbi Orenstein, Deputy Director of the Ministry of Religious Services, 3 June 1956, Issue-17/6353, I.S.A; Ministry of Religious Services to the Ramat Gan Religious Council, 20 May 1959, Issue-8/6340, I.S.A.

[64] On visibility and infrastructure, see: A. Carse, Nature as infrastructure: making and managing the Panama Canal watershed, *Social Studies of Science* 42(4) (2012) 539–563; R. Mrázek, *Engineers of Happy Land: Technology and Nationalism in a Colony*, New Jersey, 2018.

[65] Such processes characterize the post-World War II era in which infrastructure took precedence over the landscape, and centralization and technocracy sidelined ecological and social concerns. See: P. Bélanger, Landscape as infrastructure, *Landscape Journal* 28 (1) (2009) 79–95.

[66] On the political and social aspects of infrastructures, see for example: Larkin, Politics and poetics of infrastructure; S.J. Collier, *Post-Soviet Social: Neoliberalism, Social Modernity, Biopolitics*, New Jersey, 2011. Vijay Gidwani states that 'waste', 'value' and 'property' were a triad at the heart of the colonial discourse in Bengal. 'Waste' represented a category of land for tax but also an approach to the native community and the superiority of the colonizers over the colonized. In that sense, 'waste' related to "'useless species': 'idle lands' and 'indolent behaviour', that had to be purged", only by the force of a good government, economy and industry. See: V.K. Gidwani, 'Waste' and the permanent settlement in Bengal, *Economic and Political Weekly* (1992) 39–46, 40, 44.

מראה המכון הנסיוני לקומפוסטציה בתל־אביב. בפנים הבנין מכונת ריסוק האשפה, ומשמאלו תחנת פטישים בליסטית.

Fig. 11. The experimental composting plant in Hiriya, with waste processing machinery inside, 1956. Source: Hillel Shoval, courtesy of the photographer's family.

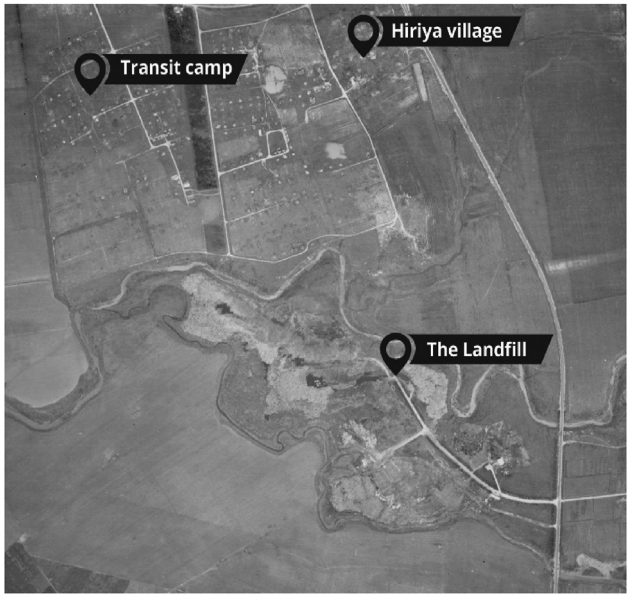

Fig. 12. Hiriya village, transit camp and the landfill, 9 January 1958. Source: Survey of Israel.

effective means of removing waste from the city.[67] This was a continuation of the approach to urban waste treatment initiated during the British Mandate. But the delayed and failed opening of the plant made a mockery of that lofty vision, and Hiriya became a symbol of failure in waste treatment and a stark example of failed infrastructure. The waste that was supposed to be safely channeled away from the city ended up as foul air plaguing the heart of the metropolis.[68] Hiriya, is, therefore, an example of how infrastructures must be examined in terms of their political, economic and social functions.[69]

The photographs and written documents about Hiriya attest to a rapid takeover of the area, which its new owners saw as empty land, or which they acted to empty thereby eliminating its human heritage. They attest to the agendas of the Israeli authorities who promoted a particular vision of the young state and its conflicting values of rapid housing development, agriculture and the proposed solution to the problem of urban waste.[70] These aggressive processes reshaped the space, impacted society and demonstrated the material presence of urbanization. For the young state they were synonymous with 'development' and 'progress'.[71] Thus, historically, part of the area had been used for human habitation, but the landfill

[67] Heike Weber states that until the 1970s, landfilling was way behind other scientific and technological developments, and the technology that produced items in the landfill were ahead of those that produced the landfill itself. Those landfills were a live experiment. It was only in the 1970s, with the rise of environmental awareness that science started focusing on landfilling (Weber, Landfills, modern).

[68] Hughes argues that infrastructure forms the foundation for operating large-scale modern economic and social systems that organize daily life. In his view, these systems start as small, independent entities, but when one controls the others, or when they combine to form a network, they become infrastructure. See: Hughes, *Networks of Power*.

[69] On the British imperial involvement in the establishment of the airport in Palestine, see: R. Shamir, British interwar airspace in the Middle East: the forgotten airport of Lydda, *Journal of Historical Geography* 76 (2022): 23–33; On the political and social aspects of infrastructures, see for example: Larkin, Politics and poetics of infrastructure; S.J. Collier, *Post-Soviet Social: Neoliberalism, Social Modernity, Biopolitics*, New Jersey, 2011. Vijay Gidwani states that 'waste', 'value' and 'property' were a triad at the heart of the colonial discourse in Bengal. 'Waste' represented a category of land for tax but also an approach to the native community and the superiority of the colonizers over the colonized. In that sense, 'waste' related to "'useless species': 'idle lands' and 'indolent behaviour', that had to be purged", only by the force of a good government, economy and industry. See: V.K. Gidwani, 'Waste' and the permanent settlement in Bengal, *Economic and Political Weekly* (1992) 39–46, 40, 44.

[70] On the Israeli transit camps as a modernist practice of planning and control by weakening the residents and eliminating their identity, see: R. Kozlovsky, Temporal states of architecture: mass immigration and provisional housing in Israel, in: S. Isenstadt and K. Rizvi (Eds), *Modernism and the Middle East: Architecture and Politics in the Twentieth Century*, Seattle, WA, 2008, 139–160.

[71] L. Porter and O. Yiftachel, Urbanizing settler-colonial studies: introduction to the special issue, *Settler Colonial Studies* 9(2) 2019 177–186.

Fig. 13. The landfill and transit camp, May 1959. Source: Maps Collection, Geography Department, Tel Aviv University.

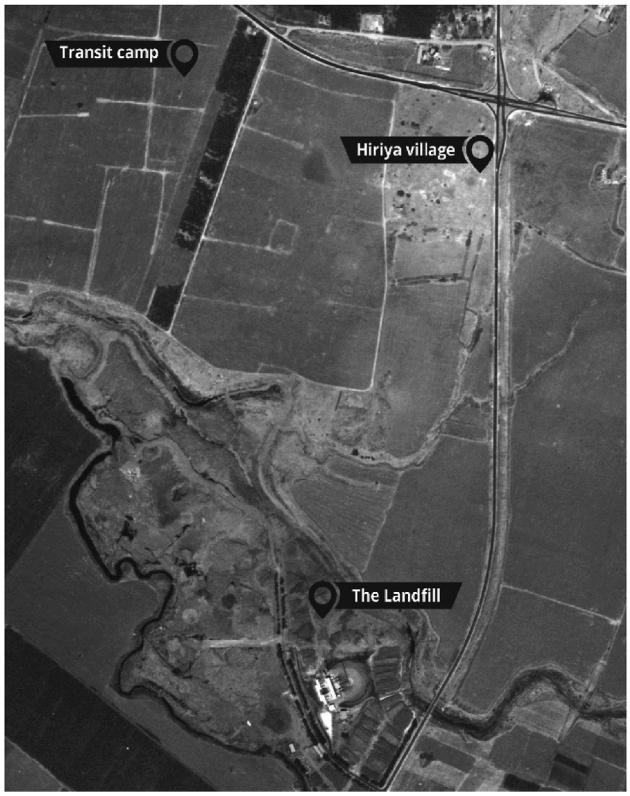

Fig. 14. The landfill, transit camp and the remains of the village, 1963. Source: Maps Collection, Geography Department, Tel Aviv University.

drove away all its residents.[72] Even when the residents of the village and the transit camp repeatedly asked to be recognized as a permanent settlement, the planning authorities decided that only the landfill would receive permanent status.[73]

The events that took place in the Hiriya area in the first decade of the state of Israel — the distribution of land to neighboring municipalities, with a large tract belonging to no local authority whatsoever, and the refusal to establish a permanent settlement — all clearly point to an agenda of leaving the landfill where it was and getting the people out. Moreover, the decision to dump the city's garbage in a former Palestinian village whose residents were displaced in an act of war, next to major roads and a transit camp, and not far from Tel Aviv-Yafo's poorest neighborhoods, inflicted incessant harm on an already weak and vulnerable population.[74] Locating the landfill specifically near these areas made Hiriya a clear case of environmental injustice.[75]

Reflections and insights

Zionism was a rescue project for a people that had suffered racism, deportation and genocide, and that aspired to resettle in the country it saw as its historic homeland. This project was based on a profound transformation of the physical and social landscape that caused the displacement of indigenous Arab people and the repopulation of the country, thereby appropriating its resources and changing its histories. It also included the oppression of weak groups in Israeli society, mainly non-European newcomers.

Sanitary infrastructures (in this case, waste) are often a means of devaluing lands and societies. Constructing a landfill on the ruins of an Arab village, and in proximity to a transit-camp, is an extreme case of such devaluation.[76] While Tel Aviv, the new settler city, was

[72] Based on interviews with Shalem Farm tenants Edna Kaploshnik on 7 November 2019, and Sarah Bash on 10 October 2019: The farm held possession of the land until the early 2000s, but its permanent occupants left in the mid-1960s and those who replaced them stayed only for short periods. Over the years, the farm's few residential buildings gradually fell into neglect and were abandoned. The HaZera company subsequently went from being a minor to a major player in the site's history, but that story lies beyond the scope of this article.

[73] So far, no images of the area in question have been found in the various photographic collections between 1951 and 1956, when the Tel Aviv Municipality began dumping its waste in Hiriya, thus sealing its fate for decades to come. The absence of aerial photographs highlights the importance of using a variety of archival and historical sources to clarify landscape-related issues.

[74] A municipal report from 1949 outlined the remote neighborhoods of Tel Aviv and their difficulties in being disconnected from the city center. The neighborhoods of south-east Tel Aviv suffered the most: poor sanitation, lack of infrastructure and inadequate public transportation. South Tel Aviv had been absent from the priorities established by the city, which had systematically degraded those areas in order to turn them into the metropolis's hazard zone. Moreover, Tel Aviv Municipality had let those neighborhoods die slowly by promoting big regional plans while ignoring the citizens' complaints, until those areas became inhabitable. This is similar to the events at Hiriya, where plans for household waste were prioritized over the residents' daily suffering. See: S. Rotbard, *Ir levana, ir shehora*, Tel Aviv, 2005, 121; N. Marom, *Ir im konseptsia: metachnenim et Tel Aviv*, Tel Aviv, 2009, 228, 235–238.

[75] The term 'environmental justice' refers to the application of social justice to environmental issues. Proponents of this movement point to an unequal distribution of environmental hazards among different population groups, with the vulnerable being exposed to higher levels of environmental pollution due to their proximity to pollution sources, which become 'sacrifice zones'. Disposal of waste in landfills reduces pollution in cities and enhances public health and quality of life, but it is harmful to the population living nearby. Studies conducted in the United States have shown a clear link between the location of landfills and waste dumps and the dwellings of vulnerable populations — especially racial and ethnic minorities — to a degree that is disproportionate to their percentage of the general population. See for example: R.D. Bullard, Solid waste sites and the black Houston community, *Sociological Inquiry* 53(2–3) (1983) 273–288; C. Lee, *Toxic Waste and Race in the United States*, Oxfordshire, 2019, 10–27; A. Hurley, *Environmental Inequalities: Class, Race, and Industrial Pollution in Gary, Indiana, 1945–1980,* North Carolina, 1995; D.N. Pellow, *Garbage Wars: The Struggle for Environmental Justice in Chicago*, 2004.

[76] On the Palestinian case and how the built environment and urban infrastructure are used in the formation of Israel, see: S. Stamatopoulou-Robbins, *Waste Siege: The Life of Infrastructure in Palestine*, 2019; E. Weizman, *Hollow Land: Israel's Architecture of Occupation*, 2012; O.J. Salamanca, Assembling the fabric of life: when settler colonialism becomes development, *Journal of Palestine Studies* 45(4) (2016) 64–80.

perceived as modern, liberal and democratic, connected to global markets and agendas, its urban infrastructures played a central role in the displacement and elimination of indigenous geographies. The manner in which Tel Aviv dumped its waste outside the city existed well before the founding of the state of Israel. Establishing the landfill at Hiriya expresses, therefore, the shift from a colonial to a post-colonial phase while maintaining imperial methods and plans.

Locating the landfill at Hiriya was made possible by the large tracts of land that the new state now controlled. These areas have undergone rapid and sweeping change, ethnically, socially, spatially and scenically; they soon became a no-man's-land blighting the lives of everyone around them. The Hiriya landfill entrenched the symbolic boundaries between those forced to suffer its adverse effects and those who remained beyond its malign influence, and effectively defined the center and the margins.[77] Thus, multi-layer margins were created in the heart of Israel. This is no wonder, as waste plays a central role in establishing the relations between centers and peripheries, thus maintaining the unity, functionality and continuity of the center. It enables the political-economic and social system to persist, untroubled and unthreatened. Moreover, these margins emphasized crucial aspects of the daily functioning of the new state, and were thus not marginal but central to environmental-social governance.[78] Furthermore, in this process, human beings also became redundant and disposable, to be kept out of sight and out of the sociopolitical order. Vinay Gidwani claims that certain people, places and products are disposed of as wasteful and redundant, and he related this transformation of common property to profit-seeking societies in which other forms of value are subordinated to the accumulative logic.[79] It was only in the late 1990s, with the decision to stop dumping waste at Hiriya, rehabilitate the site and turn it into a park, when the area's fate took a new turn.[80]

The combination of aerial photographs and written documents demonstrates how, prior to and at the start of the British Mandate, the mosaic of the Hiriya area was transformed in a sequence of changes with a gentle human intervention into a delicate system of agricultural activity that relied on the benefits of water and fertile soil. During the years of the British Mandate, the area saw vast growth in settlement and citrus cultivation.[81] The landscape mosaic created in the early 1950s, however, was a patchwork of entities that disregarded local landscape conditions and trampled over its organic elements. In this violated landscape, the legacies of the Arab village residents who had lost their homes, property and land, was erased in a political-cultural act; the presence, life and culture of the residents of the transit camp — all refugees from pogroms in Islamic countries and the holocaust in Europe who were displaced again and again — were eliminated as well, leaving no trace of the Arab village, the transit camp or the natural landscape that had accommodated them. With them went the finely tuned lifestyles that had been forged to suit life in a seasonal floodplain of clay, *hamra*, sand and *kurkar* soils. The landscape at Hiriya is a case of political, social, ecological and cultural violation so blatant that the site that emerged became a byword for destruction.

In sum, the events that occurred in just a few years on a relatively small tract of land, reflect much longer and broader historical processes.[82] They show how the empirical materials collected from a liminal territory of Israel that reshaped the landscape demonstrate highly complex, political and global elements. Hiriya is therefore a clear example of aggressive landscape-changing processes and their implications on various groups in society.

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[77] P. Bourdieu, The market of symbolic goods, *Poetics* 14(1–2) (1985) 13–44; P. Bourdieu, *Distinction: A Social Critique of the Judgement of Taste*, London, 1984.

[78] S. Randeria, Global designs and local lifeworlds: colonial legacies of conservation, disenfranchisement and environmental governance in postcolonial India, *Interventions* 9(1) (2007) 12–30.

[79] V. Gidwani, Six theses on waste, value, and commons, *Social & Cultural Geography* 14(7) (2013) 773–783.

[80] For the international competition for the rehabilitation of Hiriya, which took place on 2004, see: G. Limor-Sagiv and N. Lissovsky, The trash has gone–the trash Mountain remains: a new look at the international design competition for the rehabilitation of the Hiriya landfill in Israel. *Landscape Research*, (2023).

[81] On the changes in the geography of the area, see: Kark and Shay, *Summary of a Geographical and Historical Survey* 2001. As landscape ecologist Richard Forman points out, the landscape is a mosaic of local ecosystems — topography, solar conditions, water sources and soil types. See: R.T.T. Forman, 'Foundations', land mosaics: the ecology of landscapes and regions, in: F.O. Ndubisi (Ed), *The Ecological Design and Planning Reader*, Washington, DC, 2014, 222.

[82] On hidden political agendas within the landscape, see: D.E. Cosgrove and S. Daniels (Eds), *The Iconography of Landscape: Essays on the Symbolic Representation, Design, and Use of Past Environments,* Cambridge, 1988; D. Mitchell, Cultural landscapes: the dialectical landscape — recent landscape research in human geography, *Progress in Human Geography* 26(3) (2002) 381–389.

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The trash has gone – the trash Mountain remains: a new look at the international design competition for the rehabilitation of the Hiriya landfill in Israel

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The trash has gone – the trash Mountain remains: a new look at the international design competition for the rehabilitation of the Hiriya landfill in Israel

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ABSTRACT

Hiriya landfill, in central Israel, served Tel Aviv for 50 years and became a byword for neglect and ugliness until it was recently transformed from an environmental hazard, into a beautiful park. This article explores the idea and experience of waste, as concept and matter, and its representations in the 2004 international design competition for Hiriya's rehabilitation. Addressing the global issue of rehabilitating wasted sites, the competition encouraged landscape architects to address a polluted past and outline new cultural and ethical meanings in the reclaimed public space. Drawing from unexplored textual and visual sources, and combining landscape architecture with cultural studies on waste, we reveal that few of the 14 proposals touched upon the complexity of waste, with its cultural, ethical and social attributes. The winning entry by Peter Latz turned the mound into a striking monument to trash, but minimised the visitors' idea and experience of the waste itself.

KEYWORDS

Hiriya; landfill; landscape architecture; competition; culture and waste; nature park; landscape rehabilitation

Introduction

Hiriya, the main rubbish dump in Israel, is situated at the country's most central point, on the outskirts of the Tel Aviv-Yafo metropolis and the confluence of the Ayalon and Shapirim rivers. It is a huge mound, rising to 200 feet, extending over 112 acres, and its unique silhouette became a familiar sight to passers-by on Israel's main highways 1 and 4, and to passengers landing or taking off from nearby international Ben Gurion Airport, the main point of entry to Israel. Hiriya's role as greater Tel Aviv's main landfill began shortly after the founding of the State of Israel in 1948, and soon it became a blight on the environment and the landscape, and hazardous to health and to the quality of life of the residents of the area.[1]

Hiriya has even become synonymous with stench and filth, evoking the Hebrew slang word *hara*, meaning 'shit'. The stench from the site extended over ever-greater distances, outlining geographical and symbolic boundaries between those living nearby and those who escape its effects (Bourdieu, 1984, 1985). A dramatic turn occurred in 1998, when the government decided to stop dumping garbage at Hiriya, thus bringing to an end 50 years of accumulated waste and stench, and giving a new future to the area's disadvantaged residents and the violated landscape (Figure 1).

Waste, as a product of our consumer culture and a producer of sociocultural processes, has been the focus of various studies in the last decade (Bauman, 2004; Douglas, 2003; Gille, 2007;

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Figure 1. Hiriya mountain before the rehabilitation, May 2003. *Source*: Dan Region Association of Towns.

Hawkins, 2006; Hawkins & Muecke, 2002; Thompson, 2017). Waste exposes social values and agendas—some are visible, others hidden or unconscious. This article examines the complex, obscured place of waste as revealed in the 2004 international design competition for Hiriya's rehabilitation. The competition, the biggest of its kind in Israel, addressing a currently hot topic, constituted a rare moment when landscape architects, as agents of culture, addressed our offensive polluting past and outlined our future public spaces.[2]

The story behind the competition is hidden in dusty archives and was never before fully explored.[3] We uncovered a host of sources such as correspondence, protocols, engineering reports, design workshop, and professionals' notes, and compared them with competition proposals and in-depth interviews with the competition participants and judges.[4] Combining these textual, visual and oral resources, we looked in particular into the ways in which the issue of waste as a physical material, a concept, and a planning experience was confronted in the competition proposals and the judges' criteria. This framework of exploration can serve as a reference for the study of landfill rehabilitations and the creative and advanced ways in which the 'negative' industrial past should be integrated and enhanced in modern cultural landscapes.

Moreover, since waste is a major cause of greenhouse gas emissions, research on landfill rehabilitation is urgent and challenging around the globe. While the world's wealthiest countries are investing in solutions to trash mountains, in developing countries about 90% of waste is still dumped in open sites or incinerated (Kaza et al., 2018). Israel is an outlier: signatory to the Paris Accords (2015) to reduce greenhouse gas emissions, nonetheless it is one of the worst offenders among Western countries in terms of waste production, with over 80% of its waste still (in 2022) in landfills emitting gasses. Understanding the role of waste rehabilitation may contribute to sustainable planning and management of landfills and brownfields in Israel and around the world. In this article, we will first briefly describe the issue of landfill rehabilitation, the history of Hiriya's rehabilitation and the introduction of the otherwise-undiscussed theme of waste into the public discourse. We will then concentrate on the international competition, the proposals and the insights derived from it.

From hazard to leisure

Together with the decision to terminate the landfill operation in 1998, the Israel Planning Administration decided to convert some 2000 acres surrounding Hiriya into a metropolitan public park with advanced green infrastructures to support urban needs.

Located at the heart of an otherwise highly dense urban conurbation, the site had been left undeveloped due to unique historical circumstances, which had designated it as a floodway and hydrologic supporting structure for the expanding cities (Lydda District Regional Outline Planning Scheme, 6, 1942, Ministry of the Interior, Tel Aviv Planning Bureau) during the British Mandate. The new conversion plan protected the area from future construction and preserved it as a green lung for southern Tel Aviv. The newly named Ariel Sharon Park, after the prime minister who had pushed for its initial creation, was inaugurated in 2007.

Thus, Hiriya joined other internationally more familiar landfills that posed environmental, health and scenic hazards, and which were also rehabilitated and transformed. The best known of these is Fresh Kills, which for about 50 years (1948–97) served as the main landfill of New York City's five boroughs. In the past decade, Fresh Kills has been evolving into a spacious park—designed and led by James Corner/Field Operations—after a complex ecological rehabilitation (Corner, 2005; Melosi, 2020). Similar examples include the Olympic Park in Munich (early 1970s), Stockley Park near London (late 1980s), Byxbee Park in Palo Alto (1991) and Al-Azhar Park in Cairo (2005) which became a catalyst for the social, economic and cultural sustainability of a congested and financially strapped city. These and dozens of other landfills around the world have been converted from hotspots of pollution and disease into vibrant, green lungs of regeneration (Hansjakob & Grzimek, 1972; Krinke, 2003; Salama, 2008; Walker & Owen, 2003) and engendered scholarly discussion on planning wasted sites.[5] The creative design of Duisburg Park in Germany (a post-industrial site, not a landfill) designed by Latz between 1990 and 2002, and the Groundswell Exhibition at the Museum of Modern Art in New York that presented rehabilitation sites around the world, stimulated public interest.

Peter Reed, curator of the Groundswell Exhibition emphasised the role of landscape architects in 'reinventing' old and neglected sites. The museological presentation of projects that have undergone a transformation has further expanded the perception of the landscape and public awareness regarding the places in which we live, and has underscored their role as agents of change (Reed, 2005).

From the backyard to the Tel Aviv Museum of Art

Shortly after Hiriya stopped operating as a landfill, a groundbreaking initiative in the form of an international art exhibition addressing the rehabilitation of Hiriya was launched at Tel Aviv Museum, led by Dr. Martin Weyl—chairman of the Beracha Foundation and former director of the Israel Museum in Jerusalem. Weyl sought to open Israel up to international environmental and visual thinking and expand the discussion of waste—which hitherto had been limited to its environmental, health and social aspects—to the artistic realm (Weyl, 2010) (Figure 2).

Part of the change in the essence of an object as it transforms into waste is its move to another site: the trash can or recycling bin and finally the landfill, all located at the margins, at the end of the street, or at the edge of the city (Gille, 2007). A representative of the cultural-artistic elite, Weyl wished to extend the symbolic boundaries of his milieu beyond the imaginary centre of Tel Aviv to include the underprivileged, disregarded sectors of the population in whose vicinity the waste is dumped. He used the power of art to transform the Israeli discourse and its agenda. When Hiriya—the icon of trash and embodiment of geographical, social and cultural fringes—is put on display in the Tel Aviv Museum of Art, its definition changes, as does that of the society that dedicates an exhibition to it, and reverses the normal course that garbage follows—taking it from the margins to the centre.

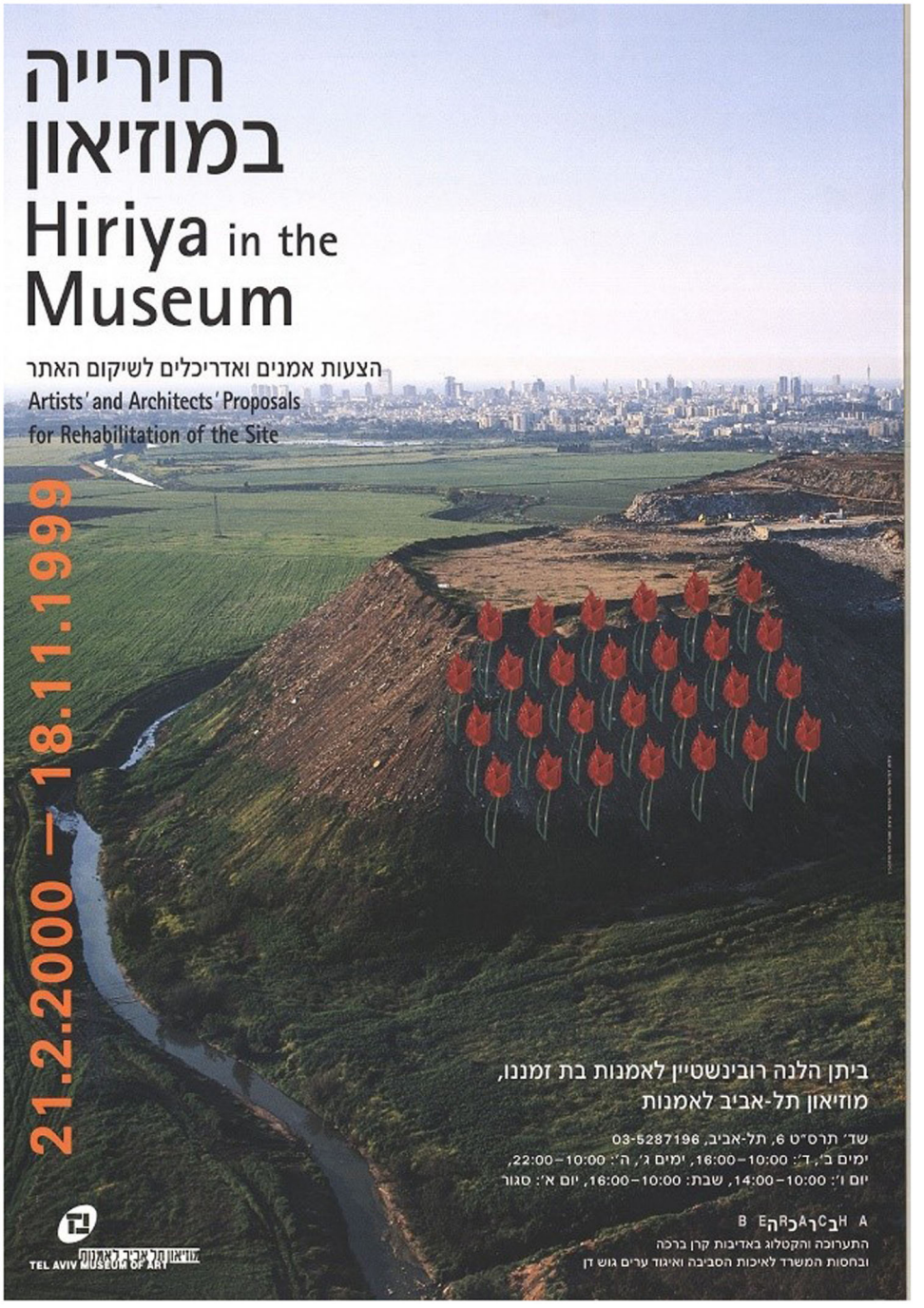


Figure 2. Poster, Hiriya in the Museum. *Source*: Albatross: Duby Tal, Moni Haramati (front cover). *Photo*: Tel Aviv Museum of Art.

The exhibition (1999–2000) sought to bring new content and form to the trash mountain. It featured 19 works by local and international artists, architects, landscape architects and designers. Most of the works addressed garbage as a material and conceptual entity, and as a reflection of consumer culture and modern society's ills.[6] They also suggested various, even contradictory, visions of the trash mountain, some conceptual or even philosophical, others practical.[7]

The exhibition was also innovative in that it introduced into the debate the link between art and the public space by addressing an infamous open space that itself becomes an artwork. Thus, Hiriya is part of a long tradition of 'earth art' that cannot be placed within a museum, gallery or park, but is itself transformed into a site-specific work of art. The landscape of the trash mountain became a place, a material and a medium of artistic expression, and the artists became agents of healing and restoration of the violated land and nature (Smithson & Smithson, 1996).

The exhibition encouraged the idea of turning Hiriya into a park and led to collaborations between various bodies and interests.[8] In 2001, at an international design workshop, the park vision was presented with the trash mountain at its centre. The workshop sought a design that would promote the site as a place for recreation and education where the trash mountain would be a focal point and a symbol of environmental awareness and rehabilitation after years of destruction and neglect (Angel & Weyl, 2001; Plesner, Guggengeim, & Kaplan, 2002; Tochnit metar mechozit 5/3, 2004).

In August 2002, another more limited workshop was held that included Peter Latz (Sadnat Tichnun [Design workshop], 2002). Alongside the artistic-architectural vision, consultations were held with specialists in waste decomposition in an effort to understand the changes the trash mound would undergo, and to formulate appropriate recommendations to stabilise it. The huge quantity of waste at the site precluded its removal, and the steep slopes required stabilising to prevent another collapse of waste into the Ayalon River, as had happened in 1997–1998. The decision was made to maintain Hiriya's familiar profile as a prominent landmark by bolstering the existing slopes to create more moderate inclines (Plesner et al., 2002).

In January 2003, a workshop was held with 30 planners from Israel and abroad, with the aim of developing a master plan for the park. Besides rehabilitating the trash mound, the plan would give prominence to a new recycling park and centre for environmental education, which were slated for construction at the foot of the mound, together with a waste transit station (Angel & Weil, 2004). Although public discourse on environmental issues was just emerging at the time, waste as an outcome of an economic-cultural, global and national system was centre-stage in the planners' vision. The education and recycling centre were included in the preliminary stages, acknowledging that artistic and architectural information may not necessarily change habits, and something more profound was required.

The design competition and the elusiveness of waste

To raise public awareness, an international competition for the redesign of the trash mountain was announced in September 2004. The design guidelines emphasised the park's purpose as a place of recreation and leisure, a landmark and national symbol, and a means of developing environmental awareness, rehabilitation and renewal. It was agreed that, rather than incorporating any formal sports facilities, the new park would encourage nature activities. Priority would be given to proposals that included artists' input, to simple humanistic designs involving natural and recycled materials, and to plans embodying a vision of optimism and even fantasy while preserving the landscape (Memorandum, 2004; Public competition with invitees, 2004). A detailed engineering brief included guidelines for stabilising the slopes; treating leachate and runoff that could contaminate the soil, groundwater and nearby streams; an explanation of methane gas treatment emanating from the waste, and safety rules for visitors.

Surprisingly, the waste itself—the very stuff of the mound and the primary reason for the design—was not mentioned explicitly or implicitly in the guidelines. This is all the more striking since the mound's table-like contour and the enormous pile of foul-smelling, polluting waste were familiar to everyone. Was the waste not mentioned because it was self-evident, or was this indicative of a conscious or unconscious desire to repress this aspect of the site's past?

Figure 3. Hiriya in the Museum II. Proposals for the public competition for detailed landscape design of the landfill, 2004. *Source*: Tel Aviv Museum of Art.

Fourteen proposals were submitted to the competition, mostly from design firms who had been invited to tender: Shlomo Aronson, Braudo-Maoz, Segal-Raayoni and Dan Zur of Israel; Peter Latz of Germany; Vista of the Netherlands; Bargmann, Smith, Starr, Laderman-Ukeles of the United States, and Manuel Ruisanchez of Spain. Some had also participated in the preliminary workshop. Other proposals were submitted after the competition was publicised in the media (see Appendix A). Each (anonymously submitted) proposal comprised four panels and a text that presented the park's vision.

The jury, chaired by Niall Kirkwood of Harvard University,[9] included architects Baruch Baruch and Adam Mazor, landscape architect Tamar Darel-Fossfeld, art curator Suzanne Landau and former Supreme Court President, Meir Shamgar—the latter as a public representative who lent the proceedings an air of state authority. The jury's decision was published a month later, and the proposals were displayed at the Tel Aviv Museum of Art (Figure 3).

Most proposals preserved the mound's unique shape, and all incorporated engineering, hydrological and ecological aspects into the design. Some included the recycling and environmental education centres with a focus on the nature of waste, the history of the landfill and a future vision of recycling and waste-to-energy systems. However, although many preserved the site's *genius loci*, only a handful touched upon the issue of waste in the design, either in the visitor experience, or in an ideological-educational statement in the accompanying text.

The proposals

A careful analysis of the different proposals shows what we term 'the absent presence' of waste. We first discuss entries which hardly touched upon the issue of waste, then those which discussed it in artistic or educational terms, followed by those that tried to confront the past and those that challenged the current discourse, and we conclude with the winning entry. We do not discuss entries that omitted the issue of waste altogether (expect for the second prize-winning proposal).

The design by Dan Zur and Studio de Lange (Proposal #16, Second Prize) completely concealed the trash mound by covering it with a green envelope, constructed on a symmetrical grid of thematic gardens (Figure 4). Benz Kotzen's design (Proposal #23, Third Prize) reconceived the mound as a butterfly park for diverse species that would embody a transformation of life in the wild (Figure 5). Formulating landscape as an aesthetic natural realm derives from eighteenth-century cultural attitudes towards beauty and sublimity. Both Zur/de Lange's and Kotzen's

Figure 4. Proposal. Zur-Wolf Landscape Architechts & Studio de Lange. *Source*: Dan Zur/De-Lange Studio.

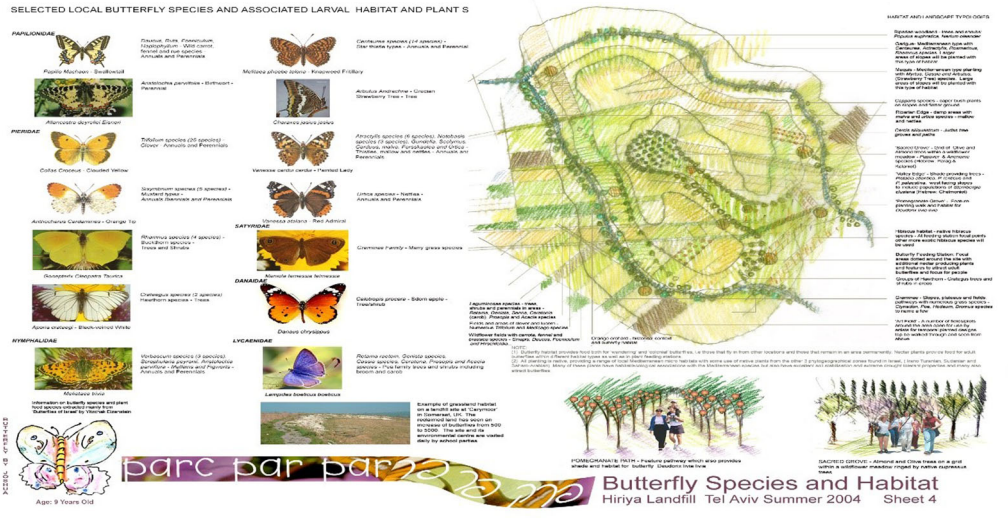


Figure 5. Proposal. Benz Kotzen. *Source*: Benz Kotzen Sustainable Landscape Architecture.

proposals demonstrate what scholar Vittoria Di Palma coined an 'anti-picturesque', a landscape that repels and therefore calls for transformation (Di Palma, 2014, 2017).

Some entrants devoted parts of the mound to educational exhibitions commemorating Hiriya, and created sculptures conceptualising waste. For example, Manuel Ruisanchez (Proposal #19), suggested turning the roundabout leading to the mound into a 'cultural link' that would both reveal 'garbage archaeology' and host temporary art exhibitions. Similarly, the MAS team (Proposal #18, Honourable Mention) suggested that the inclined entrance to Hiriya 'serve as a ramped exhibition space for displaying the archaeology of Israel's Waste Repository' (interview with Matanya Sack, 13 April 2021).

Bruce Levin (Proposal #14, Third Prize) proposed the construction of a 32 ft. high 'waste wall' of solid, sorted waste girdling the top of the mound, with a steel base covered with layers of shredded concrete debris—glass, bottles, pulped rubber and tires—and topped with bundles of plastic waste to provide an observation deck overlooking greater Tel Aviv; this would be the highlight of the visit to the site (interview with Bruce Levin, 22 April 2021) (Figure 6).

In a similar vein, Segal-Raayoni (Proposal #13) proposed reflecting the history of Tel Aviv's waste in a winding route up the incline, with windows at regular intervals displaying items characteristic of different periods in Israel's history. This proposal used waste as an inspiration for flexible structures that could adapt to changes in soil conditions and would be designed like snack wrappers (interview with Itamar Raayoni, 12 April 2021) (Figure 7).

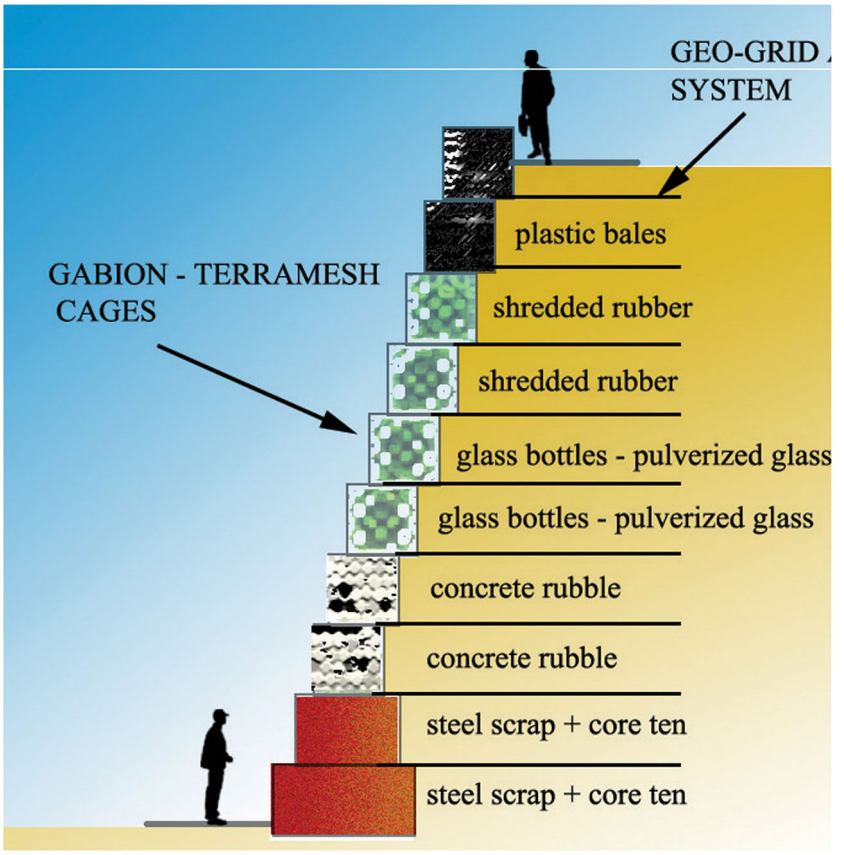


Figure 6. Proposal. Bruce Levin. *Source*: Bruce Levin K.S.M. Landscape Architects.

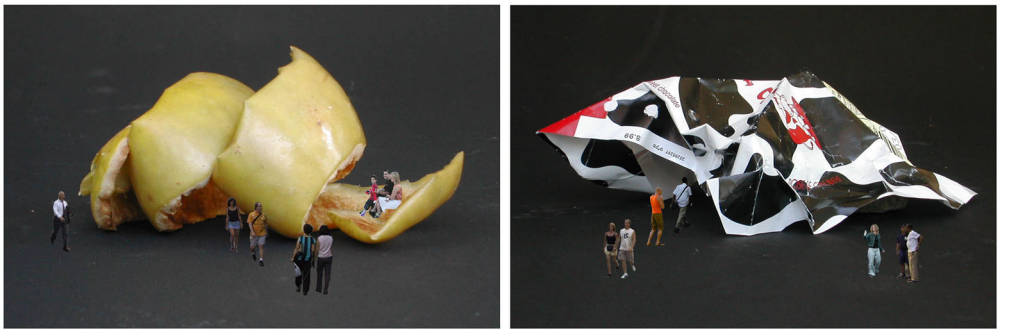


Figure 7. Proposal. Segal Raayoni. *Source*: Segal-Raayoni Landscape Architecture and Urban Design Ltd.

Notably, these proposals presented waste as an inert museum object, odourless and harmless, and almost the opposite of its actual ever-changing and environmentally hazardous nature. Proposing that the waste be sorted, arranged by type and placed behind glass also detached it from the chaotic nature of the landfill, the contents of which are devoid of any rules or order.

Several proposals suggested using part of the mound to educate visitors about its past and the waste that is integral to it. For example, Braudo-Maoz (Proposal #24) invited visitors to peek inside the mound from the pit that had formed at its summit. They could also view the various accumulated layers through recesses along the perimeter path around the mound, in which objects from different periods would be displayed. This would necessitate a design intervention, since presenting the 'real thing' would soon end in a decayed mess. So Braudo-Maoz also proposed showing the waste-related processes, firstly by revealing the pipes carrying the methane gas, and by using the gas to illuminate the mound. The firm's guiding principle was to produce a *recover story*, not a *cover story* (interview with Aliza Braudo, 18 April 2021) (Figure 8). This proposal demonstrates a maturity in brownfields redesign: from the call for greening recovered sites, to foregrounding the visibility of histories and processes of remediation (De Almeida, & Smith, 2019; Meyer, 2007).

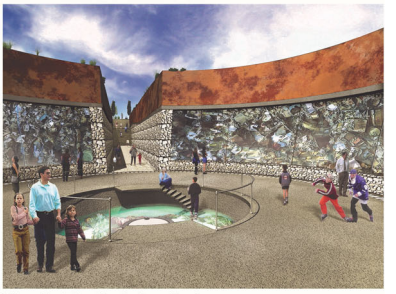
Benz Kotzen (Proposal #23) (Figure 9) who sought to turn the mound into a butterfly park, proposed turning the fissure that had evolved into an open-air museum. There, visitors could wander between walls of historic trash and gain insights into waste disposal and sustainability. Kotzen envisaged the interior of the mound as a living museum showing the changes that garbage undergoes, and revealing the dynamic life in nature without exposing visitors to its dangers.

The plan submitted by the Tsurnamal-Bar-Lev team (Proposal #12) went further than the others in its approach to waste, seeking to express the 'essence of Hiriya as a landfill' (Weyl & Hadar, 2005, p. 62). Visitors would experience a landscape that had been created in the successive layers of the mound of trash, which they themselves had produced. The issue of waste also featured in the title, *Hiriya Park: A Valley of Rejected Objects*. Visitors would be invited to roam between places in no particular order and rummage through a pile of detritus. The open museum space would be intended to evoke an uncanny feeling: strange, pleasing yet discomfiting, familiar yet foreign (interview with Vardit Tsurnamal, 9 February 2021) (Figure 10). Such an approach exposes our environmental secrets, doubts and insecurities, or what Elizabeth K. Meyer calls the uncertainty of large parks (Meyer, 2007).

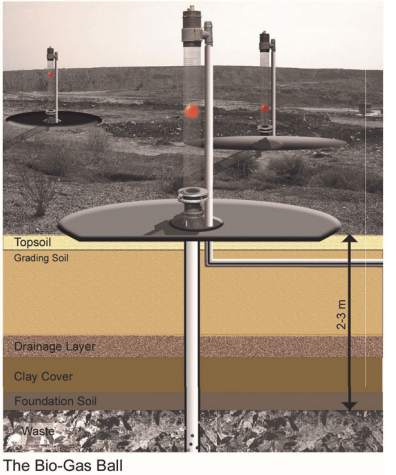
Two proposals alluded in different ways to time—namely, to the decades during which Hiriya had gradually evolved, and to future years when the waste would continue to decompose at the heart of the mound. Shlomo Aronson's proposal (#20) saw the waste as a dominant component that reveals a protracted process that must not be forgotten. However, the waste in his proposal found no explicit expression as a substance.

Shimon Margolin's proposal (#17) was the most ideologically radical, and the simplest and cheapest in terms of execution. It stood in stark contrast to all the others by stating: Let's not do

View 1 - The Layered Crevice



View 2 - The Garb-Age Crater



The Bio-Gas Ball

Figure 8. Proposal. Braudo-Maoz. *Source*: Braudo-Maoz Landscape Architecture Ltd.

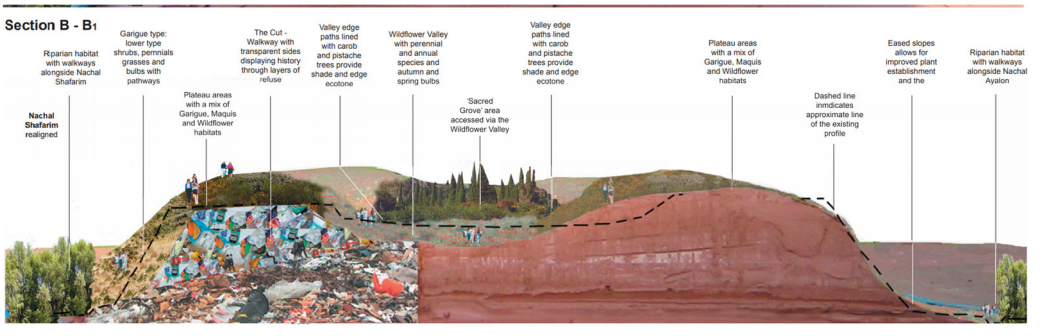


Figure 9. Proposal. Benz Kotzen. *Source*: Benz Kotzen Sustainable Landscape Architecture.

Figure 10. Proposal. Tsurnamal Bar-Lev Landscape Architecture, with Havi Livne and Dorona Yogev. *Source:* Tsurnamal Bar-Lev Landscape Architecture.

Figure 11. Proposal. Shimon Margolin. *Source*: Shimon Margolin Architecture Ltd.

anything, and neither bring visitors there, nor climb to its summit (interview with Asif Berman, 2 June 2021) (Figure 11):

> It is time to let nature be itself. We can allow ourselves to presume that the slopes will slide until they will naturally stop, that the gas that comes out of the mountain will diminish. It is time to be observers, not actors .... Our belief is that Hiriya should not be covered by a blanket of flowery green. Our proposal is to avoid all planning or engineering to make the place more hospitable for humans. Our only plan for the next fifty years is to take a pause from the compulsion to do. A pause, to let Hiriya reconstruct itself, might teach us to take time to contemplate the meaning of our action for the environment. A time for Hiriya can be a time for us to heal. (Weyl & Hadar, 2005, p. 94)

Margolin's is the only bid that treats waste directly, comprehensively and explicitly. It is an ideological rather than a design or rehabilitation proposal, and its purpose and importance inhere in its declarative mindset-changing approach. Naturally, this and other proposals that did

Figure 12. Proposal. Latz and Partners. *Source*: Latz + Partners.

not offer a comprehensive solution for implementation were dropped in the first round of assessments (Pratei kol shiput hatacharut, 2004).

The winning proposal, by Peter Latz (Proposal #25), did not address the waste as a conceptual or design element; indeed, it may be argued that it ignored the fact that the mound was made of waste. Latz disregarded the engineering recommendations for stabilising the slopes because they would obscure the mound's distinctive identity. Instead, he offered a creative solution to preserve its iconic shape by moderating the slopes and repositioning the streams around it. His solution was to turn the entire mound into a huge environmental sculpture—an enormous monument to trash—thereby changing its perception from a symbol of neglect to a symbol of renewal (interview with Ulf Glänzer, 1 June 2021) (Figure 12).

Latz understood that with the changing seasons the mound gets soaked in the rain then dries out in the heat, and this causes structural changes. Since rainwater and leachate seep to the bottom and contaminate the soil and adjacent streams, he proposed enclosing the lowest section within a battery of construction debris to prevent the contamination seeping out. Latz demonstrated, as he had in Duisburg Nord, how to turn engineering into design while acknowledging symbols of the past and processes that occur over time (Rosenberg, 2009).

Although Latz made creative use of recycled materials, waste, references to past pollution and the harms inflicted by consumer culture were not included in his proposed visitor experience, nor was his technical solution for removing the methane gas that was kept hidden from the park's visitors for safety reasons (interview with Glänzer, 1 June 2021). Waste as a scourge of our time that creates extensive pollution comes under the aegis of the centre for environmental education; waste as a resource for renewable energies fuels the activity of the recycling industries park. Both centres are located at the foot of the mound but are not necessarily part of the visit; nonetheless, they are intentionally kept in sight of visitors walking along the top of the mound (Weilacher, 2007).

Remembering without smelling

Whereas museums and archives preserve what culture delineates as worthy of maintaining for future generations, landfills do the opposite: they filter out and hide whatever is deemed worthless and therefore rejected or suppressed. The power to make these decisions often lies with the establishment. In this regard, introducing the trash mound into the realm of art has largely determined how Hiriya will be remembered and presented in the public space (Engler, 1999; Girot & Imhof, 2016; Thompson, 2017).

A critical analysis of the proposals submitted to the 2004 competition with those at the exhibition 5 years earlier attests to changes in the conceptual and design emphases in thinking about the landfill. The discussion, conducted mainly among landscape architects, shifted from an artistic, open, multi-disciplinary, theoretical discourse that saw a polluted site as a space for a museum, to a professional-design discourse and the framing of an open public space as a park. The artistic aspect diminished with the need to move from abstract artistic ideas to a design that encompassed the engineering, ecological and economic practice of rehabilitation and establishing the park.

At the same time, there was another notable change. The works displayed at the first *Hiriya at the Museum* exhibition saw the event as an opportunity to use waste to broaden discussion of modern society's ills. Conversely, none of the proposals except those by Margolin and Tsurnamal-Bar-Lev treated waste as a major issue. Margolin's display left the trash mound standing, without any intervention whatsoever, whereas Tsurnamal-Bar-Lev turned it into an 'other' uncanny space, at once familiar and alien. The other proposals either ignored the issue, or relegated it to secondary or marginal status, thereby also changing the nature of the waste from an environmental hazard into a pleasing visual and olfactory presentation. Margolin and Tsurnamal-Bar-Lev transcended the mainstream and the competition program by proposing plans that challenged the current discourse.

Waste as a conceptual entity and a material outcome poses dilemmas for design and culture. Turning the polluting past into a living memory means leaving decades of accrued debris in place. In the case of Hiriya, this is neither dry waste nor the plastic, computers, cans and bottles that leading artists placed at the centre of their proposals.[10] It is organic rotting waste that attracts insects and flies, emits a sour stench and induces breathing difficulties. The nature of this waste required the landfill to be closed and the hazard treated—and yet its very closure transformed the waste from a living entity into an inanimate object. The solution, which was essential for the safety and enjoyment of visitors, made the waste and the experience of encountering it incomplete and inadequate. Turning Hiriya into a museum, as some proposals suggested, presented the waste as a thing of the past rather than a dynamic entity that, due to microbial activity, continues to change at the heart of the mound, even after the landfill was closed.

The issue of waste hardly rates a mention in the competition judging process; the judges apparently sought a proposal that would deliver a comprehensive plan giving Hiriya a 'positive' image. Judge Shamgar is quoted as saying: '[T]he new park must not be a monument to garbage'. He believed that it should attract people with shady nooks and various attractions. In the final stage of the competition, as the discussion focussed on the top four finalists, he supported Zur/de Lange's and Kotzen's proposals to turn the hill into a 'land of gardens' and a 'butterfly park' (respectively), by blanketing it with images unrelated to the site's context and thereby softening the iconic topography. Baruch also supported Zur/de Lange's design, but disagreed with the idea of disguising the mound and hiding its past. Conversely, Landau supported Latz's proposal, while Kirkwood wavered between Zur/de Lange's and Latz's proposals, which represented opposing approaches. Darel-Fossfeld thought that Hiriya should not be obscured as a site and embodiment of an unsustainable lifestyle, and initially supported the proposals of Tsurnamal-Bar-Lev and Team SUDS (which did not reach the final stage). She wanted to understand whether the technological devices would become an educational tool. Over two days of discussions (8–9 September 2004), the judges debated whether to obscure or even suppress the site's unwholesome past by turning it into an untroubled romantic landscape, or to preserve the landfill's formal attributes (interviews with judges; see also Memorandum, 2004; Pratei kol, 2004). Latz's proposal only caught the judges' attention at an advanced stage, but once it did, they found it met many of the preliminary criteria. The simple, feasible proposal offered an original solution to the summit of the trash mound, and imposed no financial or maintenance burden on the authorities.

From the interviews with the judges 17 years later (allowing for the tricks memory may play over such an interval), it is apparent that they were persuaded that Latz's design neither placed undue emphasis on the mound, nor negated its existence. Darrel-Fossfeld and Landau thought that the rehabilitated Hiriya should serve as an example for other violated places and emphasised its educational value. Baruch believed that the mound should be a symbolic, architectural-design entity. Everyone recalled that Shamgar had remained steadfast in his opposition to Latz's proposal, which left the mound's profile largely intact, thereby trying to preserve its memory. Shamgar's position echoes 'the rehabilitation approach' (Engler, 1995) which restores an area to its former state and purges its pollution.

Moreover, as Hiriya integrates necessary waste infrastructure with public space, it embodies a rare instance among the rehabilitated landfills in the world. The waste has not completely gone away, and the connection between past, present and future remains.[11] In that sense, Hiriya echoes other common approaches (Engler, 1995) that combine mitigating the hazards by converting the site to other uses (a public park); emphasising the site's polluted past and highlighting the lessons learned (through the centre for environmental education); using it as the foundation for regional resilience and community growth (a green infrastructure to solve flooding problems).

Landscape as a tool for shaping identity: a critical perspective

Anthropologist Mary Douglas (2003) describes waste as everything that is unclassifiable and out of place, a definition that sociologist Zsuzsa Gille (2007) expanded to include everything that is spoiled. Waste is a product of certain materials and social processes, and an element that establishes social, economic and cultural order. Sociologist Zygmunt Bauman (2013) states that late modernity has been characterised by its classification of everything anomalous in society as waste: the desired versus the rejected, normal versus pathological, healthy versus sick. Whenever waste is collected, he claims, the boundary between what is deemed worthy and what is wrong or repressed is redrawn. Waste is thus a good lens through which social values and dilemmas may be observed.

Recent research on the Anthropocene exposes the remnants of past human errors—or 'ghosts'—and the ways in which they still impact humans and their environment. Looking at the interrelations between humans and nonhumans in the Anthropocene can complicate our understanding of Hiriya's role. The gigantic mountain is a vivid ghost, a silent witness of our past errors, recalling our ecosystem's intense fluctuation and our current massively polluting way of life. However, the new park, with its central monument of loaded meaning, demonstrates our heritage of intervention in a typical area of Mediterranean nature: from gentle agriculture to a brutal takeover and heavy pollution of land, soil, air and water, followed by massive infrastructural renovation of a green lung (Bubandt et al., 2018; McNeill, 2001; Resnick, 2021; Waterton & Saul, 2021).

This raises a critical question: Did the competition guidelines, the design solutions proposed and the criteria that guided the competition judges attest only to design and engineering considerations that would make Hiriya attractive and safe? Or are they a reflection of how our culture still refuses to recognise its harmful products, which Gille defines as a negative attitude towards waste that heightens the urge to expunge it? Does the externalised nature of waste change its characteristics when landfills are recovered and redesigned, and does the abstraction of space reveal or hide the social, cultural, historical, ecological and political attributes of trash? (Ghosn, & Jazairy, 2014). Just as we place garbage in tightly tied plastic bags, which we quickly distance from our personal environment, don't we also prefer to wrap the mound in a seasonal mantel, a natural covering, in a bid to distance the hazard—physically and conceptually—from our social and cultural surroundings?

The term 'habitus',[12] which defines the boundaries between individuals or groups in society, can be extended in this case to include waste. Bodily habits profoundly demonstrate the

assimilation of identity and belonging and translate social structures into tastes (Elias, 1994). In this study, we claim that waste is an extension of food insofar as it is its inverse and, like food, relates to the body and senses. Weyl's initiative and his assertion that waste no longer lies beyond the preserve of the elite but is part of the capital of Israeli culture, must be interpreted in this light. The prestige associated with art has expanded the discussion of waste and brought together partners from diverse spheres of interest. It has also guaranteed the quality of the design of the future park.

Five years passed between the art exhibition and the final decision regarding Hiriya's rehabilitation. This decision stipulated that waste would continue to be sorted at Hiriya, and that those interested in the environmental aspects of the landfill could visit the education centre and recycling park. However, the mound itself would only represent the waste in the abstract. This approach upholds the assertion by Michael Thompson, theorist of science, that an item is only valuable when someone with authority deems it so (Thompson, 2017). Once artists and curators stated that waste had value, it took centre stage; nonetheless, when landscape architects designed the site, the waste was relegated to the recycling park.

Traditionally, discussions about landscape and landscape design revolve around beauty, high culture, centres of power and national and cultural identity; they are not accustomed to dealing with the dirty and the ugly. Throughout history, landscape has been seen as a refuge from the hardships of the present, from the din of the city and from technology; landscape architects create beautiful places that fulfil 'visual dreams' rather than confronting past transgressions. However, contemporary landscape architecture requires a cultural vision beyond purely formal or ecological design; and, as Corner puts it, examining environmental blights in isolation from their sociocultural contexts may repair past damage but will not address the social and cultural problems that caused that damage (Corner, 1999).

Conclusion

After 70 years, Hiriya has been reborn: from an ugly frog, it has become a handsome prince (Figures 13 and 14). The process of its renewal—from artists' exhibition, through actual design,

Figure 13. Hiriya landfill after the rehabilitation. *Source*: Ariel Sharon Park, Albatros.

Figure 14. Observation from the top of Hiriya facing Tel Aviv. *Source*: Galia Limor-Sagiv.

Figure 15. Ariel Sharon Park and the cities surrounding it. *Source*: Ariel Sharon Park.

competition and rehabilitation workshops—attests to its physical and ecological transformation, and to the change in Israeli society's self-perception as no longer being willing to tolerate such sights and smells at the heart of the country.[13] This is in parallel with a corresponding initiative by the Planning Administration to preserve the landfill's surroundings by turning them into a metropolitan park, and granting this neglected area south of Tel Aviv-Yafo a status similar to large parks in other major cities in Israel and around the world, thus making it a source of pride and pleasure (Figure 15).[14] Hiriya is a seminal example of a huge landfill in a socially deprived area that was a blight and environmental hazard until the authorities and various social and cultural circles

intervened.[15] Although it brings progressive thinking to the area in landscape, ecological, infrastructural, technological and educational terms, it does not seek to eliminate the past or highlight the costs of the present production culture and its ramifications for landscape. The international competition and ensuing rehabilitation process gained media exposure and public involvement, which are both important in their own right and as a precedent for other locations in the future. However, it is noteworthy that the problems associated with waste are only growing, given its ever-rising volume, the types of materials involved and the complexity of treating them. Moreover, the attempt to present Hiriya as a model of rehabilitation has not been entirely successful because even today, 24 years after its closure, Israel's waste continues to overflow; transporting it from the central region to the periphery has only put it out of sight without fully appreciating the damage it causes. Hiriya facilitates discussion of the landscape as a product of culture and of landscape architecture as an agent of change that creates and enriches culture, calls for action and allows surrounding communities to forge an identity and meaning. Rehabilitating damaged places is, therefore, about the past, but it is no less about envisioning and shaping the future.

Notes

1. About the construction of the landfill in the early 1950s, see Limor-Sagiv and Lissovsky (2022).
2. The article's focus is on the competition. Implementation of the winning proposal took over a decade and was the result of a rare cooperation between several governmental authorities. This is beyond the scope of this article but it is fully explored in another (forthcoming).
3. On previous studies on the competition, see: Alon-Mozes (2009, 2012), in which she examines the tension between the local and the global in the competition proposals and discusses the emergence of environmental thinking in Israel as exemplified in the Hiriya affair; see Lawson (2015), in which he analyses three large landfills which underwent rehabilitation and were turned into ambitious parks: Fresh Kills in NYC, Keele Valley in Toronto and Hiriya in Tel Aviv. In a personal essay titled 'Hiriya: On stench and beauty' (2010) (Hebrew), Martin Weyl describes the events surrounding the turn of Hiriya.
4. We confirm that all interviewees have agreed for extracts to be published and for their identities to be known.
5. See Corner (1999); Kirkwood (2003); Berger (2006); Meyer (2007).
6. For information on the Hiriya exhibition, see Weyl (2004).
7. Landscape architect Shlomo Aronson sought to establish a bird park whose structure would consist of pipes that pumped out the methane gas trapped in the landfill. Architects Ulrik Plesner and David Guggenheim, and urban planner Mordechai Kaplan, proposed turning the no-man's-land surrounding the trash mountain into a nature park.
8. The exhibition brought together the Dan Region Towns Association, the Beracha Fund, environmental organisations, heads of local authorities and government ministers. Meanwhile, the Tel Aviv District Planning Committee, headed by Naomi Angel, sought to merge the undeveloped areas of Hiriya with a view to turning them into a metropolitan park, and to create infrastructure for runoff and flooding. This would be coupled with efforts, which had begun in early 1998, to rehabilitate the Ayalon River that flows to the foot of the trash mound.
9. Niall Kirkwood FASLA Chairman of the Department of Landscape Architecture, Graduate School of Design at Harvard University has studied the issue of waste management for many years, and has been involved in landfill rehabilitation projects around the world. Thus, he has continued the research and work of well-known landscape architect George Hargreaves. Kirkwood was among the first in the world to introduce the engineering-infrastructural element to the academic field of landscape architecture, thereby linking landfill infrastructure and ecology with design and culture (interview with Niall Kirkwood, 11 March, 2021). See Kirkwood (2003); Czerniak, Hargreaves, and Beardsley (2007).
10. See for example: Thomas Hirschhorn, Zbel Manifesto, Wang Zhiyuan, Tim Noble and Sue Webster.
11. See details of the Northeast Coastal Park in Barcelona, Spain, designed by Abalos & Herreros, which combines municipal waste-management facilities with a public park and beach (Reed, 2005, pp. 144–147).
12. According to Pierre Bourdieu (1984, 1985), 'habitus' is the set of perceptions, behaviors, tastes and preferences of individuals in society who accept the structures of the social group to which they belong.
13. Norbert Elias's work on the development of dining etiquette in medieval Europe (Elias, 1994) may help to explain the cultural transformation of Israeli society. Many Israelis still remember the days when Hiriya was an active landfill; however, today we find it incomprehensible that Israeli society treated with equanimity the gradual growth of the stinking mound of trash, with flocks of birds hovering above it, at the entrance to Tel Aviv.

14. Post-industrial sites also called brownfields, wastelands, drosscapes or manufactured sites are the centre of several recent studies (see, for example, Corner, 1999; Kirkwood, 2003; Berger, 2006; Meyer, 2007).
15. On the human outcomes of climate change and the Anthropocene era, with a focus on its exacerbation of the vulnerability of ecosystems and poor people, see also Nixon (2011).

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Interviews with design partners

Naomi Angel, Former Tel Aviv District Planner in the Planning Administration, 14 December 2020, 29 December 2020, 5 January 2021.
Martin Weyl, Chairman of the Beracha Foundation, former director of the Israel Museum, 28 January 2020.

Interviews with judges

Tamar Darel-Fossfeld: 2 February 2021
Baruch Baruch: 8 February 2021
Suzanne Landau: 16 February 2021
Neil Kirkwood: 11 March 2021

Interviews with contestants

Vardit Tsurnamal: 9 February 2021
Itamar Raayoni: 12 April 2021
Matanya Sack: 13 April 2021
Aliza Braudo: 18 April 2021
Bruce Levin: 22 April 2021
Ulf Glanzer: 1 June 2021
Asif Berman: 2 June 2021

Appendix A. Proposals submitted to the competition

#12: Tsurnamal-Barlev Landscape Architecture, with Havi Livne and Dorona Yogev, Dori Bar-Lev, Liat Chiel-Nuri, Adi Noy.
#13: Segal-Raayoni Landscape Architecture and Urban Design Ltd. Amit Segal, Itamar Raayoni, Lisa Geshiktor, Tlalit Segal-Raayoni.
#14: Bruce Levin Architects Ltd. Bruce Levin, Omer Yanowic, Enrique Lowinger, Vered Zutta, Mira Maylor)—Third Prize.
#15: Richard W. Meyer, Etan Eden, Ram Eisenberg, Amir Mueller, Rebbeca Schwaner, Vered Hackert, Nathan Gulman.
#16: Dan Zur & Associates., Landscape Architects; Studio de Lange Design and Architecture: Dan Zur, Lior Wolf, Zohar Ashkenazi, Yasmin Itamari, Yifat Soffer, Vadim Dragunski, Pnina Levi, Chanan de Lange, Tal Roih de Lange, Dana Wander, Hadas Goldberst.—Second Prize.
#17: Shimon Margolin Architecture Ltd. Ron Margolin, Assif Berman, Arnon Bar-am.
#18: MAS. Rebecca Sternberg, Matanya Sack, Uri Reicher.—Honourable Mention.
#19: Manuel Ruisanchez, Barcelona, Spain. Manuel Ruisanchez, Ana Zahonero Xifre, Shlomi Almagor.
#20: Shlomo Aronson & Co. Shlomo Aronson, Barbara Aronson, Jorge Salzberg, Ifat Gal, Michal Kimhi, Tomer Goldstein, Ofri Gerber, Tal Bilinsky.
#21: Vista Landscape Design and Urban Planning, Amsterdam, The Netherlands. Leon Emmen, Roel van Gerwen, Marie-Laure Hoedemakers, Paul van Hoek, Sjef Jansen, Rainer Johann, Joost Koek, Elke Kraussman, Rik de Visser.—Honourable Mention.
#22: TEAM SUDS: Julie Bargmann, Ken Smith, Laura Starr, Mierle Laderman Ukeles, USA.
#23: Benz Kotzen Sustainable Landscape Architecture, London, UK. Benz Kotzen, Shibboleth Shechter, Sharon Azouz.—Third Prize.
#24: Braudo-Maoz Landscape Architecture Ltd. Aliza Braudo, Ruth Maoz, Tali Shapira, Shlomit Zilberman, Shachar Zur, Dalit Sharon, Tali Gil, Meirav Davish Ben-Moshe, Yitzhak Goren, Abraham Jacob.
#25: Latz + Partner, Kranzberg, Germany. Peter Latz, Anneliese Latz, Tillman Latz, Christine Rupp-Stoppel, Tobias Kramer—First Prize.

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Israel's largest landfill rehabilitation: creative landscape design as a catalyst for a functioning metropolis

Galia Limor-Sagiv, Nurit Lissovsky and Naomi Angel

Hiriya, a municipal landfill site in the centre of Israel, has undergone major upheavals discussed in previous research by the authors of this study. The current research relates to the transformation of Hiriya and the surrounding area into the Ariel Sharon park. Established in 2007 and designed by landscape architect Peter Latz, the park stretches across 2000 acres and is one of the largest environmental rehabilitation projects in the world (Figure 1). It functions as a green lung for the Tel Aviv-Jaffa metropolis, the country's most populated region, and offers leisure areas for approximately five million citizens living in the nearby cities (Figure 2). Like similarly rehabilitated sites around the world, the park – formerly a marginal area, unwelcoming, and dangerous to the public – was converted into a pleasant public space. Its function has changed completely due to advanced creative planning and design which have transformed the area into an urban-supporting space addressing flood control, nature conservation, eco-system services and leisure activities through nature-based solutions. The case described and analyzed in this article is a work in progress and an indicator of history in the making identified in real time by the authors.

In this article, we claim that the decision to cease operating the notorious landfill infrastructure, was driven by other infrastructures – namely, the airport and roads – as well as by a shift in the environmental discourse. The threat to the airport came from birds, but also from the rivers which flow to the foot of the garbage mound and, during winter flooding, blocked the main transportation routes. We show how recovering the waste infrastructure – the jewel in the crown of a national waste-management program – initiated a practical and symbolic process of salvaging other malfunctioning infrastructures and enabled the surrounding neglected areas to recover, too; recovering the waste infrastructure also provided solutions to other problems in the area. Latz, who was chosen in 2004 to design the recovered landfill, and again in 2009 to design the entire park, emphasized the now-iconic mound rather than concealing it, and turned it into a catalyst for a healthy, functioning metropolis.

Hiriya, the enormous garbage heap 60 meters (200 feet) high, in the middle of the park, started operating soon after the Arab village Al-Khairiyyah was destroyed following the 1948 war of Israel's independence and Palestine's *nakba*. Fifty years of stench, environmental health hazards and landscape blight finally came to an end, not only as a result of environmental policy but also because the massive annual migration of birds, mainly flocks of seagulls, from Africa to Europe and back, would circle the garbage looking for food, thereby endangering the airplanes landing and taking off from Ben-Gurion Airport nearby. Hiriya, once a symbol of environmental and social neglect, has become a symbol of environmental and cultural recovery. The transformation of the mound of garbage was the symbolic start of the new park's construction. A wound in the landscape thus became a huge

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Colour online, B/W in print

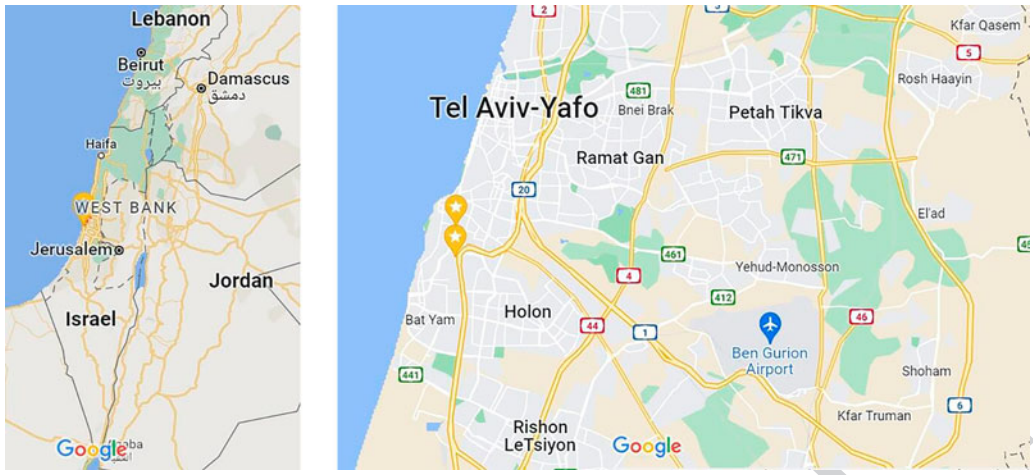

Figure 1. Israel, Tel Aviv-Yafo region and Ariel Sharon Park. Source: Google Maps.

Colour online, B/W in print

Figure 2. Ariel Sharon Park. Source: Latz + Partner.

monument to our polluting past and an indicator of a healthier environmental discourse going forward.

The area known today as Ariel Sharon Park is the Ayalon river's floodplain. Dry in the long summers and powerful in winters, its fertile lands attracted human settlement for thousands of years. The new park utilizes the vast areas which had been kept open due to historic circumstances, for the benefit of the southern Tel Aviv-Jaffa metropolis. The plan for the new park was to retain six million cubic metres of floodwater from the Ayalon river which threatens to paralyze the city's

transportation with flooding each year – and to construct an additional train track to accommodate future passenger numbers.

Exploring diverse textual and visual documents, including workshop preparations, Latz's own designs, archive materials, and interviews, we will identify the factors that led to the dramatic transformation of the Hiriya area.[1] We will also examine how an excellent design turned a once-in-a-century phenomenon like Hiriya from a brownfield on the outskirts of the cities into a lively, green, functioning space in an urban setting. This design transformed the existing green infrastructures into a rich experiential landscape, incorporating recreation, sport, leisure, flood control, nature conservation, education, and art, next to a functioning waste transit station and recycling plants. Thus, we will claim, Hiriya is a case study showing the crucial importance of landscape architecture in times of climate change, densifying population and degrading natural resources. Landscape architects are the conductors coordinating architecture, engineering, water management, ecology, food and culture.

The article comprises four main sections, a conclusion and reflections. The first section offers a short review of pivotal landscape projects, which turned brownfields into parks, on various scales and using different methods; it also includes a brief review of large parks as urban-supporting infrastructures, in terms of their social, environmental, and climate-change aspects. The second section briefly describes the historical-geographical history of the Hiriya area which, after the establishment of the landfill, turned into a socially and environmentally neglected zone. The third section analyzes several parallel national-scale developments, which accelerated the decision to cease operation of the landfill and establish a large new park. The fourth section describes and analyzes the creative landscape park, explaining how one project combined a multitude of activities from planning and design to the implementation of various different infrastructures as well as social and cultural activities. The article ends with a short conclusion and reflections.

Large parks as infrastructure

Infrastructures are an integral part of modern urban life. Electricity, water and sewage systems, airports, roads and trails, telecommunications networks, and waste collection form the technical basis of our current living conditions. Until recently, infrastructures were at the heart of engineering, hydrology, and economics studies, but in the last decade they have received scholarly attention from the humanities, social sciences, and the arts.[2] The global transition from an industrial to a commodity-based economy has resulted in many abandoned infrastructures, in and outside cities, which are unattractive, unusable, and often polluting. These range from small-town lots to landfills, old airports, quarries, factories, abandoned ports, and dwelling compounds; and whereas they once supported urban life, they now threaten it.

In the last decade, the rehabilitation of these sites has made huge progress, focusing mainly on abandoned industrial and infrastructure lands, mining wasteland, and landfills, in many cases using nature-based solutions.[3] Landfills are among the most visible indications of our consumption culture in the landscape. Locating them next to poor neighborhoods makes them invisible and even

[1]The methodological approach used in this article is a combination of Narrative Research and Case Study Research, in which the investigator explores a bounded system over time, through detailed data collection involving multiple sources of information. Creswell and Poth, *Qualitative Inquiry and Research Design*, 53–4, 73.

[2]Hughes, *Networks of Power*; Graham and Marvin, *Splintering Urbanism*; Larkin, "The Politics and Poetics of Infrastructure," 327–43; Anand et al., "Introduction: Temporality, Politics, and the Promise of Infrastructure," 1–38.

[3]Song et al., "Nature Based Solutions for Contaminated Land Remediation," 568–9; Zheng and Kirkwood, "Landscape Architecture and Sustainable Remediation," 301–24.

more challenging to rehabilitate. In her notable book, *Designing America's Waste Landscapes*, landscape architect and scholar Mira Engler examines waste and sewage infrastructures in a bid to understand how we shape our landscape. She reviews the history and theory of waste sites in the US and analyzes plans to change public perceptions.[4] Another example is the regeneration of landfills in China, divided into four categories: expo parks, sports and recreational parks, country parks, and ordinary urban parks.[5]

These locations are an opportunity for random urban social interactions or recreation that help us reconnect with nature in concreted zones. Examples include: the Seattle Gasworks Park, 1975 (Richard Haag), which transformed a space for gas equipment storage into a park using advanced soil rehabilitation methods; Schouwburgplein (Theater Square), Rotterdam, 1996 (Adrian Geuze), built above a carpark; Seonyudo Park, Seoul, 2002 (Seo Ahn Total Landscape), transformed concrete tanks into ponds for wetland plants and grasses, producing an intense natural visitor experience integrated with old industrial waste-treatment infrastructure; Hadiqat As-Samah (Garden of Forgiveness), Beirut, 2006 (Gustafson Porter Ltd), built on a city compound destroyed during Lebanon's civil war, with archaeological layers offering a shared heritage of cultural diversity; the Olympic Sculpture Park, Seattle, 2007 (Weiss/Manfredi Architects), which transformed a fuel storage and transfer station into a park connecting city zones.[6]

On a larger scale and relevant to this discussion are Crissy Field in San Francisco, by Hargreaves Associates, which transformed an army airstrip into a vast urban public park, removing tons of hazardous materials and recovering the area's tidal marches; Duisburg-Nord Landscape Park in the Ruhr District, Germany, by Latz + Partner, which turned an industrial steelworks into a large park commemorating Germany's polluting past by maintaining and converting the industrial facilities into playgrounds and sporting facilities, using advanced methods of soil and water purification (Weilacher, 2007); Fresh Kills Lifescape in Staten Island, New York, by James Corner/Field Operations, which transformed a huge landfill into a parkland, based on a long-term strategy using natural processes to recover severely polluted lands.[7]

These polluted sites evoke a particular interest: some remove the hazard (Crissy Field), while others treat it on the site itself (Fresh Kills) by purifying or replacing the soil. The question is, how much of the polluting past to reveal, both in terms of the engineering required and the social, cultural, and educational benefits, and how much of the site's genius loci (even those that are negative) to expose (Duisburg-Nord). These are recovery projects with both ecological and infrastructural elements as well as social and historical implications. They transform iconic spaces of waste and dereliction into usable sites that recollect and interpret the past, and forge collective identities.[8]

Some of these sites function as large parks. 'Large parks are extensive landscapes that are integral to the fabric of cities and metropolitan areas, providing diverse, complex, and delightfully engaging outdoor spaces for a broad range of people and constituencies'.[9] From the eighteenth century, large parks were established on empty, undeveloped land on the city outskirts. However, since the late twentieth century, large tracts are scarce, so planners, politicians, and designers are obliged to be creative when turning large, neglected, or polluted sites into public parks.

[4]Engler, *Designing America's Waste Landscapes*.
[5]See Zheng and Kirkwood, "Landscape Architecture and Sustainable Remediation."
[6]Song et al., "Nature Based Solutions."
[7]Corner, "Lifescape," 14–21.
[8]Meyer, "Uncertain Parks," 59–85.
[9]Corner, "Foreword," 11.

Large parks enable social activities which create society and belonging in crowded cities. Their scale offers visitors a vast theatre of weather, plants, and geology under the open sky. Along with their social and cultural aspects, large parks have a crucial ecological role, moderating temperatures and creating local habitats for vegetation and wildlife. Those 'green lungs' clean, refresh, and enrich urban life;[10] this is evident, for example, in Parc de la Villette in Paris, 1987 (Bernard Tschumi), River Park, Los Angeles, 2000 (George Hargreaves), Del-Rio-Manzanares, Madrid, 2006 (West 8), and Lake Ontario Park, Canada, 2013 (James Corner/Field Operations).

Such parks often solve the adjacent metropolis' infrastructural problems, as in the case of the pivotal Riverside Park on New York City's Upper West Side, 1874 (Frederic Law Olmsted and Robert Moses), built on a train system that connected different parts of the city and Flushing Meadows Park, Queens, 1939 (Gilmore David Clarke and Michael Rapuano), which recovered an ash dump and marsh land for New York City's world fair in 1939.

Recent examples in Israel of open areas that solve infrastructural problems are Herzliya Park, 2009 (Barbara Aronson), which transformed a marsh; the Gazelle valley, Jerusalem, 2015 (Rachelle Wiener Landscape & Architecture), which controls winter flooding, preserves a herd of local gazelles, and provides an urban nature park in the middle of a crowded city; the rehabilitation of Kidron stream (Tsurnamal-Turner), which provides good water for desert citizens, and Haifa Bay (Sack-Reicher), which recovers Haifa's contaminated industrial site.

Groundwork for ongoing neglect

The area with which this article deals accommodated the ancient biblical Bene Beraq, and subsequently the Arab village Ibn Ibraq, renamed Al-Khairiyyah in 1924, meaning 'the good' and recalling its fine soil. Al-Khairiyyah was situated on a hill about eight kilometers east of Jaffa and several hundred meters north of the Ayalon river. During the British Mandate (1920–1948), the village owned 3378 acres and had 1420 inhabitants.[11] The area was designated as Crown Land,[12] namely public land set aside for government/public purposes and not attached to any municipality, in a bid to maintain its drainage function during the annual floodings that threatened the southern neighbourhoods of Tel Aviv. The designation secured the area against all future construction.

Ariel Sharon Park also includes the lands of Mikve Israel, established in 1870 as the first Jewish agricultural school in Palestine and the first Jewish settlement outside Jerusalem. Located southeast of Jaffa, it taught agriculture to young Jews in order to establish villages and agricultural and farming life around the country.[13] Over the years, Mikve Israel has become a symbol of Jewish agriculture in Israel and a historic landmark. In order to protect it and its cultural heritage, the Mikve Israel Agricultural School Law was enacted in 1976, ensuring its continued operation as an agricultural school and protecting the designation of the land.

Returning to Al-Khairiyyah: like other villages east of Jaffa and most villages and towns in the entire Palestinian area, it was captured by Jewish forces during the 1948 war, and its inhabitants were expelled.[14] Thereafter, the village houses were populated by Jewish soldiers and immigrants, while one hundred metres westward, HaZera Cooperative – an innovative company which

[10] Ibid.; Czerniak, "Speculating on Size," 19–33.
[11] Khalidi, *All That Remains*.
[12] Crown Lands are public land in British dominions or colonies. They usually include land set aside for various government or public purposes. In many cases, Crown Lands were used for future town planning and infrastructures such as airports, military bases, and other public utilities, or for future development and the protection of nature resorts.
[13] Penslar, "French Influences on Jewish Agricultural Settlement," 37–54.
[14] Morris, *The Birth of the Palestinian*.

cultivated seeds – established its first farm (the Shalem Farm) to meet the increasing demand for food for Israel's rapidly growing population. Later, a transit camp was established nearby to accommodate new immigrants; it remained there for almost ten years and its residents suffered harsh living conditions.

In 1953, despite numerous protests, Tel Aviv's domestic waste started to be dumped on a plot next to the village and the transit camp. The waste kept piling up in the landfill and the opening of a planned compost plant was repeatedly delayed; when it did finally open at the beginning of the 1960s, it failed to solve the metropolis' waste problem. From its inception, the landfill raised grave concerns among residents and doctors, but nonetheless the landfill continued to expand for another 50 years.[15]

Over the decades, the area functioned as agricultural land, but it was perceived as appropriate for other polluting infrastructures, such as parking lots for municipal refuse trucks and buses, a power substation, wholesale market, football stadium, and new roads, among others. All these huge, proposed infrastructures would only have further exacerbated its already-poor quality. Its location, next to Tel Aviv's poorest neighborhoods, turned it into a backyard and no-man's-land.

The Ayalon river and its Shafirim tributary, which flow at the foot of the garbage mound, added to the threat from the bird migration mentioned earlier. As the mound kept growing, it gradually pushed up against the rivers and eventually the south-western slope merged with the riverbank. The rivers were unregulated and unprotected, and this resulted in waste repeatedly toppling from the mound into the creeks.

Moreover, the two rivers are dry during the long summers and wet and stormy in the short winters (the Ayalon can flow at a rate of 400 cubic metres per second), and they have flooded the southern parts of Tel Aviv almost every winter for decades; they also threaten central Israel's main roads. In the winter of 1997/8, heavy rains created fissures on the top of the garbage mound, and piles of waste on the north slope collapsed into the nearby stream blocking its flow (Figure 3). Not only was the river polluted, but there was also a greater danger than ever that highway 4, a central route, and Ben-Gurion airport and the surrounding settlements would be flooded. These dramatic winter events accelerated the closure of Hiriya landfill, and led to a national plan for this hazardous space (Figure 4).[16]

A new era

Approaches to the country's nature and environment have changed over time. The early twentieth-century Zionists perceived the historic land as empty, waiting for its nation to colonize it and restore its nature. The national return to the historic land was seen as the route to redemption.[17] The 1948 war resulted in the mass displacement of Palestinians and the destruction of hundreds of their towns and villages. Israeli control over the newly possessed territories not only included demographic change but also a cultural and agricultural transformation of the land on which the new nation, gathered from around the world, was built.[18]

[15]More on the events in the area after 1948 and the establishment of the Hiriya landfill can be found in: Limor-Sagiv and Lissovsky, "Place and Displacement," 32–43.
[16]Zevik Landau (former CEO of the Yarkon Drainage Authority), in discussion with the author, December 24, 2019.
[17]De-Shalit, "From the Political to the Objective," 70–87; Tal, *Pollution In a Promised Land*; Galai, "Narratives of Redemption," 273–91.
[18]Rabinowitz, "An Acre Is an Acre Is an Acre?," 67–89; Golan, "The Transformation of Abandoned Arab Rural Areas," 94–110; Falah, "The 1948 Israeli-Palestinian War," 256–85; Fischbach, *Records of Dispossession*; Orenstein, Miller and Tal, eds, *Between Ruin and Restoration*.

Colour online, B/W in print

Figure 3. Hiriya and the Ayalon river, December 1997. Source: Dan Region Association of Towns.

Colour online, B/W in print

Figure 4. Hiriya landfill, 2002. Source: Dan Region Association of Towns.

The move from a romantic to a more public-health, scientific approach, based on legislation and land-use planning, has gradually taken place.[19] It began in 1951 with the Sharon Plan (named after Arieh Sharon, who conceived and designed it), Israel's first national outline of the framework for the country's population dispersion in the northern and southern periphery; this plan also created the hierarchical network of settlements, towns, and cities, and promoted plans for residence, industry, agriculture, and transportation. In addition, the plan envisioned a series of parks, consistent with the Jewish National Fund's recommendation of a network of six large parks.[20] The establishment in 1953 of the Society for the Protection of Nature in Israel marked a new stage in environmental activism. The Council for the Prevention of Noise and Air Pollution was established in 1961, and the Kanovitch Law (against air and noise pollution) was enacted the same year, marking a focus on health and preservation of natural areas. Subsequently, in 1963, Israel established the Nature Reserves Authority and the National Parks Authority, and thereafter, in 1989, the Environmental Protection Service, later the Ministry of the Environment.[21]

These developments notwithstanding, in terms of environmental issues Israel still lagged behind other developed countries. It was only in the 1980s, under western – mainly American – influence, that the romantic-nationalistic approach to nature was challenged. A scientifically based environmental approach, focusing primarily on public health, led to a series of laws in the 1990s relating to air quality, waste, water, and more.[22] In addition to the public health focus, a more sustainable development approach emerged, calling for equilibrium between the use of natural resources and nature's ability to renew itself, and linking environmental and social justice.[23] This new approach, led by environmental organizations and activists, had an impact on the legal system and planning authorities.[24] It opposed the establishment of new towns and settlements, enhanced an urban-density agenda, and called for multidimensional environmental planning and policy making, while integrating social issues into the environmental agenda.[25]

In the 1990s, several complementary processes occurred in the Israeli public discourse and practice. The first, described above, was the increase in environmental organizations, a shift in consumer patterns, and an updated educational agenda, all of which led to a series of new laws concerning air pollution, water contamination, and noxious gasses after years of neglect.[26]

The second process marked a revolution in the Israeli planning system, new national land-use planning, and the creation of several advanced national outline plans. It is doubtful whether such changes would have occurred without the mass immigration to Israel from the ex-Soviet Union in the early 1990s, which threatened to permanently alter the physical and social landscape of the country through short-term planning. It was the first time since the 1950s that a serious attempt at national-scale planning had been proposed. The first (five-year) national outline plan 31 (TAMA 31) was designed rapidly to meet an immediate need. It laid the foundations for land-use planning and development, restrained the housing aspirations of some of the ministries, and

[19] Orenstein and Silverman, "The Future of the Israeli Environmental Movement," 357–82.
[20] Tal, "Natural Heritage."
[21] Furst, "Ecology, Environment, Sustainability," 238–53.
[22] Tal, *Pollution In a Promised Land*.
[23] Ibid.; Alon-Mozes, "Ariel Sharon Park and the Emergence," 279–300; Orenstein and Silverman, "The Future of the Israeli Environmental Movement."
[24] Alterman, "National-level Planning in Israel," 257–300; Tal, "Space Matters," 119–51; Shmueli et al., "Scale and Scope of Environmental Planning Transformations," 336–62.
[25] Dromi and Shani, "Love of Land," 111–36; Orenstein and Silverman, "The Future of the Israeli Environmental Movement"; Furst, "Ecology, Environment, Sustainability."
[26] Greenspan et al., "Environmental Philanthropy," 111–30; Sagy and Tal, "Greening the Curriculum," 57–85; Dromi and Shani, "Love of Land."

protected Israel's open spaces. A subsequent initiative created during the 1990s (Israel 2020) was an ambitious strategic plan designed by over 250 senior members of the professional and academic community, with the cooperation of thirteen government ministries and state authorities; it included almost every sphere of public policy relating to spatial development. Israel 2020 provided a new set of concepts and language, and raised the discussion to a new level. All of its principles were adopted by national outline plan 35 (TAMA 35) that focused on construction, environment, development, and conservation, and was approved by the Israeli government in 2005. TAMA 35 defines the planning policy and layout of settlements in Israel and aims to respond to the development needs of the country's population while preserving open spaces and land reserves for future generations. It protects the country's natural history – nature reserves and forests, which until then were acknowledged as important, and agricultural lands, which were not – in a country where rising population density poses a huge national challenge. The outline plan for the Tel Aviv district, TAMAM 5, initiated in the late 1990s, was aimed at ensuring the efficient functioning of the central metropolis of Israel, and its role as a leader of economic and cultural activity. It identified the crucial role of parks – first among them the Ariel Sharon Park – urban renewal, and public transportation as national targets.

These plans showed decision makers the usefulness and creativeness of planning, and they acquired budgets for new planning enterprises.[27] The next stage in this important evolution was the creation of national outline plan 1 (TAMA 1), which embraced most of the previous local and thematic plans, and provided a clear, unified scheme that assured protection and preservation of open, natural areas. TAMA 1 was prepared in 2012 and approved by the government in 2020.

The third process initiated a new approach to streams and rivers, which had in previous decades become sewage conduits, harming or destroying local aquatic habitats. The natural water flow was exploited for agricultural use or drinking.[28] Due to the lack of water in the Middle East, the state of Israel has owned, regulated, and managed its water resources since its early days. In the last three decades, Israel has been more preoccupied than ever with streams, urban runoff, and flood-risk management, foregrounding this issue in the strategic and statutory discourse, and embedding eco-hydrological approaches in its planning. Recognition of the streams' serious conditions led to the establishment, in 1993, of a new national directorate for river restoration, which began influencing government and planning institutions' decisions, and the national and district outline plans. Subsequently, regional administrations were established to rehabilitate 30 streams, and the mission of stream development and rehabilitation was conducted under the auspices of statutory drainage authorities. In subsequent years, an environmental system for water resources and stream-basin management was promoted, ensuring an understanding of streams and their basins as complex ecosystems whose restoration and preservation involve complex cooperation and actions.[29] In 2003, the natural environment was included in Israel's water law as one of the legitimate recipients of fresh water. In addition, new standards for waste-water treatment were set, and desalination infrastructures were established.[30] These, along with pollution reduction in streams, habitat restoration, and the implementation of sustainable methods for restraining floods, have improved Israel's streams. The Yarkon, the main river into which the Ayalon flows, has its own drainage authority, which was established in 1997.[31]

[27] Alterman, "National-level Planning in Israel"; Tal, "Space Matters," 119–51.
[28] Tal and Katz, "Rehabilitating Israel's Streams and Rivers," 317–30.
[29] Ayalon et al., *Evaluating the Activity of the Directorates for Stream Restoration in Israel*.
[30] Feitelson and Rosenthal, "Desalination, Space and Power," 272–84.
[31] Zeevik Landau (former CEO of the Yarkon Drainage Authority), in discussion with the author, December 24, 2019.

The fourth process consisted of major progress in the national approach to waste treatment, which until then had been managed by the local municipalities. The new national outline plan (TAMA 16) standardized the measures and criteria for establishing and maintaining landfills. The new plan closed unregulated landfills that did not meet the new environmental and health standards – the largest and most famous of which was Hiriya. According to the new plan, most of Israel's central cities' waste was to be sent to the Negev in the country's southern periphery. In addition, the Ministry of Environmental Protection promoted laws, regulations, and incentives to reduce the waste sent to landfills and increase recycling.[32] In 1998, it was decided that Hiriya landfill would cease operations. It would become a transit station and industrial park for sorting and channeling waste to energy plants, and transporting the remainder to new, sanitized landfills in the southern desert.[33]

Thus, the decision to close Hiriya landfill, rehabilitate the surrounding stream, and turn the entire area into a park resulted not only from an environmental discourse acknowledging the negative effects of untreated waste on humans and nature. It was an exceptional decision, derived from the events described above: the threat to the nearby airport by foraging birds, the unstable trash mound threatening to collapse into the rivers and flood main transportation routes, and the understanding of the importance of open green areas.

However, the gap between official policy and its actual application left a vacuum with no responsible leader or financier, and the closure of Hiriya revealed that no authority had the vision, motivation, or funds to recover the area and plan its future.[34] It is, therefore, interesting to ask how such processes come about; which players are crucial, what agendas they pursue, and what tools they use to enhance their vision and targets.[35] In the case of the transformation of Hiriya, it is evident that it would not have taken place without visionaries who appreciated the magnitude of the hour, expressed the need and acted for a total change of the landfill area.[36] The leading figures in this process were Martin Weyl, Yossi Farhi, then Tel Aviv district planner in the Interior Ministry, and his successor Naomi Angel, Danny Sternberg (deceased), first CEO of the government company in charge of the park and the engineer of Dan Region Association of Towns, and Zevik Landau, former CEO of the Yarkon Drainage Authority. The scope of this article does not permit mention of everyone involved.

Soon after Hiriya stopped operating as a landfill, in 1998, an international art exhibition displaying proposals for its rehabilitation was launched at Tel Aviv Museum. The exhibition was curated by Dr. Martin Weyl, chairman of the Beracha Foundation and former director of the Israel Museum in Jerusalem, who wanted to prioritize the issue of waste in the Israeli public discourse.[37] At the same time, and unbeknown to the parties, the Tel Aviv District Office of the Planning Authority was working on TAMAM 3/5, the plan for the area of Hiriya. The preparation of the plan was led by Ulrich Plessner, in collaboration with David Guggenheim and Moti Kaplan. As the parties became aware of the work being done in tandem, it was only natural that the plan would also be presented at the exhibition, as it laid the outlines for a metropolitan park, and enabled discourse

[32] Nissim et al., "From Dumping to Sanitary Landfills," 323–7; Daskal and Ayalon, "Treatment of Municipal Solid Waste in Israel," 6–12.
[33] Tal, *Pollution in a Promised Land*.
[34] Ronen-Rotem, "The Impact of International Philanthropic Foundations on the Urban Environment in Jerusalem and Tel Aviv-Jaffa"; Martin Weyl (Chairman of the Beracha Foundation, former director of the Israel Museum), in discussion with the author, January 28, 2020.
[35] On transformations in the Israeli planning system, see: Feitelson, "Shifting Sands of Planning in Israel," 695–706.
[36] On the case of Jerusalem after the 1967 war and its redesign and planning by architects as agents of spatial, visual and material ideas and beliefs, see: Nitzan-Shiftan, *Seizing Jerusalem: The Architectures of Unilateral Unification*.
[37] Weyl, "Hiriya: al tzachana ve'yofi".

between the various authorities regarding Hiriya.[38] At the same time, the Tel Aviv District Office of the Planning Authority and the planning department of the Ministry of Environmental Protection initiated the protection of the area around Hiriya as a green lung for the Tel Aviv area.

Subsequently, a series of international design workshops with various experts envisioned a large new park with the trash mound at the centre, an industrial recycling park, and a centre for environmental education. In September 2004, an international design competition for the rehabilitation of Hiriya took place, in which Latz + Partner won first prize. Latz chose to preserve the iconic shape of the trash mound by repositioning the streams around it and slightly moderating the slopes, which turned the trash heap into a huge environmental sculpture, or a monument to waste. In addition, he proposed enclosing the lowest part of the mound with a battery of construction debris, thereby preventing the contaminated leakages from reaching the soil.[39]

As the plans matured, finances were sought to protect the open areas. In November 2004, the plan to build the 2000-acre park was approved (TAMAM 3/5). However, the idealistic concept of providing an open space for leisure and sport, and keeping the last green land in the area, was challenged by other interests. The Hazera firm, which had leased 250 acres there for many years, resisted the plans claiming that it could only be financed by building a new suburb. This was supported by then-Minister of Industry Trade and Labor, Ehud Olmert, but met fierce opposition from a coalition of environmental organizations, the Beracha Foundation, Dan Region Association of Towns, and the nearby residents. It was only through the intervention of then-Prime Minister Ariel Sharon, who visited the mountain in July 2003 and was stunned by the beautiful view, that the plans for a park (with no new suburb) were officially approved, and given final authorization in April 2005.[40] Sharon would probably not have intervened without the extensive lobbing activity of his son, Omri, then leader of the Green Lobby in the Knesset, who convinced his father to support the plan which does not allow construction at all.[41] Thereafter, Ayalon Park was known as Ariel Sharon Park, in tribute to the prime minister who had ensured its existence. Hazera was asked to leave the area but refused, and the issue ended up in court. A widely publicized trial began, in which Ehud Olmert was accused of accepting bribes from Hazera to promote its real-estate initiative. He was convicted, fined, and sentenced to prison.[42]

The Plan – extra large, large, medium, small

In this section, I will describe the way in which Ariel Sharon Park was and still is administered, the regional and design plans that were applied to the entire area, and the enormous infrastructure projects that came about as a result.

Ariel Sharon Park was first implemented by the Dan Regional Association of Towns, and financed by the government and the Beracha Foundation. The involvement of the Beracha Foundation, and of Weyl in particular, was central to the policy, planning, and design processes, and enhanced and accelerated the process tremendously, enabling one of Israel's largest environmental initiatives.[43]

[38] Weyl, "Hiriya in the Museum."
[39] On the international design workshops and the landscape architecture competition held in 2004, see: Limor-Sagiv and Lissovsky, "The Trash Has Gone," 354-374.
[40] Martin Weyl in discussion with the author January 28, 2020.
[41] The massive lobbying by Omri Sharon was covered extensively in the Israeli media. See for example: Rinat, "If Ted Turner Would Come to the Mountain."
[42] Lis, "Ex-Olmert Confidant Held Over Corruption Charges."
[43] Ronen-Rotem, "The Impact of International Philanthropic Foundations."

The Ariel Sharon Park company was established in 2005 as a government company subject to the Ministry of Environment rather than to any municipality that might misuse it. It is entitled to plan, develop, manage, coordinate and maintain the entire park, with an internal budget based on donations, estates, state budget, local authorities and revenues from ventures. The entire project is being handled by three leading landscape architecture firms: Latz & Partner, which designed the master plan of both the mound and the entire park; Studio-MA, which operates the works on the mound, the entrance to the park, and the Cofer river park; and Braudo-Maoz Landscape Architecture, which operates the entire park's master plan and the biodiversity park together with a team of various professionals.

Meanwhile, the regional plan, TAMAM 3/5, was applied to the entire area. Its main goals were: (1) to create conditions for the development of a metropolitan park for the use of residents of southern Tel Aviv; (2) to establish principles for the rehabilitation and preservation of land as a flood plain for the Ayalon and Shafirim rivers; and (3) to set out guidelines for the rehabilitation of the Hiriya waste site; determine instructions for the construction of a waste treatment and recycling centre, and preserve the character and heritage of the Mikve Israel agricultural school. This regional plan stated that no permit would be granted for construction or any other use of the park. In addition, the area would accommodate two main sewage channels (from north Tel Aviv, Ramat Gan, Givataim, and Bnei Braq), as well as train and metro lines to serve Israel's main cities.[44]

Against this administrative background, Peter Latz created a design that covers 2000 acres, and accommodates the Hiriya mound and recycling park, Ariel Sharon Park, and the Mikve Israel area. It is situated next to Begin Park and the Safari, creating a contiguous open green space (Figure 5). Located at the centre of Israel's most populated region, it is a local site which plays an almost national role and any change in this area has impact across the country.

According to Latz's plan, the streams at the foot of Hiriya first needed to be diverted away from the trash. Thereafter, the rehabilitation of the trash mound could commence and, subsequently, the planning and design of the entire park.

The recovery and design of Ariel Sharon Park is an ambitious, thirty-year project aimed at connecting the cities of Tel Aviv, Ramat Gan, Or Yehuda, Bnei Brak, and others. A harbinger of the phenomenon of metropolitan parks in Israel, it is a large park serving multiple cities and communities, with various functions.[45] The vision of recovering the southern parts of the Dan metropolis also poses a great functional challenge, as the park is surrounded by Israel's highways and consists of a huge area to construct and maintain. Seven pedestrian and vehicle routes are planned to connect the park to the nearby neighborhoods and cities in the future.[46] This long-term landscape-architectural project is still underway and works were postponed for several years due to corruption scandals, police investigations and audit reports on the management of the park, and then started again.[47]

[44]Tzadik Eliakim (of Eliakim Architect Ltd., and planner of the Mikve Israel outline plan), in discussion with the author, December 16, 2019.

[45]The movement for open large natural areas emerged in Europe and North America in the 19th century, in acknowledgment of the need for leisure spaces next to the growing cities, and for a gateway from their pollution. On metropolitan parks and changes in their paradigm, see: Retzlaff, "The Illinois Forest Preserve District Act of 1913," 433–55; Veitch et al., "How Active are People in Metropolitan Parks?," 1–8. On metropolitan parks in Israel, see: Feitelson, "Metropolitan Recreation Areas," 81–3; Hann (ed), *Metropolitan Parks and Recreation Areas in Israel*.

[46]Amir Lotan in discussion with the author, January 12, 2023.

[47]On the corruption in Ariel Sharon Park, see: Hofstein, "Corruption is Delaying the Drainage Solution in Tel Aviv."

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Figure 5. Components of Ariel Sharon Park. Source: Ariel Sharon Park.

The resulting infrastructure projects relate not only to waste-management, but also to water-management and drainage, as well as sports and leisure activities.

The dominant factor in the design and planning of Ariel Sharon Park is the drainage of the Ayalon river, which takes up most of the park's space, and the management of the Ayalon and its tributaries the Shafirim and Cofer rivers. Thus, the park is an engineering-architectural project based on ecological principles, which was planned to hold six million cubic metres of water. The rivers' canyons (wadis) were dramatically widened with relatively moderate slopes to regulate the water flow and enable habitats to develop. In terms of topography, the lower areas are designed for drainage, and the higher sections are for visitors' use (Figures 6 and 7). The park's margins are dedicated to sport and leisure, at its heart is water management.

Water and transportation collide at the Ayalon River. Ariel Sharon Park is divided by the Ayalon Project, which includes the Ayalon river's concrete canal, the main entrance to Tel Aviv from the south, a highway, and a railway. Israel's first national plan, the Sharon Plan, issued in 1951, outlined a system of parks in which the Ayalon river was a green belt connecting Hayarkon Park in north Tel Aviv to a new park in the south of the metropolis. However, the ecological plan turned into an infrastructural corridor for central transportation lines, and the river was narrowed into a concrete channel, which disregarded its ecological value and only partly resolved the problem of its annual flooding. Over the years, two competing strategies were proposed to address the Ayalon flooding: diversion and conservation. The first recommended diverting the river to the sea before it reached the city, in a canal beneath the fields of Mikve Israel. The second plan, by TAHAL, Israel's water planning agency, proposed prioritizing water conservation as part of a national plan for water security. It was suggested that the Ayalon river be included in a national damming project, in which seven reservoirs upstream would moderate the irregular flow, and a pumping station would transfer water to a larger carrier.[48]

[48]Kozlovsky and Feniger, "Landscapes of Calculation," 77–95.

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Figure 6. Ariel Sharon Park masterplan. Source: Latz + Partner

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Figure 7. Water system in Ariel Sharon Park. Source: Latz + Partner

Colour online, B/W in print

Figure 8. The lake and the café at the top of Hiriya. Source: Studio-ma.

In terms of the mountain of waste at Hiriya, the issue of waste treatment and the safety of the trash mound had to be resolved first in order to progress the entire project: planning and building required solutions to the terrain's instability that was caused by the subsidence resulting from the decomposition of the waste. Latz's first design principle was to maintain the iconic shape of the mound, thereby highlighting rather than avoiding the injustice Hiriya had caused, and using its value in the functionality and design of the area. Consequently, there was no construction at the top. To ensure the sustainability of the project, all the materials used were taken from the site itself, or from the recycling plant.

The slopes of the mound posed a major problem because they were steep and threatened the rivers, so they first needed to be stabilized. The engineers advised moderating them, but Latz suggested stabilizing the mound with recycled construction waste forming a belt around it, and diverting the rivers further away. The banks of the creek are also stabilized with the same materials. Stabilizing the mound also enabled its transformation into a public park. Latz's design that maintains the original topography of the mound turned it into a national icon. He divided the mound into an oasis at the lowest section that absorbs all the runoff in a lake, and an upper level with a visitors' centre, and café, offering an impressive vista (Figure 8). The upper level is divided into several parts, which collectively take the runoff from the mound to underground pools. These sections of the mound are gradually being covered and sealed, both to protect the upper soil from polluting gases that rise up from the waste, and to prevent any seepage of runoff to the mound. Above these are groves which suck the water up from the underground pools. However, the mound is unstable and sinking at a rate of 1.3 millimetres a month, and the pergola at the top from where visitors can enjoy the view (Figure 9) moves about 1.4 millimetres south each month. The polluting gases are mainly methane (CH_4) – a by-product of unregulated landfills – and are formed by the decomposition of organic matter in anaerobic conditions that is collected in more than eighty wells 12–27

Colour online, B/W in print

Figure 9. The pergola at the top of the mountain. Source: Studio-ma.

metres deep. The gas is carried to a nearby textile factory. The leachates are collected in a peripheral piping system leading to the foot of the mound, where they are biologically treated and transferred to the regional sewage system.[49] The design uses recycled construction materials thereby creating unique biological habitats (Figures 10 and 11).

Regarding the plan of the whole park, it is noteworthy that the original landscape of the plain was flat, and it was with considerable effort that the landscape architects convinced the various stakeholders to create a more diverse topography in the valley. This included islands with rich and varied vegetation, all intended to slow and/or prevent drift. This topographical design constitutes a nature-based solution to flooding, and shows that this is not an eighteenth-century English landscape but rather a post-industrial environment that, inter alia, correlates with the trash mound.[50]

In accordance with the original master plan, there is a balance between how the soil was dug up and redistributed in piles within rather than outside the park. The eight million cubic metres of soil dug from the area have been used to create the new topography outside the flooding area. Latz's second design principle required Hiriya's mound to be visible from each of the main roads surrounding it, hence the redistributed soil was piled up to a moderate height so as not to hide Hiriya's iconic mound. This design also enables visitors to enjoy nature undisturbed by noisy roads. Although in the last decade the original master plan for the park was somehow neglected due to

[49] Latz, "Rehabilitation of the Hiriya Landfill," 4–67; Ulf Glanzer (of Latz & Partner), in discussion with the author, June 1, 2020; Amir Lotan (of Studio MA), in discussion with the author, 22 December 2022 and 12 January 2023.

[50] Aliza Braudo (landscape architect, and managing partner of Braudo-Maoz Landscape Architecture), in a lecture attended by the author, 21 January 2021 and 14 November 2021; Amir Lotan in discussion with the author, 22 December 2022 and 12 January 2023.

Colour online, B/W in print

Figure 10. Recycled construction materials in Hiriya park. Source: Latz + Partner.

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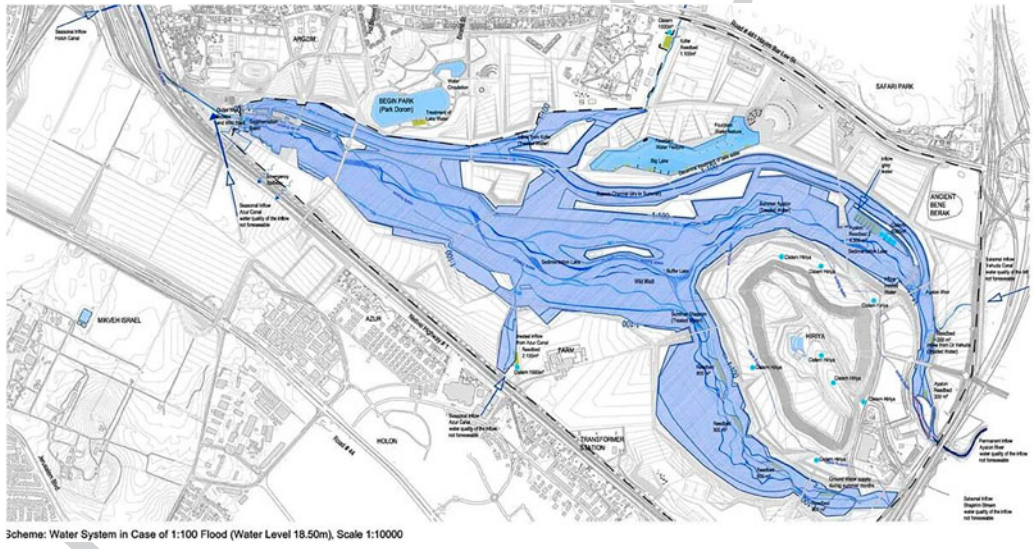

Figure 11. Recycled construction materials in Hiriya park. Source: Ariel Sharon Park.

its size and cost, as the need for a fourth trail arose to meet the growing use of trains in the Tel Aviv metropolis, the plan was revived with some changes. The Ayalon channel was too narrow to contain both the trails and the water flow, therefore the National Committee for the Planning and Construction of National Infrastructures ordered the pooling volume in the park to be increased in order to minimize water levels in the channel during extreme weather events.[51]

[51]Zeevik Landau in discussion with the author, 24 December 2019.

The Ariel Sharon Park is a unique project as it demonstrates an impressive combination of planning, drainage, and ecology in one landscape-architectural huge scheme. It makes the urban supporting infrastructure and engineering principles part of the environment, in accordance with the design, the central idea being to hold the runoff water. In order to prevent winter flooding of the southern neighbourhoods, when the water flow exceeds 400 cubic meters per second, a hydraulic dam, located where the river enters the channel, closes and the water flows backwards into one huge and several smaller retention ponds. When the flooding ends, the water is released slowly back into the channel, allowing it to integrate with other man-made structures.[52] Thus, in dry months the park will change shape and accommodate visitors across most of its expanse; in wet months the water will become a natural visual celebration of environmental recovery and good functioning.

Thus, Ariel Sharon Park fulfils a variety of functions. The park's plan also includes the historic Mikve Israel, icon of the agricultural legacy, and the agricultural area to the north – a fundamental infrastructure for the future; a lake, amphitheatre, promenade, cafés, sport facilities, and an archaeological site lie to the east. The extensive development areas are intended for recovering ecological systems, and include a natural winter pool, a bird sanctuary, bicycle trails, walking and jogging trails, and more. In addition, the park is located on the birds' migration route, thereby creating a unique open green area for them to rest and feed. There are plans to put a photovoltaic roof hundreds of thousands of metres wide on the parking lots to provide electricity to the surrounding neighbourhoods and create a financial resource for the park.[53]

The Ariel Sharon Park, a large park with various functions, incorporates many infrastructures, including water, drainage, ecology, leisure, waste treatment, renewable energy, transportation, and more (Figure 12). It was established on an area damaged by a failed waste infrastructure, which had blocked the functioning of other systems in the area that can now flourish. These, in turn, enable the development of yet other infrastructures for the future. The landscape can adapt to the climate and no longer functions solely as an aesthetic open area.

Conclusion and reflections

The common approach to polluted sites is to acknowledge that we came, destroyed nature, came to our senses, recovered the land, and atoned for our sins. Hiriya offers a different perspective, telling a less linear story: it describes the complex relationship between city and nature, nature and infrastructures, infrastructures and cities, and between different infrastructures.

Infrastructures inhabit our physical surroundings, forming the basis of cities and life on this planet. When those infrastructures become brownfields, they create large unattractive, polluting, unused, and unwanted sites, which threaten the cities, and are often associated with additional environmental and social hazards, and attract illegal activities.[54] Careful creative planning and design by professionals from various disciplines can turn such sites into instrumental spaces that contribute to a rich urban life.

Hiriya landfill failed as an urban-supporting waste-treatment infrastructure, thereby threatening other major infrastructures, namely the nearby airport, main roads, and flood plains. The rehabilitation of the landfill and the establishment of the new park were a result of several large, dramatic processes, which occurred in tandem: a shift in the national planning system, environmentally

[52]Tzadik Eliakim in discussion with the author, 16 December 2019; Aliza Braudo, on a tour attended by the author, 21 January 2021, 14 November 2021.
[53]Alon Amram (Director of the Engineering Department, Ariel Sharon Park), at a lecture attended by the author, 14 November 2021.
[54]DePass, "Brownfields as a Tool for the Rejuvenation of Land and Community," 601–6.

Colour online, B/W in print

Figure 12. Ariel Sharon Park. Source: Ariel Sharon Park.

oriented and public awareness, a new approach to streams and rivers, a national plan for waste treatment and landfills, and the cooperation of outstanding players with vision and courage. These finally converged to form one unique crucial site.

The plan's aim was to construct a twenty-first-century park that would address various urban needs, with an ambitious drainage plan – rare in its enormous scale, even globally – thus creating a unique social-ecological metropolitan park. The plan is unique in that it was not motivated by financial or engineering considerations, but by the wish to transform a polluted and polluting landscape into a man-made engine for the recovery of the natural environment and the wellbeing and functioning of the surrounding cities.[55] It is also unique because it involved a range of planning, ecology, hydrology, and drainage professionals, headed by a landscape architect (Latz) rather than by an engineer, planner or architect, as is more usually the case.

Hiriya and Ariel Sharon Park are a wonderful example of how to maximize a site's benefits and indeed, in subsequent years, served as a model for other projects dealing with water, polluted sites, and growing communities in Israel. Defined as a waste-treatment site, thus profiting from its proximity to the country's most populated areas – huge amounts of waste are delivered to a recycling centre nearby, treatment costs are reduced, and the hazard has become a resource. Keeping the waste facilities inside the new park makes the waste and its iconic mound part of the park's mainstay.

Climate change poses serious challenges to cities around the world. Heat waves, extreme rainfall, air pollution, and biodiversity reduction threaten human well-being, while urban centres face growing population density and traffic increase, and must address land conversion and the decrease in open green areas. Urban green spaces, and large parks in particular, are essential for city

[55]Amir Lotan in discussion with the author, 22 December 2022, 12 January 2023.

recreation, sport, social encounters, biological conservation, cultural identity, and natural solutions to cities' infrastructural problems.[56] They prevent urban sprawl, support historically deprived communities, repair environmental injustice, and strengthen urban resilience against the extreme negative consequences of climate change. Ariel Sharon Park confronts climate change by combining leisure with water and smart transportation infrastructures, alongside a regional ecological corridor and open natural area which cool the surrounding urban mass. Large parts of the park are dedicated to rewilding as well as human activities, and the plan includes winter-pond preservation, wild-animal support, and vegetation beside the urban areas.

As open green spaces become rarer, brownfields gain in value, and knowledge regarding their recovery and regeneration increases. Landscape architects are capable of handling social, cultural, ecological, and physical aspects, and therefore play a leading role in rehabilitating contaminated sites.[57] Landscape architects provide a comprehensive balance between human activities and nature's needs. Such sustainable development enables sustainable transportation, environmental preservation, renewable energy, waste management, and issues of urban resilience. Relevant to Hiriya, in this context, is the potential of wetlands during rises in sea levels, flash floods, and other extreme climatic events.[58]

As explained above, the nature-based solution of a large park created an engineering infrastructure for drainage which, in turn, created a social, cultural, and ecological infrastructure, together with agricultural, transportation and electrical infrastructures, on the site of a rehabilitated waste-treatment plant. It created a park in a historically deprived part of Tel Aviv, and provided an open green area in a country which is becoming increasingly crowded.[59] Peter Latz described Duisburg-Nord Park as an oasis – a space where people encounter and consider the transformation of old industrial sites.[60] The 'oasis' at Hiriya is both a real place on the trash mound and the story of how human effort transcended the damage caused to landscape and nature.

Looking to the future, large parks face large challenges: they are expensive to design and construct, and even more so to maintain and manage. As complex and dynamic systems, they are greater than the plan their designer devises, and must address different interests, authorities, and politics. Ecologically, large scale is an advantage, but unlike Central Park in NYC or Bois de Bologne in Paris, for example, which have enjoyed unlimited space since their inception, Ariel Sharon Park confronts the challenge posed by those who insist that it should accommodate housing to finance its ambitious design. The three administrative bodies of the park (the Ariel Sharon Park Company, the Dan Region Association of Towns, and the Mikve Israel School) aimed to make it financially sustainable, confronting issues inherent in the park's vision, and addressing various interest groups that have little in common. The rehabilitation of Hiriya turned the neglected and polluted area into a valuable land-resource, turning the whole process into an incisive discussion on our urban planning, and giving rise to a vision which hopefully will be achieved.

[56] McPhearson et al., "Advancing Understanding of the Complex Nature of Urban Systems," 566–73; Song et al., "Nature Based Solutions."

[57] Zheng and Kirkwood, "Landscape Architecture and Sustainable Remediation."

[58] Yigitcanlar and Dizdaroglu, "Ecological Approaches in Planning for Sustainable Cities," 159–188. On adaptation to extreme environmental changes such as water-related hazards, practiced in three projects in China using the methods and tools of landscape architecture – Tianjin Qiaoyuan Wetland Park, Yanweizhou Park, and Qunli Stormwater Wetland Park – designed by Beijing landscape studio Turenscape, see: Perepichka and Katsy, "How Landscape Infrastructures Can Be More Resilient."

[59] On the challenges of Israel's parks and nature reserves, including financing, wildlife management, accommodating different communities, etc., see: Tal, "Natural Heritage."

[60] Latz, "Landscape Park Duisburg-Nord," 159.

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Naomi Angel is an architect specialized in urban planning and design, long term comprehensive planning and urban design directives. Her work for 20 years as the chief metropolitan planner for the Tel Aviv District involved massive urban renewal and densification, infrastructure, and 4 large metropolitan parks planning and design processes. Mass transit in Tel Aviv and Ariel Sharon Park, Hyria uncluded, were her signature projects. Angel's responsibility was to see to the development and approval of plans and design directives for the park from national scale to detailed design of park portions – and foreseeing their execution and continuous upscaling. Angel directed the Hyrira landscape design competition, oversaw the detailed design, and approved the building permits of the park transformation to the manmade mountain.

Nurit Lissovsky is Associate Professor of Landscape Architecture at the Technion-Israel Institute of Technology. She is the editor of Arcadia: The Gardens of Lipa Yahalom and Dan Zur (2012); Gideon Sarig: Gardens for People (2017; with T. Alon-Mozes); Ruth Enis: Gardens of Her Own (2019; with T. Alon-Mozes); and Perspectives on the Work of Zvi Dekel (2021). Her research on the sacred landscape, on landscape architecture in Israel and on landscape design in national parks was published in Landscape Journal, Planning Perspectives, Studies in the History of Gardens and Designed Landscapes, Ugarit-Forschungen, Palestine Exploration Quarterly and others. Her current research (ISF grant 2751/21) explores the American-Israel transnational knowledge flows and the making of Israel's modern landscape.

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Interviews

Alon Amram (Director of the Engineering Department, Ariel Sharon Park), at a lecture attended by the author, November 14, 2021.

Aliza Braudo (landscape architect, and managing partner of Braudo-Maoz Landscape Architecture), in lectures attended by the author, January 21, 2021 and November 14, 2021; and on tours attended by the author, January 21. November 14, 2021, 2021.

Martin Weyl (Chairman of the Beracha Foundation, former Director of the Israel Museum), in discussion with the author, January 28, 2020.

Tzadik Eliakim (of Eliakim Architect Ltd. and planner of the Mikve Israel outline plan), in discussion with the author, December 16, 2019.

Ulf Glanzer (of Latz & Partner). in discussion with the author, June 1, 2020.

Amir Lotan (of Studio MA), in discussions with the author, December 22, and January 12, 2023, 2022.

Zevik Landau (former CEO of the Yarkon Drainage Authority). in discussion with the author, December 24, 2019.

עדות בנוף

קריסתו של נוף: חירייה בעשור הראשון למדינה

גליה לימור־שגיב
ונורית ליסובסקי

קריסתו של נוף: חירייה בעשור הראשון למדינה

בשער המאמר:
מעטפה עם חותמת יום פתיחת סניף הדואר בחירייה, 4 במרס 1952
(אוסף גליה לימור־שגיב)

ב־4 במרס 1952 נפתח סניף הדואר בחירייה. על המעטפה שהונפקה לרגל המאורע צוירה צללית אופיינית של מבנה ערבי נמוך עם גג כיפתי, ובצידו עץ דקל (ראו שער המאמר). הבחירה לתאר יישוב יהודי – שבאותה עת היה מעברה גדולה בצד בתים ערביים שיושבו על ידי עולים חדשים – באמצעות דימוי חזותי־איקוני שמשקף קיום ערבי במרחב הארץ־ישראלי, עמדה בסתירה למציאות הפוליטית של התקופה, בחירייה ובישראל כולה. וגם אם המראה עצמו היה חלק מהנוף המקומי, הרי השלווה שהוא משרה רחוקה מלשקף את הדרמה שהתחוללה באזור.

האם אפשר לספר היסטוריה של נוף? כיצד ניתן לספר על דמויות ועל תבניות נוף אילמות? נחל סוער בחורף ויבש בקיץ; אדמה, שדות חקלאיים; תושבים שנמלטו או דיירים לרגע; מזבלה עירונית – מי מאלה הגיבור הראשי בעלילה, ומי שחקני המשנה? שאלות מעין אלה ניצבות לפתחם של כל מי שדנים במרחבים נופיים בארץ, שקו ההיכר המרכזי שלהם הוא הריבוד ההיסטורי והשינויים שחלו בהם לאורך ציר הזמן.

במאמר זה נבחן את השינויים הגדולים שהתחוללו בנוף של חירייה וסביבותיה בעשור הראשון למדינת ישראל. ביחידת שטח זו היו אז שלוש ישויות נפרדות: חווה חקלאית, מעברה ומזבלה; והמזבלה שינתה ללא הכר, בפרק זמן קצר של שלוש עד חמש שנים, את הנוף במקום. נוסף על אלה התקיימו במקום האדמה, הנחל והכפר הערבי.

המחקר על חירייה מועט, בעיקר בהתחשב במיקומה במרכז הארץ, בצד שתי דרכים מרכזיות במדינה (כביש 1, 4), ומקומה המרכזי בשיח העממי־הישראלי על סירחון והזנחה.[1] מחקרים לא מעטים דנו בעשור הראשון להקמת מדינת ישראל, אבל השאלה כיצד הפכו חירייה והשטחים שסביבה למזבלה המרכזית של גוש דן טרם נחקרה.[2] לכן כדי לדון בדרמה הנופית, יש לתאר קודם כול את האירועים ההיסטוריים, המרחביים והחברתיים שהתרחשו באותן השנים במקום זה.

* מאמר זה הוא פרק בעבודת הדוקטור של גליה לימור־שגיב, העוסקת בהיסטוריה הנופית־סביבתית של חירייה. העבודה נכתבת בפקולטה לארכיטקטורה ובינוי ערים בטכניון, בהנחיית פרופ׳ נורית ליסובסקי. העבודה נתמכה על ידי הקרן הלאומית למדע (ISF) וקרן שלמה גלס ופני בלבן־גלס.
קיצורים בהערות: אה״מ – ארכיון המדינה, ירושלים; אצ״מ – הארכיון הציוני המרכזי, ירושלים; את״ה – הארכיון לתולדות ההגנה, תל אביב – יפו; אאע״ד – ארכיון איגוד ערים דן לתברואה; אעת״א – ארכיון עיריית תל אביב – יפו.

1 משמעות המילה ח׳יר בערבית הוא טוב, ואילו בעברית הפכה המילה חירייה לשם נרדף לחוסר סדר, ריח רע ומפגע סביבתי.

2 על התחרות הבין־לאומית לשיקום חירייה שהתקיימה בשנת 2004 ראו: T. Alon-mozes, ‘Ariel Sharon Park and the Emergence of Israel’s Environmentalism’, *Journal of Urban Design*, 17, 2 (2012), pp. 279–300; idem, ‘The International Competition for the Reclamation of the Hiriya Landfill: A National Israeli Symbol in the “Global” Arena’, *Landscape Review*, 13, 1 (2009), pp. 31–46

המחקר על חירייה בעשור הראשון למדינה מעלה שאלות דוגמת המדיניות הארצית לטיפול בפסולת, הטכנולוגיות שעמדו אז לרשות הערים וההשלכות המשפטיות (והאתיות) שהיו לצעדים שננקטו בשטח. ואולם אנו בחרנו להתמקד בשינויים הנופיים שחוללו אירועי התקופה במרחב המסוים הזה, נושא שעשוי לשמש נקודת פתיחה לדיונים בשאלות הנזכרות. בהשאלה ממיכאל פקיונה נטען שכדי להבין את המרחב של חירייה בהווה יש לחשוף את מכלול רבדיו הגלויים והנסתרים, את עברם ואת השינויים שחלו בהם.[3]

מחקר הנוף בימינו מבקש להרחיב את המשמעות של נוף מתמונה ודימוי למרחב הכולל היבטים פיזיים, חברתיים, כלכליים ופוליטיים.[4] קריאת הנוף המוצעת כאן משלבת תיאור אובייקטיווי שיטתי של הנוף, של חזותו ושל תפקודו לאורך ציר הזמן, על סמך עיון בחומרי ארכיון (מסמכים, קטעי עיתונות, תצלומים), קריאה פרשנית־ביקורתית המנתחת ומצליבה תצלומי אוויר ומפות, ראיונות, התבוננות וניתוח בשטח וכן דיון עומק במזבלות כתשתית נופית.

כדי לבחון את מזבלת חירייה כתשתית נופית נעזרנו בכלים מתחומי מחקר שונים. חלקו הראשון של המאמר משחזר את הסיפור ההיסטורי, ונשען על מקורות ארכיוניים – שרבים מהם טרם פורסמו – בצד מאמרים בעיתונות התקופה. חלקו השני מציע קריאה פרשנית של תצלומי אוויר ומפות, והחלק השלישי מציג ניתוח ביקורתי כחלק מדיון רחב במזבלות כתשתיות נופיות. שילוב המתודות מאפשר השלמת חוסרים של מקורות ראשוניים, בין שאלה מסמכים כתובים ובין שזה תיעוד חזותי, שכן מה שנכתב לא תמיד צולם, ולהפך, מה שמופיע בתצלום לא תמיד מגובה בתיאור כתוב. שילוב המתודות מזמן הסתכלות חדשה על הנוף ועל השכבות המתועדות בו, בזכות המידע הכתוב המוטמע מאחורי העין המתבוננת ומאפשר לה לקרוא את התצלומים והמפות על משמעויותיהם. גישה זו מאפשרת לקרוא את הנוף לא רק כשכבות של קרקע, אבן, מים ותוצרי פעילות אנושית, אלא גם כרבדים של היסטוריה, זיכרונות ואג'נדות פוליטיים.[5]

א. פסולת כתשתית נופית

אחרי מלחמת העולם השנייה סחף את העולם גל הקמה של תשתיות גדולות, שקידמו סדר יום כלכלי־הנדסי חדש. מיזמים של הובלת מים, כבישים, שדות תעופה, רשתות חשמל ומערכות ביוב שינו באופן ניכר את פניהן של ארצות רבות. תשתיות אלה סוקרו במאמרים בתחומי ההנדסה, ההידרולוגיה והכלכלה, אך רק בשנים האחרונות החלו חוקרים ממדעי החברה והרוח לעסוק בנושא ובהקשריו

3 M. Pacione, *Historical Geography: Progress and Prospect*, London 1987

4 על הגישות למונח נוף ראו: C.O. Sauer, *The Morphology of Landscape*, Berkeley, CA 1925, pp. 19–53; D.W. Meining, 'The Beholding Eye: Ten Versions of the Same Scene', idem (ed.), *The Interpretation of Ordinary Landscapes*, Oxford 1979, pp. 33–48; D.E. Cosgrove, *Social Formation and Symbolic Landscape*, London 1984; J.B. Jackson, *Discovering the Vernacular Landscape*, New Haven, CT 1984; J. Corner (ed.), *Recovering Landscape: Essays in Contemporary Landscape Architecture*, New York 1999; S. Schama, *Landscape and Memory*, London 1995; W.J.T. Mitchell, (ed.), *Landscape and Power*[2], Chicago, IL 2002

5 עוד על הזיקה שבין זיכרון לטבע ראו: שאמה (שם).

הפוליטיים והחברתיים, לרבות היבטים אקולוגיים ונופיים. הם הראו כי תשתיות פיזיות הן גם מבנים פוליטיים, אסתטיים וחברתיים מורכבים, המשפיעים על חיי היום־יום ועל חזון העתיד, וקשורים באופן הדוק לתפיסת הקִדמה והפיתוח ולהבטחות המודרנה.[6]

מאמר זה מתמקד בפסולת, שהיא חלק מתשתיות תומכות עירוניות, אך להבדיל מתשתיות מים, חשמל, תקשורת ותחבורה, שנתפסות כדבר חיובי שנועד לקדם שגשוג, פסולת – וכמוה מערכת הביוב – מפַנה ממקום למקום דבר לא רצוי, ובכך מורידה את ערכו של המקום שאליו היא מגיעה.

אשפה הייתה לאורך ההיסטוריה בעיה עירונית, שכן בערים, שלא כבאזורי הכפר, לא ניתן היה להשליך את הפסולת האורגנית כדשן בשדות. עד אמצע המאה התשע עשרה היה הטיפול בפסולת באחריות הפרט, ורק אז עבר לידי העיריות והממשלה. הרעיון הסניטרי שצמח באנגליה במחצית השנייה של המאה התשע עשרה נועד לשפר את התנאים התברואתיים בערים ולהרחיק את מוקדי הזיהום, והוא השפיע גם על ערים באירופה ובארצות־הברית והביא למהפכה בטיפול בביוב, במים נקיים ובפסולת. גישה זו לוותה בתפיסה אסתטית חדשה, שהנגידה בין זוהמה, נחשלות ואי סדר, לבין ניקיון, קדמה וסדר. גורמי הזיהום הורחקו מעיני התושבים, והעניין בהם פחת להוציא מקרים שבהם לא טופלו כיאות, היוו מטרד, וגרמו סבל.[7]

עם החלת המנדט הבריטי בפלשתינה־א״י החלו הערים בארץ להרחיק את מוקדי הזיהום אל מחוץ לשטחים הבנויים, כך שהעיר נשמרה נקייה, והזיהום נדחק למעגל חיצוני. בתל אביב חזר ועלה הצורך להרחיק את המזבלות שלה במקביל לצמיחת העיר. העירייה השקיעה מאמצים בניקוי העיר ובסילוק הפסולת, ואף גיבשה תוכניות ארוכות טווח להקמת מכון לטיפול בפסולת, אך אלה לא הגיעו לידי ביצוע, בעיקר בשל אילוצים כלכליים. הפעילות אומנם הביאה לסילוק המפגעים, אך הם זיהמו בעקביות את סביבתה החיצונית של העיר.[8]

בעשור הראשון לקיומה נדרשה מדינת ישראל למצוא פתרונות דיור, תעסוקה ותשתיות למאות אלפי מהגרים שבאו אליה. בשנים אלו הוקמו בישראל מפעלי תשתית חסרי תקדים בגודל ובהיקף, בהשקעה גבוהה מכל מה שנעשה לפני ואחרי: כבישים וגשרים, חשמל וכוח גרעיני, נמלי תעופה,

6 ראו למשל: T.P. Hughes, *Networks of Power: Electrification in Western Society, 1880–1930*, Baltimore, MD 1993; S. Graham & S. Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*, London 2001; B. Larkin, 'The Politics and Poetics of Infrastructure', *Annual Review of Anthropology*, 42 (2013), pp. 327–343; N. Anand, A. Gupta & H. Appel, 'Introduction: Temporality, Politics, and the Promise of Infrastructure', eidem (ed.), *The Promise of Infrastructure*, Durham, NC 2018, pp. 1–38

7 על ההיסטוריה של הטיפול בפסולת ראו: M. Engler, 'Waste Landscapes: Permissible Metaphors in Landscape Architecture', *Landscape Journal*, 14, 1 (1995), pp, 11–25; J.A. Tarr, *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective*, Akron, OH 1996; M.V. Melosi, *Garbage in the Cities: Refuse, Reform, and the Environment*, Pittsburgh, PA 2005; idem, *The Sanitary City: Environmental Services in Urban America from Colonial Times to the Present*, Pittsburgh, PA 2008

8 על הטיפול במוקדי הזיהום של תל אביב בתקופה המנדטורית ראו: י׳ בלסלב, ׳היסטוריה סביבתית עירונית בארץ ישראל במחצית הראשונה של המאה העשרים: תל־אביב כמקרה מבחן, 1909–1948׳, עבודת דוקטור, אוניברסיטת תל אביב, 2017.

מתקני מים וניקוז, מפעלי תעשייה ופארקים לאומיים.[9] אבל בתשתיות שהוקמו וגם בתוכנית האב השאפתנית שהוכנה באגף התכנון במשרד ראש הממשלה, תוכנית שרון, שקידמה תשתיות למגורים, לתעשייה, לחקלאות ולתחבורה, לא ניתן מקום לחשיבה מערכתית על תשתית לטיפול בפסולת.[10] אם כן **היעדר תשתית ראויה** הוא לב המחקר. התשתית הלקויה לטיפול בפסולת בחירייה שינתה את פני האזור מן הקצה אל הקצה, והייתה בסיס להזנחתו במשך עשרות שנים. תשתית לקויה זאת גם גרמה לאי תפקוד סביבתי וחברתי: היא לא רק יצרה מפגע נופי אלא אף החלישה אוכלוסיות שהיו מלכתחילה חלשות.[11]

נקודת האפס: דיירים חדשים, התיישבות חדשה

הכפר הערבי אלח'יריה שכן כ־8 ק"מ ממזרח ליפו, על גבעת כורכר מוגבהת, 20 מ' מעל פני הים, מאות מטרים מצפון לנחל איילון. הוא וכפרים שכנים – בהם סאקיה, סלמה, יאזור וכפר עאנה – השתייכו לנפת יפו (איור 1). בחפירות ארכיאולוגיות זוהה הכפר כאתר ששכנה בו בני ברק הקדומה.[12]

איור 1: הכפרים אלח'יריה, סאקיה, יאזור, סלמה ועאנה, מפה בריטית משנת 1935
(אתר המפות הממשלתי)

9 צ' אפרת, הפרויקט הישראלי: בניה ואדריכלות, 1948–1973, תל אביב 2004, עמ' 825–827.

10 על תוכנית שרון ראו: א' שרון, תכנון פיסי בישראל, ירושלים תשי"ב; א' גולן, 'ההתיישבות בעשור הראשון של מדינת ישראל', צ' צמרת, ח' יבלונקה (עורכים), העשור הראשון: תש"ח–תשי"ח (עידן, 20), ירושלים תשנ"ח, עמ' 83–102. על קורות מזבלת תל אביב ב'מקווה ישראל' ראו: י' בלסלב, 'עיר עברית עם אשפה עברית: הטיפול בפסולת של תל־אביב בתקופת המנדט', ישראל, 24 (סתיו תשע"ז), עמ' 271–300; הנ"ל, 'מגב רקבון ועפר: מאבק רוויזיוניסטי במזבלת תל־אביב', עת־מול, 263 (תמוז תשע"ט), עמ' 9–12. ראו גם: ע' פייטלסון, דגם התפתחות קונפליקטים סביבתיים באזורים מטרופולינים והשלכותיו התכנוניות, ירושלים 1996; א' טל, הסביבה בישראל: משאבי טבע, משברים, מאבקים ומדיניות – מראשית הציונות ועד המאה ה־21, תל אביב 2006; ע' הלמן, אור וים הקיפוה: תרבות תל־אביבית בתקופת המנדט, חיפה תשס"ח; N. Karlinsky, 'Jaffa and Tel Aviv before 1948: The Underground Story', M. Azaryahu & I. Troen (eds.), *Tel Aviv, The First Century: Vision, Designs, Actualities*, Bloomington, IN 2012

11 האנתרופולוג לרקין קבע כי תשתיות הן מערכים או אובייקטים פיזיים שמספקים בסיס לתפקוד של אובייקטים אחרים, עובדה שהופכת אותם לשיטה (system). ראו: לרקין (לעיל, הערה 6).

12 על הממצאים בבני ברק ראו: ר' בארי ואחרים, 'בני־ברק, תל (דרום)', חדשות ארכיאולוגיות, 131 (2017) (http://www.hadashot-esi.org.il/report_detail.aspx?id=25606&mag_id=127). בתקופות פרה־היסטוריות היה היישוב ממוקם

בשנים 1944–1945 היו בכפר 1,420 תושבים, ובבעלותו היו 13,672 דונם, 5,842 דונם מתוכם בבעלות יהודית. רשת כבישים שעברה דרכו ולידו אפשרה גישה נוחה ליפו, לוד, רמלה ותל אביב ולכפרי הסביבה. בתקופה העות׳מאנית נקרא הכפר אבן אבראק, אך לאחר שבשנת 1924 נמכרו חלק מאדמותיו והוקמה עליהן בני ברק, החליטו תושבי הכפר לשנות את שמו לאלח׳יריה, כדי לבדל עצמם מהיישוב היהודי. אוכלוסיית הכפר הייתה מוסלמית ברובה, והיו בו שני בתי ספר, לבנים ולבנות, שהוקמו בתקופת המנדט הבריטי. התושבים עבדו בעיקר בחקלאות, וגידלו הדרים, דגנים ומעט פירות נוספים. בסקר שנעשה בתחילת שנות הארבעים על ידי ה׳הגנה׳ נכתב כי בתי הכפר עשויים מלט ובטון או לבנים וטיט וחלקם מעצים ורעפים, וכי יש בו שלוש בארות, שני קברים עתיקים, שמונה חנויות מכולת, ארבעה בתי קפה ומסגד. באיור נלווה שהוכן מעמדת תצפית על נחל איילון נראים בתי הכפר עומדים על גבעה וביניהם עצי דקל אחדים, עצים אחרים ושיחים. הכפר, שהיה מוקף פרדסים, השתלב בקווי הטופוגרפיה העדינים של הנוף (איור 2).[13] בתוכניות אזוריות שהתקינו שלטונות המנדט הבריטי – ושאושרו לאחר הקמת מדינת ישראל – הוגדר אזור זה כשטח גלילי שאינו כפוף לשום רשות מקומית, והאסור לבנייה ולפיתוח, כך שיוכל לתפקד כפֶּשֶׁט הצפה של נחל איילון ויגן על העיר הצומחת מפני הצפות בחודשי החורף.[14]

אלח׳יריה נכבש על ידי חטיבת אלכסנדרוני ב־29 באפריל 1948, במבצע ׳חמץ׳, לאחר שתושביו ברחו, בדומה לתושבי הכפרים שסביבו, כארבעה ימים קודם לכן. ימים ספורים אחרי הכיבוש הביעו תושבי הכפר רצון לחזור לבתיהם ולקבל את מרותו של השלטון היהודי, אך סורבו.[15] אירועים אלו היו חלק מן השינוי המרחבי הדרמטי שהתחולל בעקבות המלחמה והקמת מדינת ישראל. נלוו אליהם הרס נרחב של מבנים, הזנחת קרקעות חקלאיות, התיישבות של אוכלוסיות חדשות, שרטוט גבולות

איור 2: הכפר אלח׳יריה מעמדת תצפית על נחל איילון, מדרום־מערב לכפר, תחילת שנות הארבעים
(הארכיון לתולדות ה׳הגנה׳)

על גדת הנחל, ומן האלף השני לפסה״נ ועד ראשית התקופה ההלניסטית התמקם היישוב על התל – ולימים, בתקופה העות׳מאנית, הוקם עליו הכפר הערבי. החל מהתקופה המוסלמית הקדומה התקיים היישוב גם על התל וגם סביבו, ואף שבתעודות שונות נזכרת נוכחות צלבנית במקום, לא נמצאה לה עדות חומרית (שיחה עם רון בארי, ארכיאולוג מחוז מרכז, רשות העתיקות, 14 ביולי 2020).

13 מעטות העדויות הכתובות על הכפר ח׳יריה. ראו למשל: W. Khalidi, *All That Remains: The Palestinian Villages Occupied and Depopulated by Israel in 1948*, Washington, DC 1992, pp. 248–250; مصطفى مراد الدباغ، بلادنا فلسطين، الجزء الاول القسم الاول، بيروت ١٩٦٥. סקירות ה׳הגנה׳ ראו: ׳סקירה על הכפר אל־ח׳ירייה׳ (אין תאריך), את״ה, 105/135; תיק הכפר יאזור (אין תאריך), את״ה, 2/כפר/8.

14 Lydda District Regional Outline Planning Scheme, יוני 1942, משרד הפנים, לשכת התכנון תל אביב.

15 על מבצע ׳חמץ׳ ועל הדיונים בעניין הקרקע ראו: ב׳ מוריס, לידתה של בעיית הפליטים הפלסטינים 1947–1949, תרגם א׳ מגן, תל אביב תשנ״א, עמ׳ 62–63, 141; י׳ בר, ׳פרקים למהלכים אופרטיביים במלחמת השחרור׳, בין הקטבים, 16–17 (תמוז תשע״ח), עמ׳ 261–291.

מוניציפליים חדשים והקמת שכונות ויישובים על שטחים ששימשו עד אז לחקלאות. בעקבות המלחמה הוכפל שטחה של תל אביב והגיע ל־50,000 דונם, וגם אוכלוסיית העיר כמעט הכפילה עצמה בתוך ארבע שנים. שינויים קיצוניים אלו, שאפיינו את כל המרחב הפלסטיני לשעבר, כללו שינויים גדולים בהרכב האוכלוסייה ובבעלות על הקרקע, והפכו את פניה הפיזיים של הארץ.[16]

בתי הכפר אלח׳יריה נהרסו בלחימה, ורק מעטים – כשנים עשר על פי עיתוני התקופה[17] – נותרו ראויים למגורים. באביב 1949 התיישב באחד הבתים 'הקפיטן', שפיקד על המבצע לכיבוש האזור – הוא היה קצין בצבא יוון שערק, ולימים אימץ את השם נתן אלחנני. תחילה גר לבדו בכפר ההרוס, אך עד מהרה הצטרפו אליו עולים חדשים וחיילים משוחררים שנכנסו לבתים הריקים, ובסתיו 1949 היו בכפר כחמישים נפשות. התושבים שיפצו את הבתים בכספם, ללא עזרת הסוכנות, ושילמו ל'רכוש הנטוש'.[18] בצד כל בית הייתה חצר ששטחה כחצי דונם, ובה גידלו ירקות ועיזים. 'הקפיטן' הביא למקום מים מכפר אז״ר, מרחק כ־3 ק״מ, ובכך הקל על התושבים. באותם ימים גם הוקמה במקום צרכנייה – 'הקפיטן' מימן 75 אחוז מההשקעה ואת היתר מימנו התושבים – ואפשר היה לרכוש בה מזון ומוצרים שונים, שעד אז נקנו בסלמה או בכפר אז״ר.[19] האפוטרופוס לנכסי נפקדים עדכן בסתיו 1949 כי לכמה מהבתים פלשו דיירים שאינם משלמים שכר דירה. במקביל ביקשה קבוצת חיילים משוחררים ליישב את אדמות הכפר, אך 'קרן קיימת לישראל' (קק״ל) השיבה להם כי האזור מיועד

16 על השינויים המרחביים באזור תל אביב ויפו ראו: א׳ גולן, 'ממסד, פליטי מלחמה, עולים: העיצוב מחדש של המרחב העירוני במלחמת העצמאות ואחריה', מחקרים בגיאוגרפיה של ארץ ישראל, טו (תשנ״ח), עמ׳ 28–46; הנ״ל, 'שינוי הנוף היישובי במרחב הכפרי הערבי שננטש במלחמת העצמאות', הציונות, כ (1996), עמ׳ 221–242; הנ״ל, שינוי מרחבי – תוצאות מלחמה: השטחים הערביים לשעבר במדינת ישראל, 1948–1950, קריית שדה בוקר תשס״א; נ׳ מרום, עיר עם קונספציה: מתכננים את תל אביב תשס״ט; ס׳ שרון, 'המתכננים, המדינה ועיצוב המרחב הלאומי בראשית שנות החמישים', תיאוריה וביקורת, 29, (2006), עמ׳ 31–57.

17 ת׳ וינשטוק, 'הקפיטן מחיריה', הבוקר, 23 בספטמבר 1949, עמ׳ 21.

18 הוועד הפועל של ההסתדרות הכללית אל שר הפנים מ׳ שפירא, 18 באוקטובר 1949, אצ״מ, S15/9603. בסוף מרס 1948 הקימה ה'הגנה' ועדה לטיפול בנכסים הנטושים של הערבים, ולאחר הקמת המדינה היא עברה למשרד המיעוטים ושמה שונה למחלקה לנכסים ערביים. ביולי הוחלט להעביר את הטיפול בשטחים חקלאיים למשרד החקלאות, אך האחריות נותרה בידי האפוטרופוס על הרכוש הנטוש, שהיה כפוף לשר האוצר. בדצמבר 1948 שינתה ממשלת ישראל את החלטתה הקודמת, והחליטה ליישב את הכפרים הפלסטיניים הנטושים, מחשש שתיושם החלטת האו״ם שקראה להתיר לפליטים לשוב אל בתיהם. מחלקת ההתיישבות בסוכנות פעלה לבצע את ההחלטה. רשות הפיתוח טיפלה בהעברת נכסי הנפקדים לידי יהודים, והורשתה לרכוש נכסים שהיו בידי האפוטרופוס על נכסי הנפקדים. על פי החוק מיולי 1950, יכלה רשות הפיתוח למכור קרקעות לממשלה, ל'קרן קיימת לישראל' (קק״ל), לרשויות מקומיות ולמוסדות שיישבו ערבים חסרי קרקע. במסגרת זו רכשה קק״ל מיליון דונם בדצמבר 1948 ומיליון דונם נוספים באוקטובר 1950. בנובמבר 1949 הוחלט כי קק״ל תקבל מרשות הפיתוח קרקעות של הכפרים סלמה, חירייה וכפר עאנה, והן יועדו למגורים ולא לחקלאות. עוד על המנגנונים שהביאו להעברת הבעלויות על הקרקעות הנטושות ולשינוי דרמטי במרחב העירוני והחקלאי ראו: א׳ גולן, 'תפיסת קרקע ערבית על ידי ישובים יהודים במלחמת העצמאות', קתדרה, 63 (ניסן תשנ״ב), עמ׳ 122–154; הנ״ל, 'מקומו ומשמעותו של הרכוש שהותירו אחריהם הפליטים הפלסטינים בעיצוב המרחב הכפרי במדינת ישראל', מ׳ בר־און, י׳ גרינברג ומ׳ חזן (עורכים), כלכלה במלחמה: קובץ מחקרים על החברה האזרחית במלחמת העצמאות, ירושלים תשע״ז, עמ׳ 33–54; הנ״ל, שינוי מרחבי (לעיל, הערה 16); י׳ גולדשטיין, 'העלייה הגדולה והכפרים הפלשתינים: דינאמיקה של התיישבות, 1948–1951', סוגיות חברתיות בישראל, 12 (תשע״א), עמ׳ 32–61.

19 וינשטוק (לעיל, הערה 17); האגף לשלטון עצמי, המחלקה לישובי עולים, אל ועד כפר המסובים, 12 במרס 1953, אה״מ, ג־61 – 1973; נ׳ אלחנני, יו״ר ועד כפר המסובים, אל ד׳ רוזן, מנהל המחלקה לישובי עולים, משרד הפנים, 17 במרס 1953, שם.

לשכונה עירונית ולא למשקי עזר. אגף התכנון התנגד באותה עת להקצות אזור זה למגורים, ולכן בקשת המתיישבים לחכור קרקעות למשקי עזר הותרה לשנה אחת בלבד, עד שיקבע אגף התכנון את אופיו של היישוב. בסתיו 1950 ביקשו שישים המשפחות שגרו בכפר לקבל אחריות לפרדסי הסביבה, אך נענו כי אלה כבר הובטחו ליישובים החקלאיים הוותיקים בסביבה, כפר אז"ר ואפעל, ולא יוכלו להינתן ליישוב עירוני או פרוורי עם משקי עזר.[20]

איור 3: חוות שלם, 1958
(ארכיון חברת 'הזרע')

בה בעת במרחק מאות מטרים ממערב לכפר הקימה אגודת 'הזרע', אגודה שיתופית לגידול ולאספקה של זרעים, את חוות שלם, הראשונה מארבע חוות חקלאיות שהקימה האגודה במקומות שונים במדינת ישראל. החווה, שהשתרעה על כ־500 דונם, הוגדרה כמשק ניסיוני לגידול ירקות, במטרה לענות על הביקוש הגובר למזון. בשנת 1951 החלה בניית מבני הקבע של החווה, בתכנון האדריכל אריה שרון. המבנים תוכננו תוך הפרדה בין אזור המגורים לאזור המשק, בהשראת הדגם הרווח בקיבוצים, שגם רבים מהם תכנן שרון.[21]

בתחילת 1951 הוקמה בין שרידי הכפר המיושב מחדש לחוות שלם – מעברת חירייה (בארכיונים לא נמצאו מסמכים המעידים על תאריך הקמתה המדויק). המעברה הוקמה בין היתר בשל בקשת אנשי הכפר להגדיל את מספר התושבים בו, כדי להקים יישוב קבע. השם חירייה שונה לכפר המסובים, כחלק ממגמה ארצית שהובילה ועדת השמות הממשלתית, לתת שמות יהודיים ליישובים. וכך בבתי הכפר התגוררו עולים שהגיעו לארץ בשנים 1949–1950, ובמעברה גרו עולים שהגיעו בשנים 1951–1952, ויחד הם מנו 1,329 איש, ובגנים ובבתי הספר היו 700 תלמידים.[22]

20 מכתב מהאפוטרופוס לנכסי נפקדים אל זגורסקי, 29 בספטמבר 1949, אצ"מ, KKL5/18212; אגודת 'ישי' לשיכון חיילים משוחררים אל י' וייץ, 20 באוקטובר 1949, שם; וייץ אל מנהל המדור לשיכון ודיור באגף ישוב החיילים ושיקומם, משרד הביטחון (אין תאריך), שם; קק"ל אל מנהל המדור לשכון ודיור, אגף לישוב החיילים ושקומם, 10 בפברואר 1950, שם; צ' רייך בשם ועד כפר כירייה אל מנהל המדור לאדמות מוברות, משרד החקלאות, 31 בינואר 1950, שם; ח' דנין אל ר' אלוני, מנהל המדור לאדמות מוברות, 15 בפברואר 1950, שם; א' שרון, מנהל התכנון, אל הוועד המשותף לתכנון חקלאי והתיישבותי, 6 במרס 1950, שם; ש' יניב, הוועד המשותף לתכנון חקלאי והתיישבותי, אל אלוני, המדור לאדמות מוברות, משרד החקלאות, 6 במרס 1950, שם; ועד כפר חיריה אל הקק"ל, 2 באוקטובר 1950, שם; וייץ אל ועד כפר חיריה, 3 באפריל 1951, שם.

21 נ' מימר, 'חוות־שלם ("הזרע") – מקיום לקיימות: שימור חווה חקלאית והסבתה למרכז מבקרים בפארק אריאל שרון', אתרים המגזין, 6 (כסלו תשע"ז), עמ' 151–156.

22 ועד כפר המסובים אל משרד הפנים, המחלקה לישובי עולים, 11 ביוני 1952, אה"מ, ג-71 / 1973; אלחנני אל רוזן (לעיל, הערה 19); ועד כפר המסובים אל המחלקה לישובי עולים, משרד הפנים, 1 באוגוסט 1952, אה"מ, ג-62 / 1973; ועד הכפר אל המחלקה ליישובי עולים, 26 בספטמבר 1952, אה"מ, ג-71 / 1973.

מלכתחילה היו מי שלטשו עין אל שטחו של הכפר הנטוש ואל השטחים הנרחבים שבדרום־מזרח יפו. בספטמבר 1948 ביקשה קק"ל להעביר אליה משטחי הכפרים הערביים שמצפון ומדרום־מזרח לתל אביב, בהם אדמות של הכפר אלח'יריה, כדי לפתח בהן את תל אביב, דרישה שמאחוריה עמדה גם עיריית תל אביב, ששאפה להרחיב את גבולותיה. ואולם ראשי מערכת התכנון של המדינה החדשה הובילו תוכנית לפיזור אוכלוסייה, והתנגדו בכל תוקף להרחבת שטחה של תל אביב. במקום גוש אורבני בנוי הם שאפו להקים כמה ערים קטנות, שיהיו מוקפות ברצועות של שטחי חקלאות.[23]

שטחי הכפר חירייה עמדו בלב מחלוקת בין רשויות מדינה לבין רשויות מקומיות, בין התוכנית הארצית לפיזור האוכלוסייה לבין הרצון והצורך של ערי המרכז לצמוח. היעדר גוף אחד שאליו יכלו תושבי הכפר והמעברה לפנות היה אופייני לשנים אלו, שבהן נדרשו מוסדות המדינה ליישב גלי עלייה ולהקים יישובים רבים. רשויות המדינה לא היו תמימות דעים באשר לחלוקת הקרקעות וייעודן, ולא אחת הגיעו חילוקי הדעות ביניהן עד כדי היעדר תקשורת. המאבק בין הגורמים השונים הביא לכך שתושבי הכפר קיבלו סיוע מועט.[24]

בתחילת שנת 1950 נמסרו שטחים נרחבים מאדמות חירייה, לרבות חלקים משטחו הבנוי של הכפר, למשרד הדואר, לצורך הקמת תחנת ממסר. באביב באותה שנה פורסם כי עיריית רמת גן מנהלת עם קק"ל משא ומתן כדי לקבל 3,500 דונם באזור להקמת שיכונים ואזור תעשייה. במקביל פרסם ראש העיר תל אביב ישראל רוקח תוכניות לעירו, שכללו גם מגרש חדש לאשפת העיר ולמכון להפיכת האשפה לזבל אורגני – 400 דונם, סמוך לכפר הנטוש חירייה. שני עובדי עירייה יצאו לאירופה כדי ללמוד את הנושא, משרדי הבריאות והחקלאות שותפו בתוכנית, ובמכון ויצמן נעשו בדיקות לקראת ביצועה.[25]

פסולת כבעיה וכמשאב

סוגיית הפסולת הטרידה את הערים בתקופת המנדט, אך הפתרונות שניתנו לה היו על פי רוב השלכה במגרשים פתוחים או במחצבות נטושות, בשטחים שנתפסו כחוץ־אורבניים.

עיריית תל אביב השליכה במשך שני עשורים את הפסולת הביתית של תושביה במגרש צמוד לבית הספר החקלאי 'מקווה ישראל'.[26] תחילה שילם 'מקווה ישראל' לעיריית תל אביב תמורת האשפה והפיק ממנו דשן לשדותיו, אך בהמשך התהפך הגלגל והעירייה שילמה לבית הספר כדי שיקלוט את

23 גולן, שינוי מרחבי (לעיל, הערה 16), עמ' 114, 132, 140.

24 גם בבתי הכפר הנטוש סאקיה, הסמוך לחירייה, התיישבו עולים באישור האפוטרופוס, אך לא זכו לתמיכת הסוכנות. ראו: שם, עמ' 144–145. ניתן ללמוד על ריבוי הגורמים המעורבים מדו"ח של רשות הפיתוח לתקופה 1 בינואר 1951 – 31 במרס 1952, אצ"מ, S41/425. ראו גם: א' ברוצקוס, 'ה"חלומות" שהיו לערים: על הנסיונות לתכנון אזורי התיישבות וקליטת עלייה בשנים 1948–1952', מ' נאור (עורך), עולים ומעברות, 1948–1952 (עידן, 8), ירושלים תשמ"ז, עמ' 127–140.

25 'רמת־גן בסימן גידול', הצופה, 25 באפריל 1950, עמ' 3; 'תכנית פיתוח של עירית ת"א בהיקף 40 מיליון ל"י', דבר, 10 באפריל 1950, עמ' 4; 'תכניות עירוניות חדשות', ידיעות עירית תל־אביב, 15 ביוני 1950, עמ' 11; 'גבעתיים: לקראת הרחבת שטח שיפוטן של הרשויות רמת־גן, גבעתיים ובני־ברק', דבר, 5 ביוני 1952, עמ' 4.

26 ראו: בלסלב, עיר עברית (לעיל, הערה 10).

האשפה. התפיסה שפסולת היא משאב שניתן להפיק ממנו דשן לחקלאות המשיכה לעצב את מדיניות העירייה גם בשנים הבאות, אך לא הייתה התקדמות משמעותית ביישומה.[27] עם הקמת המדינה הוחלט – בעקבות תלונות רבות ובשל הקמת שכונות חדשות בדרום העיר – להפסיק את השלכת הפסולת ב'מקווה ישראל', לרכזה כחצי קילומטר משם, בכפר הערבי יאזור, ולהקים שם מתקן להפיכת הפסולת לזבל אורגני. אלא שתושבי האזור התלוננו על הריחות הרעים והעשן מהמזבלות בדרום העיר, ותלונותיהם זכו לתמיכה מצד רופאים והוועדה להיגיינה ציבורית שליד הסתדרות הרופאים; אלה דרשו לחסל את מגרש האשפה החדש, בטענה ש'בימים בהם האוויר ספוג לחות והאטמוספירה נמוכה, משתרע האויר הממוזג גז ועשן מעל הקרקע, ופוגע קשה בהמוני אדם בתחלואה המונית, מכה אותם במיחושי אלירגיה והרעלה על כל תופעותיהם'.[28] באוגוסט 1949 הוקמה ועדה משותפת של משרדי החקלאות והבריאות ושל הרשויות המקומיות בתל אביב, רמת גן, חולון ובת ים כדי לדון בשאלת האשפה בגוש דן. הוועדה החליטה שיש לנצל את האשפה להפקת זבל אורגני, בין היתר בשל המחסור הגדול ממנו בארץ, והמליצה להקים מזבלה בשטח שבין סאקיה לחירייה, בשל הכבישים סביבו וקרבתו היחסית לתל אביב. לפיכך החליטה רשות הפיתוח להקצות שטח זה לקליטת הפסולת של תל אביב ולהקמת מפעל לייצור קומפוסט; בכך, האמינו, יבוא הקץ לתלונות שנצטברו.[29]

בשל התביעות השונות על הקרקע היססה רשות הפיתוח אם להקצות את השטח להקמת המזבלה, אך עיריית תל אביב התריעה לפניה כי היא התחייבה לפני משרד הבריאות להעביר את מגרש האשפה עוד לפני קיץ 1952, וביקשה מהרשות לאשר מחדש את הקצאת השטח. לבסוף, בישיבת מליאת רשות הפיתוח שהתקיימה ב־8 בפברואר 1952, אושרה בקשת עיריית תל אביב לחכור 300 דונם לאיסוף אשפה ולהקמת מפעל קומפוסט בשטח הצמוד לבתי הכפר ולמעברה. באותה ישיבה גם אושרה בקשת הדואר להקים תחנת קליטה על שטחיו הבנויים של הכפר ובסמוך להם. בכך חתמו רשויות המדינה את המחלוקת על ייעוד קרקעות הכפר.[30]

העיריות הגדולות בישראל בחנו תוכניות לטיפול בפסולת, ובאוגוסט 1951 בא לארץ מומחה איטלקי לפסולת, בוג'נו־פיקו (Boggiano-Pico), כדי לתכנן את הפיכת האשפה לזבל אורגני.[31] ביוני

27 מלחמת העולם השנייה הניעה את ממשלת בריטניה לחפש דרכים להפקת דשן מחומרים אורגניים, בשל הצורך בעצמאות תזונתית. ממשלת המנדט דחקה בעיריות לבנות מפעלי קומפוסט, כדי להתמודד עם המחסור העולמי בדשנים, וגם בחנה את 'שיטת בקארי', שכבר יושמה באיטליה ובצרפת. ראו: בלסלב (לעיל, הערה 8), עמ' 191–193.

28 דברי חברת הכנסת י' שמחונית בישיבה ה־58 של הכנסת הראשונה, כ"ג בתמוז תש"ט (20 ביולי 1949) (https://fs.knesset.gov.il//1/Plenum/1_ptm_250198.pdf); 'עירית ת"א נאשמת בזלזול בבריאות התושבים', מעריב, 28 במרס 1950, עמ' 3; 'המזבלות מסכנות את חיי התושבים ואינן מנוצלות', על המשמר, 20 ביוני 1951, עמ' 2.

29 ד' גפן אל י' רוקח, 16 בדצמבר 1949, אעת"א, 1362; פרוטוקול ישיבת הוועדה האזורית לבירור השאלה של הוצאת אשפה, 5 במרס 1950, שם.

30 רוקח אל י' גוריון, המנהל הכללי של רשות הפיתוח, 10 בינואר 1952, אעת"א, 5/4/2; פרוטוקול ישיבת המליאה של רשות הפיתוח, 8 בפברואר 1952, אצ"מ, S41/425; 'הקצאת שטח לאיסוף אשפה ומפעל קומפוסט בחיריה', 26 בפברואר 1952, אאע"ד.

31 'בחירות חדשות לעיריית ת"א – דורשת סיעת ההסתדרות', דבר, 14 באוגוסט 1951, עמ' 1. שיטת בוג'נו־פיקו להפקת דשן מאשפה עירונית יושמה בהצלחה בלונדון בתחילת שנות הארבעים, וזכתה להצלחה גם בביירות. חברת 'גרין' ניסתה לקדם הקמת מפעלים בתל אביב, בחיפה ובירושלים, אך מלחמת 1948 ואי כדאיות כלכלית עצרו מיזם זה. ראו: בלסלב (לעיל, הערה 8), עמ' 205.

1952 חתמה עיריית תל אביב על הסכם עם חברת 'גרין', זכיינית שיטתו של בוג'נו־פיקו בישראל, ועל פיו עתידה הייתה החברה לקבל את כל האשפה העירונית ולעבד אותה לזבל אורגני. החברה התחייבה לגייס את ההון להקמת המפעל בתוך שנה וחצי מחתימת ההסכם, ונקבע שכעבור שלושים שנה יעבור המפעל לרשות העירייה.[32]

ואולם התוכנית להקמת שדה אשפה ומתקן טיפול ליד חירייה לא הניחה את דעתם של תושבים ורופאים. בהודעה שפרסמה ההסתדרות הרפואית בשנת 1952 נאמר: 'בהזדמנויות שונות הביעה ההסתדרות הרפואית את התנגדותה הנמרצת להקמת מפעלי תסיסה כלשהם על שטחי חיריה, מפאת קרבתם לתל־אביב ולסביבותיה [...] מכאן מובנת הסכנה הנשקפת לתושבי חיריה וסביבותיה, המאוכלסות בצפיפות והשרויות בתנאי היגיינה מחרידים, וכן לבתי החולים בילינסון, תל־ליטווינסקי וכו'.[33] ההסתדרות הרפואית אף שלחה תזכיר לכנסת ובו דרשה שעד שיימצא פתרון לא תוקם המזבלה, וקראה לחסל את תילי האשפה בסביבות תל אביב ורמת גן, ולרוקן את האשפה היומית לבורות שיכוסו ולא לשורפה כנהוג.[34]

ועד כפר המסובים והמעברה, שלמד מכתב בעיתון על המזבלה העומדת לקום בסמוך,[35] פנה אל עיריית תל אביב ואל משרד הבריאות בזו הלשון:

> אנו מתפלאים מאוד שהחתונה נעשתה בלי נוכחות החתן, והוחלט במהירות בזק מבלי להתייעץ אתנו ובלי להתחייב על מצב הבריאות של אלפי תושבים השרויים בלי זה בתנאי היגינה מחרידים. ולכן הננו פונים, בזה, לכב'[ודכם] ואנו מזהירים אתכם בכל לשון של הזהרה והתרעה, לא להעיז לעשות את העוול הזה למקומנו. אנו רוצים [מילה מטושטשת] שנתנגד בכל האמצעים העומדים לרשותנו, נגד [...] תוכניתכם, העלול[ה] לגרום נזק – רב לבריאותנו ולבריאות ילדינו.[36]

סגן ראש העיר השיב כי מיקומו של שדה האשפה נקבע כשנה קודם לכן על ידי ועדה בין־משרדית, ולהערכתה לא יהווה מפגע ולא יגרום נזק ליישובי הסביבה. נציגי המעברה ננזפו על הלשון שנקטו במכתבם, ש'אינה מקובלת ואינה ראויה שתינקט בפניה של רשות מקומית אחת לחברתה'. במקביל הזמין משרד הבריאות חוות דעת אם שדה האשפה יהווה מפגע סניטרי באזור המאוכלס יושבי מעברה.[37]

32 בהתאם להחלטות הוועדה הבין־משרדית לטיפול באשפת תל אביב פורסמו בעיתוני הארץ ובחו"ל בקשות להצעות להקמת מפעל להפקת קומפוסט. לא התקבלו הצעות מחו"ל, אך מישראל התקבלו ארבע הצעות, מאת האחים גרין, מזל הוזדורף, קליש וציזיק. שתי ההצעות האחרונות נפסלו בשלב ראשון והוחלט להמליץ על הצעת גרין. ראו: המפקח הסניטרי העירוני אל י' נסיבי, מזכיר העיר, 25 בנובמבר 1949, אעת"א, 1362; 'הטיפול באשפה העירונית – מסקנות הועדה הבין משרדית', 23 בפברואר 1950, אעת"א, 5/4/2; 'בעיר ובעיריה', ידיעות עירית תל־אביב, 15 בדצמבר 1952, עמ' 24; ט' שבתי, 'חינוך וארגון', הארץ, 22 באפריל 1951, עמ' 2; 'בחירות חדשות' (שם); תוספת להסכם, יולי 1968, אאע"ד.

33 'כיצד תבוער האשפה של תל־אביב', על המשמר, 21 באפריל 1952, עמ' 2.

34 שם.

35 שם.

36 ועד כפר המסובים אל עיריית תל אביב, 23 באפריל 1952, אה"מ, ג־72 / 1973.

37 סגן ראש עיריית תל אביב אל ועד כפר ומעברת חיריה, 8 במאי 1952, אה"מ, ג־72 / 1973; מנהל המחלקה לתברואה, משרד הבריאות, אל ועד הכפר, 15 במאי 1952, אה"מ, ג־72 / 1973.

איור 4: שיטפונות במעברת חירייה, 1955
(הארכיון הציוני המרכזי)

תושבי המעברה והכפר לא ויתרו; הם קבלו על כך שבוועדה הבין־משרדית לא נכח אפילו רופא אחד, וציינו כי בעת קבלת ההחלטה היה המקום שומם, אך מאז הפכה הסביבה מאוכלסת, כך שאי אפשר לבצע את תוכנית שדה האשפה. הם הוסיפו: 'אם כי אנחנו גרים באיזה פרבר מרוחק, ובמגורים קטנים ורעועים, בכל זאת כבודנו ובריאותנו חשוב ויקר אצלנו, בדיוק, כמו הכבוד והבריאות של כל אזרח, מבלי להתחשב, איפה הוא גר'.[38] במכתב נוסף למשרד הבריאות ביקשו עזרה, שכן 'הרבה תושבים בינינו הם עולי ארצות המזרח המנוגעים במחלות שונות; ועכשיו קביעת שדה אשפה בשטח יתן לבריאותנו את הדפיקה אחרונה'.[39]

משרד הבריאות השיב כי כשיוקם המכון לטיפול בפסולת הוא ימנע מפגעים אפילו במרחק של מטרים אחדים, כל שכן במעברת חירייה. עם זאת הודגש כי 'אם בינתיים תִּבָּנה עוד מעברה ליד המגרש [...] עלולים להיות קשיים [...] הסוכנות לא שאלה אף משרד ממשלתי מאלה שהשתתפו בבחירות המקום הזה, אם להקים שם מעברה או לא'.[40]

נוסף על המפגע התברואתי החמור שאיים על תושבי המעברה, הייתה מדי חורף גם סכנת הצפה של נחל איילון (מוצררה). החורפים של 1949–1950, 1951–1952 ו־1955–1956 היו קשים במיוחד –

38 ועד כפר המסובים אל עיריית תל אביב – יפו, 18 במאי 1952, אה"מ, ג-72 / 1973.

39 ועד כפר המסובים ומעברת חיריה אל משרד הבריאות, 18 במאי 1952, אה"מ, ג-72 / 1973.

40 מחלקת התברואה, משרד הבריאות אל המחלקה ליישובי עולים, משרד הפנים, 26 במאי 1952, אה"מ, ג-72 / 1973. רוב המעברות הוקמו בצד יישוב ותיק אך לא כחלק ממנו, והאחריות לניהולן נחלקה לא אחת בין כמה רשויות. פעמים רבות נקלעו המעברות למאבק בין הרשות המקומית, הסוכנות והממשלה או מִנהל התכנון. הסוכנות הקימה מעברות על פי צורכי השעה, אך פעמים רבות לא תיאמה את פעילותה עם רשויות התכנון, דבר שעורר ויכוחים ואף נתק בין הגופים. על פי פלזנשטיין ושחר בכיר במחלקת הקליטה טען שהמתכננים 'לא רצו לתת לנו שטחים, אז אמרנו אם לא יתן – ניקח, ולמעשה לקחנו כל מה שהיה חופשי'. ראו: ד' פלזנשטיין וא' שחר, 'הגיאוגרפיה של המעברות', נאור (לעיל, הערה 24), עמ' 93.

כשישים-שבעים ימי גשם בשנה וכ־700–1,000 מ״מ לעונה.[41] יישובים ומעברות רבים, בהם מעברת חירייה, סבלו מנזקי שיטפונות, ורבים נאלצו להתפנות מבתיהם.[42]

בסתיו 1952 פעלו הסוכנות ומשרד העבודה להקמת צריפים במקום האוהלים במעברות באזור תל אביב, ואולם התוכנית לא כללה את חירייה, שאמורה הייתה להתחסל. למרות הבטחות שקיבלו מהסוכנות, המשיכו מאות משפחות בחירייה לגור באוהלים בלויים ובבדונים, וסירבו להצעה לעבור מזרחה, למעברת כפר עאנה, בדרך ללוד. משלחת תושבים שבאה למשרדי הסוכנות טענה כי התושבים כבר מצאו עבודה בקרבת המעברה, טוו קשרים חברתיים, ואינם רוצים שוב להתחיל את חייהם במקום נידח.[43] הם איימו כי ינקטו צעדים חריפים אם דרישתם לא תיענה, ושלחו הודעות בעניין לרשויות שונות ולעיתונים.[44] בסתיו 1952 פרצו במעברות רבות במדינה מחאות חריפות, שכללו שביתות והפגנות, ובחלק מהמקרים התערבה המשטרה באירועים. נראה היה שמחאות אלו מאורגנות, ושהובילה אותן מעברת חירייה, והיא אף הוציאה כרוז לכל תושבי ישראל. 5,000 תושבי המעברה הכריזו על שביתה כללית, וקבלו על כך שכל רשות מטילה את האחריות על רשות אחרת. הם ביקשו לשים קץ ליחס המביש כלפיהם, ואף להקל עליהם בתשלומים למעבר לשיכון קבע. הסוכנות השיבה להם כי השטח שעליו הוקמה מעברת חירייה נמוך ועל כן חשוף לפגעי שיטפונות, והוא מיועד להקמת תחנת ממסר. נוסף על כך נאמר כי יתר המעברות על כביש תל אביב – לוד יחוסלו משום שהן מכערות את עורק התחבורה הראשי של הארץ.[45]

כעבור זמן קצר פנה האגף לשלטון עצמי אל ועד כפר המסובים ויידע אותו כי גבולות רמת גן הורחבו, ועל כן חלק מתושבי הכפר כלולים מעתה בתחום שיפוטה של העיר, ואחרים נמצאים מחוצה לו, והאחריות להם חלה על הוועד. התושבים התמרמרו וטענו כי לא רק שסבלו ארבע שנים ממחסור במים, מחוסר תכנון ומהיעדר סיוע של המוסדות, ואף קלטו מעברה של 800 משפחות, הרי כעת הם מתבשרים על פיצול, שגונז את תקוותיהם לעתיד המקום כיחידה אחת. פנייתם למשרד הפנים בבקשה לספח את הכפר והמעברה לרמת גן, וכך להשיג את שלמות המקום

41 מתוך אתר השירות המטאורולוגי (https://ims.data.gov.il/he/node/46).

42 ׳הנזקים במעברות...׳, על המשמר, 16 בדצמבר 1951, עמ׳ 4; ׳גשמי־זעף וסערות; היום יימשך מזג־האוויר הקשה׳, שם, עמ׳ 1; ׳אוהלים ובדונים רבים נפלו במעברות בסערת הגשמים הקשה׳, שם, 17 בדצמבר 1951, עמ׳ 1; ׳שטפונות קשים בשפלת החוף׳, דבר, 3 בדצמבר 1954, עמ׳ 1; ׳הגשם הגדול׳, שם, 7 בינואר 1955, עמ׳ 18.

43 חיסול המעברות נמשך זמן רב מהמתוכנן, בין היתר בשל מצב תושביהן. היציאה מהמעברות לשיכונים דרשה התחייבות לתשלומים סדירים, אך לא לכל התושבים היה הממון הדרוש. ככל שעזבה האוכלוסייה החזקה, נותרו במעברות תושבים חלשים, מבחינה כלכלית וחברתית. באמצע 1952 חייתה כשישית מהיישוב בישראל במעברות, כרבע מיליון איש, בתחילת 1953 נותרו בהן כ־157,000 איש, וכעבור שנה – 108,000 איש. חיסול המעברות העסיק את הרשויות גם בשנים הבאות, ובסוף 1963 עדיין נותרו בהן 15,000 איש. ח׳ דרין (דרבקין), שיכון וקליטה בישראל: תש״ח–תשט״ו, תל אביב תשט״ו, עמ׳ 80; אפרת (לעיל, הערה 9), עמ׳ 519–521.

44 ׳קרית צריפים מוקמת באזור רמת־גן׳, הארץ, 18 בנובמבר 1952, עמ׳ 4; ׳220 משפחות במעברת חיריה מתגוררות באוהלים׳, קול העם, 11 בספטמבר 1952, עמ׳ 4; ׳שוכני מעברת חיריה דוחים מזימות הסוכנות להעבירם למקום נידח; תובעים הקמת צריפי עץ במקום׳, שם, 14 בספטמבר 1952, עמ׳ 4; ׳תושבי מעברת חיריה דורשים הקמת צריפים במקום ומתנגדים להעברתם למקום אחר׳, שם, 30 בספטמבר 1952, עמ׳ 3.

45 ׳אלפים שבתו והפגינו במעברות בתביעה להחליף אהלים בצריפים ושיכון־קבע׳, קול העם, 28 באוקטובר 1952, עמ׳ 1; ׳שביתות והפגנות במעברות׳, מעריב, 27 באוקטובר 1952, עמ׳ 1.

איור 5: מפת רמת גן, שיכון רסקו וסלמה, ככל הנראה בשנים 1955–1953
(הארכיון הציוני המרכזי)

ותכנונו כיישוב קבע, נדחתה. הכפר והמעברה נותרו גם בשנים הבאות ללא קשר לשום רשות מוניציפלית (איור 5).[46]

המערכה על הנוף: השתלטות המזבלה

מחאות תושבי הכפר והמעברה נגד הקמת המזבלה נמשכו, אך ללא הועיל. ב־15 בפברואר 1953 החל תהליך העברת האשפה של תל אביב אל מקומה החדש באדמות חירייה. עיריית תל אביב פרסמה מכרז לקבלת הצעות לניצול האשפה עד שיוקם המכון של חברת 'גרין', שהתמהמהה בקבלת רישיונות לייבוא הציוד הנדרש.[47] הניסיונות לחסל את המעברה נמשכו, ובקיץ 1954 הודיע משרד העבודה כי לאור סיום המיזמים בדרום־מזרח תל אביב לא יספק עוד עבודה לתושבי המעברות באזור, כדי לאלצם לעבור לאזורים שיש בהם מחסור בידיים עובדות.[48] מזבלה נוספת, לא רשמית, באזור מעברת חירייה שימשה במקביל את עיריית רמת גן להשלכת הפסולת שלה.[49]

46 האגף לשלטון עצמי, המחלקה לישובי עולים אל ועד כפר המסובים, 21 בינואר 1953, אה"מ, ג-61 – 1973; ועד כפר המסובים אל רוזן, מנהל המחלקה לישובי עולים, משרד הפנים, 9 בפברואר 1953, שם; האגף לשלטון עצמי, המחלקה ליישובי עולים אל ועד כפר המסובים, 12 במרס 1953, שם; 'עובדי מועצת אור־יהודה הכריזו שביתה נגד הלנת־שכר', על המשמר, 5 בינואר 1955, עמ' 1.

47 'מבוקר עד בוקר – מדן ועד אילת', הבוקר, 10 במרס 1953, עמ' 3; 'האשפה בגוש דן – דשן עשיר', שם, 19 באוגוסט 1955, עמ' 7.

48 'מובטלים עד גיל 35 לא יועסקו בעבודות דחק', זמנים, 24 ביוני 1954, עמ' 4.

49 'עבור התביעות הצודקות של תושבי מעברת ח'יריה', כרוז לתושבי מעברת חירייה (מתורגם מערבית, תאריך משוער 1954), מרכז מורשת יהדות בבל.

המזבלה הוקמה והתושבים התלוננו על הסבל הנגרם להם: תושבי יד אליהו קבלו על 'העשן הכבד, המסחרר את הראש, הסותם את הנשימה והמכרסם את הגרון והריאות'.[50] העירייה מצידה טענה כי אינה שורפת את האשפה, ואם בימות הקיץ פורצת מדי פעם שרפה, היא ערוכה לכיבוי האש.[51] בקיץ 1955 דווח בעיתון 'על המשמר':

במשך 3 ימים רצופים מיתמר העשן במעברת חירייה [...] כתוצאה משריפת הזבל שבמזבלה [...] מאבקם המר של תושבי המעברה על סילוק המזבלה מבדוניהם לא הוכתר בהצלחה [...] בקיץ מפיצה המזבלה 'ריחות ניחוח' [...] והמעברה נהפכת לגהינום ממש, כשמיליוני זבובים ושרצים למיניהם – נושאי חיידקים – עושים בה כבתוך שלהם. מדי פעם מחליטה עיריית ת"א 'לסייע' לתושבי המעברה – היא מעלה באש את המזבלה, אולם שירותה זה הוא בבחינת 'שירות דוב' – העשן הבלתי פוסק והמחניק [...] עושה אף הוא את המקום לבלתי־נשוא למגורים.[52]

באותה עת עדיין ישבו במעברה כ־2,000 איש, 414 משפחות, כולם בבדונים, אך עד חורף 1955 נותרו בה רק 300 משפחות.[53] העיתונאי שלמה שבא סיפר:

זבלם וליכלוכם של 600 אלף תושבי איזור תל־אביב מושלכים בריחוק של 20–30 מטר מצריפי בית־הספר [...] ד"ר ברונשטיין, מהוועדה להיגיינה ציבורית, מזהיר: סכנת חיים! כשאני מסתובב במעברה עולה באפי ריח כבד, מחניק [...] מכל מקום אני רואה את ערימות הזבל [...] ואילו כשבא נציג מחלקת התברואה של עיריית תל־אביב לאמוד את היזק המזבלה למעברה, הוא הסתובב בין הבדונים, ריחרח באפו ופסק: 'אין ריח!'.[54]

בקיץ 1955, לקראת הבחירות הכלליות, גברו ההאשמות נגד משרד הבריאות על שאינו עושה די לסילוק האשפה ליד מעברת חירייה. שיטת הטיפול הזמנית של חברת 'גרין' בפסולת כללה הפרדתה לרכיבים אורגניים ולא אורגניים, ריסוק החומר האורגני במכונות, סידורו בתילים והשקייתו במים, כך שבתוך שעות ספורות הוא תסס בטמפרטורה גבוהה, שאמורה הייתה להשמיד את זחלי הזבובים שהתפתחו באשפה. נוסף על כך הייתה במקום תסיסה אירובית, באמצעות החמצן שבאוויר, ומדי כמה ימים הפכו את ערמות הפסולת, כדי למנוע ריחות קשים והצטברות גזים. אך טיפול זה לא פתר את הבעיות, ובקיץ 1955 הוגשה לבית הדין המחוזי בתל אביב תביעה נגד רשויות הבריאות באזור, בדרישה לסלק את המזבלות מחירייה ומ'מקווה ישראל'.[55]

כתב 'על המשמר' מרק גפן תיאר את כמויות האשפה העצומות שמושלכות במעברת חירייה ואת עמוד העשן המתפשט עם כל רוח קלה ומגיע אף לתל אביב. עוד סיפר כי בימי הקיץ מתארכים התורים במרפאות בתל אביב, וכי הרופאים כורעים תחת עומס המטופלים שאינם חולים ב'מחלות

50 'האויר ביד אליהו', דבר, 21 באוקטובר 1954, עמ' 2.

51 'מגרש האשפה', דבר, 27 באוקטובר 1954, עמ' 2; 'תובעים הרחקת אשפה 25 ק"מ מאזורי מגורים', על המשמר, 5 באוגוסט 1954, עמ' 4; 'בעוד חודשיים – יוחל בפינוי האשפה בחיריה', שם, 12 באוגוסט 1955, עמ' 10.

52 'מעברת חירייה בתמרון עשן – ואין מושיע', על המשמר, 16 באוגוסט 1955, עמ' 3.

53 ש' שבא, '50 אלף הנשכחים; אשפה נגד אנשים', על המשמר, 10 ביוני 1955, עמ' 3; צ' מתתיהו, 'אור יהודה לקראת החורף החמישי', שם, 29 בנובמבר 1955, עמ' 2.

54 שבא (שם).

55 ד' סנה, מנהל אגף השיכון במשרד העבודה, אל ע' גוברין, יו"ר ועדת העבודה, 24 ביוני 1955, אה"מ, גל־9 / 54173; 'חצי מיליון טון אשפה תוססת...', זמנים, 4 באוגוסט 1955, עמ' 4; 'האשפה בגוש דן – דשן עשיר', הבוקר, 19 באוגוסט 1955, עמ' 7.

מוגדרות'; יש רופאים שפוטרים אותם בתרופה שגרתית, אך יש רופאים שקושרים את המחושים לריחות הקשים הנישאים מהמזבלה בחירייה. ראש העיר תל אביב חיים לבנון השיב על התלונות כי 'טרם הוכח שמישהו מת מזה', אך סופר שבנה לעצמו דירה נאה בהרצליה כדי להשתחרר מהמחנק בתל אביב, ושראש העיר רמת גן 'בורח' לעיתים קרובות לזיכרון יעקב, כדי לישון שם בלי לסבול מהריחות. 'אין להבין', כתב גפן, 'למה עיריית תל אביב אינה נוהגת כמו כל העיריות בעולם, שהקימו משרפות סגורות שבהן שורפים את כל האשפה מבלי שהריחות יתפשטו בסביבה'.[56]

חרף התלונות אישר הממונה על מחוז תל אביב את החוזה בין עיריית תל אביב – יפו לבין רשות הפיתוח להחכרת השטח לשם הקמת מכון לעיבוד אשפה, בדמי חכירה של 920 ל"י לשנה. מכון קטן וניסיוני לייצור קומפוסט הוקם בשנת 1956, ועל פי התוכנית הוא אמור היה להתרחב.[57] באביב 1958 אישרה העירייה את הארכת החוזה עם חברת 'דמן' – שבשנת 1956 קיבלה את הזכויות מחברת 'גרין' – בתנאי שעד אוגוסט באותה שנה תשיג החברה את האישורים לרכישת הציוד והמכונות, ובספטמבר אישרה לה הארכה נוספת. בדצמבר 1958 הודיעה 'דמן' כי קיבלה את האשראי לרכישת מכונות מהחברה ההולנדית להנדסה 'דור אוליבר'. בשטח חירייה פעלו בשנת 1958 חמש חברות שקיבלו זיכיונות לעיבוד הזבל האורגני הישן, ונאסר עליהן לטפל בזבל הטרי. ניצול הזבל כולו, כך הובטח, ייעשה רק עם הפעלת המפעל שיעבד את הזבל הטרי בשיטה אוטומטית, וכך תימנע הצטברות אשפה במגרש הפתוח.[58]

בשנים הבאות הוסיפו התלונות להגיע. בקיץ 1957 פנה ד"ר שלמה אטרקצ'י אל משרד הבריאות וטען כי תושבי האזור, בייחוד תושבי סאקיה וחירייה, 'מוכים במחלות [...] צובאים על דלתות המרפאות [...] אחד הגורמים הראשיים לתחלואה זו יש לזקוף בלי ספק על חשבון המזבלות בחיריה'. משרד הבריאות השיב כי הריחות אינם קשים. ד"ר מנחם ברונשטין, חבר הוועדה להיגיינה ציבורית שעל יד ההסתדרות הרפואית, חלק על טענת המשרד שהמזבלה תוכננה בטרם יושב המקום. לדבריו כבר בשנת 1949, לפני שהוכנו התוכניות להפוך את חירייה למזבלה, הודיעה מחלקת התברואה כי גרות שם חמישים-שישים משפחות, ובשנים 1950–1951 הוקמו שם המעברות. הוא סיפר כי לדברי מורי בית הספר הם שיחקו ובילו עם תלמידיהם בשטח שעליו הוקמה לימים המזבלה. בסתיו 1957

56 מ' גפן, 'המזבלה העירונית מרעילה אלפי תושבים בת"א', על המשמר, 6 ביוני 1955, עמ' 1–2.

57 'דשנים אורגניים' אל הנהלת העיריה, 31 בינואר 1963, אעת"א, 2/3/5.

58 ההסכם הראשון נחתם ב־30 ביוני 1952 בין עיריית תל אביב – יפו לבין חברת 'גרין', והוא הועבר ב־19 באפריל 1956 מחברת 'גרין' לחברת 'דמן', ושוב הועבר ב־23 בפברואר 1961 מחברת 'דמן' לחברת 'דשנים אורגניים'. ראו: חוזה חכירה בין רשות הפיתוח לעיריית תל אביב, 20 בנובמבר 1955, אאע"ד; חוזה חכירה 12395 בין רשות הפיתוח לעיריית תל אביב, 4 בינואר 1957, שם; הארכת החוזה לעבוד האשפה הטריה לזבל אורגני, 1 באפריל 1958, שם; מפעל לעבוד אשפה עירונית, 22 בספטמבר 1958, שם; 'דמן בע"מ' אל עיריית תל אביב, אישור על קבלת אשראי, 18 בדצמבר 1958, שם; אישור חכירת קרקע להקמת מפעל למיון ועבוד האשפה בחיריה, 22 במאי 1960, שם; תוספת להסכם מ־30 ביוני 1952 ותוספת הסכם מ־27 ביוני 1960, בין עיריית תל אביב ל'דשנים אורגניים, חברה בע"מ', יולי 1968, שם; 'המפעל לעבוד האשפה של תל־אביב־יפו יוקם תוך שנתיים', שערים, 27 במאי 1958, עמ' 3; נ' לביא, 'ענייני הריחות סביב תל־אביב', הארץ, 10 באוגוסט 1958, עמ' 2; 'נחתם ההסכם להקמת המפעל לעיבוד אשפת העיר תל־אביב' (אין תאריך), אעת"א, 5/4/2.

הוגשה לשר הבריאות עצומה חתומה על ידי 3,500 תושבים ובה קריאה להעביר את המזבלה בשל פגיעה חמורה בבריאות התושבים.[59]

המחלוקות על עניין נזקי המזבלה נמשכו. פרופ׳ ולטר שטראוס, מנהל המחלקה להיגיינה רפואית ולרפואה מונעת בבית הספר לרפואה של האוניברסיטה העברית, סבר כי שיטת כיסוי האשפה בזבל ישן משביעה רצון ואין סכנה לבריאות תושבי העיר.[60] לעומתו טענו אחרים כי לא רק הריחות מסוכנים לבריאות, אלא גם הגזים חסרי הריח הנפלטים מהזבל עלולים להזיק ואף לגרום למוות. כל הרופאים היו אחידים בדעתם שהעשן העולה מהמזבלה מגיע למרחקים גדולים, וקבעו כי המרחק הרצוי בין מגרש אשפה לאזור מגורים הוא 30 ק״מ.

באביב 1959 הגישו שלושים תושבים, מהמעברה ומלב תל אביב, תביעה משותפת לבית המשפט, במטרה לשים קץ לסירחון שעולה ממזבלות העיר. היה זה אחד מכְּתבי האישום הארוכים ביותר שהוגשו אי פעם נגד עיריות תל אביב, רמת גן וחולון, ותוארו בו בפירוט רב פגעי המזבלות. סבלם של תושבי המעברה היה הגדול ביותר, אך גם תושבי העיר התלוננו כי בשל הריחות הם אינם יכולים לישון, מתקשים להתרכז, וסובלים מסחרחורות, בחילות, מחנק, אובדן תיאבון ועייפות.[61]

אל בית המשפט באו כחמישים עדים, בהם שמונה רופאים. רופא אחד טען כי גזים וריחות הנישאים לאורך 12 הקילומטרים שבין חירייה לעיר אינם נבלמים על ידי הרים או מבנים, ועלולים לפגוע בבריאות. רופא אחר אישר כי בקרב תושבי קריית שלום, הסמוכה למזבלת ׳מקווה ישראל׳, רבים מקרי הברונכיטיס, נזלת כרונית, דלקות גרון, בחילות וכאבי ראש. קשות מכול היו עדויות תושבי המעברה, שסיפרו על משאיות זבל שמגיעות כל חמש דקות, על תנים ונחשים, על מקקים בתוך האוכל ועל שרפות שנמשכות ימים רבים, וכל אלה במרחק כ־100 מ׳ מבית ספר וגן ילדים.

ואולם עורך הדין של עיריית תל אביב הביא עשרות עדים, בהם פרופסורים לרפואה, זואולוגיה והיגיינה, שטענו כי השיטה הקיימת בחירייה משביעה רצון, וכי בביקורם שם התרשמו מהניקיון והסדר. הריחות, טענו, אינם גרועים יותר מאשר בכפר חקלאי, ואינם נישאים עד תל אביב. אחד העדים, כימאי בהכשרתו, קבע כי אשפה יבשה אינה מפיצה ריחות מעבר ל־20 מ׳, ושני מומחים ברפואה ציבורית קבעו כי אדים ועשן מאשפה אינם גורמים ברונכיטיס. התובעים דרשו להסתמך על התקדים בירושלים, ששם תלונת תושבים על מזבלה בתלפיות הובילה להפסקת השלכת הפסולת במקום ולהרחקת המזבלה.

59 ׳מכתבים למערכת׳, דבר, 6 ביוני 1957, עמ׳ 2; ׳מכתבים למערכת׳, שם, 23 ביוני 1957, עמ׳ 2; ׳תובעים העברת מזבלת חירייה׳, למרחב, 17 בנובמבר 1957, עמ׳ 4. ד״ר שלמה (סלמן) אטרקצ׳ היה רופא ילידי עיראק שבחר לגור במעברת סקיה הסמוכה למעברת חירייה, אף שרכש דירה בתל אביב. לשם מילוי תפקידו רכשה לו קופת החולים אופנוע, וכך הצליח להגיע ולטפל בתושבים ביישובים באזור. ראו: ב׳ מאירי, החיים באוהל: מהווי החיים במעברה, ירושלים 2018, עמ׳ 23–26.

60 שיטת כיסוי האשפה באדמה למניעת שרפות ומפגעי ריח הייתה נהוגה כבר במזבלת ׳מקווה ישראל׳. החומר האורגני בערמות האשפה התפרק באוויר הפתוח, תהליך שנמשך שנים ספורות, אך הדשן שהופק מהן היה באיכות ירודה. ראו: בלסלב (לעיל, הערה 8), עמ׳ 197.

61 י׳ סיני, ׳משפט על ריחות רעים׳, חרות, 29 במאי 1959, עמ׳ 6.

השופטת פסקה כי שיטת הכיסוי בחירייה מספקת, וקבעה כי על העירייה לפצות כמה מהתובעים על סבלם בעבר, אך דחתה את מרבית התביעות, ואף הטילה על התובעים לשלם את הוצאות המשפט. כל זה כאשר עיריית תל אביב העבירה לחירייה 400 טונות אשפה ביום, ועוד 100 טונות הועברו מדי יום מרמת גן, גבעתיים ובני ברק, באמצעות 170 משאיות, כך שכבר הצטברו שם קרוב למיליון וחצי טונות אשפה.[62]

שנה לאחר מכן, במאי 1960, שוב אושר ההסכם עם חברת 'דמן', ולפיו עתיד היה המכון לניצול אשפת תל אביב והסביבה לקום בתוך שנה וחצי על כ־100 דונם בסביבת מגרש האשפה העירוני. מפעל דומה כבר פעל בחיפה ועיבד 60 טונות אשפה ליום, כשליש מהאשפה היומית בחיפה. נוסף על כך הוקמה ועדה בין־משרדית שגיבשה תוכנית ארצית להפיכת אשפה לזבל אורגני בעל ערך חקלאי, ובצד תוכנית 'דמן' לטיפול בפסולת של תל אביב קידמה תוכניות של המועצה האזורית נעמן עבור עכו והקריות ושל המועצה האזורית גזר עבור רמלה, לוד ורחובות. באותו הזמן גם כובתה שרפה במזבלת חירייה, שנמשכה שמונה עשר יום, ושגרמה סבל רב לתושבי האזור.[63]

ב. הנוף על ציר הזמן

בד בבד עם תכנון המפעל והתחלת הקמתו, הלכה מעברת חירייה והצטמצמה, עד אשר נעלמה מהנוף. בקיץ 1956 נותרו בה 280 משפחות, ובהמשך – כ־100–120. התכתבויות משנת 1959 בעניין המעברה מעידות על תהליך חיסולה.[64] ואולם חיסול המעברה לא שם קץ לבעיות הקשורות בפסולת, ואלה המשיכו ללוות את האזור עוד עשרות בשנים וקיבעו את הדימוי של המקום כשטח הפקר. רק עם ההחלטה להפסיק את ההטמנה בחירייה בסוף שנות התשעים וההחלטה בתחילת שנות האלפיים לשקם את המקום ולהקים את פארק אריאל שרון, חלה תפנית בתולדות האזור.

ניתוח תצלומי אוויר של אזור חירייה לפני הקמת המדינה ואחרי הקמתה מלמד על השינויים הגדולים שחלו בנוף בפרק זמן קצר. לכפר אלח'יריה היו מאפיינים של כפר ערבי־פלסטיני מסורתי.[65] הוא שכן בצד ואדי מוצררה – שבקיץ היה יבש, ובחורפים הפך לעיתים לאפיק שיטפוני – אך הוא הוקם במרחק ממנו, כך שלא הוצף בחורף, ותושביו יכלו ליהנות מהקרקע הפורייה שבסביבתו. הנוף אופייני לכפר איכרים (פלאחים) בעלי קרקע שעיבדו את אדמתם בכוחות עצמם, תוך התארגנות

62 שם; י' סיני, 'אדם וזבל – זבל עדיף', חרות, 5 ביוני 1959, עמ' 6.

63 'מעבדים תוכנית־חומש לפתרון בעיית האשפה', על המשמר, 6 באפריל 1960, עמ' 5; 'אושר ההסכם על מכון לנצול אשפה', הארץ, 24 במאי 1960, עמ' 5.

64 על תהליך חיסול המעברה ראו: שומר הכשרות במעברה י' חנגלי אל הרב אורנשטיין, סגן מנהל משרד הדתות, 3 ביוני 1956, אה"מ, גל-17 / 6353; משרד הדתות אל המועצה הדתית רמת גן, 20 במאי 1959, אה"מ, גל-8 / 6340.

65 י' בן־ארצי, 'הנוף הכפרי המסורתי והחדש בארץ־ישראל ממעוף הציפור', ב"ז קדר וא' דנין (עורכים), חישה מרחוק: תצלומי־אוויר ודימותי לווינים ככלים במחקר הארץ, ירושלים תש"ס, עמ' 173.

חברתית וכלכלית מצומצמת והתאמה לסביבתם.

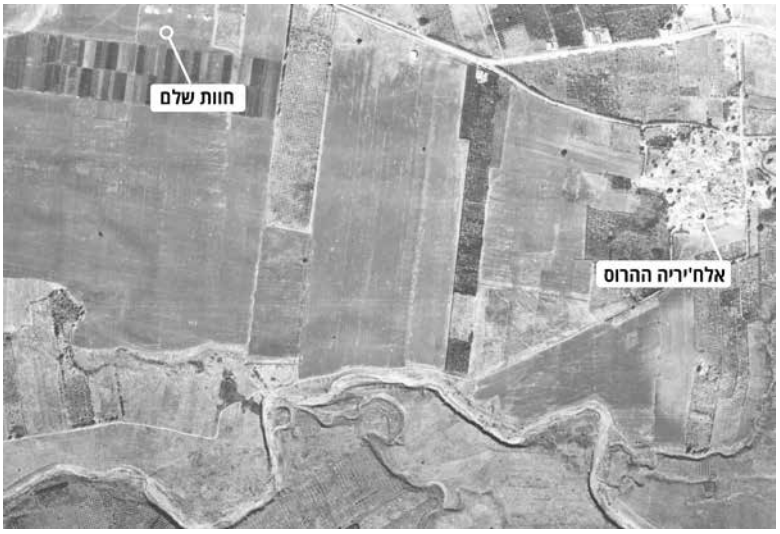
בתצלום אוויר שנעשה על ידי חיל האוויר הגרמני בשנת 1918 ניתן לראות כי הכפר היה סמוך לדרך הראשית שהובילה מכפר סלמה אל רמלה ולוד, וכי בדומה לכפרים אחרים באזור הנדון, היה צפוף ומכונס. סביב הכפר, ממזרח ומדרום, נראות חלקות חקלאיות ספורות, ובמרחק מה מקבצים של חלקות, חלקן במפגש הנחלים איילון (מוצררה) ושפירים (איור 6).

בתצלום אוויר משנת 1944 ניכר שהכפר גדל והחל להתפשט אל שולי האזור הבנוי שלו – בעיקר לצידי הדרכים שהובילו אליו וממנו – ושנוספו דרכים שחיברו אותו אל הכפרים הסמוכים ואל החלקות החקלאיות. בשולי הכפר נוספו חלקות, ונראה כי הקרקעות כולן עובדו, גם אם רובן בחקלאות אקסטנסיווית ורק במיעוטן הייתה השקיה. חלקות רבות נראות כפרדסים. חלוקת החלקות לגושים גדולים עם חלוקה משנית לרצועות צרות, אופיינית לכפרים הערביים־הפלסטיניים. בזכות כל אלה נראה אלח׳יריה, בדומה לכפרים אחרים באזור, משתלב בנוף שסביבו, נטמע בו וצומח בצידו ובהשפעתו (איור 7).

נקודת השבר של מלחמת 1948 ניכרת היטב בתצלום אוויר מסתיו 1949. רוב בתי הכפר הרוסים, והאדמות אינן מעובדות. החלקות במפגש הנחלים איילון ושפירים אינן נראות כלל, אך מערכת הדרכים, הפרדסים ועצים נוספים

איור 6 (מימין): אבן אבראק, 17 בינואר 1918, תצלום אוויר של טייסת 304 הבווירית
(ספריית יונס וסוראיה נזריאן, אוניברסיטת חיפה)

איור 7 (למטה): הכפר אלח׳יריה, תצלום אוויר, 10 בדצמבר 1944
(ספריית המפות, החוג לגיאוגרפיה, אוניברסיטת תל אביב)



איור 8 (למעלה): הכפר אלח'יריה ההרוס וחוות שלם, תצלום אוויר, 6 באוקטובר 1949

איור 9 (למטה): חירייה / כפר המסובים והמעברה, תצלום אוויר, 23 בנובמבר 1951

(המרכז למיפוי ישראל)

נותרו ברובם. ממערב לכפר נראים המבנים הראשונים של חוות שלם (׳הזרע׳), ובצידם חלקות מעובדות באופן שונה מהחקלאות שאפיינה את הכפר הערבי (איור 8).

תצלום אוויר מסתיו 1951 מעיד כי חלק מבתי הכפר שוקמו, והחלקות טופלו, למעט השטח שבין הנחלים. גם הדרכים שוקמו, ודרך גדולה, החוצה את הפרדסים, נסללה ממזרח לכפר לכיוון דרום. השינוי הבולט ביותר בנוף הוא המעברה הגדולה שהוקמה בצמוד לכפר ממערב לו, כך שגבולה הדרומי נושק לנחל איילון. בצד הצפוני־מזרחי של המעברה, הגובל בכפר, נראה מקבץ צפוף של אוהלים, שחלקם פורקו, ולידם בדונים מסודרים בשורות וכמה מבנים מלבניים ששימשו כנראה כמבני הציבור (בית הספר, גן הילדים, המרפאה), שירותים ומקלחות. דרך היקפית סובבת את המעברה, ושבילים קטנים נכנסים לתוכה (איור 9).

תצלום אוויר מקיץ 1956 מראה כי בתי הכפר התמעטו, והפרדסים סביבו נעקרו. מתחם האוהלים בצפון־מזרח המעברה נמחק, חלק מהמבנים הוסרו, הכביש ההיקפי הוארך ומקיף את כל המעברה, ושבילים חדשים חוצים אותה לאורכה ולרוחבה. ממערב למעברה נראים חמשת בתי המגורים של חוות שלם, מסודרים בחצי גורן, ומצפון להם מבני השירות של החווה. שטחי עיבוד נרחבים נושקים למעברה, וצומת דרכים גדול נוסף מצפון־מזרח לכפר (איור 10).

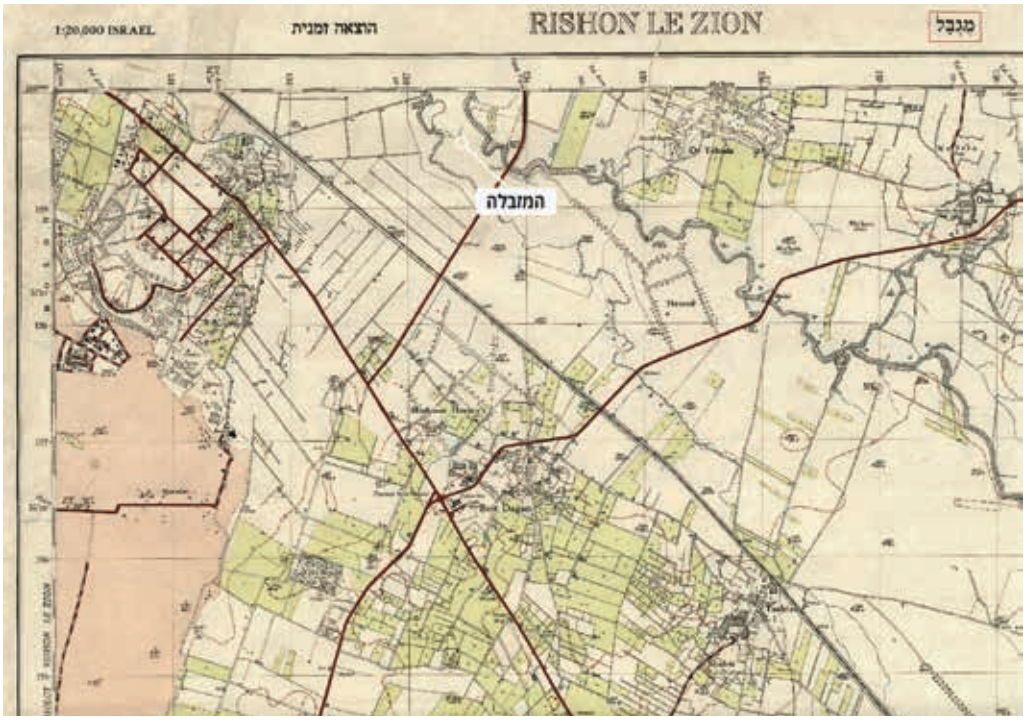
השינוי הדרמטי ביותר בנוף, כפי שעולה בבירור מתצלום זה, התרחש בשטח המפגש שבין שני הנחלים: על פני מה שהיה המישור התרוממו גבעות, ביניהן עברו שלושה שבילים, והם התחברו לדרך גישה ראשית, שלאורכה ניטעה שדרת עצים, ושבקצהָ האחד הוקמו מבנים – כך נראתה מהאוויר מזבלה בת ארבע שנים.

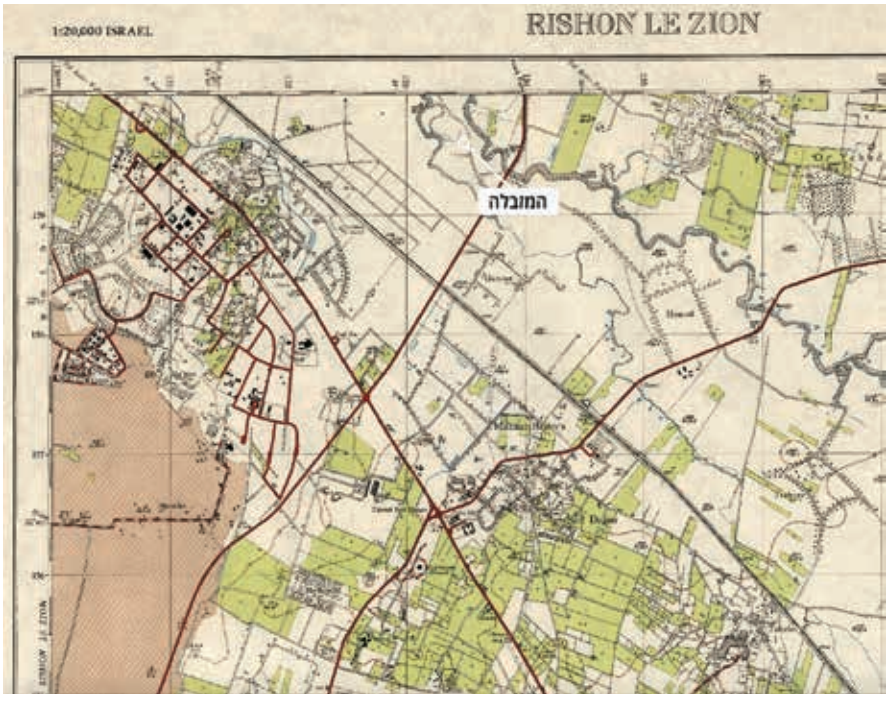
איור 10: חירייה / כפר המסובים, המעברה, חוות שלם והמזבלה, תצלום אוויר, 3 באוגוסט 1956
(המרכז למיפוי ישראל)

התיעוד המצולם – כלי מרכזי למיפוי וניתוח של שינויים בנוף – חלקי וחסר, ומפות בנות הזמן אינן מוסיפות מידע. במפה מנדטורית משנת 1929 עם תיקונים מאוגוסט 1953 המזבלה החדשה ודרכי הגישה אליה אינן נראות; ייתכן שהדרכים טרם נסללו, וייתכן שטרם סומנו. במפה מתוקנת משנת 1956–1957 כבר הופיעו הדרכים ומבני השירות (איורים 11, 12).

נראה כי בשלב זה השתלטו על השטח שלוש הישויות החדשות במרחב חירייה – החווה, המעברה והמזבלה – ונוכחותן בלטה הרבה יותר מזו של הכפר הערבי ההרוס: חוות שלם הקימה בתי קבע ועיבדה חלקות חקלאיות שהשתרעו בין הכביש בצפון, למעברה במזרח ולנחל איילון בדרום; המעברה חלשה על השטח שבין הכביש לנחל ובין הכפר לחווה; ואילו המזבלה התפרסה על הקרקע שבין נחל איילון לנחל שפירים.

תצלומים מהשנים 1958 ו־1959 משקפים את סופה של המעברה ואת צמיחתה של המזבלה. הבדונים שניצבו בחלקה הדרומי של המעברה, הקרוב לנחל איילון, נעלמו, והגבעות באזור המזבלה המשיכו





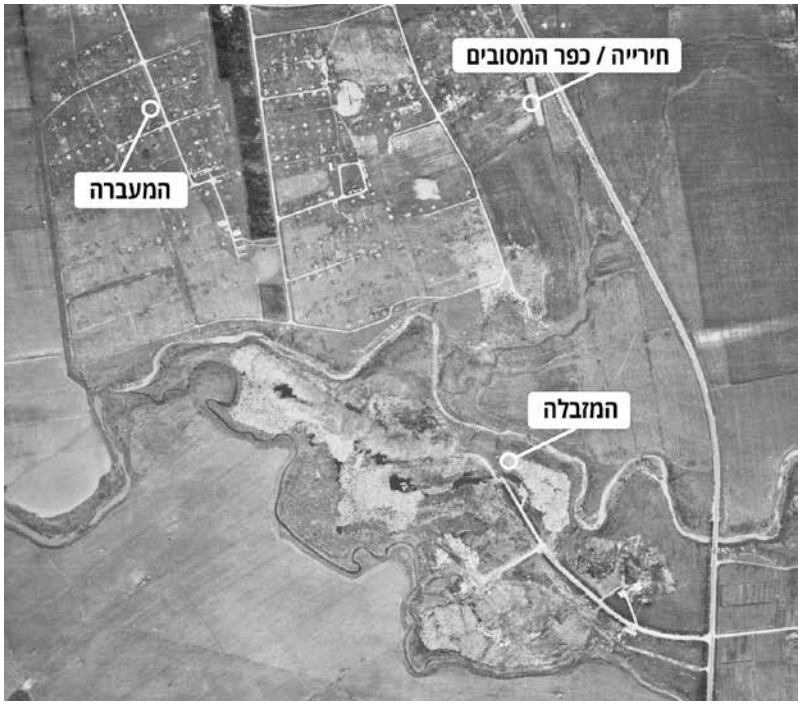
איור 11 (למעלה):
מפה מנדטורית
משנת 1929
עם תיקונים
מאוגוסט 1953

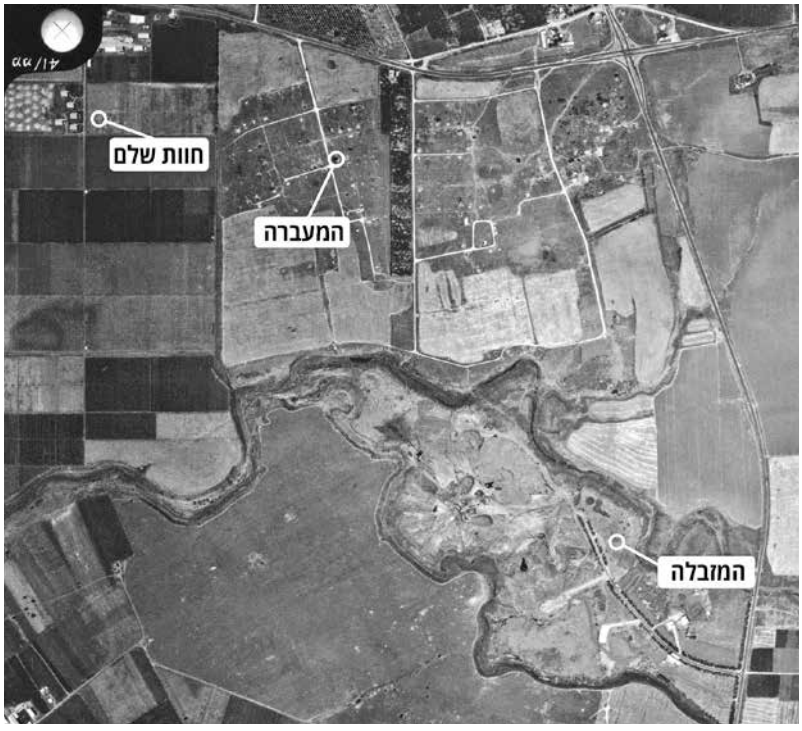
איור 12 (מימין):
מפה מנדטורית
משנת 1929
עם תיקונים
משנת 1956–1957

(ספריית המפות,
החוג לגיאוגרפיה,
אוניברסיטת תל אביב)

לצמוח ולגבוה (איור 13); רק בתים ספורים בכפר נותרו על תילם, וכמעט כל מבני המעברה פורקו. בשטח המזבלה נוספו שבילים ועצים, ובראשי הגבעות נפערו בורות (איור 14). בתצלום משנת 1963 כבר אין רואים ולו בית אחד (בתים אחדים נותרו מעברם השני של הכבישים באזור); מבני המעברה אינם, ורק השבילים ביניהם עדיין ניכרים בשטח. בשטח המזבלה הוקם מבנה גדול, ובצידו תילים מוארכים שבמרכזם מכשיר צר המשטח בעיגול את הפסולת האורגנית לשם הפיכתה לקומפוסט (איור 15).

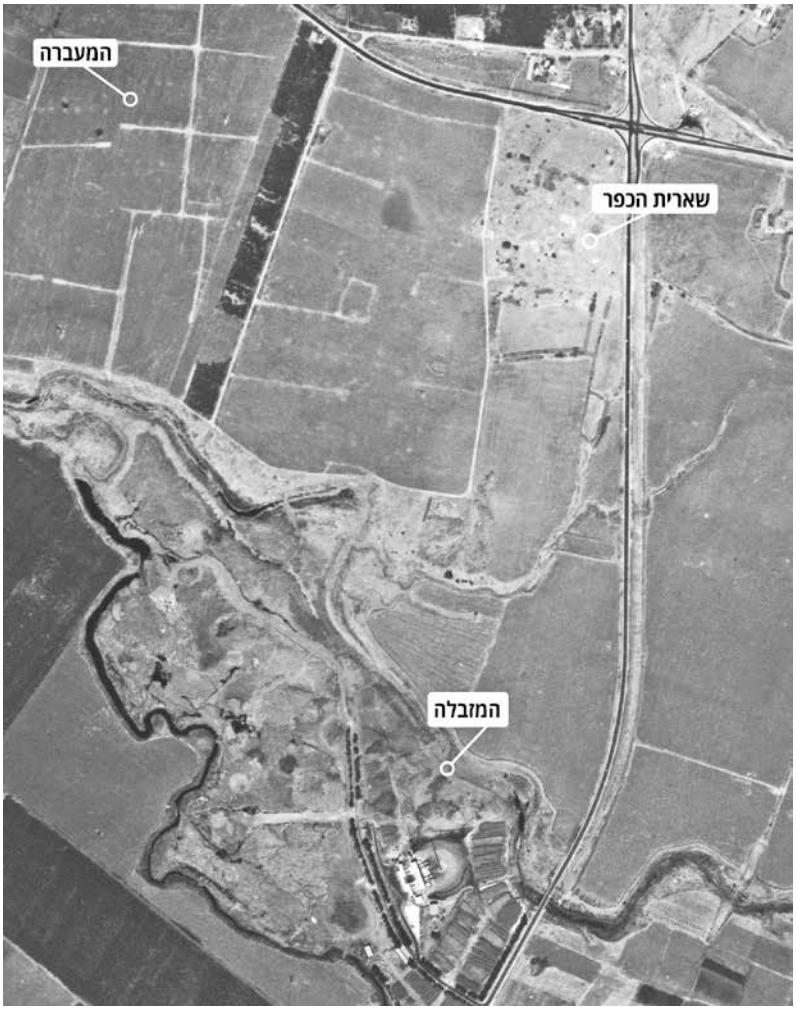
תצלומי האוויר מעידים על מאבק הכוחות שהתחולל באזור חירייה בשנות החמישים. עד 1948 ומעט אחריה שלט הכפר בשטח, אך חלקו היה קטן והוא נטמע בשטחים הטבעיים והחקלאיים שסביבו. בשנת 1949 נכנס לתמונה גורם חדש, חוות שלם ('הזרע'), ואף שהמבנים שהקימה בשטח היו קטנים ומעטים, היא שינתה





איור 13 (למעלה): חירייה / כפר המסובים, המעברה והמזבלה, תצלום אוויר, 9 בינואר 1958
(המרכז למיפוי ישראל)

איור 14 (למטה): המזבלה, המעברה וחוות שלם, תצלום אוויר, מאי 1959
(ספריית המפות, החוג לגיאוגרפיה, אוניברסיטת תל אביב)



איור 15: המזבלה, המעברה ושארית הכפר, תצלום אוויר, 1963
(ספריית המפות, החוג לגיאוגרפיה, אוניברסיטת תל אביב)

בהדרגה את אופיו החקלאי של האזור. החווה המשיכה לפעול ולהחזיק בקרקע עד תחילת שנות האלפיים, אך דייריה הקבועים עזבו באמצע שנות השישים של המאה העשרים, ומי שהחליפו אותם שהו בה לתקופות קצרות. עם השנים ננטשו והוזנחו מבני החווה.[66] בשנת 1951 נכנס גורם נוסף לזירה, המעברה. היא הוקמה באזור ההצפה של נחל איילון מתוך התעלמות מתנאי המקום, ועל כן הוצפו בתי התושבים כמעט מדי חורף. המעברה, שהייתה גורם משמעותי בנוף האזור במשך כמה שנים, נמוגה בהדרגה עד שנעלמה מהשטח בלי להותיר זכר.

בתחילת 1953 שוב נכנס גורם חדש לזירה – המזבלה – והיא שינתה מייד את אופיו של השטח, הפכה לשחקן המרכזי בדרמה הנופית, וחרצה את גורלם של יתר השחקנים. עם השנים גדלה והתעצמה המזבלה, לרוחב ולגובה, והשפעתה השתרעה הרבה מעבר לגבולותיה הפיזיים, לנראותה החזותית ולריח שעלה ממנה. מסוף שנות החמישים חלשה המזבלה על המרחב ופגעה בגורמים הטבעיים – הקרקע, הנחל ובתי הגידול והחיים בהם ובצידם. אף שבאופן היסטורי שימש חלק מהשטח למגורים, הקמת המזבלה חרצה את גורלו והפכה אותו לריק מיישוב; גם כשתושבי הכפר והמעברה חזרו והביעו רצון להפוך את ביתם ליישוב קבע, קבעו גורמי התכנון שרק המזבלה תקבל מעמד קבע (איורים 10, 13, 14, 15).[67]

66 מבוסס על ראיונות עם דיירות חוות שלם עדנה קפלושניק, ב־7 בנובמבר 2019, ושרה בש, ב־10 באוקטובר 2019. חברת 'הזרע' הפכה בהמשך לגורם מרכזי בתולדות המקום, אך סוגיה זו חורגת ממאמר זה.

67 באוספי תצלומים לא נמצאו עד כה תצלומים של האזור הנדון מן השנים 1951–1956, שבהן החלה עיריית תל אביב להשליך פסולת בחירייה. היעדרם של תצלומי אוויר מהשנים הללו מעיד על חשיבות השימוש במגוון מקורות ארכיוניים והיסטוריים לצורך בירור סוגיות הקשורות בנוף – במקרה זה מקורות כתובים ממלאים את החסר ומתעדים אירועים שהתחוללו בשטח, ושלחלקם אין עדות חזותית.

ג. נוף כעדות: המזבלה כמפגע סביבתי וחברתי

מבט על הנוף מלמד על התנאים הפיזיים, על כוחות הטבע ועל הפעילות האנושית בו, ומרמז על הערכים הפוליטיים, החברתיים והתרבותיים שלאורם נעשתה פעילות זו. ממעוף הציפור וממרחק הזמן ניתן לראות את אלה במלוא יופיים אך גם במלוא כיעורם. התצלומים והמסמכים הכתובים בעניין חירייה מעידים על השתלטות מהירה על השטח, שנתפס בעיני בעליו החדשים כמרחב ריק, והם משקפים את הערכים, המניעים והאג'נדות של הגורמים שהשתלטו עליו – עיריית תל אביב בחסות מוסדות התכנון וזרועות ההתיישבות במדינת ישראל ובראשן הסוכנות היהודית ומשרד החקלאות. אלה קידמו את החזון של המדינה הצעירה ואת הערכים שהובילה בחירייה – דיור מהיר, חקלאות ופתרון לבעיית הפסולת העירונית. יישומם של ערכים אלה בשטח הותיר חותם בנוף, והוא משקף את ממדי הפעילות ואת סדרי העדיפויות של מבצעיה.[68]

האירועים שהתרחשו במרחב חירייה בעשור הראשון של מדינת ישראל מעידים על יד מכוונת ועל סדר יום: חלוקת נתחים מהשטח לעיריות השכנות ושמירת רובו כשטח גלילי שאינו שייך לשום רשות מוניציפלית, הסירוב להקמת צריפונים לדרי המעברה וסגירת מקומות עבודה סמוכים, וההתעלמות מאין־ספור תלונות על המזבלה – כל אלה מעידים על הכוונה להשאיר במקום את המזבלה ולהוציא ממנו את האנשים. תושבי הכפר והמעברה מצאו את ביתם במקומות אחרים, ואילו המזבלה המשיכה להסב נזק לכל הגרים בשכנותה, במרחק מאות מטרים ואף כמה קילומטרים.

מזבלות ומערכים לטיפול בפסולת הם רשתות פיזיות שמעבירות חומרים, אנשים ורעיונות במרחב ומשמשות בסיס לכלכלה ולתפקוד החברתי. רובנו מאמינים כי תשתיות וטכנולוגיה יכולות להבטיח קדמה ופיתוח. מנגד היעדר תשתית או תשתית כושלת משמרים נחשלות אזרחית.[69] לפיכך נכון לבחון תשתית לא רק בהיבט הטכני־תפקודי שלה, אלא גם מבחינת תפקודה הפוליטי, הכלכלי והחברתי.

פעמים רבות יש לתשתיות משמעות סמלית, המעידה על שליטה בטבע ועל הטלת משמעת על האזרחים, ונראותן או אי נראותן מעידה על כוחה של המדינה.[70] תשתיות פסולת, כמו תשתיות תברואה אחרות, נבחנות דווקא ביכולתן להיות סמויות מהעין, וככל שלא יראו אותן ולא יריחו אותן, כך הצלחתן גדולה יותר. המקרה של חירייה מלמד כי נראות היא יחסית, וכי מה שרחוק מהעין (ומהאף) של אחד, עלול לגרום סבל לאחר.

יתרה מזאת, הבחירה לשפוך את אשפת העיר הצומחת באתר נטוש בשולי ערים, בצד כפר ערבי ומעברה ובקרבת השכונות העניות של דרום תל אביב – יפו, הביאה לפגיעה מתמשכת באוכלוסיות

68 לניתוח המעברות כתופעה מודרניסטית לקליטת עלייה שתפקדה כאמצעי תכנון ומכשיר שליטה, תוך החלשת התושבים ומחיקת זהותם ראו: R. Kozlovsky, 'Temporal States of Architecture: Mass Immigration and Provisional Housing in Israel', S. Isenstadt & K. Rizvi (eds.), *Modernism and the Middle East: Architecture and Politics in the Twentieth Century*, Seattle, WA 2008, pp. 139–160

69 על ההיבטים הפוליטיים והחברתיים של התשתיות ראו למשל: לרקין (לעיל, הערה 6); S.J. Collier, *Post-Soviet Social: Neoliberalism, Social Modernity, Biopolitics*, Princeton, NJ 2011

70 על נראות ותשתיות ראו: A. Carse, 'Nature as Infrastructure: Making and Managing the Panama Canal Watershed', *Social Studies of Science*, 42, 4 (2012), pp. 539–563; R. Mrázek, *Engineers of Happy Land: Technology and Nationalism in a Colony*, III, Princeton, NJ 2018

חלשות ופגיעות. בדרום תל אביב היו כבר משנות העשרים של המאה הקודמת אוכלוסיות חלשות ותשתיות ירודות, והוא נתפס כמקום מסוכן; חלומותיה המודרניסטיים של העיר העברית כוונו להתרחבות צפונה. האזורים הדרומיים התאפיינו בחוסר תכנון ופיתוח ובתנאים סביבתיים ירודים, ונלוותה אליהם תחושת קיפוח. במסגרת הרחבת שטחה של תל אביב בעקבות מלחמת 1948 והקמת המדינה צורפו אליה יפו ושכונות בדרום העיר ומזרחה, ובאזורים אלה יושבו רוב העולים שבאו בתחילת שנות החמישים. גם הכפרים הערביים בסביבתה של תל אביב נותרו אזורי עוני, וחיו בהם מהגרים. הפער בין מרכז העיר לשוליה לא היה רק תכנוני־תשתיתי אלא גם חברתי. כבר בשנות החמישים נטען כנגד העירייה שהיא מזניחה את שכונות הדרום, טענות שביטאו את תחושתם של תושבי האזור שהם בנים חורגים של תל אביב.[71] מיקומה של המזבלה דווקא ליד אזורים אלה הפך את חירייה למקרה מובהק של אי צדק סביבתי.[72]

בשנותיה הראשונות הסבה המזבלה סבל בעיקר לשכניה, אך גם לאחר חיסול המעברה בסוף שנות החמישים נותרה המזבלה במקומה, והר הזבל הוסיף לצמוח עד שהתנשא לגובה 60 מ'. ככל שהתבסס וחלש על שטח גדול יותר, וככל שמראהו ניבט ממרחקים גדולים יותר, כך התעבו הגבולות הסימבוליים שהוא שרטט בין מי ששוכנים בצידו ונפגעים ממנו לבין מי שחומקים ממעגלי השפעתו.[73] לא רק חומרים טובים הפכו ממשאב לפסולת ולמטרד, אלא גם בני אדם הפכו למיותרים ולמי שיש להעלימם הרחק ככל האפשר מן העין ומן הסדר החברתי־הפוליטי. באמצעות המזבלה הגדירה החברה מה ומי נמצאים במרכז, ומה ומי נמצא בשוליים; כך נוצרה פריפריה בלב המדינה.[74]

פסולת, כפי שטען הסוציולוג זיגמונט באומן, היא תוצר של המודרניות, ומִפני האשפה הם שמאשררים מדי יום את הגבול שבין ניקיון ללכלוך, בין רצוי ללא־רצוי, בין חדש לישן ובין נורמלי

71 י' שביט וג' ביגר, ההיסטוריה של תל־אביב, ג: עיר מתחדשת (1952–1973), תל אביב תשע"ג, עמ' 18; גולן, שינוי מרחבי (לעיל, הערה 16), עמ' 111–112, 132; מרום (לעיל, הערה 16), עמ' 148, 226–227. בתחילת שנת 1949 הכינה עיריית תל אביב דו"ח על המצב בשכונות הספר, וכל שתים עשרה השכונות שהוזכרו בו סבלו מניתוק מהמרכז, אך מצבן של שכונות דרום־מזרח העיר היה החמור ביותר; וביניהן בלטו לרעה במיוחד שכונות התקווה, עזרא, סלמה והמעברות שלידה, שסבלו מתברואה ירודה, היעדר תשתיות (חשמל, תאורה, כבישים) וניתוק מתחבורה ציבורית. ראו: מרום (שם), עמ' 228. רוטברד טען כי היעדרותן של שכונות דרום תל אביב ודרום־מזרח העיר מסיפורה של העיר הלבנה באה לידי ביטוי גם בסדרי העדיפות העירוניים: אזורים אלה לא רק הוזנחו בשיטתיות אלא דודרו בכוונה תחילה, וכל המטרדים של המטרופולין פונו אליהם. ראו: ש' רוטברד, עיר לבנה, עיר שחורה, תל אביב תשס"ה, עמ' 121.

72 צדק סביבתי הוא יישום של צדק חברתי בנושאים סביבתיים, והוא מצביע על חלוקה לא שוויונית של מפגעים סביבתיים בין קבוצות אוכלוסייה שונות, כך שקבוצות חלשות נחשפות לזיהומים סביבתיים ברמות גבוהות יותר מאשר יתר האוכלוסייה. מחקרים שנערכו בארצות־הברית הראו קשר ברור בין מיקום של מזבלות ומטמנות לבין מקומות מגורים של אוכלוסיות חלשות. ראו למשל: R.D. Bullard, 'Solid Waste Sites and the Black Houston Community', *Sociological Inquiry*, 53, 2–3 (1983), pp. 273–288; C. Lee, *Toxic Waste and Race in the United States*, Oxfordshire 2019, pp. 10–27. עוד על צדק סביבתי ומיקום מוקדי זיהום בדרום תל אביב ראו: רוטברד (שם); י' רוזן־צבי, 'של מי הפסולת הזו לעזאזל?! סילוק פסולת וצדק סביבתי בישראל', מחקרי משפט, כג (תשס"ז), עמ' 487–558, ושם הפניות לספרות נוספת.

73 פ' בורדייה, 'השוק הלשוני', הנ"ל, שאלות בסוציולוגיה, תרגם א' להב, תל אביב 2005, עמ' 121–134; P. Bourdieu, *La distinction: Critique sociale du jugement*, Paris 1979, pp. 204–215

74 אפרת טען כי רוב השיכונים של בני עדות המזרח נבנו בשכונות שקמו בסמיכות לערים ועיירות ערביות או על אדמה ערבית לשעבר. הדבר יצר חפיפה בין גבול חיצוני־לאומי לגבול פנימי־עדתי־חברתי. ראו: אפרת (לעיל, הערה 9), עמ' 242. עוד בעניין זה ראו: א' יפתחאל, 'אי שוויון זה עניין של גיאוגרפיה', פנים: כתב עת לתרבות, חברה וחינוך, 4 (1998), עמ' 32–42.

ללא־נורמלי.[75] בעידן המודרני תהליכים דומים לאלו שהתרחשו בחירייה הביאו להשתלטות על שטחים שנתפסו כריקים או כאלה שיכולים לקלוט את שיירי הפעילות של העולם המודרני. בתהליכים אלה הועברה הפסולת מהצד החזק – מבחינה כלכלית, פוליטית וחברתית – אל הצד החלש, אל אזורים שאוכלוסייתם לא יכלה לדאוג לזכויותיה. תפיסה זו, שמובילים חוקרי קולוניאליזם של אשפה (Waste Colonialism), מאפשרת לראות בחירייה מקרה שבו הכוחות המדיניים החדשים חמדו את משאב הקרקע, ומרגע שסימנו אותו, הם עיקרו את משמעויותיו הקודמות ונתנו לו מאפיינים חדשים – משֶטח הצפה ושדות חקלאיים הוא הפך למזבלה עירונית ולמקום שמבדיל בין חזקים לבין חלשים, בין כאן לבין שם.[76]

תצלומי אוויר מרחבי העולם ממאה השנים האחרונות מעידים כי הנוף נשלט יותר ויותר על ידי מיזמי תשתית – סכרים, רשתות חשמל, כבישים ועוד. אלה מיזמים טכנולוגיים לתועלת התושבים, העיר והמדינה. אך כאשר ערכים מודרניסטיים ופתרונות המושתתים על סדר וכללים ברורים הופכים כאוטיים, ומה שנעשה במגמת פיתוח הופך למפגע סביבתי שיצא משליטה, נעשית התשתית לגורם מכריע ביצירתו של נוף מופר ומפגע אנושי.[77]

סיכום

הנוף הוא עדות היסטורית לתהליכים שהתרחשו במקום אחד לאורך זמן. בסיפור של חירייה בעשור הראשון למדינת ישראל, כפי שהוא עולה ממסמכים ותצלומים, יש אורות וצללים, הצלחות וכישלונות. מחד גיסא כיבוש השטח הנטוש והניסיון להחיותו על ידי הקמת המעברה, פיתוח החקלאות וכינון המזבלה, באו לתת מענה על הגידול באוכלוסייה ועל צורך במזון ובדיור וכן בטיפול בפסולת העירונית. מאידך גיסא חלק ממפעלות אלה, ובראשן המזבלה, נחלו כישלון. מעברת חירייה – שלא כמעברות אחרות – לא הפכה ליישוב קבע, אך היא נותרה על הקרקע שנים רבות, ודיירים סבלו מתנאים ירודים מאוד.[78]

בעיית הפסולת של תל אביב הייתה קיימת עוד בטרם הוקמה מדינת ישראל, והפיכתה של חירייה למזבלה מרכזית התאפשרה בשל השטחים הרחבים שקיבלה המדינה הצעירה. שטחים אלו עברו שינוי מהיר וגורף מבחינה חברתית, מרחבית ונופית, תוך כדי מחלוקות ומאבקים בין רשויות

75 Z. Bauman, *Wasted Lives: Modernity and its Outcasts*, Cambridge 2004

76 עוד על קולוניאליזם של אשפה ראו: שם; M. Liboiron, 'Waste Colonialism', *Discard Studies*, 11 January 2018 (https://discardstudies.com/2018/11/01/waste-colonialism/)

77 תהליכים מסוג זה מאפיינים את העידן שאחרי מלחמת העולם השנייה, שבו קדמה התשתית לנוף, והיבטים של ריכוזיות וטכנוקרטיה דחקו הצידה היבטים אקולוגיים וחברתיים. ראו: P. Bélanger, 'Landscape as Infrastructure', *Landscape Journal*, 28, 1 (2009), pp. 79–95

78 חלק מהמעברות הוקמו מתוך כוונה להופכן לערים – כמו חלסה, שהפכה לקריית שמונה, והר טוב, שהפכה לבית שמש – וחלקן הפכו לשכונות בפרוורי ערים. לעומתן מעברות אחרות – בהן בצת, שהפכה לשלומי – אמורות היו להתחסל אך נותרו במעמד ארעי ועם השנים הפכו לעיירות. מעברות נוספות – בהן צמח, זרעין, נוריס, נעמן, עין שמר, מחנה ישראל, כדורי וכאמור גם חירייה – נמחקו כליל מהמפה. ראו: פלזנשטיין ושחר (לעיל, הערה 40), עמ׳ 95; אפרת (לעיל, הערה 9), עמ׳ 521.

השלטון, יישובים ותושבים. מיקום המזבלה בחירייה אומנם הרחיק במקצת את המטרד של מזבלת 'מקווה ישראל', אך לא שינה באופן מהותי את דרכי הטיפול בפסולת. מפעל הקומפוסט במקום היה אמור לפתור את בעיית הפסולת, לייצר דשן לחקלאות, ולהפוך ליהלום שבכתר המודרניות והיעילות הכלכלית באמצעות טכנולוגיה, ובכך לממש את החלום הציוני שבמרכזו החקלאות. חלום זה אמור היה ליצור מנגנון יעיל להרחקת הלכלוך מהעיר ולשמירה על החברה המודרנית. אך הדחיות החוזרות ונשנות של פתיחת המפעל והכישלונות שליוו את הפעלתו הפכו את הקערה על פיה, כך שחירייה הפכה לסמל הכישלון בטיפול בפסולת ולדוגמה בולטת של תשתית שכשלה. אותו גורם מורחק חרג מהמקום שהוקצה לו ושב על עקבותיו, דרך האוויר, חזרה אל ליבה של העיר. במקום פתרון מתקדם לטיפול תברואתי בפסולת נוצר מפגע רחב היקף, לא נשלט, שפצע את הנוף ושלח זרועות מזהמות לגובה, לרוחב ולעומק האדמה.

הסיפור של חירייה מתבהר מתוך הצלבה של מסמכים וקטעי עיתונות, תצלומי אוויר וראיונות. צירופם יחד מראה כיצד במחצית הראשונה של המאה העשרים השתנה בהדרגה הנוף של האזור – תחילה בקצב איטי, כמעט ללא התערבות אנושית, ובהמשך מתוך האצה של פעילות חקלאית, שנשענה על שפע המים והקרקע הפורייה.[79] לעומת זאת הפסיפס הנופי שנוצר מאז תחילת שנות החמישים התעלם מהתנאים הטבעיים באזור ורמס את חלקיו האורגניים. סיפור התהוותו של הר הזבל חירייה הוא פרק מרכזי בהיסטוריה של הטיפול בפסולת בישראל, על צדדיו התשתיתיים והסביבתיים ועל ההשלכות האנושיות והאקולוגיות שהיו ועדיין יש לו. כמו שתשתיות מים או תחבורה משנות את הנוף, כך תשתית כושלת משנה את המרחב ועימו את המורשת הנופית־תרבותית. הנוף החקלאי הופר כמעט באחת, ועד מהרה הפך לשטח הפקר שזימן פעילות שוליים ולאזור מגורים של חברה מוחלשת. בתוך הנוף שהופר נמחקה המורשת האנושית של תושבי הכפר הערבים, של היהודים שהתיישבו בבתיהם ושל דרי המעברה שחיו בצידם, ואיתה נמחקו גם מרקמי חיים עדינים שנוצרו לאורך עידנים, והאופייניים לאזורי פֶּשֶׁט הצפה של נחל עונתי ולאדמות חרסית, חמרה, חול וכורכר. ההפרה הנופית בחירייה היא סימן להפרה אקולוגית, חברתית ותרבותית, והיא בוטה עד כדי כך שאתר הפסולת שצמח במקום הפך סמל לתהליכים אלה. סיפור זה יכול לשמש צוהר להצלחות הגדולות של המדינה הצעירה אך גם לכישלונותיה, והוא מציג תפיסות ותהליכים בעלי משמעויות והשלכות חברתיות, תרבותיות ואקולוגיות.[80] חירייה היא דימוי, סמל וייצוג של כל אלה יחד.

79 על השינויים בגיאוגרפיה של האזור ראו: R. Kark & L. Shay, 'Summary of a Geographical and Historical Survey of The Ayalon Park Area, 1800–1948: An Internal Research for Ayalon Park', 2001. על פי אקולוג הנוף פורמן הנוף הוא פסיפס המורכב ממערכות אקולוגיות מקומיות שחוזרות ונשנות באופן דומה על פני קילומטרים. זהו פסיפס שנבנה מהטופוגרפיה, תנאי השמש, מקורות המים וסוגי האדמה. ראו: R.T.T. Forman, '"Foundations", Land Mosaics: The Ecology of Landscapes and Regions', F.O. Ndubisi (ed.), *The Ecological Design and Planning Reader*, Washington, DC 2014, p. 222

80 על אג'נדות פוליטיות המוטמעות בנוף ראו: D.E. Cosgrove & S. Daniels (eds.), *The Iconography of Landscape: Essays on the Symbolic Representation, Design, and Use of Past Environments*, Cambridge 1988; D. Mitchell, 'Cultural Landscapes: The Dialectical Landscape: Recent Landscape Research in Human Geography', *Progress in Human Geography*, 26, 3 (2002), pp. 381–389

תקציר

מחקר זה עוסק בחירייה (הר הפסולת והאזור שסביבו) כמרחב פיזי וכסמל תרבותי. המחקר עוקב אחר השינויים שעבר המקום במאה השנים האחרונות, ומתמקד בשתי תפניות/דרמות נופיות שהתחוללו בו, דרמות שיצרו גלי הדף והשפעות לטווח רחוק ואשר משקפות תפישות תרבותיות ואג'נדות פוליטיות. הדרמה הראשונה התחוללה במקום ב-1948 ובשנים העוקבות, כאשר אל-ח'ירייה, שהיה כפר ערבי טיפוסי למישור החוף, נחרב במלחמה ותושביו גורשו. תחילה יושבו בתי הכפר בעולים חדשים ולצידו הוקמה מעברה גדולה, אך תוך שנים ספורות החלה לפעול שם המזבלה של תל אביב, ובכך נחתם גורל האיזור לעשרות שנים קדימה. המזבלה שינתה אותו ללא הכר, הפכה אותו למוזנח, מזוהם ומזהם, ופגעה בטבע, בנוף, ובאדם. הדרמה השנייה התחוללה כחמישה עשורים מאוחר יותר, כאשר הוחלט לסגור את מזבלת חירייה, לשקם את ההר ולהפוך את האזור כולו – כ-8,500 דונם - לפארק טבע מטרופוליני (הוא פארק אריאל שרון), מהלך שהניע הבראה של אזור חולה ופגוע, וחולל החלמה חברתית, סביבתית ותשתיתית.

לב המחקר כולל שלושה פרקים, שכל אחד מהם מייצג מאמר שפורסם או בשלבי קבלה לפרסום (לאחר הערות הקוראים). שלושת המאמרים עוסקים באותו מקום גיאוגרפי ובאותו מקום סימבולי. סדר הופעתם כרונולוגי, ושלושתם נוגעים בהיבטים רחבים שמעבר לאתר הגיאוגרפי עצמו, בדגשים שונים של מחקר הנוף: היסטורי, תרבותי ותשתיתי. המאמרים מובחנים זה מזה אך גם משלימים זה את זה, ובמרכז כל אחד מהם עומדת טענה בסיסית שונה. צירופם יחד מלמד על הדרך בה מקום שהיה במשך עשרות שנים סמל ההזנחה והזיהום בישראל הפך מופת של שיקום והתחדשות סביבתית, על רקע של שיח תכנוני חדש הקורא לשמירה על שטחים פתוחים בלב ערים מצטופפות. את שלושת הפרקים מקדים מבוא המציג את מטרות המחקר, וכולל סקר ספרות, תקציר המאמרים, שיטות מחקר ומתודולוגיה, סקר ארכיונים ומקורות ודיון מקיף בתוצרי המחקר ובהשלכותיו.

במאמר הראשון "Place and Displacement: Historical Geographies of Israel's Largest Landfill." נטען כי הקמת תשתית הפסולת בחירייה בתחילת שנות החמישים של המאה הקודמת יצרה תשתית להזנחה מתמשכת של האזור, פגעה בנוף ובסביבה והפכה אותם לבלתי ראויים לחיי אדם לשנים רבות. המאמר מנתח את האירועים שהתחוללו במרחב חירייה בעשור הראשון לאחר הקמת מדינת ישראל, ובוחן את תפקיד המרחב ביצירת כוח פוליטי, כפי שעולה מהמקרה של הרס הנוף במרכז הארץ. התשתית הכושלת לטיפול בפסולת הרסה את המרקם הנופי העדין באזור, ומחקה מורשת אנושית מרובדת, ואת הטבע האופייני לאזור. בכך נחתם גורלו של האזור כשטח הפקר, המופקר לפעילויות שוליים ולזיהומים מסוגים שונים. המאמר חושף את השינויים המהירים שהתרחשו בתחילת שנות החמישים באזור חירייה, וכיצד ההתעקשות על פתרון טכנולוגי לטיפול בפסולת, כזה שגם ספוג באידיאולוגיה ציונית המעודדת יצירת דשן לחקלאות וגם מנסה לקדם שגשוג כלכלי, הביא במהרה ליצירת אתר ידוע לשמצה, סמל למפגעים סביבתיים, תשתיתיים, חברתיים ובריאותיים.

המאמר השני "The Trash has Gone – The Trash Mountain Remains: A New Look at the International Design Competition for the Rehabilitation of Hiriya Landfill in Israel." *Landscape Research*, 48 (3). שמסמנת מתמקד בתחרות הבינלאומית לעיצוב ושיקום ההר שהתקיימה בשנת 2004, רגע נדיר שבין החורבן לשיקום וגם רגע ייחודי בשיח הציבורי והמקצועי בישראל. ההצעה הזוכה, בהובלת אדריכל הנוף הגרמני פיטר לאץ, הפכה את האזור לפארק מטרופוליני ולקטליזטור של הבראה למרחב כולו, דוגמא לממשק של תשתיות, ניהול נגר, תחבורה מתקדמת להסעת המונים, מסדרון אקולוגי, ומרחב לתרבות ופנאי לשכונות החלשות של דרום המטרופולין. עם זאת, כפי שנטען במאמר, הפסולת, החומר שממנו עשוי ההר והסמל לזיהום ולהזנחה סביבתית, נותרה בשולים, ולא זכתה במקום הראוי לה בשיח החברתי-העיצובי והנופי. המאמר מתעכב על רגע מכונן, שבו ישראל – באמצעות אדריכלי נוף הפועלים כסוכני תרבות – נעצרה כדי לבחון את העבר המזהם שלה, וניסתה לצייר את העתיד הבריא שלה. זהו רגע מיוחד המשמש כמראה לאופן שבו חברה בוחרת לספר את הסיפור שלה עצמה, ואת הדרך שבה היא בוחרת לעצב את המרחבים הציבוריים שלה למען הדורות הבאים, כמקומות לפנאי ולנופש אבל גם כמקומות של זיכרון וחינוך לאורח חיים מקיים יותר.

המאמר השלישי "Israel's Largest Landfill Rehabilitation: Creative Landscape Design as a Catalyst for a Functioning Metropolis". *Planning Perspectives.* עוסק במהפך שעברה חירייה בסוף שנות התשעים של המאה הקודמת. נטען בו כי מזבלת חירייה נסגרה בשל הפגיעה שגרמה לתשתיות מרכזיות אחרות, בהן נמל התעופה הבינלאומי בן-גוריון והכבישים 1 ו-4, ולא רק כתולדה של חשיבה סביבתית בוגרת יותר. המאמר מנתח את המהפך שעברו חירייה וסביבותיה כמיקרו-קוסמוס לתהליכים ברמה הארצית, ובהם צמיחת שיח תכנוני חדש המאזן בין שטחים בנויים לטבע; הבשלה של תוכנית ארצית לטיפול בפסולת; גיבוש תפישה חדשה לגבי נחלים ומקורות מים; והתחזקות השיח והתנועה הסביבתית בישראל. כל אלה איפשרו הפיכת שטח הפקר לקרקע יקרת ערך ועמידה מול תאוותם של כרישי נדל"ן.

המחקר, בכל שלושת המאמרים, עושה שימוש במסמכים ארכיוניים מגוונים, כתובים וויזואליים, שטרם נחקרו, בהם: התכתבויות הנוגעות למעברת חירייה, לכפר המסובים ולמזבלת חירייה, בין דרי המעברה לרשויות המדינה והעיריות השכנות, ובינן לבין עצמן, פרוטוקולים של ישיבות ופרוטוקולים של ועדת השיפוט בתחרות, תצלומי אוויר, מפות היסטוריות, דוחות הנדסיים, סקיצות ומסמכי הגשות לתחרות, תוכניות סופיות ומפורטות לתכנון ההר וסביבתו, צילומים ועוד. כל אלה לצד כתבות ומאמרים בעיתונות וראיונות עם תושבי האזור בתקופות הנדונות, עם אנשי מקצוע שהיו מעורבים בשינויים שאירעו וממשיכים להתרחש באזור, עם המתמודדים בתחרות האדריכלים ועם השופטים בה. הקריאה המשולבת של כל סוגי המקורות הללו חיונית להבנת הדרמות הנופיות שהתחוללו בחירייה, על ההשלכות שלהן על אדם וטבע.

שיטת המחקר היא איכותנית ורב תחומית. נעשה בו שימוש בכלי מחקר היסטוריים והיסטוריים-סביבתיים ובכלים סוציולוגיים תרבותיים, וכל זאת במסגרת של כלי ניתוח ומתודולוגיות מתחום מחקר הנוף ותכנון הנוף.

נושאי המחקר על חלקיו השונים מעוגנים בשדות ידע שונים, והם מתארים תהליכים שחלקם לינאריים וחלקם רוחביים ובו-זמניים. בהתאם, הספרות המחקרית שעליה נשען מחקר זה מקיפה דיסציפלינות ומסגרות תיאורטיות מגוונות, כולל היסטוריה, היסטוריה סביבתית וחברתית, לימודי תרבות, עיצוב ותכנון נוף, טיפול בפסולת ואקולוגיה של נוף, תשתיות הנדסיות, וכן צדק סביבתי וקולוניאליזם התיישבותי, כאשר אלה מתמקדים ומוצגים דרך הפריזמה של מחקר נוף.

העבר, ההווה והעתיד של חירייה, על התהליכים התרבותיים, הסביבתיים, הפוליטיים והאדריכליים שקשורים למקום, נחקרו עד היום באופן חלקי בלבד, ועל כן מחקר זה תורם תרומה של ממש לידע הקיים ואף צפוי לשמש אבן דרך למחקרי המשך, שיעסקו בשטחים פתוחים מופרים ובאתרים מזוהמים, המשמשים מראה לאירועים היסטוריים, לתפישות תרבותיות ולאג'נדות פוליטיות. פעולות לשיקומם של אתרים כאלה מעידות על שינויים בשיח הציבורי ובתפישות הקשורות ביחסי עיר-טבע ואדם-סביבה, מכיוון ששטחים מסוג זה הם שחקנים מרכזיים בהתמודדות של ערים וקהילות עם איומי משבר האקלים. מחקרים רבים עוסקים בהיבטים הנדסיים, כלכליים וסביבתיים של פסולת ואתרי הטמנה, אך מעטים המחקרים שמאירים היבטים של רוח, חברה ותרבות, או דנים בהשפעה של אתרי פסולת על הנוף. גם בכך יש במחקר זה, על שלושת חלקיו, תרומה ותקדים למחקרי המשך, ובעיקר בשל החידוש שבהתבוננות ביקורתית על הפסולת כשחקן דינמי בנוף, המפר סדרי עולם סביבתיים וחברתיים, אך גם טומן בחובו הזדמנויות לשיקום והתחדשות.

המחקר נעשה בפקולטה לארכיטקטורה ובינוי ערים, המסלול לאדריכלות נוף, בהנחיית פרופסור נורית ליסובסקי; ייעוץ: אדריכלית נעמי אנג'ל

אני מודה לטכניון, בית הספר לתארים מתקדמים ע"ש אירווין וג'ואן ג'ייקובס, ולקרן גלס-בלבן על המלגה, ולקרן הלאומית למדע (מענק מס' 953/18 על-שם נורית ליסובסקי), על התמיכה הכספית הנדיבה בהשתלמותי.

מחברת חיבור זה מצהירה כי המחקר, כולל איסוף הנתונים, עיבודם והצגתם, התייחסות והשוואה למחקרים קודמים וכו', נעשה כולו בצורה ישרה, כמצופה ממחקר מדעי המבוצע לפי אמות המידה האתיות של העולם האקדמי. כמו כן, הדיווח על המחקר ותוצאותיו בחיבור זה נעשה בצורה ישרה ומלאה, לפי אותן אמות מידה.

חירייה: מקום וסמל

חיבור על מחקר

לשם מילוי חלקי של הדרישות לקבלת התואר דוקטור לפילוסופיה

גליה לימור שגיב

הוגש לסנט הטכניון - מכון טכנולוגי לישראל
חשון תשפ"ד, חיפה, אוקטובר 2023