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REPORT

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Executions and Mass Graves in Tantura, 23 May 1948

Methodology report by Forensic Architecture

24 May 2023

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Contents

1. Scope of Analysis

2. Brief Historical Context

3. Summary of Findings

4. Relevant Material Used in Analysis

4.1 Village surveys

4.2 Archival photographs

4.3 Aerial images

4.4 Satellite images

4.5 Memory sketch map

4.6 Ground-level photographs

4.7 Cartographic regression platform

4.8 Survivor Testimonies

5. Methodology

5.1 Cartographic regression and aerial/satellite image analysis

5.2 Site documentation

5.3 3D reconstruction

5.4 Shadow analysis

5.5 Anaglyph imagery

5.6 Situated testimony

5.7 Open-source intelligence

6. Outline of Findings

6.1 Visual evidence of the depopulation and destruction of Tantura

6.2 Visual evidence of mass executions in Tantura

6.3 Original village cemeteries

6.4 Added gravesites

6.4.1 Earthwork 1: An earth feature near the Muslim cemetery

6.4.2 Earthwork 2: An earth feature near the village square

6.4.3 Comparing Earthwork 1 and Earthwork 2

6.5 Further suspected mass graves

6.5.1 Mass grave by the beach

6.5.2 Mass grave inside the main village cemetery

7. About Forensic Architecture

8. Forensic Architecture Case File Examples

1. Scope of Analysis

Forensic Architecture (FA) has been commissioned by Adalah—The Legal Center for Arab Minority Rights in Israel—to conduct an analysis of the available cartographic and photographic evidence on the Palestinian village of Tantura before and after the 1948 war in order to:

1. locate and outline of the original village cemeteries;
2. identify and measure any evidence of an added mass grave¹—or graves—visible in the available aerial imagery of the site after the occupation of the village by Israeli forces on 22-23 May, 1948, provide their GPS location, and mark their boundaries on a contemporary satellite image;
3. assess the possible explanations for the appearance of the added mass grave(s); and
4. determine whether there is visual evidence that any added mass grave(s) were at any point in time unearthed and the bodies exhumed and removed.

2. Brief Historical Context

The Palestinian fishing village of Tantura was located 35 km south of the city of Haifa along the Mediterranean coast. Before its occupation on 22 of May 1948, Tantura had a civilian population of around 1,500 inhabitants. It was one of the last remaining Arab communities in the area around the time of the foundation of the State of Israel on 15 May 1948.

A week later, on the night of 22-23 May 1948, Tantura was attacked and occupied by the Thirty-Third Battalion of the Alexandroni Brigade. The village leadership had previously refused to adhere to the surrender terms of the Haganah, which was in the process of being absorbed into the soon to be established Israeli army, and the village fell after an intense battle overnight.²

During the attack, many buildings and roads in the village were damaged and destroyed. Once it had been occupied, Tantura was depopulated: as many as 1,200 villagers were reportedly expelled to the nearby village of Fureidis, which had been captured days before.³

According to the oral testimony of the Palestinian survivors of Tantura, the documented testimony of veterans of the Alexandroni Brigade, as well as reports from the Israeli army archives uncovered by historians, a systematic massacre of disarmed fighters and civilians was conducted by the Israeli forces and intelligence units

¹ We understand a ‘mass grave’ to be a “burial site containing the remains, often commingled, of numerous persons”, the circumstances of which “warrant an investigation as to [its] lawfulness.” Please see Special Rapporteur of the Human Rights Council (2020), A/75/384: Report on human rights standards and possible steps towards the respectful and lawful handling of mass graves, 6.

² Benny Morris, *1948: A History of the First Arab-Israeli War* (New Haven: Yale University Press, 2008), 164; Walid Khalidi, *All that Remains: The Palestinian villages occupied and depopulated by Israel in 1948* (Institute for Palestine Studies, 1992), 193-195.

³ “Tantura,” *Palestine Remembered*, retrieved 14 March 2023, <https://www.palestineremembered.com/Haifa/al-Tantura/index.html>.

in the hours after the village was occupied.⁴ Accounts by survivors and perpetrators of the number of those massacred after the battle vary between 20 and 280. Most accounts describe the execution of men, aged between thirteen and thirty, with a witness mentioning also the execution and burial of women.⁵ Both the historical record and testimonies of survivors refer to the existence of several mass graves dug in the village of Tantura on 23 May 1948.⁶ These graves were dug for Palestinian civilians and fighters killed during the battle as well as those who were executed after the village was occupied.

The first mass grave for the burial of people executed after the battle, as reported upon by several Palestinian and Israeli witnesses, was described as being located in an open field, near prickly pear (or cactus) bushes and three trees. The location of this mass grave is known to scholars both in Palestine/Israel and internationally, and has recently been presented in a documentary.⁷ We further researched traces of this grave, confirmed its location, estimated the number of people buried there, and analysed its relation to visible features around it. Another mass grave for the burial of people executed after the battle was reported as having been dug in an orchard belonging to the Dassouki family, near the village square and the Mosque. The location and circumstances of the second mass grave were previously unknown to scholars. We have located this grave on aerial images, estimated the number of people buried there, researched its traces and analysed its relation to visible features around it.

In addition to these two mass graves, it appears that the systematic disposal of bodies, both of those executed and of those killed during the battle, was undertaken by Israeli forces in several other places in and around the village. Palestinian and Israeli witnesses reported the execution and burial of those executed in a mass grave by the beach, as well as the existence of a mass grave in the main village cemetery and in the area near the Mosque.

By 14 June 1948, around four weeks after Tantura was occupied, a group of young Israelis consisting of 24 men and 6 women, settled the village and established the Nachsholim settlement. Later, Jewish immigrants from Turkey and Romania, as well as Holocaust survivors from Poland, joined to settle in Nachsholim. By the end of the summer in 1948, most of the inhabitants of Tantura had been expelled from Fureidis and other places in Israeli-held territory and rendered refugees. By 1949, the Dor settlement was established on the southern part of the village lands by Jewish immigrants from Greece. The destruction of the majority of the village of Tantura

⁴ Ilan Pappé, *The Ethnic Cleansing of Palestine* (London: Oneworld Publications, 2006), 135; Ilan Pappé, "The Tantoura Case in Israel: The Katz Research and Trial," *Journal of Palestine Studies*, Vol. 30, No. 3, (Spring 2001): 22.

⁵ See, for example, the testimony of Tantura survivor Mohammad Khalil Dassouki in Section 6.4.2.

⁶ Israeli historian Ilan Pappé writes: "The act of preparing a mass grave was witnessed by several Palestinians who took part in the digging, an experience more horrid still when they realised they would have been killed themselves had Yaacov Epstein [a Minister from Zichron Yaacov and one of the persons credited with stopping the executions] and others not arrived in time to save them. Abu Khalid is one of those who witnessed the digging of a mass grave. Murani Muhsin, Abu Hasan, saw the digging of two mass graves, each containing 45 bodies," See Ilan Pappé, "Historical Truth, Modern Historiography, and Ethical Obligations: The Challenge of the Tantura Case", *Holy Land Studies*, Vol. 3, No. 2 (November 2004): 182. Further, Palestinian survivor Ali 'Abd al-Rahman Dekansh (Abu Fihmi) recounts the incident: "The person who was with me knew Hebrew. He overheard them saying that after they [the diggers] finish[ed] the first mass grave, let them dig another one and kill them and put them in it...their military announcement said they had killed two hundred and fifty. It is a war military announcement, it was broadcast," See Ilan Pappé, "The Tantura case in Israel: The Katz research and trial", *Journal of Palestine Studies*, Vol. 30, No. 3 (Spring 2001): 35.

⁷ See *Tantura*, dir. Alon Schwarz. Reel Peak Productions, 2022.

took place gradually over the following years, as stones from the village houses were used in the construction and landscaping of the two Jewish settlements that were built over its ruins.

3. Summary of Findings

Drawing upon a range of historical, testimonial and cartographic sources, as well as a situated testimony we collected first-hand, our investigation arrived at the following findings:

- We identified **four original cemeteries** within the boundaries of the village: three Muslim cemeteries, the largest of which is centrally located within the village; and one Christian cemetery south of the village.
- We identified **an earth feature– Earthwork 1, or E1**, which is located at 32.61091, 34.91887; 32.61088, 34.91887; 32.61089, 34.91924; 32.61086, 34.91924. E1 is a rectangular 33-metre long by 3-metre wide and approximately 85-centimetre-high human-made earth mound positioned parallel to the main road, south-east of the main Muslim cemetery. Our assessment is that **E1 very likely contains a mass grave** of some of the residents of Tantura executed after the battle on 23 May 1948. We estimate that there could be between 70-140 bodies under it. The area is presently a tourist parking lot serving Dor Beach.
- We identified a **second earth feature– Earthwork 2, or E2**, which is located at 32.60922, 34.91793; 32.60918, 34.91813; 32.60916, 34.91812; 32.60919, 34.91793. E2 is a rectangular 19-metre long by 3-metre wide approximately 85-centimetre-high human-made earth mound positioned south-west of the main village square facing the Mosque, in a field belonging to the Dassouki family, and surrounded by a thick bush. It is our assessment that **E2 also very likely contains a mass grave** of some of the residents of Tantura executed after the battle on 23 May 1948. We estimate that there could be between 40-80 bodies under a mound of this size. The area is presently a tourist parking lot serving Dor Beach.
- Although it is roughly 14-metres shorter than E1, **E2 shares several characteristics with E1**. Both E1 and E2 are long and thin earth features of a similar width and height, oriented along a similar east-west axis and are similarly located closely parallel to the cactus bush line of the northern edge of an otherwise open field. These physical similarities point to a **potential similar modus operandi of mass burial**.
- It is our assessment that it is **unlikely that the bodies were later exhumed or excavated from either E1 or E2**. None of the visual evidence we examined indicates that the bodies in what we believe to be mass graves were either partially or fully excavated between 23 May 1948 and 25 October 1949, nor is there any visual indication that they were exhumed thereafter.
- We observed that multiple testimonies of survivors and perpetrators refer to the wall of a building by the beach as the site of execution and burial. We identified one possible site of execution to be a wall and courtyard behind the house of Ahmad Haj Yahya, lying directly south of the family home of Adnan Yayha. We also observed that another testimony collected years later refers to human bones found at the same site. It is our assessment that **the wall and the courtyard behind the house of Ahmad Haj Yahya possibly contains another mass grave**. We observed a significant ground disturbance approximately 25 metres south of that site, along one of the roads leading to the sea. We believe it is possible that this mound is the site of burial of those executed by the wall and courtyard.

- We conducted what FA refers to as a “situated testimony” with Adnan Yahya (b. 1930) in Treysa, Germany. Adnan testified to the existence of a mass grave in the south-eastern corner of the cemetery, where a circular pit, approximately 2-4 metres by 2-4 metres, had been dug. He testified that this mass grave was surrounded by individual graves, located inside the cemetery, and near the main road that leads to the railway. His testimony corresponds to the testimonies of other witnesses of the existence of a mass grave inside the main village cemetery. It is therefore our assessment that **there likely exists at least one mass grave inside the cemetery**. We have found several ground anomalies within the cemetery, one or more of which could possibly be the site of a mass grave. We deem further work needs to be undertaken in order to confirm this assessment.

4. Relevant Material Used in Analysis

4.1 Village surveys

- i. Survey 1929/1931
- ii. Survey 1946-1, Serial No. T/51/59
- iii. Survey 1946-2, Serial No. T/51/59

4.2 Archival photographs

- i. Tantura. Israeli Army Archives. See Figure 19: *Women and children being led by Israeli forces towards the main road of entry to the village on 23 May, 1948.*
- ii. Tantura. Israeli Army Archives. See Figure 20: *Women and children being gathered on a main road by the village cemetery on 23 May, 1948.*
- iii. Tantura. Israeli Army Archives. See Figure 21: *Groups of men being led by Israeli forces across the cemetery going south on 23 May, 1948.*
- iv. Tantura. Israeli Army Archives. See Figure 27: *Geo-locating the bush lines visible within the 1949 aerial image and archival photo of women gathered by the cemetery.* Forensic Architecture, 2023.

4.3 Aerial images

- i. 12 February 1946, British Mandate's Royal Air Force
- ii. 1947, British Mandate's Royal Air Force
- iii. 18 April 1948
- iv. 25 October 1949, Israeli Air Force
- v. 14 January 1952, Israeli Air Force
- vi. 23 September 1955, Israeli Air Force
- vii. 1956, Israeli Air Force
- viii. 1957, Israeli Air Force

4.4 Satellite images

- i. 7 June 2019, OFEK
- ii. 12 May 2021, Maxar Technologies

4.5 Memory sketch map

- i. Ahmad Taha Salam, Tantura village structure and property allotments in 1948

4.6 Ground-level photographs

- i. Images collected by Forensic Architecture on 11 August 2022

4.7 Cartographic regression platform

- i. <https://www.tantura.forensic-architecture.org/>

4.8 Survivor Testimonies

- i. Institute for Palestine Studies. "The Tantura Massacre, 22-23 May 1948," *Journal of Palestine Studies*, Vol. 30, No. 3 (Spring 2001) 5-18.
- ii. Theodore Katz. Interviews of Tantura survivors and former soldiers in the 33rd Battalion of the Alexandroni Brigade. 1997. Audio.
- iii. Hala Gabriel. Interviews of Tantura survivors in Damascus, Syria. 2006-2007. Video.
- iv. Alon Schwarz. *Tantura*. Documentary. 2022. Video.
- v. Arab Loutfi. *Over Their Dead Bodies*. Documentary. 2008. Video.
- vi. Tantura Remembered Facebook Page. Interviews with Tantura survivors. Video. Source: <https://www.facebook.com/people/الطنطورة-لن-تفقد-الذاكرة/100064378764556>
- vii. Forensic Architecture. Situated interview with Tantura survivor Dr. Adnan Yahya. Treysa, Germany. 11 March 2023. Video.

5. Methodology

5.1 Cartographic regression and aerial/satellite image analysis

Cartographic regression refers to the process of using historic surveys, maps and aerial photographs overlaid on contemporary imagery in order to track changes in the territory and landscape over time. Cartographic regression is increasingly being used in archaeological surveys as a means to evaluate the probable locations of cultural resources.

We geo-referenced all aerial images and village surveys (see Section 4) using a Geographic Information System (GIS) software. This allowed us to cross-reference satellite images with aerial photographs of Tantura from 1946, 1947, 1948, 1949, 1952, 1956 and 1957 with a contemporary ground-level survey we conducted on 11 August 2022 in order to ascertain information regarding geographical changes to the terrain.

In doing so, we were able to observe Earthworks 1 and 2, which are very likely mass graves (see Figure 1).

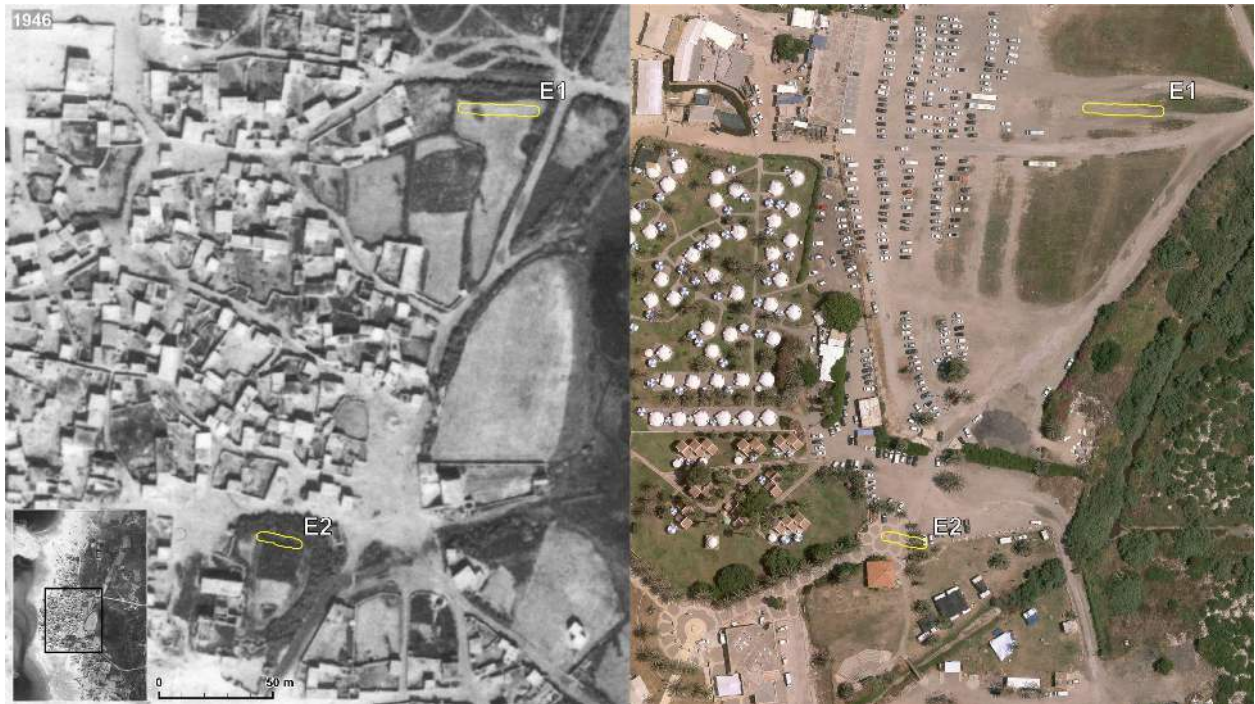


Figure 1. Aerial image of Tantura taken by RAF in 1946 alongside a contemporary satellite image, with Earthworks 1 and 2 marked in yellow in both views. Source: 7 June 2019, OFEK. Forensic Architecture, 2023.

5.2 Site documentation

On 11 August 2022, we visited the remains of the village of Tantura to conduct a survey of three surviving buildings on the site (see Figures 2-3). We relied mainly on measurements taken of the height of the remaining home of Ahmad Haj Yahya by the beach to reconstruct the village and possible sites of mass graves (see sections 5.3 and 5.4).



Figure 2. Aerial image of Tantura taken by RAF in 1946 alongside a contemporary satellite image. The buildings that remain are marked in blue. Forensic Architecture, 2023.



Figure 3. Site documentation, 11 August 2022. Forensic Architecture, 2023.

5.3 3D reconstruction

In our analysis, digital models are more than mere 3D representations of real-world locations—we use 3D models as analytic or operative devices. Models help us to understand the location of images, camera positions or events in relation to one another. They also allow us to conduct new analyses based on spatial relations, including the positions of people according to their testimonies, fields of vision, and the location and dimensions of structures. In doing so, models also allow us to conduct new analyses based on the spatial relations of structures to their surroundings. Our 3D reconstruction was built using the open-source 3D software Blender.

Using historical photographs, aerial images and village surveys we built an accurate and geo-referenced 3D model of Tantura as it stood before the invasion.

We also built 3D models of Earthworks 1 and 2 using the aerial images where they appear. We determined the accurate heights of the two earthworks and the village buildings using a shadow analysis based on our measurements of the still standing Yahya house (see Section 5.4 and Figures 4-5).

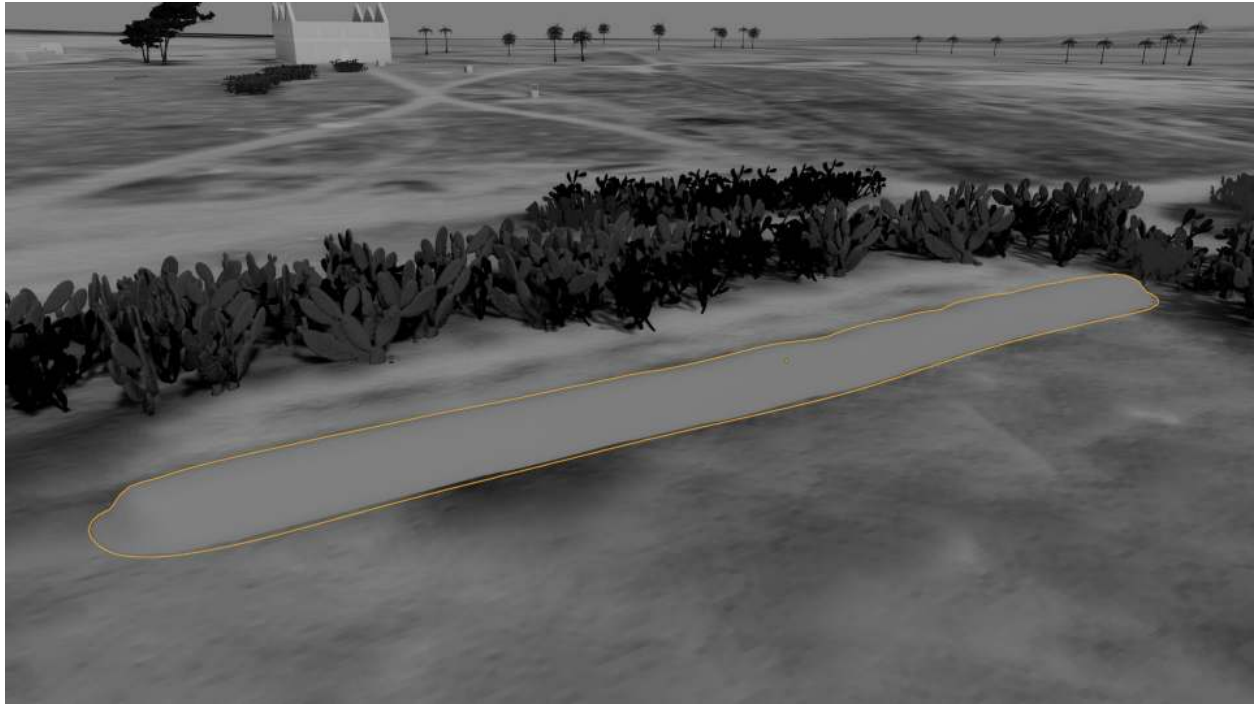


Figure 4. 3D model of Earthwork 1 (E1) and its surroundings. Forensic Architecture, 2023.

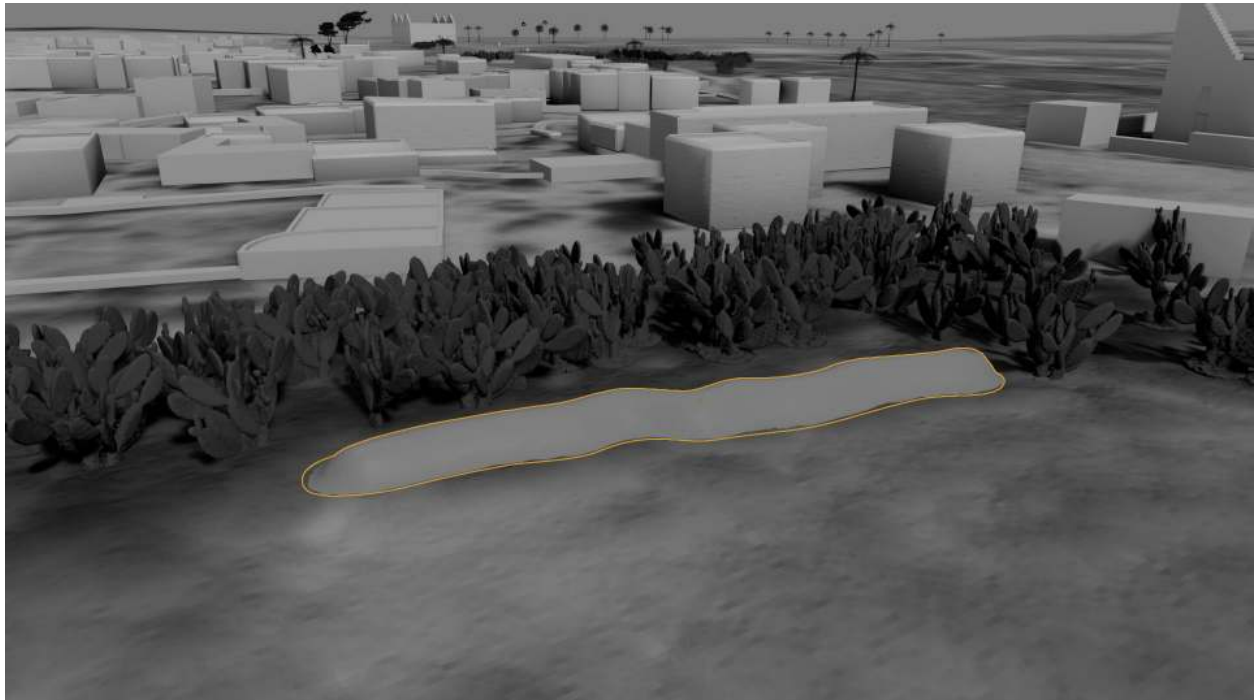


Figure 5. 3D model of Earthwork 2 (E2) and its surroundings. Forensic Architecture, 2023.

5.4 Shadow analysis

We used shadow analysis within our 3D model to measure the approximate dimensions of Earthworks 1 and 2.

The 1949 aerial photograph was taken in the morning hours on a cloudless day, with the direction of the sun coming from the southeast. The mounds of earth surrounding E1 and E2 thus cast shadows on the ground (see for example Figure 6).

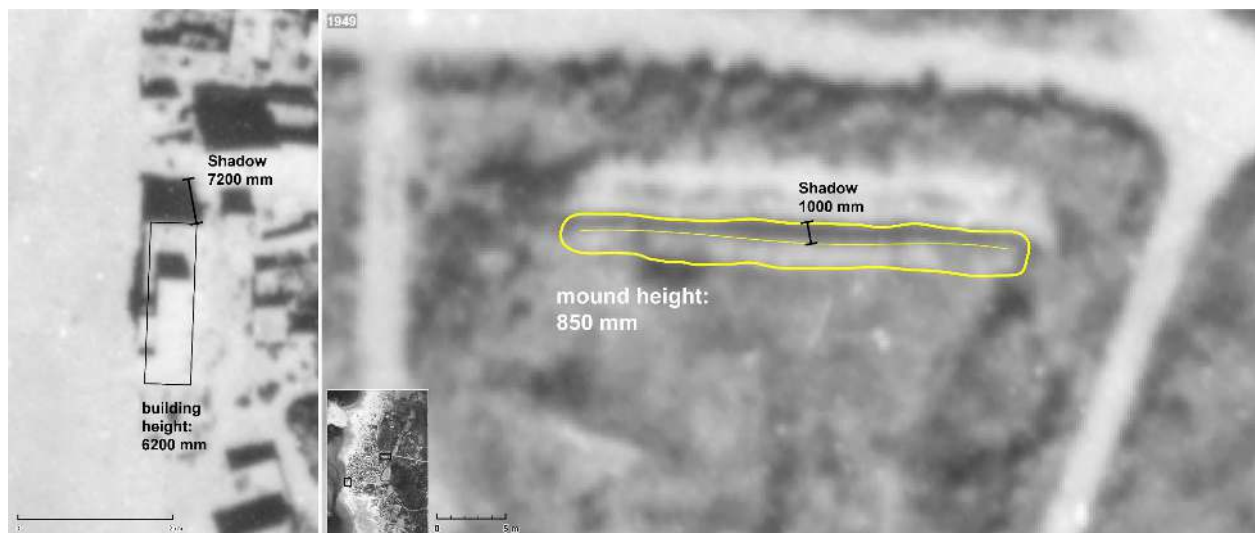


Figure 6. E1 shadow compared to the shadow of a surviving building, used to determine the height of the mound. Forensic Architecture, 2023.

The measurements we collected of the Yahya house allowed us to derive the height of other buildings within the village as well as Earthworks 1 and 2, based on the relative size of the shadow they cast. We measured the dimension of the shadows for each site and compared them to the length of shadow cast from the remaining Yahya house.

The relative length of the shadows allowed us to estimate the height of the mounds in E1 and E2.

5.5 Anaglyph imagery

An anaglyph is an image made of compositing two perspectives of the same location, where one image is filtered in red and the other in blue. When viewed through corresponding filtered glasses, this creates a 3D effect that allows us to determine depth, as each eye processes a different perspective.

We used this technique to analyse a sequence of three consecutive and slightly overlapping photographs of Tantura captured by the same plane flying along a north-south axis at 11:23 AM on 25 October 1949. We superimposed two photographs at a time in different configurations. While this technique is not able to accurately calculate the height of the objects, it does capture the relative value of depth, which allows us to assess the nature of landscape anomalies in the suspected sites of mass graves (see Figure 7-8).



Figure 7. Anaglyph image created using two consecutive photographs with different perspectives of the same site. Forensic Architecture, 2023.



Figure 8. A close-up of E1 from two perspectives using 1949 aerial images by IAF.

5.6 Situated testimony

A situated testimony is a technique of interviewing developed by Forensic Architecture, which uses 3D models of the scenes and environments in which traumatic events occurred so as to aid in the process of interviewing and gathering testimony from witnesses to those events.

On 11 March 2023, Forensic Architecture travelled to Treysa, Germany to conduct an original recorded testimony with Adnan Yahya, a 93-year-old survivor from Tantura. Adnan, who was 17 years old at the time of the village's occupation, worked with us to reconstruct his actions in the village in the custody of Israeli forces on 23 May 1948 after its occupation. In particular, Adnan recounted his experience of being forced to bury the bodies of villagers in the south-east corner, inside the large Muslim cemetery in the village (see for example Figure 9).



Figure 9. Situated interview with Adnan Yahya, 11 March 2023. Forensic Architecture, 2023.

Adnan's testimony aligns with those of other survivors that confirm the likely existence of at least one smaller mass grave dug inside the main village cemetery among the individual graves.

5.7 Open-source intelligence

Open-source intelligence (OSINT) is information collected from publicly available sources. Common OSINT sources include social networks, online forums, corporate and governmental websites, blogs, videos, news reports, and publicly available satellite images.

We used OSINT to locate testimonies of survivors and perpetrators captured in film and other records as sources of information which aided the interpretation of the aerial images and the building of our 3D model.

6. Outline of Findings

6.1 Visual evidence of the depopulation and destruction of Tantura

The RAF aerial images from 1946 and 1947 show that the village was populated before the battle: there are areas of vegetation that appear to have been regularly tended and cultivated, and gardens and roads that are regularly in use and cleared of weeds.

In the 1946 aerial image, which can be seen in Figure 10, in the vicinity of the area where Earthwork 1 later appears, there is a garden with nearby houses and a number of walking paths surrounding the area. Similarly, Earthwork 2 is situated in a field south-west of the main village square, which is surrounded by residential homes, as well as two main roads on its northern and eastern sides that appear to be regularly used.

By 1949, however, there were clear traces of destruction visible in the village: there were substantial alterations to its structure in the form of full or partial destruction of buildings, walls and roofs; new routes had been cut through the village's built fabric while main roads had been flattened; and the vegetation in and around the village had been significantly transformed.

In particular, we observed large-scale destruction in three key areas: by the beach, in the north of the village near the main Muslim cemetery, and in the southern part of the village leading into the main square. These infrastructural scars likely indicate the direction through which Israeli forces entered the village and the major sites of battle on 22-23 May 1948 (see Figures 11-12).

Our analysis of the available aerial imagery corroborates reports of the forced depopulation of the village. Tantura had two main economies, fishing and agricultural cultivation. We observed that while in 1946 familial property lines were visible, by 1949 many indications of individual and familial property divisions had been erased through the removal of vegetation that marked the edges, as well as the systematic destruction of some plots. We could also observe that by 1949 the fields in and around Tantura had fallen fallow (see Figures 13-16).

Between 1949 and 1952, the emptied village fell into ever-greater decay. By 1952 it was in ruins, having clearly undergone a systematic process of demolition. At this time, most buildings had been either fully or partially removed, their gardens fallow and weeds spreading across what had previously been homes, roads and publicly used spaces such as cemeteries and main squares. By 1956 the village was almost fully erased (see Figures 17-18).

These scars on the land are indicative of a mass depopulation of the village, and correspond with both historical documentation and testimonial reports of the occupation of Tantura, its forced depopulation, and its subsequent systematic erasure.



Figure 10. 1946 Aerial image with key markers in the village of Tantura. Forensic Architecture. 2023.

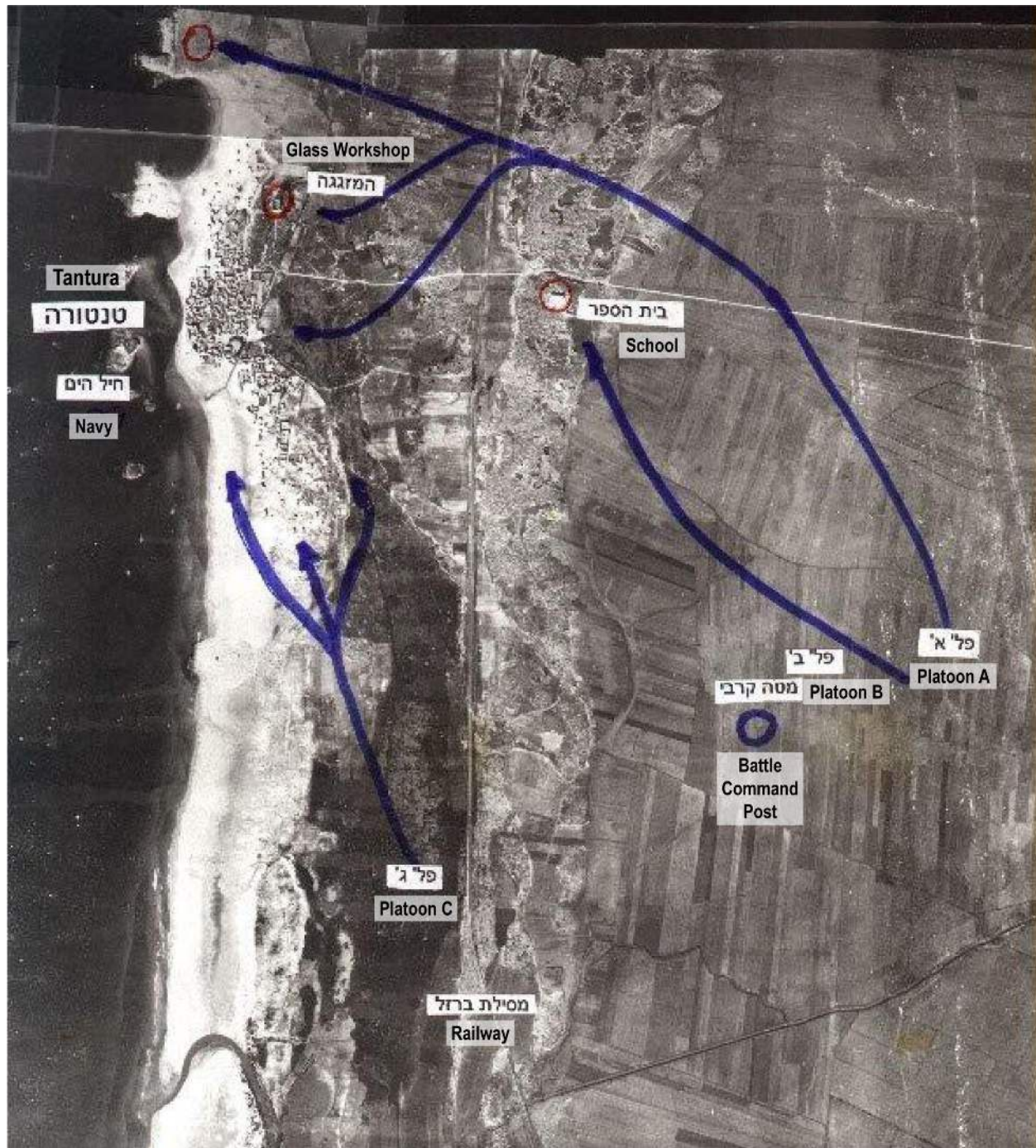


Figure 11. Diagram of invasion by Israeli forces. Source: Gershon Rivlin, *The Alexandroni Brigade in the War of the Commies, Systems*, 1964: https://amiramorenbikes.com/2017_0718_tantura_alit/. Translation annotation by Forensic Architecture.

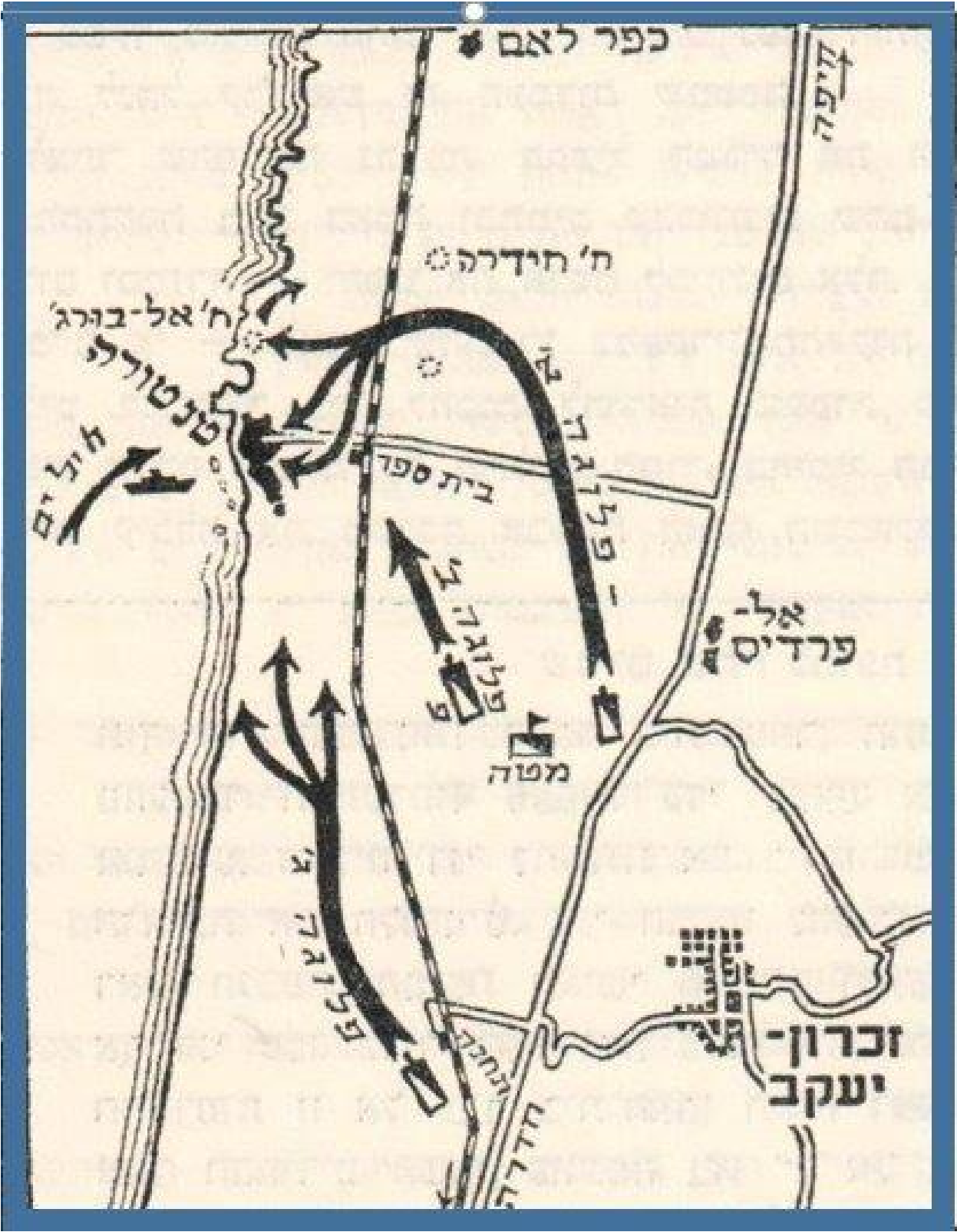


Figure 12. Diagram of invasion by Israeli forces. Source: Gershon Rivlin, *The Alexandroni Brigade in the War of the Commies*, Systems, 1964: https://amiramorenbikes.com/2017_0718_tantura_alit/



Figure 13. Visible areas of damage. The three marked boxes show areas where the damage was concentrated, Tanura, 1949 IAF. Forensic Architecture, 2023.



Figure 14. Before and after the Israeli forces' assault on Tantura (1). Highlighted are destroyed walls, buildings, and paths carved through property walls and fields. Left: 1946 RAF, Right: 1949 IAF. Forensic Architecture, 2023.



Figure 15. Before and after the Israeli forces' assault on Tantura (2). Highlighted are destroyed walls, buildings, and paths carved through property walls and fields. Left: 1947 RAF, Right: 1949 IAF. Forensic Architecture, 2023.



Figure 16. Before and after the Israeli forces' assault on Tantura (3). Highlighted are destroyed walls, buildings, and paths carved through property walls and fields. Left: 1947 RAF, Right: 1949 IAF. Forensic Architecture, 2023.



Figure 17. Aerial image showing hollowed out buildings in Tanura, 1952 IAF.

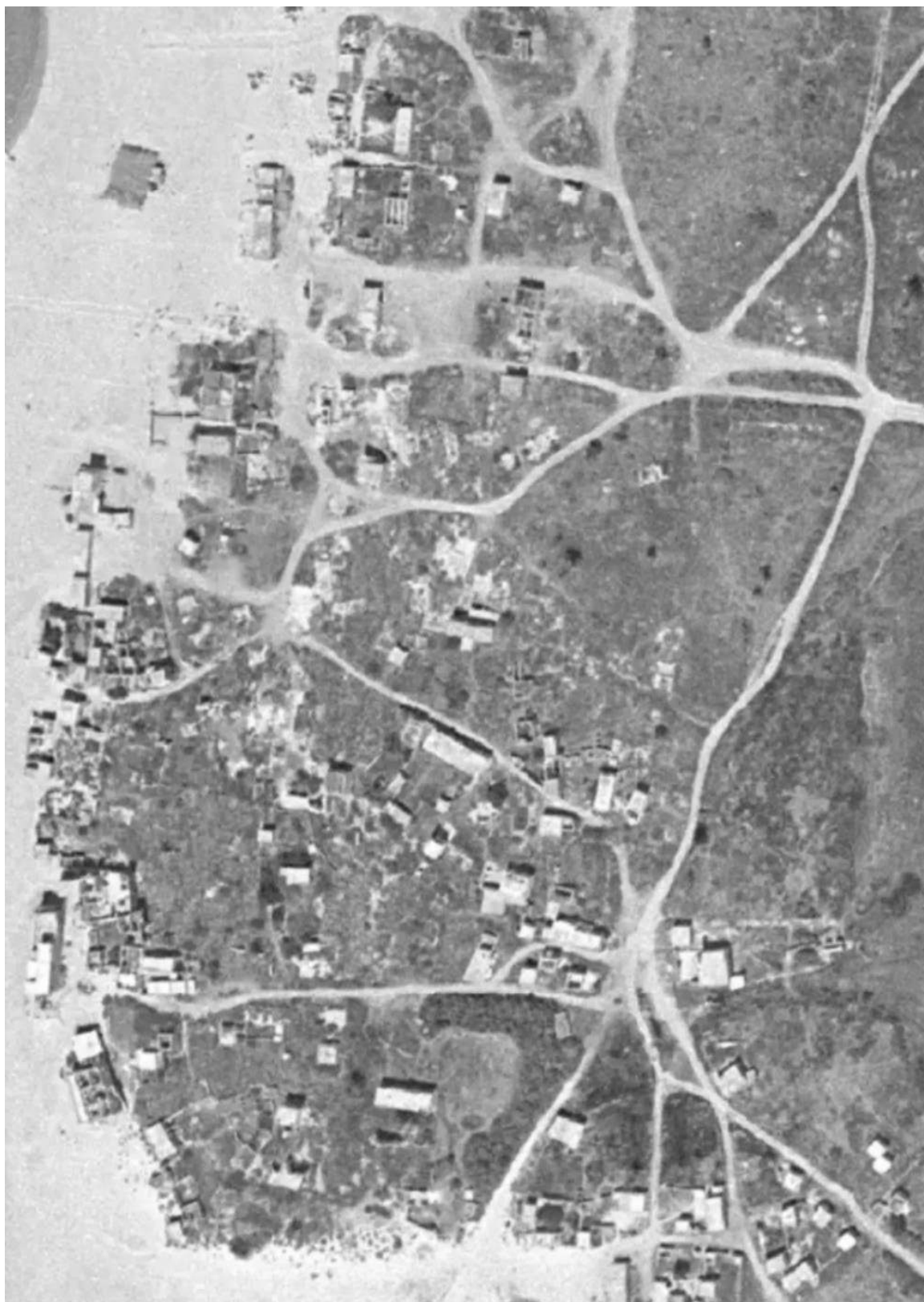


Figure 18. Aerial image showing Tantara in ruins, 1956 IAF.

6.2 Visual evidence of mass executions in Tantura

According to the oral testimony of the Palestinian survivors of Tantura and the documented testimony of veterans of the Alexandroni Brigade,⁸ a systematic massacre of disarmed fighters and civilians was conducted by the Israeli forces and intelligence units in the hours after the village was occupied. Some of these testimonies include those of:

- i. Tantura survivor **Adel Mohammed Amouri (b. 1931)**: “During the battle I think we only lost 1 or 2 of our men. But after the battle was over they started taking men approximately between the ages of 22-30. They would take them in groups of 10-15, line them up, and kill them. Each man got a bullet to the head to make sure they were dead. The whole invasion was over with many deaths in a small town. Some people say about 60-65 people died that day. Some people say it was about 100. My opinion is that many more died than that.”⁹
- ii. Tantura survivor **Ahmad Abdel Mo’ty (b. 1936)**: “There were between 50 and 60 people who were killed, those who got sprayed by the machine guns. But to be honest, I don’t have an exact number. But it’s between 50 and 60, maybe a bit higher or lower. They would take the best of the young men and make them stand facing the wall, then fire at them. And this is something I witnessed with my own eyes.”¹⁰
- iii. See also testimonies of Tantura survivors **Yusra abu Hana (b. 1915)**, **Nayef Taha Mahmoud Salam (b. 1935)**, **Hussein Ibn Ahmed Ibn Abdel-Rahman Al-Ashmawi (b. 1938)**, and **Haj Fawzi Mahmoud Ahmad Tanji (b. unknown)** in Section 6.4.1.1; **Mohammad Ibrahim Abu Amer (b. 1934)** and **Hussein Ibn Ahmed Ibn Abdel-Rahman Al-Ashmawi (b. 1938)** in Section 6.5.1; and **Abu Mashayiff (b. unknown)**, **Mostafa al-Masry (b.1935)**, **Rashida Al Ayoub Amar (b.1929)**, **Mohammad Ibrahim Abu Amer (b. 1934)**, **Ahmad Abdel Mo’ty (b. 1936)** and **Zuhdi Salman Abu Nada (b. 1930)** in Section 6.5.2.

We came across no archival photos from 23 May 1948 that showed the execution of villagers in Tantura as described by Palestinian and Israeli testimonies. Despite at least one camera being present, it is most likely that such crimes would not be documented. However, photographs that were taken on 23 May correspond with patterns of actions in and around sites of mass killing and support testimonies of Palestinians survivors and Israeli soldiers.

At least three photographs that we have examined show the systematic separation of women and children from the men (see Figures 19-21). One photo shows women and children being led by soldiers towards the main road of entry to the village by the main cemetery; one photo shows women and children guarded by Israeli forces and made to wait by that same main road by the cemetery; and one photo shows around twenty men being led through the cemetery going south (see Figure 22).

⁸ Schwarz, *Tantura*.

⁹ Adel Mohammed Amouri, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

¹⁰ Ahmad Abdel Mo’ty, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.



Figure 19. Women and children being led by Israeli forces towards the main road of entry to the village on 23 May, 1948. Source: Israeli Army Archives.



Figure 20. Women and children being gathered on a main road by the village cemetery on 23 May, 1948. Source: Israeli Army Archives.



Figure 21. Groups of men being led by Israeli forces across the cemetery going south on 23 May, 1948. Source: Israeli Army Archives.



Figure 22. Location of photographs Figure 19(1), Figure 20 (2), Figure 21 (3), and Figure 27 (4) along with the subjects visible in them as well as their location (2 and 4) or direction of movement (1 and 3). Forensic Architecture, 2023.

The systematic gathering of the inhabitants and subsequent separation of men from women and children, while possible for many other reasons—including interrogation or incarceration, for example—is also often the first step of mass executions. Palestinian and Israeli testimonies have described the gathering and separation as the first stage of action practised by Israeli forces after the occupation of the village, in the lead up to the mass executions. Some of these testimonies include those of:

- i. Tantura survivor **Ezzedin Abdallah Ibrahim Al Masry (b. 1936)**: “Once occupied, the villagers led by the Israeli forces at the beach. And old men, women and children were systematically separated from the young men.”¹¹
- ii. Tantura survivor **Dawoud Abu Shokor (b. unknown)**: “Women and children were gathered in one group on the seashore, guarded by soldiers carrying different types of weapons, and the second group of men, also guarded by soldiers carrying different types of weapons.”¹²
- iii. Tantura survivor **Mohammad Khalil Dassouki (b. unknown)**: “They rounded up the men and put them on the seashore by the Yahya home. The women they put by the sea under the home of Thaer and Mahmoud Dassouki.”¹³
- iv. Tantura survivor **Mohammad Saed Mohammad Sallam (b. 1939)**: “They took us, women and children, and they placed us at the house of Dassouki, this house was high and it had a sandy extension that connected that house to the seashore. They made us sit on the sand which was getting hotter and hotter. On top of the houses they were Jewish soldiers who were watching everything. And on the ground they were circling us too.”¹⁴

Testimonies also recounted that starting in the morning of 23 May, after the battle and occupation of the village, some survivors were tasked by the Israeli forces to gather bodies from across the village, which were to be buried in mass graves. Some of these testimonies include:

- i. Tantura survivor **Ezzedin Abdallah Ibrahim Al Masry (b. 1936)**: “They took us to collect the dead bodies from the streets, in order to put them in the hole. They made all the kids do that, not just me. There were 15 to 20 kids. We would carry them and bring them to the hole. My task was to bury my uncle and cousin, 100 meters away from the hole, by piling rocks on them, Because where they were, we could not dig. So we just put soil and rocks on them, to bury them so the wild animals wouldn’t eat their bodies.”¹⁵
- ii. See testimonies of Tantura survivors **Mohammad Abu Amr (b. unknown)**, **Najah Hasan Ayoub (b. 1932)**, **Alsabre Abu Hana (b. unknown)**, **Hussein Ibn Ahmed Ibn Abdel-Rahman Al-Ashmawi (b. 1938)** and **Mohammad Saud Abu Hana (b. 1935)** in Section 6.4.1.1; and **Fatmeh Salim Shora (b. 1932)** and **Jamil Abed Al Malek Halil (b. unknown)** in Section 6.5.2.

¹¹ Ezzedin Abdallah Ibrahim Al Masry, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

¹² Dawoud Abu Shokor, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

¹³ Mohammad Khalil Dassouki, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

¹⁴ Mohammad Saed Mohammad Sallam, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

¹⁵ Ezzedin Abdallah Ibrahim Al Masry, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

It is therefore our assessment that the bodies buried in the mass graves of Earthwork 1 and Earthwork 2, and the possible mass graves by the beach and inside the main cemetery, are those of the people who were killed in the executions on 23 May which followed the battle, as well as of those who were killed during the battle itself and were subsequently taken to these sites.

6.3 Original village cemeteries

Studying the RAF aerial photograph from 1946, we identified and outlined on a contemporary satellite image the dimensions and structure of the village of Tantura as it existed before its occupation, depopulation and partial destruction in 1948, and identified the present-day location of the Muslim and Christian cemeteries.

There are three Muslim cemeteries and one Christian cemetery within the village outlines. There is one large Muslim cemetery located north of the village's centre (32.6119152, 34.9189547), with two smaller ones in the far north (32.61600, 34.91943) and far south of the village (32.60090, 34.91956). The Christian cemetery is located in the southern part of the village (32.60551, 34.92041).

All four cemeteries have now been destroyed by the development of the Nachsholim and Dor settlements (see Figure 23).



Figure 23. Location of original cemeteries of Tanura overlayed on contemporary satellite image of the village. Source: 12 May 2021, Maxar Technologies. Forensic Architecture, 2023.

6.4 Added gravesites

By comparing the 1946, 1947, 1948 and 1949 aerial images, we observed a few clear disturbances in the surface and two added features.

6.4.1 Earthwork 1: An earth feature near the Muslim cemetery

E1 is a long and narrow rectangular-shaped human-made earth mound with an east-west orientation. It measures approximately 33-metres in length and 3-metres in width. It is parallel to the main road and situated south-east of the main Muslim cemetery.

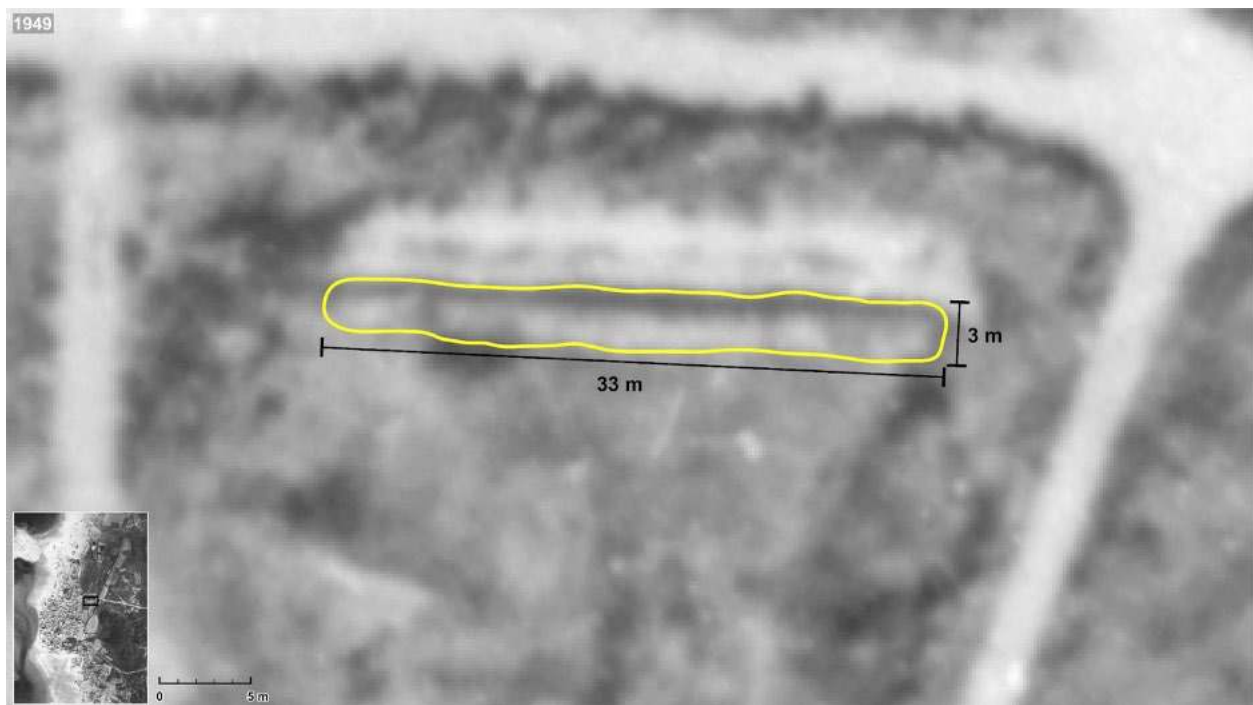


Figure 24. 1949 aerial image with Earthwork 1 outlined and measurements. Forensic Architecture, 2023.



Figure 25. Comparison of the site of E1 between 1947 and 1949 marking the bush and plot lines. Forensic Architecture, 2023.

Using shadow analysis, we produced a 3D model of the mound, E1, to study its height and characteristics. We calculated its height at its peak to be approximately 85-centimetres (see Figure 4).

When the outline of the mound is superimposed on the 1947 image, we can see that E1 is located in the northern edge of a field belonging to the Al-Sabbagh family, 5-metres away from and parallel to a tall and thick line of bushes that marks its northern border. We observed three visible palm trees 40-metres south of E1.

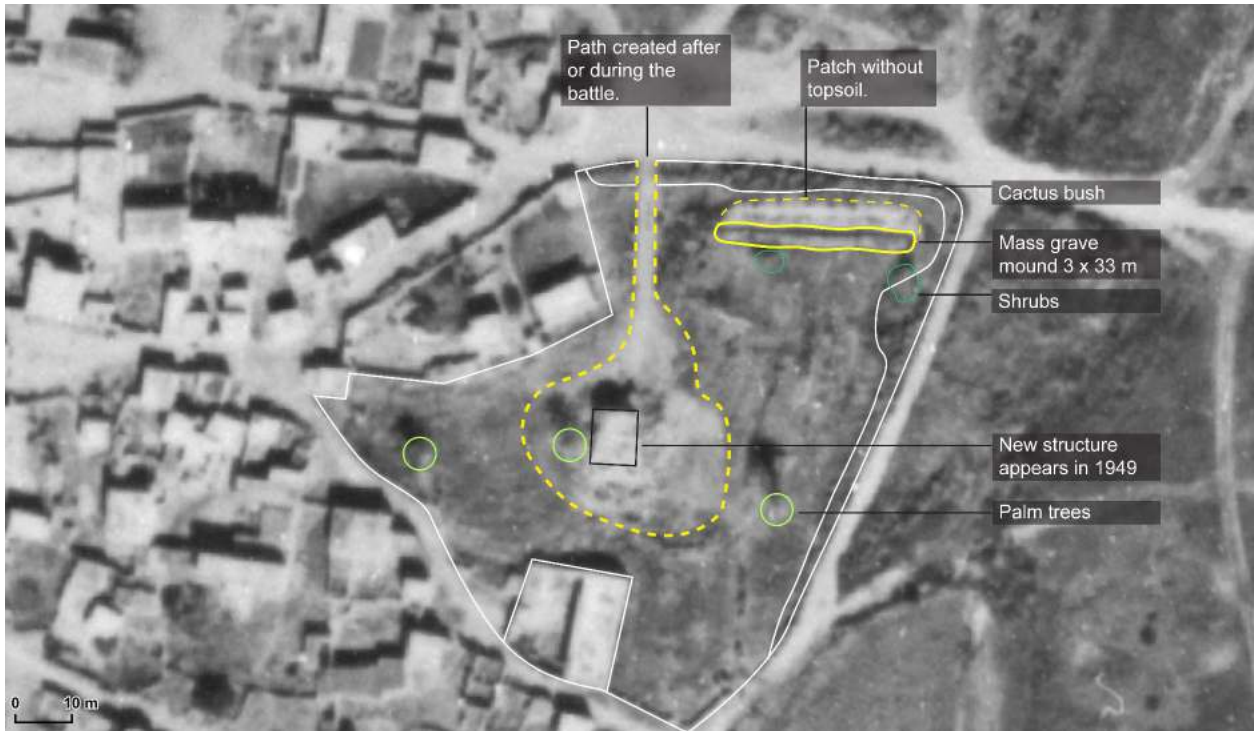


Figure 26. 1949 aerial image marking key elements around E1. Forensic Architecture, 2023.

In the 1949 aerial image, E1 is identifiable as a strip with a brighter southern half and a dark northern half. The dual coloration is due to the orientation of the sun, which in the picture casts shadows northwards (see Figure 26).

The tall and thick bush enveloping E1 is likely a low-growing plant, most probably a cactus bush. The bush is also visible in ground level archival photographs of Tantura from 23 May 1948 (see Figure 27).



Figure 27. Geo-locating the bush lines visible within the 1949 aerial image and archival photo of women gathered by the cemetery. Source: Israeli Army Archives. Forensic Architecture, 2023.

E1 first appears in the aerial image from 25 October 1949. It is our assessment that it was very likely created in the period that included the occupation, depopulation and partial destruction of the village. In the RAF images from 1946 and 1947, and the aerial image from April 1948—taken a month before the battle—this area was part of a larger field divided by lines of various forms of shrubbery, like cactus bush.

In the 1949 image, we observed that all the bush lines that subdivided this field had been uprooted and removed. Also analysing the changes that took place in the period between April 1948 and October 1949, we observed that a building with a domed roof had been built near E1, along with a new north-south road leading into it. This

road cuts into the outer bush that bounds this field. This building is not visible in the above-ground photo from May 1948 and it is likely to have been built after that time. Its use or the relation between the building and E1 is presently unknown to us.

Traces of E1 persist in the aerial images from 1952, 1956 and 1957 with decreasing clarity.

6.4.1.1 Assessment of Earthwork 1

In order to comprehensively assess Earthwork 1, we compared the 1946 and 1947 RAF aerial images with the 1948 aerial image and the IAF image from 1949; along with the available testimonies of both survivors and perpetrators.

It is our assessment that E1 very likely contains a mass grave of some of the residents of Tantura killed on 22-23 May 1948. After cross-referencing testimonies of Palestinian and Israeli witnesses, we believe that the majority of those buried in this mass grave were people executed after the battle.

We base the assessment that E1 is a mass grave on the following observations:

1. E1 did not exist in 1947 and first appeared in the aerial image captured in October 1949, seventeen months after the village of Tantura was occupied on 22-23 May 1948. Its appearance coincides with visual indications of the mass depopulation and evacuation of the village after battle.
2. The rectangular shape of the earthwork has the visual signature of a gravesite. Graves, whether individual or collective, have mounds of earth above them. This is due to the fact that, after digging the hole, the volume of the bodies lowered into it leaves excess earth piled on top. Further, the earth which is used to cover the body or bodies is less dense, and thus occupies more volume. As such, a long 33-metre mound of earth indicates the existence of a large collective gravesite dug where bodies were buried at the same time.

The location of E1 also coincides with the location where witnesses—both Palestinian survivors and Israeli soldiers¹⁶—saw bodies piled up after the occupation of the village. Among other details, testimonies such as the ones listed below recount the location of a mass grave in an open field, near the cemetery, by prickly pear (or cactus) bushes, adjacent to three palm trees, and in a site that today is a parking lot:

- i. Tantura survivor **Hend Hawashe (Um Rasmi) (b. approximately 1930)**: “[They were buried] in the cemetery, but not next to the existing graves, on the side. On the side. When you go there, you will see the old cemetery in one place, and the new graves in another place, not far away but separate. [...] When you enter by the railway tracks the cemetery is on the right. It is a big cemetery.”¹⁷

¹⁶ The testimonies of former Israeli soldiers who were present in Tantura were documented in a 2022 film, *Tantura*, by Israeli filmmaker Alon Schwarz. References were also made to audio recordings of interviews previously conducted by Israeli researcher Theodore Katz with former soldiers.

¹⁷ Schwarz, *Tantura*.

- ii. Tantura survivor **Mostafa al-Masry (b.1935)**: “From this structure southwards, to the palm trees, that is all a cemetery. There were three trees there. Thirty metres north of those trees, more or less, they dug a pit that was surrounded by piles of soil.”¹⁸
- iii. Tantura survivor **Nayef Taha Mahmoud Salam (b. 1935)**: “We still did not know who got killed, but as they finished and they wanted to make people leave the town, only then they took us to the field next to the graveyard, and we started seeing the bodies of this person, and that one, this and that all dead. [...] Then they started grouping people so that they could deport them. Nobody knew what was going on. Later we understood that these almost 50 men that were aside and that [the Israeli soldiers] thought were part of the resistance and had rifles were separated to get killed. [...] I was still 13 years old then but I do remember all these events. I don’t know when they buried them. I saw them in the graveyard piled on top of each other, and in the streets, you will see one here, two there, another few in the other side.”¹⁹
- iv. Tantura survivor **Mohammad Abu Amr (b. unknown)**: “They decided to gather the dead throughout the village, take them to the gravesite/cemetery, and bury them in mass graves. They took 10 or 12. Amongst them were Shafiq El-Eiq, Saad el-din Abu Hassan, and three Salboud children, Ahmad, Khalil and Mustafa, three brothers, the mother had no others. They were ordered to pile the bodies in a cart to be taken to the cemetery which would be a mass grave.”²⁰
- v. Tantura survivor **Mohammad Saud Abu Hana (b. 1935)**: “They took us from the shore to the village cemetery at the side of the town, where there are cactus plants. They put us there, they made the women sit there, then they took a few men to bring in the bodies, and made other men dig the big hole. [...] People from our village [dug the hole]. [...] Most men were there, so the Jew[ish soldiers] told them to dig a whole, so they dug it. [...] I saw the bodies, but I really cannot tell you how many were there. Practically, I cannot tell how many. [...] More than 20 [bodies], the cargo truck they brought was full. And they threw them in the hole. That is without including the bodies that were in the streets.”²¹
- vi. Tantura survivor **Sabira Abu Hana (b. 1933)**: “On the beach, they stole twelve gold bracelets from Hajja 'A'isha, the wife of Issa 'Abd al-'Al. Amina 'Awad Abu Idriss discovered the body of her brother near the cemetery. She smoothed his hair, kissed him and yelled her grief. I saw about fifty bodies at the cemetery.”²²
- vii. Tantura survivor **Adel Mohammed Amouri (b. 1931)**: “I saw scores of dead bodies there including those of my dad, brother, and cousin. They were digging mass graves that they would throw 10-15 men into. It was so difficult to see someone you knew, your father, cousin, neighbour, and be so afraid to even mention that you knew them. I saw people from my village and many relatives, in the tens of people, stacked up in these mass graves. I saw it with my own

¹⁸ Schwarz, *Tantura*.

¹⁹ Nayef Taha Mahmoud Salam interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

²⁰ See 00:45:44 in *Over Their Dead Bodies*, dir. Arab Loutfi. 2008.

²¹ Mohammad Saud Abu Hana, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

²² “Twenty-one eyewitness testimonies of war crimes against humanity,” *Palestine Remembered*, retrieved 14 March 2023, <https://www.palestineremembered.com/Haifa/al-Tantura/Story560.html>.

- eyes, not far from me at all. They made it a cemetery for the people of Tantura. Today [Israel has] transformed it from a cemetery to a parking garage.”²³
- viii. Tantura survivor **Najah Hasan Ayoub (b. 1932)**: “When they put us in the cars we passed by the cemetery and saw that they were digging a ditch and there were people gathering the bodies and collecting them there.”²⁴
 - ix. Tantura survivor **Alsabre Abu Hana (b. unknown)**: “They took us to the sea, under Eqab al-Yahya’s house. Then they brought us to the outskirts of town, to the cemetery. We sat there waiting for the cars to take us. They packed up the men and took them prisoner and then they started loading up the women, children, and elderly in cars to take them. [...] They were bringing the dead on ladders. They would put three or four on top of each other. The men were gathering the martyred. [...] On the ladders [...] and they’d dump them into the grave. They dug a mass grave for all of them.”²⁵

The assessment that E1 is also the site of burial of people executed after the battle is supported by numerous Palestinian testimonies, including:²⁶

- i. Tantura survivor **Yusra abu Hana (b. 1915)**: “On the beach [where we were assembled,] they stripped us of everything: watches, bracelets, money, identity papers. On the way to the beach, the door of one of the houses was open and I saw a pile of bodies inside. Not to mention the people they had gathered and executed in the cemetery. More than fifty.”²⁷
- ii. Tantura survivor **Haj Fawzi Mahmoud Ahmad Tanji (b. unknown)**: “Yes, and then they took the men away to the graveyard. [...] They brought us to the graveyard. [...] We saw the bodies. [...] Yes, to the graveyard. [...] They took us there, seated us, aimed the weapons at us, and wanted to kill us. [Then] the people of Zichron came and said, ‘These don’t [kill]. You have killed enough.’ [...] The same day they took them and dug a big hole.”²⁸
- iii. Tantura survivor **Hussein Ibn Ahmed Ibn Abdel-Rahman Al-Ashmawi (b. 1938)**: “Until we arrived at the cemetery, there we found a congregation of men and women. From afar we could see people carrying stretchers with dead bodies. About 100-metres away was a huge ditch. They were taking the bodies and dumping them into this ditch. In that moment, the people who were dumping the dead into this ditch, of course, we do not call them dead, we call them martyrs, because all those murdered in Tantura were martyrs. Those same people who carried the dead bodies on stretchers to the ditch were killed by a wave of bullets and dumped into that same

²³ Adel Mohammed Amouri, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

²⁴ Najah Hasan Ayoub, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

²⁵ Alsabre Abu Hana, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

²⁶ Numerous Israeli testimonies of the same are documented Schwarz, *Tantura*.

²⁷ Institute for Palestine Studies. “The Tantura Massacre, 22-23 May 1948,” *Journal of Palestine Studies*, Vol. 30, No. 3 (Spring 2001), 17.

²⁸ Haj Fawzi Mahmoud Ahmad Tanji, interviewed by Theodore Katz, 9 May 1997. Audio recording, private collection.

ditch. That sight, I will never forget. It's as if I'm seeing it all over again today. From afar, but it was clear that they were taking these stretchers and dumping bodies into that ditch."²⁹

6.4.1.2 Contents of E1

It is our assessment that E1 very likely contains a mass grave of some of the residents of Tantura executed after the battle on 23 May 1948. The grave may also include people killed in battle.

Using a 3D model that we constructed (see Figure 5), we measured the dimensions of E1 and calculated the volume of earth piled above ground level to be approximately 50m³.

The earth removed while digging a grave is often piled beside it, later to be used to cover the bodies. The volume of the earth is thus a function of the number of bodies, taking into consideration the fact that the earth piled up over the grave will be less compact and therefore of a lower density than the earth being dug.

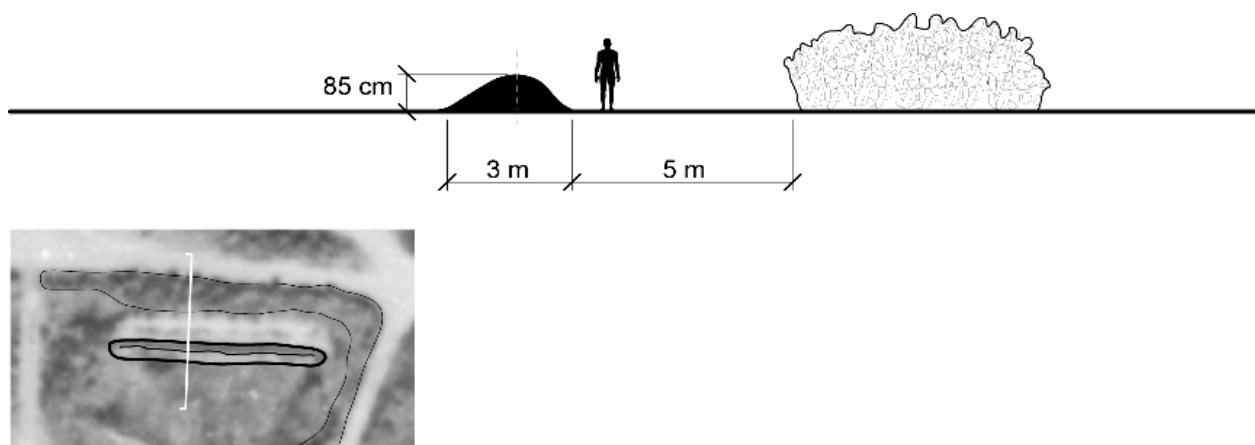


Figure 28. Sectional drawing of E1 showing dimensions of mound and its distance from the cactus bush. Forensic Architecture, 2023.

We believe that if bodies were laid shoulder to shoulder and oriented northwards in one layer, there could be around 70 bodies under a mound of this size. Were the bodies to be layered on top of each other, as one testimony suggests,³⁰ the number could be double that, up to approximately 140 bodies. In other, more haphazard configurations, the number of bodies would be difficult to estimate. Thus, our assessment is that the number would be in a range of between 70-140 bodies.

The amount of earth above the grave—50m³—suggests that the upper limit of the approximation of 140 bodies is possible as the volume of 140 average male bodies is approximately 11.2m³.

In the image taken on 25 October 1949, we observed that north of the mound, an approximately 4.5-metre-wide rectangular patch runs parallel to it.

²⁹ Hussein Ibn Ahmed Ibn Abdel-Rahman Al-Ashmawi, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

³⁰ See testimony of Mohammad Khalil Dassouki in Section 6.4.2.

We considered the possibility that the digging of the rectangular patch was undertaken between 23 May 1948 and October 1949 so as to remove the buried bodies from the grave. If this were to be the case, then the mound visible and labelled as E1 is the excess earth that had been extracted in the process of removing the bodies. In this scenario, E1 would have been made at two distinct times: on 23 May 1948, when the bodies were initially buried; and at another moment between 23 May 1948 and 25 October 1949, when the bodies would have been either partially or fully removed.

We believe this scenario to be very unlikely. This patch has semi-regular edges and a lighter colour than the surrounding earth. The shape of this line, uncharacteristically straight, likely indicates the work of the blade of a bulldozer moving along the west-east axis at some point between April 1948 and October 1949. This lighter colour could be attributed to the removal of topsoil and the piling of this earth over the original grave, likely to re-cover bodies which had become exposed, as the landscape in and around Tantura is characterised by a thin topsoil layer.

This scenario is supported by Israeli testimonies describing the buried bodies as inflating and being exposed within a week of the mass burial.³¹

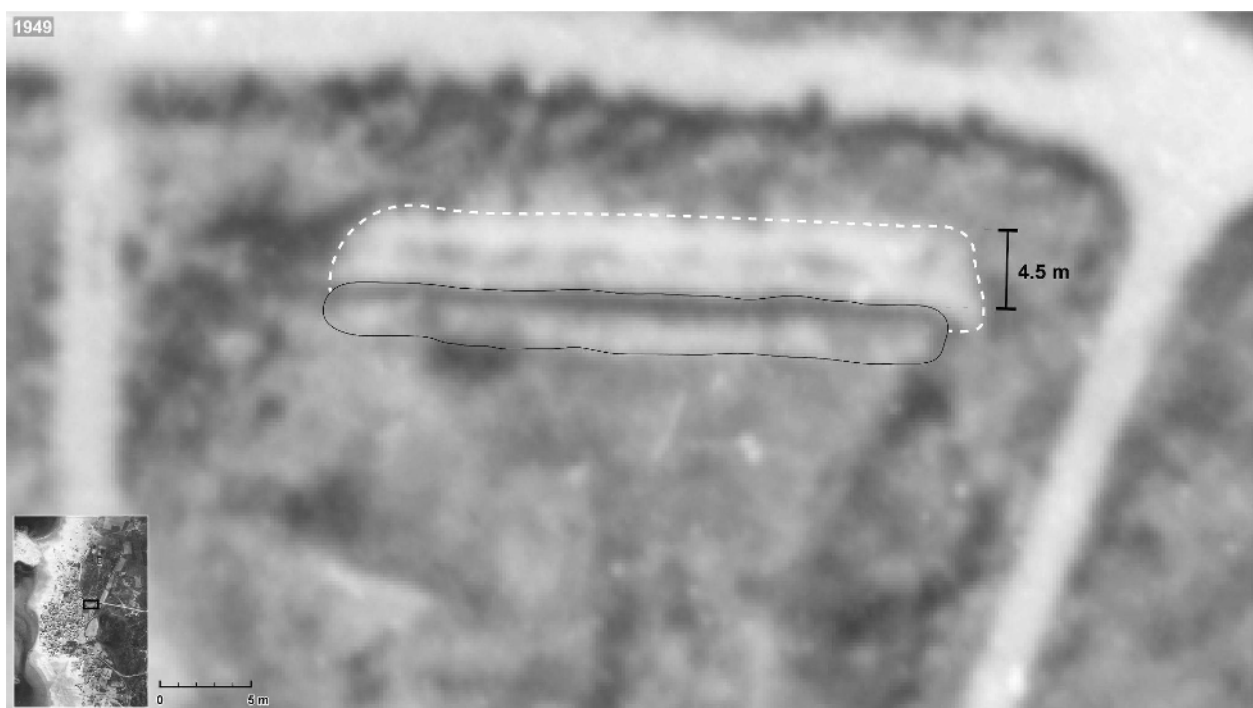


Figure 29. Marking the rectangular patch above E1 within the 1949 aerial image. Forensic Architecture, 2023.

³¹ Mordechai Sokoler in an interview with Theodore Katz: “After a week I came to Tantura, and where they were buried was a mountain, a great mountain. [...] Mountain. [...] They swelled. [...] Yes. It became a mountain.” Mordechai Sokoler, interviewed by Theodore Katz, 1997. Audio recording, private collection.

It has been claimed that the rectangular patch is an open trench in the 1949 aerial image (see Figure 29).³² However, through our 3D and shadow analysis of the site, our assessment is that this patch has no significant depth.

This assessment is based on the following:

1. We analysed three aerial images—the first images that capture E1—taken in short succession along the north-south axis over the village in 1949. The length of the faces of the buildings varies between these due to the change in position. We would expect to see a similar phenomenon if the feature was to be a trench. However, the proportion of the feature does not change between the images, indicating it is not at a significantly different elevation than the rest of the surface immediately surrounding it.
2. The north, east, and west edges of the rectangular patch do not change their position across all three images, indicating that the feature is likely flat. The only geometry that appears to vary, as we see it from slightly different angles, is the mound, E1, itself. This further supports our assessment that E1 is the only place of significantly different level from the ground.
3. Relatedly, as the direction of the shadows is in a north-west direction, if the rectangular patch was a deep trench, we would expect to see shadows on its eastern edge even past the mound—but there is no shadow there.

Our assessment is therefore that the patch north of E1 is a shallow ‘scratch’ of the soil surface, possibly made in order to pile more earth over the mass grave.

6.4.1.3 Remnants of E1

Traces of Earthwork 1 persist in the 1952 and 1956 aerial images. Between 1949 and 1952, the two small shrubs adjacent to E1 as well as the building built near it in the centre of the field and the road leading into it were removed, as the village fell further in ruins.

In the 1952 image, E1 still existed as an elevated feature, by then likely covered in plants (see Figure 30). The patch to the north of the mound was still mostly exposed, not fully overgrown with plants. This indicates that the light-coloured patch likely lacked the topsoil needed for plants to grow.

Between 1952 and 1956, all houses in the vicinity of E1 in the village had fallen into further decay, been damaged, or demolished. In the 1956 image, E1 remains visible as an elevated feature, though seemingly less so than in 1949 and 1952 (see Figures 17-18 and 26). Bushes and grasses along the edges of the north ground clearing continued to cover and close in the light-coloured patch, though it is still visible.

By 1957—in the IAF aerial image taken nine years after the occupation of Tantura—we can observe that the area has been significantly transformed (see Figure 31). By then, E1 appears to be flat, with only a faint outline of its eastern part still visible. Partial traces of the patch north of E1 are visible on the surface. It is unclear

³² Schwarz, *Tantura*.

whether E1 was flattened or whether the area was filled in order to create the parking lot which exists to this day (see Figures 32-33).

It is possible that, in the process of flattening the area in order to later create a parking lot, human remains, or fragments thereof, may have been spread well beyond the area of the earthwork itself.



Figure 30. Boundary of Earthwork 1 marked within the 1952 image. Forensic Architecture, 2023.



Figure 31. Boundary of Earthwork 1 marked within the 1957 image. Forensic Architecture, 2023.



Figure 32. Boundary of Earthwork 1 marked within the 1965 image. Forensic Architecture, 2023.



Figure 33. Boundary of Earthwork 1 marked within the 1975 image. Forensic Architecture, 2023.

6.4.1.4 Excavation of bodies from E1

We believe that it is unlikely that the bodies were exhumed or excavated from E1. We base this opinion on the following observations:

1. We found no testimonies from either survivors or perpetrators regarding the removal of buried bodies from mass graves in Tantura. Such removal would have been an anomaly in the documented history of the 1948 war, and its aftermath.
2. None of the visual evidence we examined indicates that the bodies in what we believe are mass graves, E1 and E2, were either partially or fully excavated between 23 May 1948 and 25 October 1949, nor are there any visual indications that they were exhumed thereafter (see Section 6.4.1.2).

We believe that it is more likely that the bodies remained under E1, rather than being exhumed or excavated from the site.

6.4.1.5 Location of E1 in today's environment

The centre of E1 is approximately: 32.61089, 34.91905. The extent of E1 is **32.61091, 34.91887; 32.61088, 34.91887; 32.61089, 34.91924; 32.61086, 34.91924.**

We marked the location of E1 on a contemporary satellite image (see Figure 1). The area is presently a tourist parking lot serving Dor Beach.



Figure 34. Boundary of Earthwork 1 marked within contemporary satellite image. Source: 7 June 2019, OFEK. Forensic Architecture, 2023.

6.4.2 Earthwork 2: An earth feature near the village square

We observed various testimonies of survivors making references to bodies being buried in a mass grave in an open field belonging to the Dassouki family. Other testimonies make reference to a mass grave and bodies piled in a field near the Mosque or the village square, including:

- i. Tantura survivor **Yusuf Salam (b. 1924)**: “Besides the bodies that I saw in the mass grave that had been dug in the Dassoukis’ field, I myself counted twenty-five bodies of our people.”³³
- ii. Tantura survivor **Mohammad Ibrahim Abu Amer (b.1934)**: “Next to the Dassouki house there was a pile of murdered men that was around 60-70 men. It was over 3 metres high.”³⁴
- iii. Tantura survivor **Mohammad Khalil Dassouki (b. unknown)**: “They dug this ditch, and they started... like sardines, next to each other, to organise them. They put the first row, and the second row... there remained three women out. There were three women. One's name was Ez El Haj from the Abdel Aal family. One whose name was Soad al Filou. She used to bring drinks to the resistance fighters. They hit

³³ Institute for Palestine Studies. “The Tantura Massacre”, 15.

³⁴ Mohammad Ibrahim Abu Amer, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

her and she died. And there was another woman who had become so black from the sun that I couldn't recognize her. We asked them, "And these women that are here?" They dug another ditch for the three and buried them. [...] They buried them in the Dassouki orchard. The Dassouki orchard was split into two halves. One half our grandfather had donated to be used as a place for people to bury their dead. And the other half, a man named Mousa Shbeeb Dassouki would garden that land. Tomatoes and cucumbers, and things like that."³⁵

- iv. Tantura survivor **Fawaz Anis Abu Madi (b.1929)**: "Many people were killed from our village. It was said that between 60 or 70 people were killed, including men, children and women. They were all buried together in the same hole. This hole was in an area called 'Bustan Al-Dassouki [Dassouki orchard]. It was a big hole, where they placed all the bodies then covered it up with dirt using bulldozers."³⁶

Other witnesses reported mass executions around the village square, al-Marah, and the Mosque to the south of the village—with some reporting that the bodies were later thrown into a large pit nearby:

- v. Haifa notable **Muhammad Nimr al-Khatib (b.1950)**: "The Jew[ish soldiers] gathered all women and children in a place, where they dumped all bodies, for them to see their dead husbands, fathers and brothers and terrorise them, but they remained calm. They gathered men in a second place, and taking them in groups they shot them dead. When the women heard this shooting, they asked their Jewish guard about it. He replied, 'we are talking revenge for our dead'. One officer selected forty men and took them to the village square. They were taken aside in groups of four. They shot one, and ordered the other three to dump his body in a pig pit. Then they shot a second, and the other two carried his body to the pit, and so on."³⁷
- vi. Tantura survivor **Abd al-Razzaq Nasr (b.1931)**: "They led me, my arms tied with my shirt, so I could find my rifle and they took it. On the way I saw a number of bodies near the Abu Safiyya house, and on the way back, at the place called Marah, I recognized the bodies of Fadl Abu Hana, Fawzi Abu Zamaq, and Muhammad' Awad Abu Idriss. In the little alley by Abu Juayd's barber shop, I saw a long trail of blood running some 20 meters to a little place where more than ten bodies had been piled up."³⁸

We obtained a diagrammatic sketch of the village houses and their owners from an online community-populated archive titled *Palestine Remembered* (see Figures 35-36).³⁹ The sketch was drawn from memory by Ahmed Taha Salam, a former inhabitant of Tantura, and included a legend identifying the families to whom the various

³⁵ Mohammad Ibrahim Dassouji, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

³⁶ Fawaz Anis Abu Madi, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

³⁷ Pappé, "Historical Truth", 185.

³⁸ Abd al-Razzaq Nasr, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

³⁹ See memory sketch: <https://www.palestineremembered.com/Haifa/al-Tantura/Picture13030.html>. Retrieved 14 March 2023.

building blocks, properties and agricultural fields in the village belonged prior to the occupation of the village in 22-23 May 1948.⁴⁰

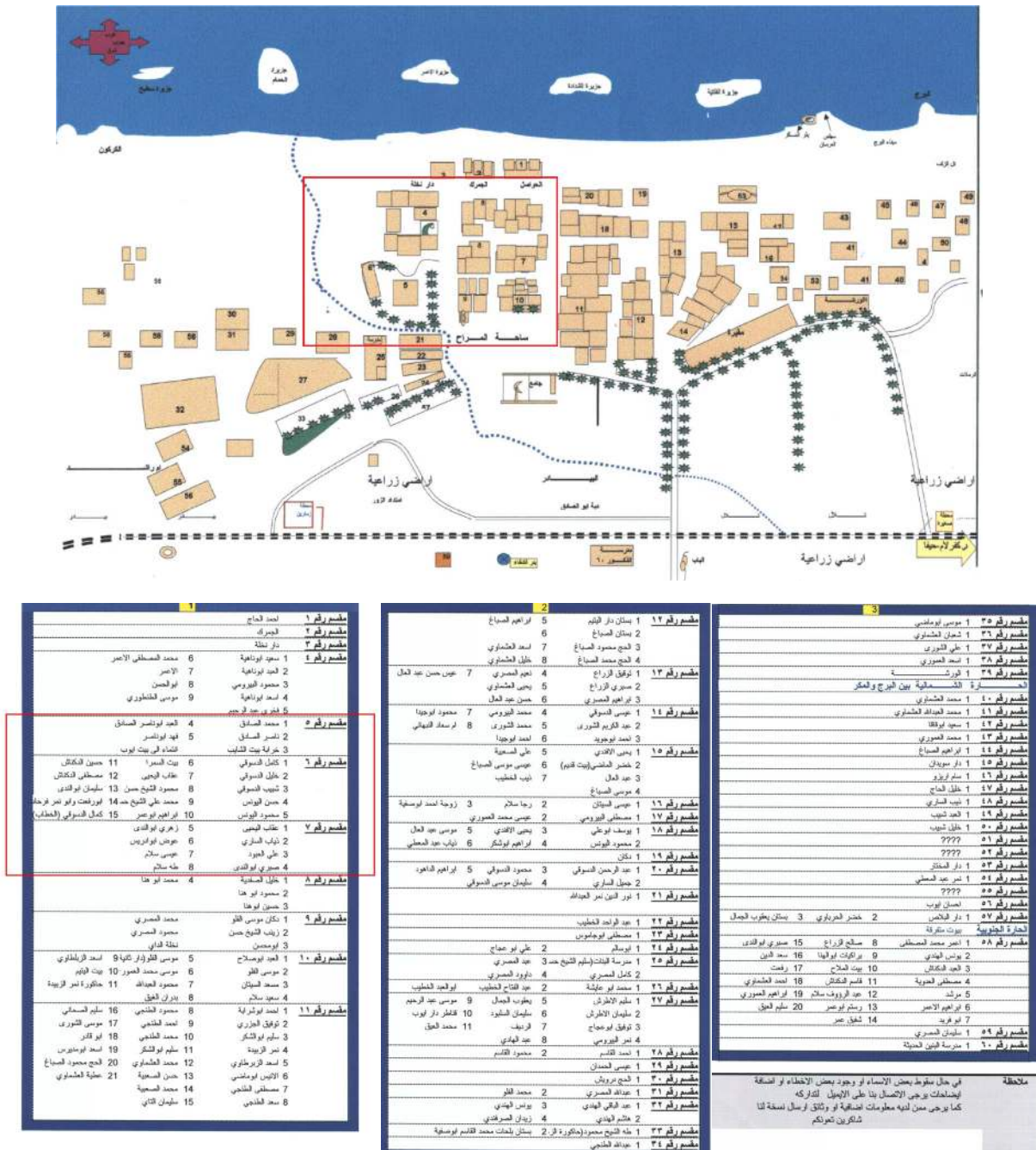


Figure 35. Memory sketch by Tantura survivor Ahmed Taha Salam identifying property allocations in the village. Source: www.palestineremembered.com.

⁴⁰ See legend: <https://www.palestineremembered.com/Haifa/al-Tantura/Picture13023.html>;

<https://www.palestineremembered.com/Haifa/al-Tantura/Picture13025.html>; and

<https://www.palestineremembered.com/Haifa/al-Tantura/Picture13027.html>. Retrieved 14 March 2023.

مقسم رقم ٥			1 محمد الصادق	4 العبد ابوناصر الصادق
			2 ناصر الصادق	5 فهد ابوناصر
			3 خرابة بيت الشايب	انتفاء الى بيت ايوب
مقسم رقم ٦			1 كامل الدسوقي	6 بيت السمرا
			2 خليل الدسوقي	7 عقاب اليحيى
			3 شبيب الدسوقي	8 محمود الشيخ حسن
			4 حسن اليونس	9 محمد علي الشيخ حس
			5 محمود اليونس	10 ابراهيم ابو عمر
			1 عقاب اليحيى	5 زهري ابوالنندى
مقسم رقم ٧			2 نيا ب الساري	6 عوض ابوالنندى
			3 علي العبود	7 عيسى سلام
			4 صبري ابوالنندى	8 طه سلام

Plot Number 6

Dassouki Family



Figure 36. Property belonging to most of the members of the Dassouki family with a field in Plot 6. Source: www.palestineremembered.com. Forensic Architecture, 2023.

We overlaid the diagrammatic sketch over the village structure as it existed in 1947 and located the building allotments using main roads and village markers—such as the main square, the Mosque and the large Muslim cemetery—as anchors. We limited the plotting of the building allotments to the blocks in the diagram whose visual signature clearly corresponded to the village outlines in the 1947 aerial image.

By comparing these two layers, we were able to identify three major properties in Tantura that belonged to the Dassouki family: plots 6, 14, and 20.

Of these, plot 6 is the property belonging to most of the members of the Dassouki family, which also contains the largest field owned by the family. On the north and eastern edges of this field there is an area that appears planted with trees, likely a small orchard (see Figure 37). By comparing the 1947 aerial image of the field with

the 1949 aerial image, we noticed an earth feature in the form of a human-made earth pile appearing in 1949. We refer to this as Earthwork 2, or E2.



Figure 37. Boundary of where Earthwork 2 later appears marked within 1947 aerial image, the north and east side are planted with trees. Forensic Architecture, 2023.

There are fewer sources which refer to this site in the published scholarship.

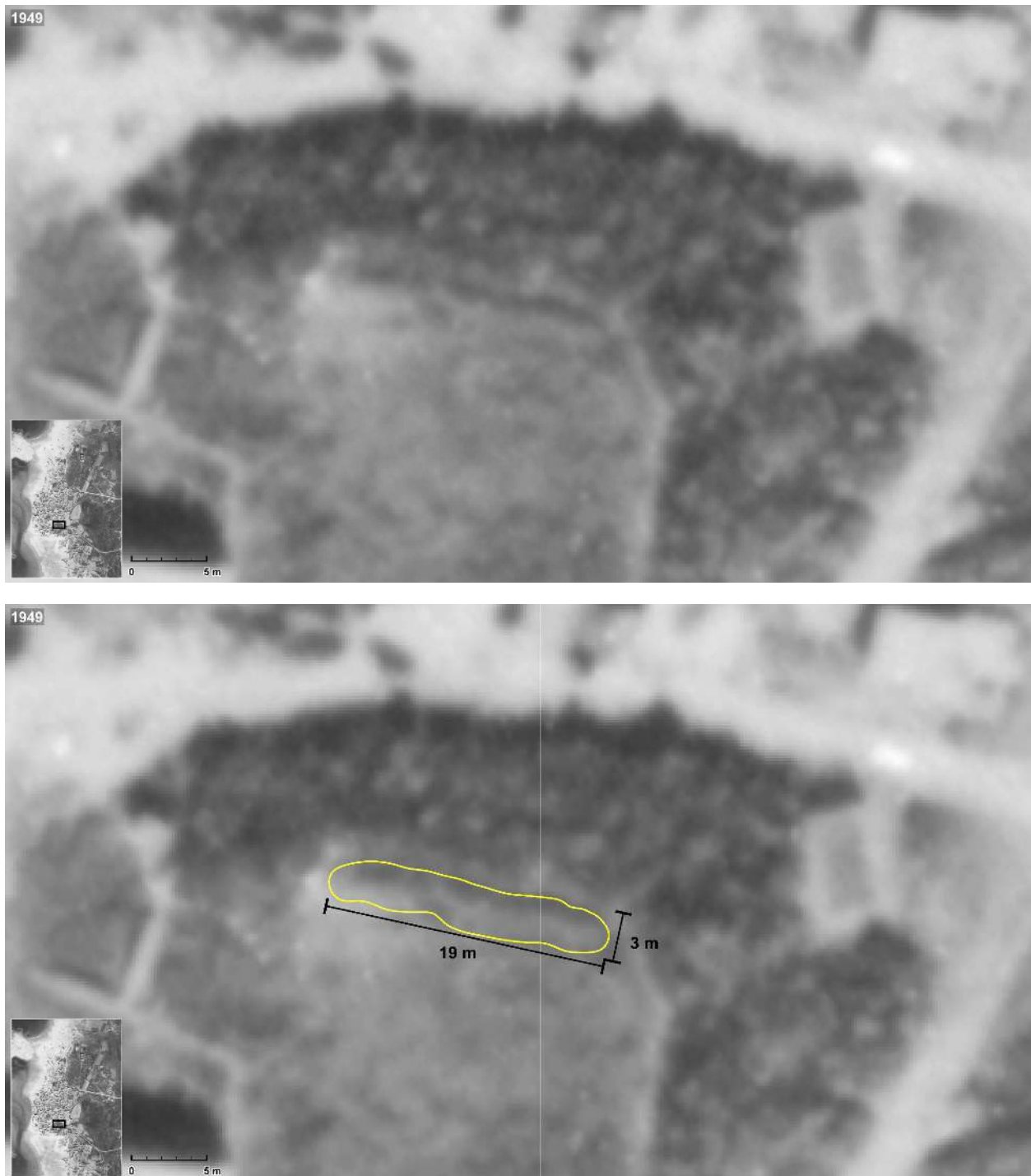


Figure 38. Boundary of Earthwork 2 in the 1949 image. Above, without marking; below with an outline of the mound and its measurements. Forensic Architecture, 2023.

Similar to Earthwork 1, Earthwork 2 is a long and narrow rectangular-shaped human-made earth mound with an east-west orientation. It measures approximately 19-metres in length and 3-metres in width, and is located south-west of the main village square, facing the Mosque in a field belonging to the Dassouki family, and surrounded by a thick bush. In the 1949 image, the shadow is cast toward its north, while its southern half appears brighter. It is very likely a long and thin mound (see Figure 38).

Using shadow analysis, we produced a 3D model of the mound to study its height and characteristics. We calculated the height at its peak to be approximately 85-centimetres. Significantly, the height of Earthwork 2 is the same as that of Earthwork 1.

E2 did not exist in the 1947 image and is not visible in the 1948 image. E2 first appeared in the aerial image captured in 1949 (see Figure 39). Similarly to E1, this earthwork was also very likely created in the period that includes the battle, occupation, depopulation and partial destruction of the village.

In 1947, the area where E2 is later located was an open field, bound by a thick orchard on its north, east, and partially west side. The field is located along two well-used roads, one that enters the village from the south and another residential road that leads to the beach.



Figure 39. Comparison of the site of E2 between 1947 and 1949 marking the bush lines. Forensic Architecture, 2023.

Traces of E2 are faintly visible in imagery from 1952, but it is no longer visible in images from 1956 onward (see Figures 40-41).

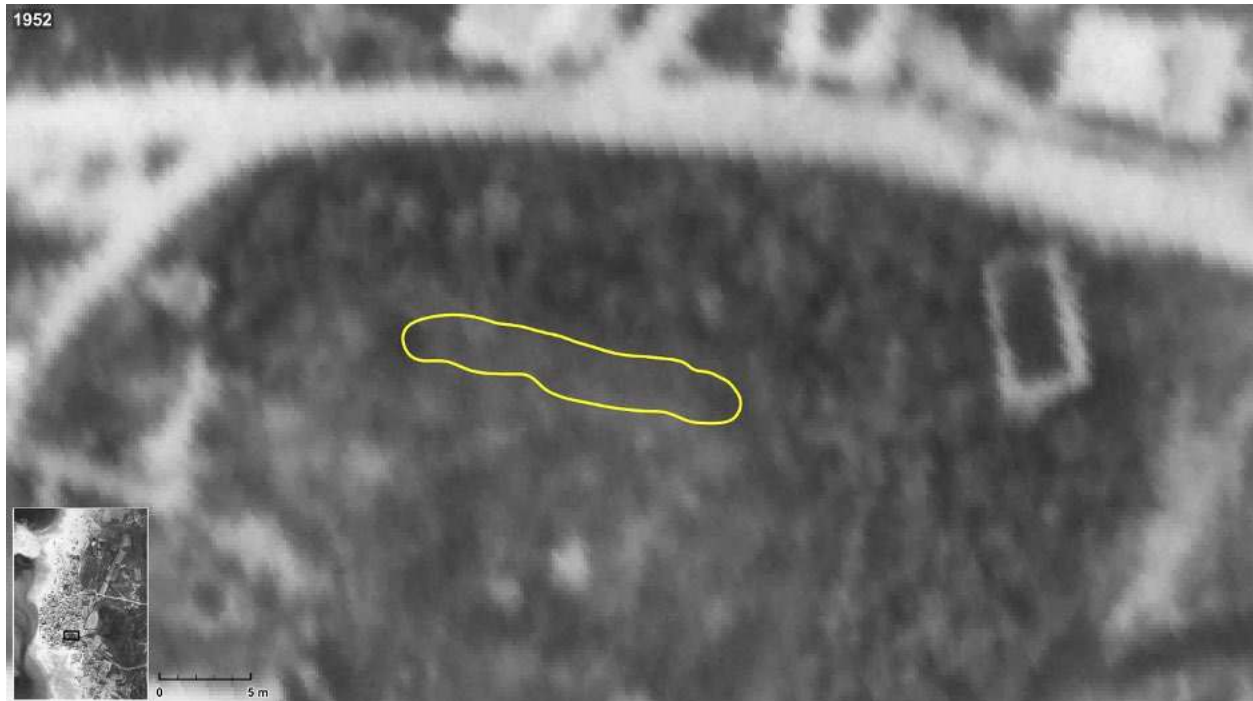


Figure 40. 1952 aerial image showing faint traces of E2. Forensic Architecture, 2023.

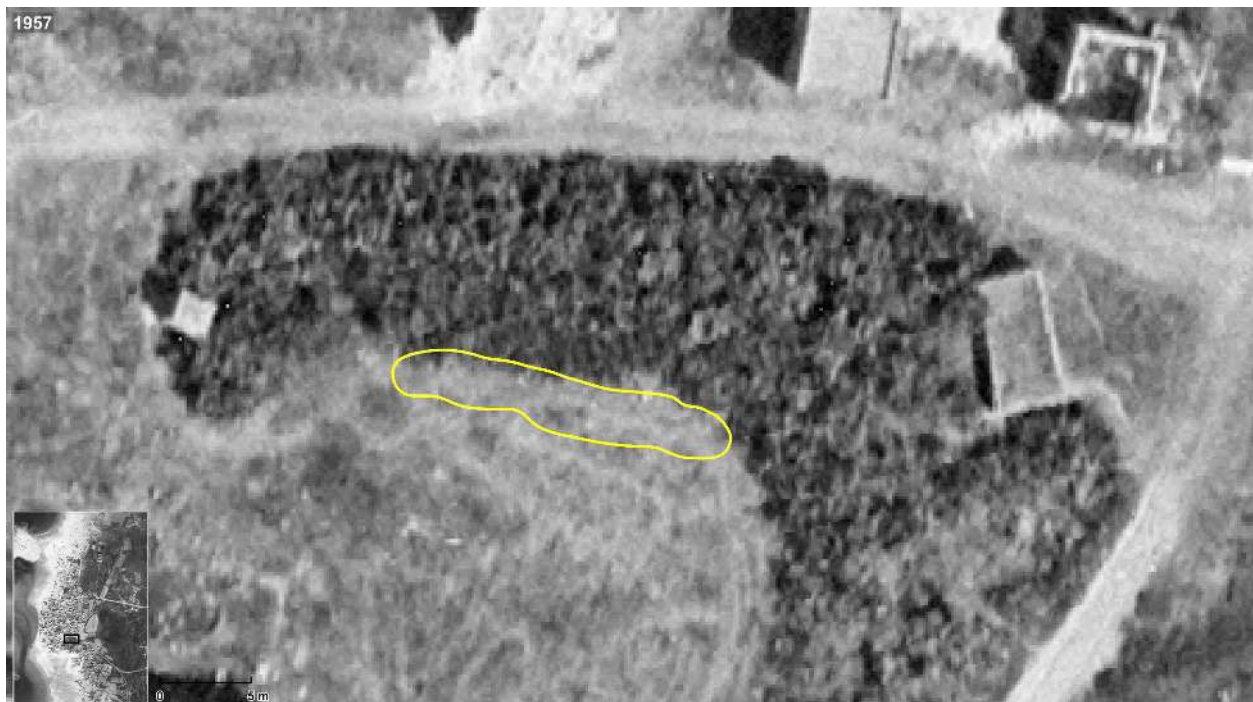


Figure 41. 1957 aerial image where E2 is no longer visible. Forensic Architecture, 2023.

6.4.2.1 Assessment of Earthwork 2

We compared the 1946 and 1947 RAF aerial images with the 1948 aerial image and the IAF image from 1949; along with the available testimonies of both survivors and perpetrators.

It is our assessment that E2, the mound located in plot 6—a field belonging to the Dassouki family—very likely contains a mass grave of some of the residents of Tantura executed on 23 May 1948. After cross-referencing testimonies of Palestinian and Israeli witnesses, we believe that the majority of those buried in this mass grave were people executed after the battle.

We base the assessment that E2 is a mass grave on the following observations:

1. Like E1 (see Section 6.4.1), E2 is an earth mound consistent with the visual signature, dimensions and spatial characteristics of a mass grave.
2. Similar to E1, it is located at the edge of an open field, at an approximate distance of between 1-2-metres from a line of high growing vegetation, in this case trees in an orchard.
3. E2 did not exist in 1947 and first appeared in the aerial image captured in October 1949—seventeen months after the village of Tantura was occupied. Its appearance coincides with visual indications of the mass depopulation and evacuation of the village after the battle.
4. The location of the mound coincides with the location where witnesses—both Palestinian survivors and Israeli soldiers—saw bodies piled up after the occupation of the village on 22-23 May 1948. These testimonies recount the location of a mass grave in a field near the main square, near the Mosque and belonging to the Dassouki family.

6.4.2.2. Contents of E2

Using our 3D model, we calculated the volume of the earth mound, determining it to be roughly 20m³.

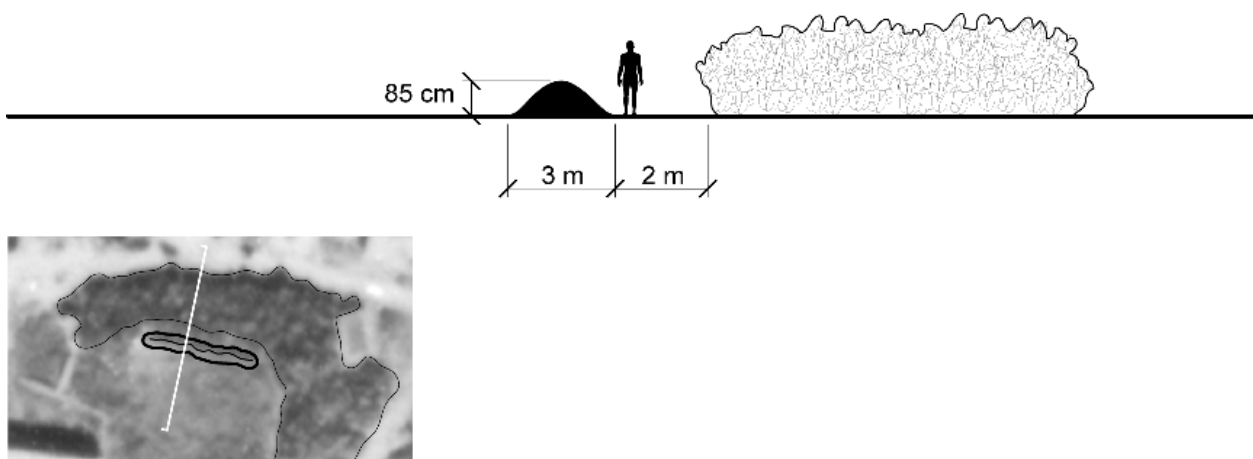


Figure 42. Sectional drawing of E2 showing the dimensions of the mound and its distance from the cactus bush. Forensic Architecture, 2023.

We believe that if bodies were laid shoulder to shoulder and oriented northwards in one layer, there could be between 40 bodies under a mound of this size. If the bodies were positioned in two layers, the number under the E2 mound could be double that, up to approximately 80 bodies. In other, more haphazard configurations, the number of bodies would be difficult to estimate. Thus, our assessment is that the number would be in the range of between 40-80 bodies.

The amount of earth above the grave— 20m^3 —suggests that the upper limit of the approximation of 80 bodies is possible as the volume of 80 average male bodies is approximately 6.4m^3 .

6.4.2.3 Remnants of E2

Traces of Earthwork 2 are visible in the 1952 aerial image (see Figure 1). In images after 1952, the boundaries of the E2 mound are not clear (see Figure 44).



Figure 43. Boundary of Earthwork 2 visible and marked within the 1952 aerial image. Forensic Architecture, 2023.



Figure 44. Boundary of Earthwork 2 marked within the 1957 aerial image. Forensic Architecture, 2023.

Between 1952 and 1956, most of the houses on the main street north of E2 were heavily damaged, many were completely demolished, in a process of destruction that affected the entire village.

By 1957—in the IAF aerial image taken nine years after the occupation of the village—we can observe that the area around E2 has been significantly transformed: there are major roads visible, while most original buildings have been destroyed.

6.4.2.4 Excavation of bodies from E2

We believe that it is unlikely that the bodies were exhumed or excavated from E2. We have based this assessment on the following observations:

1. We found no testimonies from survivors or perpetrators regarding the mass removal of the bodies. Such removal would also be an anomaly in the documented history of the 1948 war.
2. None of the visual evidence we examined indicates that the bodies in what we believe are mass graves were either partially or fully excavated between 23 May 1948 and 25 October 1949, nor are there any visual indications that they were exhumed thereafter.

In summary, we believe that it is likely that the bodies remained within the boundaries of E2 rather than being exhumed or excavated from it.

6.4.2.5 Location of E2 in today's environment

The location of E2 is: 32.60918, 34.91803. The extent of E2 is **32.60922, 34.91793; 32.60918, 34.91813; 32.60916, 34.91812; 32.60919, 34.91793**.

We marked the location of Earthwork 2 on a contemporary satellite image (see Figure 45). The area is presently the beginning of a pedestrian promenade on the south-east corner of a tourist parking lot serving Dor Beach.



Figure 45. Boundary of Earthwork 2 marked within contemporary satellite image. Source: 7 June 2019, OFEK. Forensic Architecture, 2023.

6.4.3 Comparing Earthwork 1 and Earthwork 2

Although E2 is roughly 14 metres shorter than E1, it shares several characteristics with E1:

1. both E1 and E2 are long and thin earth features of a similar width (roughly 3 metres) and height (roughly 85-centimetres);
2. both E1 and E2 are oriented along a similar east-west axis; and
3. both E1 and E2 are similarly located parallel to a line of high vegetation in the northern edge of an otherwise open field in the relative periphery of the village.

These physical similarities point to a potential similar *modus operandi* of mass burial adopted by the perpetrators. Taken together, the two sites indicate a possible pattern of mass burial in Tantura, and point to a possible signature of mass burial in both form and location that may also have been adopted by

perpetrators in other occupied and depopulated villages in Palestine with testimonies of similar mass killings.

6.5 Further suspected mass graves

6.5.1 Mass grave by the beach

We observed that multiple testimonies refer to the wall of a building by the beach as the site of execution and burial, including:

- i. Tantura survivor **Mohammad Ibrahim Abu Amer (b. 1934)**: “They rounded us up in the middle of the village in our neighbourhood by our house and the Yahya family house. They rounded up all the villagers in this area. Then they lined us up by the seashore. They lined the men up in lines like we were about to pray and they took the women to another location. They had their rifles pointed at us as we stood there with our hands over our heads like this. With their rifles pointed at us on the seashore like they were ready to fire. After that they started taking 3 or 4 of us at a time. They would take them 20 metres or so away, tell them to face the wall, and kill them. In the course of an hour or two they had executed 60-70 men. I was with a group of men lined up on the seashore with our hands over our heads being held as prisoners. I witnessed with my own eyes how they would take a few men at a time into a small alleyway in the neighbourhood and kill them.”⁴¹
- ii. Tantura survivor **Ahmad Abdel Mo'ty (b. 1936)**: “When the town was completely occupied, they took us near the house of Eqab [al-Yahya], and made us stand with men on one side and women on the other. Then they started taking young men in groups of 3 or 4 to stand facing the wall. They sprayed them with machine guns. Then, they took some men and even children. I was one of the children they took so they could collect the bodies on a horse carrier to transfer them to the cemetery.”⁴²
- iii. Tantura survivor **Hussein Ibn Ahmed Ibn Abdel-Rahman Al-Ashmawi (b. 1938)**: “[Israeli soldiers] had the men at the sea, and the men had their heads to the ground. There was an Israeli leader who started calling for someone from our village. His name is Mohammed Ehsan as far as I can remember, he was in the British army and he knew about arms. They asked him, ‘who has weapons?’ So he was forced to give away some names. And they started calling them forward, one by one. They brought up 10. Before they even reached where he wanted them to go, they had killed them all. We watched this from afar. This is what I saw with my own eyes. They had already killed 10 on the way. They started gathering others. An officer came and grabbed four men. We automatically thought that the fate of these four would be the same fate as the 10 before them that were killed.”⁴³
- iv. Tantura survivor **Adel Mohammed Amouri (b. 1931)**: “They would take them in groups of 10-15, line them up, and kill them. [...] Each man got a bullet to the head to make sure they were dead. [...] Some

⁴¹ Mohammad Ibrahim Abu Amer, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

⁴² Ahmad Abdel Mo'ty, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

⁴³ Hussein Ibn Ahmed Ibn Abdel-Rahman Al-Ashmawi, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

people say about 60-65 people died that day. Some people say it was about 100. My opinion is that many more died than that.”⁴⁴

- v. See also testimony of Tantura survivor **Yusra abu Hana (b. 1915)** in Section 6.4.1.1.

Mostafa al-Masry (b.1935) is a Palestinian from Tantura living in Fureidis. On two separate occasions, his testimony pointed to a site of burial by a wall near a courtyard behind the large house of Ahmad Haj Yahya, south of the family home of Adnan Yayha, and north of the village’s former Boys School. In a 2008 documentary titled *Over Their Dead Bodies* by filmmaker Arab Loutfi, Mostafa points to the southern point of a 2-metre wall behind the home of Ahmad Haj Yahya (marked in red in Figure 47).⁴⁵ Later, in a report by MBC Group News, al-Masry points to the northern point of the same wall (marked in blue in Figure 47).⁴⁶ The two testimonies corroborate each other, as the points are within 2-metres of each other (as can be seen in Figure 47). The GPS location of this site is: 32.60951, 34.91666.

Later, in a 2022 documentary titled *Tantura* by filmmaker Alon Schwarz, a fisherman named **Fouad Hassadie**, resident of Fureidis, recounted finding human bones in the same location (marked in green in Figure 47).⁴⁷

As the collected testimony by different witnesses co-relate across time and correspond to the same site, it is our assessment that the wall and courtyard behind the house of Ahmad Haj Yahya, directly south of the family home of Adnan Yayha, possibly contains a mass grave.

A comparison of the aerial images from 1947, 1949 and 1952 do not show distinct earthworks or ground anomalies in the area highlighted by the witnesses. However, we observed a significant ground disturbance approximately 25 metres south of the site (see Figures 46-47).

Using shadow analysis, we determined that there is elevated ground in this area. Further analysis through advanced modelling may reveal the height of this mound. The difficulty in determining this geometry lies in the irregular shape of the ground, as well as the low resolution of the imagery available.

⁴⁴ Adel Mohammed Amouri, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

⁴⁵ Loutfi, *Over Their Dead Bodies*. In the documentary, al-Masry states: “‘Haj Mahmoud Al-Yahya’s house was here. Over there was Mustafaa Deqnash’s house, Hussein Deqnash. And here they buried the men and old women after they died, 30 of them, here in this pit. They killed and buried them. Nothing is known about them. Some guy came wanting to erect a building, when they dug and found 30 bodies, he left.”

⁴⁶ Mostafa al-Masry, interviewed by MBC Group News, N.D. Private collection.

⁴⁷ Schwarz, *Tantura*.

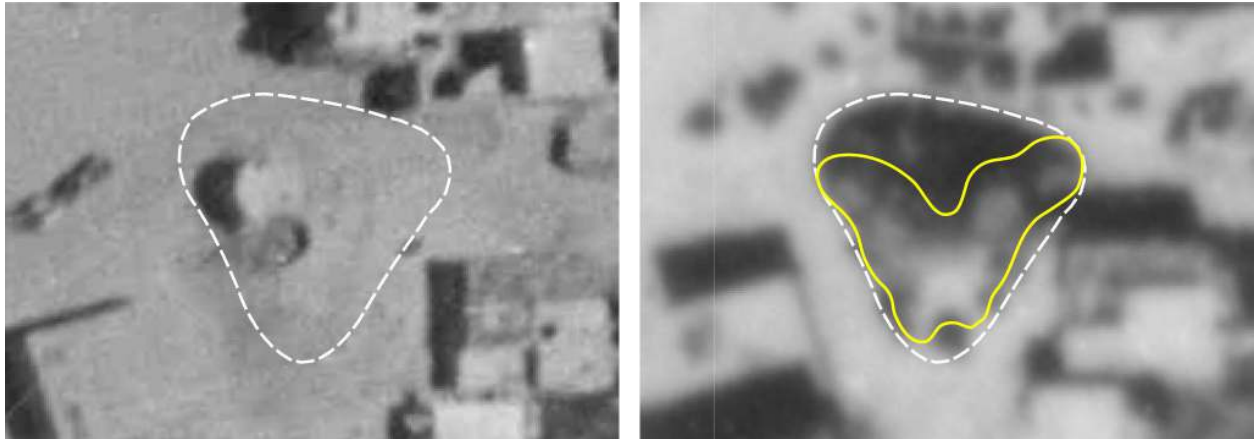


Figure 46. White dashed line is an outline of the area of anomaly. The yellow outline represents an apparent mound that appears in 1949 after the battle. Left: 1947. Right: 1949.

It did not exist in the 1947 image and first appeared in the aerial image captured in 1949. The vicinity of this anomaly to the site referred to by the witnesses, as well as the fact that this ground disturbance was most likely created in the period that included the battle, occupation, depopulation and partial destruction of Tantura, points towards it being a possible site of mass burial which requires further analysis.

The area is presently an open space behind the Yahya house, with dirt and grass over it.

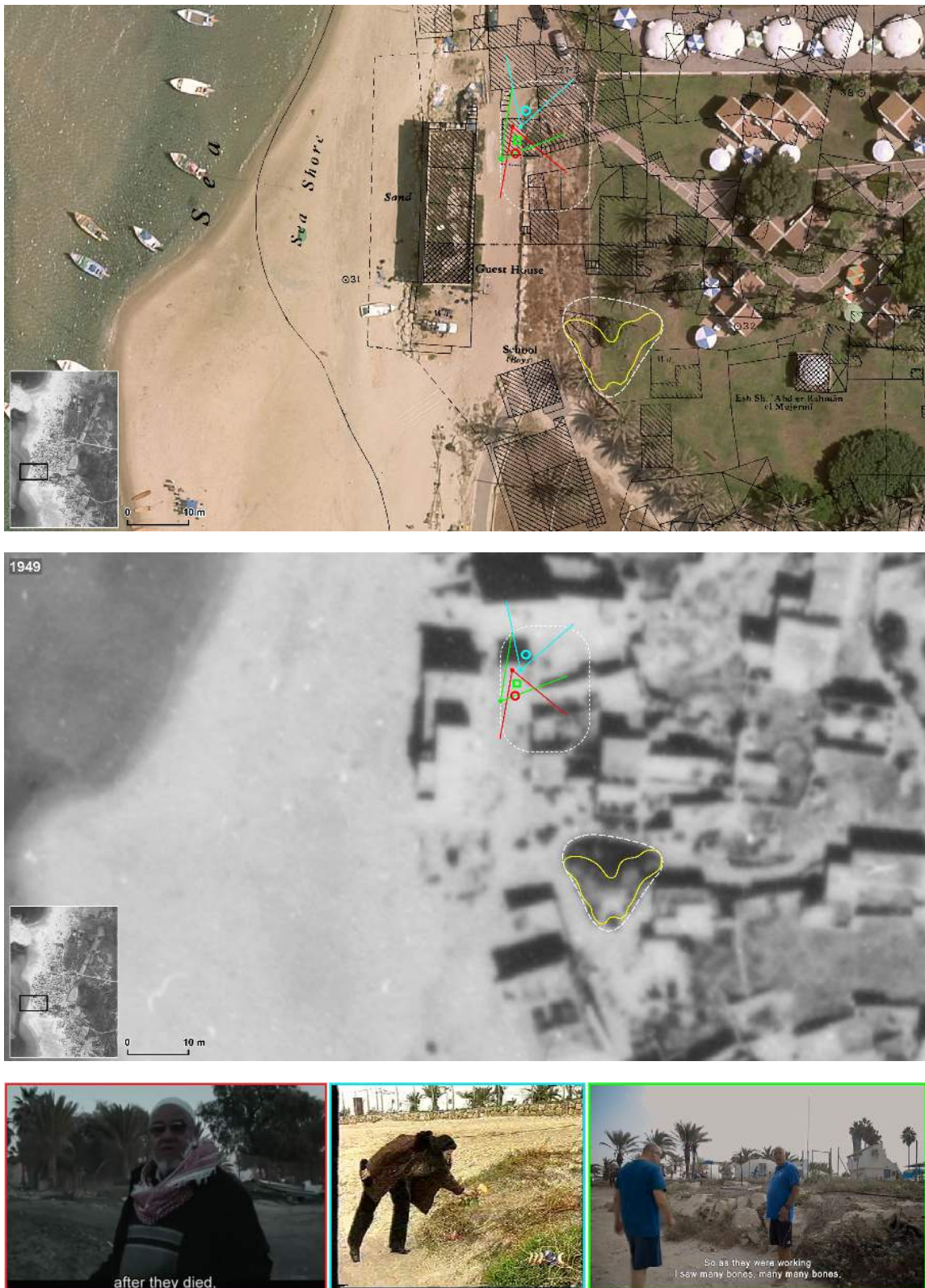


Figure 47. Sites of possible graves near the beach. The blue and red markers indicate al-Masry's testimony. The green marker indicates Hassadieh's testimony in Tantura. The yellow outline represents a mound that appears

in 1949 after the battle. Stills from *Over Their Dead Bodies* (2008) in red and blue, and from *Tantura* (2022) in green. Forensic Architecture, 2023.

6.5.2 Mass grave inside the main village cemetery

We conducted a situated testimony with Adnan Yahya (b. 1930) in Treysa, Germany, on 11 March 2023. Adnan was asked about his experience of the battle and occupation of Tantura on 23 May 1948 using our 3D model of the village, geo-located archival images, and printed aerial images from 1947 and 1949 (see Figures 48-49).



Figure 48. Situated interview with Adnan Yahya, 11 March 2023. Forensic Architecture, 2023.

In the situated testimony, Adnan testified to the following:

- He was captured on the beach and made to stay there for several hours, from the morning until the afternoon, at which point he and a friend were led by Israeli soldiers along the beach. By a known 'sweet water' well at the edge of the largest island by Tantura, he and his friend were led to the east, along a road into the main village cemetery.
- Adnan was led to the south-eastern corner of the cemetery where a circular pit, approximately 2-4 metres by 2-4 metres had been dug, and bodies had been piled up beside it.
- Adnan did not dig the pit, nor did he carry the bodies to the site. The bodies had been carried to the location by other villagers. He did not know whether the people he buried were killed during battle or executed after the occupation of the village.
- Adnan had no memory of wells, cacti or trees in the immediate vicinity of the pit—but was certain it was located within the cemetery itself, as he had a clear memory of individual graves surrounding the pit.

The pit was also located near the main east-west road that led to the railway tracks, and to Adnan's old school on the other side of the tracks.

- Adnan and his friend were forced by Israeli soldiers to throw approximately 10-20 bodies into the pit. Adnan tells that one of these bodies was the father of that friend, who was still breathing when they were forced to throw him in the pit.



Figure 49. Situated interview with Adnan Yahya, 11 March 2023. Forensic Architecture, 2023.

Adnan's testimony corresponds with available testimonies from other Palestinian witnesses of the existence of a mass grave inside the main village cemetery:

- i. Tantura survivor **Fatmeh Salim Shora (b. 1932)**: "While we were waiting at the cemetery, we saw them pick out four men. They brought the coffin from the mosque. It had some wooden handles... and they would gather up the dead. These were from when we would hear gunshots but could not see. [...] I saw this. Yes. [...] They would pile up the dead and come over and dump them in the cemetery. I swear. My eyes were watching, by God I swear. [...] They would put two or three and they would bring them and dump them, like piles of wheat. Have you seen the wheat piles when harvested? They would put them in the middle of the cemetery."⁴⁸
- ii. Tantura survivor **Abu Mashayiff (b. unknown)**: "[S]aw with his own eyes the execution of eighty-five young men of Tantura, who were taken in groups of ten and then executed in the cemetery and the nearby mosque."⁴⁹

⁴⁸ Fatmeh Salim Shora, interviewed by Hala Gabriel, Damascus, Syria, 2006. Private collection.

⁴⁹ Lorenzo Kamel, "The Tantura Affaire", *Oriente Moderno*, Anno 90, No. 2 (2010), 402.

- iii. Tantura survivor **Rashida Al Ayoub Amar (b.1929)**: "The Israeli forces took all women, children, and old men to the seashore, exactly at the house of Abd al-Razzak Al-Yahia's father, they killed all the men while we were walking. I witnessed them killing some man who was trying to pull 7 or 8 dead bodies from the street. [...] They killed so many people that I could not count. [...] What I witnessed was that Israeli forces collected some dead bodies and put them in some mats taking them to the graveyard, and buried all of them."⁵⁰
- iv. Tantura survivor **Najia Hasan Ayoub Amar (b. 1921)**: "In the cemetery, I saw soldiers, and they began to bring those who killed them and throw them there. They brought many people from the village who threw them, scattered them, and did not bury them at the same time. The second day they buried them."⁵¹
- v. Tantura survivor **Ali 'Abd al-Rahman Dekansh (Abu Fihmi) (b. 1909)**: "[The Israeli forces sat us down, and the leader followed them from Al-Marah. His name is Shamshon and two or three years ago, I had met him. He gave me two notebooks and two pencils, and he gave me 10 persons to help bring the dead from the streets and put them at the cemetery. Then, when we put them there, they brought shovels and said to bury them here."⁵²
- vi. Tantura survivor **Zuhdi Salman Abu Nada (b. 1930)**: "Israeli forces killed a lot of people around 30-50-60 or 70. They surrounded us and forced us to sit down at the beach from the north. They brought a list of people's names who had weapons, and Shamshon read the names of these people and what they owned. Shamshon killed almost 14 or 15 men from those who had weapons and he took their weapons as well. He killed them at once when they were around west of the Mosque, then Israeli forces carried the killed people to the cemetery and threw them. We witnessed that when we were at the cemetery. Later some cars came and female relatives of those killed men also came and some of the women recognized their killed relatives."⁵³
- vii. Tantura survivor **Jamil Abed Al Malek Halil (b. unknown)**: "[Israeli forces] put [the bodies] in horse carts, and put them on top of each other like hay, and took them down to the cemetery. Then they dug a big hole and put them inside it and buried them."⁵⁴

In *Over Their Dead Bodies*, Tantura survivor **Mostafa al-Masry** also points to a site of execution and a mass grave to the North, which would have been inside the cemetery (marked in red in Figure 50).⁵⁵

Also in this film, Tantura survivor **Nayed Sallam** points to an archival image of Tantura from 23 May 1948 and states "That's the glass factory and there's the grave. That's the wall around the factory. It's been said they

⁵⁰ Rashida Al Ayoub Amar, interviewed by Theodore Katz, 11 March 1997. Audio recording, private collection.

⁵¹ Najia Hasan Ayoub Amar, interviewed by Theodore Katz, 17 May 1997. Audio recording, private collection.

⁵² Ali 'Abd al-Rahman Dekansh, interviewed by Theodore Katz, 16 February 1997. Audio recording, private collection.

⁵³ Zuhdi Salman Abu Nada, interviewed by Theodore Katz, 5 April 1997. Audio recording, private collection.

⁵⁴ Jamil Abed Al Malek Halil, interviewed by Theodore Katz, 5 April 1997. Audio recording, private collection.

⁵⁵ Loutfi, *Over Their Dead Bodies*.

buried the dead here, but there was a wall here for the factory. They buried some of the dead and filled in the grave. In addition to other graves that they had dug.”⁵⁶

We geo-located this image within our 3D model and determined that the witness was pointing to a site of a mass grave within the boundaries of the village cemetery (marked in blue in Figure 50).

Earthwork 1 is outside of the formal boundaries of the main village cemetery, however, given its proximity to the cemetery, researchers have suggested that some of the above testimonies refer to the mass grave at E1.⁵⁷

Given the existence of multiple testimonies that specifically mention a mass grave being ‘inside’ the cemetery—and, in particular, given the recollection of Adnan Yahya that the pit within which he was forced to throw the bodies of those killed was located between individual graves within the cemetery—it is our assessment that there likely exists at least one mass grave inside the cemetery.

We compared the 1947, 1949 and 1952 aerial images and observed four ground disturbances—each between 2-4 metres in width and 2-4 metres in length, in the south-eastern part of the main village cemetery. These correspond to the dimensions Adnan remembered, and would require further analysis to confirm.

The area is presently a cleared grass patch and a parking lot (see Figure 51).

⁵⁶ Loutfi, *Over Their Dead Bodies*.

⁵⁷ For example, in a 2008 interview with the Emirati-based Al-Khaleej newspaper, Haj Fawzi Mahmoud Ahmad Tanji, or Abu Khaled—a survivor of the Tantura massacre—recalls Israeli forces ordering him and others “to dig a trench 40 metres long, 3 metres wide, and one metre deep inside the cemetery, then they began to lead batches of men from Tantura to transport the corpses and throw them in the trench.” [حينما أمروه وآخرين بحفر خندق] ثم بدأوا باقتياد دفعات من رجال الطنطورة لنقل الجثث ورمي داخل المقبرة بطول 40 مترا، بعرض 3 أمتار، وعلى عمق متر واحد trans. Forensic Architecture]. Abu Khaled’s testimony refers clearly to a trench ‘inside’ the cemetery—yet the dimensions he testifies to are almost exactly the dimensions of Earthwork 1. For this reason, researchers have interpreted many of these testimonies as referring to the cemetery as a landmark while speaking to a mass grave in the field where E1 is located. See also Schwarz, *Tantura*.

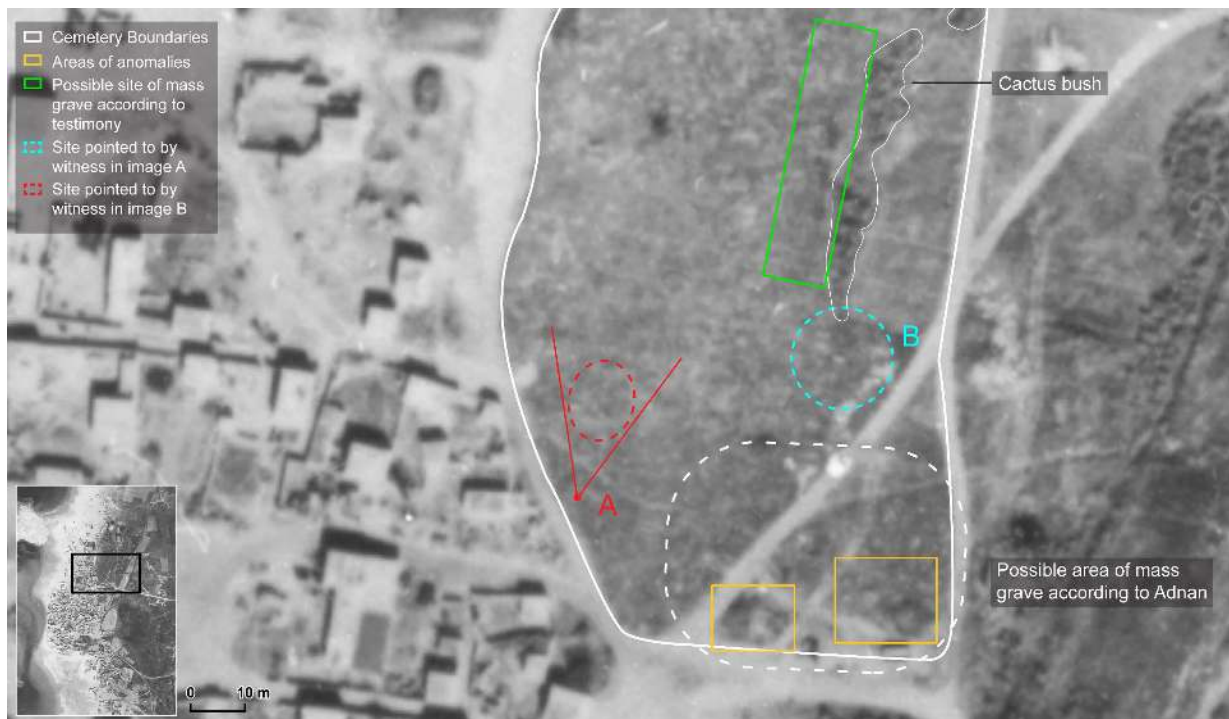


Figure 50. Diagram representing all locations testified to be sites of mass graves inside the cemetery. Aerial image 1949, IAF.

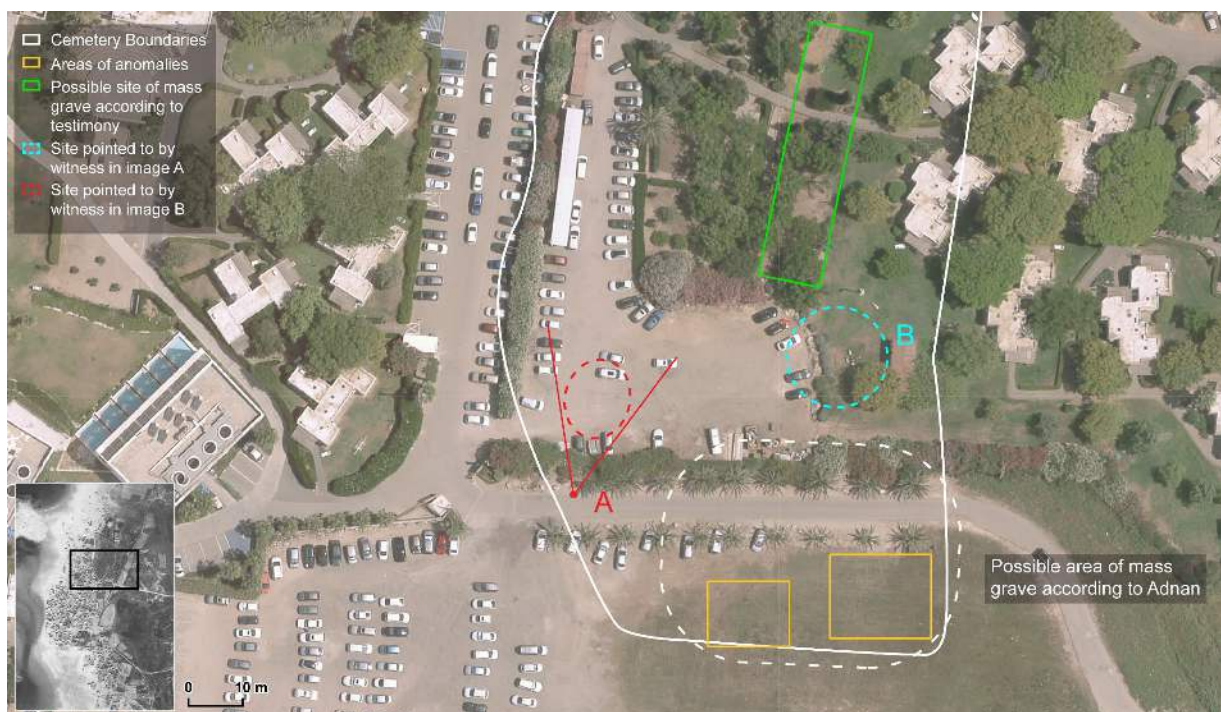


Figure 51. Diagram representing all locations testified to be sites of mass graves inside the cemetery. Source: 7 June 2019, OFEK. Forensic Architecture, 2023.



Figure 52. Two stills from Arab Loutfi's *Over Their Dead Bodies* (2008). In still A, Mostafa al-Masry points to an area he describes as the site of a mass grave. In still B, Nayed Sallam points in a photograph where he says is a mass grave. Both sites are drawn and labelled in Figure 50-51.

7. About Forensic Architecture

Forensic Architecture (FA) is a research agency, based at Goldsmiths, University of London, investigating human rights violations including environmental destruction and violence committed by states, police forces, militaries, and corporations. FA has undertaken [more than ninety investigations worldwide](#) including in Pakistan, Indonesia, Myanmar, Guatemala, Mexico, Chile, Brazil, the US, UK, Germany, Turkey, Ukraine and Greece. FA is directed by Professor Eyal Weizman and works to develop new evidentiary methods and apply them in complex multimedia spatial analyses. The agency also works regularly with local and international NGOs such as Amnesty International, Human Rights Watch, Doctors without Borders, the ICRC, and the UN.

Our investigations employ pioneering techniques in spatial and architectural analysis, open-source investigation, digital modelling, and immersive technologies, as well as documentary research, situated interviews, and academic collaboration. Findings from our investigations have been presented in national and international courtrooms, parliamentary inquiries, and exhibitions at some of the world's leading cultural institutions and in international media, as well as in citizen's tribunals and community assemblies.

FA's case files have been submitted as evidence in national legal processes across the world, including in Israeli courts. The agency's findings have also been submitted or presented in international jurisdictions including the European Court of Human Rights and the UN General Assembly, and in national courtrooms, parliamentary inquiries, and truth commissions around the world.

Forensic Architecture has been recognised for its work in the field of journalism with a Peabody Award for Digital and Interactive Storytelling (2021), the European Cultural Foundation (ECF) Princess Margriet Award for Culture (2018), the Designboom Design Prize for Social Impact (2019), and a Peabody-Facebook Futures of Media Award for Interactive Storytelling (2017). FA director Eyal Weizman is a life fellow of the British Academy and recipient of an MBE for 'services to architecture'. He is a member of the Technology Advisory Board of the International Criminal Court in The Hague and is on the board of the Centre for Investigative Journalism.

8. Forensic Architecture Case File Examples

Forensic Architecture has produced evidence for the then-UN Special Rapporteur on Counter-Terrorism Ben Emmerson QC, in whose company we presented our findings [on drone warfare](#) at the UN General Assembly in New York in October 2013 and the Human Rights Council in Geneva in 2014.

We presented evidence in the Israeli High Court in the case of [The Committee of the Village of Battir vs. the Ministry of Defence](#) (HCJ 7612/12) through Michael Sfard, [who won this case on 4 January 2015](#).

Our report on [the Use of White Phosphorus in Urban Environments](#) was presented at the UN Human Rights Council Geneva in November 2012, and in March 2011 in the Israeli High Court through Michael Sfard.

Our Forensic Oceanography team presented the case of the Left to Die Boat before the French Tribunal de Grande Instance in April 2012, the Brussels Tribunal de première instance in November 2013, and in the courts of Spain and Italy in June 2013. Forensic Oceanography also had [findings presented before the European Court of Human Rights](#) in 2018.

[The Gaza Platform](#) and our [Rafah: Black Friday](#) report about the 2014 Gaza War, developed with Amnesty International, were submitted to the UN Independent Commission of Inquiry in March 2015, and to the International Criminal Court in March and September 2015.

Our 2019 [investigation into the killing of Tahir Elci](#), a renowned Kurdish human rights lawyer, was cited [by UN rapporteurs](#) as instrumental in the re-opening of the Turkish state's investigation into the killing, and was subsequently cited in the prosecutors' indictment, and discussed at length in court.

Our [investigation of the murder of Pavlos Fyssas](#) was [played before the Court of Appeal of Athens in 2018](#), as part of the trial of 69 members of the Golden Dawn political organisation, and was reportedly significant in the judge's decision in the case.

Our investigation into [the presence of Russian military units in eastern Ukraine](#) in 2014 [was submitted to the European Court of Human Rights in 2019](#) as part of an ongoing case.

Our investigation into [intentional fire-setting in Papuan rainforests](#) is currently before a court in Hamburg, where submissions were made in February 2021.

We have also presented evidence that accompanied a complaint to the International Criminal Court (ICC) into [the killing of Palestinian-American journalist Shireen Abu Akleh](#) in 2022.

More information on our casework available at: www.forensic-architecture.org.

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