FOLIA PRAEHISTORICA POSNANIENSIA T. XXXI – 2026
WYDZIAŁ ARCHEOLOGII, UAM POZNAŃ – ISSN (Online) 2450-5846, ISSN (Print) 0239-8524
https://doi.org/10.14746/fpp.2026.31.02

TRACING THE EXECUTION ROAD: FROM THE TREBLINKA I LABOUR CAMP TO MALISZEWA FOREST

ŚLADAMI DROGI EGZEKUCYJNEJ: Z OBOZU PRACY TREBLINKA I DO LASU MALISZEWA

Sebastian Różycki

Faculty of Geodesy and Cartography, Warsaw University of Technology
1 Politechniki Square, 00-661 Warsaw, Poland
https://orcid.org/0000-0002-6316-8084
sebastian.rozycki@pw.edu.pl

ABSTRACT. This article examines the historical road linking the Treblinka I labour camp with the execution and burial landscape in Maliszewa Forest as a material, spatial and experiential component of a landscape of violence. Rather than treating the road only as a line to be reconstructed, the study investigates its historical emergence, wartime function, post-war disappearance and contemporary re-inscription as a memorial trail. The analysis combines pre-war topographic maps, Luftwaffe aerial photographs from May and September 1944, post-war aerial photographs, more than twenty witness testimonies, GIS-based spatial analysis, field observation, airborne laser-scanning visualisations and limited archaeological investigations. Pre-war maps show that the later road crossed agricultural land and did not form part of the earlier road network. On the 1944 photographs, while the camp was still operating and shortly after its liquidation, the road is clearly identifiable as a light linear strip contrasting with the adjacent fields and leading from the southern camp gates towards the execution and burial landscape. A 1950 aerial photograph shows that the road had already disappeared and that the area had returned to clearly cultivated agricultural parcels, indicating that renewed ploughing and sowing first erased its surface expression. Imagery from 1958 documents subsequent afforestation, while a 1973 photograph shows a new access road constructed for the post-war memorial; this road did not follow the historical alignment. The historical road is therefore interpreted with a high degree of confidence, while its representation as a GIS centreline and its transfer to the field are explicitly distinguished from the variable physical width of the wartime route. Earlier multidisciplinary investigations of Maliszewa Forest identified a broader burial zone and demonstrated that individual graves and depressions have varying visibility in aerial photographs and ALS-derived products. The article argues that short roads, paths and movement corridors should be treated as a distinct analytical category within Holocaust landscapes. They were not neutral connections between sites, but

FPP 31, 2026: 41–59. *© The Author(s). Published by: Adam Mickiewicz University Press, 2026.*
Open Access article, distributed under the terms of the CC licence (BY, https://creativecommons.org/licenses/by/4.0/).

infrastructures that organised coercion, killing and the disposal of bodies. The case also demonstrates that converting a historical-spatial interpretation into a public memorial trail is itself a landscape intervention and requires clear communication of both the strength of the evidence and the limits of the reconstruction.

KEY WORDS: Treblinka I, Holocaust archaeology, archaeology of atrocity, execution landscape, historic aerial photographs, GIS, memorialisation

INTRODUCTION

Holocaust and conflict archaeology have often concentrated on camps, buildings, fences, mass graves and monuments as point or area features (Sturdy Colls, 2012, 2015; Karski, Różycki, Schwarz, 2017; Karski, Kobiałka, 2021; Kobiałka, 2022; Kobiałka et al., 2024). Such research has substantially expanded knowledge of the material organisation of persecution and killing. Less attention, however, has been paid to the linear and connective elements that allowed sites of confinement, labour, punishment, execution and burial to function as spatial systems. Access roads, fenced corridors, tracks to killing grounds and paths used for the transport of bodies may be physically slight, but they organised movement and linked otherwise separated zones of violence. More broadly, research on modern conflict has demonstrated that material traces and landscapes play an important role in the formation, contestation and communication of memory (Saunders, 2001; Moshenska, 2010; Schramm, 2011).

Landscape approaches provide a framework for treating these routes as more than neutral lines. Landscapes are produced and transformed through movement, use, memory and changing social practices (Bender, 2001). Material features also shape how places are encountered and understood, although phenomenological approaches developed for prehistoric landscapes cannot be transferred uncritically to Holocaust sites (Bradley, 1998; Tilley, 2004/2020). In the present context, their value lies in drawing attention to movement, sequence, materiality and spatial experience, not in suggesting that a contemporary visitor can reproduce the experience of a victim. The concept of an eventscape is also relevant because it directs analysis towards the spatial organisation of actions and relations of power rather than towards isolated structures (Branton, 2004).

This article addresses the road leading from the southern gates of the Treblinka I labour camp to the execution and burial zone in Maliszewa Forest. The road was part of the operational infrastructure of the camp, but it disappeared from the legible post-war landscape and was not incorporated into the initial commemorative arrangement. Its identification and later marking created an opportunity to examine not only where the road ran, but how it functioned, how it vanished and what is involved when a historical interpretation is converted into a visitor trail.

The term reconstruction is used here in a restricted sense. It does not mean restoring the past landscape to its original state or claiming access to a complete historical reality. It refers to the construction of an evidence-based spatial model of the historical road from surviving cartographic, photographic, testimonial and field evidence. The

model may be strongly supported while still remaining distinct from the material road as it existed and changed through use.

The study asks four questions: (1) when and for what purpose did the road emerge within the local landscape; (2) how did it organise movement between the camp and the execution and burial zone; (3) how can heterogeneous sources be critically combined while preserving the distinction between evidence, interpretation and positional precision; and (4) what epistemic, ethical and commemorative consequences follow from transforming the interpreted historical alignment into a contemporary memorial trail?

HISTORICAL AND LANDSCAPE CONTEXT OF THE TREBLINKA I LABOUR CAMP

A United States Holocaust Memorial Museum study has estimated that Nazi Germany and its allies operated approximately 42,500 detention and camp facilities of various categories between 1933 and 1945 (Theune, 2018). Within this extensive and heterogeneous network, forced labour camps formed an important component of occupation policy, economic exploitation and terror. Treblinka I was established in the summer of 1941 near a gravel pit between the villages of Treblinka and Wólka Okrąglik, approximately 100 km north-east of Warsaw, in the Warsaw District of the General Government (fig. 1).

Treblinka I functioned as a punitive labour camp and was institutionally distinct from the nearby extermination camp Treblinka II. The prisoner population included both Poles and Jews, detained for a range of reasons and held under extremely

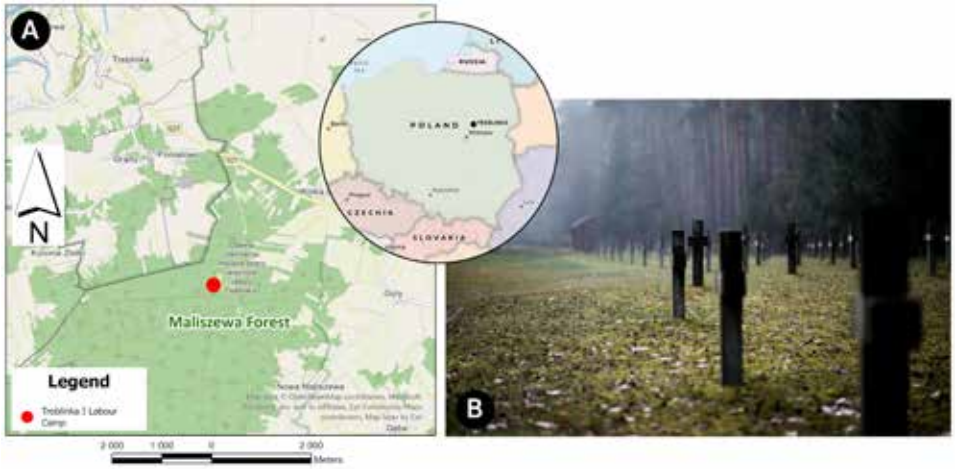

Fig. 1. Study area: A – location of the Treblinka I labour camp and Maliszewa Forest; B – memorial commemorating the victims of the Treblinka I Labour Camp

harsh conditions. Prisoners worked primarily in the adjacent gravel pit. According to the literature, approximately 20,000 prisoners passed through the camp and around 10,000 died or were killed. Victims were buried in the forested area near the village of Maliszewa (Kopówka, Rytel-Andrianik, 2011). In this article, the term Maliszewa Forest is used as a working toponym derived from interwar Polish topographic maps. The camp operated until 23 July 1944, when it was liquidated and dismantled as the Eastern Front approached.

The pre-camp landscape is documented on three topographic maps: WIG sheet Pas 38 – Słup 34 – E, scale 1:25,000, published in 1933; WIG sheet Pas 38 Słup 34 Małkinia, scale 1:100,000, published in 1936; and Soviet edition N-34-129-A, scale 1:50,000, published in 1941. These maps show the local settlement and road network before and around the establishment of the camp. The alignment later used as the execution road did not form part of the mapped pre-war road system. The area crossed by it was agricultural land. This distinction is important: the wartime road was not simply the continued use of an established public route, but a feature connected with the spatial organisation of the camp and its execution landscape.

There is no photogrammetric coverage available for the interval between the pre-war and early wartime maps and the first analysed aerial photograph from May 1944. Consequently, the exact date and stages of the road's construction cannot be determined from the currently available evidence. The sources nevertheless establish two chronological limits: the route was absent from the mapped pre-camp agricultural landscape and was fully visible while Treblinka I was still operating in May 1944.

The post-war memorial landscape focused primarily on the monument zone established in the early 1960s, particularly where mass graves had been identified. This emphasis was understandable, but it left the broader logistics of violence only partly legible. The road connecting the camp with the execution and burial landscape was neither preserved nor incorporated into the original commemorative route. Its first major post-war transformation resulted from the resumption of agricultural cultivation. Repeated ploughing and sowing erased the road's shallow surface expression before the area was systematically afforested. A later access road constructed in connection with the memorial followed a different alignment and created a new spatial relationship between the monument and the former camp.

CONCEPTUAL FRAMEWORK: ROAD, ROUTE, CORRIDOR AND EVENTSCAPE

To avoid treating different spatial objects as interchangeable, four terms are distinguished. Road denotes the material feature used during the functioning of the camp. Route denotes the historical direction and sequence of movement from the camp to the execution and burial area. Corridor denotes the broader spatial zone within which the road can be located and interpreted from the available evidence. Visitor trail de-

notes the contemporary marked path created to communicate and protect that history. The GIS centreline is a cartographic representation used to transfer the interpretation to the terrain; it is not equated with the full physical width or all possible variations of the historical road.

Bender's (2001) emphasis on landscapes of movement is particularly relevant to a route defined by forced displacement. The road was experienced differently by prisoners, guards and those involved in transporting bodies, and its meaning also changed after the war. Its role shifted from an operational element of persecution to an erased feature within a later afforested landscape, then to an object of research and finally to an officially interpreted memorial route. Landscape is therefore understood here not as a static container but as a historically layered relationship between material traces, movement, knowledge, memory and institutional practice.

The concept of eventscape helps to connect the road to a sequence of actions rather than treating it as an isolated feature (Branton, 2004). At Treblinka I, the relevant spatial sequence included the camp gates, the road across open agricultural land, the transition into the forest and the execution and burial zone. This sequence organised separation, surveillance, coercive movement, killing and the disposal of bodies. The road's significance lies not only in connecting two locations, but in structuring the transition from imprisonment to execution.

Landscape phenomenology has stressed that movement and material settings structure perception and experience (Bradley, 1998; Tilley, 2004/2020). This perspective must be applied cautiously at sites of mass violence. The contemporary visitor does not repeat, recover or gain access to the historical experience of the victims. The value of marking the route is more limited and ethically defensible: it makes the spatial relationship between confinement and killing intelligible and allows witness testimony to be encountered in relation to the terrain to which it refers.

SOURCES AND METHODS

Cartographic and aerial-photographic sources

The source base includes the three pre-war and early wartime topographic maps listed above and a chronological sequence of aerial photographs. The complete wartime aerial-photographic corpus available for the Treblinka area includes imagery from 1940/1941 and photographs acquired on 13 May, 15 May, 2 September, 18 September and 29 September 1944. Only the flights of 15 May and 2 September provide direct evidence for the execution road. The 15 May flight produced frames 124, 125 and 126 at 07:20. Frame 125, in which the Treblinka I labour camp and its surroundings are located close to the centre of the image and the radiometric quality is particularly good, served as the principal source for interpretation. The road is visible as a light, continuous linear strip crossing the agricultural parcels from the southern camp gates towards Maliszewa Forest (fig. 2A).

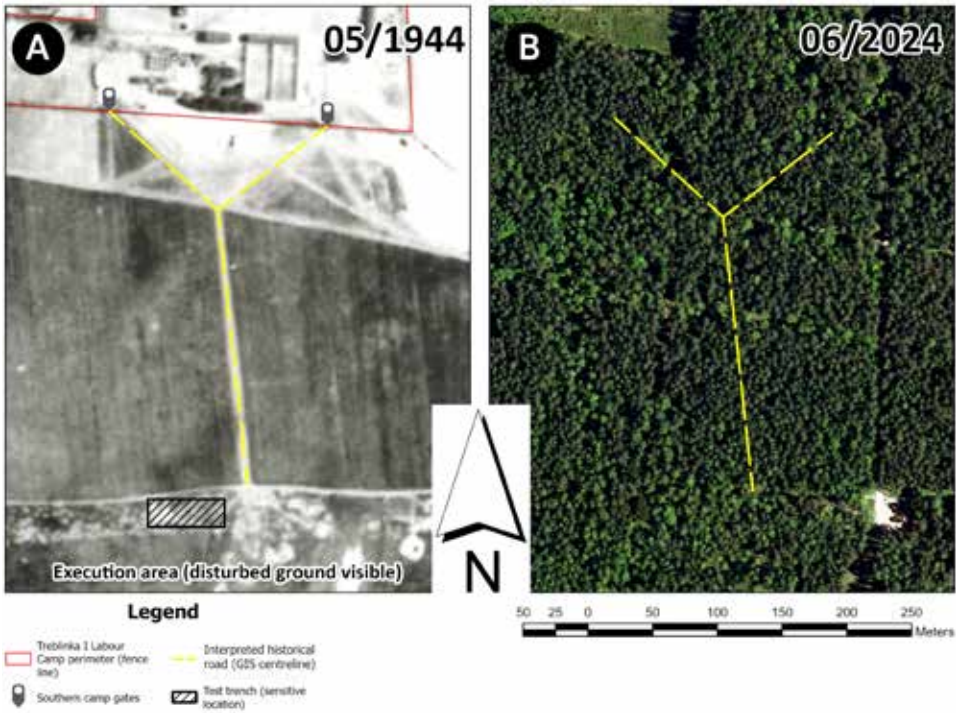

Fig. 2. GIS interpretation of the historical road and its transfer to the contemporary landscape: A – archival aerial photograph acquired in May 1944, showing the perimeter of the Treblinka I labour camp, the southern camp gates, the interpreted road centreline and the approximate location of the archaeological test trench; B – contemporary orthophoto from June 2024 with the interpreted road centreline; present forest cover obscures most surface traces of the historical feature

The second principal wartime source was photograph no. 48, acquired on 2 September 1944 at approximately 13:40 and at an approximate scale of 1:50,000. Although the camp had already been liquidated, the road remained clearly visible, providing an independent chronological confirmation of its form and alignment (fig. 3B). The photographs of 13 May, 18 September and 29 September do not cover the complete road corridor and were therefore used only as contextual sources. The agreement between the May and September observations reduces the risk that the interpreted feature represents a transient tonal effect or a short-lived agricultural trace.

The next available aerial photograph was acquired in 1950 and is held by the Central Military Archives (Centralne Archiwum Wojskowe, CAW), part of the Military Historical Bureau in Warsaw. Photograph no. 629 was taken with a Wild RC5 camera at an approximate scale of 1:12,000. Its precise acquisition date is unknown. The condition of the fields suggests acquisition during the growing season, after sowing but before harvest, although no more precise seasonal attribution is attempted. By 1950, the historical road was no longer visible and the area between the former

camp and Maliszewa Forest was again divided into clearly cultivated agricultural parcels. Following the resumption of agricultural cultivation, repeated ploughing, sowing and other farming practices most probably erased the shallow material traces of the wartime road (fig. 3C).

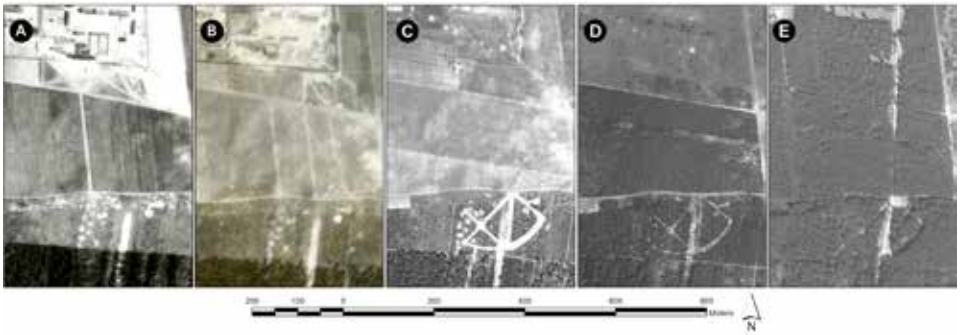

Fig. 3. Diachronic transformation of the historical road and its surrounding landscape: A – aerial photograph no. 125, acquired on 15 May 1944, showing the road clearly visible between the southern camp gates and Maliszewa Forest; B – aerial photograph no. 48, acquired on 2 September 1944, showing that the road remained visible after the liquidation of the camp; additional linear features absent from the May image are also visible, but their date and function remain uncertain; C – aerial photograph no. 629 from 1950, held by the Central Military Archives, showing that the road was no longer visible and that the area had returned to agricultural cultivation; a possible post-war enclosure is visible near the execution and burial area; D – aerial photograph from 1958 documenting the subsequent systematic afforestation of the former agricultural landscape; E – black-and-white aerial photograph no. 4112 from 1973, obtained from the Head Office of Geodesy and Cartography, showing a later memorial access road that did not follow the historical wartime alignment

A series of aerial photographs from 1958 documents the subsequent process of systematic afforestation of the former camp landscape and its surroundings (fig. 3D). A black-and-white aerial photograph from 1973, no. 4112, obtained from the Head Office of Geodesy and Cartography (Główny Urząd Geodezji i Kartografii, GUGiK) and acquired at an approximate scale of 1:26,000, shows a later access road constructed in connection with the memorial commemorating the victims of Treblinka I. This road did not follow the historical wartime alignment (fig. 3E).

Taken together, the chronological series establishes a landscape biography of the road: absence from the pre-camp mapped network; clear existence and use during the operation of the camp; persistence into September 1944; erasure through renewed agricultural cultivation before 1950; progressive masking through afforestation; and the later creation of a different memorial access road (fig. 3).

The principal wartime photographs were georeferenced within a modern spatial reference framework through aerotriangulation with self-calibration (Różycki, Karwel, Kurczyński, 2023). This was necessary because the source material consisted of contact prints affected by deformation, including shrinkage of the paper support, and

no camera calibration certificate was available. For the principal 15 May imagery, the approximate photonegative scale was 1:27,000. Scanning at 600 dpi corresponded to a ground sampling distance of approximately 1.2 m, while previous work on comparable material demonstrated positional accuracies of approximately 1.2–1.9 m. Once orthorectified and compared with modern reference data, the road was digitised in GIS as a centreline. Figure 2 compares the interpreted historical road on the May 1944 aerial photograph with the location of its GIS centreline on a contemporary orthophoto.

Remote-sensing imagery is not treated as an automatically transparent record. As Mlekuž (2013a, 2013b) has argued in relation to LiDAR and landscape archaeology, spatial data become archaeological evidence through practices of processing, visualisation, comparison and interpretation. Airborne laser-scanning data from the Polish ISOK programme, acquired in 2012 at a density of approximately 4 points per square metre, were used mainly to generate supporting visualisations of the terrain, including shaded-relief products. Because of the moderate point density, forest cover and the subtle morphology of some features, ALS was not treated as a decisive source for identifying either the road or burial-related depressions. Some terrain features are visible in the derived products, while others recognised during field observation or limited archaeological investigation are absent. The absence of a feature from the ALS-derived visualisations was therefore not interpreted as evidence of its physical absence (Różycki et al., 2020).

Witness testimony and historical interpretation

More than twenty post-war witness testimonies were examined, principally in the holdings of the Institute of National Remembrance. They describe the execution area, the road leading to it and the ways in which prisoners and bodies were taken from the camp. The corpus includes accounts by prisoners who were brought along the road to the execution site and survived or escaped despite being shot. Testimonies were not used as simple substitutes for cartographic coordinates. Their value lies in describing direction, sequence, function, movement and the experience of the route. Spatial statements were compared with the independently visible relationship between the southern camp gates, the road and the execution zone.

The sources are mutually complementary rather than hierarchical. The maps establish the pre-camp agricultural setting and the absence of the later route from the mapped road network. The 1944 photographs identify its material form and alignment. Testimonies explain its function and the actions that occurred along it. Post-war photographs document its disappearance and replacement by a different memorial access road. Field and archaeological evidence relate the interpreted route to surviving terrain features and the burial landscape. The GIS environment was used not merely to place these sources together, but to compare their chronological, spatial and evidential relationships.

Field transfer and limited archaeological investigation

The GIS reconstruction was developed into a field-operable alignment. Control points corresponding to the interpreted centreline were staked in the field using RTK GNSS (fig. 4). Centimetre-level positioning refers only to the accuracy with which the selected GIS geometry was transferred to the present terrain. It does not imply centimetre-level knowledge of the road's historical edges, whose position is constrained by image resolution, orthorectification uncertainty and the variable physical form of an unpaved route.

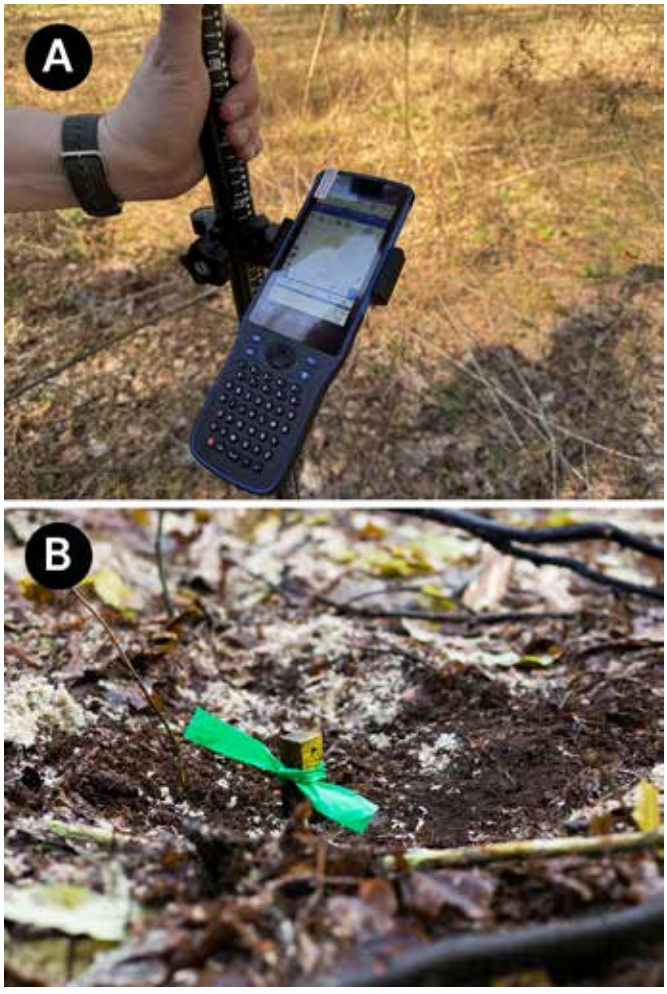

Fig. 4. Field transfer of the interpreted historical road alignment: A – positioning of the GIS centreline in the present terrain using a high-precision RTK GNSS receiver; B – wooden stake marking the transferred alignment

Earlier multidisciplinary investigations conducted in Maliszewa Forest between 2016 and 2019 combined historic aerial-photograph interpretation, witness accounts, ALS-derived visualisations, field survey and limited excavations. These campaigns delineated a broader execution and burial zone and identified six previously unknown grave features (Różycki et al., 2020). They also demonstrated that individual graves and depressions have unequal visibility in the available datasets: some are legible in aerial photographs or terrain visualisations, whereas others become apparent only after vegetation clearance or limited excavation. The later investigation described below should therefore be understood as a spatially focused investigation of the section where the road enters the execution and burial landscape.

Against this broader background, the section where the interpreted road enters the execution and burial landscape was examined through field observation and comparison with wartime and post-war aerial photographs. A shallow elongated depression coincided with disturbances visible in the historic imagery. In 2022, a limited archaeological test trench was placed across this terrain feature. The intervention was designed to characterise a specific feature rather than to expose the burial zone extensively.

The trench measured 2.5×1.5 m and was aligned east-west, perpendicular to the elongated depression. After removal of humus and forest litter, excavation revealed a distinct anthropogenic cut. Its fill contained loose sand, grey ash, small charcoal fragments, burnt organic remains and heavily burnt human bone fragments. Differences in the shape of the cut and the organisation of the fills suggest at least two episodes of disturbance. The southern edge was not captured within the trench, and the full dimensions remain unknown (fig. 5; Lenarczyk et al., 2022).

The archaeological investigation provided a different category of evidence from the aerial photographs and testimony: stratigraphic and material information concerning a burial-related feature situated where the interpreted road enters the execution landscape. It strengthened the interpretation that the route provided access to a wider, dispersed zone of execution and burial rather than to a single central endpoint. The work was undertaken under the oversight of the Rabbinical Commission and was intentionally restricted. No attempt was made to extend the trench beyond what was required to identify and characterise the feature. For ethical, religious and conservation reasons, detailed coordinates are withheld, and the long-term management of the area remains under the authority of the Treblinka Museum.

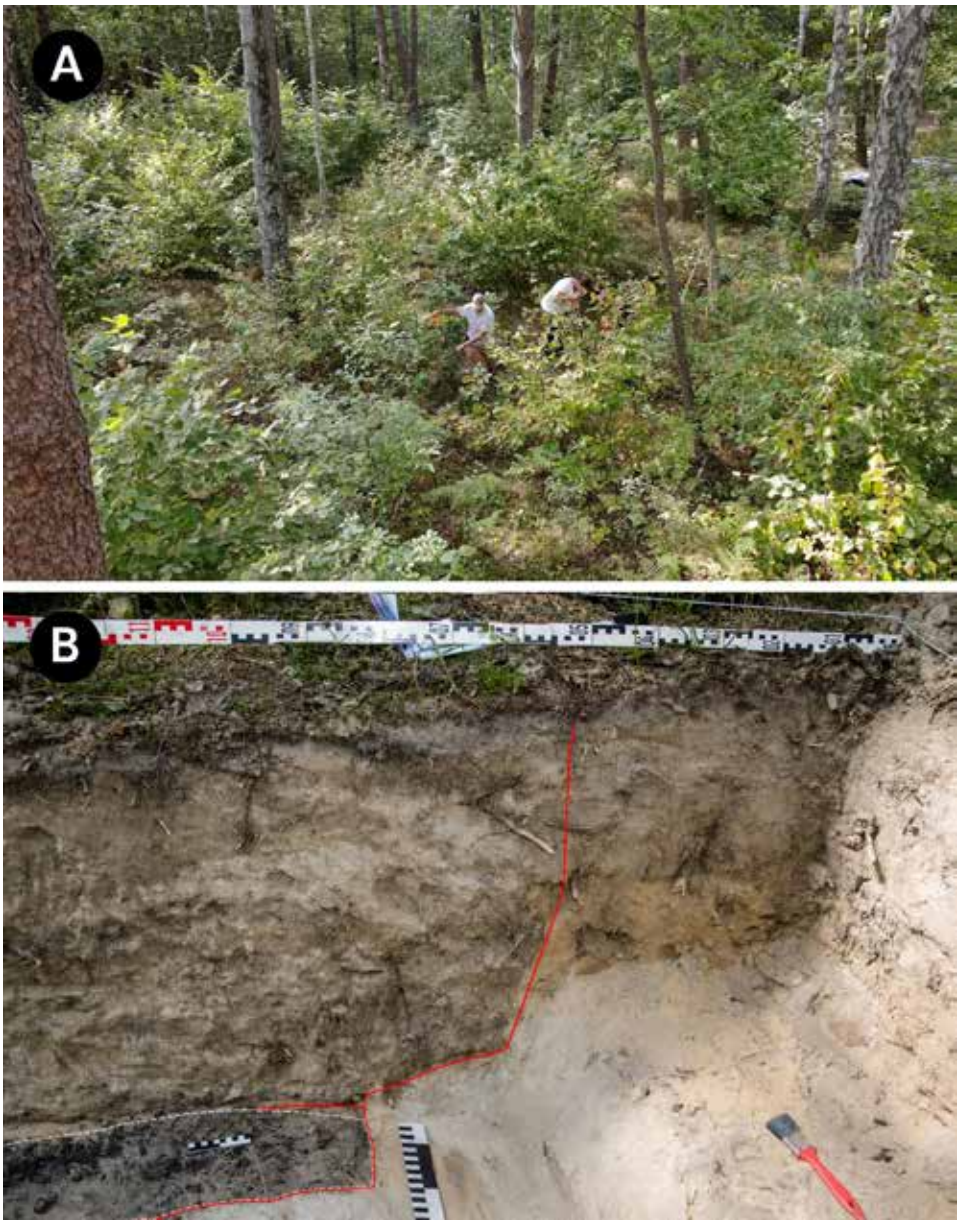

Fig. 5. Limited archaeological investigation of a burial-related feature near the section where the historical road enters the execution and burial landscape: A – general view of the archaeological test trench in dense woodland; B – exposed trench profile with interpretative markings: the red line indicates the edge of the anthropogenic cut, and the dashed white outline marks the dark, charcoal-rich deposit containing burnt organic material and heavily burnt human bone fragments

The field staking formed the basis for a heritage-management process led by the Treblinka Museum (Treblinka Museum, 2025). The interpreted centreline was transferred to the terrain with RTK GNSS (fig. 4), after which the Museum obtained the required permissions from heritage and forestry authorities. Selective clearance and removal of low vegetation restored the legibility of the corridor and enabled safe access (fig. 6). The resulting visitor trail follows the evidence-based alignment, but it remains a contemporary intervention rather than a physical restoration of the wartime road.



Fig. 6. Selective clearance of the contemporary visitor-trail corridor: A – the interpreted alignment after the selective removal of trees and low vegetation; B – field assessment of the cleared corridor and its relationship to the interpreted historical road alignment

The memorial solution is intentionally restrained. It combines two general information boards with thirteen panels presenting survivor testimony. A red sandstone block, described as a witness stone, accompanies each testimony panel. These stones came from elements associated with the early post-war commemorative phase and create material continuity between the established monument zone and the newly designated trail. Wayfinding signs and the testimony panels now make the route legible to visitors without introducing an overtly monumental new form (fig. 7).



Fig. 7. The historical route incorporated into the visitor and memorial infrastructure of the Treblinka Museum: A – levelled visitor-trail section with testimony panels and witness stones; B – interpretive board presenting the historical context of the route

The testimony panels transform the trail from an abstract line into a sequence of historically grounded narrated locations. They communicate the road as an operational infrastructure and as a corridor of coercion and fear. At the same time, the installation does not claim that visitors reproduce the experience of those taken to execution. Its purpose is to restore spatial intelligibility: to show that imprisonment, forced movement, execution and burial formed one connected landscape.

Memorialisation is not neutral. By clearing, marking and naming one alignment, an institution gives public authority to a particular historical interpretation and changes how visitors move through the site. This is justified here by the strength of the photographic and testimonial evidence, but the distinction between the historical road, the interpreted centreline and the contemporary trail should remain explicit in publications and on-site communication. The intervention also produces a new layer in the biography of the landscape. As Kolen (2026) observes more broadly, cultural landscapes exist not only as material settings but also as ways of seeing and landscape ideas. The Treblinka trail similarly brings a previously illegible historical relationship back into institutional and public awareness.

The route also has a conservation function. Once identified, marked and interpreted, it is more likely to be monitored and protected from accidental disturbance. In a wooded memorial landscape, carefully managed visibility can therefore support protection. This benefit must be balanced against the need to avoid unnecessary ground disturbance and to preserve the dignity of the burial zone.

DISCUSSION

Roads as infrastructures of violence

The Treblinka I case demonstrates that roads and short movement corridors are not secondary details of camp topography. The logistics of persecution depended on moving people between spaces of detention, labour, punishment, killing and burial (Sturdy Colls, 2012, 2015; Saryusz-Wolska, 2023). At Treblinka I, the road organised the transition from confinement to execution and also enabled the transport of the deceased and murdered from the camp. It should therefore be treated as part of the machinery of violence, despite its modest physical form.

This shifts analysis away from a landscape composed only of nodes. The camp and the execution site should not be analysed as isolated places merely connected by a path. Together with the road, they formed an operational sequence. The road contributed to spatial control, channelled movement and connected visible camp infrastructure with a more concealed forest zone. As an eventscape, the system comprised not only locations but actions, timings and unequal relations of power (Branton, 2004).

A moving and layered landscape

The road's biography confirms the value of understanding landscape as dynamic. Before the camp, the area was agricultural and the road was absent from the mapped network. During the camp's operation, the route became a clearly visible functional feature. After 1944, the first major transformation was not afforestation but renewed cultivation: by 1950 the fields were again regularly ploughed and sown, and the road had ceased to be visible. Systematic afforestation followed and altered both the topography's visibility and the experience of movement through the area. The later construction of a memorial access road introduced another layer with a different alignment and purpose (fig. 3). This sequence exemplifies the moving and negotiated landscape described by Bender (2001) and Kolen (2026).

Bender's (2001) work is useful because it connects landscape with movement and with different ways of being in place. The Treblinka road was experienced under radically unequal conditions: as a route of coercion for prisoners, as operational space for guards and camp personnel, and as a research and commemorative route for present institutions and visitors. These experiences cannot be collapsed into one another. The contemporary trail should therefore support historical understanding without implying continuity of experience.

Remote sensing, interpretation and evidential confidence

The article also illustrates the need to distinguish confidence in feature identification from precision in cartographic representation. The historical road is clearly visible and functionally situated on two wartime aerial photographs. Its identification is therefore strong. Nevertheless, orthorectification does not reveal exact historical edges, and an RTK GNSS instrument cannot make the source interpretation more precise than the photographs permit. The same caution applies to ALS: the 2012 ISOK dataset was useful for visualising terrain, but its density and the forested conditions meant that not all subtle depressions were detectable. Confidence, positional uncertainty and data visibility should therefore be reported separately.

This distinction responds to a broader methodological problem in landscape remote sensing. Visualisation may create an impression of objectivity and fixed borders, while archaeological meaning emerges through interpretation (Mlekuž, 2013a, 2013b). Good practice therefore requires the transparent identification of interpretative overlays, an explanation of the criteria used to identify the road, and explicit reporting of the different scales of uncertainty involved.

Commemoration as landscape intervention

The conversion of the route into a public trail has consequences beyond dissemination. It restores a missing spatial relation and makes the execution landscape more legible, but it also selects, formalises and materialises an interpretation. Comparable memorial interventions at Holocaust sites demonstrate that the material reconfiguration of a landscape can significantly shape visitor experience and public memory (Buntman, 2008). A memorial trail can unintentionally suggest that the historical road has been physically restored or that its exact boundaries are known. The restrained design, use of testimony and avoidance of scenic reconstruction reduce that risk, but accompanying interpretation should continue to state that the present trail follows an evidence-based historical alignment rather than reproducing the wartime road in its original material form.

The intervention is nevertheless important because post-war memorialisation had concentrated attention on the monument and graves while leaving the route of forced movement outside the public narrative. Reintroducing the road broadens the site from a set of commemorated points into a connected landscape. It also links research, conservation and museum interpretation rather than treating them as unrelated stages.

Transferability and limitations

The workflow is transferable to other sites where short roads, fenced lanes or paths have disappeared through renewed agriculture, forestry or post-war redevelopment. Comparable methodological and ethical challenges arise in the identification and investigation of Holocaust killing and burial sites in other national and legal contexts (Cherkaska, 2022). Its transferable element is not a fixed sequence of technologies, but critical comparison of sources of different chronological and evidential character. The Treblinka case also shows that the non-visibility of a feature in one dataset cannot be treated as proof of its absence: a road may have been erased by cultivation, while a burial-related depression may be absent from a moderate-density ALS visualisation yet remain detectable in the field or through limited archaeological investigation.

The study also has limitations. No photogrammetric material is currently available for the interval between the pre-war maps and May 1944, so the date and process of road construction cannot be established precisely. The exact acquisition date of the 1950 photograph is also unknown, although the state of cultivation indicates the growing season. The surviving aerial photographs do not define the road's edges uniformly along its full length, and they cannot reconstruct every movement that occurred after the road entered the dispersed execution and burial zone. The visitor trail should therefore be communicated as an evidence-based alignment, not as a complete restoration of a fixed historical object.

CONCLUSION

The road from the Treblinka I labour camp to the execution and burial landscape in Maliszewa Forest was a historically specific infrastructure of violence. Pre-war maps show agricultural land without the later route. Aerial photographs from May and September 1944 clearly document the road while the camp was still operating and shortly after its liquidation. By 1950, the land had returned to cultivation and the road was no longer visible; photographs from 1958 record subsequent afforestation, while the 1973 imagery shows a new memorial access road that followed a different alignment. This chronological sequence explains both the strength of the identification and the processes through which the road disappeared from the post-war landscape.

The study demonstrates that a road may be identified with high confidence without claiming centimetre-level knowledge of its historical edges. The road's material presence, form and function are supported by mutually complementary sources, while the GIS centreline remains a model used for analysis and field transfer. RTK GNSS precisely positioned that model in the present landscape; it did not convert the uncertainties of historic imagery into historical exactitude.

Analytically, the route should be understood as part of an eventscape linking camp gates, forced movement and a dispersed execution and burial zone. It was not a neutral connection and did not lead to a single central point of killing. Rather, it acted as a principal access axis through which violence, execution and the disposal of bodies were spatially organised. Its erasure through agriculture, later masking by woodland and eventual re-inscription as a memorial trail show that landscapes of violence continue to be transformed after the events that created them.

The marked trail restores an important spatial relationship within the Treblinka I memorial landscape and supports protection, education and responsible public access. It should not be described as a literal restoration of the wartime road or as a means of reproducing victims' experience. Its value lies in making a well-documented historical relationship legible while preserving the distinction between source, interpretation and contemporary intervention.

More broadly, roads, paths and short transport corridors deserve recognition as a distinct category within Holocaust archaeology and the archaeology of difficult heritage. They often survive only as faint material traces, yet they structured forced movement and connected the places in which persecution unfolded. A critical, chronological and transparent approach to their identification can provide both new historical knowledge and a responsible basis for conservation and memorial practice.

ACKNOWLEDGEMENTS

The author is grateful to the Treblinka Museum for its cooperation and support in the research, protection and interpretation of the site. The author also wishes to thank Dr Szymon Lenarczyk (Wykop na Poziomie), who directed the archaeological in-

vestigations undertaken within this project. The research was funded by the Minister of Education and Science of the Republic of Poland and the Ministry of Culture and National Heritage of the Republic of Poland.

Conflict of Interest: The author declares no conflict of interest.

Author's Contribution: The author confirms sole responsibility for the study conception and design, data collection, analysis and interpretation of the results, and manuscript preparation.

REFERENCES

Bender, B. (2001). Landscapes on-the-move. *Journal of Social Archaeology*, *1*(1), 75–89.

Bradley, R. (1998). *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*. London – New York: Routledge.

Branton, N. L. (2004). *Drawing the Line: Places of Power in the Japanese-American Internment Eventscape*. Doctoral dissertation, University of Arizona.

Buntman, B. (2008). Tourism and tragedy: The memorial at Belzec, Poland. *International Journal of Heritage Studies*, *14*(5), 422–448.

Cherkaska, D. (2022). *The Application of Forensic Archaeological Methods for Holocaust Studies in Ukraine*. Doctoral thesis, Staffordshire University.

Karski, K., Kobiałka, D. (2021). Archaeology in the shadow of Schindler's List: Discovering the materiality of Plaszow Camp. *Journal of Contemporary Archaeology*, *8*(1), 89–111.

Karski, K., Różycki, S., Schwarz, A. (2017). Memories of recent past: Objectives and results of non-invasive archaeological research project at KL Plaszow Memorial Site. *Analecta Archaeologica Ressoviensia*, *12*, 1–26.

Kobiałka, D. (2022). The devil burns gold there: The heritage of Nazi Germany crimes in Death Valley, Chojnice, Poland. *International Journal of Historical Archaeology*, *26*, 359–378.

Kobiałka, D., Hildebrandt-Radke, I., Kostyrko, M., Frymark, D., Wroniecki, P., Czerner, A., Wężyk, A. (2024). Necrosol as a material archive of genocide: The case of the Nazi German mass crimes in the Szpęgawski Forest. *Journal of Contemporary Archaeology*, *11*(2), 177–201.

Kolen, J. (2026). Landscapes move – and challenge borders. *Landscape Research*, *51*(3), 493–511.

Kopówka, E., Rytel-Andrianik, P. (2011). *Dam im imię na wieki. Polacy z okolic Treblinki ratujący Żydów*. Siedlce: Wydawnictwo Sióstr Loretanek.

Lenarczyk, S., Sugalska, A., Wagner, A. (2022). *Prace archeologiczne na terenie Obozu Pracy Treblinka I – sierpień 2022*. Unpublished report prepared within a project funded by the Minister of Education and Science of the Republic of Poland.

Mlekuž, D. (2013a). Skin deep: LiDAR and good practice of landscape archaeology. In C. Corsi, B. Slapšak, F. Vermeulen (eds.), *Good Practice in Archaeological Diagnostics: Non-invasive Survey of Complex Archaeological Sites* (p. 113–129). Cham: Springer.

Mlekuž, D. (2013b). Messy landscapes: LiDAR and the practices of landscaping. In R. S. Opitz, D. C. Cowley (eds.), *Interpreting Archaeological Topography: 3D Data, Visualisation and Observation* (p. 88–99). Oxford: Oxbow Books.

Moshenska, G. (2010). Working with memory in the archaeology of modern conflict. *Cambridge Archaeological Journal*, *20*(1), 33–48.

Różycki, S., Karwel, A. K., Kurczyński, Z. (2023). German extermination camps on WWII reconnaissance photographs: Orthorectification process for archival aerial images of cultural heritage sites. *Remote Sensing*, *15*(*10*), 2587.

Różycki, S., Zapłata, R., Karczewski, J., Ossowski, A., Tomczyk, J. (2020). Integrated archaeological research: Archival resources, surveys, geophysical prospection and excavation approach at an execution and burial site: The German Nazi labour camp in Treblinka. *Geosciences*, *10*(9), 336.

Saunders, N. J. (2001). Matter and memory in the landscapes of conflict: The Western Front 1914–1999. In B. Bender, M. Winer (eds.), *Contested Landscapes: Movement, Exile and Place* (p. 37–53). Oxford and New York: Berg.

Saryusz-Wolska, M. (2023). Infrastructures of Holocaust mass graves. *Zagłada Żydów. Studia i Materiały*, *19*, 199–216.

Schramm, K. (2011). Introduction: Landscapes of violence: Memory and sacred space. *History and Memory*, *23*(1), 5–22.

Sturdy Colls, C. (2012). Holocaust archaeology: Archaeological approaches to landscapes of Nazi genocide and persecution. *Journal of Conflict Archaeology*, *7*(2), 70–104.

Sturdy Colls, C. (2015). *Holocaust Archaeologies: Approaches and Future Directions*. New York: Springer.

Theune, C. (2018). *A Shadow of War: Archaeological Approaches to Uncovering the Darker Sides of Conflict from the 20th Century*. Leiden: Sidestone Press.

Tilley, C. (2004/2020). *The Materiality of Stone: Explorations in Landscape Phenomenology*. Abingdon: Routledge.

Treblinka Museum. (2025). *Historyczna Droga Śmierci*. Retrieved from: https://muzeumtreblinka.eu/2025/08/13/historyczna-droga-smierci/