

The Oil Press Complex of Khirbat al-Tira

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Khirbat al-Tira lies nearly 1.5 kilometers west of the historic core of Ramallah and approximately 16 kilometers northwest of Jerusalem (Figure 1). It is situated just beside the Ramallah Women's Training Centre, a United Nations Relief and Works Agency (UNRWA) facility, in proximity to the Saint George School. It occupies the summit and slopes of a small hill at an elevation of 804 meters, commanding a wide vista of areas to the north and the west. To the south and east, however, the view is obstructed by several hills of greater elevation. The ancient settlement covered a total area of about thirty thousand square meters. The best-preserved part of the settlement consists of an area of some six thousand square meters located at the southern end of the site where the property is owned entirely by the Greek Orthodox Patriarchate. The remainder of the site is located on private property belonging to several different individuals and organizations, and the remains there have been either heavily damaged or totally destroyed due to development.¹

In antiquity, Khirbat al-Tira was located along an ancient road that branched off the main artery connecting Jerusalem in the south with major cities in the northern regions of Palestine. From al-Bireh, located just east of Ramallah, the road extended westward to Khirbat al-Tira, Khirbat Khallat al-'Adas and Khirbat 'Askariyya (located to the northwest of Khirbat al-Tira), on to 'Ayn Qinya, and from there westward to the Mediterranean coast.²

Victor Guérin, Father Marie-Joseph Lagrange, Elihu Grant, Alfons Maria Schneider, Father Bellarmino Bagatti, and Father Michele Piccirillo have all surveyed Khirbat al-Tira and identified numerous, historically significant architectural

remains scattered over several discreet parcels of land. Their findings included the remains of a Byzantine church and villa, a rock-cut reservoir, and an oil press and agricultural terraces.³ The Israel Antiquities Authority (IAA) added the site to its list of registered antiquities sites in 1986, and the pottery sherds collected during their survey were identified as Hellenistic, Roman, and Byzantine.⁴

Two excavation campaigns were carried out under the direction of the author on the property of the Greek Orthodox Patriarchate during the summers of 2013 and 2014, for a total of 13 weeks. By the end of the second campaign our teams, ranging from 22 to 29 individuals, had excavated a total area of approximately 950 square meters. The excavations uncovered several significant architectural features, including a rock-cut, subterranean complex used as a Roman-period hiding place; a Byzantine-Umayyad-period church; parts of a Byzantine villa and several other Byzantine residential structures; two passageways leading to the church; a subterranean rock-cut oil press of the Byzantine period; a rock-cut cistern; sections of Umayyad residential units; and a large Ottoman-period agricultural terrace. The ultimate aim of this long-term project is to develop the six dunams owned by the Greek Orthodox Patriarchate as a protected archaeological park.

Virgin soil or bedrock was reached in all of the excavated squares, and the sequential layers in most of these squares are horizontally and vertically connected. The vertical thickness of the cultural remains, from the surface of virgin soil or bedrock up to the top of the overlying remains, ranged from 0.5 to 2.7 meters. These remains, for the most part, are dated to the Byzantine and Umayyad periods. Few Hellenistic and Roman remains were identified in the excavated squares. The relative paucity of this older material could indicate that accumulated cultural deposits pre-dating the Byzantine era were removed in order to level the ground in relation to the bedrock surfaces, thus providing a more solid footing for the Byzantine construction. Afterward, some of the earlier earthen deposits were also used to fill in between the stones of the new buildings.

By the end of the second season, the exposed cultural remains could be divided into four identifiable strata. The numbering of the strata runs from bottom to top, starting with the oldest cultural stratum as number 1. Stratum No. 1 is dated to the Roman period and is represented by the subterranean rock-cut refuge or hideout consisting of two chambers.

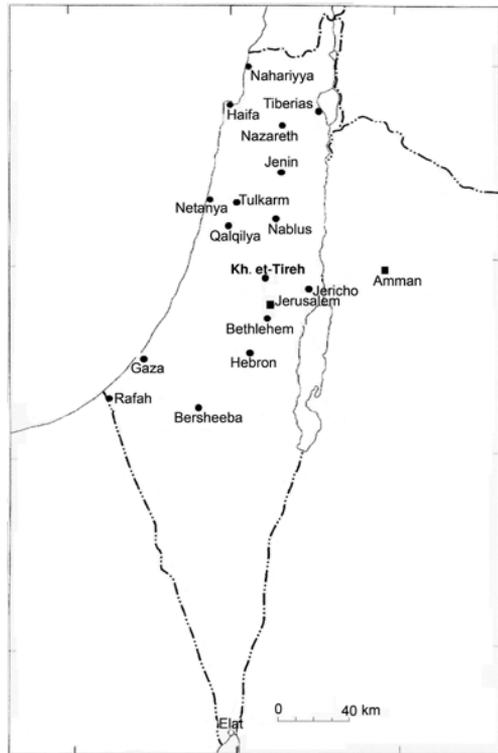


Figure 1: A map of Palestine featuring Khirbat al-Tira. Drawing by I. Iqtait.

Stratum No. 2 is dated to the Byzantine period and is divided into two main occupational phases, Phases 1 and 2; Phase 1 is further divided into two sub-phases, a and b. The Byzantine Sub-phase 1a consists of the oil press, the rock-cut cistern, and the Byzantine villa,⁵ while Sub-phase 1b consists of all the sub-phase 1a constructions plus two later rooms constructed above the oil press. Phase 2, then, consists of the church, the ancient pathway to the church, several rooms, and two rainwater channels leading to the earlier rock-cut cistern. Stratum No. 3 is dated to the Umayyad period and consists of several wall segments. Finally, Stratum No. 4 dates from the Ottoman era to modern times and consists of the new pathway to the church, together with several dry-stone terrace walls.

The oil press complex consists of an L-shaped subterranean, rock-cut crushing and pressing facility, a subterranean rock-cut cistern, and two rooms built above the press. As stated above, the construction of the oil press and the cistern belongs to an earlier phase and the two rooms above to a later phase.

The Oil Press

Olive cultivation and oil pressing in the Mediterranean region can be traced back to the late Neolithic and early Chalcolithic periods and have continued without interruption to the present time.⁶ Archaeological and archaeo-botanical evidence in the Levant region indicates that the cultivation of olive trees reached its zenith from the Persian (6th–4th century BCE) through the Byzantine periods.⁷ Several different techniques were used in the Eastern Mediterranean in antiquity to extract olive oil.⁸ Itamar Taxel classified the oil pressing techniques used in Palestine throughout the Byzantine era into three main types: the lever-and-screw press, the lever-and-weights press (both of which employed a wooden press-beam), and the direct-screw press. The latter, the screw-type, is further divided into three sub-types: presses with a wooden screw-frame; presses with a frame of grooved stone piers; and presses with a rock-hewn, cross-shaped frame. These types and sub-types, with the exception of the last, represent a number of variations that might reflect cultural and regional differences. Taxel maintained that these techniques were well known in all regions of Palestine during the Byzantine period and that they continued in use without interruption throughout the Early Islamic periods.⁹

The oil press at Khirbat al-Tira is a subterranean, rock-cut installation located in the residential quarter just to the east of the northeastern corner of the church (Figure 2). According to information provided by Father Nicola, the 61-year-old priest of ‘Ayn ‘Arik Greek Orthodox Church, as well as by several other Ramallah residents, this oil press has long been known locally, almost as a minor antiquarian attraction, with curiosity-seekers wandering about to see the crosses carved into its ancient rock walls. Our beginning documentation of this installation, rendered just prior to the start of the second excavation campaign, indicates that its floor was covered with earthen deposits mixed with rubble and modern material (Figure 3). The visible features included holes of different sizes dug into the floor deposits, possibly caused by modern illegal digging in search of potentially-valuable artifacts. We noted as well that the crushing basin had been



Figure 4: The crushing basin of the oil press of Khirbat al-Tira, looking north. Photo by S. Al-Houdalieh.

meters wide, built of roughly dressed stones of various sizes laid on earthen deposits. It consists of eleven steps, the bottom two lying inside the enclosed, rock-hewn room) and the remainder within a rock-hewn corridor. This access from the surface leads down to a doorway measuring 1.3 meters by 1.75 meters. An angled recess was identified along the southern edge of the rock doorframe, along with four pivot holes (ca. 5 centimeters deep and 8 centimeters in diameter) by which door hinge-posts were set into the frame, top and bottom.

The press complex consists of an L-shaped, subterranean man-made cave with two distinct floor levels. One room functioned as a crushing chamber and the other, a pressing chamber (Figure 5), with the floor level of the former standing at least 70 centimeters higher than the latter. The crushing chamber is nearly square in plan and consists of a central space measuring 4.3 meters by 4.3 meters by 2.3 meters in height, flanked by two tunnel-like openings in the west wall. The room is open on the south, where it joins the other chamber. The ceiling is quite even, with a few shallow natural or artificial holes. The floor of this chamber slopes downward 3 percent from north to south, and a round crushing bed or basin occupies its center. The crushing basin, carved from a single block of hard limestone, measures about 65 centimeters in height, from the base to the rim, and 2.1 meters in diameter; it was originally set in a shallow, bedrock floor depression 12 centimeters in depth. The top crushing surface is flat and quite even and surrounded by a rim 17 centimeters in height to prevent spillage (Figure 6). The basin has a square socket-hole of 26 centimeters by 26 centimeters in the center, above which, cut into the ceiling of the room, is a smaller round socket measuring 15 centimeters in both diameter and depth.

In antiquity,¹⁰ the opposed sockets would have secured the ends of a vertical wooden post, the crushing mill's central pivot, square at its bottom end and round at the top. In use, this post would have been fitted near its center with a wooden crossbeam which served two functions: First, it was the horizontal axle of a round, upright millstone which rolled within the confines of the basin, crushing the olives. These millstones typically had a square hole through the center fitted with a wooden bushing, which in turn accommodated the axle and facilitated the rolling motion. Also, one end of the crossbeam, extending well beyond the edge of the crushing basin, provided leverage for rotating the millstone, by either human or animal power.

From the west wall of the crushing room, two tunnel-like openings each gives access down into a small hewn pit or chamber. These two spaces are of nearly the same shape but have different dimensions, with a separation of 1.4 meters on average between them through the bedrock (Figure 5). The opening of the northern space is over twice as wide as it is tall, measuring 1.25 meters by 0.55 meters; the chamber itself measures 1.7 meters from front to back by 1.1 meters wide by 1.9 meters high. The southern small chamber, lying within the "L" formed by the two large rooms, has two openings, one from the east and one from the south. The eastern opening is arched, with its floor surface standing 12 centimeters above the floor level of the main chamber; this opening measures an average of 40 by 48 centimeters. The southern opening is irregular in shape and measures an average of 85 by 55 centimeters. This southern chamber itself measures 1.55 meters long (east–west axis)

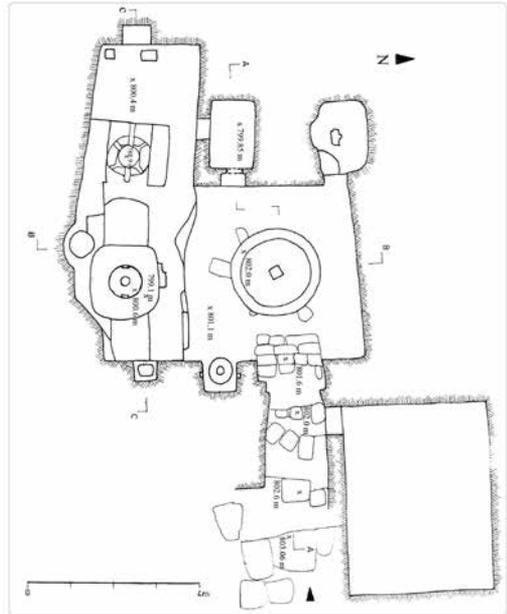


Figure 5. Top plan of the oil press complex of Khirbat al-Tira after the excavation. Drawing by I. Iqtait.

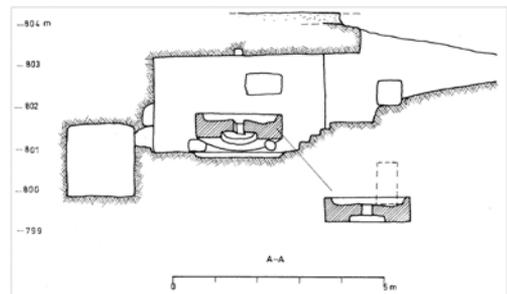


Figure 6. Cross-section A-A of the oil press of Khirbat al-Tira (including isometric view of the upturned crushing basin with its bottom surface and recess and central hole). Drawing by I. Iqtait.

by 0.9 meters wide (north–south) by 1.6 meters high. The floor levels of both of these small chambers lie *at least* 65 centimeters below the floor level of the adjacent crushing room.

Given the presence of the two, tunnel-like passages, which are similar to the *loculi* in rock-cut tombs of the Roman period, it would appear that this crushing chamber was originally a Roman period tomb. These two documented *loculi* resemble many other *loculi* discovered in archaeological sites throughout Palestine which have been dated to the Roman period, including the following: Khirbat Kishor,¹¹ Marisa,¹² Obada,¹³ Beth She’arim,¹⁴ Talpiot,¹⁵ Shu‘fat,¹⁶ Modin and Jericho,¹⁷ Bayt ‘Ur al-Tahta,¹⁸ Khirbat Qayit,¹⁹ Jatt,²⁰ and Khirbat Kharuf.²¹

The original Roman-period tomb to which the *loculi* belonged, we propose, was reconfigured during the Byzantine period to be used as an oil press. This was achieved by the following means: increasing the height and width of the main doorway from the surface; expanding the original chamber southward to create the present L-shaped configuration of rooms; cutting down the floors of the two *loculi*, significantly deepening them for use as olive-collecting vats; and cutting a new opening into the southern *loculus*/pit from the new southern room.

The southern room of the complex, the pressing chamber, is elongated and rather irregular in shape; it measures 7.5 meters by 2.7 meters. Its ceiling is at the same level as that of the crushing chamber but then slopes gradually downward toward the west. Two artificial holes penetrate the eastern part of its ceiling. The first hole, in the upper portion of the cross-shaped frame in the south wall, is elongated in shape, measuring 1.6 meters north–south by 0.36 meters east–west by 0.55 meters in depth. In antiquity, this long, narrow opening would have been sealed from the top by two large stones, part of the floor pavement of the room built later partially on top of this installation. The second hole, generally round but irregular in shape and measuring an average of one meter in diameter, is located directly above the large press-stone. The fresh cuts at the edge of this hole suggest that it was created in modern times, perhaps by antiquities looters seeking to remove the press-stone with heavy machinery. Opening this hole also caused the destruction of the mosaic floor pavement of the room above.

The floor level of this chamber is uneven and includes several man-made depressions in the bedrock surface (Figure 7). The deepest, a pit in which a large cylindrical press-stone is situated, measures 1.55 meters in diameter and 1.2 meters in depth. Two adjacent recessed floor areas with different levels are found to the east and west of the above-mentioned pit; they would have been used as standing areas for workers during the pressing process. The other major depression is an oil collection vat located in the western part of this chamber. This tank is bell-shaped in cross-section, measures 1.1 meters in depth by 0.7 meters in diameter at its widest point, and its bottom surface includes a shallow, rounded depression of 18 centimeters by 12 centimeters. The mouth of the vat is round, 53 centimeters in diameter. The bedrock surrounding the mouth has been cut to form two concentric frames or recesses, the inner one circular in shape and the outer one square. Also, several shallow, hewn channels surround the mouth in a radiating pattern, cut so as to drain down into the vat.

This construction of the southern room includes three large, cross-shaped press-frames cut as recesses in the bedrock walls, two in the eastern wall (Figure 8), and one in the southern wall. Two of these recesses extend upward to penetrate the overlying bedrock. The vertical elements of these recessed “crosses” range between 1.8 and 3.2 meters in height, 50 and 85 centimeters in width, and 35 and 80 centimeters in depth; the dimensions of the horizontal elements range between 1.2 and 1.6 meters in width, 30 and 60 centimeters in height, and 30 and 50 centimeters in depth. In use, the simple mechanical elements fitted into the recessed “cross” consisted of a horizontal heavy wooden beam fitted with a vertical wooden screw, with the screw threads all carved by hand. A bowl-like depression is found at the bottom of each cross-shaped frame. One of these depressions includes a hole 5 centimeters in diameter through which the extracted juice could flow out. Traces of a hydraulic plaster layer were identified on the lower part of the southern cross-shaped frame and on the internal surface of its basin.

The large stone found in the central pit is interpreted as part of a freestanding, screw-type (“direct pressure”) press, serving both as the press-bed and the base for an upper wooden frame holding the screw mechanism. Found *in situ* partially tipped over, this stone was restored to its upright position during the excavation. The cylindrical stone measures 0.9 meters in diameter by 1.45 meters tall, its top surface (the press-bed) featuring a round, hewn depression. Vertically, the stone is cut with two grooves extending down from the top, on opposite sides. For most of their one-meter length these grooves measure 18 centimeters wide and 15 centimeters deep, however in their lower end these recesses flare out into a dovetail mortise measuring 0.4 by 0.4 meters square at the bottom. In the center of the stone’s top surface (the press-bed) is a round hewn basin. In use, the stone would have been fitted with carefully cut vertical timbers on either side, which in turn supported at the top a wooden cross-beam pierced vertically by a wooden screw, just as in the cross-shaped frames above.

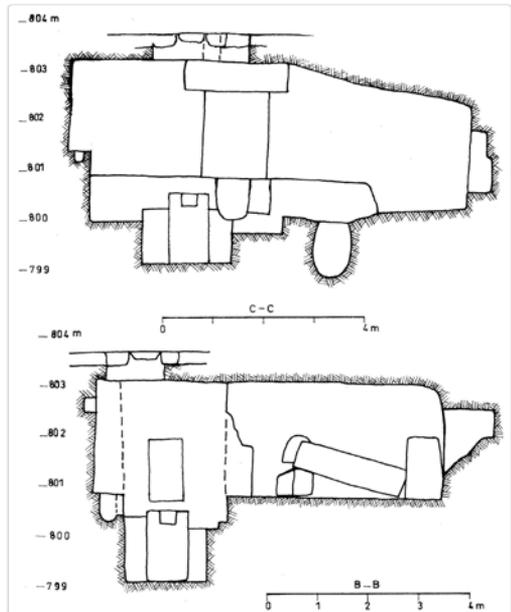


Figure 7: Cross-section B-B and C-C of the oil press of Khirbat al-Tira. Drawing by I. Iqtait.



Figure 8: Two cross-shaped frames in the eastern wall. Photo by S. Al-Houdalieh

An irregular rock-cut niche was documented in the western wall of the southern chamber. It is 1.15 meters tall and 0.6 meters wide on average. This niche is 40 centimeters deep in its lower part but then tapers irregularly towards the top where it is shallower. The base of this niche is situated 30 centimeters above the floor level of the chamber. Two shallow depressions 20 centimeters square by 8 centimeters deep were also documented in the floor of the chamber, just below the vertical edges of the niche. It is supposed that the niche was originally intended to hold a lever, but the absence of a press-bed in the area located between it and the above mentioned oil collection vat might suggest that this niche was not in use.

The crushing and pressing techniques employed at Khirbat al-Tira can be described as follows: After the harvesting and cleaning of the olive fruits, the yield would be brought into the oil press facility and stored in the olive-collecting vat or vats (depending on the size of the harvest), the small chambers or pits opening off the northern room. Next, a portion of the olives was spread out in the crushing basin and crushed by rolling the millstone in a circular motion over the bed. The crushing mill, in this case, was operated by hand, as the space probably would not accommodate a donkey or other draft animal. The resulting mash was then collected in round, flat baskets and moved to one of the four press-frames in the southern room. At Khirbat al-Tira, oil extraction involved a direct-pressure screw-press technique, using the three rock-hewn, cross-shaped frames and the one freestanding screw-type press, whose base was the grooved, cylindrical stone found in the pit.

The pressing technique for all of these presses can be summarized as follows: The flat baskets containing the crushed olives were placed one atop the other to the required height in the lower portion of the frames. To distribute the pressure, a flat, disk-shaped stone or piece of wood of the same size was probably placed atop the column of stacked baskets. The screw was then slowly tightened down by means of a turning handle inserted into holes in its square bottom. This produced the necessary pressure on the baskets to extract the greatest quantity of liquid from the olive mash, and the pressure could be increased as the pressing proceeded. After pressing, the baskets containing the expended olive pulp were removed and emptied (the pulp itself had several further domestic and agricultural uses). The olive juice flowed down into the hewn basin at the bottom of each frame; at least some of it appears to have been channeled toward the central pit where the large press-stone was located. In the various collection vats (or vessels), the oil was left to separate from the juice, water and any solid material. As the oil rose to the top, it was drawn off or otherwise diverted into western-most collecting vat. Finally, (after filtration, perhaps) the oil was poured into jars as the finished product.

The Cistern

The cistern, rectangular in shape (Figure 5), is hewn completely from the limestone bedrock, has three mouths, and is located just to the right of the staircase leading down to the oil press. The first of its three mouths has a square shaft opening measuring 90

centimeters by 96 centimeters. It is believed that in antiquity it was covered with a heavy stone cap-ring. The second mouth is nearly round and measures 88 by 80 by 45 centimeters deep and is covered by a rectangular capstone block with a central round opening of 50 by 60 centimeters. The capstone itself features an irregular recessed cutting 11 centimeters deep and 3–10 centimeter wide surrounding the opening, plus two sockets at the eastern edge of the frame appear to have provided seating for a cover. A shallow, rock-cut channel was identified below the southeast corner of this capstone. The third mouth, which has long been known and visible from the surface at Khirbat al-Tira, is hewn into the right-hand (north) wall of the above-mentioned staircase, entering the cistern at its southwest corner just above the doorway to the oil press; this opening measures 82 by 70 by 40 centimeters deep.

The floor of the cistern (not yet excavated) was found partially covered with earthen deposits mixed with stones, and we observed a deep and apparently freshly dug trench angled down through these deposits. Therefore we believe that, once again, the trench was dug by looters in search of marketable archaeological objects. The size of the cistern inside is approximately 4.5 meters long (east–west) by 3.4 meters wide (north–south) by more than 4 meters deep. The interior surface, which had been polished smooth, was coated with two layers of hydraulic plaster in which pottery fragments, grog and gravel were embedded to ensure the greatest possible water retention throughout the year. Much of this plaster has fallen away, particularly from the eastern side, due to pressure from the expanding roots of a sars tree growing near the first mouth of the cistern. It is believed that rainwater was collected directly from the flat bedrock surfaces immediately surrounding the two mouths penetrating the top of the cistern.

During the second phase of this period (Stratum 2, Phase 2), some modifications to the water collection system were made. Remains of two channels were revealed directly below the destruction layer of the second phase. The first channel, which is mostly intact and leads to the first mouth of the cistern, has been traced for a distance of 4.8 meters. It measures 15 centimeters wide and 15 centimeters deep in cross-section, its sides and floor constructed of small stones covered with plaster; the floor gradient descends toward the northwest. The plaster layer consists of lime, ash, grog and small, natural aggregates, with a thickness ranging between 8 millimeters and 5 centimeters. The channel is covered by stone slabs sealed with lime mortar in between. These slabs used to cover the southern, excavated part of the channel were laid side-by-side along the western exterior wall of an elongated room as was the practice during the second phase of the Byzantine period. This would appear to indicate that the channel was constructed after the adjacent room.

The second channel, which led to the second mouth of the cistern, is L-shaped in plan and was traced for 3.4 meters. In its excavated western segment, two lines of stone slabs placed vertically, side by side, define one side of the channel and another single line of slabs, running along the exterior western wall of a small room, from the other. It measures 22 centimeters wide by 12 centimeters deep and had been coated with a thin layer of hydraulic plaster. It is believed that both of the channels were connected to vertical drainage pipes and were used to collect rainwater from the roofs of surrounding buildings.

The Two Rooms

The two rooms built above the oil press are related to Stratum 2, Sub-phase 1b, as indicated above. The first room is 6.3 meters by 3.2 meters, and the thickness of its northern and eastern walls ranges between 60 and 80 centimeters. They consist of two courses of different sized field-stones set in a brownish mortar, and they are preserved to a height of 20 to 35 centimeters. The western wall was dismantled to the floor level, and its external course is now covered by a construction from Phase 2 (the eastern wall of the passageway leading to the church). The southern wall of this room is still partially covered by the baulk. The floor area consists of stone slabs on the southern end and of mosaics in the northern sections. The slabs are large, untrimmed pieces of limestone which vary in size. Traces of lime have been identified on the tops of several slabs, which could indicate that the pavement was once coated with a layer of lime plaster. The mosaic floor consists of medium-size, white tesserae, the cutting and shaping of which are of good quality; the cubes measure 1.2 centimeters by 1.2 centimeters by 1.1 centimeters thick on average, yielding a density of 65 tesserae per 100 square centimeters. This mosaic cubes were laid as the topmost of three layers, with a maximum total depth of 50 centimeters. The bedding mortar layer below is very hard and varies from 2 to 6 centimeters thick. The substrate beneath the mortar consists of pebbles laid on top of beaten, brownish earthen deposits, 30 centimeters thick. The mosaics in the center and in the northeastern corner of the room were totally destroyed in the course of relatively recent looting activity.

Just to the north of Room 1, the intact part of Room 2 was revealed, a remnant which measures only 1.5 meters long by 1.3 meters wide. However, based on the eastward extension of its northern and southern walls, which would have run atop the rock-cut side-walls of the staircase down to the oil press, we believe that the room was originally 4 meters long by 1.3 meters wide and that part of its destroyed, eastern floor area constituted the ceiling of the staircase. The three remaining walls appear as two courses of field-stone of mixed sizes and bonded with a brownish mortar. The northern and southern walls measure approximately 80 centimeters thick, preserved to a height of 40 centimeters on average. The western wall, however, was dismantled to the floor level of the room, and its external course was covered by a wall from the Stratum 2, Phase 2 (the same wall that covered or replaced the western wall of Room 1). The floor consists of white mosaic of the same level and characteristics as the mosaic pavement of Room 1. It is, however, badly damaged or completely destroyed in several places.

The mosaic floor pavements of both rooms have been conserved and consolidated (Figure 9). The conservation work took place over a period of four weeks, executed by a team of five persons. Their conservation efforts consisted of the following successive stages: (1) The entire top surface of the mosaic floor pavements was first cleaned, using sponges, paintbrushes, scalpels, dental tools, cloths, blades, chisels and hammers, with a minimal use of water. (2) The physical condition of the cleaned mosaics was then surveyed and the findings documented in the form of photographs, drawings, maps, and written, descriptive notations. (3) The damaged edges of the mosaics were consolidated with Primal (Rhoplex) AC33 and mortar. The primal was diluted 7–10 percent with



Figure 9: The conservation of the mosaic floor pavement of room 1, looking south.
Photo by S. Al-Houdalieh.

water and applied with hand-held sprayers to the needed areas. The mortar consisted of hydraulic lime (17 percent), washed sand (17 percent), quartz powder (16 percent), and tile adhesive C2TE 109 (50 percent). (4) Finally, all the detached tesserae of the floor surfaces were re-set using the same lime-based mortar specified above.

Conclusion

The relatively large size of the *Khirbat* (approximately thirty thousand square meters), its fortification walls, as well as the architectural remains unearthed within the site, all indicate that the settlement here flourished and reached its zenith during the Byzantine period. The existence of four separate press-beds inside the complex indicates that the oil press was a central feature of the settlement, serving all of its inhabitants. The two rooms constructed above the installation could have been used to store or to hold in reserve the owner's portion of the oil extracted. Since the excavated earthen deposits from inside the subterranean complex contain only modern material, we believe that the press facility itself was maintained in continuous use from the Byzantine through the late Ottoman periods.

Salah Hussein Al-Houdalieh is a professor of archaeology and cultural heritage at al-Quds University. His current research and teaching interests include archaeology and ethnography in the Levant, identity, antiquities looting, and heritage ethics. Several of his

fieldwork projects have examined the impact of looting on Palestine's cultural heritage and urban development on archaeological resources. He is grateful to al-Quds University for its generous financial assistance, which allowed for the excavation and conservation of Khirbat al-Tira over the summer of 2014. He is indebted also to his B.A. archaeology students for their tireless efforts over the course of the excavation season. Thanks are also extended to Osama Hamdan, Raed Khalil, Anas Abu Tair, Rasmi al-Shaer, and Wisal Musa for their skilled, professional conservation of the unearthed mosaic pavements and other architectural remains. Finally, he would like to thank Tom Powers and Gina Dominique for their constructive proofreading and comments on the draft of this work.

Endnotes

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