

PRELIMINARY REPORT ON THE EXCAVATIONS AT KHIRBAT AL-BADIYYA, 1998

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Introduction

The first excavations of Khirbat al-Badiyya were conducted in the summer of 1998 under the direction of Zeidoun al-Muheisen, from the Institute of Archaeology and Anthropology, Yarmouk University. The site of al-Badiyya is located 15km SW of 'Ajlūn and 3km SE of Kufranja (PGE: 217.900; PGN 186.900) (Fig. 1).

The name al-Badiyya is of Arabic origin, probably referring to an earlier olive oil press, but there is no definitive evidence for its meaning. This site was first mentioned in 1925, in an account about the 'Ajlūn area (Steuernagel 1925: 322-324). The next reference to it was not until 45 years later (Mittmann 1970: 84).

The site was surveyed and a contour map drawn; then the NE sector of the site was divided into many areas, designated Area A, Area B, Area D and E (Fig. 2).

AREA (A)

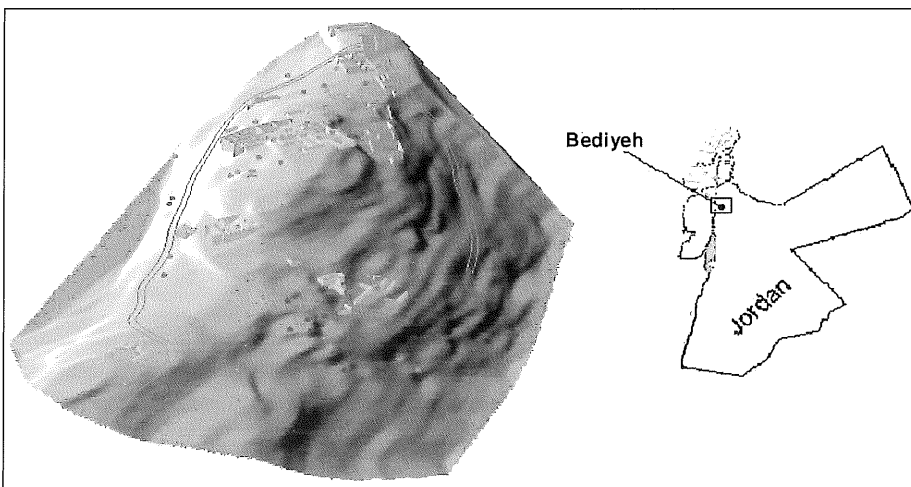
Area (A) was comprised of 28 squares, each 5.0m², and was 890m above sea level. Various architectural remains were excavated, representing at least three occupational phases.

A Byzantine occupational phase was discovered, represented by two Basilica churches and a chapel (Fig. 3). One of the churches was in the center of this area; the other was of a later date, and abutted the northern wall of the earlier church. The chapel was adjacent to the southern wall of the earlier church. During the Islamic period, the churches were used as residential buildings, and the internal spaces were altered.

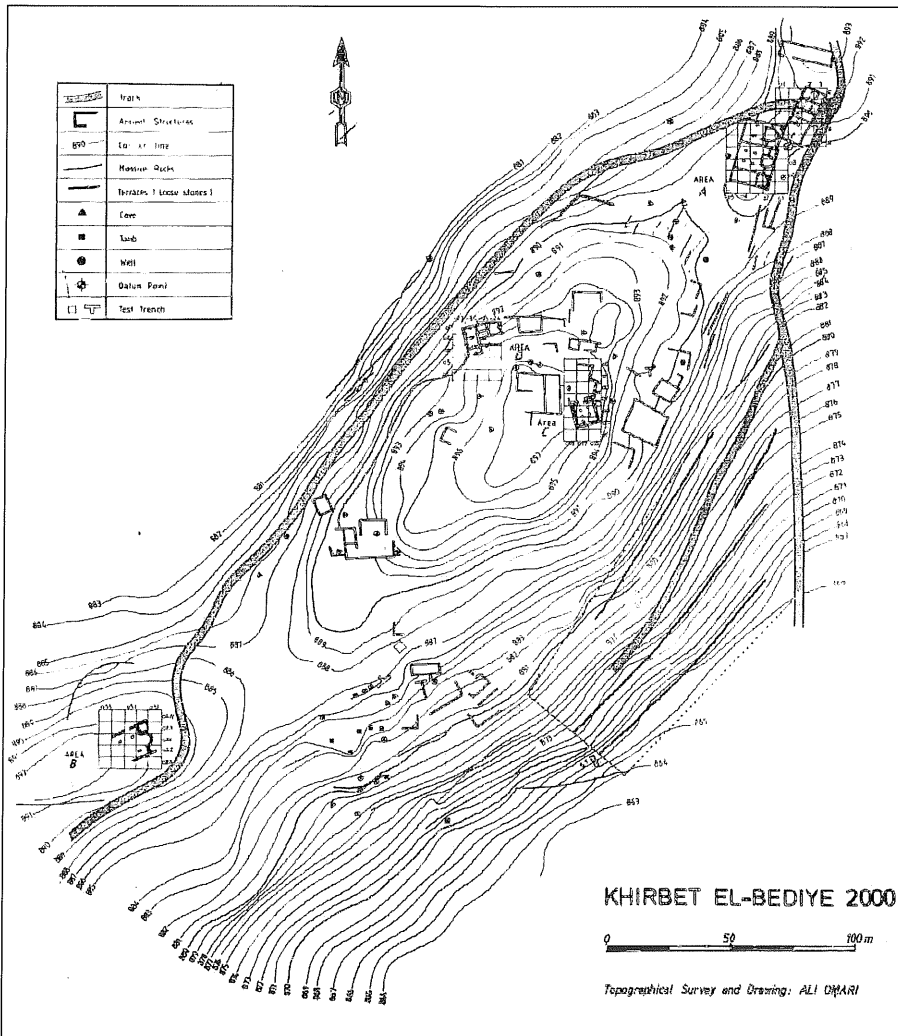
Phase 1

The First Church

The Basilica was comprised of a 3.8m apse on the eastern nave, separated from the aisles by two rows of four columns. This unit represents the first occupational phase of this area. The exterior measurement is 11.7m x 17.3m, with an interior measurement of 9.7m x 15.3m. The church also has two small rooms, the Diaconicon and the Prothesis, adjoining the apse, in addition to a nave and two aisles, with an entrance on the east side. The structure cannot be dated precisely, but can probably be placed in the 6th



1. The location of the Khirbat al-Badiyya site.



2. Contour map of the Khirbat al-Badiyya site.



3. General view of the first and second Churches, and the chapel.

century AD, possibly Justinian.

The Outer Walls: There was a 0.92m wide, and 11.7m long wall alongside the east baulk of Square OB02, oriented N-S; double faced from dressed stones, with small stones in between. The exterior was constructed with very large stones, whereas the interior was of smaller dressed stones, each with a projected boss and clearly defined margins. It continues into Square OC02.1 and into Square OA01.17. Three courses to a height of 1.10m were preserved. There were two layers of plaster at the base of this wall, and it appears to continue below the mosaic floor.

An E-W oriented, massive stone wall was uncovered in Square OC02.6, extending into Squares OC03.6, OB03.2, OB04 and OB05.1. It is bonded with the above mentioned N-S wall, forming a right angle, and was built by the same technique. It is 17.30m in length and the height ranges between 0.90m and 1.20m. At a height of approximately 0.80m, a carved stone extended the width of the wall; it is possibly the ledge for a window.

In Square OB05, this wall is bonded with another N-S oriented wall, forming a right angle. It extends into Squares OA05 and A04, and is parallel to the east wall of the earlier church. It meets another wall on the north side of the church, and is bonded with both walls at east and west, forming the plan of the church.

The main entrance to the church was located in this wall, and was uncovered in Square OA05. It is ca. 1.60m wide, with door sockets dug in the threshold. There is evidence that it was blocked with hewn stones, and then a new entrance above it was rebuilt in a later phase. The later entrance is ca. 0.90m wide, including the threshold. Another two smaller entrances were discovered, facing the north and south aisles.

The Apse: The apse was double faced, of dressed stones with small stones in between. At the center, it abutted the main straight eastern wall of the church, which gives this apse a thick end. It extends into Squares OB02.1 and OA01.17 in the center of the church and into Square OA02.16. It is 4m wide (N-S) and 5m long (E-W).

The chancel steps were located in Squares OA02.11, OA03.15, 22 and OB03.28. They enclosed the west side of the apse at both ends.

They were constructed from large, dressed limestone; rectangular grooves were employed to hold the marble slabs of the screen. There was a 0.83m wide entrance in the center of the chancel, with squared holes, probably used to fix two columns.

The entrance extended between Squares OAO3.022 and OBO3.28. It lead to the bema, located at the end of the nave. In Square OBO2.23, and extending into Square OAO2, there were remains of a row of dressed stones, 0.4-0.45m wide; possibly representing a bench inside the apse. This feature may possibly be the synthronon, or seat for the priests.

There are two small rooms flanking the apse. One is located at the SE corner of the church, within Squares OBO2 and OCO2.1 and 6 from east and south. It measures 2.5 x 1.60m, and represents the Diaconicon of the church. The other room is of the same size, located on the NE corner of the church, within Squares OAO1 and OAO2, and probably represents the Prothesis of the church.

The Nave and Aisles: The church has a nave and two aisles, with an entrance on the west facing the apse. The main entrance was ca. 1.60m wide, with door sockets dug in the threshold. This door was blocked at a later date, and a narrower door in the same place, measuring 0.90m wide, gave access to a residential house.

Four column bases of rectangular form were discovered in this area. They are of rectangular dressed stones, and located in Squares OB03.033, OB04, OA04 and OA03. They are oriented parallel to the west side of the chancel, and parallel to each other. Each base measured 0.50m x 0.40m. These bases possibly represent the lowest course of the church pillars, which form the basilica design. The aisle hall measures 10m in length and 1.60m in width.

The Mosaic Floors

The mosaic covered the church floor completely; unfortunately, it was badly preserved. The best-preserved sections of mosaic were those located under the walls of the later phase. Due to the weight of the walls over the floor, it sank 0.10-0.30m in some sections. The tesserae were not attached to the base and were easy to remove. The mosaic floor was constructed from

marble tesserae, each 0.015m², and was decorated with multicolored geometric designs, fruit and birds.

The Mosaic Floor Inside the Apse: This mosaic was in poor condition, due to the weight of the later period walls and the pressure of fallen stones. The multicolored (white, red, orange and black) mosaic covered the interior of the apse. A band of crow step decoration was placed between two lines of orange color, surrounding a decoration of crossed lines forming a rhomboid measuring 0.40m. A smaller rhomboid with the sign of the cross was in the center.

The Mosaic Floor inside the Diaconicon: This mosaic was badly preserved on both the western and southern sides, with different levels because of the pressure and weight of the wall above it. It was multicolored, of white, black, red, orange and yellow. The decoration was similar to that in the apse, excluding the crow steps inside a black frame. The mosaic floor did not bond with the wall plaster, therefore the wall plaster was earlier than the mosaic floor, and an earlier floor may possibly exist under this floor.

It had been disturbed during later occupation phases. In the NE corner, it was cut in the shape of quarter circle; this area can probably be interpreted as a fireplace, due to the large amount of ash which was found around it.

The prothesis room had very fragmentary remains of mosaic floor, with the same decoration found within the Diaconicon room.

The Mosaic Floor in the South Aisle: This was also badly damaged, particularly on the east and west sides. It used white, black, red and orange tesserae, but predominantly black and white. The design included a geometric decoration of three intersected circles, repeated four times, forming a large cross. The largest circle is 0.64m in diameter, whereas the smallest one is 0.32m. These decorations were within a narrow border, depicting different types of birds and fruit, belonging to the same area.

The Mosaic Floor of the Nave: This floor suffered almost complete destruction, as a result of continuous use through later phases. Most of the remaining mosaic floor was hidden under walls

or concentrated in corners; only some small patches were intact. This multi coloured geometric mosaic was constructed with small cubic tesserae of 0.015m².

The most important part of this floor is the area in front of the chancel steps, which consists of a framed panel of five lines of Greek inscription, including the date of construction, 710AD. The panel was surrounded by a continuous frame of medallions and repeated rosettes, with different themes such as birds, grapes, themes from the surrounding environment, and geometric patterns.

The Second Church

The second church was constructed alongside the northern side of the first church; its plan is a standard basilica (with an apse and nave that was separated from the aisles by two E-W rows of two columns). It was located in Squares A01 - A04, B01 - B04, and parts of 0A01, 0A02, C02, C03, and C04.

This church had almost the same dimensions as the first, with the walls continuing from the first to the second; however, it appears that this church was constructed hastily. For example, the north wall of the first church is used as the internal southern wall of the second, in spite of its roughness, and the northern part of the eastern wall belonged to an earlier building, connected by a partial wall to the NE end of the first church, and was not straight with the original line of the building.

The exterior measurements of this church are 17.4m on the north side and 16.2m on the south side, whereas the interior measurements are 15m on the north side and 14.1m on the south side. The exterior measurement of the west wall is 10.6m, with an interior measurement of 9.6m, minus the width of the north wall of the first church.

The Apse: Although the stones had been robbed and reused in later phases, this apse had the same dimensions as the first church; this could be discerned from a few stones of the foundation still *in situ*, together with parts of the chancel steps, and remains of the mortar mattress under the mosaic.

The Nave and Aisles: The nave has only two

columns in front of the chancel steps, there is only one rectangular column base formed by three stones, on the south side of the nave center. One column of the second church was removed, leaving a hole in the floor of the nave parallel to the south column, towards the western end of the screen.

Both aisles were distinguished by the remains of a mortar line on the Diaconicon and Prothesis. The Prothesis had a cistern at its NE corner, probably belonging to an earlier structure.

The entrance was on the east wall, 1.6m wide, and directly in front of the nave. All the mosaic floors of this church had been removed; only the mortar mattresses were left. However, a lot of tesserae were discovered on the mattress, covered by a layer of large fallen stones.

The Chapel

This is an elongated structure with an apse on the eastern end. It was added to the earlier church by building three walls against the east side of the church at the same time as the construction of the second church.

The apse abutted the eastern end of the south wall of the earlier church and is 4.2m in diameter. Its construction is very similar to the apse of the first church; however, it is narrower than that of the first church. The exterior face of this wall and the interior curved section of the apse appear to have been constructed at the same time. Only a narrow part at the front of the apse was visible; the rest of the chapel was covered by later occupational phases. There is a mosaic floor 1m under the upper surface of the apse height, located in Square OBO3; it has white, black, red and gray cubic tesserae of 0.01-0.015m. It has geometric designs, consisting of red and black crosses, black and red lines, and concentric circles.

The southern/northern wall of this chapel was constructed in the same manner as the church walls, oriented E-W, parallel to the south wall of the first church and bonded to the east wall. This wall and the parallel wall of the first church were the highest, probably because the area in between them was filled by structural remains of later occupational phases.

The eastern wall was built opposite the apse of the chapel, parallel to the western wall of the church, with a 0.80m entrance.

An E-W oriented staircase, consisting of six steps, (each tread 0.5m wide, 0.25m deep and 0.22-0.25m high), connected with a lower staircase carved in the bedrock, also oriented E-W, with treads 0.22m high and 0.6m wide. These steps lead to the entrance of a cave.

The Cave

After descending the staircase, an E-W oriented cave, with the entrance on the eastward side, was discovered. The entrance was 2.2m high, and 0.6m wide. It appeared to be a natural cave and used as a store. The excavation did not go beyond cleaning the entrance, which was filled with debris and large stones, ca. 1.5m wide. Inside the cave were three entrances leading to a series of caves extending southward; some local inhabitants said there were tombs underneath.

Phase II

Both of the Basilica churches were later altered during a residential occupation phase; many walls were added inside the churches to accommodate the new occupational needs, particularly in the earlier church and the south side of the later one. The second phase can be divided into two main sub-phases, but it was hard to discern differences in construction and stratigraphy. The occupational phases were dated by means of finds, such as ceramic and other artifacts, that were dated to the Byzantine Period (Phase I) and Umayyad and Abbasid Periods.

This complex appeared to have had more than one entrance, used in different phases. The main entrances of both churches had evidence that they were closed by stones at some point, with a new entrance opened in a later phase; this later entrance is about 0.90m wide, including the threshold. Many new walls overlay the mosaic floor, creating residential rooms measuring 2.50 x 3.50m. The walls were 0.70-0.90m thick.

The floors were covered by a pavement, comprised of stony slabs, pebbles, cobbles and boulders; sometimes the pavement was built over the mosaic floor. From this, we can deduce that the mosaic floors were in use in the later phases, without mending. As a consequence of the weight of the new walls, the floor was depressed in parts. Soil was laid over these to create a level surface. Numerous *ṭābūn(s)* were found in many of the rooms which measured

2.50 x 3.20m. Some of the walls in these rooms were preserved to a height of 1.10m. Ceramic analysis dated the artifacts in this phase to the Umayyad and Abbasid periods.

Phase III

The third phase was weakly represented in this area, and concentrated in the southern side of the first church, and over the chapel area. Many reused stones from previous phases were observed. This phase was represented by a single row of wall stones, covered with a thick ash layer, including many pieces of slag, which indicates that this was an industrial area, (probably for ceramic or metal industry). Ceramic analysis suggests that this phase belongs to the Ayyubid and Mamluk periods, but it may possibly continue through to the Ottoman period. Some samples of slag were sent for analysis.

AREA (B)

Located on a mountain to the west of Area A, the southern part of this area was badly damaged recently by a bulldozer. A lot of pottery sherds and tesserae were found, which are probably the remains of a church. Six squares were opened; 0AY/052, 0AY/053, 0AY/0054, 0A2/052, 0AZ/053 and 0BA/052; another three were partly excavated to follow the extension of the structure.

This church has a basilica design, but only the first course was extant for most of the structure. It was divided into three parts: the nave in the center, the south aisle and the north aisle. The foundation was constructed of undressed lime and chert stones, each 1-0.9m in width. Four walls of 1-0.75m widths bonded each other in Squares OA/O54 and OAY/O52, forming a square room and representing the original exterior walls of the church. The Diaconicon was situated on the northern side of the apse, projecting eastward. It was 3.2m x 3m; the entrance faced west. The floor of this room consisted of compact soil with pebble inclusions. A pit in the N-W corner contained a 0.60-0.80m storage jar, dated to the Byzantine period.

The Prothesis was situated at the southern side of the apse, towards the SE aisle. It was constructed from a double faced stone wall, with the dimensions of the Diaconicon. Part of the Prothesis floor and small sections of the south aisle

and the nave were covered by geometric colored mosaic. Due to the bulldozing work here, most walls of both rooms and both aisles and the nave were in a poor state of preservation or missing, particularly the west side of the church, which was completely bulldozed. The preserved length of the church was 15m, and the width was 15m.

Between both small rooms, a curved wall was constructed from medium size stones, forming the apse; only the two lower courses were still extant. This apse extended into Squares 0AY/052 and A02/052 on the eastern side of the building, and was 5.2m in diameter. The whole building was built directly on the natural bedrock.

The nave is located in the middle of the church. Four column bases comprised of two stones were found in Squares 0AY/054, 0AY/053 and OAY/052. These bases were situated along both sides of the nave, with a distance of 4 meters between them. Some of them are of rectangular form, one 0.65 x 0.30m and the others 0.70m. The preserved length of the nave is 7m. Part of the left aisle is in Square OAY/O53, and possibly is the original extent of the church, but this is not certain.

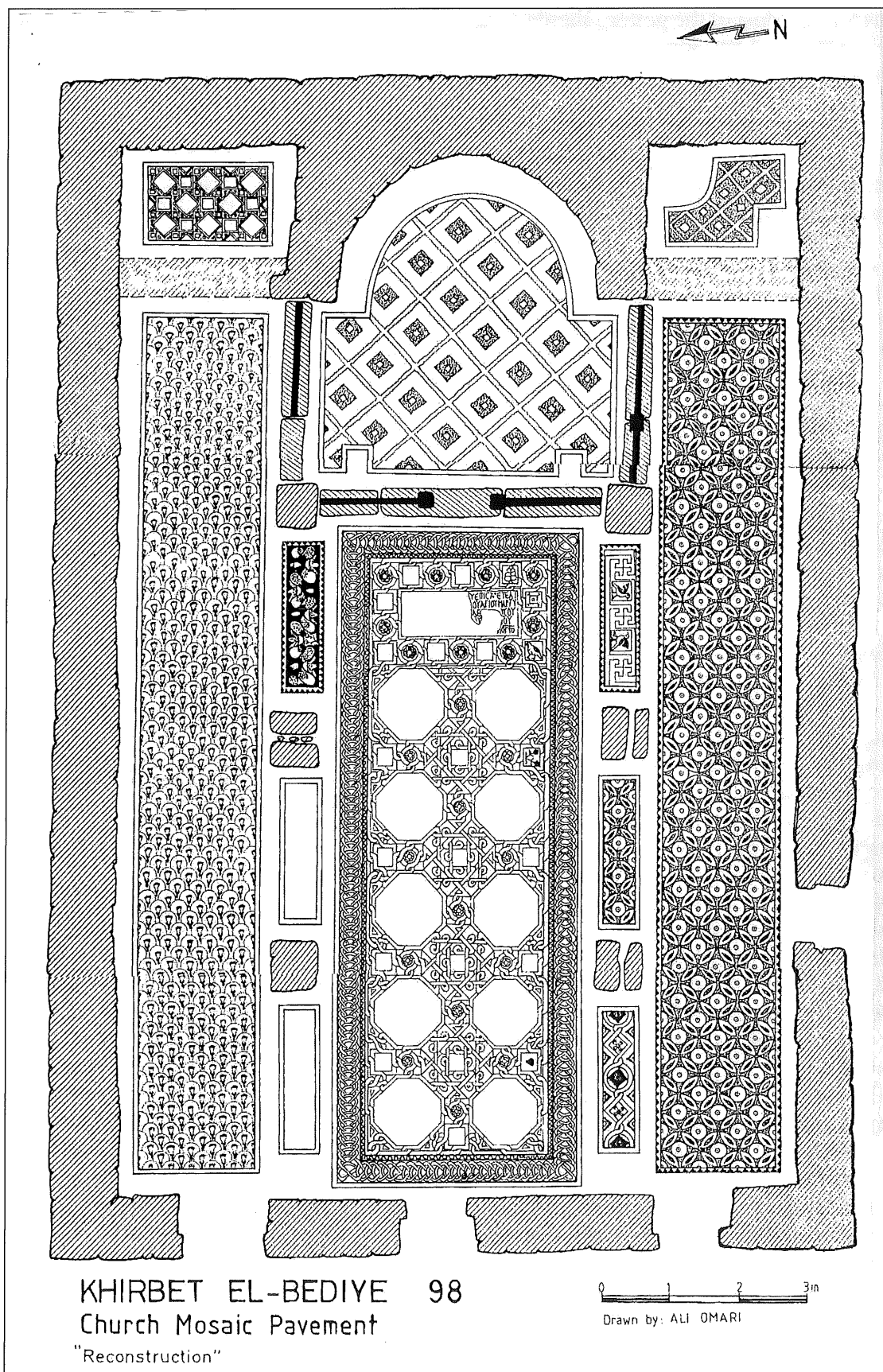
The Cemetery Area

The cemetery is located westward of Area A; it has tombs which indicate that it is indeed a cemetery, and the following probe trenches were opened:

One probe trench measured 4.5m x 1.5m, was 0.65m deep and oriented E-W. Another formed a right angle with the first probe. A third, measuring 2m x 1m was opened, and then all the probes were expanded, forming a 4m² trench. A threshold stone was found at the center of the square, and a stone wall and the remains of a plaster floor were discovered on the bedrock.

No tombs had been uncovered in this area. Therefore, the excavation was moved to the NW sector of the site, where some tombs were observed. More than ten probe trenches were made, but unfortunately, no archaeological evidence was obtained. It was then decided to clean the tombs (all had been previously robbed) on the NW side (**Fig. 4**), classify them, and try to determine their function by studying their internal details.

The first tomb was full of soil, pottery sherds, human bones (including a damaged skull), and



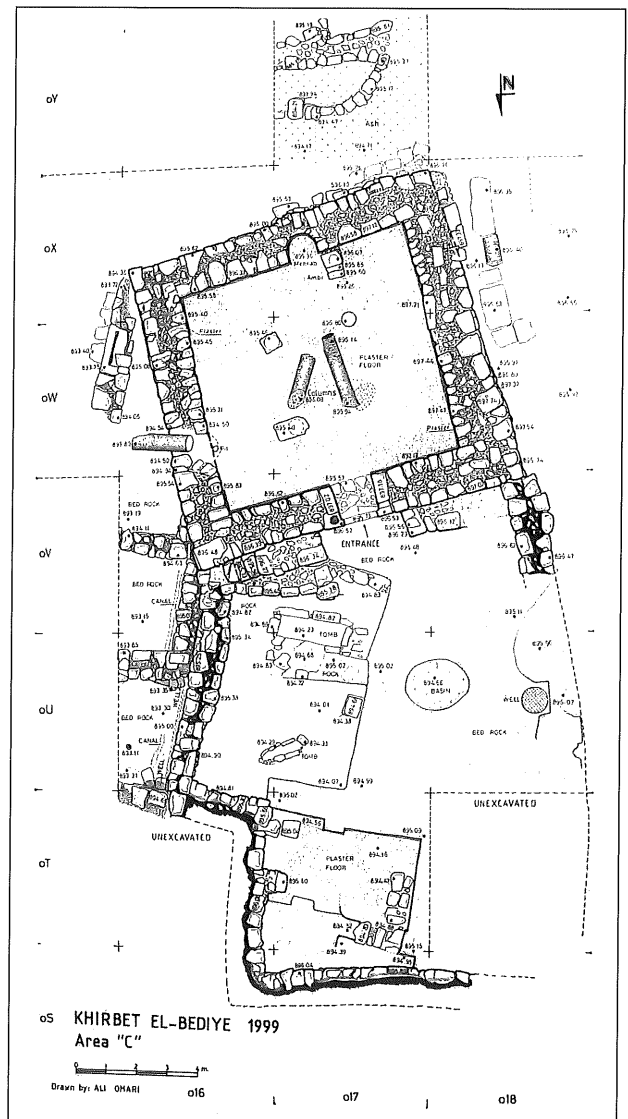
4. A horizontal chamber tomb, dated to the Roman/Byzantine period.

glass fragments. Most of the pottery sherds were from the Roman and Byzantine periods. The entrance to the tomb was 0.82m high and 0.51m wide. It was 1.4m in length and 1.58-1.35m in height. Two tomb chambers discovered next to each other appeared to be dug into the bedrock on the right side of the tomb entrance; each of these tomb chambers was 1.87m x 0.60m, with a depth of 0.80m.

The second tomb was situated to the west of the first. Some bones and many sherds were collected after the fill soil was removed from the entrance. The tomb plan originally was designed for 3 niches; the east and north chambers were complete, but the south side remained un-worked. Both the finished chambers were disturbed by robbers, but the human remains were found. The interior dimensions of the cave were 1.65m x 1.50m. The center of the cave was sunken by two steps, and four sided seats like a square were positioned on the lower part. The cave was plastered, with the remains of the plaster discovered in the corners. The entrance dimensions were 0.56m wide, 0.76m high and 0.23m thick, with a small hollow of 0.06 x 0.09m, which was probably used as a locker (al-Muheisen and al-Shorman 2004: 177-189).

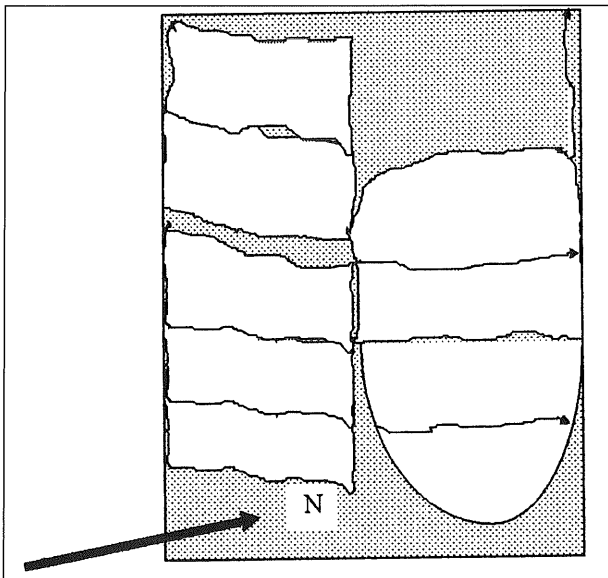
During the 1999 excavation season, the remains of a unique mosque were completely uncovered (Fig. 5). It has a plaster floor and four columns at the center, supporting the ceiling, which probably had a central dome. The walls were still extant to a height of 2.0-2.5m on its west and north sides, the internal walls covered with plaster. A *Mihrāb* was found inside the mosque, oriented south towards Mecca; next to it on the west side was a *Minbar* of three steps, constructed from stone and covered also with plaster on both sides. The northern wall includes a wide entrance, with a ca. 1.0m bench with narrow steps from the eastern side for the call to prayer. A large yard with a beaten earth floor and a water cistern has been uncovered on the north side of the northern wall. An absolute date for this monument cannot be determined, as treasure hunters have dug a large hole in the center and through the plaster floor, where the top of the columns was previously visible.

The excavations continued working on the southern part of the earlier church under the chapel, where there is an E-W oriented cave con-



5. General plan, showing the Mosque area.

taining a wine press west of the apse, with a wall measuring 3.25m in length and 0.8m in width. This wall was built in a later occupation phase, with an entrance at its northern end, leading into a narrow E-W oriented space enclosing a stone staircase with six steps, connected with a lower staircase carved in the rock (Fig. 6). The cave consists of three rooms connected to each other by two entrances carved in the bedrock. The first room is roughly rectangular in form, and could be reached by an entrance at the northern end of the east side of this room. This entrance consisted of six steps carved in the bedrock, the treads of different height ranging between 0.2-0.3m, which descended down to the room from a small platform. The second entrance on the SE side of this room was blocked, probably due to its nar-



6. A sketch for the staircase.

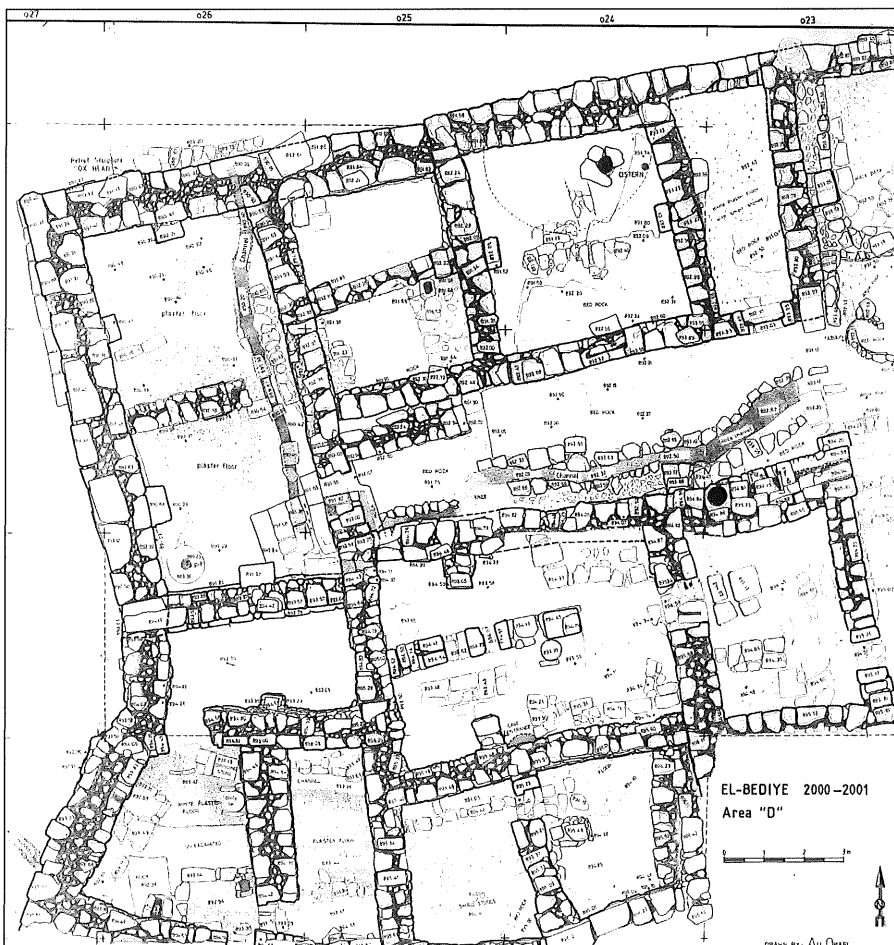
rowness; traces of three eroded steps could be seen, with a difference in level of about 1.15m. Part of the ceiling of this entrance was covered with stone slabs after it had been abandoned, and reused as a niche; this can only be seen

from inside at the top of the stairs.

At the center of the room there is a shallow circular basin; 1.1m diameter and 0.1m deep. On the SE edge of this, a narrow channel (0.12m wide and 0.3m long), connected with a circular storage pit; the mouth of this was 0.55m in diameter and depth was 1.15m, and the interior diameter ranged from 1.5-1.15m. There were two small rectangular basins of different sizes, one south and the other north of the storage pit. These small basins may possibly be postholes; this pit is probably for wine processing, and the mill stone would probably have been supported on posts. There is also a cylindrical hole in the bedrock ceiling in the NW part of this room, with a 0.15m diameter; this also was probably used for wine processing, possibly to bring water from the roof.

AREA (D)

During the 2000 and 2001 seasons, the work was concentrated in the central part of the northern area of the site, Area D (Fig. 7). The initial



7. General plan of Area D.

decision to work here was based on structural remains; the corner of a Hellenistic period building, ca. 2m high, was observed. This building was constructed of large, well-shaped stones, with a relief sculpture of an ox head on the western edge of the northern wall. It was decided to excavate in this area, to learn more about the function of this building. The excavated area shows many structural elements on the surface, with wall lines scattered over the entire area. There are remains from the Hellenistic, Roman and Byzantine periods; the area was densely populated in the Islamic period, with stones of earlier buildings reused to build houses. Pottery sherds dated to these periods show a tremendous use of the site during Ayyubid and Mamluk periods, particularly the upper levels.

Architectural evidence of the ca. 2m high Hellenistic building shows that the exterior walls remained constant, with the lower course unchanged. The interior of the structure had changed; walls had been repaired or rebuilt using a different technique, and many additional walls constructed to make small rooms or spaces. In the third course of the northern wall (that with the relief sculpture of an ox head), there is a gap between the seventh and the eighth stones; this is probably a water channel leading to cistern outside the building. This cistern is not yet excavated, but is connected to a long, wide water channel running E-W inside the building under the floor. It is located along the southern wall of the interior structure, where it extends for a length of 8.8m outside the two rooms, and ca. 10m inside the two rooms. Outside the structure, the water channel connected with a niche and a

rectangular hole carved in the bedrock; this was probably used as a strainer, and the channel then divided into two branches. The first branch went under the south side of the entrance and under the steps. The second branch turns in front of the entrance to run under the E wall of the room. The channel was constructed by digging a groove in the bedrock, and was covered by stone slabs.

One of the internal rooms of the Hellenistic period structure was excavated; the finds from a depression filled with medium sized stones mixed with grayish brown dirt were from the Hellenistic and Early Roman periods. Three complete Hellenistic lamps were found, close to the cut of the bedrock at the room center. A water cistern was found in the NE corner of the room, under the stone fill, which was probably laid to level the floor. The cistern depth was ca. 7m, with an internal diameter of ca. 5m. The internal surface was well plastered. The bottom of the cistern was filled with soil, stones and pottery sherds; the ceramic finds were all dated to the Hellenistic period.

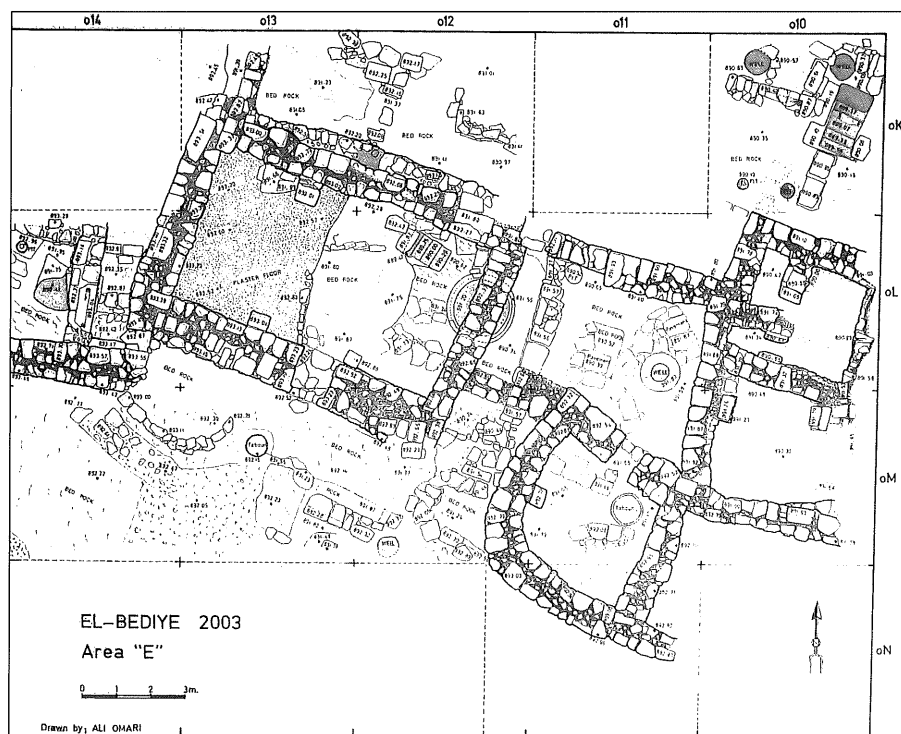
AREA (E)

The 2003 excavation season concentrated in Area E, situated to the SW of the churches, where some structures were clearly observable on the surface (**Fig. 8**). Fifteen squares of 5m² were opened, uncovering a fragmentary structure of several occupational phases, belonging to the Ayyubid, Mamluk, Umayyad and probably Roman periods (**Table 1**).

A large rectangular room (oriented SE-NW), was excavated, measuring 10m in length and 7.5m in width. The entrance in its southern wall

Table 1: Distribution of Squares in Area E.

	OK013	OK012	OK011	OK010
OL014	OL013	OL012	OL011	OL010
OM014	OM013	OM012	OM011	OM010
			ON011	



8. General plan of Area E.

was 0.8m wide. The room was located within Squares OK012 and OK013, OL012, OL013 and OL014 and OM013. The walls were built with reused stones from earlier structures. The south and west walls were constructed on the bedrock. The north overlay an earlier wall; it was narrower than the earlier, with the edge of the earlier stone visible along the whole of the northern face. The eastern wall overlay a large stone basin, which is probably associated with the wine press under the large room.

The walls are not well built; wall widths range from 0.75m- 0.95m for the SE wall, ca. 0.80-0.85m for the NE wall, 1m-1.2m for the NW wall and 1.4m-1.55m for SW wall. The NE and the SW walls are joined by two spring arch bases, dividing the space of the room into three equal parts, each 5.15m from the corner. The floor of this room was not the same throughout. The NW half of the room, from the west side of the entrance, was raised by 0.95m with a single row of stone. This had a plastered floor over the bedrock surface, and part of the northern wall was also plastered. The floor in the central area of the room was of bedrock; this had an irregular edge ca. 2.7m east of the plaster floor. The remainder of the floor surface was of stone pavement and dirt; and filled the entrance to the wine press. The door in the SW wall opened toward

the south; it measured 0.8m in width and 1m in height above the door threshold, which was a pavement of small stones. Outside the entrance was an open yard, located in Squares OM012-OM014. This yard appeared to be used for daily activities; a 0.65m diameter *ṭābūn* was found within a small enclosure built from one single line of stones, which was possibly used for fuel storage. In the SW corner of Square OM012 was a SE-NW oriented water channel, preserved for 2.2m, which led to a cistern.

The wine press was constructed inside a cave ca. 2.49m below the bedrock surface (Fig. 9). It was reached by four curved steps oriented



9. General view of the wine press in Area E.

E-W, ca. 0.25-0.29m high and ca. 0.66m wide. The inside of the cave was rectangular in form, 2.7m wide, 3.44m long and 1.9m high. A circular basin (1m in diameter and 0.2m deep), was dug into the bedrock. It was connected to a strainer storage pit by a narrow channel to the SE, 1m in length and 0.15m wide. This storage pit was situated close to the SE corner of the cave; it has a cylindrical form, and is 0.5m in diameter and 0.8m deep. Within this pit there is a smaller hole, 0.15m deep. There were also two rectangular holes dug into the bedrock on the north and south sides of the basin. Deeper than the basin bottom, they are 0.62m long, 0.34m wide and 0.3m deep. There is a niche in the NE corner of the cave. The base is on the floor, and it measures 0.84m high, 0.6m wide and 0.42m deep. It was interpreted as a storage area, possibly for tools.

Another smaller cave of sub square form was excavated on the SE side of the cave, which was accessed by means of three narrow steps. The tread of the first step was 0.2m high and 0.4m wide, the second 0.34m high and 0.2m wide, and the third 0.34m high and 0.27m wide. The cave measured 1.8m on the west side, 2.3m on the east side; it was 1.58 m in height and 1.58m deep. This cave was also interpreted as a storage area.

Another large stone basin was discovered, with an exterior diameter of 2m, an interior diameter of 1.7m and a depth of 0.35m; this feature was interpreted as a grape press. A row of a stones extended from the west side of the basin towards the edge of the bedrock, probably forming a sort of channel. It was not possible to excavate the area below this basin, as the N-S oriented eastern wall of the above mentioned room was still extant, and crossed the center of the basin. It was therefore not possible to explain the relationship between the stone basin and the grape press.

A fragmentary structure was uncovered in Square OL014. SW of the rectangular room, it retained features from two occupational phases. The first was part of a wall extending from the south end of the west section, contrary to the structure of the rectangular room but not connected with it; it measured 4.14m in length, 1m in width and 0.75m in height. The second was the corner of an earlier structure which extended from under the first wall. It consisted of a N-S oriented wall (3.57m in length, 0.7m in width

and 0.27m in height) which bonded with a small E-W oriented wall (1.4m in length, it was not possible to determine the width, because it was overlain by the first wall). This structure appears to be related to an earlier building, but most of the stones had been removed and reused in later occupational phases. To the west of this fragmentary structure is a cave, possibly used as a cistern, but it was not possible to excavate it during the dig season.

To the east of the rectangular room was a fragmentary structure, (located in Squares OL011 and OL012, OM011 and OM012, and ON011), with remains from at least three phases of occupation. The first phase was represented by a 1m wide curved wall in Squares OM011 and ON011 which links with two other walls. The first is oriented E-W, is 4.14m in length and 1m wide. There is an entrance in the center, 0.75m wide and 0.88m at the preserved height, with a threshold made from medium sized flat stones. The second wall is oriented N-S, and measures 3.2m in length and 0.94m in width; it links the curved wall and the first wall, forming a room. Inside this room was a compacted earth surface; two *ṭābūn(s)* were found on the surface, together with many pottery sherds belonging to storage jars, which suggest that this room may possibly have been used as a kitchen. The entrance opened towards the north, leading to a sub-rectangular room formed by stone walls. The western wall had one course, measuring 3m in length and 0.75 in width; it was removed because its position on the edge of the section meant it was not stable, and the northern part of it was missing.

The second phase was represented by reuse of the exterior of the N-S oriented eastern wall; it is constructed from well shaped stones on the western part while the eastern part is constructed from small, rough stones. It measures 4.77m in length and 0.90m in width.

The third phase was represented by the northern wall; it measures 3.3m in length and 1m in width. It appears that the northern end of the east wall was built against its south face. The northern wall appears to overlay an earlier wall; 1.85 m in length and 0.71m in width, only a small part of it was visible, with an entrance at its west end. A stone pavement was associated with this wall; laid over bedrock, it surrounded a stone

cistern, with an exterior diameter of 1.14m, and an opening of 0.5m. Another wall belonging to this phase was revealed; aligned with the west wall but at a lower level, it measured 3.25m in length and 0.75m in width. This wall sealed the cistern and the pavement.

The eastern wall had been shared by two structures at least; as mentioned above, its western side was reused in a later structure, while its eastern side was originally constructed on a lower level. Its height measured 1.44m and it has an arch base, approximately at its center, which measured 1.28m in height and was 0.75m wide. This wall represented the western wall in an adjoining rectangular room.

The southern wall of this adjoining room was oriented E-W, and measured 3.85m in length and 0.8m in width; the eastern edge of an earlier wall was visible at its eastern end. The upper courses of the wall were from the later phase, whilst the lower were from the second phase of occupation. The southern wall bonded to another wall (which was 5m long and 0.75m wide) at the edge of Square OM010, parallel to the western wall. This wall also contained the base of a spring arch, parallel to that in the west wall, 0.68m wide and 2.14m from the SE corner.

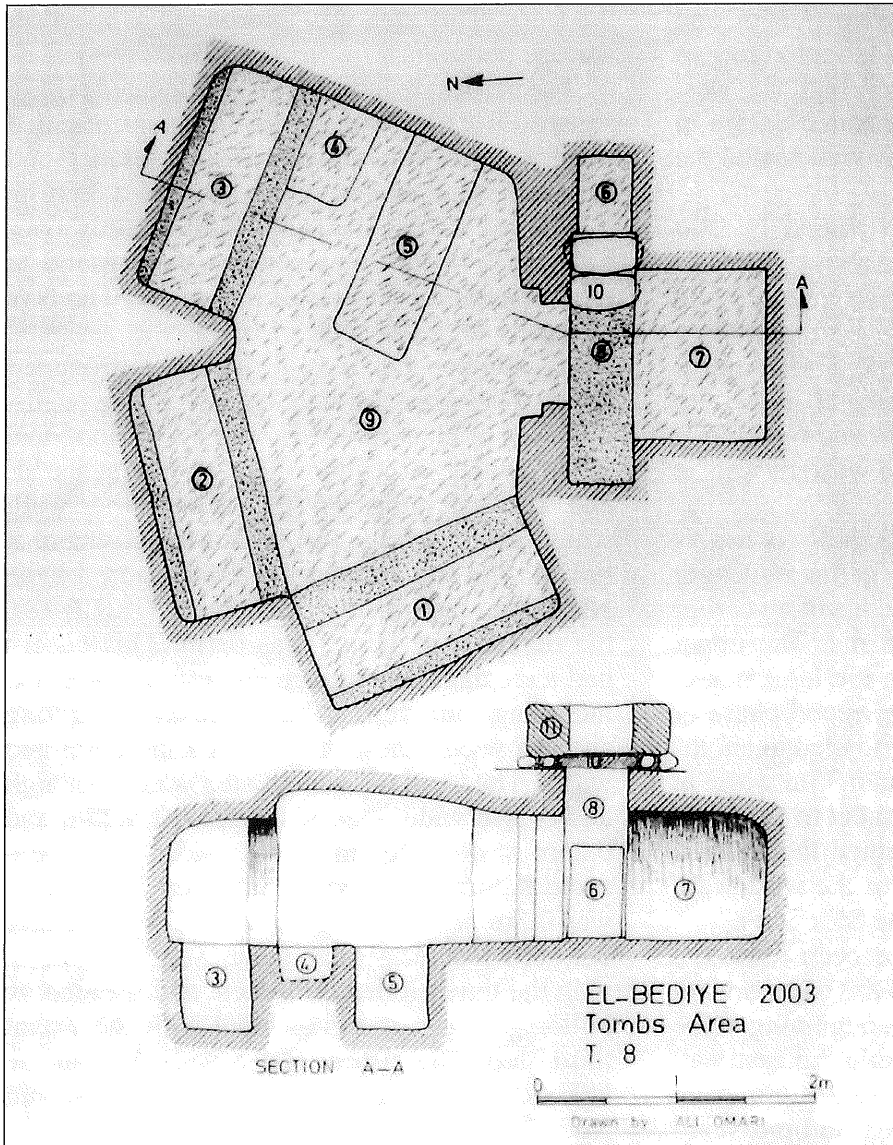
This room appeared to have been reused; a stone wall was built parallel to the eastern wall, linking the east and west walls, beginning at the north side of the arch base within the east wall and abutting the west wall at a point 3.28m from the SW corner of this room. This wall measured 3.5m in length and 0.75m in width, representing an additional phase in this part of the structure. This wall divided the area into two areas; the eastern 0.7m wide, and the other on the northern side, (where a part of the original wall still stood), 1m in length and 0.75m in width. It is bonded with the northern edge of the west wall, oriented E-W N-S, where a narrow room has been formed on the southern side; this was possibly used as a storage room. The corner formed by these two walls was observed to be partially constructed over the corner edge of an earlier structure on the northern side of this wall, within Square OL010. The second room was square, measuring 2.85m²; there was a 1.7m x 1.4m raised area in the NW corner, with two stone steps toward the east, where a medium size storage jar was found broken on the south side of

the steps. This area was interpreted as used for storage purposes.

The earliest feature found was located within square OK010; a stone wall fragment oriented NE-SW, one row of well shaped header and stretcher stone blocks, which measured 3.6m in length and 0.65m in width, built directly over bedrock. Two cistern openings were found at the NE and NW corners of the square. The NW cistern, with a diameter of 0.7m, was assigned locus number OK010.14; it was surrounded by an enclosure formed by two stone walls. One was oriented NW-SE, was 2.85m long and 0.55m wide, with a threshold visible at its SE end. It overlay the NW end of the other wall, which was 1m long and 0.55m wide, where it linked with the circular stone enclosure of the NE cistern (assigned locus number OK010.18), the diameter of which was 0.7m. This cistern had a rectangular entrance cut into the bedrock, including four steps, which measured 2m long and 1m wide. These steps varied in height and width. The tread of the first step was 0.6m high and 0.25m wide, that of the second 0.25m and 0.25m wide. The third was wider, and measured 0.54m high and 0.26m wide. The fourth was 0.3m high and 0.25m wide. The excavator believed that originally there were five steps, with the third eroded or broken, and mended by building a row of stones level with the extant third step. The cistern had a widening on the NW side, and measured ca. 0.45m x 0.65m with a depth of 0.09m.

This cistern appeared to be situated outside the building, and available for communal use; possibly this is the reason for the existence of the steps. The inside of the cistern and the entrance to the steps was covered with a thick layer of fine plaster. The cistern was partially emptied this season, but many large stones and soil still remain; this may be completely emptied in later seasons. Many questions were raised by this season's work, which can only be answered after further excavation.

Part of the fieldwork in 2003 was devoted to analyzing the constructed landscape, that is, the creation and erection of monuments, tombs (Fig. 10), buildings and other structures. Geographic Information System was used to perform the landscape analysis using Viewshed. One of the constructed elements at the site are the three



10. A horizontal chamber tomb, dated to the Roman/Byzantine period.

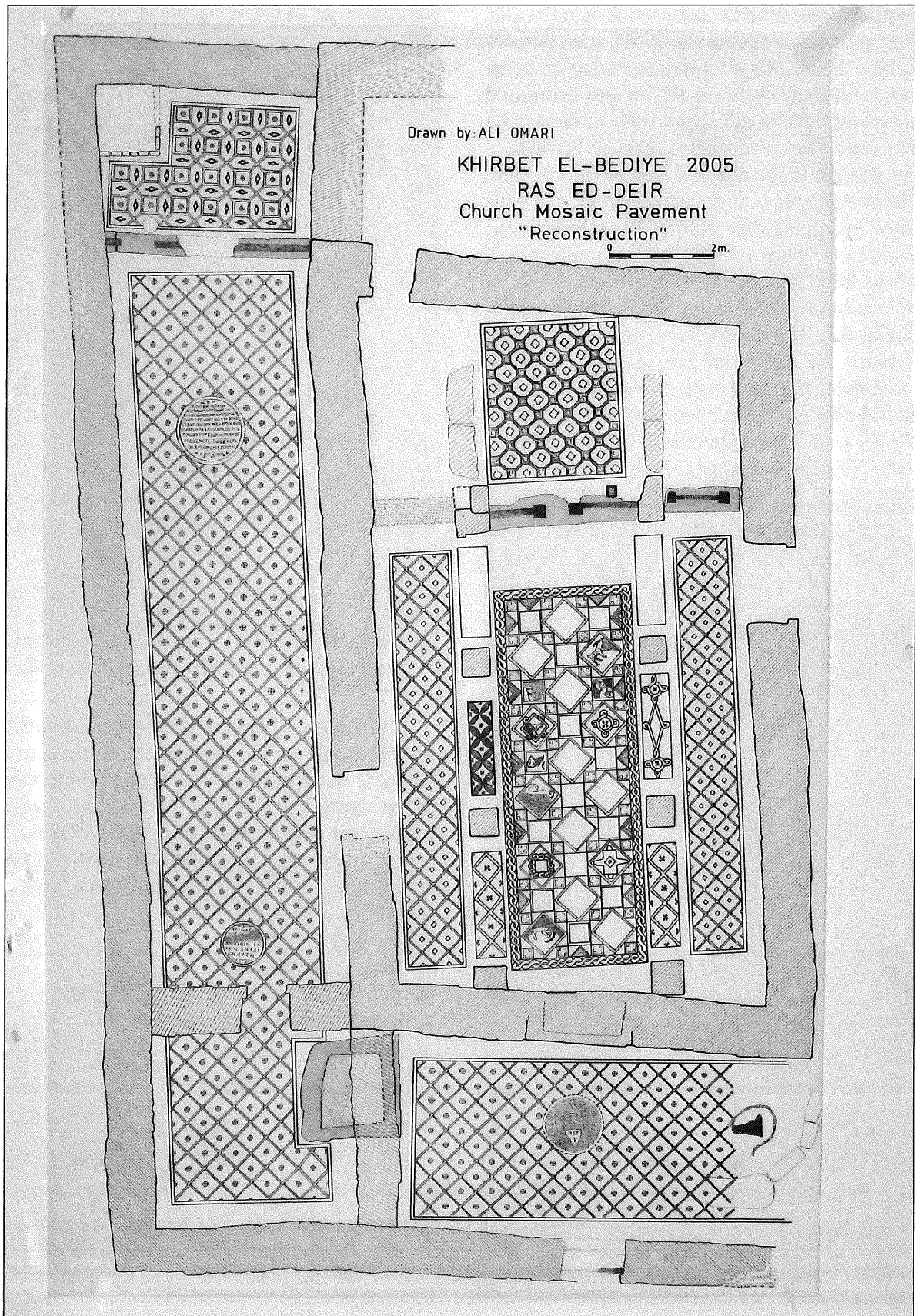
cemeteries that were dated to the Late Roman/Early Byzantine periods; the western cemetery has chamber tombs with arcosolia, the southern cemetery has single horizontal shaft graves and the eastern cemetery has horizontal shaft graves, vertical shaft tombs and chamber tombs. Based on tomb typologies and artifact assemblages recovered from these tombs, tomb reuse was clear as well as social stratification. A predictive model was constructed using GIS to predict further tombs at the western cemetery that are believed to have housed people of higher social class. The performance of the model was 0.82, which is theoretically accepted and is going to be tested during the excavations of 2004 (al-Muheisen and al-Shorman 2004: 177-189).

Excavation in the 2005 season took place in

an area called Rās ad-Dayr in Khirbat al-Badiyya. This area is located to the SE of the site of Badiyya. The church excavated was located in the heart of the hill of Rās ad-Dayr (Fig. 11). The building is a standard basilica, with the nave divided from the aisle by two E-W oriented walls.

The Mosaic floors

The mosaic floors in the church were well made and featured geometric, botanic and faunal designs; however, many of them had been partially destroyed by tree roots. The nave floor is divided into two separate panels and a larger central area. The central area is 7.25m x 2.60m, enclosed by a guilloche, and is decorated with a geometric pattern, rows of large diamonds alternating with squares. The diamonds and squares



11. Plan of the Rās ad-Dayr church.

also contain geometric, interlaced designs, including portraits of animals, birds, and flowers (Fig. 12). There is no evidence of iconoclasts. The exterior panel is 8m x 1.15m and decorated with a grid of diamonds filled with flowers. The interior panel has a geometric grid of flowers.

The mosaic in the chancel area is 3m x 2.70m, and decorated with octagonal and square patterns repeated in a geometric design. The mosaic in the north aisle is 17.80m x 3.15m, with a simple grid of diamonds filled with flowers. This mosaic includes two Greek inscriptions enclosed by circular medallions (Fig. 13). The translation of one reads:

“Under the holy and blessed Bishop John was achieved the pavement for the Holy Archangels Michael and Gabriel, through the zeal of the Priest and Archimandrite Serge in the year 662, the First of Artemisios, Indication 4”.



12. Detail of the mosaic floor found in the Rās ad-Dayr church.



13. The Greek inscription in the center of the north hall, Rās ad-Dayr church.

The mosaic in the northeastern room is 3.60m x 2.40m and has an interesting composition of adjacent octagons forming squares. The mosaic in the narthex is 7.70m x 3.50m, and decorated with a grid of diamonds filled with flowers. The center of the mosaic originally included Greek inscriptions; however these are now destroyed except for a few letters.

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