MACHAERUS PROJECT: PRELIMINARY REPORT ON THE 2011 HUNGARIAN - JORDANIAN EXCAVATIONS

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Introduction

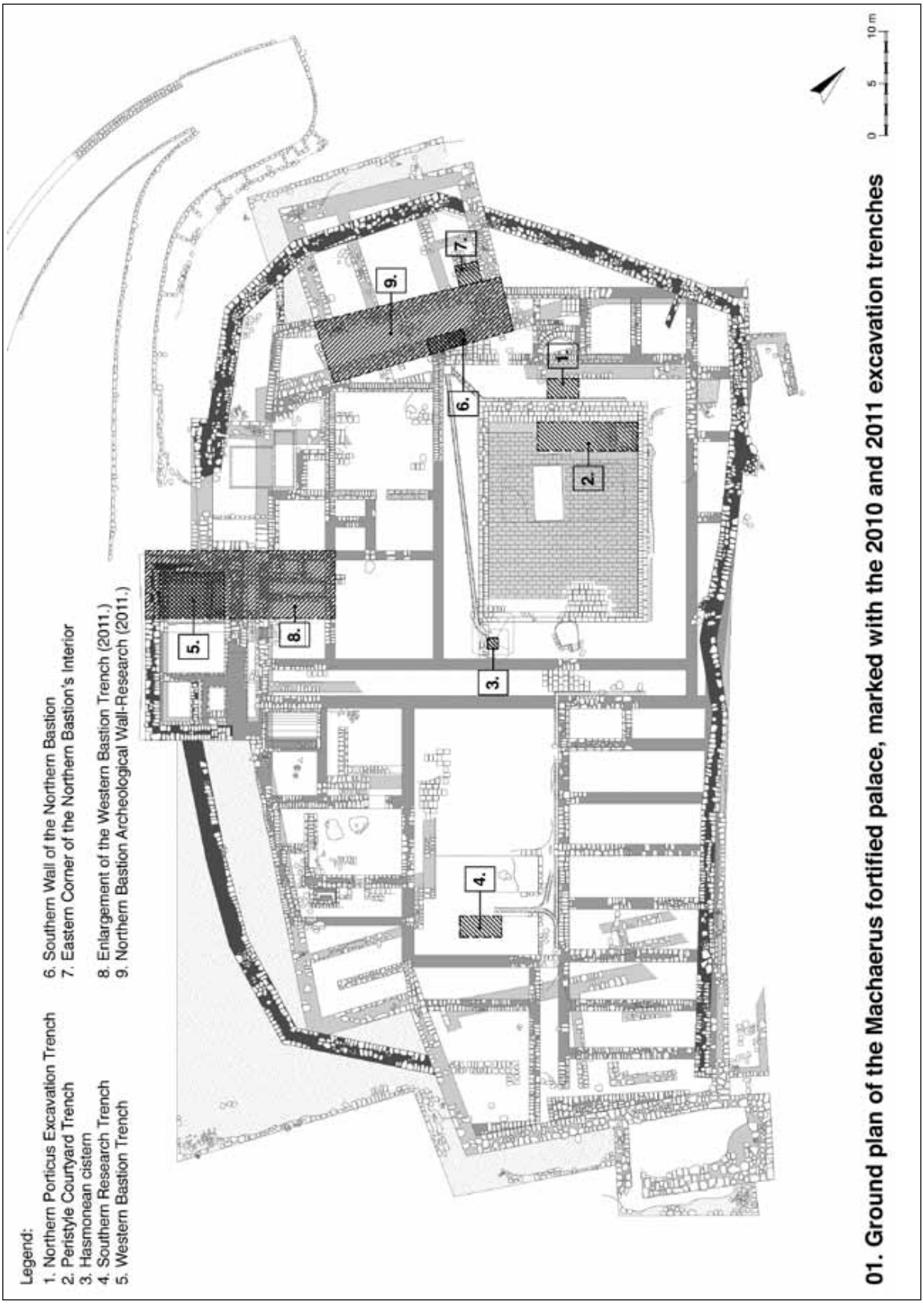
Following a three-month field survey in 2009 and two-month excavation season in 2010 at Qal'at al-Mishnaqa in Mukawir, known to ancient sources as Machaerus (Machairos), additional archaeological excavations and surveys were conducted at the fortified royal palace on the hilltop, overlooking the Dead Sea. The joint mission of the Hungarian Academy of Arts and Jordanian Department of Antiquities (excavation permit in the name of Dr Győző Vörös) carried out a one-month archaeological investigation at the site between 26 March and 21 April 2011. A general introduction to the site and preliminary scientific reports on the previous two seasons can be found in the 2010 *ADAJ*, *Liber Annuus* and *Munjazat* journals, and also in the forthcoming proceedings (*SHAJ* 11) of the 11th ICHAJ, held in Paris in June 2010.

The objectives of the 2011 season were the completion of the architectural and archaeological investigations and making preparations for the preservation, conservation, consolidation and *anastylosis*-restoration of the Machaerus palace-fortress, and its attractive future presentation to the public.

Archaeological Excavations

In 2010 we opened a 6 x 4 metre trench in the northern part of the western fortification tower (**Fig. 1**). The limits of the trench were the south-west, north-west and north-east walls of the bastion itself. To gain a better understanding of the archaeological stratigraphy inside the bastion, we positioned the south-east edge of the trench midway down the 6 x 8 metre hall. Rather unexpectedly, we did not expose any archaeological stratigraphy in this section, but instead uncovered the elevation of a previously unknown wall. In the six metre deep trench we discovered collapsed wall debris that had accumulated over the well-preserved bedrock and floor foundations, in between intact walls on either side. In addition to a large quantity of pottery, three *in situ* coins came to light during the clean-up: one depicted the Hasmonean anchor and another, the Hasmonean double cornucopia. Both these coins were minted by King Alexander Jannaeus of Jerusalem; the third was too corroded to yield any additional information. This trench gave an unexpected vertical dimension to the fortification that will become a key element in the monument's future presentation.

To gain a better understanding of the architectural structure of this trench, we enlarged it to 18 x 6 metres (see new plan with the 2010 trenches marked). We identified seven rooms within the trench, which we excavated to bedrock. These rooms are numbered from the south in the archaeological and architectural documentation. The south-east end of the section lies over the arched bath discovered by the Franciscan mission. The physical parameters, architectural structures and archaeological stratigraphy (including identified floor levels) can be studied on the drawn and photographic record. The bedrock in rooms 1, 2, 3, 6 and 7 was horizontal, with two rock-cut steps in the walls between rooms 1 and 2, and 2 and 3 respectively. Concerning the architectural character of the monumental walls, we can state that the Cyclopean masonry of the Hasmonean walls were used by the Herodian architects as foundations for their ashlars. The western bastion of Alexander Jannaeus' fortress was strengthened with a cross-wall and reduced in size by King Herod the Great's builders. From



1. Plan of the Machaerus palace-fortress, marked with the 2010 and 2011 excavation trenches.

the archaeological material recovered during our excavations, we can highlight fragments of five pottery lamps, three Aramaic *ostraca*, two extremely corroded bronze coins and one fossil ornamental bead (**Figs. 2, 3 and 4**).

Archaeological Walls

In the 2010 season we opened two trenches (Nos. 6 and 7) in the area of the northern fortification tower. They provided valuable information, as we discovered staircases in both of them. In trench 6, nine steps led up from the peristyle courtyard, and in trench 7 five steps descended from the same level.

2. The 2010 - 2011 western bastion trench (view from south).

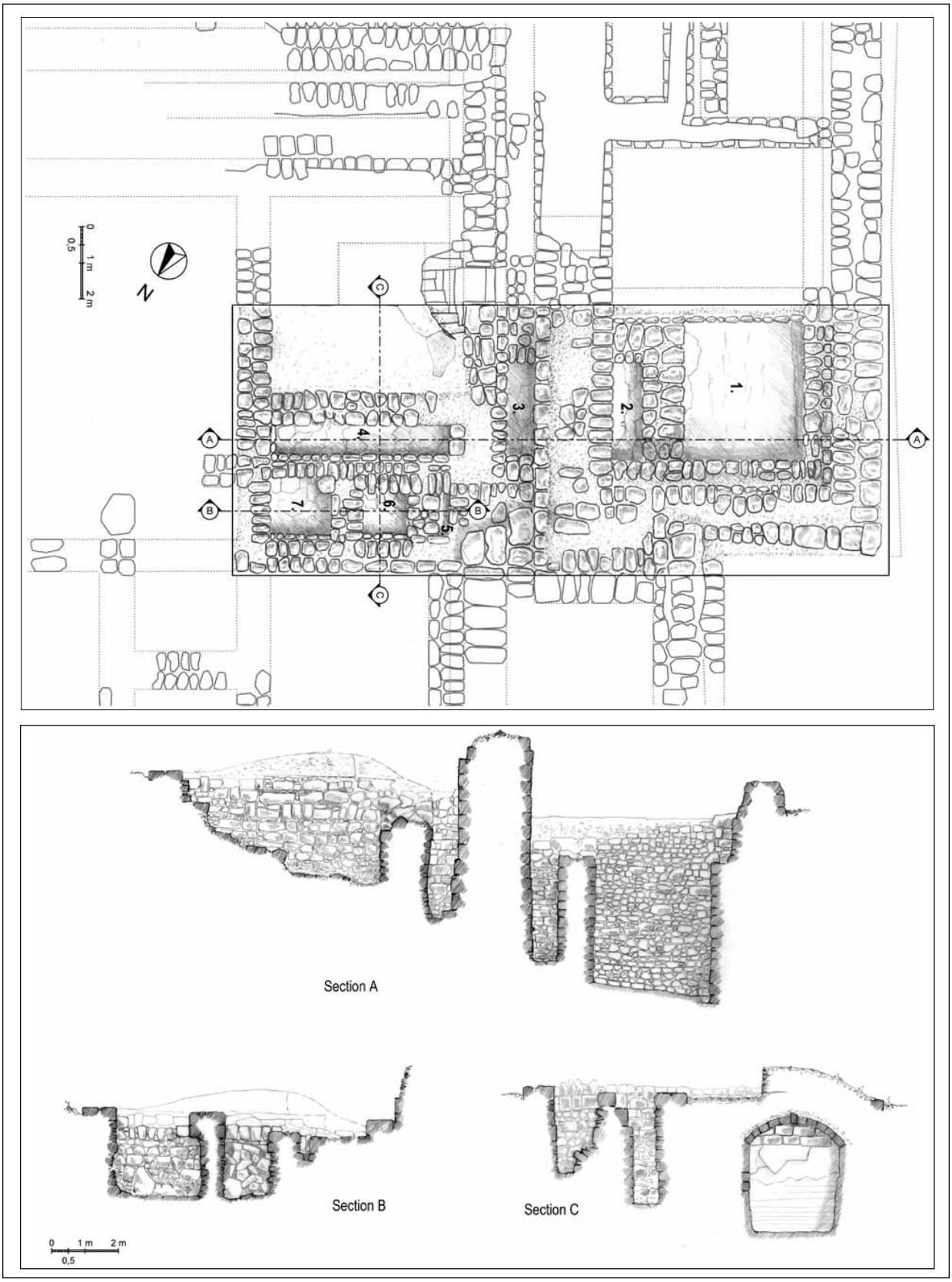
3. The 2010 - 2011 western bastion trench (view from north-east).

In these two trenches, we defined a large, 15 x 6 metre section for architectural research that proved to be the most problematic area of our 2009 and 2010 investigations (**Figs. 5 and 6**). Eventually our research was fruitful. We carried out detailed architectural analysis and excavated amidst the southern Herodian structures built adjacent to the northern Hasmonean bastion. As a result of our research we concluded that the south-west part of the outlined area consists of two blocked entrances of the Hasmonean fortress: the southern was one of the outer entrance gates of the fortification, whilst the northern represented one of the inner doors of the northern bastion (**Fig. 7**). The goal of the Herodian builders was to use the (probably) already ruined wall behind the northern Hasmonean bastion, which runs along our 2010 No. 6 section, as the foundation for an ascending staircase. Since the steps are in Greek feet, being 32cm deep and 20cm high, we calculate that 35 steps were would have been needed to ascend from the peristyle courtyard to the wall which turns directly towards that of the *triclinium*'s northern hall. The difference in height between the two levels has been estimated at *ca*. seven metres. It also gives the height of the three-hall *triclinium*'s arched roof (**Fig. 8**).

For the enclosed staircase, flanking walls were erected on both sides and the space between the bastion and the completed staircase filled in. The plan and two reconstructions show the two architectural periods, and well illustrate the development of architectural space in this part of the monument.

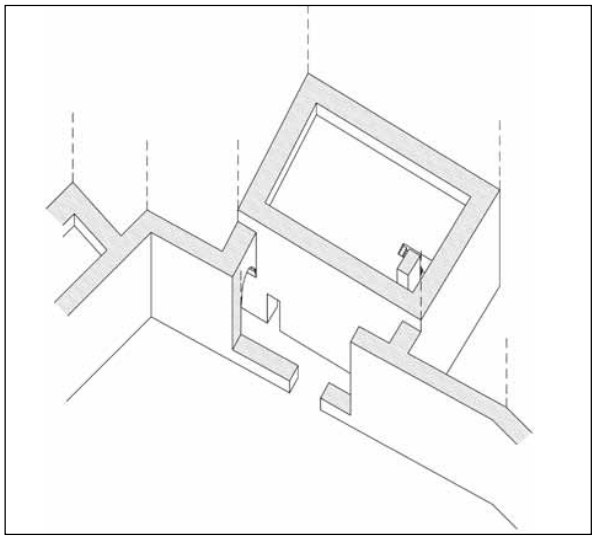
Architectural Survey and Geodesic Measurements

Following our architectural surveys of 2009 and 2010, this season's survey objectives were to check and collate the measurements from previous seasons, to undertake a comparative analysis of the different architectural periods and to finalise the details of the theoretical architectural reconstructions. As a result of our investigations, we were able to identify a previ-

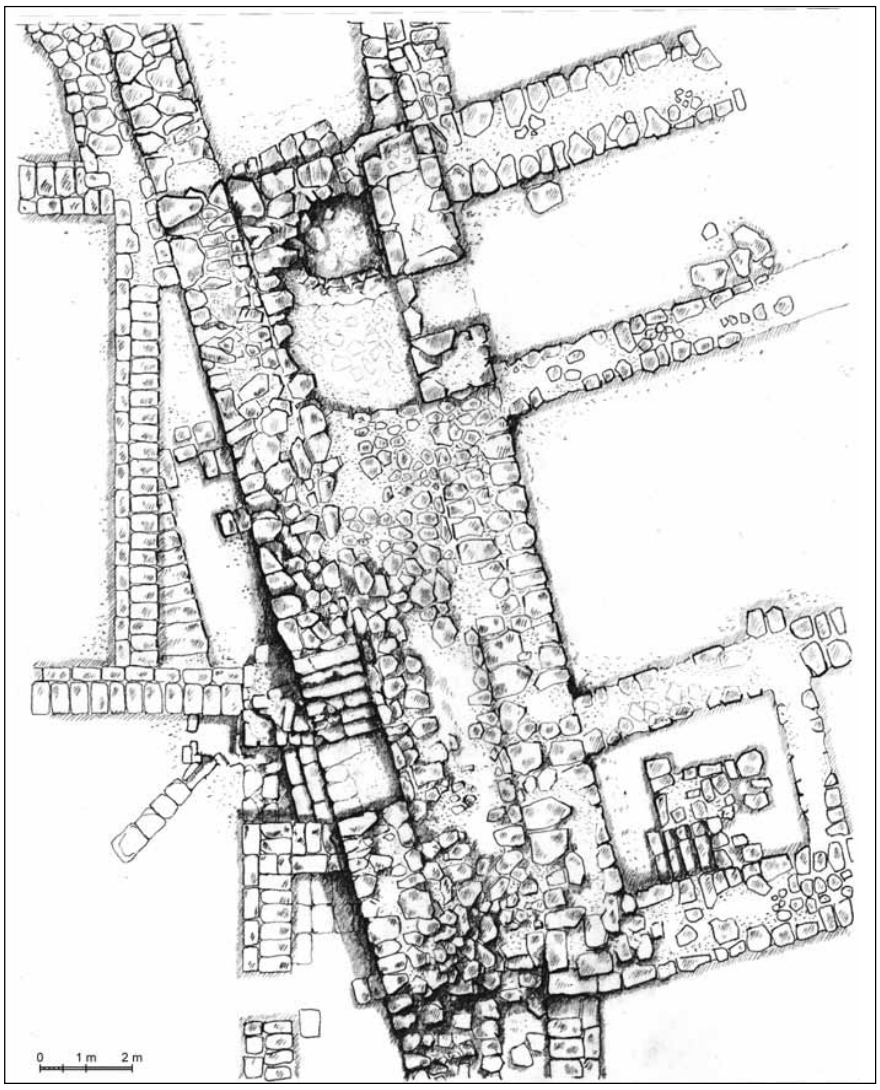


4. Architectural elevations and stratigraphic sections in the detailed drawing of the enlarged No. 8 trench.

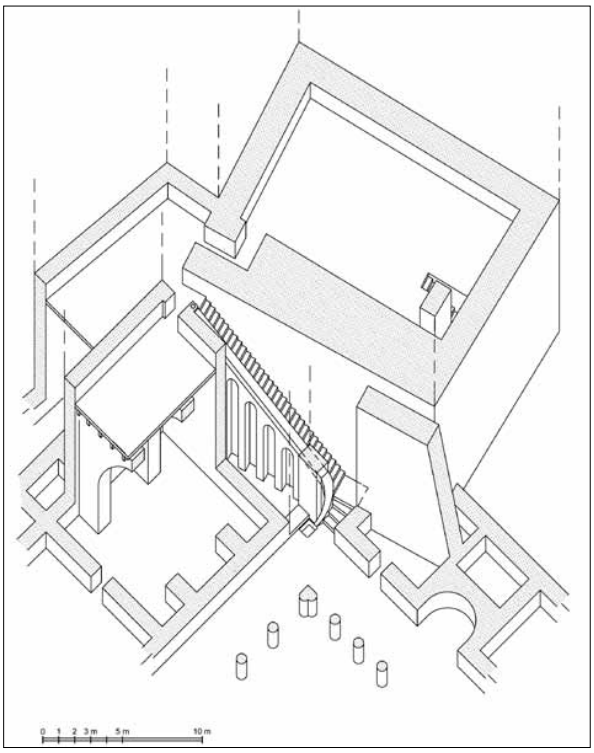
5. Location of the 2011 wall research (view from south-west).



7. Reconstruction drawing of the first architectural phase in Section No. 9.



6. The detailed layout of the wall research and excavations.



8. Reconstruction drawing of the second architectural phase in Section No. 9.

ously undocumented basin east of the peristyle courtyard (close to the staircase ascending from the northern watchtower up to the fortress). We also examined the relationship between the aqueduct, suburb and water catchment system on the one hand, and the cisterns and ancient main road leading up to the fortress on the other.

We paid special attention to making a detailed drawn and photographic record of the surviving architectural elements and also created an architectural catalogue / classification for their comparative examination. In light of these activities, we concluded that reconstruction of the Ionic and Doric columns would be possible: bases, capitals and a large number of drums from both have survived, as have their surmounting elements. We were aware of the *in situ* plaster decoration and carved details on the architectural elements, and made a very careful drawn and photographic record of all aspects.

The geodesic survey of the archaeological site was carried out with the support of the president of the Jabal Banī Hamida municipality, Mr Ibrahim al-Atrash, who personally visited the excavations. The peristyle courtyard of the Herodian royal palace is situated at an elevation of 698 metres above sea level, or approximately 1,100 metres above the Dead Sea. A digital total station was used to establish the geodesic fixed points, with optical projections to five points at Machaerus from the 'M 183 al-Dayr' survey point, located at a hilltop village to the south-east.

Mosaic Research

The most glorious part of the former Herodian royal palace was undoubtedly the 28.3 x 23.3 metre peristyle courtyard, with its apsidal throne niche on the axis and Doric columns on the four porticos, along with the connecting 25.6 x 9.6 metre *triclinium* with its three arched halls on the ground floor and upper floor with a stunning panoramic view of the Dead Sea and West Bank. Another gem of the Machaerus palace was the 20.1 x 12.9 metre royal bath, the third-largest surviving Herodian bath after those of Lower Herodion and Masada. Unfortunately, the halls of the bath were in very poor condition, but during the 1979 Franciscan excavations a splendid, decorated, black and white mosaic came to light (*tepidarium* mosaic: Corbo 1979: Pl. 44 B.). This is the oldest known mosaic in Jordan, which today has pride of place in the Madaba Archaeological Park, with an excellent parallel at Masada.

We started micro-archaeological investigations at the site of this mosaic's discovery and, in addition to a large number of *tesserae*, a 12 x 11cm *in situ* mosaic came to light (**Fig. 9**). After studying the floor level foundations of the mosaic in detail, we established that a similar floor structure was present in the neighbouring hall as well. As a result of our research, we discovered further 9 x 9mm black and white *tesserae*, plus three red examples, one of which was cut in trapezoid form; all had *in situ* cement on their sides. We therefore concluded that there was another bath hall with colourful mosaic decoration, most probably in its central so-called *emblemata* part.

Most of the floor level of the Herodian palace has been lost and, at the beginning of our archaeological work in 2009, we were only able to identify it in a few places (primarily where paving slabs survived *in situ*). However, we noticed that the surviving floor levels in the two bath halls with mosaics and in the northern hall of the *triclinium* were similar in structure. This

9. In situ mosaic remains in the royal bath.

suggested that the ground floor of the *triclinium* was originally also covered with mosaic. We discovered large numbers of 20 x 20mm *tesserae* in the debris accumulated against the wall foundations of the *triclinium* and on the hill side in the Franciscans' spoil heaps. Significantly, these were not found in the bath halls; all were carved on white limestone and on each piece we identified the same cement as on the bath *tesserae* (**Fig. 10**).

Preparation for Conservation and Anastylosis-Restoration

During the last three archaeological field seasons we have become well-acquainted with the archaeological and architectural heritage of the Machaerus palace-fortress. Detailed investigation of the monument has been carried out, as has comprehensive comparative research with analogous monuments on the West Bank. Our archaeological and architectural investigations were extended to all *in situ* archaeological remains and all displaced architectural elements found on the site. To gain a better understanding of the monument we opened nine archaeological trenches. This enabled us to identify three periods of architecture, *viz*. Hasmonean, Herodian and Zealot, and to make theoretical architectural reconstructions. Accordingly, we can work towards a preservation and presentation of this unique monument that will display its history and beauty from an architectural perspective. In the meantime, we aim to develop proposals for much-needed conservation and consolidation work. As a preliminary measure, we have covered the more fragile parts of the monument (e.g. *in situ* plaster, the water drainage system and edges of *in situ* paving slabs) with fine soil from the spoil heaps.

Summary

As a result of our three-month survey in 2009, two-month excavation season in 2010 and supplementary one-month excavation season in 2011, six months' fieldwork has now been carried out at Machaerus. Accordingly, we have come to a much better understanding of the history, architecture and the archaeology of the site. This research has provided an enormous body of data (e.g. complete architectural descriptions, geophysical survey data, results from nine excavation trenches, *ca*. 10,000 large-format, professionally-taken digital photographs, including detailed digital video footage), which will form the basis of scientific archaeo-architectural work that will preserve the heritage and legacy of Machaerus for future generations. On completion of our work, hopefully by the end of this year, we will be able to submit a proposal to the Government of Jordan for an architectural preservation programme that will present this important Biblical site in a creative and innovative light to visitors and pilgrims. The highlight of our recent archaeological season was the royal visit by HRH Queen Rania to Mukawir on 12 April 2011, where Her Majesty was briefed on the future tourist development plans for the Machaerus palace-fortress.

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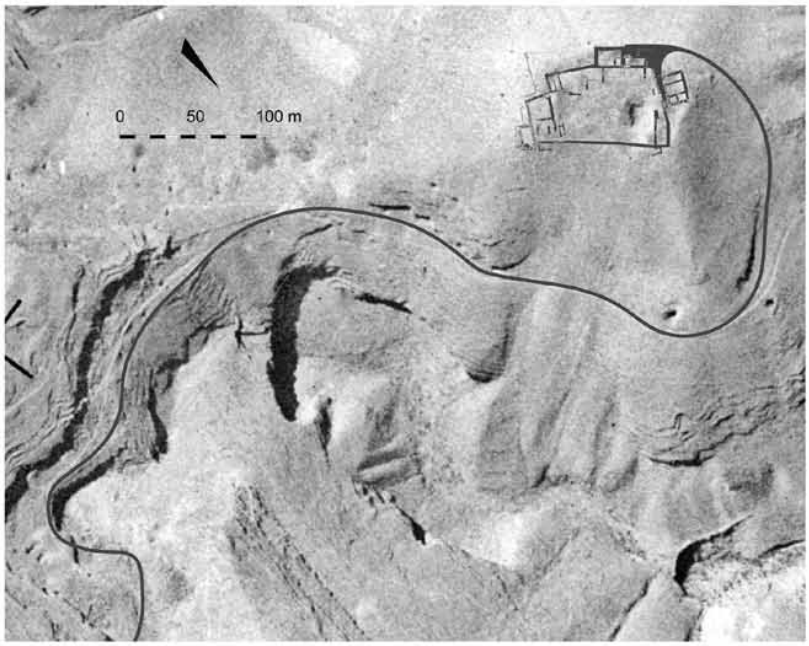
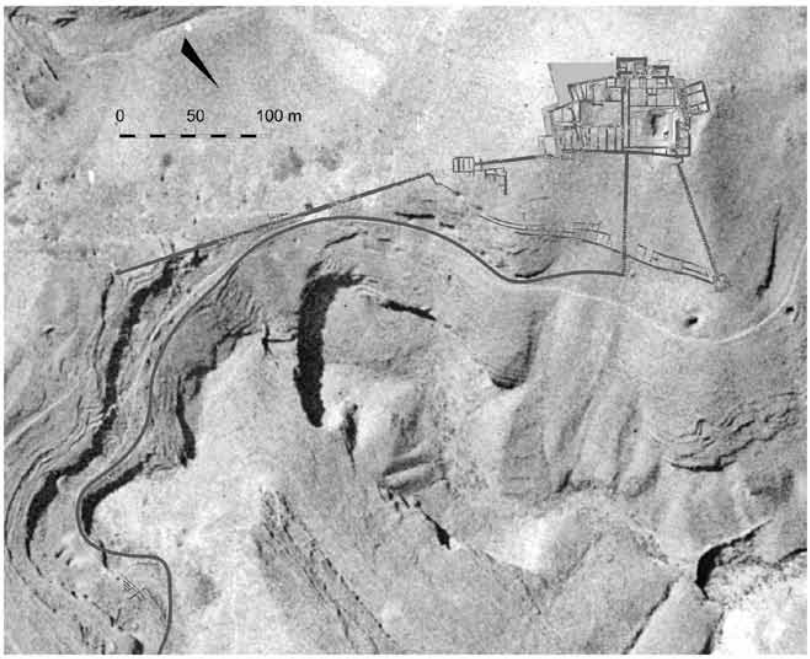
10.1. Ground plan of the fortress and the ascending road in the Hasmonean era



10.2. Ground plan of the palace-fortress, the lower city and the ascending road in the Herodian era



10. Architectural overview of the monument and its surroundings.