

PETRA GARDEN & POOL-COMPLEX 2003

End of Season Report
submitted to Michel Conan
Dumbarton Oaks

Team:

Project Director: Leigh-Ann Bedal (Pennsylvania State University Erie)
Hydraulics consultant: James Wescoat (University of Illinois, Urbana Champaign)
Geophysicist (Ground-Penetrating Radar): Michael Grealy (Denver University)
Archaeologist/Excavator: James Schryver (Cornell University)
Excavator: Edward Thiry III (Pennsylvania State University Erie)

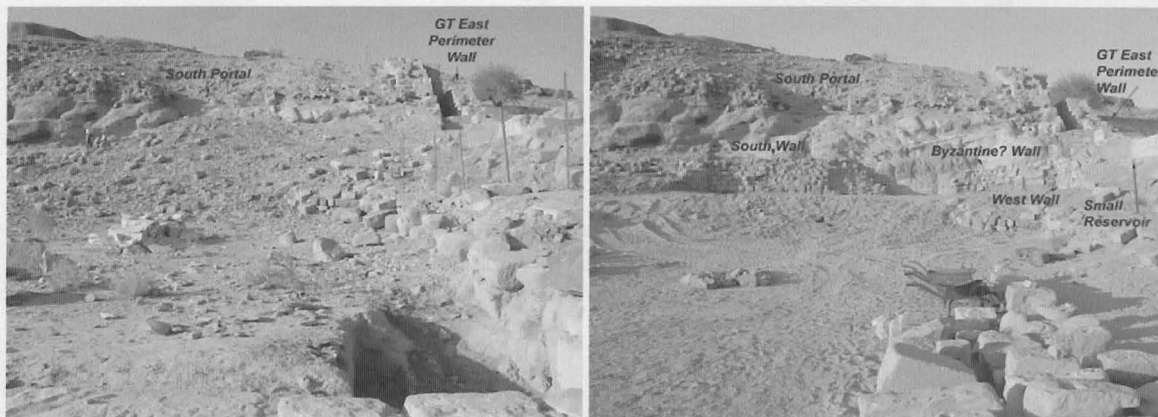
The Petra Garden & Pool-Complex 2003 field season was carried out over a three week period, July 5th - July 24th 2003. The season was made possible with the cooperation of the Department of Antiquities of Jordan. Funding was provided by a project grant from Dumbarton Oaks (Trustees of Harvard University) and a senior archaeology grant from the National Science Foundation (NSF).

The goals of the PGPC 2003 season had six major objectives: 1) to excavate the large deposit of earth and debris that washed down from the Ez-Zantur ridge and covered the southwest corner of the pool area; 2) to move the limestone blocks scattered along the base of the east escarpment to the top of the escarpment near the cistern from which they originated so that reconstruction of the cistern may be carried out in future seasons; 3) to excavate the baulk between Trenches 3 and 5 in order to understand the connection between the pool's *castellum* and water channels uncovered in Trench 3 (1998) and the stone structure (platform) in Trench 5 (2001); 4) to initiate the study of the site's hydraulic system; 5) to investigate the nature of the vaulted opening at the center of the Retaining Wall along the northern boundary of the garden terrace; and 6) to complete the subsurface survey of the garden terrace using ground-penetrating radar (GPR). The results of the Petra Garden & Pool-Complex 2003 field season, including the hydraulics study and GPR survey will be submitted for publication in the 2004 volume of ADAJ.

Pool SouthWest

Beginning on the first day of fieldwork, July 5th, we began to excavate the large mound of earth and debris that washed down from the Ez-Zantur ridge and covered the southwest corner of the pool area. We began at the top of the mound (elevation = 911 m), immediately below the South Portal which is situated west of center on the South Escarpment, approximately 10 meters above the level of pool. Over a period of 14 work days, we worked down along the natural rock face, to an elevation of 903.5 m (= 7.5 m depth) and exposing an area measuring 20 m from the SW corner of the Pool Area. The artifacts found in the earth fill (architectural fragments, pottery sherds, lamps, and coins) were a mix of Nabataean, Roman, and some Early Byzantine. Underneath the fill, the top 9 courses of a screen wall (South Wall) built to mask the natural rock of the southern escarpment, was uncovered. Only a 10 m length of the South Wall, which appears to be of Nabataean construction, was clearly exposed, although its uppermost courses

can be traced eastward along the full length of the southern escarpment. A second wall (West Wall) runs N-S for 7.8 m, forming the western boundary of the Pool Area. Running parallel to the West Wall, is the Great Temple's East Perimeter Wall. Between the West Wall and the GT East Perimeter wall is a small reservoir (8.23 x 2.63 m) that is situated on a bedrock shelf at the level of the GT Upper Temenos. To the south of the reservoir, is a small room (Room C) with a small channel cut into the bedrock floor. The channel runs E-W and appears to be used to drain water from the Room and through an unexcavated opening in the West Wall at the NE corner of the room.

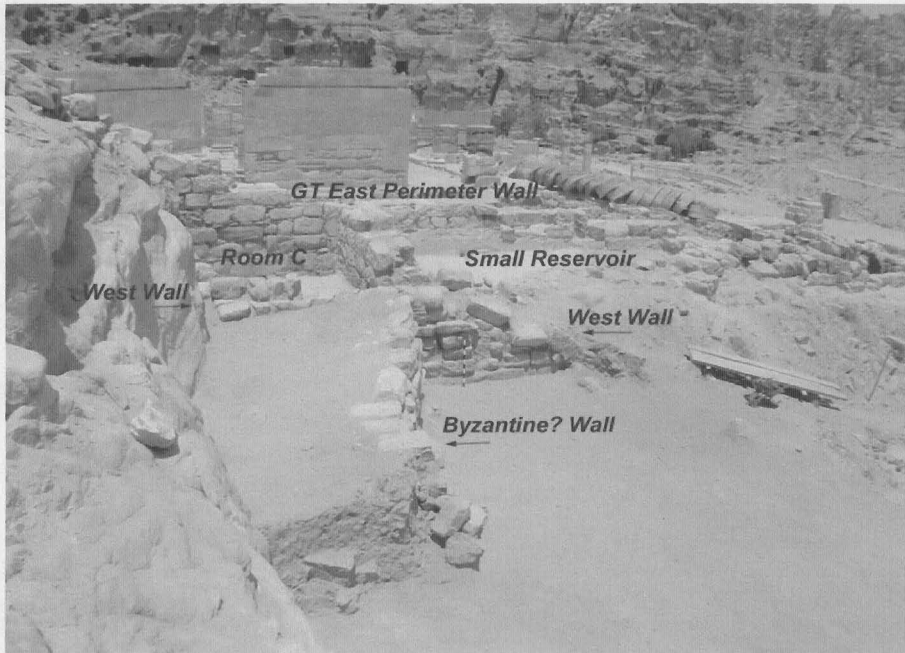


View of the southwest corner of Pool area looking south, before excavations (left) and at the end of the 2003 field season (right).

A third wall was exposed in the clearance of the debris mound in the SW corner of the Pool Area. This wall is built on top of an earlier fill that covers the original floor in this area up to about 1.5 m and has a different construction from the Nabataean walls. The wall stands roughly 1 m tall and is 5 m in length (E-W), with its west end built up against the E face of the West Wall. Based on its stratigraphic relationship to the other walls and its construction of roughly hewn stones without clear courses, it probably dates to the Byzantine period or later.

In September, Chrysanthos Kanellopoulos completed a scale drawing of the Byzantine Wall's north face and top plan for documentation. This wall will be removed as excavation continues in this area in 2004.

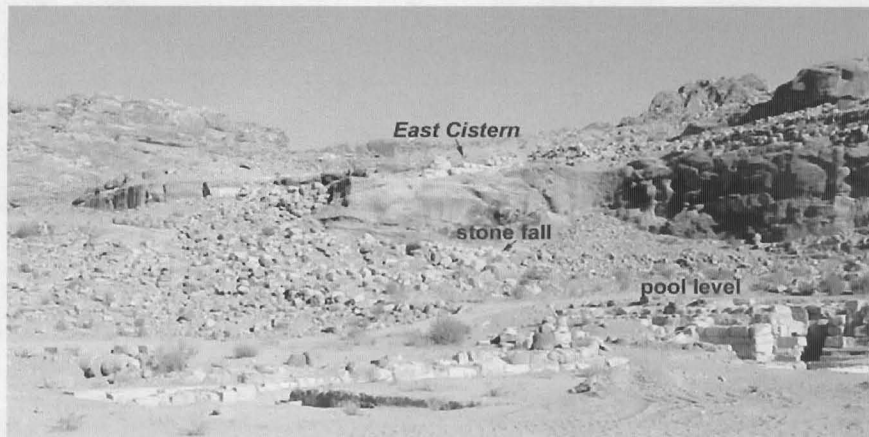
In October 2003, Dakhilallah Qoblan oversaw the consolidation of the exposed section of the South Wall in order to assure its stability and preservation during subsequent excavation seasons.



View of the southwest corner of the Pool area looking west, showing the architectural features exposed in the 2003 field season.

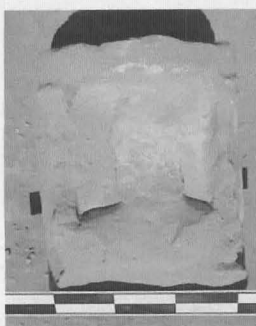
East Cistern

The eastern edge of the Pool area is covered by a dense scatter of fallen stones, many of which originated from the elevated cistern built on top of the eastern escarpment, 16 m above the pool level. The cistern stones are easily identified by their material (limestone) and the thick coat of hydraulic concrete that is still adhering to the interior face for containment of water. In order to be able to excavate the Pool's eastern boundary in future field seasons and to carry out the partial reconstruction of the cistern, the rock fall had to be moved to the SW corner of the "Middle Market" at the same level as the cistern. Over a period of two work days, five workmen worked to load all of the identifiable cistern stones into the bucket of the bulldozer which transported the stones up to the cistern where they were unloaded and neatly laid out.



(left) View of the east edge of the Pool area looking east, showing the dense rock fall at the base of the eastern escarpment and the remnants of the East Cistern above. (right)

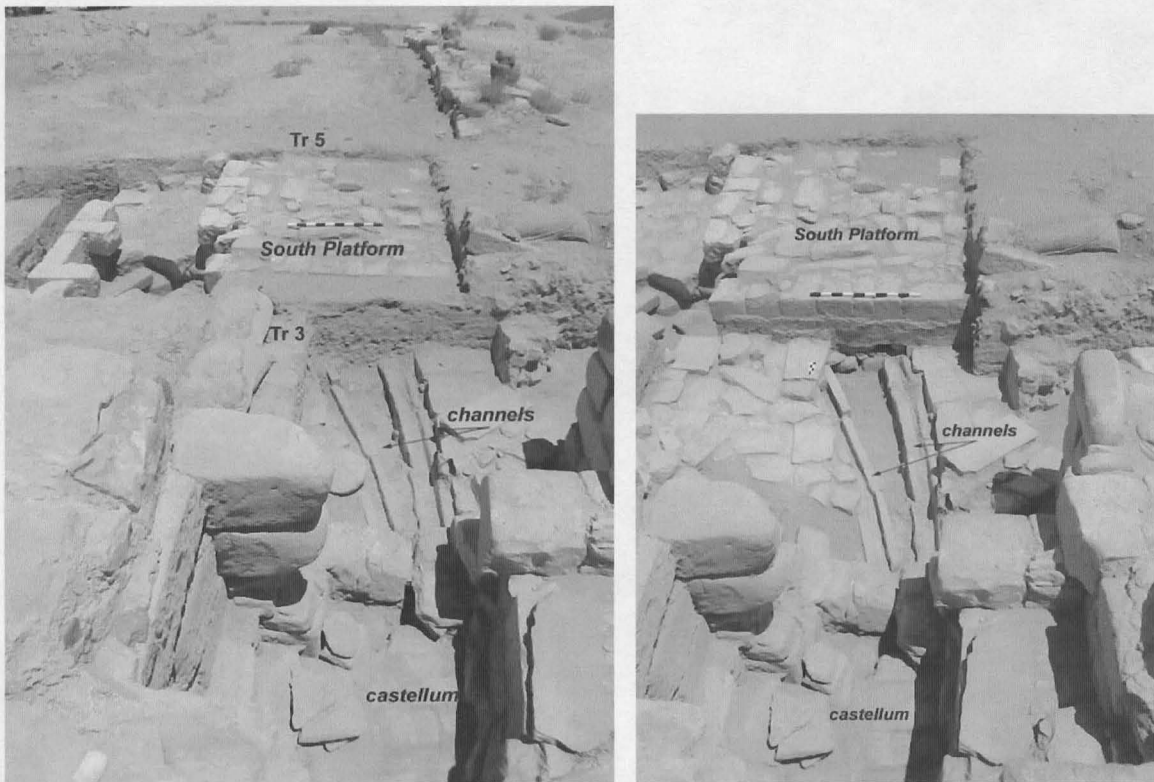
While walking the area around the cistern to determine the best location for depositing the stones, Dakhilallah Qoblan noted a small column drum (ht: 0.46; D: 0.37) resting on its side just 3 meters to the SE of the cistern. When rolled over, it was discovered that one face of the drum was carved with the bust of a man wearing a robe draped over his left shoulder inside a window framed by two columns. The man's face is badly damaged. Because of its association with the cistern and the desire to move the sculpture before it suffered further damage, it was photographed and numbered (PGPC2003 S1000) and promptly moved to the museum. In September, Chrysanthos Kanellopoulos completed a scale drawing of the sculpted bust column drum for documentation.



Column drum with carved bust (PGPC2003 S1000)

Baulk 3/5

In order to understand the connection between the pool's *castellum* and water channels uncovered in Trench 3 (1998) and the South Platform in Trench 5 (2001), the baulk between the two trenches was excavated and Trench 3 was extended 1.5 m westward. The south face of the South Platform was exposed revealing a plastered face and two small openings through which water from the *castellum* flowed into or underneath the platform. The channels were originally laid underneath a paved floor which was later robbed out for reuse of the channels. The disturbance of floor pavers to the west of the channels, the laying of a pipeline (running NW) into the floor complex, and a complex stratigraphy of soils above the floor, indicate subsequent periods of reuse and abandonment of the water system for a long period. Numerous coins and pottery discovered in the space between the *castellum* and the platform were badly worn and corroded from water erosion.



(left) View of Trenches 3 and 5 looking north, at the end of the 2001 field season, and (right) the same view at the end of the 2003 field season.

North Arch

A limited probe was carried out in the vaulted opening at the center of the Retaining Wall along the northern boundary of the garden terrace in an attempt to determine the function of the vault—is it a doorway providing access to the garden terrace, or a part of the terrace's drainage system, or perhaps a decorative niche facing the street? Unfortunately, it was impossible to determine the function without excavating a larger area that exposes both faces of the Retaining Wall which will have to wait until a future field season. The southern face of the Retaining Wall is badly collapsed and the vault is densely packed with field stones. Two courses of wall stones built up against the north face of the Retaining Wall appear to be a later construction that blocked the opening.



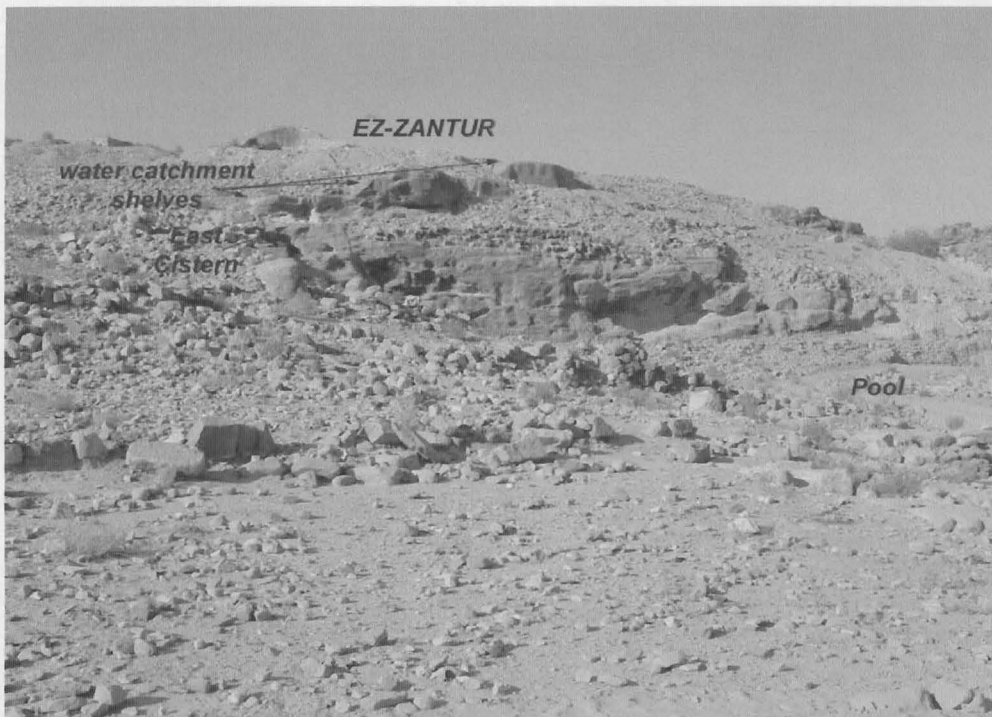
View of the Petra Garden & Pool-Complex looking south, showing the North Arch in the Retaining Wall at the central axis of the garden terrace.



Detail of the North Arch after cleaning, 2003.

Hydraulics Reconnaissance

Hydraulics specialist, James Wescoat, arrived mid-season and spent five days in the field, studying the water catchment system to the south of the Petra basin in order to trace the sources and route of the water that would have fed the Petra Garden & Pool-Complex. Wescoat visited several of the major springs in the area (Ain Musa, Ain Sadr, Ain Lemun, and Ain Braq), and walked the wadis between Ain Braq and the Snake Monument, observing the cisterns, aqueducts, channels, and settling pools in the area. He was also given permission to investigate the water channels and large cistern of the Great Temple complex. His preliminary findings are that the garden's main water supply originates from Ain Braq, and is transported in the Braq aqueduct to Jebel Attuf and into several large cisterns located along the eastern slope of Ez-Zantur before being carried to the pool. The bedrock shelves located immediately south of (above) the pool on Ez-Zantur created an effective water catchment that directed the flow of rain water to the East Cistern and the pool.



View of Ez-Zantur looking southwest from the "Middle Market", showing the bedrock shelves above the Pool that likely functioned to channel water flow into the East Cistern and the Pool.

Ground-Penetrating Radar

Michael Grealy arrived mid-season and spent four days in the field carrying out a subsurface survey of the garden terrace using ground-penetrating radar (GPR). His work was a continuation of the GPR survey carried out by Lawrence Conyers 2001. In addition to collecting data from previously unstudied areas of the site, including the raised field in the SE quadrant of the garden terrace and along the Roman Road north of the garden terrace, using a 400 mgz antenna, Grealy carried out a detailed investigation of previously studied areas using a 900 mgz antenna in an effort to answer questions raised by the original data and to provide a more detailed subsurface map that will aid in future excavations and interpretations of the overall site. During his last afternoon in Petra, Grealy carried out a GPR study of the area in front of the Khazneh upon the invitation by Mr. Suleiman Farajat of the Petra Archaeological Park. Unfortunately, his Zip Drive was damaged during travel to Jordan and so he was unable to process his data in the field.



Note: At the time of this report (11/7/03) I have not received any data or report from Grealy regarding the GPR. He had a computer problem in mid-October and says that the data is safe, but the hard drive must be replaced and he is still waiting for this to be completed. I will submit a copy of his report to Dumbarton Oaks as soon as I receive my own.

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