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Surprises at the Petra Great Temple: A Retrospective

Introduction

Chiseled out of reddish Nubian sandstone, the physical landscape of Petra evokes Nabataean times. Abandoned tombs and stone rubble covering the flanks of the wadis that were once residences or public buildings, are hidden in the great rift mountains overlooking the Wādī ʻArabah — they all speak eloquently of the bustling city of Petra that used to be and is now a spectacular architectural wonder, and recently elected one of the Wonders of the Ancient World. The city's consciousness has not escaped the archaeologist and Petra enjoys a high place on the agenda of Jordanian archaeology. A host of familiar icons, including the al-Khazna, (the Treasury) ad-Dayr (the Monastery), the Sīq (the breathtaking entry to the city), the 800 plus tomb complexes, not to mention Indiana Jones — have given the Petraean capital a tremendous sense of identity. A sense of place matters. Petra is a place people deeply care about, and the Brown University excavations of the Great Temple, literally, for 15 years have grounded our team here since 1993.

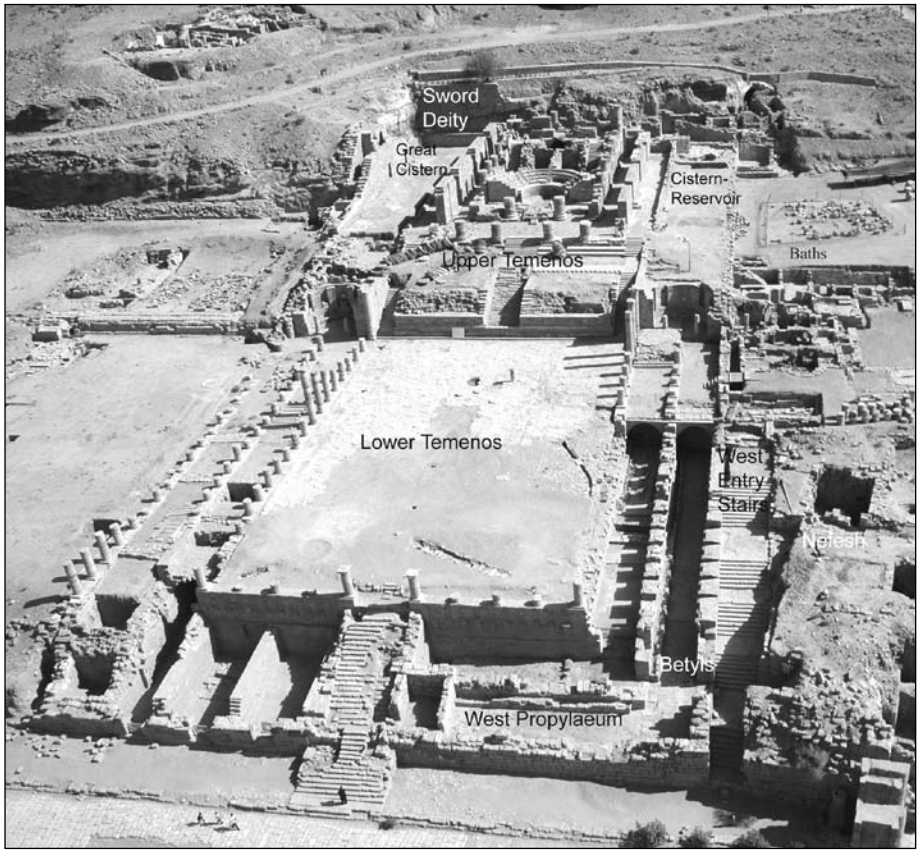
From its earliest days Petra has claimed a central role in Nabataean culture. From architecture to religion, trade to water systems, Petra is our primary source for Nabataean art, religions and culture. Petra has been populated for approximately 10,000 years by diverse peoples, such as the Edomites from the eighth to the mid-seventh centuries BC. Independently the Nabataean Dynasty arose to prominence in the second century BC under Aretas III Philhellene (84-62BC). And it was during the lengthy rule of Aretas IV, "Aretas, king of the Nabataeans, the lover of his people", (9BC-40AD) that we find the zenith of Petra. His long pacific reign plunged Petra into one of the most creative political eras in the 300 or so years of Nabataean history. In 106AD Petra was annexed by Rome, and in 130AD Hadrian named the site after himself, *Petra Hadriane*, giving the city an imperial imprint.

Shortly after we began our research at the Petra Great Temple, we were astonished by a myriad of unexpected discoveries. This submission summarizes three broad revelations particular to Great Temple, specifically, 1) Water and wastewater management; 2) Monumental architecture, and 3) Aniconic sculpture. For all its variety, Nabataean culture is beginning to gain coherence in its economic history, in its political boundaries, and in its images and symbols, for Petra and the Great Temple excavations have provided us with an encyclopedic view of Nabataean culture.

For the reader's convenience, a brief review of the Petra Great Temple is provided below with a 2006 Great Temple aerial overview in FIG. 1, and the site plan is shown in FIG. 2. We now turn to review the chronology established for the Petra Great Temple.

Great Temple Chronology

To help us in establishing a temporal span, following Hieronymous of Cardia, preserved by Diodorus Siculus (19.95.206; 96.4; 97.2-6), the Nabataean period spans the earliest mention of the Nabataeans in 312 BC until the Roman annexation in AD 106. But the earliest remains at the Great Temple are tentatively assigned to the beginning of the first century BC. The Roman period follows the annexation in 106AD and extends to the Byzantine period to 325AD (although the Great Temple partially collapses in the AD 363 earthquake). The Byzantine Period comes to a close at the Great Temple with another devastating earthquake in AD 551, when there is all but complete collapse of the precinct followed by abandonment and localized activities. Phasing of the Great Temple has been subdivided



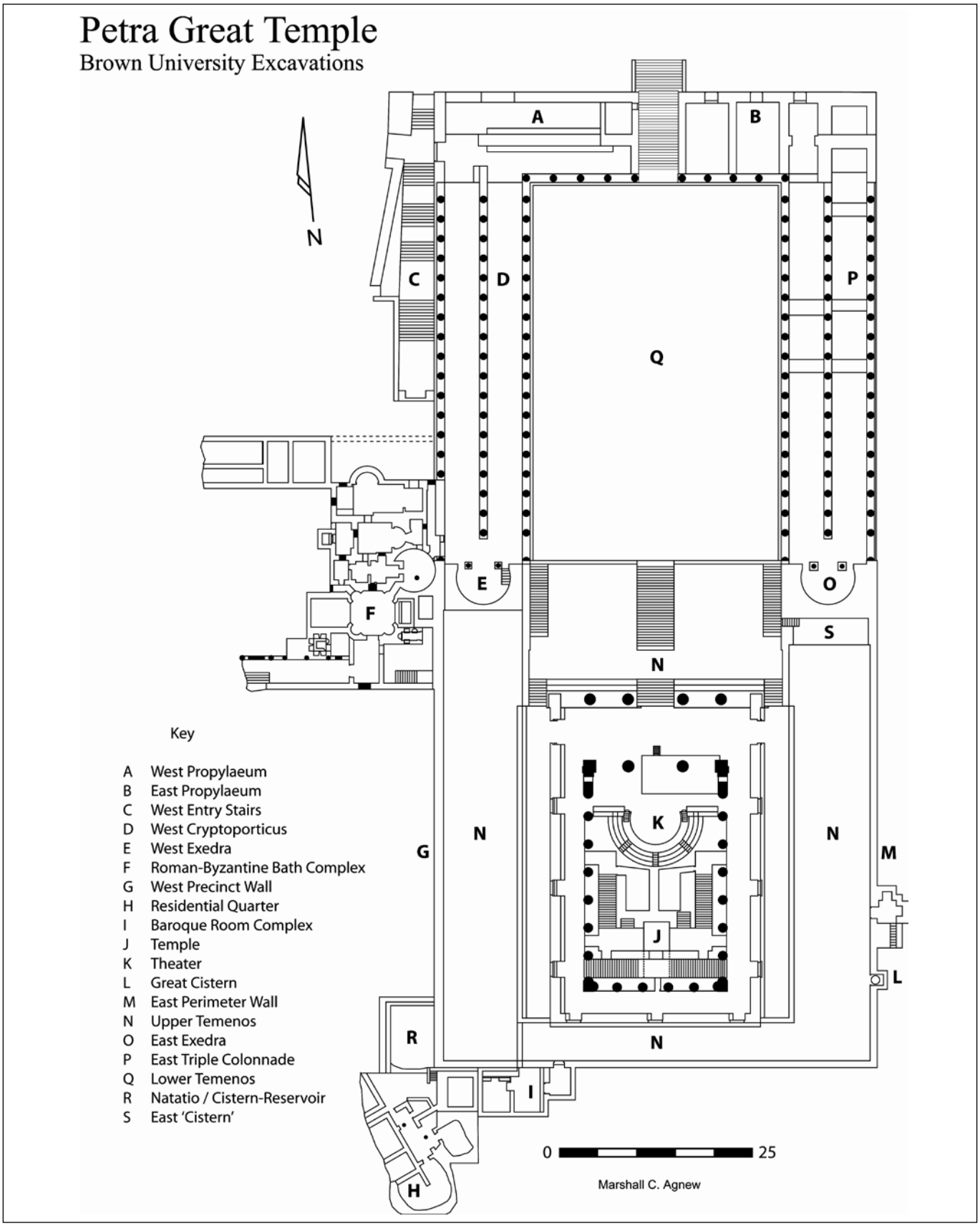
1. Aerial view of the Petra Great Temple precinct at the close of the 2006 excavations, to south (Photograph by Artemis W. Joukowsky).

into 15 phases, outlined in FIG. 3, and then we turn to discuss the water management systems at the Great Temple.

Water and Wastewater Management: Nabataean Hydraulic Engineering

Petra is one of the most water poor regions and the availability of fresh water has been central to its environment, development, culture, and economy. Little water is delivered by precipitation. Petra has an annual average rainfall/precipitation of 50-300mm, of which most soaks into the ground. Significant groundwater sources, aquifers, are found in the sand and gravel deposits. The ‘Ayn Mūsā (Moses’ spring) is a significant groundwater source created by the intense fracturing of the bedrock, and there are also springs like the ‘Ayn Brāk that served the city. October to April is the season for flash floods, but the seasonal variability of flows and flash floods imposed major restrictions on water supplies. To regulate water flow and storage of surface water supplies required the construction of dams, channels, drains, filter basins, reservoirs and cisterns to store the precious commodity. Because of their vulnerability the Nabataeans knew how to control, direct and tame the water by cutting tunnels to divert water and to tame the rush of flash floods (Ruben 2003). The expansion of the city in the late first century BC, including the construction of the Petra Great Temple provided an incentive for the creation of municipal water systems. Extensive water systems were integral to the planned building program of the Great Temple, they were carefully engineered and constructed before any monumental building took place.

We knew the Nabataeans were ingenious hydraulic engineers, but when our excavations began, we did not suspect that they created sophisticated irrigation systems throughout the entire Great Temple site. We did not anticipate finding extensive water systems at the Great Temple, however, in our first year of excavation in 1993 we uncovered a central artery of what would become a series of extensive subterranean water canalization systems that channeled water into the precinct and evacuated the wastewater. To better understand the 135m of subterranean channels extending under the temple sloping down to the Lower Temenos, ground-penetrating radar in 1995 provided us with the relevant information (Joukowsky 1998:169-186). Subterra-



2. Petra Great Temple site plan (Marshall C. Agnew).

SITE PHASE	DATE	MAJOR CONSTRUCTION - DESTRUCTION
Pre-Site Phase I	ca. Pre-1st c. BC	Odd walls and cup marks in bedrock
Site Phase I	ca. Early 1st c. BC	Bedrock Preparation and Canalization
Site Phase II	ca. Mid 1st c. BC	Distyle in Antis temple: Portico Wall, Lowest Steps of Central Steps
Site Phase III	ca. Mid-to-Late 1st c. BC - 1st c. AD	Minor Damage
Site Phase IV	ca. 1st c. BC - 1st c. AD	Grand Design (Expansion), Tetrastyle in Antis Temple, Full Propylaeum, West Entry Stairway, Nefesh, Lower Temenos Triple Colonnades, Exedrae, Cryptoporticoes, Upper Temenos Great Cistern, East Perimeter Wall, Residential Quarter, Baroque Room
Site Phase V	ca. 1st c. AD	Nabataean Redesign and Repair, Theater Added to Great Temple, Betyls in Propylaeum
Site Phase VI	106 AD and 113/114 Earthquake	Roman Takeover, Damage to Propylaeum West, Repairs to Lower Temenos, Baroque Room Collapse, Temple Doorways and Corridors Narrowed, Bath Complex Constructed
Site Phase VII	ca. Mid 2nd c. AD	Propylaeum Repair, Wall K Razed in East and Rebuilt in West, West Room 1 Constructed, Roman Street Paved, East Propylaeum Rooms 1-3 Constructed, East Exedra Repair, Lower Temenos East-West Cross Walls in East Colonnade, Benches, Temple Doorways Narrowed and Walled-In, Theater Stage Constructed
Site Phase VIII	ca. Late 2nd c. AD	Damage, Abandonment, Collapse, Dumping
Site Phase IX	363 AD Earthquake	Collapse of Propylaeum and Lower Temenos West Triple Colonnade, West Cryptoporticus Collapse, Upper Temenos Added Features
Site Phase X	ca. 4th and 5th c. AD	Abandonment, Fluvial Deposit Accumulates, Lower Temenos Reconstruction of Colonnades with Reused Ashlars, Domestic Secondary Reuse in All Temple Areas
Site Phase XI	Post 551 AD Earthquake	Further Collapse, East Triple Colonnade Collapse, West Entry Stairs Collapse, Temple East Porch Column Collapse, Baths Out of Use
Site Phase XII	Late Byzantine 551 - 640AD	Abandonment and Robbing
Site Phase XIII	Islamic Period	Series of Major Collapses
Site Phase XIV	Modern Period	Farming of the Lower Temenos by Bedouin, Dumping, Construction of Bedouin Walls, Brown University Excavations

3. Petra Great Temple Chronological Chart of Site Phases.

nean channels had been constructed from the rear of the precinct under the Great Temple, the Upper and Lower Temene and the Propylaeum presumably to empty into the Wādī Mūsā. Of particular interest to us was that Nabataean hydraulic engineers were concerned with waste management as well.

The Nabataeans obviously adapted their skills to meet the needs of the Great Temple precinct and the pre-construction planning necessitated special water resources and reserves. The escarpment bedrock rise behind the temple precinct is a tangled web of subterranean drains and surface channels, some with ceramic pipes. In order to ensure success for watering the precinct they had to divert and tame this supply and control it by building dams and cutting tunnels to bring water into the site. When and where necessary, they lowered the water velocity and cut steps or ledges to reduce water speed.

Chiseled out of the bedrock under the Upper Temenos East Plaza to the east of the temple proper, Nabataean engineers constructed an underground cistern holding 390,000 liters (or 103,038 gallons) of water. FIG. 4 is a view of the interior of the cistern's southwest with the arch to the left and to the right two exposed faces of a southwest masonry pillar. FIG. 5 is a view to the north from the escarpment behind the temple showing the east artery exiting the cistern and extending along the west of the Upper Temenos east plaza. To date, this is the largest known cistern in the Petraean central city. From this cistern there was a complex of subterranean conduits in the bedrock under paved floors as well as above ground water passages to channel the excess water into the central artery in the temple

4. Interior of Great Cistern (Photograph by Christian F. Cloke).

5. Great Cistern overflow channel in Upper Temenos East Plaza to north (Photograph by Artemis W. Joukowsky).

forecourt. FIG. 6 shows the Upper Temenos channels nearing the end of the south perimeter wall and rounding the corner to the north towards the Great Cistern. There are additional subterranean and large water repositories like the Great Cistern in the east precinct wall reservoir (a filter basin), a settling tank in the Baroque Room Complex, the east 'cistern', and what we tentatively identified as a cistern-reservoir which, hypothetically, may have functioned as a *natatio* or swimming pool for the Roman-Byzantine Bath precinct, as well as holding tanks and pools found in the baths. Alone the Great Cistern and the cistern reservoir held a massive and astonishing 122,556.97 gallons of water. Lesser holding tanks and filter basins have also been located in the Baroque Room Complex and in the Residential Quarter. Above ground water channels are located adjacent to the Lower Temenos Retaining Wall, and at the top of the west entry stairs there are channels still encasing lead pipes. Bedrock water channels and stone ashlar reinforced channels cov-

6. Canalization along the south perimeter wall to east (Photograph by Artemis W. Joukowsky).

ered with capstones with ceramic pipes are carefully covered over or plastered to hide their presence or their recesses in the rock face. There also is a network of channels to direct rainwater away from the temple façade. The Residential Quarter and the Great Temple Roman-Byzantine Baths are riddled with water systems. Not only are water resources for the Great Temple vital for the temple itself but they also seem to have served as a repository for a variety of purposes, including a supply for adjacent precincts like the Pool Garden complex to the east and the west so-called "Baths" to the west — both of which required abundant water supplies.

(As stated before, I speculate that the "Baths" were part of a complex that may originally have served as a palace, and for this reason these Baths are referred to here as the Baths-Palatial Complex. The Baths-Palatial Complex is not to be confused with the Great Temple Roman-Byzantine Baths. The former were previously excavated by the Jordanian Department of Antiquities some 20 years ago. What we do know is that a water conduit extends from the Great Temple west exedra, under the west entry stairway to the Baths-Palatial Complex. Moreover, the archaeological evidence suggests that the city plan may have been modified with the construction of the Baths-Palatial Complex, but this is conjecture, and beyond the scope of this discussion).

Clearly, the Brown University excavations at the Great Temple have been confronted with the evidence of massive Nabataean hydrological undertakings. It took the ingenuity of the Nabataeans to collect and harness water resources as well as to direct and to ensure clean water disposal and storage. Such Nabataean environmental consciousness is astounding and both the innovations and the execution of these systems found at the Petra Great Temple are remarkable.

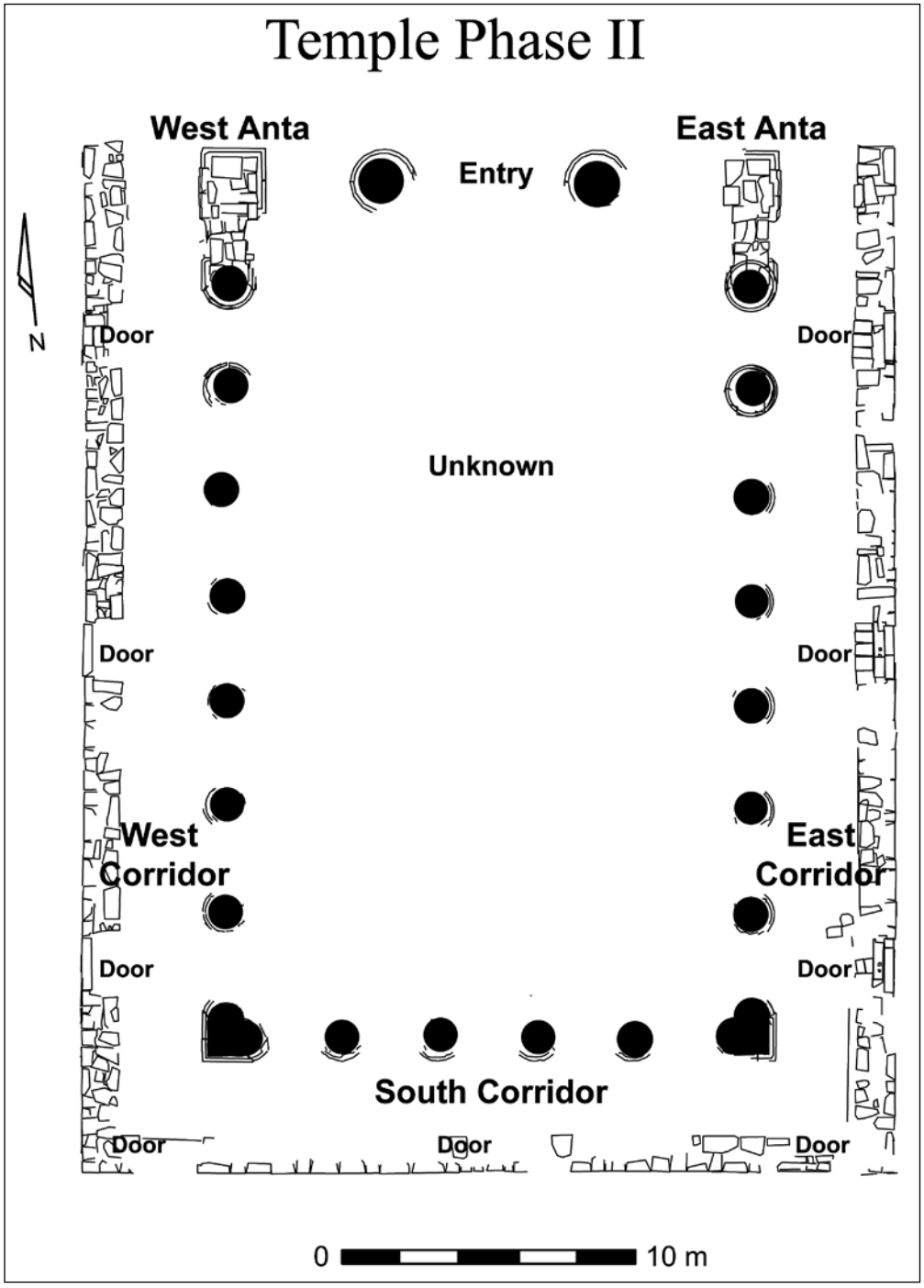
Architecture

The magical city of Petra is tucked away in the desert. Petra is a city devoted to extraordinary architectural concepts, which to this day astonishes visitors who are amazed by its mystical environment, its tombs and architecture. This sudden burst of building activity particularly in the late first century BC is compelling. The expanded Nabataean economy encouraged constructions of monumental proportions. One possible reason for the building of a Great Temple was the widespread prosperity of the Nabataeans. The design and embellishment created the distinctive features of an indigenous Nabataean style.

Outlined below are the three principal temple architectural phases, the distyle temple of site phase II, the tetrastyle temple of site phase IV, and the theater-in-the temple of site phase V.

Distyle in Antis Temple

The remains of its earliest structural incarnation, the *distyle in antis* colonnades of the Great Temple measure 30.00m in north south length x 19.50m in east west width. Its plan can be seen in FIG. 7. Founded directly on the prepared bedrock surface, two sandstone columns front the edifice in the north, flanked by two massive interior antae resting at an average elevation of 908.446m above sea level (hereafter referred to as a.s.l.). Along the sides of the temple in the east and west are eight columns, each crowned by an intricately carved limestone Corinthian style



7. Plan of Great Temple site phase II (Marshall C. Agnew).

capital of the Nabataean type. In the south, six columns extend across the temple rear, two of which (shared with the sides) in the southeast and southwest corners prominently display a heart-shaped column shaft of double-engaged design. Along the east, west and south sides of the temple, the diameter of the diagonally dressed column drums averages 1.20m and that of the pronaos entry columns and rear double-engaged columns is approximately 1.50m. The inter-axial distance between the side columns measures 3.27m at the temple south and 3.51m in the east and west.

Traces of pigment still clinging to the sandstone columns illustrate that the lower third of the shafts of the *distyle* temple's peripteral columns are veneered with smooth plaster, brightly painted in alternating hues of red and yellow. Alternately, the upper two thirds of each column are embellished

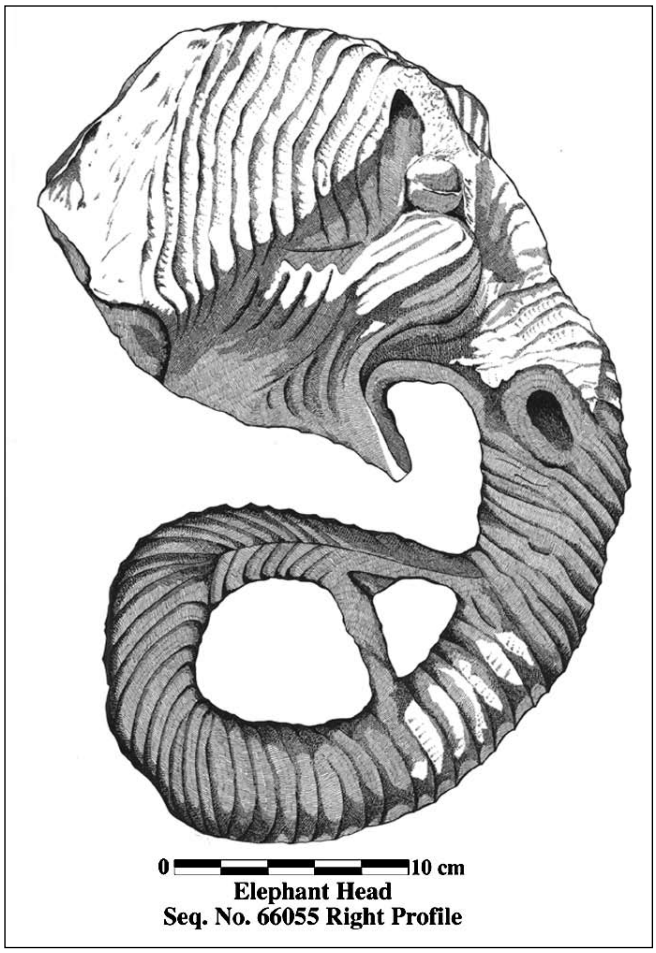
by white plaster molded in a cable design. At the front of the temple, the twin pronaos entry columns are plastered in a similar fashion, the lower portions of both painted red. In the temple's interior, and presumably extending for an unknown distance beyond the colonnades and antae in all directions, is the earliest floor of the temple precinct. Possible remnants of this original pavement (indicated by *in situ* limestone flagstones in the north part of the west corridor) are expertly laid, cut to fit snugly beneath the slightly elevated Attic bases of the temple columns and antae. The cella or main room of the temple presumably extends the full interior length and width of the colonnades. No traces, however, of this large room remain as it is covered over by later construction.

Along the temple east, west and south, towering walls are added alongside the colonnades marking the outer boundaries of the internal east, west and south corridors. Encasing the temple structure, each of these corridor walls, rising to a projected 15m height, is constructed from diagonally dressed sandstone headers (averaging 0.36m x 0.33m) and stretchers (averaging 1.38m x 0.45m). Most of the courses and rows are well laid with Nabataean mortar and are founded directly on the prepared bedrock. As they stand today, each of the three walls is divided into four north south (or in the case of the rear wall, east west) sections. Between the sections of the corridor walls are four broad doorways fitted with finely cut limestone thresholds averaging 2.10m in length, providing direct access to the corridor interiors. Displaying an irregular construction, the rugged interior faces of the corridor walls are concealed in antiquity by thick layers of decorative plaster, a quantity of which still remains *in situ* in the south and west corridors. Plaster decoration also covers the exterior surfaces of the walls, keyed into the striated diagonal tooling of the ashlar masonry. The corridors are embellished with classical ornamentation — entablatures and pediments, and the interiors are carefully plastered with moldings, cornices and cassettes, and second style Pompeian wall paintings. Elaborate floral friezes and acanthus-laden limestone capitals suggest that this enlarged temple is constructed in the mid-first century BC by the Nabataeans.

Tetrastyle in Antis Temple

This is the Great Temple of site phase IV or the "Grand Design" dating to the end of the first century BC to the first century AD. In Site Phase IV, there is significant growth and change with the addition of large ambitious project transforming the temple precinct into what we know today as the Great Temple precinct. We have rescued and redefined the site phase IV architecture of the precinct itself and the Great Temple, a major archaeological and architectural component of metropolitan Petra. The Great Temple precinct covers 7560 m^2 consisting of a Propylaeum, Lower Temenos, and Upper Temenos, the sacred enclosure for the temple proper. In the Propylaeum and Lower Temenos are east and west (north south) colonnades under which are cryptoporticoes (vaulted chambers). FIG. 8 shows the massive Lower Temenos east-west retaining wall that delimits the Lower Temenos to the south. With 145 columns topped with phenomenal Asian elephant headed capitals, one of which is shown in FIG. 9, these triple colonnades lead into semi-cir-

8. Lower Temenos east-west retaining wall to south (Photograph by Artemis W. Joukowsky).



9. An elephant from an elephant-headed capital (Drawn and drafted by John Philip Hagen).

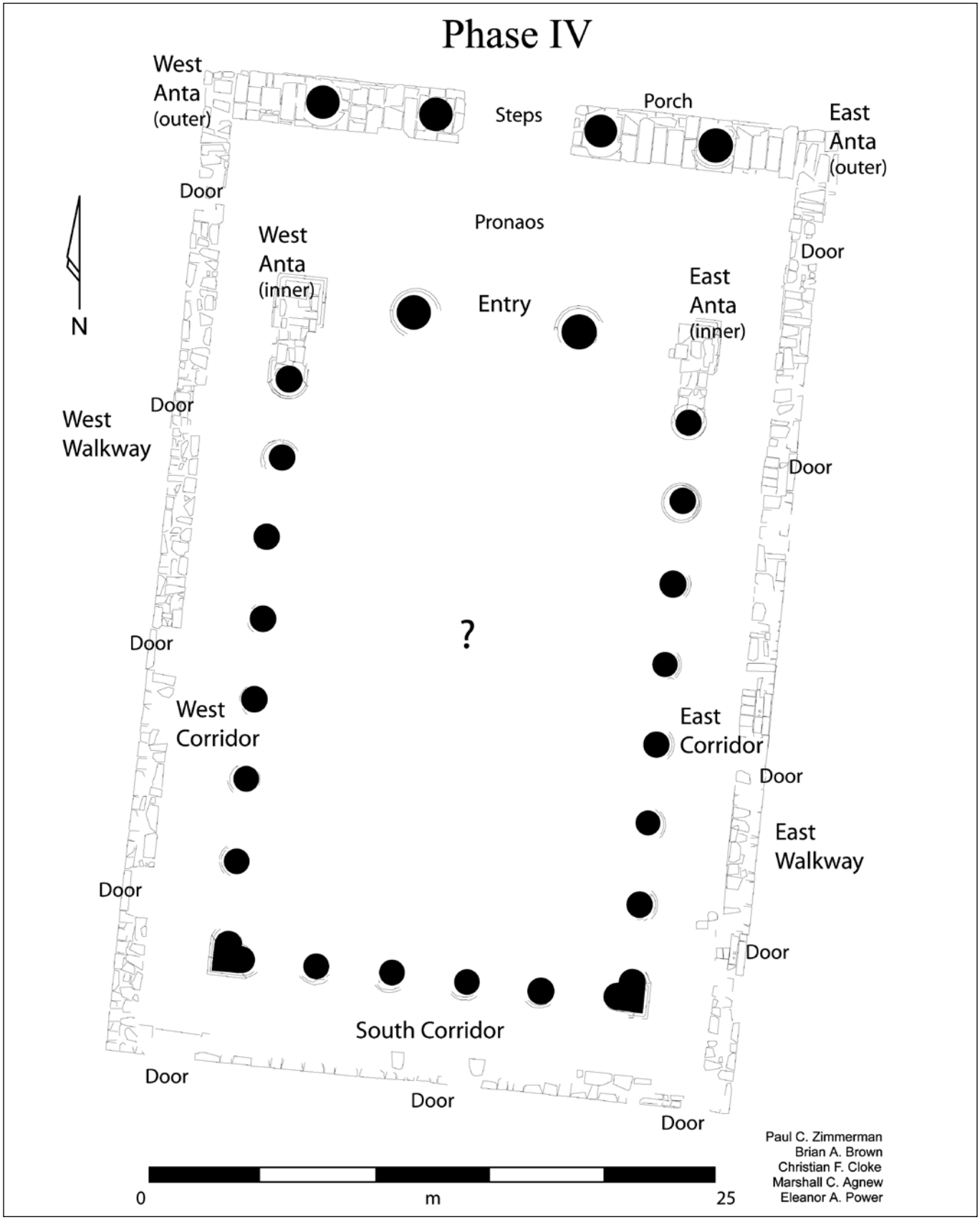
cular buttressed exedrae. Between the colonnades is a sweeping plaza with white limestone hexagonal pavers positioned above the aforementioned extensive subterranean canalization system.

As can be seen in FIG. 10, the temple plan has the addition of both a massive porch and walkways on the east and west. The structure measures 42.5m north south x 35.5m east west — it is the largest freestanding structure in Petra. In the north, serving as the grand façade of the temple's expanded *tetrastyle* design, stand the weathered remains of four massive porch columns averaging 1.50m in diameter. These columns, erected between two massive outer antae and covered with red and yellow painted plaster, are positioned 6.30m north of the original *distyle* columns and antae, and extend across the full east west width of the temple with inter-axial distances between 5.03m for the front side columns and 7.06m between the center columns. A staircase provides access from the temple forecourt to the pronaos entry. Flanking the east and west corridors are paved east and west walkways, which are added onto the building in Great Temple site phase IV. The east walkway measures 41.55m in length whereas the shorter west walkway measures 33.30m. Measuring approximately 3.70m in width, each of the walkways is bounded by a low outer wall some 0.60m wide, and these walls have seen multiple rebuilding over time. Coeval with the construction of the corridor walls, the east and west walkways serve as primary points of access from the temple plazas. Directly aligned with the lateral east and west staircases of the Lower and Upper Temene, the east and west walkways direct pedestrian traffic alongside the precinct, feeding directly into the four doorways of the east and west corridors. Additionally, cut postholes discovered at regular 3.50m intervals in the east walkway and beam support holes high in the east face of the east corridor wall suggest that this outer area is covered at one time, perhaps by tethered awnings, providing welcome shade for visitors entering the temple from the east.

Approximately 15m in height, the porch columns plus the triangular pediment and entablature hypothetically place the temple's height to a minimum of 19m. The location of the temple provided an elaborate setting for a larger building with order and elegance. The temple served as a place of worship and seat of the government. The Great Temple was enormous and assumed the plan of a temple with the ornamental vocabulary of classical influences.

Theater and Attending Support Structure

Following the *tetrastyle* expansion of the Great Temple edifice, the structure undergoes a third major structural revision during which a large semicircular theater is installed into the central cavity of the building in Site Phase V, dating to the first century AD. The small theater is illustrated in FIG. 11 and is marked as "K" on the FIG. 2 site plan. The site phase V theater-in-the-temple plan can be seen in FIG. 12. The construction of the theater and its massive substructure results in a complete reorganization of space within the temple walls. Strengthening the existing architecture, newly built intercolumnar walls between the columns of the *distyle* colonnades provide a firm substructure on which new architectural elements are founded. In the temple south, staircases are constructed along the sides and two across the rear, and platforms are



10. Plan of Great Temple site phase IV (Marshall C. Agnew).

11. Theater of Great Temple Site Phase V, to south (Photograph by Artemis W. Joukowsky).

built to support and access the theater from the rear of the complex. To the temple east and west, interior north south staircases are elevated approximately 5m above the temple floor to the second level of the precinct. Mirror images of each other, the east and west internal staircases measure approximately 2.40m in width x 7m in length and are each constructed from 21 finely laid stair treads. Built into the interior and exterior (intercolumnar) walls flanking the staircases are arched windows, providing light for the stairs, and an outward view of the temple east and west corridors and an inward view of the east and west vaulted chambers.

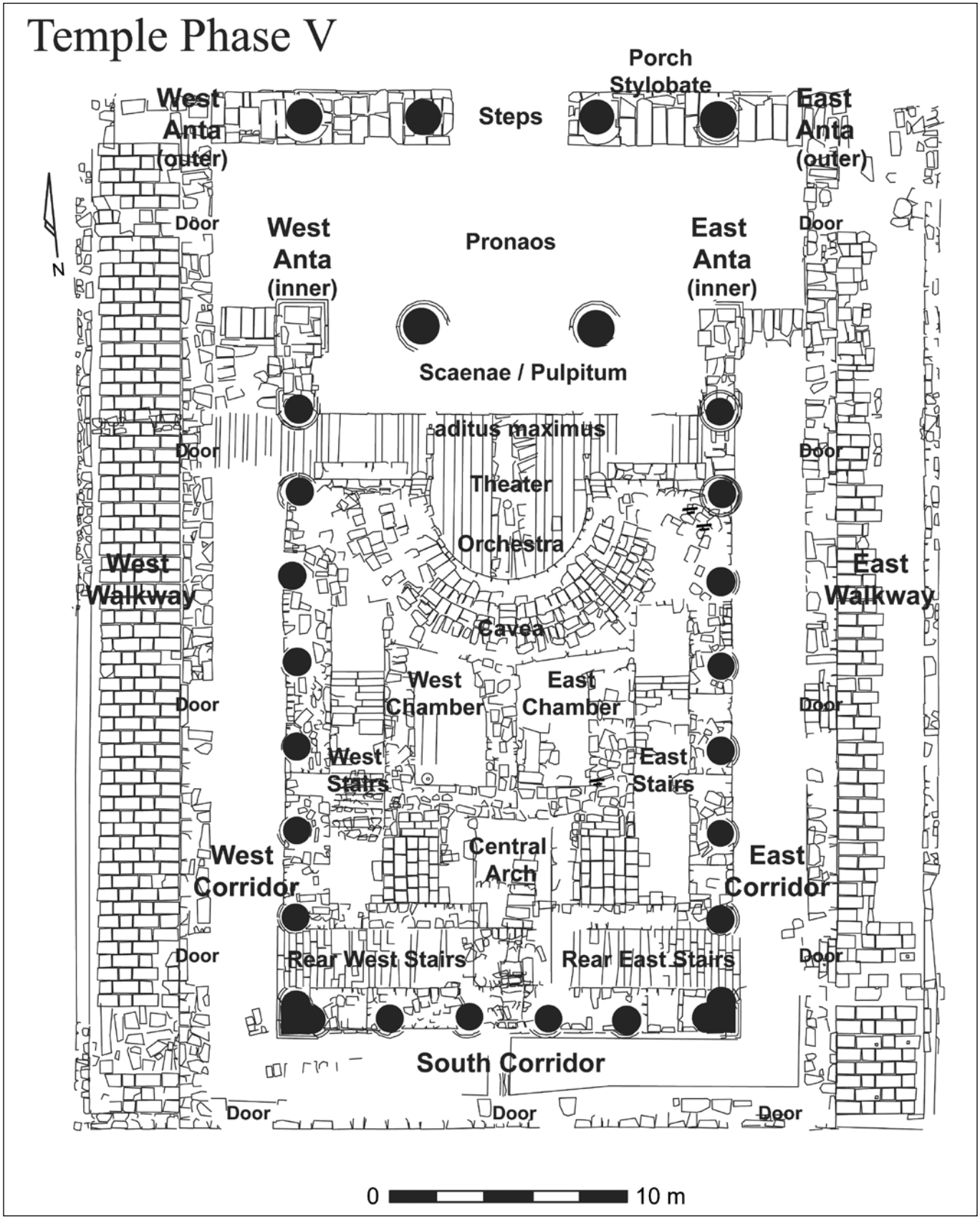
At the top of each staircase exists a paved landing 2.70m in length x 2.26m in width from which the four remaining treads of an upper pair of staircases begin the south to north ascent to the presumed upper tiers of theater seating at the temple rear. Situated between these two landings, a large adjoining platform covers a central arch, extending south to abut the east west intercolumnar wall at the temple rear. Here, flanking southeast and southwest staircases provide alternate access to the theater *cavea*, accommodating pedestrian traffic flow from the temple south corridor.

Underlying this extensive array of staircases and platforms, three interior chambers are present. The largest of these, located at the rear of the temple beneath the central platform (J on the FIG. 2 site plan) is the main support for the theater substructure, the central arch. Cut into the bedrock, the arch chamber floor (measuring 8.52m north south x 3.32m east west) contains a large four-channel canalization system with an additional smaller series of subsidiary shallow bedrock-cut channels aligned roughly parallel to one another. Directly above the canalization system is a hard-packed clay floor installed over smaller cut channels. Although the north and south portions of the arch room are collapsed, much of the substructure remains, consisting of roughly hewn sandstone ashlars measuring on average 0.35m x 0.55m, set in rows of eight. Its 16 courses are set parallel to the bedrock floor in the southern half of the arch, and tilt upward in the north at an angle of 60 degrees. To the south, the temple south intercolumnar wall forms the rear wall of the central arch chamber. Here, a small doorway measuring 0.67m in width x 2.04m in height is constructed, the sole entrance to the central arch room interior.

To the north of the central arch room are two side-by-side self-contained vaulted chambers. In the east and west, the chambers are each accessed by a doorway directly opposite the central doors in the east and west intercolumnar walls and perpendicular to the bases of the east and west interior staircases. The layout of the chambers is identical, the floor of each measuring approximately 5.50m north south x 3m east west. The walls of the chambers are constructed from hewn sandstone ashlars roofed by a vaulted ceiling. Inserted into the outer wall of each chamber, and facing onto the east and west interior staircases, is a single vaulted window, serving as the sole source of light for each of these enclosed rooms.

Surmounting the interior infrastructure of the temple is the elegant central theater. Truly the most extraordinary and enigmatic component of the Petra Great Temple visible today, the theater is constructed from finely carved sandstone ashlars arranged in a semicircular plan. At the top of the preserved *cavea*, broken edges of the upper *in situ* risers indicate the theater's original projection upward and toward the rear of the temple, housing at one time an estimated capacity of more than 600 persons. The proposed diameter of the outermost seats, should they be restored, is 33.2m.

At the base of the theater, extending the full length of the first level of the *cavea* seating is a walkway (*diazoma*) paved with alternating white and purple sandstone flagstones. Above the walkway, each of the five remaining tiers of seating measures approximately 0.40m high and 0.58m deep. Overall, the theater seating is arranged into



12. Plan of the theater-in the temple, site phase V.

four *cunei* (wedge-shaped sections) divided by three *scalaria* (staircases). Deep channels cut into the sandstone seats at irregular intervals are likely inlaid with wooden armrests, serving as dividers for single and double seating. North of the *cavea* is the floor of the orchestra (6.43m in diameter), paved with decorative white, red and purple sandstone rectilinear pavers that abut the *cavea's* northern face. FIG. 11 displays the orchestra and *cavea* as restored in 1998. Facing the orchestra are the remains of a stage/pulpitum (added at a later date) four courses high approached by two staircases on the platform's west side. Immediately south and perpendicular to the stage in the *aditus maximus* walkway are found two limestone thresholds on opposite sides of the walkway with deep square postholes carved into them. In close proximity during excavation were recovered, a number of metal fragments. This combination of finds strongly indicates that doors or gates originally separate the *aditus maximus* walkway from the inner orchestra, marking the division between public and restricted orchestra space.

Ever since the discovery of the theater there has been considerable debate and speculation about the character of the Great Temple and whether it was a sacred place or an administrative entity. We believe that it served dual purposes and with the addition of the theater, it would seem that there may have been a shift to the secular concerns and the temple became a civic building to be used for more public purposes. In other words, at this point there may have been an emerging secularized civic identity and a consciousness that defined the community in political as well as religious terms, after which it is enlarged with the theater in the first century AD in site phase V.

Beyond the grand architectural statement of the Great Temple, of greatest surprise to us was the cultural diversity exhibited in the material remains that underscore a Nabataean eclectic creative spirit. The result is a remarkable creative community comprised of Nabataeans from broad artistic and cultural backgrounds who created a complex and diverse monument using a mosaic of ideas to build their own cultural statement.

Baroque Room Complex

Clearly the Great Temple is a prime symbol of the Petrean community's identity, however, beyond the temple to the southwest is the Baroque Room complex ("I" on the FIG. 2 site plan). The Baroque Room Complex measures 5.77m north south x 17.26m east west. The three fully excavated series of interconnected rooms represent ornately decorated chambers possibly reserved for a religious function.

Behind the west wall is the opening from the Shrine Room into the Baroque Room. The most fully preserved of these rooms, the Shrine Room, measures 2.07m in north south width x 3.02m in east west length and is constructed from well-hewn, diagonally dressed ashlars preserved to a height of 3.22m in the east and 4m in the south. The once ornate decoration of the Shrine Room is revealed by the discovery of numerous brightly painted fresco fragments and a finely laid limestone hexagonal pavement. Set into the south wall of the shrine 1.32m above the floor level is a cult niche with a preserved height of 1.02m and a recessed platform providing a prepared surface for a sacred object, most likely a statue or a *betyl*.

Measuring 4.50m north south-x 3.67m east west, the Baroque Room, to our astonishment, held the massive wreckage of incredible and extensive stucco decoration, the most remarkable elements of which include a large molded ceiling medallion and wall fragments displaying delicate vegetal and architectural designs, brightly-painted panels and gilding. FIG. 13 illustrates the collapsed central medallion of the ceiling, as it was unearthed.

Residential Quarter

Adjacent and to the west of the Baroque Room is the Residential Quarter, "H" on the FIG. 2 site plan. Its excavated extent measures 15.48m north south x 9.22m east west. Here, a series of two

13. Baroque Room Ceiling Plaster *in situ* (Photograph by Artemis W. Joukowsky).

caves and eleven masonry rooms are discovered, deep within Petra's city center. Cave 1, the smaller east cave, measures 3m in north south length x 4m in east west width and its uneven floor rests at an elevation of 907.215m a.s.l. Cave 2 is the larger west cave measuring 6.25m in length x 5.40m in width with a floor elevation of 908.126m a.s.l., and a standing height of 3.85m from floor to ceiling. Here we unearthed masses (more than 30,000 fragments) of figuratively painted and plain Nabataean ceramics, bones, and extraordinary artifacts including an exquisite mother-of-pearl dolphin pendant (Joukowsky 2003: fig. 22).

Roman-Byzantine Baths

To the north of the Residential Quarter are the Great Temple Roman-Byzantine Baths. Its position is "F" on the FIG 2 site plan and an enlargement of this plan can be seen in FIG. 14. To be sure, the discovery of this complex was unexpected. We recover a platform in the north, and moving north to south, a splash bath, at least two caldaria (hot rooms), a praefurnium and a tepidarium. Below the floor level a partially sunk service corridor extends along the rear of the caldaria and isolates the baths from the Great Temple west exedra. To the south of the heated rooms is an apsidal marble-clad vestibule-frigidarium (with a cold plunge), an ornamental pool, an elegant 'well' with semi-circular cavities for drawing water, a possible apodyterium (changing room), an elegant bathroom (toilet for six persons), a small cistern, and a columned colonnade fronting on a probable palaestra-gymnasium. This is a small, compact bathing facility, a *balneum,* covering 908.80m^2 as excavated. As can be seen in the plan (FIG. 14), the complex of 22 rectangular and square rooms appears to follow the Pompeian type of bath plan (Yegül 1992: 66ff) with a simple row of windowed parallel rectangular rooms overlooking the palaestra to the west.

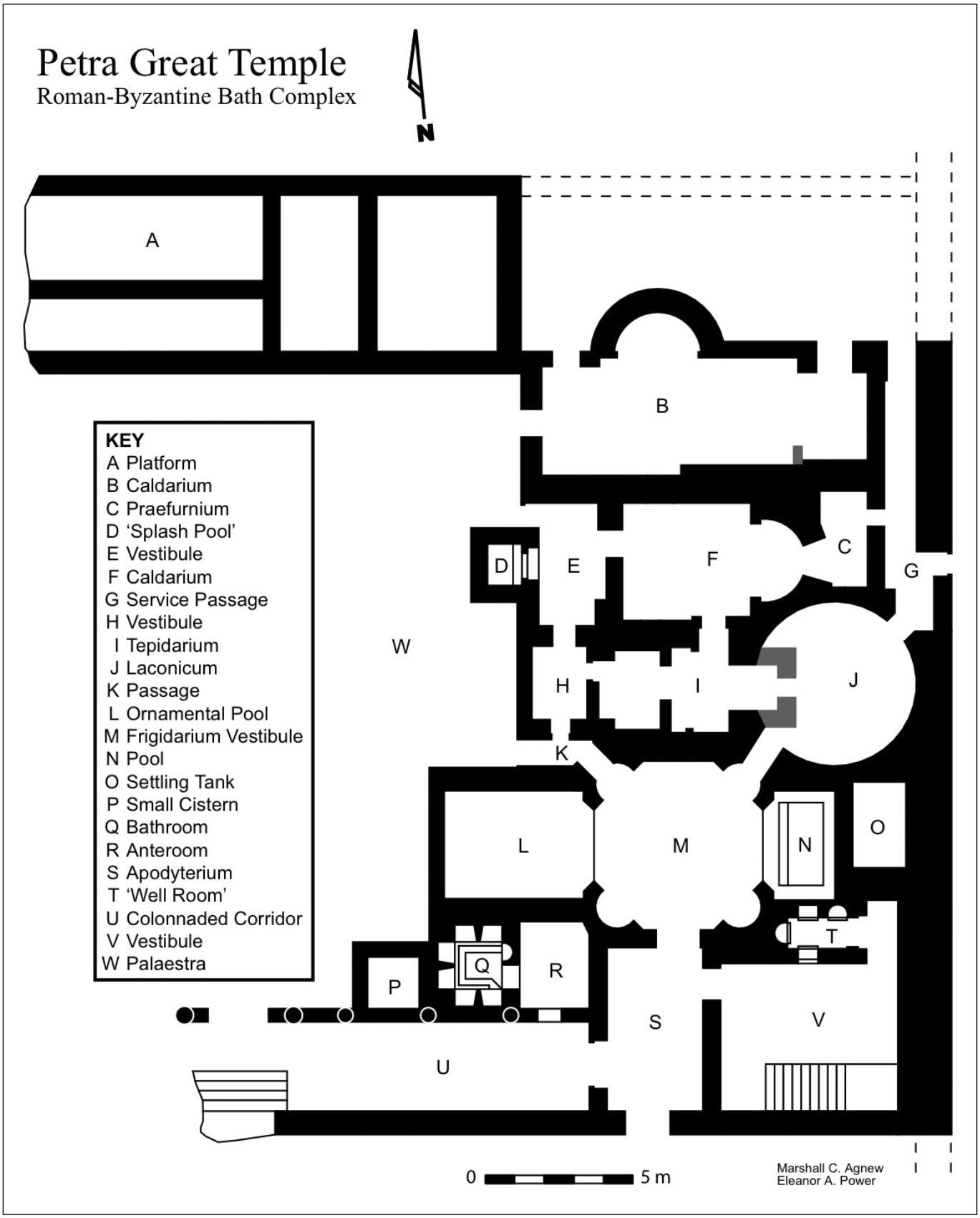
Great Temple Aniconic Sculpture

In addition to serving their own sculptural traditions, the Nabataeans drew from a broad Hellenistic stylistic repertoire; from the Parthians in the east, Ptolemaic Egypt and specifically Alexandria to the south, the Seleucids in the north, and also Petra was infused with the Roman sculptural vocabulary. We were surprised by the extraordinary array and prolific amounts of both aniconic and representational sculpture found in the excavations. Commonly appearing together at Petra and at the Great Temple are aniconic (abstract) and figurative representations of deities represented at the Great Temple. R.A. Stucky (1994: 278) states:

> "The identification of the deity represented as an extremely abstract idol is difficult because there are several female deities represented in the same manner. Apart from the Nabataean-Arabian goddesses al-'Uzza and Allat, the North Syrian goddess Atargatis is mentioned in the inscription on one of these stelai as well. What seems to be of some importance for explaining the difference between the anthropomorphic and the stylized idols is that the latter form was chosen exclusively for local or closely related Oriental deities, whereas the anthropomorphic type was used for foreign deities — although they were partially integrated into the Nabataean pantheon. The fear of "naturalistic" representation seems to be more or less restricted to the local deities; a broader spectrum of representation was obviously allowed or possible in the sphere of foreign gods".

The Great Temple aniconic sculpture included *betyls*, the *nefesh*, and the sword deity, which was published in 2001 (Joukowsky 2001: 341, fig. 12). Representational sculpture formed the bulk of the repertoire with the temple capitals (all of which have been published), the elephant-headed capitals, sculpture in the round, the pilaster blocks and other relieves (Each of the contexts these will be discussed in *Petra Great Temple Vol. II, Archaeological Contexts of the Remains and Excavations: Brown University Excavations in Jordan, 1993-2007* (in press), and they will be given specialized analysis in *Petra: Great Temple, Brown University Excavations 1993-2007, Vol. III: Architecture and Material Culture*, which is due to appear in 2009).

Betyls: At the southwest end of the West Propylaeum's north gallery's "L"-shaped extension opposite the West Entry Stairway entrance is a large niche measuring 0.97m in width and 0.69m in depth cut into the west face of the Propylaeum West central north south wall, an extension of the central stylobate wall of the Lower Temenos West Cryptoporticus. To our surprise, in this niche rest exquisitely carved twin aniconic white limestone *betyls* averaging 0.50m in height and 0.21m in width adhered to the base and rear wall of the niche by a thin plaster layer. FIG. 15 shows the West Pro-



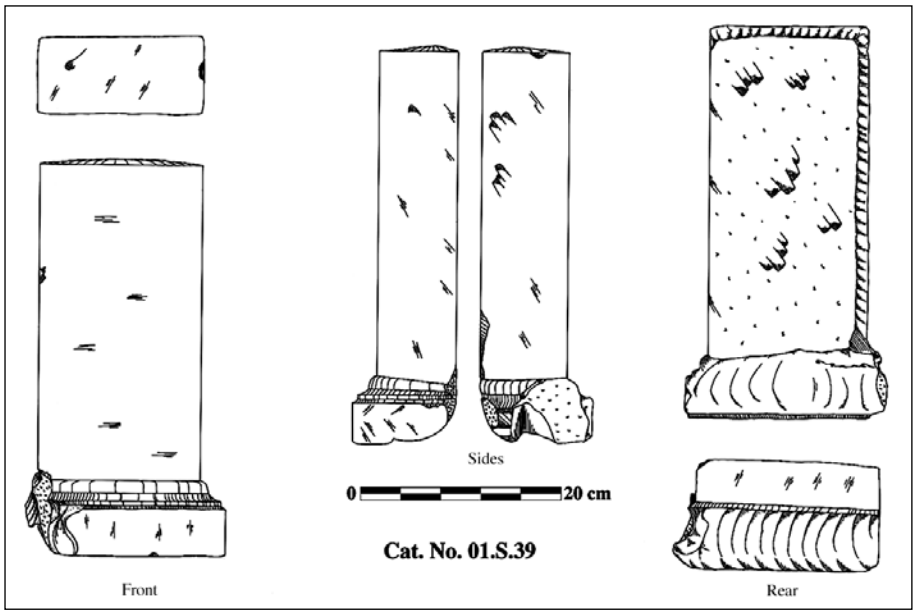
14. Roman-Byzantine Baths plan (Marshall C. Agnew).

15. Double *betyls* of the West Propylaeum, as excavated to east (Photograph by Artemis W. Joukowsky).

pylaeum *betyls* as they were originally excavated, and FIG. 16 presents a detailed line drawing of one of the *betyls*. A portable *betyl* was also found in the East Corridor excavations (Joukowsky 2001: 341, note 25). There may be additional *betyls* set into the wall below the West Propylaeum *betyls*, as can be seen in FIG. 17, showing the restored facsimiles of the *betyls*. These *betyls* are assigned to the Roman period site phase VII assigned to the AD mid second century. This is a time for repairs and rebuilding including the building of the *betyl* niche and the *betyl* installation (Joukowsky 2002: 317-318), and indicates that Nabataean traditions for aniconic representations extend well into the Roman period or post 106AD.

Betyls range from plain rectangular to conically shaped blocks representing the deity — some of them

17. *Betyl* facsimiles in the West Propylaeum (Photograph by Artemis W. Joukowsky).



16. Drawing of the *betyl* from the West Propylaeum (Drawn and drafted by Emily Catherine Egan).

have inscriptions indicating the deity represented. Some of them have eyes and noses and are known as "eye-idols" Wenning (2001: 85, note 13) states:

"The Nabataeans burned incense and poured blood on the sacred stone…Only the blood of the blood of animals was offered to the deity" (cf. Mettinger 1995: 191-192).

In her calculations, Laïla Nehmé (2003: 158) states that at Petra there are 15 independent *betyls*, and eight are independent groups of two to six betyls, Wenning (2001: 79-95) in his article, "The Betyls of Petra", classifies them into a typology. *Betyls*, Wenning (2001: 87) writes:

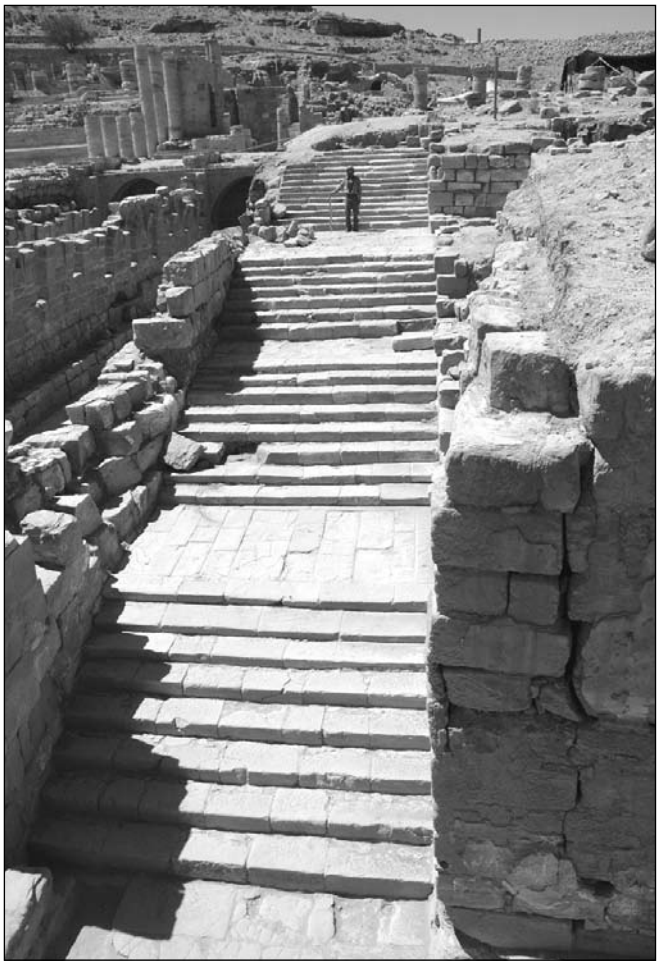
> "Each group of *betyls* must be interpreted in its own context. Niches with two *betyls* are often attributed to Dushara and Al-'Uzza, the most venerated male and female deities at Petra".

If the Great Temple *betyls* represent Dushara (the main deity of Petra and the tutelary deity of the Nabataean tribe and its royal dynasty (Wenning 2001: 81) and Al-'Uzza may be hypothetical, but what is clear is that this installation is a sacred place.

<u>Nefesh</u>: A *nefesh* is a sacred Nabataean commemorative monument. It was carved to consecrate a person or a family, and to be the receptacle of the soul. Often there is no burial associated with it, as in the case at the Great Temple. It serves as a witness to a Nabataean shared belief, symbolizing the Nabataean attachment to the aniconic representation of their god in association with an honorific memorial.

The recovery of the Great Temple *nefesh* found on the West Stairway entry to the precinct was unexpected. Shown in FIG. 18, this stairway is composed of five stair flights that are interrupted by four platform landings set at irregular intervals, creating a major entry passage measuring approximately 37.2m north south-by-4.60m east west, with a total area of 171.12m^2. On the uppermost platform, a *nefesh* with a *betyl*, accompanied by a separate standing *betyl* was unearthed. These Nabataean steps of site phase IV create a direct north to south ascent from the Roman Street to either the "Baths-Palatial Complex" or descent from the Great Temple or the "Baths-Palatial Complex" down to the Roman Street.

Shown in FIG. 19, the *in situ* discovery of the *nefesh* stele on the Locus 10 West Entry Stair terrace platform certainly is one of the most remarkable finds of the Great Temple excavations. The terrace platform is bordered to its east with smoothed blocks measuring 0.25m to 0.32m in size. This *nefesh* measures 0.78m in height x 0.57m in width. The carved obelisk is 0.19m in height x 0.135m in width and the *betyl* measures 0.135m wide x 0.13m in height. This *nefesh* is an incised white limestone/sandstone block with an incised obelisk carved above a squared cut *betyl* block, which is removable [The *betyl* block moved when touched, so the fill that held it in place was removed. Upon examination it could be seem that the *betyl* originally had been affixed into the square with white mortar, part of which we removed for sampling]. When the *betyl* was removed, it was found that the block had been completely carved through, and the *betyl* had been placed in a "window" of the block. The *in situ nefesh* was recovered standing, fortunately protected from collapse. This roughly carved, freestanding bas-relief, placed at a secondary entry to the Bath-Palatial Complex raises several questions. Was there a compelling reason for this memorial monument's placement? And if so, what would that rea-



18. West Entry Stairway to south (Photograph by Artemis W. Joukowsky).

19. The *nefesh* and *betyl in situ* on the West Entry Steps platform to west (Photograph by Artemis W. Joukowsky).

son be? On stylistic and iconographic grounds, why does our *nefesh* contain both the *betyl* (representing a deity) and an obelisk? (For safekeeping the *nefesh* was removed from the site, and a carved reproduction has been placed in its original position).

By Laïla Nehme's count (2003: 157) there are 34 *nefesh*, groups of *nefesh* or niches including a *nefesh* at Petra. Patrich (1990: 122) reminds us that the Nabataeans did not use the image of the deceased in their burial monuments, but used an architectonic shape to portray their dead. We can imagine they were worshipped in the same manner in the city as they had been in their nomadic lifestyle (Unfortunately we do not know to whom this *nefesh* was dedicated). Wenning (2001: 87) comments:

> "The Nabataean *nephesh* is shaped like an obeliskoid pilaster or a pointed cone, often with a blossom/pinecone or a stylized crown at the top. Most of the *nepheshes* are set upon a base, where the name of the dead person is given…Freestanding *nepeshes*…are rare".

By their *in situ* location on the west entry stairway platform this *nefesh* and *betyl* therefore, are rare, and are intentionally positioned in a high place to view the city surround. Both symbolize the presence of the deity, lending them a theological legitimacy. The prominently located open-air stairway platform terrace serves as a watch place, to place offerings — it is public, a place that sees pedestrian traffic, and yet it serves a public cult. The presence of these cult objects symbolizes and suggests a conspicuous cultic function for this platform. And what should be borne in mind is that a separate rectangular *betyl* was found adjacent to the *nefesh*, lending the platform a particularly significant commemorative religious and sacred place. Both the *betyls* and the *nefesh* are thought to be the symbol and embodiment of the gods. Their unexpected recovery and contexts were astonishing, because they occupied such a prominent position in the Great Temple landscape.

To a great degree, these are silent sentinels that witnessed a fascinating but enigmatic past. But being placed where they are they are far from silent about who witnessed their presence. As they are subject to interpretation, perhaps we can speculate the *nefesh* was a place to remember the honored dead? Unquestionably there is an actual cult of the dead associated with significant religious ritual in Petra; obviously death also plays a prominent role in life.

Is the erection of these religious icons spontaneous and private or do they serve as part of an official act? Did some elite Petrean commissioned a mason to execute these steles? These are intriguing questions that deserve more attention. M. Gawlikowski (1972: 5-16) states "The concept of the *nefesh* thus seems a phenomenon introduced into Syria by the Arabs from the Hellenistic period. It does not belong to the religious foundation common to the Semites, if such a foundation ever existed, but rather is attached to a type of monument that, itself, is very ancient – the standing stele around the tomb that takes very diverse forms, architectural or anthropomorphic. … Under the [implosion?] of the Arab beliefs, one observes, everywhere where these nomads are established, the appearance of the *nefesh*".

F. Zayadine (1982: 302) considers the *nefesh* by stating "The notion of *ḥaram* ['set apart', 'sacred'] was, in the Arabic traditions, attached to both the sanctuaries and burials. In both cases, these places could serve as an asylum and were considered sacred; the same name was also used to describe their character. The stelae called *nefesh*, representing deceased individuals placed usually but not necessarily on their tombs, have been identified, as is commonly accepted, with the souls of the dead who inhabited them, in the same way as a divinity inhabited a *betyl*". Zayadine suggests that the origin of the architectural form is to be looked for in Alexandria, which is indeed very possible. He continues "The underlying concepts and beliefs, however, need not be a tributary of the Egyptian practice. They seem, on the contrary, well in line with what is known about the customs of Arabia. The *nefesh* monuments are not mentioned in the Bible or other contemporary sources, and appear only in the Hellenistic period. Older populations have sometimes adopted the term *nefesh*, but not the notion of the soul incorporated in it; instances can be quoted of family tombs thus called in Palestine, Palmyra, and elsewhere". Also see, Dalman (1908); Healey (2001); Starcky (1965) and Macdonald (2003: 40).

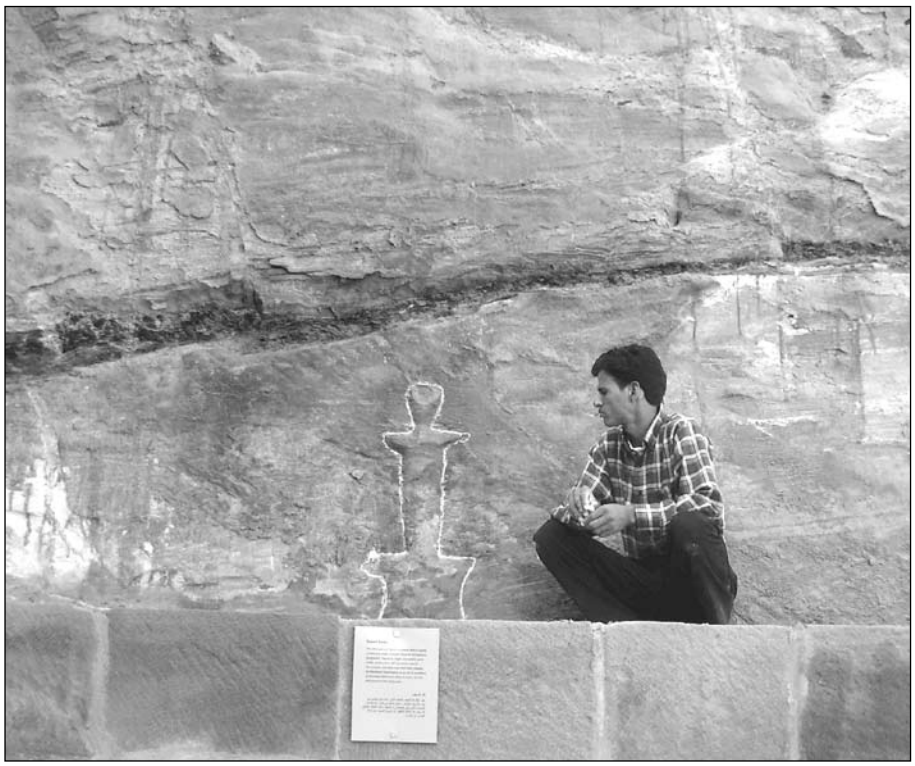
These *betyl* and *nefesh* images must have been a powerful part of the Nabataean ethnos. Their iconography is part of the Nabataean visual lexicon. The use of the *nefesh* and *betyl* must have been a reminder of the long-standing nomadic tradition, and their iconography and spiritual meaning are a part of Nabataean cultural identity. In particular, the *betyl* demonstrates a visual continuity of ideas — the metaphysical presence of the divine, an icon with sacred power.

Sword Deity: Bonded to the southeastern corner of the east perimeter wall, and extending westward from the southern edge of the grand east plaza is the south boundary of the Great Temple precinct, the south perimeter wall. Like its counterpart in the east, the south perimeter wall is constructed against the bedrock escarpment from double rows of sandstone ashlars, bearing traces of plaster on their exterior surfaces. Unfortunately, all but two of the lowest courses and three or four of the upper courses of the wall have buckled, exposing the bedrock beneath. Visible here is the schematic cult figure of what we have identified as a "sword deity" carved in relief just under a natural fissure in the bedrock escarpment (Joukowsky 2001: fig. 12). This relief is outlined with white chalk in FIG. 20, and the overall measurement is 0.65m in height. The short arms (or dagger hilt) extend approximately 0.19m from the body and the altar stone stands 0.27m in height x 0.28m in width at its base. Placed at a high, inaccessible point on the southeastern cliff face at the rear of the complex, this deity may have been chiseled by Nabataean stonemasons as an act of contrition to the deity, Dushara (Dalman 1908: 244-245) for the defacement of the living rock. In Nabataean times the figure was covered by the wall, so it would have been concealed behind the wall. Alternatively, as the deity relief is located just above a natural fissure in the escarpment (which may have served as a water channel), the relief may have been carved in praise of water, honoring this scarce commodity as would befit a deity. It was unusual to find this relief in the Great Temple escarpment, although such masons' marks are commonly found in the quarries that abound in Petra.

Conclusion

The Great Temple has transformed the urban landscape of Petra. Over the past 14 years of excavation, the Petra Great Temple has offered the Brown University archaeological team unique surprises for the study of Nabataean architecture and material culture.

The Great Temple has transformed the urban landscape of Petra. Over the past 15 years of excavation, the Petra Great Temple has offered the Brown University archaeological team unique surprises for the study of Nabataean architecture and material culture. As the Nabataeans are re-emerging from centuries of semi-eclipse, their true achieve-



20. Sword Deity outlined with white chalk, on the south escarpment (Photograph by Martha Sharp Joukowsky).

ments are being realized through archaeological excavation. For all its variety, Nabataean culture is beginning to gain coherence for its hydraulic achievements, architecture, and images and symbols. As we mentioned at the outset of this submission, the Great Temple excavations have provided us with an encyclopedic and most surprising view of Nabataean culture, some reflections of which have been described here.

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