New York University

2026 Excavations at Trimithis (mod. Amheida)

Final Report

Directed by David M. Ratzan

The 2026 excavation season was dedicated to the excavation of building 10 (B10) in Area 8.1, continuing the topographical survey and excavating a test trench in building 26 (B26) in Area 11, and the analysis of the human remains recovered from (church building 7 [B7]) in prior seasons. (Fig. 1).

The 2026 team consisted of David M. Ratzan (director, papyrologist, numismatist), Nicola Aravecchia (archaeological field director), Stefania Alfarano (deputy field director), Clementina Caputo (chief ceramicist); Alessandro Galli, Cesare Iezzi (archaeological supervisors); Margaret Culuris Harp, Aaron Held, Claire Lyman, Carlo Nuzzolo, Mo Stein (archaeologists); Leonardo Davighi, Mohamed Ibrahim (topographers); Jennifer Porter, Mahmoud Samir Hussein (conservators); Vicente Barba Colmenero (ceramicist); Francesca Cozza (registrar), Marissa Stevens (asst. registrar); Alice Salvador (illustrator); Iwona Kozieradzka-Ogunmakin (bioarchaeologist); Roberta Casagrande-Kim (art historian); Graham Claytor, Mohamed El Maghrabi (papyrologists); Bruno Bazzani (database management, IT operations, photographer); Ashraf Barakat (assistant to the director); Gaber Murad (house manager). The inspectors of the Ministry of Tourism and Antiquities were Amal Aly Ahmed, Azzaz Nasr, and Abdallah Nasr Eldeen.

Area 8.1: Building 10 (domestic complex)

Stefania Alfarano, Cesare Iezzi, and Alessandro Galli

The primary objective of the 2026 excavation season was to continue the stratigraphic investigation of building 10 in Area 8.1, partially excavated during the 2015 and 2023 campaigns (Fig 2). The work aimed to clarify the architectural sequence of the structure, define its phases of construction and modification, and determine the use and organization of its internal spaces within a diachronic framework.

B10 measures approximately 30 m NS and 26 m EW. The preserved remains indicate an architectural organization centered on a core composed of a four-column courtyard (R7) and a hall articulated by two monumental pillars (R2). Room 2 partially preserves a decorative program that originally included painted plaster walls and ceiling. It represents one of the most elaborated spaces within the complex. It is directly connected to two eastern rooms: R6, which also preserves decorated plaster, and R5, with plain mud plaster. The partition wall between the two rooms (F6) provides no direct communication between them. The spatial relationship between R7 and R2 suggests a controlled sequence of access between a semi-open space and the interior decorated hall. The planimetric configuration is significant for understanding both the architectural hierarchy and the functional organization of the building.

The main entrance to the structure has not yet been securely identified. Current architectural evidence suggests that access may have been located on the southern side of the complex. A corridor-like space situated south of R9 may represent a principal entrance route. If confirmed, this suggests a circulation pattern progressing from the southern sector toward Room

7 and subsequently into the decorated hall R2. This interpretation remains provisional pending further excavation.

The southeastern sector (rooms 1, 8, 9, and 10) presents evidence of repeated architectural modifications, indicating multiple occupation phases and possible changes in internal function over time. The building extends further north (at least to R3-R4, unexcavated) and south, where additional spaces show later alterations. These areas will be investigated in future seasons.

The stratigraphic sequence documented in 2026 reveal that B10 was constructed above earlier occupational deposits and pre-existing structural remains, some of which were incorporated into the later layout, while others were sealed beneath new floors. Following its initial construction, the building underwent successive phases of floor raising, internal subdivision, architectural adjustment, and changes in room use, culminating in episodes of ceiling and wall collapses that sealed the latest occupational surfaces.

The earliest evidence (Phase 1) predating the final configuration of the building is documented beneath the floors of the southeastern sector (R8 to R10) and in the columned courtyard (R7). In R9 and R10, compacted floors (F81; F86; F68, 136.99-97 m asl) were laid directly on levelled natural sand (DSUs 76 and 32), into which circular installations (F80; F85, F70) were cut and reinforced with mudbrick fragments and mortar. These features, interpreted as storages, belong to a previous structural arrangement (Fig. 3). In R7, an early compact floor surface is visible in section within pits (F48; F50), at approximately 137.07 m asl, confirming occupation prior to the establishment of the current layout.

The primary configuration of B10 (Phase 2) corresponds to a coherent architectural phase that established the plan still visible today. In the courtyard R7, a floor (F83; 137.29-137.21 m

asl) was laid over a reddish clay-rich preparation layer, indicating deliberate construction rather than simple levelling. This surface is associated with a hearth (F73), likely connected with an altar (FN 391) found *in situ* in the southern half of the room. This relationship suggests that combustion activities may have been associated with the altar installation. This arrangement may reflect ritual practices integrated into a residential context (Fig. 4). During this phase, R7 provided direct access to R2 through two mudbrick steps laid header-wise (F99). These steps formalized the transition from the courtyard into the hall, reinforcing the hierarchical organization of the main core of the complex.

A decorated plaster floor (F90; 137.22 m asl) in R2 belongs to this primary phase. The hall was entirely plastered and painted, including the ceiling, whose collapsed fragments (DSU 61) were found, frequently face-up, forming a dense and compact destruction deposit (Fig. 5). On one side, the fragments preserve impressions of 4 types of *jareed* roofing elements, characterized by different diameters of the wooden poles. On the outfacing side, they retain painted decoration composed of geometric motifs alternating with small figurative panels, including winged female figures and female faces. The distribution of the fragments suggests that the ceiling was structured around a central medallion, likely depicting a female face on a light blue background. Although the original floor (F90) of R2 has not yet been fully exposed, the extensive decorative program, including numerous molded and carved gypsum elements scattered throughout the room and the monumental entrance framed by double pillars with niches, strongly suggests that R2 functioned as a reception or banquet hall during this phase.

R6 preserves a simple decorative scheme consisting of a black lower register, a red band approximately 10 cm high, and a white upper zone. The currently visible floor in R6 is associated with low partition walls (F89; F94; F95) built directly against the wall plaster,

demonstrating that this subdivision belongs to a later phase of internal reorganization. In R5 the floor (F88) appears stratigraphically consistent with the primary construction phase of the building; however, this attribution remains provisional pending further investigation. The contrast between the decorated treatment of R6 and the undecorated finish of R5 suggests a functional difference within the eastern rooms already in the initial configuration of the complex. In order to clarify the relationship between the visible floors and any earlier occupation levels, targeted trenches beneath the existing pavements in Rooms 5 and 6 are scheduled for the next excavation season.

A later phase, after some modifications to the walking surfaces associated with the extended use of B10 during the second phase, reflects a significant re-functionalization of the building (Phase 3). In this stage, the complex underwent an internal reorganization, perhaps occasioned by incipient structural instability or outright collapse. In R7, the *intercolumnium* between columns F17 and F18, together with the passage immediately east of F17, was closed in association with the laying of a new floor (FSU 60), which had the effect of redefining circulation within the courtyard. In the eastern area of the structure, R6 was closed by the construction of a small mudbrick structure (F72), likely due to structural instability. The available evidence does not yet clarify whether R5 had already experienced structural failure. In R2, a walking surface composed of compacted organic material (F87, 137,45 m asl) was formed above the decorated pavement. This surface indicates that the hall was no longer maintained in its earlier formal condition. The accumulation of this organic layer suggests a functional shift in the use of the space. Contemporaneously, in the southern area, R9 preserves occupation deposit (DSU 59), rich in ostraca and ceramic fragments, representing one of the

latest levels of organized activity in the house. In R8 and R10, vault collapses and structural displacements (DSU 82; DSU 79; DSU 60) document progressive roofing instability.
The stratigraphic sequence indicates repeated episodes of partial collapse rather than a single destructive event. The spatial reorganization observed in R7, R6, and R2 therefore appears to have occurred in a context of increasing structural vulnerability. This final phase appears to have been extended and subphases of utilitarian reuse have also been recognized.

The final phase (Phase 4) corresponds to the abandonment of the structure and its progressive collapse. In R2, above the ceiling collapse (DSU 61) a windblown sand layer mixed with debris (DSU 3) marks a period during which the space was no longer maintained. In R7, a similar layer (DSU 15) preceded the major vault collapse (DSU 8), already partially excavated in 2015. The stratigraphic relationship indicates that structural failure occurred after a period of abandonment and exposure rather than as an immediate destructive event. In R9, collapse deposit (DSU 37) sealed the underlying occupational levels. In R5 and R6, the sequence is more articulated: successive vault and wall collapses (DSU 43; DSU 47; DSU 42; DSU 45) were followed by phases of windblown sand accumulation (DSU 5 and 50), indicating exposure. Only thereafter did the west perimeter wall collapse (DSU 4; DSU 6), together with the final remnants of the vaults (DSU 35; DSU 36). This sequence reflects a gradual structural decline that concluded the articulated series of construction phases, spatial reorganizations, and functional adaptations documented in Building B10.

Area 11: Building 26 (Test trench)

Stefania Alfarano, Nicola Aravecchia, Alessandro Galli

The trench opened in 2026 in Area 11 targeted Building 26, a structure located at the intersection of the two principal street axes (S36 NS and S42 EW), which define the orthogonal layout of the insulae in this sector (Fig. 6). To the north, the building is delimited by Street S35 EW, which marks its northern perimeter. Building 26 measures approximately 20.20 m east–west and 12 m north–south (visible extent) and consists of several rooms of varying size. In the best-preserved northern portion, immediately south of Street S35, three rooms of comparable dimensions are visible in sequence from north-west to south-east. The 2026 exploratory trench focused on the northernmost of these spaces (Room 1).

Room 1 is a rectangular space measuring 2.88 m (NS) by 4.52 m (EW), defined by four mudbrick perimeter walls (F1 to F4). The walls are constructed of mudbricks (34 x 16 x 6-8 cm), bonded with mud mortar and uniformly coated with a grey-brown mud plaster. The maximum preserved height of the exposed walls ranges between 50 and 70 cm. Although only the spring lines are preserved, their symmetrical placement clearly indicates that the room was originally covered by a relatively low barrel vault. Excavation reached DSU 2, a layer of windblown yellow sand extending across the room and characterised by a lower density of ceramic material compared to the overlying surface deposit (DSU 1). Due to time constraints, excavation was suspended at DSU 2 and the area was closed at this level; deeper deposits remain to be investigated in a future season.

In parallel with the excavation of the test trench, a systematic ceramic survey was conducted across Area 11 to document surface material and refine the chronological framework of the sector (see below).

Area 11: Topographical survey

Leonardo Davighi

Area 11 is located in the southwestern sector of the current archaeological site (Fig. 1). The movement of a large dune has progressively uncovered an area of approximately 7,000 m², situated south of the zone previously surveyed in 2014 (Fig. 7) The goal of the 2026 archaeological mission in this area was to incorporate more of the newly exposed areas into our overall site plan, in order to continue to build our knowledge of this sector and its relationship to the history of the urban plan of Trimithis.

Area 11 is strikingly regular in its construction, clearly represented a planned part of the settlement, and perhaps divided into functional zones (e.g., domestic, production, etc.). It is defined by two primary axes and a network of smaller alleys. The main axis (Street 36 or S36) runs north-south and measures 6 to 6.8 meters wide. It has now been identified for a stretch of approximately 120 meters. A secondary road (S42) runs (east-west) and measures 3 to 3.5 meters wide, preserved for its entire length of 100 meters. It intersects the primary axis orthogonally roughly 45 meters from the southern limit. The alleys are approximately 2 meters wide and divide the internal buildings of the area. Of particular interest are the newly mapped structures to the east of S36, which exhibit an east-west orientation and a layout that differs from the construction to the west of S36. Our work this year also determined that the structures to the west of S36 are preserved to a uniform level, with an estimated preserved height of approximately 30-40 cm.

Conservation

Jennifer Porter

Conservation activities focused on the painted plasters in Rooms 2 and 6 of B10 (*in situ* wall paintings and fragments of the collapsed painted ceiling DSU 61). Treatment was kept to the minimum necessary to stabilize the paintings during excavation while also allowing the excavation to progress at the desired pace. Minimal treatment also reduced contamination or alteration of the original painting materials by conservation interventions.

The wall paintings were composed of an earthen plaster (~10 mm) applied to the mud brick walls, covered by two layers of thin white plaster (~2-4 mm), probably lime. Extensive areas of detachment between plasters and the supporting wall put the paintings at risk of collapse during excavation. The paintings were therefore stabilized using an earth-based grout and plaster, prepared from modified mud bricks and sand collected at the site. These materials were selected based on compatibility with the original materials of the paintings, low cost, availability, and ease of use under site conditions.

The ceiling paintings consisted of a single thin white surface plaster layer (~2-4 mm), probably lime, applied to the earthen plaster that bonded the *jareed* ceiling (~20-50 mm). The white plaster was somewhat weak and friable, while the *jareed* plaster was weakly cohesive. The process of collapse had resulted in fracturing of both plaster layers. The paint layers were generally in remarkably good condition, though the red, yellow, and blue paint layers were often friable. To lift the fragments as rapidly as possible while also minimizing contamination from conservation materials, the area around each fragment was excavated and the *jareed* plaster was consolidated using 10% Paraloid B67 in acetone. Melted cyclododecane was applied as a temporary consolidant to the surface of the paintings to strengthen and protect them during

lifting. This material sublimes after a few weeks, leaving no residues. Thin wooden boards were then inserted below each fragment to aid in separating and lifting them from the surrounding sediment, and to provide stability during transport to the storeroom. Once in storage, it was found that the *jareed* plaster of some of the lifted fragments was friable and weak. In these cases, the painted white plaster was separated from the *jareed* plaster, reinforced with a thin backing of earth-based conservation plaster (~2-3 mm), and stored. For fragments where the *jareed* plaster was more stable, the earth-based conservation plaster was applied around the edges of the fragments to help consolidate and preserve them during storage.

Ceramics
Clementina Caputo

The study of the pottery recovered during the 2026 excavation season was conducted by Clementina Caputo (Chief Ceramicist) and Vicente Barba Colmenero (Ceramicist), with drawings prepared by Alice Salvador and Vicente. Ceramic fieldwork focused on the material from B10 (Area 8.1) and Test Trench 1 in B26 (Area 11), along with a ceramic surface survey in the newly exposed sectors of Area 11.

In B10 all of the ceramic material recovered was sorted, weighed, and counted. A total of 1,750 vessels (MNI) were quantified in the analyzed units. The assemblage is overwhelmingly composed of locally produced iron-rich A1-group fabrics, following C. A. Hope's classification for the Dakhla Oasis. Notably absent are ceramic fabrics and wares typical of the second half of 4th century CE attested in Area 2. Two main chronological horizons were identified. *Phase I* (2nd–3rd centuries CE) is primarily represented by contexts below floor levels and includes: faïence fragments; a few containers and Egyptian Roman amphorae from the Nile Valley; trefoil-

rimmed jugs; and a predominance of tableware and cooking vessels. There is no significant presence of wine jars. *Phase II* (early 4th century CE) is documented in units above floor levels and is characterized by a strong presence of wine storage jars, along with cooking pots, bowls, lids, basins, and bread molds (Fig. 8). Earlier 2nd–3rd-century horizons are clearly preserved in rooms 9 and 10.

In Area 11, the preliminary excavation of B26 produced exclusively Roman (2nd–3rd century CE) material, dominated by jars, cooking vessels, basins, bowls, bread molds, and trays, mostly in local A1-group fabrics, with a small number of imported amphorae from the Nile Valley, Lake Mareotis, and the Aegean. A ceramic surface survey of Area 11 documented a highly homogeneous assemblage, largely Roman in date, with evidence for the reuse of ceramic debris from the Saite and Persian periods as construction material. The Area 11 assemblage thus closely parallels material documented in other sectors of the site (Area 1, Area 8, and beneath the floors of the buildings in Area 2), reinforcing the broader chronological and functional framework identified elsewhere in the city and the contraction of it towards what today appears to be the center of the settlement by the second half of the 4th century CE.

Small Finds

Francesca Cozza

Small finds were recovered from two areas in 2026, Area 11 and Area 8.1. Only a limited number of small finds were recovered from the topographic survey and the preliminary excavation of B26 in Area 11. This small assemblage primarily consists of two faience vessel fragments, five glass vessel fragments, and two beads.

Rooms 2, 5, 6, 7, 8, 9, and 10 in B10 yielded a substantial quantity of small finds of various typologies. The assemblage primarily consists of ostraka (see Papyrology and Epigraphy, below) and unfired clay objects, although coins and artifacts crafted from other materials (such as glass, wood, faience, and metal) are also attested. Among the unfired clay objects were two clay figurines and a significant number of jar stoppers:

- 8 unfired clay jar stoppers with ostraka well tags still embedded, all classified as Type CC.
- 198 jar stoppers (predominantly from R7), featuring various types of seal impressions, including figured sealings and Greek inscriptions. The majority of these retain the impression of the bowl or lid placed within the jar rim to act as a plug.
- 8 unfired clay jar stoppers, found still set within the bowl/lid that had been placed in the jar's rim.
- 3 gypsum stoppers
- 3 small unfired-clay stoppers that bear the impression of the same seal. The motif depicts a right-facing bust of perhaps Athena (or Roma?) wearing a Corinthian helmet and drapery over the shoulder.

The numismatic evidence from B10 consists of a total of seven coins. The earliest legible issues date to the reign of Hadrian: a billon tetradrachm from Year 10 (125-126; Fig. 9) recovered from Room 9 and a bronze drachm from Year 12 (127-128 CE) found in R7. A Late Roman bronze coin was recovered in R2 (AE4, *Salus Reipublicae* type, dated to 383–403 CE). Two additional coins, retrieved from R5 and R2, are illegible but should likely be assigned to the late 4th or early 5th century CE. Finally, two coins from R6 and R9 await conservation and therefore remain entirely illegible at this stage.

Regarding the architectural elements, an abundance of modeled gypsum decoration fragments was recovered, featuring motifs such as palmettes, acanthus leaves, and volutes. A very large quantity of painted wall and ceiling plaster fragments were also recovered, predominantly concentrated in Room 2. The decorative scheme of this plaster primarily consists of geometric patterns enclosing figurative panels.

Papyrology and Epigraphy

W. Graham Claytor

The 2026 season produced the highest number of ostraka of all 14 excavation seasons at Amheida, 237 in total, in addition to three clay tablets and five fragmentary inscriptions on wall plaster and decorative gypsum. The ostraka come from six rooms of B10, with particular concentrations in R7 and R9, and complement the batch of 87 well tags found during the 2015 season, mostly in R1. This year's ostraka more than double the corpus of well tags from B10 and add new types of tag, including 35 related to the personal or place name "Philosarapis." Also new are some two dozen accounts, which are primarily concerned with brick production and/or transportation. The clay tablets contain accounts of this type; the one complete example is headed with the rare name Aionianos. The wall inscriptions are more enigmatic, but include at least one account that was purposefully erased in antiquity.

Bioarchaeology

Iwona Kozieradzka-Ogunmakin

The skeletal remains of 13 individuals (six adults; one adolescent; four young children; two infants) recovered from B7 (a 4th-century church complex) were macroscopically examined

during the 2026 field season. The skeletons were complete or near complete and exceptionally well preserved. All adults were sexed and aged using standard morphological and levels of joint degeneration methods. Sex estimation was not attempted in sub-adults due to lack of reliable methods; age was primarily estimated using dental development and eruption timing methods, supported by assessment of skeletal maturation and epiphyseal fusion stages in adolescent individual in tomb 7 (T7).

Overall, the remains of the adult individuals showed very little evidence of degenerative changes across the skeleton that would be expected in individuals over 30 years of age. Similarly, the adults showed only minimal dental wear, except the individuals recovered from T16 and T17 (female and male, respectively; both aged 40-50 years at the time of death). Dental attrition of their frontal teeth would suggest they both might have used their teeth as a tool (e.g., for softening natural materials in the case of the female in T16) or working other, harder materials between their teeth or habitual teeth grinding (the male in T17). Both individuals also showed slight degenerative changes in the spine (porosity, osteophytes), alongside Schmorl's nodes (T17) indicative of a greater spinal stress (e.g., associated with horseback riding). Three of the adults (T8, female aged 35-45 at the time of death; T16 and T17) showed dental caries in the posterior dentition, which in female from T8 led to the formation of an extensive abscess and fistula in the right maxillary sinus. Bone destruction (lytic lesions) that affected the maxilla and the surrounding bones of the orbit and nasal cavity could have resulted from a severe, chronic sinus infection; however, sinonasal cancer should also be considered as a differential diagnosis.

All adults, the adolescent (T7) and one small child (T9) showed multiple evidence of enamel hypoplasia that formed in the crowns of their teeth, attesting to physiological stress (e.g., nutritional or due to illness) sustained during childhood. Porosity and pitting observed in the

orbits, humeral and femoral neck of some of the sub-adults (active lesions) and adults (healing or healed lesions) constitute skeletal evidence of anemia-related conditions (e.g., nutritional deficiency or parasitic infestation). The remains of a small child (aged approx. 4 years at the time of death) recovered from T14 showed severe pathological changes affecting multiple areas of the skull, with particularly extensive lesions observed in the orbits and calvarium. These "hair-on-end"-like lesions, paired with porosity and new bone formation on the skull), is suggestive of childhood scurvy, a severe vitamin C deficiency disease.

The prevalence of several non-metric traits (non-pathological variations in skeletal morphology), particularly in the cranium and spinal elements, and congenital and developmental conditions in this group of individuals, may suggest those who manifested such traits were closely related or came from a closed community or social group that preferred to marry from within. Of particular note are individuals with *spina bifida occulta* (open median sacral crest; T5 and T6), additional transitional lumbar vertebra (L6; T6 and T10) (Figs. 10, 11), and fusion of the fifth interproximal and distal foot phalanges (T6 and T16).

Figures

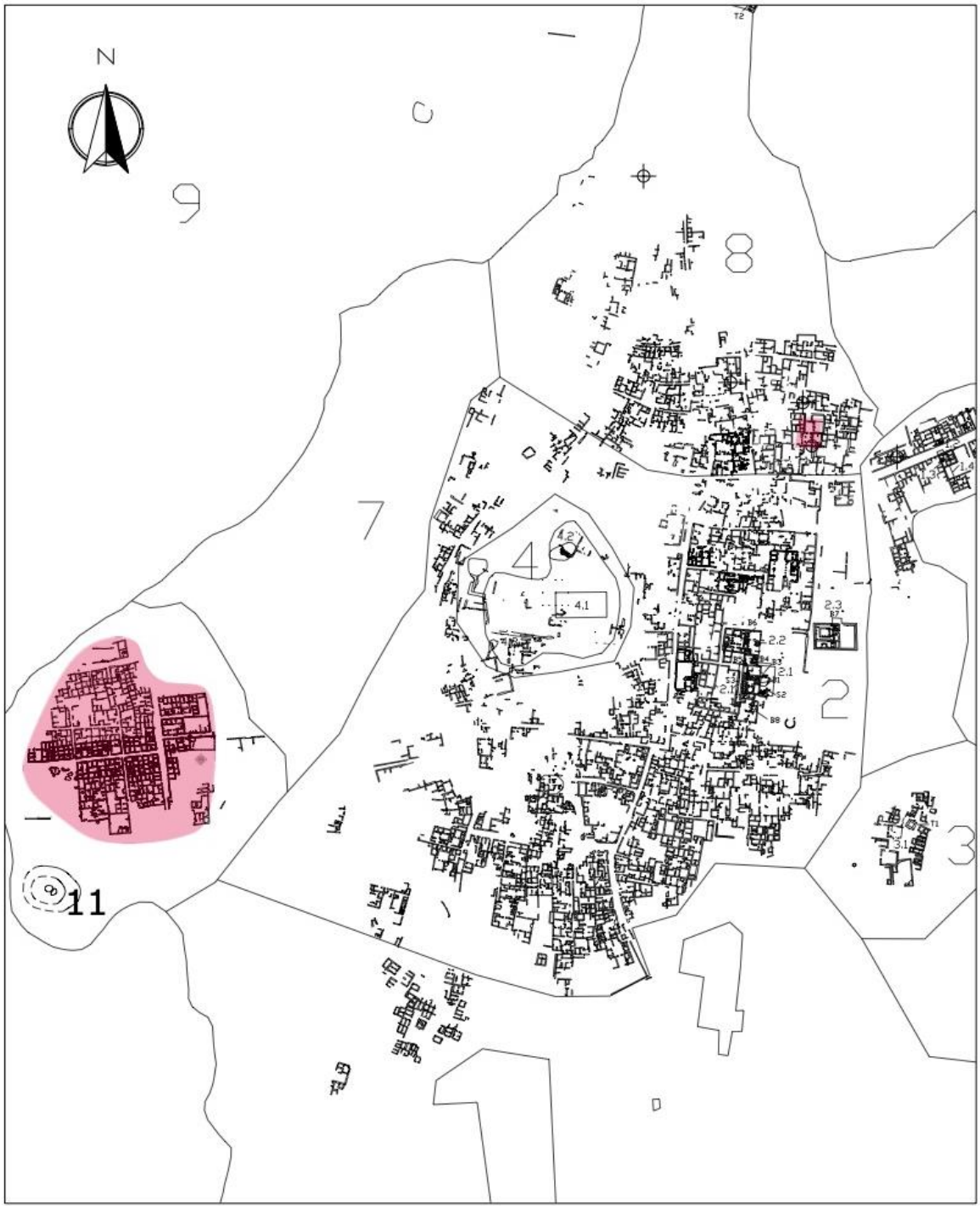

Fig. 1. General plan of the archaeological site of Amheida. Main areas of focus for the 2026 field season highlighted, Areas 8.1 and 11.

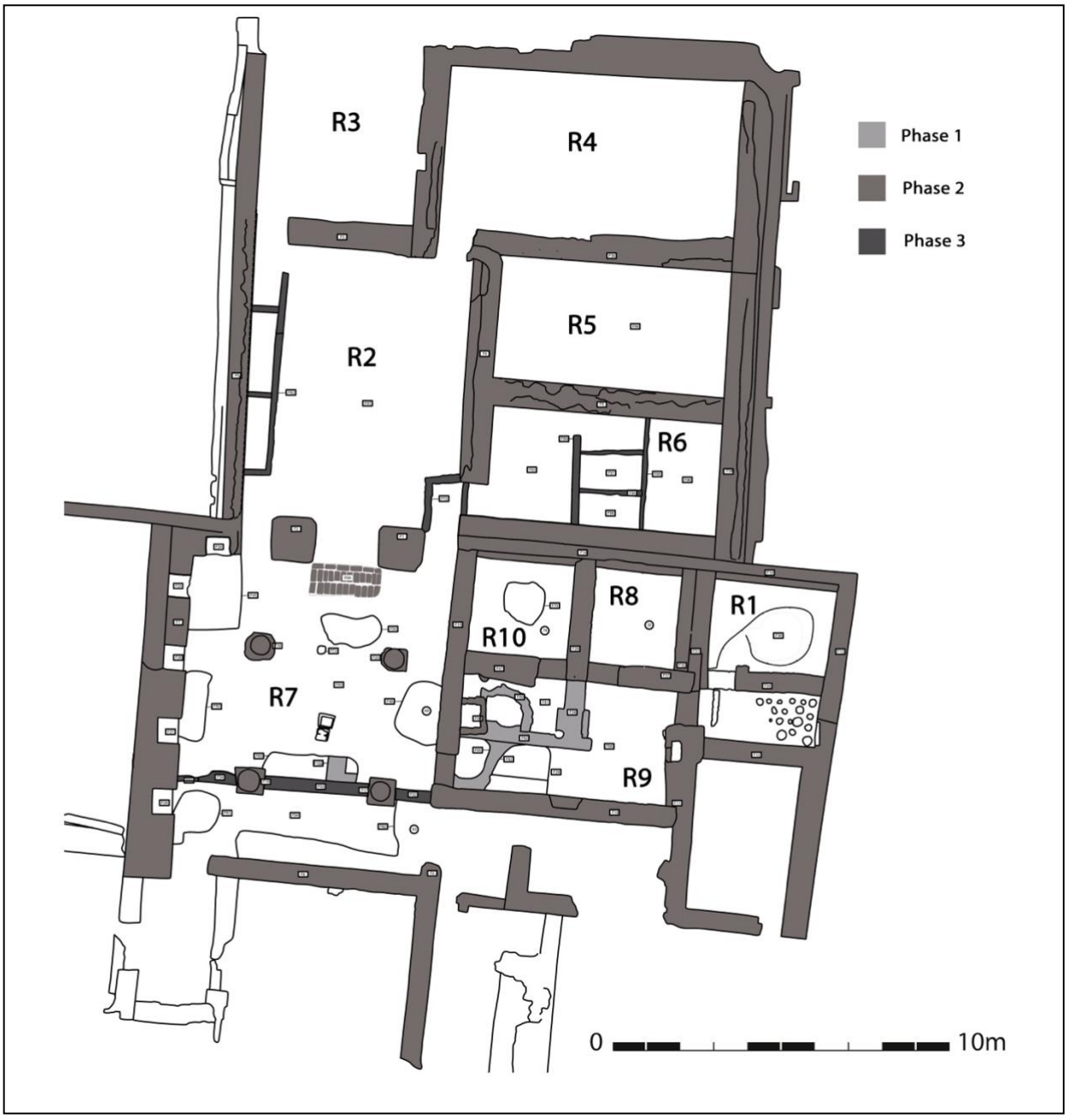

Fig. 2. General plan of building 10 (B10) in Area 8.1

Fig. 3. A view of B10, rooms 9, 10, and 7, looing west, showing earlier features under the floors assigned to the Phase 1 use the space, before the main construction of B10.

Fig. 4. A view of B10, rooms 7 and 2, looking north, showing the altar in room 7 (Phase 2 use of B10).

Fig. 5. B10, R2, showing pillars with niches leading to R7 to the south and the remains of painted plaster ceiling in situ.

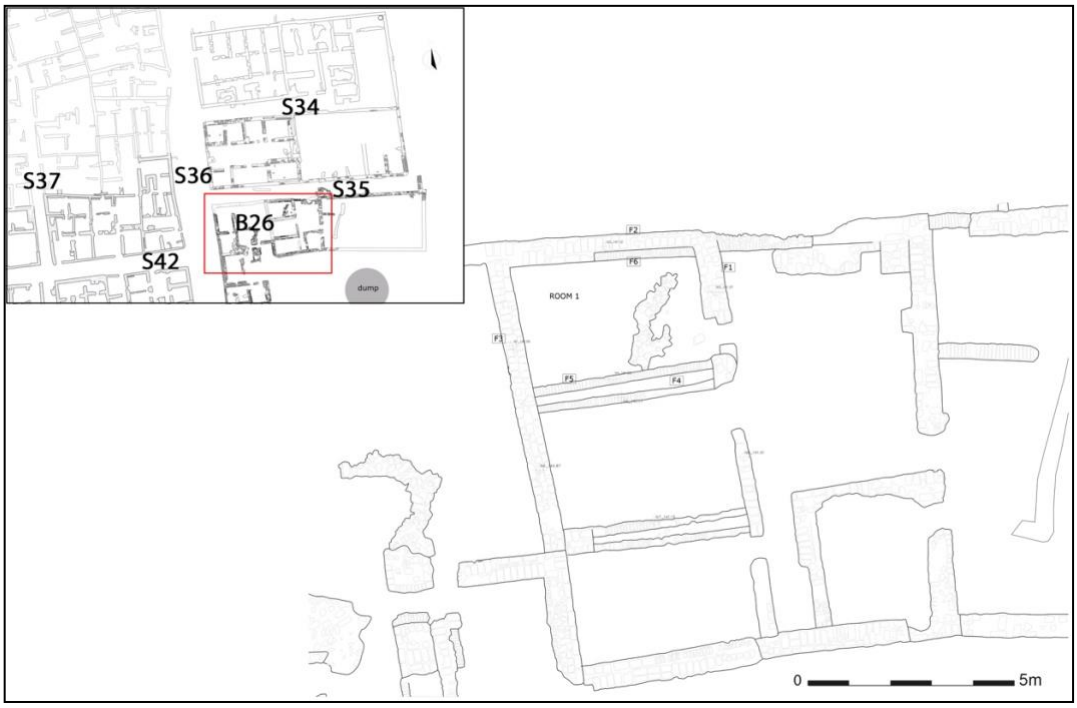

Fig. 6. B26, R1 in Area 11.

Fig. 7. Area 11, topographical survey area in 2023 and 2026.

Fig. 8. Representative ceramic types from Area 8.1, B10.

Fig, 9. Inv. 17565. B10, R9, DSU 66. Billon tetradrachm of Hadrian, year 10 (AD 125-126). Giessen 915; RPC 3.5594.

Fig. 10. B7, T6: (left) additional transitional lumbar vertebra (L6); (right) spina bifida occulta.