NINEVEH SHAMASH GATE PROJECT

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A damage mitigation effort was initiated at the Shamash Gate during the 2020 season of the Joint Iraqi-Italian Expedition to East Nineveh (fig. 1). A strategically important entrance in the eastern fortifications of Nineveh, the Shamash Gate was converted into a defensive position during the Islamic State of Iraq and Syria (ISIS) occupation of Mosul in 2014–17. The construction of a network of tunnels cutting through the foundations and superstructure of the gate complex and the random destruction of freestanding portions of the gate, including the smashing of portions of the magnificent alabaster and limestone orthostats that once lined the inner gate system, caused extensive damage to this iconic landmark of East Mosul.

The Shamash Gate was first investigated by Henry Layard in the mid-nineteenth century. It was partially excavated by Tariq Madhloum on behalf of the Iraqi Department of Antiquities in the 1960s, and its impressive crenellated outer stone wall and massive inner mudbrick structure were subsequently restored and reconstructed. The published plan from these excavations indicate a projecting gate system, with the entrance through the outer wall flanked on each side by three parapets. Passage through the inner gate

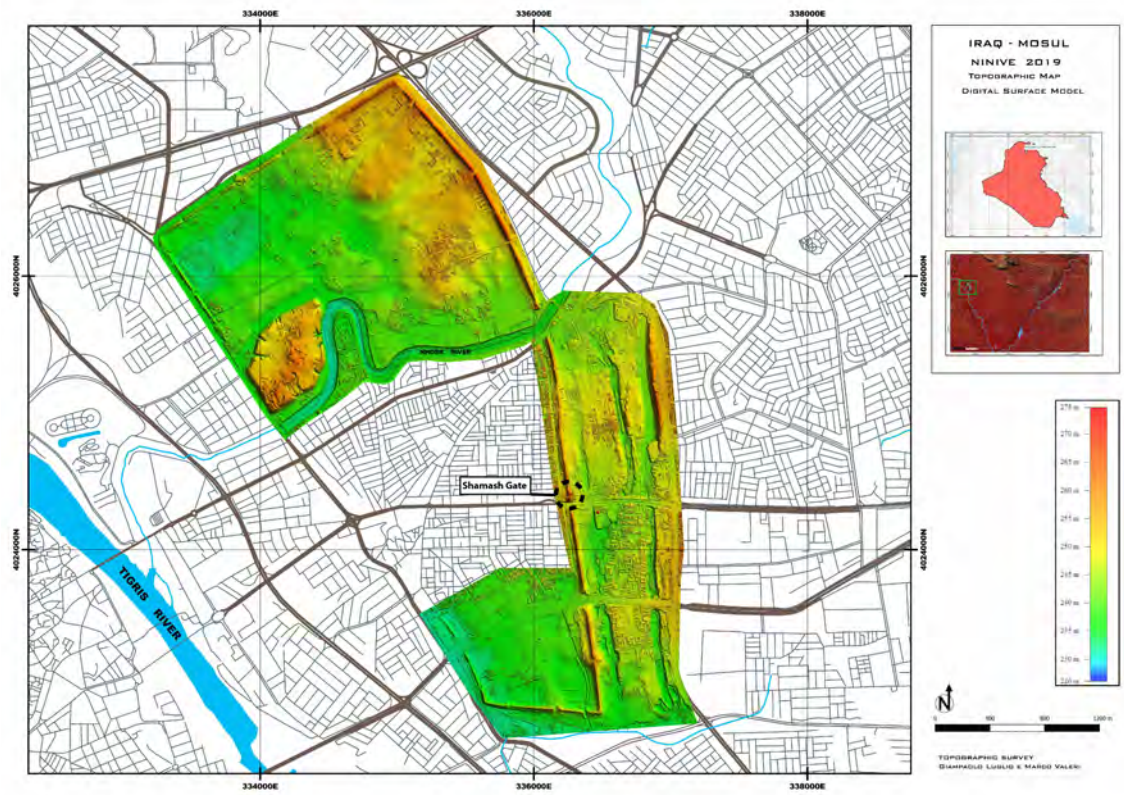

Figure 1. Digital surface model of Nineveh showing the location of the Shamash Gate. Photo: Joint Iraqi-Italian Expedition to East Nineveh.

system was restricted by a sequence of three or four sets of piers. The gate was approached from the east via the Erbil road, which crossed two bridges over a succession of moats or waterways before ascending along a causeway to the gate itself. The scale and magnitude of the Shamash Gate's construction indicate that it was one of the more important gates of Nineveh during the Neo-Assyrian period.

The 2020 preliminary investigation of the Shamash Gate not only revealed the considerable extent of the damage wreaked on this historic landmark during the period of ISIS control and the urgent need for action to stabilize its surviving remains but also confirmed that the core of the gate complex remains intact and would benefit greatly from a carefully planned and judiciously implemented conservation and restoration strategy. The importance of the Shamash Gate as a unifying symbol of Mosul's remarkable cultural legacy and its rebirth in the aftermath of the recent conflict adds critical importance to such an undertaking.

2023 FIELD SEASON

Following assessment, documentation, and structural stabilization of the gate complex in 2021 and 2022, preliminary exploratory excavations were initiated at the Shamash Gate during the 2023 season of the Joint Iraqi-Italian Expedition to East Nineveh directed by Nicolò Marchetti. The excavations were conducted over sixteen days between September 8 and October 25 and were directed by Timothy Harrison with the assistance of Khaled Abu Jayyab (field director), Elizabeth Gibbon (assistant field director), Stephen Batiuk (geophysics and mapping), Brynn Evans and William Reimer (field supervisors), Jacopo Monastero (geographic information systems and photography), Rula Shafiq (physical anthropology), and Alessandro Fonti (conservation). The project was assisted by Amal Mustafa Sharif, Liqa'a Abbas Farhan, and Tahani Younis Mohamad from the State Board of Antiquities and Heritage (SBAH) of Iraq (Nineveh District) and fourteen hired workers.

After a high density of debris—likely from the 612 BCE destruction of Nineveh—was identified at the west end of the gate, the main objective for the field season was to excavate these remains in a systematic manner. Since the erosional buildup, which contains the destruction debris, reaches 4 m above the final pebbled pavement, a second objective was to clear a stretch of the gate passage from the later deposition in preparation for future excavations. Finally, a third objective was to clarify the outlines of the tower chambers in the western portion of the gate. Accordingly, we opened seven operations (fig. 2)—operation 1, continuing a preliminary investigation of the destruction debris; operation 2 along the passageway of the gate; operation 3, a sounding in the space west of the gate; operations 4, 5, and 7 within the northwest and north-central towers; and operation 6 in the southwest tower (see fig. 3 for a composite plan of the gate structures excavated to date).

Operation 1

Operation 1 was a continuation of the 2022 soundings A and B in the western portion of the passageway within the gate system. This context proved to be fairly secure (fig. 4), producing a wide range of artifacts that included the fragments of a stela (fig. 5), bronze and iron arrowheads, ceramics, and a decorated bone button. The 2023 excavations also recovered the articulated remains of four human individuals: a child approximately 2.5–3.0 years old; an adolescent male with a bone-growth age of 18–20 years; an adult female aged 20–30 years (to judge from the degree of dental wear); and an adult of undetermined sex and an estimated age of 35–45 years (to judge from the degree of dental wear).

The earlier-phase pavement consisted of large stone blocks of different sizes, perhaps laid out as part of the gate's construction during the expansion of the city under Sennacherib (705–681 BCE). The composition of the upper pavement is less clear, as it is extremely patchy in operation 1, but it appears to have consisted of three layers. An initial layer of fine pebbles embedded in a hard clay matrix, which constituted the base of the pavement, was the most coherent and was better preserved than the upper layers. The second

Figure 2. Aerial photo of the Shamash Gate, with the seven operations undertaken in 2023 indicated.

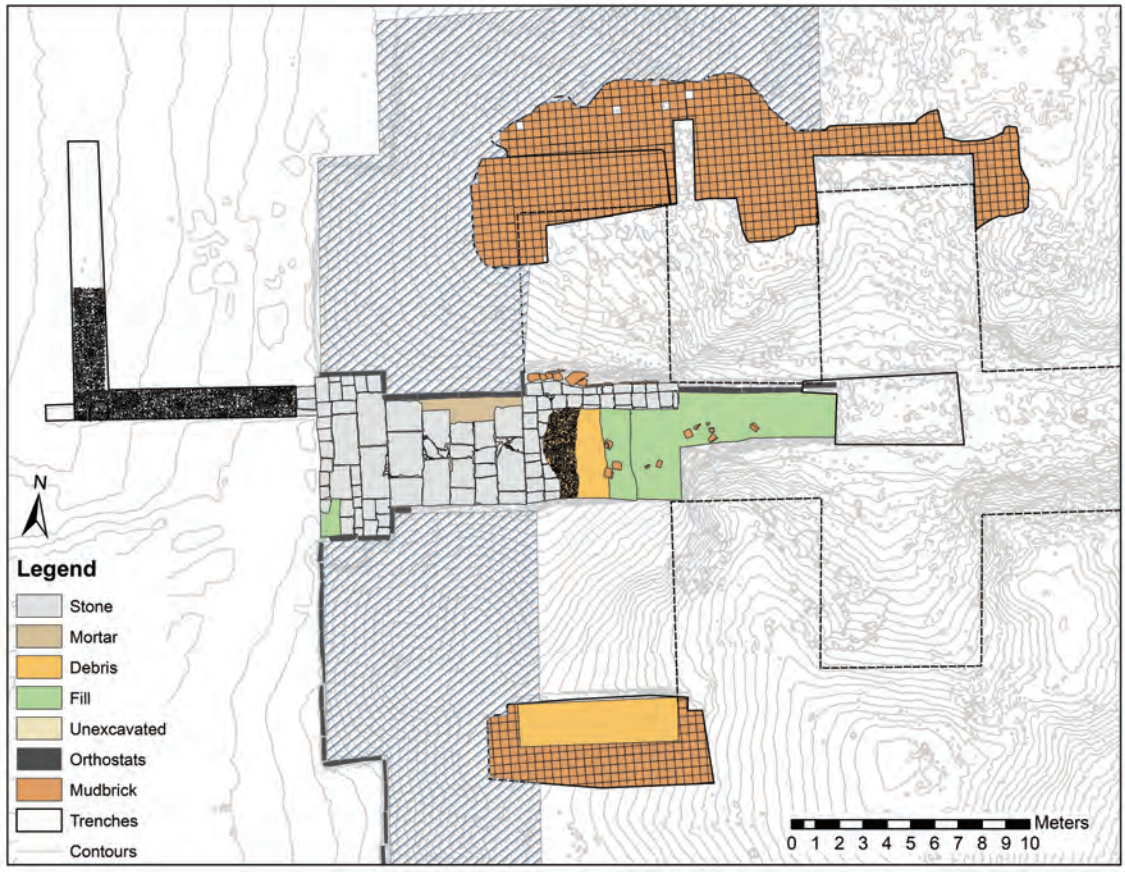

Figure 3. Composite plan of the gate structures excavated to date.

Figure 4. Close-up of the second pavement in operation 1, with objects in situ.

layer seems to have been composed of compact clay with interspersed pebbles and fragments of broken baked bricks. Immediately above and embedded within it were fragments of the stela, partially articulated human remains, and other artifacts. The floor of the second pavement, or third layer, was composed of baked bricks. Although we have yet to encounter baked bricks in situ in operation 1, their presence is not an unreasonable assumption given their clear use as pavement tiles in the north courtyard (visible in the section; fig. 6), as well as the large amount of complete or near-complete bricks that formed the debris attested in operation 1. The absence of a clear baked-brick floor in this area could be the result of bricks having become dislodged by the collapse of parts of the gate system superstructure. Evidence of a conflagration was manifested by pockets of ash and charcoal in the vicinity of the densely intermingled artifacts.

Figure 5. Stela fragment recovered in operation 1.

It is virtually certain that this destruction dates to the fall of Nineveh in 612 BCE. However, we cannot yet determine when or why the stone pavement was covered by the new pavement. Traces of cartwheel grooves could be seen in the earlier stone pavement, and parts of the pavement had clearly subsided, although it is not clear whether this subsidence took place during its time of use or after the gate collapsed, as a result of the weight of the debris. The repaving of the entrance could have been a solution to the problem of water pooling in the gate and the impact it had on the stone slabs. With its layers of pebbling and cobbling, the new pavement may have been laid with water drainage in mind.

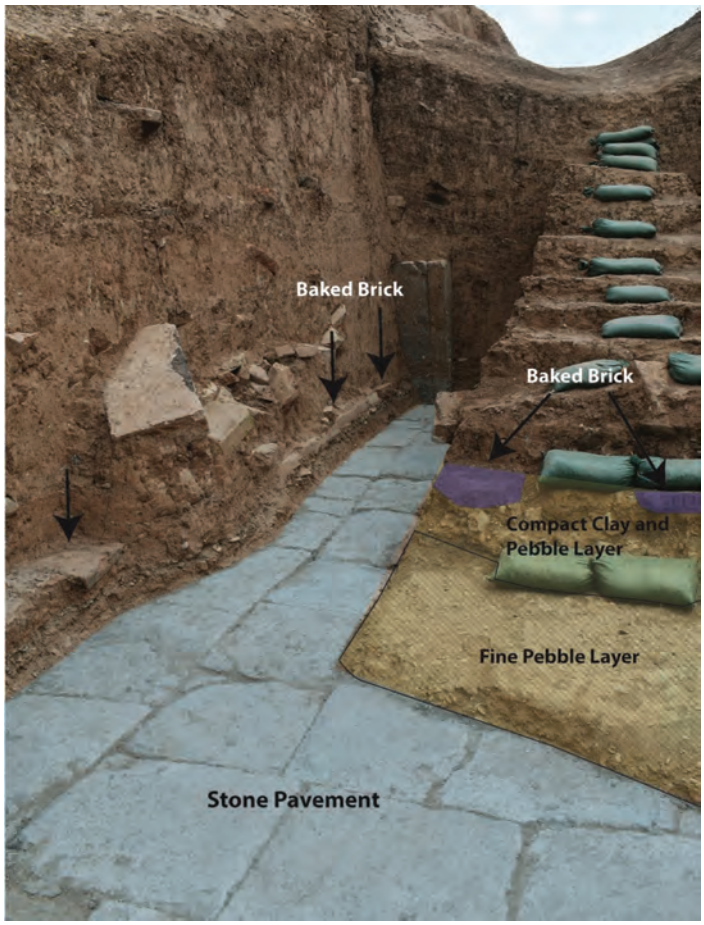

Figure 6. The pavements of the Shamash Gate in operation 1. The pavement in the section (left half of photo) is that of the room in the northwest tower.

Operation 2

Operation 2 was an eastern extension of operation 1 inside the passageway of the gate. The trench was rectangular in shape and extended from the edge of the innermost pier to just before the central pier at a length of 10.0 m and a width of 3.3 m. The trench was dug along the face of the northern towers but ran roughly 1.2 m north of the face of the southern towers. The position of the trench was determined in consideration of the difficulty of removing the thicker deposits along the southern portion of the passageway.

The primary objectives of this trench were to remove the slope wash from the area east of operation 1 and to reach the destruction levels seen in it. We brought the entire 10 m trench down to a depth of approximately 1 m. The season's excavations in this area were concluded when the orthostats lining the north side of the passageway were exposed at the level immediately above the destruction debris layer. This level contained fragments of trapezoidal baked bricks, possibly from the collapsed central arches of the gate complex.

Operation 3

Operation 3 formed an L-shaped probe designed to determine the remains and state of preservation immediately inside the gate. The probe uncovered two discrete surfaces. The lower one was likely composed of medium-sized river pebbles embedded in a clay matrix. We are unsure whether this surface was artificial or the natural geological composition at the time of use, compacted as a result of repeated pedestrian traffic. The upper surface was completely different; it was composed of clean, red clay with fragments of baked brick embedded within it. The remains of a partially articulated adult individual were uncovered on this surface.

Operations 4, 5, and 7

These operations constituted three contiguous excavation areas that were opened to outline the interiors of the chambers/courtyards of the northern tower system. The interiors of two towers, the northwest one (operations 4 and 5) and the north-central one (operation 7) were outlined. Overall, both towers suffered from heavy erosion, with water flows in primarily two directions. The first direction followed a flow from

the higher points of the tower walls into the presumably softer and lower fills of the rooms toward the south and into the passageway. The second flow took place along the thick, packed-mudbrick tower walls from the north-central tower toward the northwestern tower and further reduced the height of the presumably lower northwestern tower. The impact of the erosion could be seen in the different levels of preservation of the east and west walls of the tower, with the east wall preserved 4 m higher than the west wall. A similar condition prevailed in the southern tower system (operation 7).

Both the northwest and the north-central towers were constructed of fairly standard mudbricks (35 × 35 × 12 cm, on average). The bricks were tempered primarily with rounded river pebbles of various sizes, perhaps taken from the loose portions of the conglomerate found in the vicinity of Nineveh.

We could not determine definitively whether the northwest and north-central towers were built to a similar height or whether the tower system was stepped, with the north-central tower the highest one in the defensive system. The state of preservation suggests the second scenario is the more probable. The presence of collapsed baked brick from a vaulted arch in the upper portion of the fill toward the better-preserved east wall in the northwest tower suggests it was only slightly lower than the central tower. This interpretation is supported by the fact that the connecting north wall was level with the top of the east wall and dipped sharply (as a result of erosion) toward the west wall. Therefore, we suggest that the great discrepancy in the elevations of the east and west walls, and hence of the northwest and north-central towers, was likely a result of erosion rather than architectural design. This issue needs further exploration in future seasons, although it will require removal of the room fill in the towers (which in places reaches almost 8 m above the surface of the stone-paved floor) and further clarification of the outline and preservation of the chambers' walls.

Operation 6

Operation 6 was located in the southwest tower of the gate system. The operation's objectives were similar to those of the operations in the northwest tower—that is, understanding the outlines and the dimensions of the chambers/courtyards off the main gate passageway. The two westernmost towers were asymmetrical, with the northwest tower roughly 9 m wide and the southwest tower almost three times wider. These dimensions may indicate that there were two or three chambers in the southwest tower.

The northernmost room of the southern tower system was targeted for excavation to determine the room's back wall, as well as its west and east wall faces. This task proved to be more complicated than anticipated. The mudbricks in the southwest tower were completely different from those in the northwest one. The bricks were friable and sand tempered, and their dimensions varied. Two corners of the room also fell along deeply eroded gullies, and a large Sassanian pit cut along the face of the southern back wall of the room, distorting the connections between the east and west portions of the room. Finally, the remains of two exploded grenades were found in the trench. One had exploded in the vicinity of the room's southeast corner, the second on top of the west wall, cratering and damaging these parts of the tower chamber.

We were nevertheless able to determine that the room's dimensions match those of the main chamber of the northwest tower. This led us to assume, based on the topography and size of the chamber, that there are possibly two more rooms south of it. A similar arrangement has been observed at Nineveh's northern Adad Gate.

The differences seen between the bricks of the northeast and southeast towers in terms of their size, composition, color, and weight could indicate that one of the towers was reconstructed after its initial construction. Alternatively, the differences may reflect the organization of Assyrian labor, specifically corveé, imposed by the king on provincial districts, with the diverse composition of the bricks used in the construction of the towers and gate reflecting different labor groups drawing on different local clay sources.

Stela Remains and Preservation

To date, more than 100 fragments of a stela dating to the reign of Ashurbanipal have been recovered, although the stela's precise date remains uncertain. The stela was carved from a soft stone—probably a limestone with many inclusions, like breccia—and it had two carved faces, both inscribed in cuneiform. One of the two faces preserves a carved figure, most likely a representation of Ashurbanipal; an elbow, a decorated dress, and a mace or scepter have been discerned thus far. The stela's original size is unknown. Based on the evidence recovered so far, the stela likely stood at least 2 m in height, was 80–100 cm in width, and was 26 cm in depth. It appears to have been destroyed during the fall of Nineveh in 612 BCE.

Some of the stone's surfaces are severely corroded, and it is easily scratched, although some parts of the stone matrix are more compact. Traces of fire and burned organic remains (straw?) are evident on the surface of some of the fragments. The stone may also have become calcified during burning. Conservation and treatment of the stela fragments were complicated considerably by the presence of densely layered clay. The softer clay was removed by moistening it with a contact sponge. The more compact layers required the use of a low-ultrasonic scaler, finished with scalpel and probes (fig. 7). A third layer of clay formed a thin "skin" that had congealed over time directly onto the surfaces of some of the fragments, rendering the clay impossible to remove during this initial phase of treatment.

Figure 7. Conservation and treatment of the stela fragments.

2024 FIELD SEASON

An unscheduled intervention was conducted at the Shamash Gate in East Nineveh (Mosul) between April 22 and June 4, 2024, under the license of the Joint Iraqi-Italian Expedition to East Nineveh. The

Figure 8. Baked bricks protruding from the north wall, and secondary wall constructed to narrow the passageway.

intervention was necessary to clear large amounts of mudbrick collapse that had accumulated above the gate complex superstructure, which had become unstable as a result of intense winter rains.

The team comprised Timothy Harrison (project director), Khaled Abu Jayyab (field director), Stephen Batiuk (geophysics and mapping), and Serafino Rosso (senior archaeologist). The expedition was assisted by Rwaed Muafaq Mohammed, director of the SBAH Nineveh District, and three SBAH inspectors: Ghassan Sarhan, Ahmed Ali Abbas, and Saba Munthir. Eighteen workers were hired to assist with the clearing of the mudbrick collapse.

The spring intervention was successful in removing a substantial amount of the mudbrick collapse that seals the intact remains of the gate complex. More specifically, these excavations succeeded in delineating intact portions of the west and central piers of the north half of the Shamash Gate complex, including the framing orthostats of the central pier and part of an arch and springer anchored to this pier. The excavations also revealed a block of baked bricks inserted into the north wall, just to the east of the base of the arch, and in front of it, at a lower height, a poorly constructed and poorly preserved secondary wall, apparently inserted to narrow the passageway of the gate complex in its final phase of use (fig. 8).