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The Armenian-Italian Joint Expedition to Dvin
Report of 2024 Activities

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Abstract This report aims to show the results of the fourth excavation campaign at Dvin/Dabīl (Armenia), conducted by the Armenian-Italian research group in Autumn 2024. The excavations involved three areas in distinct sectors of the city: the southern portion of the Lower Fortress, where the 2021 square was deepened and enlarged; the so-called 'Market' area, where the 2021 excavations were expanded and a micro-stratigraphic trench was opened; and the excavations of the Tiknuni Areas 1000 and 2000. Additionally, research has started on the analysis of pottery carried out between 2022 and the last year's excavation. We also presented the first results concerning research on faunal remains.

Keywords Dvin/Dabīl. Stratigraphic methodology. Eurasia. Excavation. Medieval archaeology. Armenia.

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1 Introduction

The joint Armenian-Italian archaeological expedition to Dvin was carried out in 2024 by the Institute of Archaeology and Ethnography of the National Academy of Sciences of the Republic of Armenia (IAE NAS RA) and the University of Florence, with the financial support of the Italian Ministry of Foreign Affairs and the ERC Project ArmEn (Armenia Entangled). During the autumn campaign, excavations continued in the Market and in Area 1000 (the southern part of the Lower Fortress) within the urban sector of the city. Additionally, two new excavation areas were opened in the territory northwest of the city, at Tiknuni (TKN Area 1000, TKN Area 2000).

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- Italian side. Director: Michele Nucciotti. ArmEn, P.I.: Zaroui Pogossian. Archaeologists: Elisa Pruno (Codirector), Francesca Cheli, Leonardo Squilloni, Miriam Leonetti, Hasmik Hovhannisyan. Students: Lisa Dall'Olio, Leonardo Quercioli, Fabiana Miceli, Margherita Leone.

2 Excavations at the Dvin 'Market' (*shuka*)

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The 2024 excavations at the 'Market' site began on 1 October 2024 and continued until 21 October 2024. Based on the results of the excavations from the previous autumn season of 2023 (Petrosyan et al. 2024), which investigated the line of the horseshoe-shaped embankment in the eastern part of the 'Market' territory, it was found that there were dumps of earth from all previous excavations conducted between 1955 and 1961.

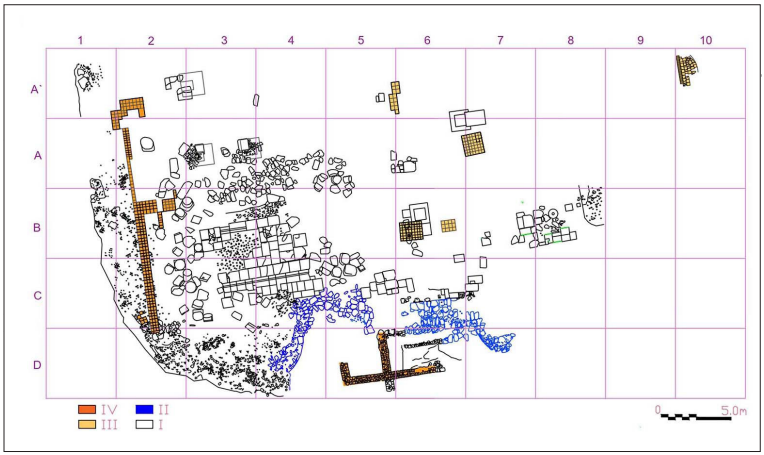

Figure 1 General plan of the 'Market'. Architect L. Kirakosyan

In the general area of the excavation, guided by the colour of the soil, it is possible to distinguish areas of heaps of worked-out earth and voids between them filled with modern debris or refuse, as well as small fragments of earth not affected by previous excavations. Dumps consisted of earth and a large number of broken fired bricks. The size of the bricks throughout the territory of the 'Market' is generally standard and fluctuates between 0.23 × 0.22 × 0.05 m. Fragments of glazed and simple ceramics of the twelfth century and small architectural details were found in the worked-out earth.

As a result of the 2024 excavations in the square A10, in the north-eastern corner of the area, at a depth of 0.90 m from the top of the embankment, a fragment of a brick wall with an adjacent brick floor was discovered **[fig. 2]**. This wall and floor are not marked on the general map of the excavations of the 1950s. They had not opened it. The wall fragment is 1.67 m long and is an even row of burnt bricks placed on their edge, which were fastened together with lime mortar. There are 23 bricks in total. The floor fits tightly against the wall. It is laid out with whole and half bricks placed flat. The wall is oriented north–south. At the northern end of the wall, the floor is rounded. It was deliberately laid out in a semicircular shape, which is noticeable by the laying of the slabs **[fig. 2]**.

The fragment of a brick wall and floor discovered in 2024 is not similar in construction technique to the remains of brick walls of two rooms with rammed floors discovered in 2022 in squares D 5, 6 **[fig. 3].**

Figure 2 The brick floor opened in 2024. Architect L. Kirakosyan

Figure 3 Brick wall and floor from the 2023 excavations

2.1 Artefacts

The main part of the material extracted from the excavations is ceramics, which are divided into simple and glazed. Total fragments are 102 **[tab. 1]**.

Table 1 Total fragments of pottery found during the 'Market' excavation

	Non-glazed ceramics	**Glazed ceramics**	
42	Total fragments of simple ceramics	Total fragments of glazed ceramics	60
7	Ceramics covered with red engobe and polished	Fragments of stone paste ceramics with blue glaze	12
		twelfth-thirteenth centuries green and yellow-green	40
		ninth-tenth centuries	8

2.2 Plain (Non-Glazed) Ceramics

A total of 42 fragments of plain ceramics were found during the excavation. It should be noted that the following molding masses could be distinguished among the fragmentary material:

- ferruginous beige-red clay of a dense structure,
- ferruginous beige-red clay of a loose structure,
- slightly ferruginous clays of a beige-pink hue,
- non-ferruginous white clay.

Fragments of beige-red and beige-pink clay contain artificially added small and, in some cases, large fragments of chamotte as an additive; rare particles of sand and pores from burnt organic inclusions were visible **[fig. 4a]**.

The plain ceramics of Dvin can be divided by colour into 'white', 'red', and pink ceramics **[figs 4b-c]**. White and red ceramics are covered with engobe matching their respective colour and have traces of polishing. Pink ceramics are uncoated. Among the 'white' ceramics covered with engobe, fragments of vessels made of different body clays can be distinguished. This is non-ferrous white and red ferrous clay, covered with white engobe. Different body clays, but an identical white surface, indicates mass production of this ceramic.

Fine ceramics, covered with bright red engobe with good polishing, are characteristic of Dvin ceramics of the twelfth-thirteenth centuries.

Figure 4 Pottery sherds from 2024 excavation: a. lid, bottom and cone for kiln; b. 'white' plain pottery; c. red and pink plain pottery

2.3 Glazed Ceramics

The main group of fragments of glazed ceramics was composed of glazed plates of the twelfth-thirteenth centuries (K'alant'aryan 2008, 82) with green or yellow-green glaze **[fig. 5a]**. However, in the general mass, several fragments of earlier glazed ceramics of the ninth century and some made of stone paste (*kashin*) with smooth blue glaze, which is also characteristic of the twelfth-thirteenth centuries, can be distinguished **[fig. 5b]**.

Among the finds from 2024 were two fragments of a kiln for firing ceramics **[fig. 4a]**, one figured brick (two similar bricks were found in 2023), two double bricks from the masonry of the decorative wall finish, one fragment of stucco with preserved blue within the recessed part of the ornament **[fig. 6]**.

The 2024 excavations cleared 80% of the waste dumps from previous excavations and discovered a new wall fragment. The context of this structure remains unclear and requires further study.

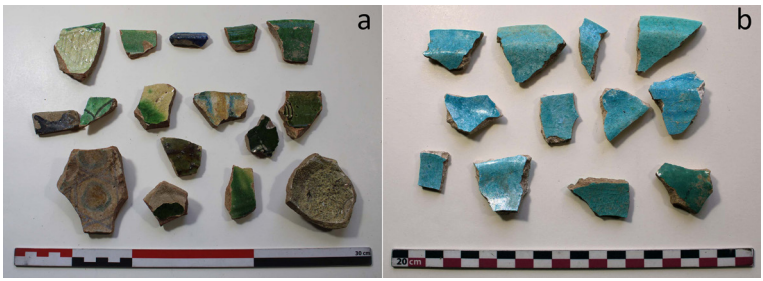

Figure 5 Pottery sherds from 2024 excavation: a. yellowish-green glazed pottery, 9th-13th centuries; b. blue stone paste pottery, 12th-13th centuries

Figure 6
Fragment of stucco decoration with blue painting

3 Area 1000

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3.1 Area 1000 Season 2024: Stratigraphic Description

The goal of the 2024 excavation season was to investigate three different sectors within Area 1000 to expose archaeological stratigraphy and trace the changes that took place between the 11th and 13th centuries. Therefore, excavations were carried out on three fronts **[fig. 7]**:

- Continuation of the excavation in the southern portion of Area 1000, to complete the removal of the collapse layers of walls SU 1090 and 1115 and to identify layers contemporary with the walls.
- Continuation of the excavation of the eastern extension (opened in 2022) until collapsed wall layers of SU 1090 were reached.
- Northward extension aimed at reaching the floor level with post 1236 pits (A1097).[1]

1 The activity numbering was changed compared to what had been published in last year's report, as the expansion of the excavation area led to the identification of new activities, requiring a corresponding renumbering. For instance, phases A1099 and A1098 have been reassigned as A1102 and A1101, respectively.

Figure 7 Area 1000, orthomosaic at the end of 2024 season indicating the walls

As discussed below, the activities in the eastern and northern extensions stopped before reaching the planned level due to the discovery of interesting activities that were not previously identified in the excavation area. The results of the excavation campaign are discussed below, beginning with the southern part of the main sector and then proceeding to the eastern and northern extensions together.

In the southern part of the excavation area, operations resumed with the erosional collapse deposits of walls MSUs 1090 and 1115, interspersed with probable levelling accumulations. The collapse layers (SUs 1091=1149, 1175, 1180, 1094) consisted of sandy, soft, and incoherent soil, sloping from north to south (i.e. from the walls to the south). On top of these layers were ash lenses and deposits (SUs 1174, 1176, 1178, 1179, 1181), which may be accumulations or fire traces. Alternating with the sloping layers showing evidence of burning were levelling layers with a generally horizontal surface, located in a 1.5-2-meter-wide band along the southern section of the excavation area **[fig. 8]**. The horizontal layers (SUs 1150, 1170, 1172, 1175, 1205,

and 1213) were made up of incoherent soil, with more or less compact lenses and inclusions of mortar lumps and charcoal. These layers contained ceramic and animal bone fragments, smaller in size than those found in the collapse layers of the walls. In addition, on the levelling layer SU 1170 and inside SU 1213, two bronze coins were found, which are currently being cleaned, analysed, and restored. Activity A1089 represents a series of wall collapses (MSUs 1090 and 1115), followed by subsequent ground levelling phases, at a time when the area to the south of the two walls was still in use, likely as an open space requiring ongoing levelling operations.

Figure 8 SU 1172 covers the N-S oriented ash layer SU 1180

The removal of the layers of A1089 in the southern part of the area allowed the exposure of the floor level SU 1253. This is composed of compacted clay mixed with gravel, fired brick fragments, ceramics sherds, and mortar lumps, located along the southern section of the excavation. In addition to the floor, the removal of the collapsed material uncovered the brick foundation (MSU 1214 in A1078) of

MSU 1115[2] and an additional wall segment (MSU 1237) with a stone foundation and an upper structure in mudbricks or rammed earth (SU 1238), orthogonal to MSU 1090 and situated between the latter and the eastern section of the excavation **[fig. 9]**. This wall may be contemporaneous with MSU 1090 (A1075).

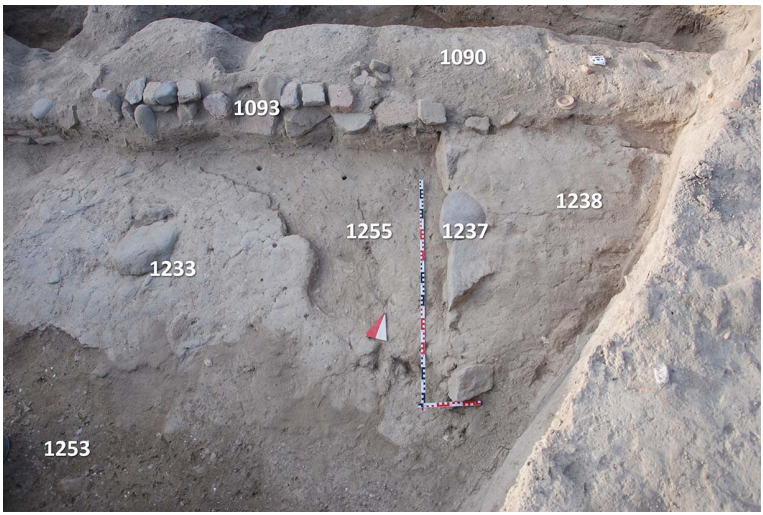

Figure 9 Wall MSU 1237 and mud bricks SU 1238

According to stratigraphy, MSU 1115 was later than MSU 1090, as its brick foundation (SU 1214) rests on a foundation layer (SU 1251) that overlies the collapse layers (SUs 1233 and 1255) of MSU 1090 **[fig. 10]**.

2 The basement is made of four courses of re-used bricks roughly broken in half. The bricks measure between 18.0 and 21.5 cm in length and between 3.5 and 5.9 cm in thickness. They are typically composed of an orange clay fabric, although some examples with a yellow fabric are also present. Based on current knowledge, MSU 1115 is the only wall with a fired brick foundation and a rammed earth elevation documented in Dvin. The construction technique of the basement, not previously identified, could be compared to some eleventh– twelfth century walls around the hypogeal space in the northern part of the citadel (Babayan 2018). However, excavation reports do not clearly describe the elevations, and the preservation state of the structures does not allow for verification (Łafadaryan 1952, 48-9; Leonetti 2024, 104-6). The introduction of the use of fired bricks in the lower portion of the masonries, usually on a basement of rammed earth, has been recognized in Merv and dated to the Seljuk period. The use of fired bricks has the function to minimize the erosion caused by water and prevent moisture from rising through the structure (Hermann 1999, 50-1). A mensiochronological study of the bricks will help determine whether the foundation can indeed be attributed to the Seljuk period, wich in Dvin goes from the 1060s to the end of the twelfth century. Walls with fired brick on mud brick foundations, but without preserved superstructures, were identified during the excavations in the 'Market' area in 2022 (Petrosyan et al. 2023; Leonetti 2024, 115-17).

Therefore, the construction of MSU 1115 (A1078) was later than an initial destruction phase of MSU 1090 (A1077) and contemporary with the floor SU 1253 (which covers SU 1251). The latter, on the external (southern) side of MSUs 1090 and 1115, was composed of compact clay with gravel, small fragments of fired bricks, mortar lumps, and numerous in-situ broken pottery sherds. In phase A1078, it is thus possible that MSU 1090 was extended or rebuilt in its southwest portion (using a different construction technique and a slightly different orientation) and, at the same time, restored or, more precisely, rebuilt above its original foundation. This reconstruction is evidenced by structural elements (pebbles, stones, and fired bricks) that are part of MSU 1093.

Finally, completing this year's results in the main square, the excavations in the southern portion together with the analysis of the relationships between the wall structures, made it possible to interpret layer 1171 –identified in 2023 north of MSU 1090 – as a floor surface related to the earliest phase of MSU 1090 (probably eleventh century). Since this layer has yet to be excavated and it cannot be stated with certainty that it represents the earliest use surface connected to MSU 1090, SU 1171 is included in A1076, along with SU 1186 (mudbrick structure leaning against the inner face of MSU 1090) and SU 1166 (accumulated material above the floor SU 1171).

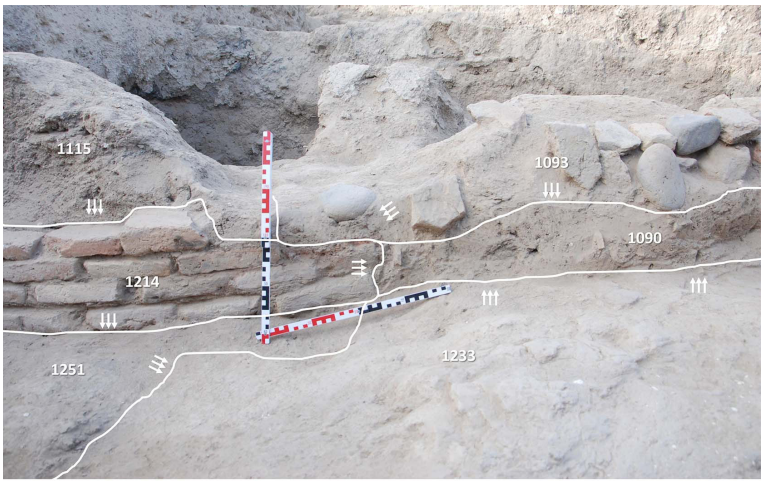

Figure 10 Stratigraphic relations between the walls MSUs 1090 and 1115

L.S.

In the eastern extension (opened in 2022) and the northern extension (opened in 2024), the excavation began with the removal of colluvial

layers and cuts (SUs 1075 and 1200), along with fills (SUs 1076 and 1099), all related to the chronological horizon following the abandonment of the urban site (A1102).

Identified as the most recent anthropic layer in A1101 (collapses and blaze), SU 1007 in the eastern extension served as a key stratigraphic marker linking back to the main square. SU 1007 is an extensive burn layer[3] that covers the destruction layer (SU 1236) and the collapse deposits (SUs 1193 and 1203) of two adjoining walls (SUs 1192 and 1231) at the southern edge of the eastern extension. It also covered the destruction (SU 1263) and north-eastern collapse deposits (SUs 1207, 1208, 1210, 1224, 1209, and 1241) associated with the reconstruction and elevation (MSU 1239) of the eastern portion of MSU 1090 **[fig. 11]**.

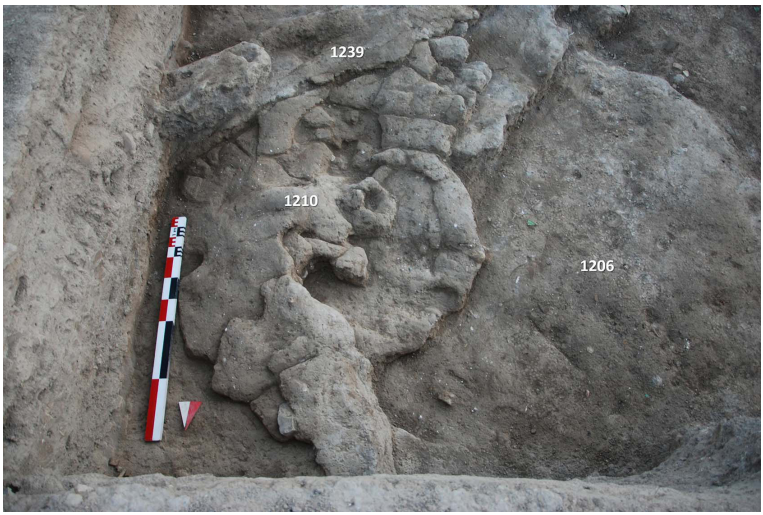

Figure 11 Collapse SU 1210 from the superstructure MSU 1239

The collapsed wall blocks SUs 1201 and 1202, documented in the northern extension, were likely attributable to structures located north of the excavation area, as inferred from their NW–SE orientation **[fig. 12]**. Composed of rammed-earth cast in formwork, the blocks were found in a state of partial disintegration (SUs 1225 and 1218).

3 It is unclear whether this was the result of a fire affecting a perishable roof structure located in what appears to have been an open space, or rather the burning of accumulated materials.

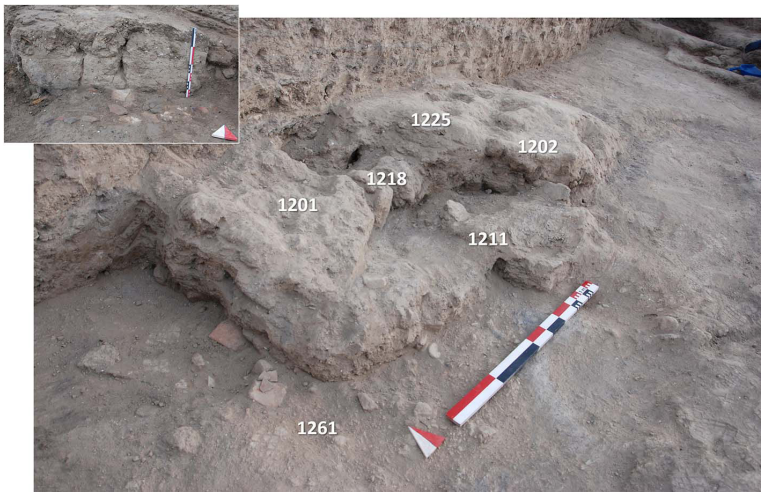

Figure 12 Collapsed masonry blocks (SU 1201 and 1202) in the northern extension

The collapses of A1101 rested upon walking surfaces that are not preserved in the western portion of Area 1000. These surfaces – SUs 1012 and 1206 – are located south and north, respectively, of the reconstructed MSU 1090. Both exhibit a relatively regular and horizontal surface; on SU 1012, ceramic fragments and a heavily concreted, highly oxidized metal object were found.

The two walking surfaces were laid over anthropic accumulations (SUs 1216, 1221, 1220, 1243, 1244, and 1247 south of MSU 1239, and SUs 1242, 1219, and 1212 to its north). These deposits were composed of clayey soil and abundant ceramic material, faunal remains, fragments of fired brick, and occasional small stones. In addition, several collapse layers – likely of natural origin – identified in the northern extension (SUs 1252 and 1249).

Among these layers, SU 1219 deserves a mention: a dump composed of ash and ceramic fragments, likely broken in situ by the collapsed wall blocks SUs 1201 and 1202 **[fig. 13]**.[4] The walking

4 SU 1219 mainly yielded cooking wares – including a nearly intact small, red-painted short necked handled jar – and storage vessels, along with a few fragments of glazed and engraved and glazed ceramics and one red lusterware sherd. Faunal bones, metal, and glass were also found in the layer.

surfaces, together with the anthropic and collapse deposits described above, belong to A1100.[5]

Figure 13 SU 1219

Anthropic accumulations, collapse layers, and walking surfaces of A1100 were related to – and rest upon – the wall structures (MSUs 1239, 1192, 1231) identified in 2024 in the eastern extension, which belong to A1099. As mentioned earlier, MSU 1239 is a reconstruction and elevation of the wall MSU 1090, preserved only in its eastern section **[fig. 14]**. MSU 1239 was identified at -0.09 m, whereas MSU 1090, documented in 2022, was at -0.94 m.[6] The rebuilding sits on a layer of ash (SU 1240) that covers the cut-down (SU 1087) surface of MSU 1090 and SU 1217=1017, indicating that MSU 1090's superstructure and the construction of the southern space occurred simultaneously and after SU 1017, following activity A1097, when the area featured a walking surface with postholes and rubbish pits (Petrosyan et al. 2024). However, the state of preservation of MSU 1239 does not allow us to determine whether it was built of mudbrick or rammed earth. The reconstruction suggests that this

5 SU 1014 and 1016 are also included in A1100. The former was already interpreted as a *colluvium* layer consisting of clay soil with many ceramic sherds (glazed, red-painted and unglazed) and crushed stone grouped in small concentrations. SU 1016 consists of a small concentration of broken mudbricks, thrown on top of SU 1010. In the report of the 2022 expedition (Petrosyan et al. 2023, 220), these two SUs were included in 'Phase 2', but the matrix has been uploaded now thanks to the new results of the extensions.

6 The elevation values are relative to the local coordinate system adopted in the UniFi excavations, whose point of origin is located a few meters southeast of Area 1000.

portion of MSU 1090 remained visible for a long time, albeit in a ruined condition (destruction in A 1089).

Associated with this rebuilding is also the floor SU 1257, identified north of the wall. SU 1257 is made of compacted and leveled clay, and near the base of MSU 1090, oriented orthogonally to it, are two mudbricks, possibly indicating a domestic feature.[7] In addition, cylindrical plaster fragments arranged in an L-shape were found resting on the floor **[fig. 14]**.

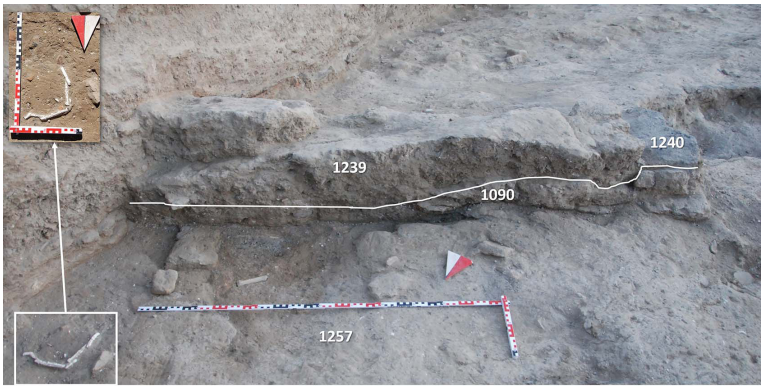

Figure 14 Northern face of the superstructure MSU 1239 over MSU 1090 and floor SU 1257

The two adjoining walls identified south of the eastern extension (MSU 1192 and MSU 1231) run NE–SW and SE–NW, respectively **[fig. 15]**. They rest on foundations (MSUs 1227 and 1235) built of small basalt pebbles, stones, and rare fragment of fired brick, visible only on the inner elevations.

7 The soil between the mudbricks is more friable and contains ash, but no evidence of burning was found.

Figure 15 The corner of the structure in the south portion of the eastern extension (left) and the basement (SU 1227) of the wall MSU 1192 (top right) and the basement (SU 1235) of the wall MSU 1231 (bottom right)

Together, the walls formed the corner of an enclosed space, with the internal area located to the southeast. Within this space, two collapse layers (SUs 1193 and 1203 in A1101) were excavated, beneath which lay the floor SU 1222. This surface, made of compacted clay, was constructed over a floor preparation layer (SUs 1228 and 1230). Removal of the floor preparation revealed the layer (SU 1229) on which the foundations of both walls were built; this layer consists of clay with abundant small lumps of mortar.

The structures of A1099 – with the exception of MSU 1239 – rested upon a walking surface (SUs 1245 and 1017 = 1217 and 1262) identified in the eastern extension and in the eastern portion of the main square. This surface (A1098) has not yet been removed but is composed of anthropically compacted clay layers. It continued to be used as a walking surface in the open area between MSU 1239 and MSUs 1192 and 1231, in parallel with the floors SU 1257 north of MSU 1239 and SU 1222 inside the space enclosed by MSUs 1192 and 1231.

M.L.

3.2 Discussion of Stratigraphy

The 2024 excavation season in Area 1000 allows for a broader interpretation of the microstratigraphic data retrieved from this sample – albeit of limited extent – which I had ironically (but not entirely unjustly) described in the 2023 report as a 'peephole' through which to observe the history of material transformations within the Lower Fortress of Dvin.

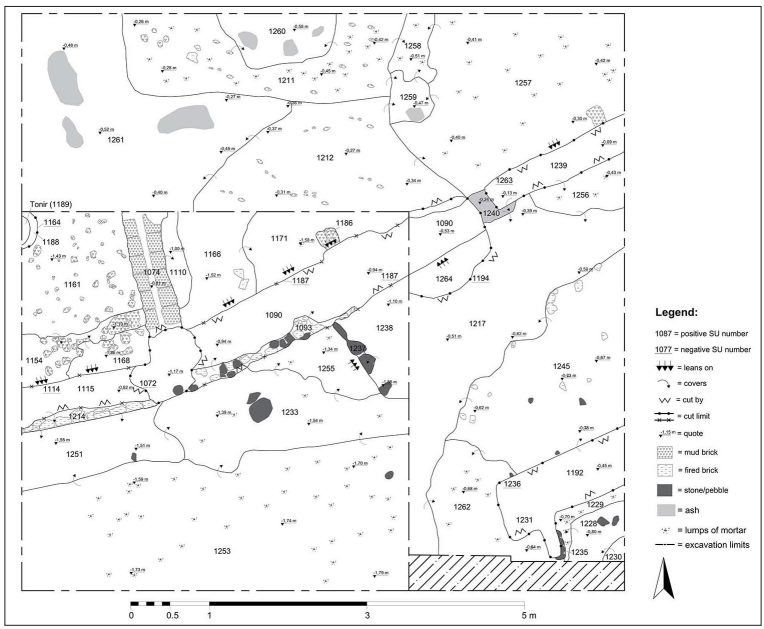

Figure 16 Area 1000, 2024 final plan

Without revisiting issues more extensively discussed in the previous section dedicated to the stratigraphy – particularly regarding the revised sequence of activities identified in 2023, to which Figure 17 provides an updated version of the matrix – I would like to focus these concluding remarks on two main points: the transformations following A1096 and A1097, and the signs of a late re-engagement with the 'material memory' of Dvin's urban fabric, epitomized by what we observe occurring in activity A1099 in relation to the earlier activities A1075 and A1076.

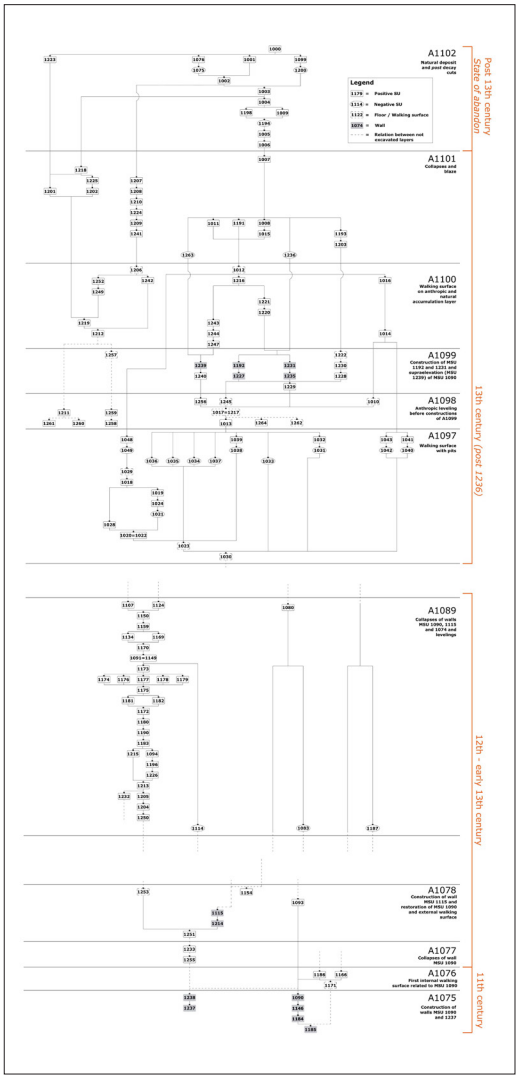

Figure 17 Area 1000, 2024 matrix showing only this year's excavated activities

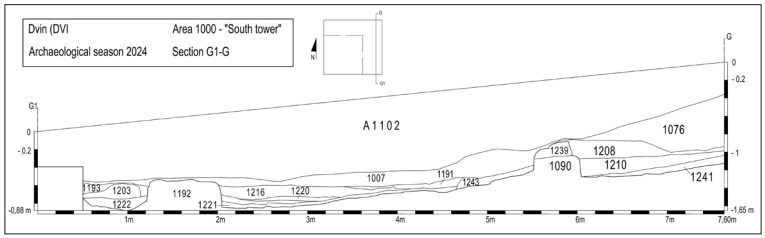

Figure 18 Area 1000, 2024 G1-G section (eastern extension)

Concerning the first point, I must revise the conclusions I offered last year (Petrosyan et al. 2024, 235-43), specifically to refute the statement: "It is certain that from these two moments onwards (A1089 and A1090), Area 1000 retains the material memory of an 'open-air' portion of the city". Simply put, the 2024 investigations have demonstrated that this was not the case.

Excavation of the northern and eastern extensions of Area 1000 has unexpectedly revealed that – after the collapse of the eleventh-century architectural structures (MSU 1090 and later reconstructions within A1078, particularly MSU 1115), which can be placed within A1089 and A1090, and after a significant rise in the occupation surface, from the levels of A1090 to those of SU1025-1054 (the earliest levels with evidence of ephemeral installations in perishable materials, namely rubbish pits associated with clusters of postholes, characterizing A1096 and A1097) – the area was reoccupied as a permanent and structured settlement.

This reoccupation is marked by the construction of buildings in mudbrick and rammed earth as MSUs 1192, 1231 and 1239.

Assuming, as still seems plausible, that activities A1096 and A1097 belong to the early Mongol period – namely, the years around 1236 – it becomes clear that the city, in ways and to an extent we are not yet able to fully quantify, responded with a partial reactivation of its urban fabric. The walking surfaces and architectural remains in Area 1000 bear witness to this. It was, as ceramic evidence suggests, a short-lived response – an impulse that did not give rise to sustained long-term settlement. But that is a different story.

The northern and eastern extensions of Area 1000 clearly reveal a renewed phase of urban occupation (A1098, A1099, A1100, A1101), following its earlier use as an open space from the early thirteenth century (A1089–A1090) and up to the use levels of the early Mongol period. This evidence confirms hypotheses previously advanced on the basis of epigraphic sources and numismatic inference by Žamkoč'yan (2015, 208), particularly in relation to the excavations

in the South Tower area.[8] It strengthens the broader conclusion: Dvin survived the Mongol invasions, and the city undertook a process of reorganization.

Turning now to the second point of these conclusions – namely, the signs of a late re-engagement with the 'material memory' of Dvin's urban fabric during the later thirteenth and fourteenth centuries – it is instructive to reflect on the modalities through which the building impulse embodied in A1099 took shape.

What we can observe of the post-Mongol-invasion urban grid appears to derive from the alignment of earlier eleventh-century structures (and plausibly roadways), mediated by the survival of a portion of the ruined MSU 1090, originally constructed in A1075. The restoration of this ruin, which can be chronologically assigned to A1099 (MSU1239), provided the alignment for the construction of the parallel structure MSU 1192)[9] **[fig. 16]**. From this observation, several interpretative paths emerge, which we aim to explore more fully in the final publication of the excavation, but which deserve to be anticipated here.

First, it became evident that the building programmes of the eleventh and twelfth centuries – such as MSU 1090 in Area 1000, more broadly linked to the large-scale urbanization of the so-called residential-productive quarter of the Lower Fortress (K'alant'aryan 1996, 51-2) – played a foundational role in shaping Dvin's long-term urban fabric, well into the 'late medieval' period. Second, a question arises regarding the mechanisms of technological and spatial recovery of urban building traditions after the Mongol invasion. By whom were these processes enacted? I am inclined to suggest that local builders – who continued to inhabit parts of the city spared from the thirteenth century processes of deurbanization – played a central role. This interpretation aligns with a model of gradual, spatially differentiated abandonment, rather than a singular, catastrophic rupture of urban life in the 1230s. It was likely these same builders who, in the aftermath of the invasion, demonstrated both the intention and the capacity to revive the urban setting – evident in

8 Similarly, the stratigraphic levels provided in Žamkoč'yan (2015) for contexts dated to the thirteenth century are consistent with the evidence observed in Area 1000. Žamkoč'yan (2015), as well as K'alant'aryan (1996, 53), report that one coin of the Georgian King David Ulu (1245-1274) was found in the western portion of the citadel and that Mongol-period coins have been found in the plain of Dvin. The plain of Dvin is mentioned in the commemorative inscription for the foundation of the Monastery of St. Astuatsatsin at Darbas, commissioned by Tarsaich Ōrbēlean. According to Žamkoč'yan (2015, 207-8), this reference suggests that the city was still inhabited at the time, even if it does not mention the city itself.

9 Alternatively, the alignment of MSU 1192 may have been provided by MSU 1090, already in a ruined state as indicated by SU 1187, and only later was MSU 1090 restored through the construction of MSU 1239.

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the recognition of the ruined MSU 1090 as a vestige of pre-Mongol spatial organization and in the use of construction techniques largely consistent with those employed in the city since the eleventh century.

Such intentional retrieval of Dvin's architectural memory – articulated through spatial continuity and technological resilience – lies at the core of a central research question in light of the final interpretation of the Area 1000 excavations.

M.N.

3.3 Material and Artefacts from Area 1000

During the 2024 season, the primary objective regarding the documentation of excavation contexts focused on the comprehensive inventory, including cataloging sheets, drawings, and photographic records, of the materials recovered from A1092, 1090, 1089, 1088, 1087, 1085, and 1084 **[fig. 19]**. In total, during the last mission, we catalogued 1802 fragments, representing 1084 minimum vessel elements. Another quantitative parameter recorded was the weight of different ceramic classes, which will allow us to calculate the fragmentation index of the studied artefacts. This data are linked both to the characteristics of different ceramic productions (for example, more fragile vessels with thinner walls, such as fritware or lustreware, tend to break into a higher number of fragments than thicker-walled vessels, such as a *karas*) and to the formation processes of the contexts and their post-depositional histories. These data enable us for instance to distinguish between the formation of a floor surface and the fill of a pit, or between a deposit that accumulated over a long period and one that formed rapidly.

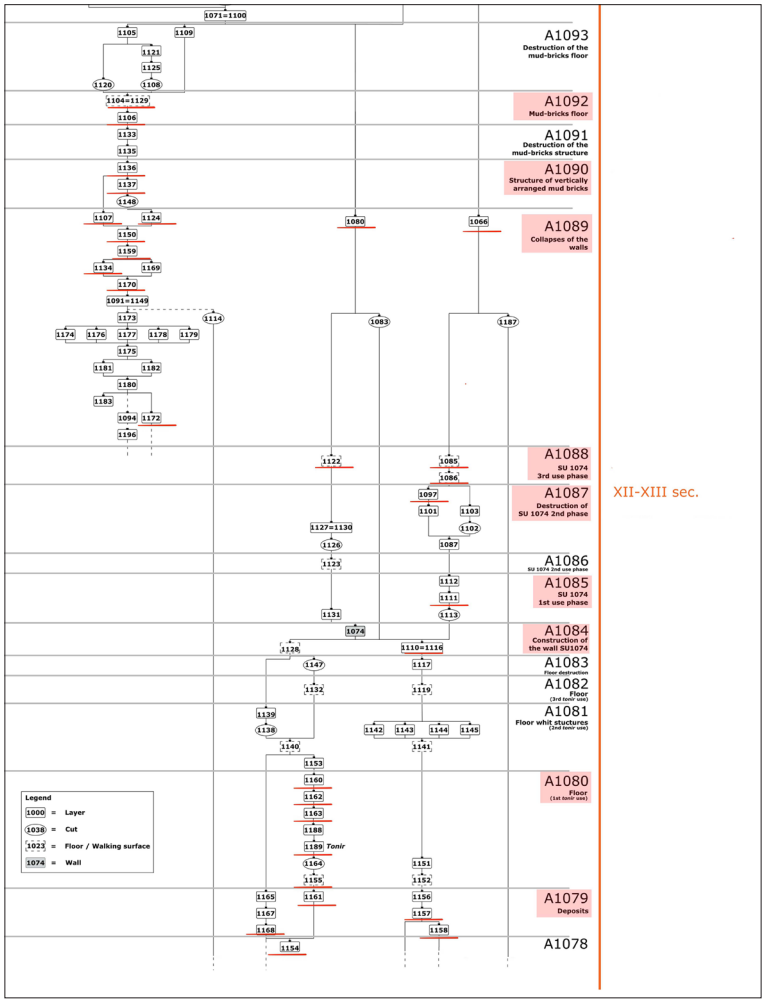


Figure 19 Area 1000 Activities and SUs inventoried this year

For the cataloging process, we continued testing the recording system initiated in previous years with the excavation at Dvin **[fig. 20]**. This system is based on an evolution of the @Petradata database, which has been in use for decades in projects led by the Chair of Medieval Archaeology at the University of Florence. All fragments are considered, initially classified according to technological categories, with nomenclature as consistent as possible with the relevant Armenian archaeological literature (i.e., previous publications on Dvin as well as other medieval archaeological excavations in

Armenia). In particular, ceramic productions are categorized based on technological distinctions, primarily between handmade and wheel-thrown or moulded vessels. Further classifications were made based on paste composition, the presence or absence of coatings, form, and potential function. Special attention was given to the identification of primary paste types within the technological classes **[fig. 21]**. The cataloguing descriptions, although based solely on macroscopic examination, are detailed and structured to facilitate the identification of paste families for archaeometric analyses. These analyses will be crucial in determining clay provenance, thereby enabling hypotheses on the production areas of the artefacts.

Site:	Dvin				Year: 2023												
Inv. number	Area	S.U.	Material	Prod. waste	Manufacturing Technology	Pottery Class	Typology	Shape	Functional Typology	Part of the vessel						Sherd tot. Number	M.N.I.
										Rim	Spout	Bottom/foot	Handle	Body	T.B.S.		
1	1000	1047	Clay		Hand made	Plain		Tonir	N.I.					1		1	1
2	1000	1047	Clay		Hand made	Painted		N.I.	N.I.					2		2	1
3	1000	1047	Clay		Hand made	Painted		N.I.	N.I.					1		1	1
4	1000	1047	Clay		Hand made	Plain		N.I.	N.I.					3		3	1
5	1000	1047	Clay		Hand made	Plain		N.I.	N.I.	1				1		2	1
6	1000	1047	Clay		Hand made	Plain		N.I.	N.I.					1		2	1
7	1000	1047	Clay		Hand made	Plain		N.I.	N.I.					1		1	1
8	1000	1047	Clay		Hand made	Plain		N.I.	N.I.					1		1	1
9	1000	1047	Clay		Hand made	Plain		Close	N.I.					1		1	1
10	1000	1047	Clay		Hand made	Plain		N.I.	N.I.			1		1		2	1
11	1000	1047	Clay		Hand made	Engobe		Tonir	N.I.					4		4	1
40	1000	1047	Clay		Hand made	Plain		N.I.	N.I.					1		1	1
66	1000	1047	Clay		Hand made	Plain		N.I.	N.I.					1		1	1
																22	13
12	1000	1047	Clay		Wheel-thrown	Plain		Close	N.I.					2		1	1
13	1000	1047	Clay		Wheel-thrown	Plain		Open	N.I.			1				1	1

Figure 20 Detail of the cataloguing system

Figure 21 Examples of identified pastes/fabrics

It is worth recalling that kilns were identified in Dvin during earlier excavations, and also we have so far found – albeit in secondary

deposition – a considerable number of production waste materials (e.g., fragments of vessels that failed in their first or second firing). Therefore, it is crucial to precisely identify the ceramic classes produced in Dvin and their chronological framework.

Another important aspect concerns the definition of morpho-typologies for the primary identified productions. This will likely be one of the final objectives of our research, as it requires processing a significant volume of data obtained from the documentation of diagnostic sherds (rims, bases, handles, etc.), which must be compared – where possible – with complete analogue objects **[fig. 22]**. The goal is to develop morphological typologies that can be analysed stratigraphically to determine whether variations within the same class and form have chronological significance.

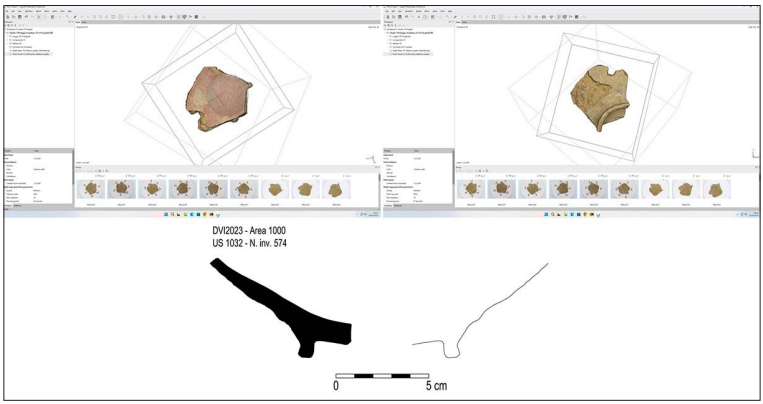
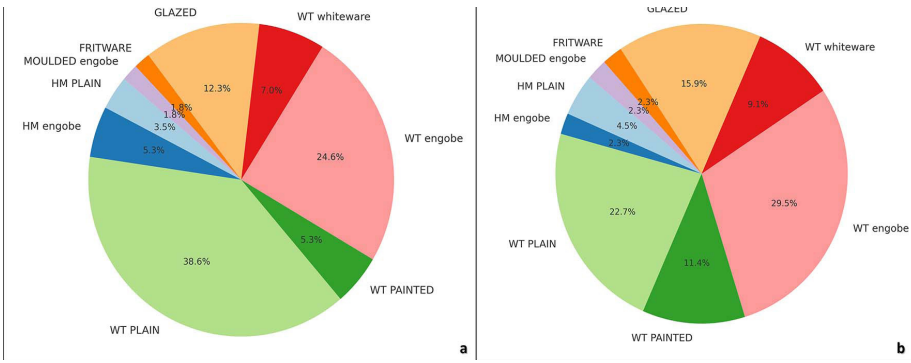


Figure 22 3d model and section of a red painted sherd (DVI574)

To provide an example of the ongoing work, the data collected during the inventory process in the autumn mission primarily aimed to generate information useful for interpreting the functions and chronology of Area 1000. Particular attention was given to the contextual analysis of A 1084, 1085, 1087, and 1088, which relate to the construction of wall SU1074, the activities associated with its use (A 1085 and 1086), its destruction (A 1087), a subsequent phase of use (A 1088), and finally the collapse of the masonry structures (A 1089).

As an example, data from SU 1080 (A 1089), a collapse layer in the northern corner of Area 1000, are presented. This stratum postdates the destruction phase of wall SU 1074 and thus marks an important modification, at least in terms of the function of the area. First, we assess the quantity of material within this SU, which contains a total of 58 fragments **[graph 1a]** and 49 MNE (minimum vessel elements)

[graph 1b]. The fragmentation index is 0.024, indicating that complete vessels broke into a high number of fragments.



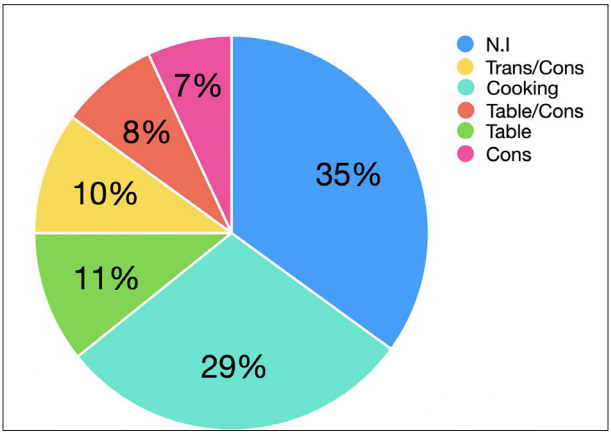
Graphs 1a-b SU 1080: a) total number of the sherds and b) M.N.I.

The small difference between the number of minimum vessel units and the total number of fragments further supports the hypothesis that this deposit corresponds to the destruction and collapse of SU 1074, confirming the loss of its original function. Moreover, diagnostic fragments are scarce, with the exception of an open-form glazed base **[fig. 23]**.

Figure 23
Profile of an open-form glazed base

In terms of material composition, this SU contains a substantial quantity of cooking ware (mostly undecorated, with heavy soot traces) **[fig. 24a]**, tableware (including several glazed fragments) **[fig. 24b]**, and storage and transport ceramics **[graph 2]**. Additionally, red-painted ceramics (likely used for cooking or storage) and a single example of polished red ware were identified. A single, very small fritware fragment with a blue glaze was also recovered. Based on the analysis conducted thus far, this context is tentatively dated to the twelfth–thirteenth century, though this dating will be refined through comparisons with other contexts of the same phase (A 1089).

Figure 24 Cooking ware (on the left) and tableware (on the right) from SU 1080



Graph 2 Chart of primary functional categories in SU 1080

Finally, a few noteworthy finds from the mission included a crucible **[fig. 25]**, not found *in situ* but, when considered alongside other evidence such as ceramic production waste and glass rods (see last year's presentation), further supports the hypothesis of a productive function for this sector of the site. Among this year's inventoried materials, several well-preserved oil lamps were also documented **[fig. 26]**.

Figure 25
Crucible

Figure 26 Oil lamps

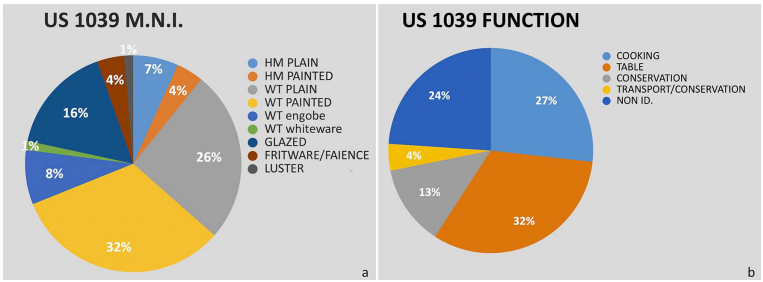
At the end of this part, we would like to present the initial detailed results of the ceramic analysis from A 1097, in order to illustrate the type of work carried out by the Florentine team in the study of the material assemblages. It is worth recalling here that A 1097 refers to a surface level cut by pits containing refuse materials (see Petrosyan et al. 2023, 222, fig. 36).

E.P.

3.4 Pottery Analysis of A 1097

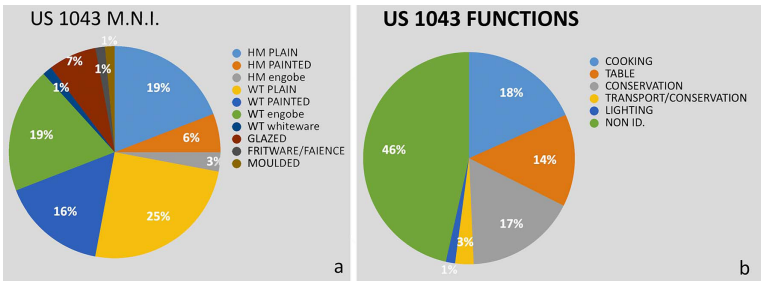
Fill SU 1039 yielded a total of 107 ceramic sherds, from which a Minimum Number of Individuals (MNI) of 71 vessels was identified. These vessels were classified into ceramic categories according to the following MNI-based percentages **[graph 3a]**: lustreware and white ware each accounting for 1%; fritware and handmade red painted ceramics for 4% each; 7% correspond to hand-made plain wares; 8% to wheel-thrown wares with slip; 16% to glazed ceramics; 26% to plain wheel-thrown wares; and 32% to wheel-thrown red-painted wares. In terms of vessel function **[graph 3b]**, the assemblage includes 4% transport vessels, 13% storage vessels, 27% cooking vessels, and 36% tableware. Due to the fragmentary nature of many sherds, the

function of 24% of the assemblage could not be determined. A more detailed analysis of the decorated red wares in this context reveals that 67% belong to the red-painted category and 39% to the red-polished type.



Graph 3 SU 1039: a. chart of M.N.I.; b. chart of primary functional categories

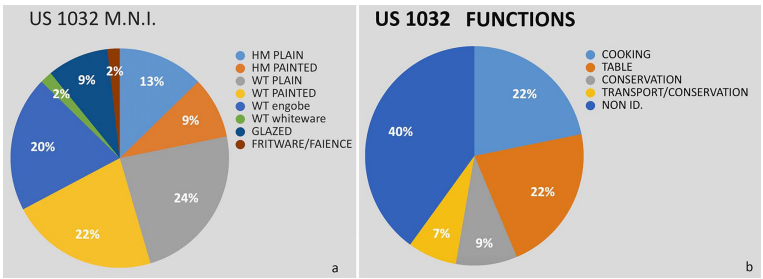
Continuing the analysis of pit fills, attention turns to SU 1043, the fill of cut SU1042. This unit produced 95 sherds, representing an MNI of 66 **[graph 4a]**. The functional breakdown is as follows: 18% cooking vessels, 17% storage, 14% tableware, 3% combined transport–storage, and 1% lighting vessels **[graph 4b]**. Of particular note is the high proportion (46%) of sherds for which no functional classification was possible. This is significant, as it reflects the depositional processes of this fill, which consists of highly fragmented material. Although fragmentation does not impede the identification of technological attributes (e.g., handmade, wheel-thrown, glazed), it does hinder functional interpretation.



Graph 4 SU 1043: a. chart of M.N.I.; b. chart of primary functional categories

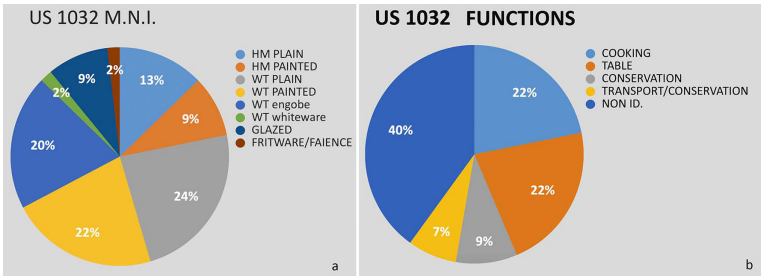
The analysis then considers fill SU 1041, associated with cut SU1040. This unit produced 18 sherds, corresponding to an MNI of 16. While

the small sample size limits the statistical reliability of the data, both class and functional distributions are presented in graph 5.



Graph 5 SU 1041: a. chart of M.N.I.; b. chart of primary functional categories

Lastly, fill SU 1032 from pit SU1031 was examined. This context yielded 78 sherds, corresponding to 49 individual vessels. The distribution of ceramic classes is illustrated in **[graph 6a]**. Functionally, the proportions of vessels related to food preparation (cooking) and consumption (tableware) are roughly equivalent, with the remainder allocated to storage and transport functions. As in other contexts, the high degree of fragmentation prevented the functional identification of a significant portion of the assemblage **[graph 6b]**.



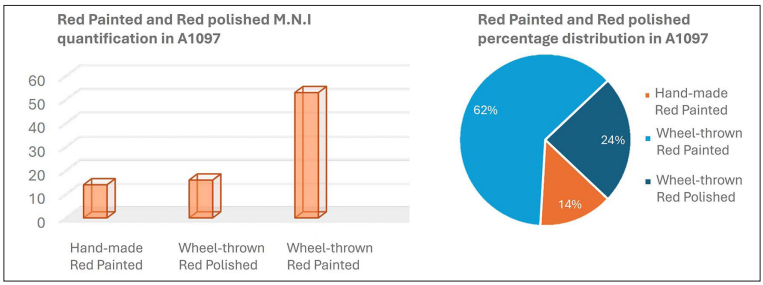
Graph 6 SU 1032: a. chart of M.N.I.; b. chart of primary functional categories

E.P.

3.5 Red Painted and Red Polished in A1097

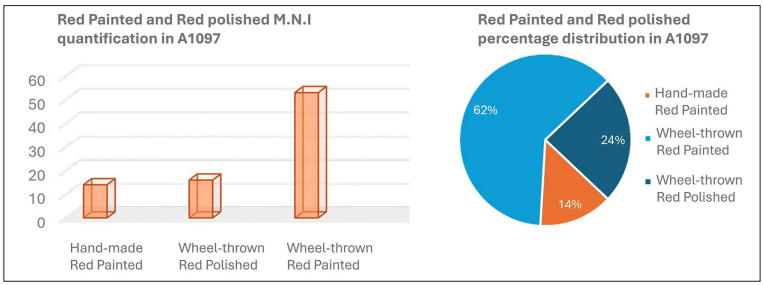
This section presents part of a broader Master's thesis focused on the study of red painted and red polished ceramics found in Area 1000. In A1097, red painted ceramics are represented by 67 sherds, from which 53 minimum vessel forms were identified. The presence of red

polished ceramics is more limited, with 26 sherds and 16 minimum vessel forms. Finally, handmade red painted ceramics are attested by 15 sherds and 14 minimum vessel forms and are characterized by a high degree of fragmentation, which partially hinders their functional interpretation **[graph 7]**.



Graph 7 A1097: Red Painted and Red Polished M.N.I (left) and percentage distribution (right)

The class of wheel-thrown red painted ceramics, despite interpretative challenges due to the fragmentary nature of the material, includes both open and closed forms, generally associated with cooking activities. The preserved wall thickness ranges between 0.5 and 1.05 cm; the fabrics are largely of the 'sandwich' type, with red surfaces on both sides and a grey core. Inclusions are generally frequent, white and black in colour, with rounded and angular shapes. In some cases, the presence of chamotte is observed, indicative of production techniques aimed at enhancing the thermal resistance of the vessels. Decoration is either incised or in relief, with a predominance of linear and 'V'-shaped motifs.



Graph 8 A1097: Red Polished fragment with V-shaped engraved decoration; Red Polished lid fragment (right)

As for the wheel-thrown red polished fragments, both open and closed forms are present (including the identifiable shape of a *karas*),

with storage and tableware functions. Wall thickness ranges from 0.5 to 0.8 cm. The fabrics are mostly semi-purified or purified, with predominant colours being brown and orange. Inclusions are very few, mainly white, small to medium in size, and most commonly quadrangular in shape. All fabrics are hard to the touch, with varying firing control – some fragments show signs of uncontrolled firing, while others are well-fired. These vessels show red paint on both the interior and exterior surfaces, though polishing is mostly external; only one example has internal polishing. Additionally, some fragments are decorated with painted inverted 'V'-shaped motifs **[graph 8a]**.

Wheel-thrown red painted ceramics are primarily associated with cooking functions: this is suggested not only by the predominance of closed forms and the presence of lids **[graph 8b]**, but also by the robust and well-fired fabrics, as well as numerous traces of burning. Regarding surface treatment, red paint is observed internally in one case, and externally in another.

F.M.

3.6 Faunal Remains from Area 1000

During the 2024 archaeological mission, the preliminary analysis of the animal bones found in Area 1000 continued. The cataloguing of bones found in previous years was completed and most of the remains collected during this latest excavation campaign were analysed.

The sample is pertinent to the twelfth-early thirteenth century and thirteenth century (post 1236) phases and came mainly from accumulation and levelling layers. In particular, most of the remains are attributable to the activities A1089 and A1094 for the twelfth-early thirteenth century phase, and the activities A1100 and A1101 for the thirteenth century phase (post 1236).

During cataloguing, the data required for sample analysis were obtained.

For species identification, several comparative anatomy manuals (Pales, Lambert 1971; Schmid 1972; Barone 1976) and specific articles were used to distinguish between sheep and goat (Payne 1985; Halstead, Collins, Isaakidou 2002; Zeder, Lapham 2010). The data from the mandibular wear stage, useful for the determination of the age of death, was recorded according to the criteria of Payne (1973) for domestic caprines and Hambleton (2001) for cattle and pig/wild boar.

Generic age class information derived from the analysis of long bone epiphyseal fusion was collected according to the work of Bullock and Rackham (1982) for domestic caprines and Silver (1969) for cattle. For osteometric data, the method proposed by von den Driesch (1976) was used as a reference, integrating it with the indications

of Salvagno and Albarella (2017) for domestic caprines. In addition, taphonomic processes (slaughter, processing, burning, gnawing marks) and pathological evidence were recorded.

A total of 1597 bones were catalogued during the 2024 campaign, of which 561 (35%) were determined taxonomically and anatomically, 579 (36%) anatomically, and 457 (29%) could not be determined at any level due to the degree of fragmentation that does not allow for certain identification in the absence of a comparative reference collection **[tab. 2]**.

Table 2 Identified animal taxa from Area 1000, 12th-13th centuries

Taxa	12th-early 13th c.	13th c. (post 1236)
Equus sp. (horse/donkey/hybrids)	1	3
Bos taurus L. (cattle)	81	24
Sus sp. (pig/wild boar)	4	3
Ovis aries L. (sheep)	72	13
Capra hircus L. (goat)	16	6
Ovis vel *Capra* (sheep/goat)	260	57
Caprinae	1	-
Canis sp. (dog/wolf)	1	-
Aves	12	5
Pisces	1	1
Total identified bones	449	112
Small/medium vertebra	144	19
Small/medium rib	216	49
Large vertebra	37	12
Large rib	85	17
Unidentified	311	146
Total unidentified bones	793	243

The sample analysed this year consists of both phases almost exclusively of bones from goats, sheep and cattle. To these are added some equids, pigs/wild boars and canids.

In addition to mammals, there are galliform and larger birds, whose specific determination is still in progress, and two large fish vertebrae (diameter 1.5-3 cm).

All anatomical elements of domestic caprines and cattle are represented in both phases while for the other species bones of the head prevail (especially mandibles and isolated teeth). Among bird bones, hindlimb bones predominate, particularly in the later phase.

Data obtained from the analysis of the epiphyses of the long bones of domestic caprines and cattle, indicate that in both phases most livestock were kept alive at least until they reached 3-4 years of age, although some unfused bones show the presence in the sample

of young animals under 1 year of age among domestic caprines and sub-adults (slaughtered around 12-18 months) among cattle. The mandibular sequences, available only for domestic caprines of the twelfth-early thirteenth century phase, confirm this trend and show a higher frequency of culling between 2 and 4 years of age.

Data on the age of death are also available for suids (pig/wild boar). In both phases mandibular sequences show the presence of very young specimens dead by 7 months of age. Sub-adults and adults older than 14 months are absent.

Butchering marks can be traced back to the skinning and removal of meat, the partitioning of bones to obtain smaller pieces suitable for cooking and the division of carcasses into half-carcasses. These traces are visible on vertebrae, generally split in half, in both phases investigated.

The other alterations found on the bone surfaces consist mainly of traces of burning, very frequent in the twelfth-early thirteenth century phase, and gnawing marks poorly attested in both phases.

Pathological evidence is more frequent in the thirteenth century (post 1236) phase. Pathologies in domestic caprines are limited to dental conditions, such as coral-like roots. For the cattle, damage to the short and long bones is more frequent, in particular deformations of the phalanges to varying degrees are attested **[fig. 27]**. In addition, a distal humerus shows deformations of the capitulum and radial fossa possibly due to trauma.

Figure 27
Cattle's 2nd phalanx with pathological disease (SU 1012). Palmar view

The sample did not show many differences between the oldest and most recent phases. In both phases, animal husbandry seemed to have been mainly oriented towards the production of meat, wool and hides in the case of domestic caprines, while cattle were probably

kept longer for agricultural works. Furthermore, the presence of mandibles associated with very young suids suggested that the bones belonged to pigs bred on the site or in its immediate vicinity.

Bird bones and fish vertebrae, which are still being studied, suggest that the diet was also supplemented by these animals.

The only thing that differentiates the two periods is the incidence of pathologies, which are much more frequent in the later phase despite the fact that the sample contained fewer findings.

Inflammatory pathologies of tooth roots in domestic caprines affected 5.5% of isolated teeth in the twelfth-early thirteenth century phase and 35.7% in the later phase.

Similarly, the percentage of cattle phalanges showing more or less severe deformations rose from 5.9% in the oldest phase to 30% in the most recent phase.

In the case of domestic caprines, the increase in this inflammatory pathology (coral-like roots), could be due to a change in feeding due to the use of new pastures or to a change in environmental conditions and therefore vegetation (Chilardi, Viglio 2010).

In the case of cattle, the high incidence of degenerative diseases of the phalanges could be due to the advanced age of the animals or to their intensive use in agricultural work, or more likely to a combination of the two factors perhaps as a result of the cultivation of larger portions of land.

The data obtained would have to be integrated with those obtained during the 2023 campaign to enlarge the sample and confirm or deny the trends identified.

4 Excavations of the Settlement of Tiknuni

Hamlet Petrosyan, Hamazasp Abrahamyan, Francesca Cheli

In the autumn of 2024, the team of the Armenian-Italian Dvin expedition of the IAE NAS RA (Hamlet Petrosyan, Hamazasp Abrahamyan, Francesca Cheli) carried out excavations at the site of the Tiknuni settlement (code: TKN), located east of Getazat village in the Artashat community of the Ararat Province **[fig. 28]**. The excavations were conducted on the western promontory of the settlement and on the hill to the southwest, covering a total area of about 70 square meters.

The Dvin expedition had previously carried out test excavations at the site in 1984 (Žamkoč'yan 1990, 2008). The 2024 archaeological work was preceded by a survey in 2022, which made it possible to identify suitable areas for further excavation.

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In parallel with the 2024 excavations, 3D modeling of the Tiknuni settlement was launched, following the cleaning of preserved walls and the removal of vegetation in the settlement area.

4.1 Introduction

The settlement known as Tiknuni is located 4 km from the archaeological site of Dvin, on the left bank of the Azat River, on one of the natural rocky heights descending from the Yeranos Mountains to the Ararat Valley **[fig. 29]**.

Figure 28 Location of the Tiknuni site in relation to Dvin (by Francesca Cheli)

Figure 29 Tiknuni settlement and the pyramid-shaped hill, view from the north

The historical name of Tiknuni is associated with the founding of Dvin. The fifth-century historian P‘awstos Buzand notes that one of the borders of the forest founded by Khosrov II Kotak was Tiknuni:

> He ordered his general to dig up many young trees, to bring wild oak trees of the forests and plant them in the district of Ayrarat, beginning from the secure royal fortress called Gaṙni and extending to the plain of Mecamor to the hill called Dvin which is on the north side of the great city of Artashat. Thus, they planted oak trees south of the river as far as the Tiknuni palace. (PB 1985, 107f)

In the Grabar (Old Armenian) text of P‘awstos, it was called “յապարանսն տիկնունի” (the lady’s dress; PB 1889, 18; authors’ translation), which the NBHL defined as “ուր իցէ տիկին կամ տիկնայք, որպէս բնակարան թագուհոյ” (where there is a lady or ladies, [it serves] as the queen’s apartment; NBHL 2, 875; authors’ translation). H. Hübschmann considered it “a palace that belongs to the ladies” (1904, 475). There is no other information about Tiknuni in Armenian sources. From Buzand’s description, it can be considered likely that we are referring to some kind of a palace located near Dvin. The unique name of Tiknuni, and the search for its traces by the Dvin expedition, ultimately led to the settlement located on a two-tongued rocky promontory rising about 4 km north of the city being

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called by such a 'romantic' name, although there were no obvious early medieval traces at the site. It was noteworthy that in the tenth century, a fortress built by Muhammad ibn Shaddād, within hearing distance from Dvin, was also identified by A. Ter-Łevondyan (1965, 167) with Tiknuni, although the settlement also had no traces from that time. It should be noted that both reconnaissance surveys and especially excavations had so far revealed exclusively the remains of a settlement from the late thirteenth and fourteenth centuries. Thus, following the tradition of the expedition, we only conditionally call the archaeological site under investigation "Tiknuni". It should also be noted that no traces of defensive structures, walls, or towers have been confirmed in the area of the settlement, so it is difficult to call it a fortress. Moreover, it seems that the settlement, founded under Mongol rule (Žamkoč'yan 2015, 208), hardly needed such protection. This is a remarkable issue that will be possible to elaborate on in further research.

Until the 1980s, the Dvin expedition conducted field surveys in the area of the settlement for years, during which remains of structures were recorded and fragments of pottery and glazed tiles were recorded (K'alant'aryan 1987, 144). Archaeological excavations were first carried out in the area of the Tiknuni settlement in 1984 by the Dvin archaeological expedition. The excavations were conducted by the archaeologist Hayk Yesayan. They covered an area of about 100 square meters. Separate parts of buildings built of burnt bricks, tonirs, semicircular hearths, etc. were uncovered. Fragments of simple and glazed pottery and glass objects, as well as parts of plaster decoration on the walls, were found (K'alant'aryan 2008, pl. XLVIII). Snail pendants and a section of a water pipe were also discovered. The main group of finds consisted of several sub-groups of glazed tiles (Žamkoč'yan 1990; K'alant'aryan 2008, pl. XLV–XLVII). The discovered objects were transferred to the History Museum of Armenia. Some of the glazed tiles were kept at the archaeological base camp of Dvin.

After a long break, in 2022 the Dvin expedition conducted field surveys in the settlement area, which were followed by archaeological work in the reporting year. The goal of the 2024 excavations was to conduct stratigraphic excavations in several separate sections of the settlement area and to clarify the dating of the settlement.

Archaeological work was carried out at the TKN Area 1000 and TKN Area 2000 excavation trenches. A preliminary examination of the discovered finds was conducted at the archaeological base camp of Dvin; they were sorted and recorded. Studies of the finds will continue in June 2025.

H.P., H.A.

4.2 Excavation Process

Considering that one of the objectives of the expedition was to reconstruct the process of abandoning Dvin and settling the nearby hills during Mongol rule – which was also the aim of the stratigraphic excavations in the Lower Fortress – the expedition conducted exploratory excavations in the area of the Tiknuni settlement in autumn 2024 **[fig. 30]**.

Prior to the actual archaeological work, the expedition explored an area of about 5 hectares of the Tiknuni settlement. The archaeological situations on site, the preserved sections, and the trenches dug by treasure hunters were documented. Eight possible excavation trenches of various sizes were identified in the settlement area, which included the most externally preserved archaeological situations.

4.3 TKN Area 2000

Of the eight sections selected for excavations, archaeological work in 2024 focused on one of the preserved walls on the western promontory of the settlement **[fig. 31]**. A 2 × 2-metre square was chosen for the excavation. The aim of the excavations was to gather information about the archaeological contexts using stratigraphic methods.

Figure 30 Location of Tiknuni Excavation Area 2000 (red). Accumulation areas of fired bricks marked in white (by Francesca Cheli)

Figure 31 Tiknuni, Area 2000

Beneath a surface layer, which degraded from the north (where it was thicker, approximately 10 cm) to the south, and was light brown-gray in colour, sandy, and with many roots (SU 2001), extending across the entire area, the site was diagonally divided into two parts by an alignment of irregularly shaped conglomerate stones running NE-SW (MSU 2002). SU 2001 yielded the greatest quantity of material: in addition to bricks (of which only one measurement is preserved), two fragments of architectural tiles (one of which is decorated),[10] two fragments of glazed ceramic, two fragments of unglazed ceramic, and two glass fragments.

After uncovering this alignment, the excavation proceeded simultaneously in the northern and southern portions, which were physically separated by the wall section MSU 2002 **[fig. 32]**.

10 One of the architectural tiles is glazed in a dark colour, tending towards black, while the other features a floral decoration in white and blue on a dark blue background. This decorative motif is present on other architectural tiles found at Tiknuni, dating to the thirteenth-fourteenth centuries (cf. K'alant'aryan 2009, pl. LXX/1; K'alant'aryan 2008, tav. XLVI-XLVII, Babajanyan 2018, 274).

Figure 32 On the left, the excavation area after the removal of SU 2001; on the right, some of the finds recovered from SU 2001

To the north of MSU 2002, beneath the surface layer SU 2001, a layer of natural origin emerged, with a clayey matrix and fine grain, light brown in colour with frequent gravel (SU 2003).[11] This layer covered an accumulation of bricks, mostly located in the eastern half, bound by a friable clay matrix of light brown-gray colour (SU 2005), which in turn rested on a very friable and fine-grained layer of the same colour as the previous one, but characterized by the presence of small and medium-sized stones and gravel (SU 2007), absent in SU 2005. The layer 2007 was thicker toward the east (approximately 20 cm).

The complete absence of finds, the mostly horizontal arrangement of the bricks from SU 2005 (one of which preserved the three dimensions: 19 × 19 × 4 cm), and what appears to be a 'intentional selection' of material (SU 2005 consisting solely of bricks and SU 2007 was made up only of stones) had led us to believe that SU 2005 is not the collapse of a portion of the wall face (possibly the upper part of the wall section SU 2002?), but rather an accumulation of material, possibly even selected (together with the stones from SU 2007), and arranged as the result of human activity **[fig. 32]**.

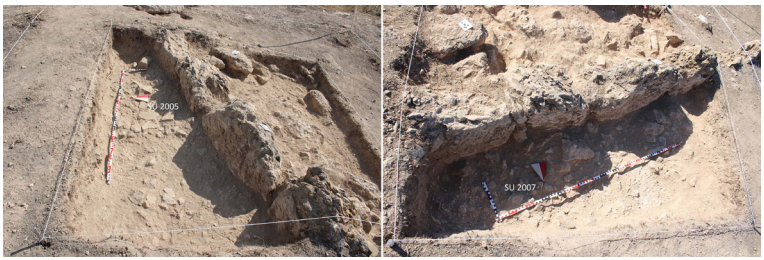

Figure 32 On the left, SU 2005; on the right, SU 2007

11 The layer yielded a small fragment of a decorative tile and a fragment of unglazed ceramic.

At the NW corner, SU 2007 covered a layer with a clayey matrix, light brown-yellow, with a compact horizontal interface, but friable when cut with the trowel (SU 2009). The layer was preserved in a small portion and yielded a glass fragment.

Below this, in the northern portion, there were two layers directly on the bedrock (SU 2014), probably of natural origin. SU 2011 is a whitish layer characterized by the frequent presence of gravel and a whitish matrix, possibly derived from the gravel itself. The layer has a very compact interface and a relatively flat profile, although it features a step in elevation towards the east.[12] Although the compactness of the upper interface might suggest an anthropogenic attempt to level the bedrock, the presence of the change in elevation seems to indicate a natural origin for the layer.

Beneath this, there were areas of brown soil with frequent gravel and small stones, deeper in areas of fractures or depressions in the bedrock (SU 2013).

The bedrock layer, SU 2014, appears to be sedimentary/sandstone, with stratified deposition, and within the interstices of these layers is the natural and sterile layer, SU 2013.

The bedrock layer, SU 2014, descends towards the south and has a change in elevation towards the east **[fig. 33]**.

Figure 33 On the left, SU 2009 and SU 2011; on the right, the bedrock SU 2014 in the northern portion at the end of the excavation

To the south of SU 2002, beneath SU 2001, a series of layers emerged, likely of natural origin, with variable consistency and completely devoid of archaeological material, characterized by varying amounts of stones of different sizes.

12 SU 2011 is located at -34 cm towards the west and -55 cm towards the east.

The first of these, SU 2004, located at the southern limit of the excavation, consisted of a clayey-sandy layer, fairly compact, brown in colour, with small stones and gravel.[13]

Beneath this, there was a friable layer of light brown colour, SU 2006, which covered the destruction interface of the wall section SU 2002 (SU 2015).[14]

The underlying SU 2008 was composed of a more compact clayey layer, light brown-grey in colour, which contained clay clumps (possibly originating from the core of SU 2002) and stones of small, medium, and occasional large sizes.

SU 2008 covered a flat-lying layer with rare large stones, SU 2010, located above a friable clayey layer, brown in colour, SU 2012, which directly covered the bedrock outcrop, SU 2014, with a descending slope from north to south **[fig. 34]**.

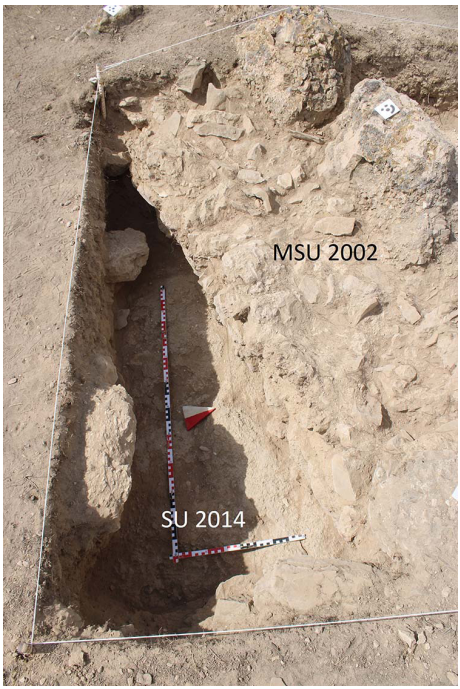

Figure 34
The bedrock SU 2014 in the southern portion at the end of the excavation

13 Within the layer, near the southern section, there was a large conglomerate stone that could only be partially removed. Since it continues into the section, it is unclear whether it is a large stone or part of the bedrock outcrop.

14 With the removal of U to make it SU 2006, the actual width of the wall section became visible, measuring 78-80 cm.

At the end of the excavation, it was possible to fully expose the wall section MSU 2002, of which only a stone alignment was initially visible. This is a wall section with a NE-SW orientation located in the central part of the area, constructed directly on the bedrock.

The northern face consists of a course of large local conglomerate blocks; the outer face was fairly vertical, with the stones arranged horizontally, except for one placed obliquely. The stones do not all have the same height, and the upper profile is irregular. No marks of working tools are visible, which suggests that the stone bed was used for the detachment of the blocks. Additionally, polygonal stone wedges are present both in the joints and in the beds, though those in the joints are larger.

The southern face is made up of smaller, medium-sized stones and shows an outward bulging toward the south. The stone setting on this side was fairly irregular, with at least three courses visible.

The core is rubble, with small and medium-sized stones, and measures 78-80 cm in width. The binder, washed out on the visible faces, appears to be clay **[fig. 35]**. At the end of the archaeological excavation, the trench was covered with geotextile and filled with the excavated soil.

Figure 35 The wall structure MSU 2002. On the left, the north elevation; on the right, the south elevation; at the bottom, a detail of the core

4.4 Discussion of Stratigraphy

The excavation started this year at the Tiknuni hilltop site aimed to investigate, through a small-scale test trench, the archaeological deposit in an area that had not been previously explored.

The Tiknuni site, for which limited documentary information is available, holds significant historical and archaeological value. This is primarily due to the abundance of decorative architectural elements made of glazed tiles, contrasted with a scarcity of both high-quality and common pottery. Additionally, the site features structures that likely existed at the summit, as indicated by visible alignments and substantial brick collapses observed along the hill's slopes.

The location of the test trench was selected based on the indication of a stone alignment, which could be verified, and, more importantly, because it appeared to be in an area not previously investigated.

Although it yielded a small number of archaeological finds, the small test trench provided the opportunity to acquire stratigraphic data, albeit from a very limited area, offering useful information about the wall structure with a NE-SW orientation (MSU 2002) that was uncovered. This structure appears to be built directly on the bedrock (SU 2014) without a foundation trench and is composed of large (on the northern elevation) and small (on the southern elevation) conglomerate stones bound by clay. The wall, approximately 80 cm wide, is not fully visible within the excavation area but appears to be typologically distinct from the other alignments/walls identified during the survey, which seem to be made of sandstone blocks. Although numerous fired bricks collapses are visible on the slopes of the hill, it currently seems unlikely that the brick accumulation (SU 2005, mostly horizontal) can be attributed to the collapse of the elevation of MSU 2002. At the end of the excavation, it was also possible to uncover the bedrock (SU 2014), which descends both from east to west and from north to south (from approximately -35 cm at the northwest to about -60 cm at the southeast from the external walking surface).

At the current stage of the investigation, and given the small quantity of pottery finds, it is difficult to determine the construction period of the structure or the earliest evidence of site occupation. However, the presence of a decorative architectural tile seems to suggest that the area was frequented at least until the thirteenth-fourteenth century.

4.5 Research Perspectives

The excavation conducted provided useful information on the archaeological deposits in an area of the Tiknuni site that had not been previously investigated.

Currently, the site appears quite barren, and with a view to continuing the research, it would be advisable to begin with the removal of low shrubbery. This intervention would allow for photogrammetric survey using a drone, with low-altitude shots of the entire hill, in order to produce an initial topographic plan and identify any recognizable structures.

Additionally, a systematic survey of the site and its surrounding area would be valuable, both to further identify the topographical units visible on the ground and to verify and potentially integrate the structures already identified, thus better guiding future archaeological investigations.

Finally, the continuation of stratigraphic excavations could provide valuable insights into the historical events of the Tiknuni site and allow for data collection on the entire stratigraphic sequence **[figs 36-37]**.

Figure 36 Tiknuni, Area 2000: final plan and Matrix

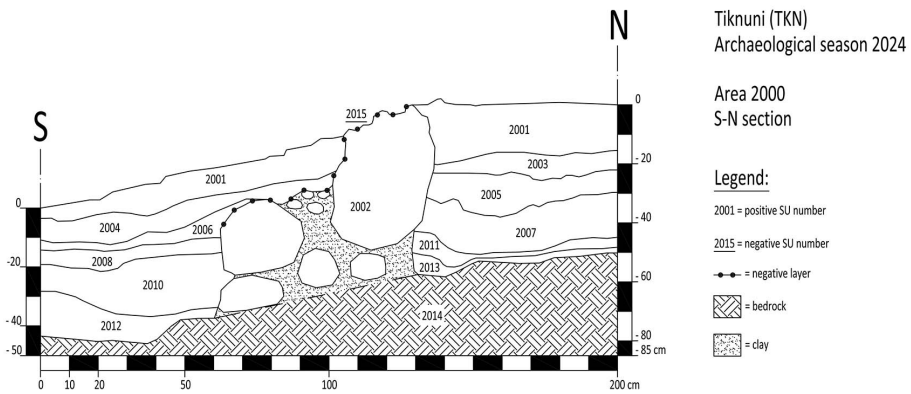

Figure 37 Tiknuni, Area 2000: S-N section

F.C., H.A.

4.6 TKN Area 1000

After the excavations of TKN Area 2000 at the Tiknuni settlement, archaeological work continued on the top of a naturally pyramid-shaped hill located about 400 meters south of the settlement. The top of the hill had been levelled over time. The oval section of the hilltop measured 14 m in width and 26 m in length. The existing unevenness was the result of several holes dug in the area of the tomb, as well as soil removal and refilling. There were also several small treasure-hunting pits, up to 50 cm deep and 1 meter in diameter **[fig. 38]**.

Figure 38 The pyramid-shaped hill located near Tiknuni (on the left) and the top of the pyramid-shaped hill before the excavations (on the right)

In response to a local report of digging activities, test excavations were carried out on the hilltop in 2012. "As a result of the works, a hole about 3.5 m deep was dug in the centre of the hilltop, which opened up and significantly damaged the building made of polished tuff stone. The hole opened from the roof of the building, causing the polished stones of the roof to break and become scattered. The ceiling is decorated with 'stalactite' or *muqarnas* ornaments typical of the period. The entrance to the structure (100 × 70 cm) has been preserved, also lined with polished tuff stone, with the edges processed and curved" (Nalbandyan, unpublished report, 26.10.2012).

Later, the pit on the top of the hill was covered and reopened several times. At the beginning of the excavations, there was a pit 240 cm deep and 270 cm wide on the hilltop. A rectangular slab of curved tuff lay in the pit, clearly part of the stalactite decoration **[fig. 39]**. Similar tuff slab fragments had also been documented in the surrounding gardens, the chapel of Surb David, and the area of the village of Getazat. These traces provided grounds to consider it likely that the remains belong to the prayer hall and burial chamber of the tomb.

Figure 39 A stalactite architectural ornament dug out by the looters

An area measuring 9 × 5 metres was initially chosen for excavation but was reduced to 8 × 5 metres during the work, depending on the size of the structure to be uncovered and the natural rocks exposed. The new excavation site included the large pit dug by treasure hunters and was given the provisional name TKN Area 1000 **[fig. 43]**. The primary objective of the excavation was to carry out rescue work in the part of the structure with the 'stalactite' decorations that

were constantly damaged by treasure hunters, to remove the recently accumulated soil, and to clean and document the architecture and archaeological contexts of the structure. The excavations involved removing soil that had accumulated as a result of earlier activities, which had also been used to backfill previous investigations.

H.P., H.A.

4.7 The Stratigraphic Description

The excavation activities involved the removal of the backfill used to cover the previous investigations.Although the removal of the deposit is still ongoing, the process has already begun to provide insights into both the stratigraphy and the structure emerging from the excavation, despite the scarcity of ceramic finds.

Beneath a friable brown surface layer containing stones, gravel, and fragments of worked and unworked tuff blocks (SU1001), the boundary of a previous excavation intervention (cut SU 1003) was identified. This earlier cut was filled with a loose, brown soil deposit (SU 1004), containing a heterogeneous assemblage of earth, stones, as well as organic materials such as wood and textile fragments. The cut appeared to follow a NW-SE orientation and was concentrated mainly in the central portion of the excavation area.

In the northern corner, the earlier excavation had intersected a very compact, fine-grained, clayey brown layer (SU 1002), which appeared sterile and may be of natural origin, possibly linked to the natural bedrock (SU 1007). In the southern portion of the area, excavation revealed a compact, light brown clayey level (SU 1010).[15] Beneath SU 1010, the remains of a collapse layer (SU 1005) were identified, likely belonging to a large structure (MSU 1006).[16] This building appears to have been constructed by excavating or adapting the sedimentary bedrock or the sterile deposit, which took the form of an underground structure **[fig. 40]**.

15 Along the SW and SE sides of the excavation area, at a depth of approximately -30 cm, accumulations of medium and large, unworked stones were encountered, bound by a very friable and incoherent matrix of mortar and clay. Since the stones rest on a black layer of charcoal with frequent root presence, they may represent material originating from the structure (possibly the core?), but appear to be in secondary deposition, probably due to previous excavations.

16 At the current stage of the investigation, since the building has not yet been fully brought to light, it was decided to assign a single number to the structure, which will hopefully be investigated in detail at the end of the excavation activities.

Figure 40 On the left, overview during the excavation works; on the right, a close-up of a part of the northern wall (MSU 1006) built by excavating into the bedrock (SU 1007)

The building has, on the small visible portions of internal elevations, perfectly squared and smoothed orange tuff ashlars, which do not originate from the same pyramidal outcrop composed of sandstone, and are therefore probably imported from other locations. Although the plan is not yet clearly visible or identifiable, it appears to resemble a Greek cross, probably with a vaulted roof, which is no longer preserved except, partially, at the springing of the vault. The corner spandrels of the impost of the covering preserve traces of muqarnas decoration. These decorative elements are also present in the upper band of the elevation at the springing of the vault, approximately at the depth reached by the excavation.

Although not yet fully visible, some elements suggest that the structure was finely decorated. Among these is a corner ashlar finely engraved with geometric, located to the SE of the excavation area.

The core of the wall is constructed with mostly unworked stones, bound by a fairly tenacious mortar of a whitish-pink colour, with inclusions of gravel and small stones **[fig. 41]**.

Figure 41 Overall view of the NW (on the left), and NE wall and the core at the end of the excavation (on the right)

Excavations were carried out to a depth of 2 meters and were halted with the intention of continuing in 2025. At the excavation site, the walls of the structure – constructed with lime mortar and rough-hewn stones, without polished stones – begin at a depth of 5 cm on the NW side. The uppermost layer of the polished tuff starts at a depth of 90 cm. Currently, up to three rows of stalactite elements are visible **[fig. 42]**.

Figure 42 On the left, a reconstructive hypothesis of the building's plan; on the right, details of the NW side with the muqarnas decoration

The gradually revealed structure is built of smoothed tuff and is cruciform in plan. At this stage, it is difficult to make definitive statements about the above-ground part of the building. The structure had a ceiling decorated with stalactite elements, small portions of which were preserved. The stalactite sections were framed by richly stylized borders, part of which remained in situ, while another fragment was found near the Chapel of Surb David. The core of the walls was filled primarily with unprocessed tuff fragments and lime mortar. Based on its known features, the structure appeared to correspond to the type of Mongol-period tombs known from Yerevan, Khachen, and other locations, built by the master architect Shahik. It appears that we are dealing with a cultural phenomenon characterized by the involvement of Armenian architects and craftsmen in the construction of funerary monuments for new rulers of different faiths.

Following the 2024 archaeological work, measurements and a 3D model of the monument were produced. The excavation site was then covered with geotextile fabric and soil, and the exposed walls were protected with soil-filled bags.

F.C., H.A.

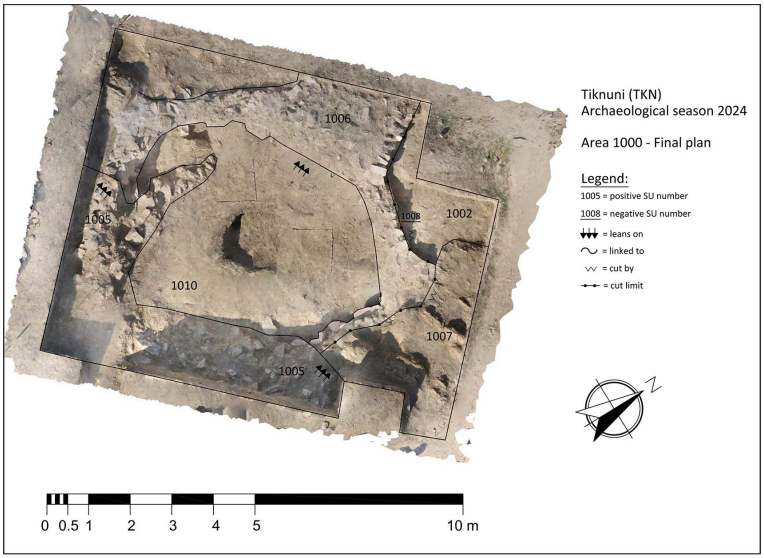

Figure 43 Tiknuni, Area 1000: plan at the end of the 2024 excavation season and preliminary hypothesis of matrix

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