To the Department of Political and Social Science Universita' degli studi di Pavia

The role of the service quarters in palaces in the 3rd millennium BC

The palace of Tupkish at Urkesh as a test case: stratigraphy, typology, and conservation

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Abstract

This study focuses on the role of the service quarter in the Palace of Tupkish at Tell Mozan, through stratigraphic analysis and typological study, considering it as a case study—particularly the kitchen—for an understanding of the logistic and functional dimensions of kingship in the third millennium B.C. It also includes comparative analyses with neighboring sites such as Tell Arbid, Tell Leilan, Tell Beydar, Tell Chuera, and Tell Brak, revealing broader patterns in economic and administrative organization, in addition to the role that palaces played as centers of power and economy.

The study examines the functioning of service quarters, particularly the kitchen, storage, and administrative sectors, and their spatial and functional roles within the palace complex. It also highlights the role played by the archaeological mission regarding conservation efforts, both in terms of preserving the site as an architectural archaeological entity and through digital dissemination via the Urkesh Global Record (UGR) —namely, the assessment of conservation strategies and digital documentation methods employed at Tell Mozan, as well as my role in both processes.

1 Introduction

Palaces represent some of the most prominent architectural and archaeological monuments in cities and kingdoms dating back to the second and third millennium B.C. These structures reflect a level of administrative, political, and economic organization that surpasses any other type of building within these realms. The Palace of Tupkish at Tell Mozan (ancient Urkesh) stands out as one of the most complete and exemplary architectural models, embodying the extent of urban, economic, and administrative development in the region. It also illustrates the significant role played by the Hurrians, the inhabitants of the kingdom, in shaping this development. The palace clearly demonstrates Hurrian influence on palace architecture and function, as evidenced by archaeological and architectural discoveries and the myths associated with them at the site.

The study of service quarters in palaces constitutes one of the main pillars of this dissertation. However, the primary focus here is on the Palace of Urkesh as a case study, through stratigraphic and functional analysis of the kitchen sector in particular, and the service sector in general, including storage rooms and administrative units. This analysis is based on rich archaeological findings such as ceramics, seal impressions, kitchen installations, and the architectural context of the service quarter.

The size and significance of the Urkesh palace prompted a comparative analysis with other neighboring palaces, aiming to identify similarities and differences in internal organization and the functions of service wings, as well as their relation to the administrative and economic

structure of those sites—especially important sites such as Tell Chuera, Tell Beydar, Tell Arbid, Tell Leilan, and Tell Brak.

Site conservation is also addressed in this study. Preservation efforts have not been limited to safeguarding the discovered archaeological remains but have also included digital preservation, initiated from the very beginning of excavations. Notably, I was personally involved in these efforts through my work on-site between 2011 and 2021, in addition to my contribution to the development of a digital book within the Urkesh Global Record (UGR). These experiences have had a direct professional impact on my career as an archaeological researcher.

2 A glimpse at Urkesh (Tell Mozan)

2.1 Geographical background

In the province of Hasakah, located in north-eastern Syria between the Tigris and Euphrates rivers, lies a fertile plain surrounded by three prominent mountain ranges. To the north stand the Anatolian Mountains, while the Abdul Aziz and Sinjar Mountains are located to the south. This region, known as the Khabur River Basin,[1] features numerous north-south flowing water sources in its upper reaches, including Wadis that converge into Wadi el-Radd, a tributary of the Khabur River. From east to west, these water sources include Wadi Awij, Wadi Khanzir, Wadi Jaghjagh, Wadi Jarrah, Wadi Kanzir, and Wadi Rumeilan. The predominantly flat terrain of this area fostered the development of some of the earliest agricultural communities due to its fertile soils and abundant natural resources. Historically, the Khabur Basin served as a vital communication hub along ancient trade routes, which explains the abundance of archaeological sites scattered along its streams.

One such site, is Tell Mozan, located on one of the tributaries of Wadi Khanzir, approximately 84 kilometres north of the city of al-Hasakah and just 5 kilometres from the Turkish border (Fig. 1). Although Wadi Khanzir is barely visible today, the analysis of a declassified Corona satellite image (D025 055 1105-1 FWD), dated November 5, 1968, reveals that during the 1960s, one of its tributaries flowed through the lower town of Tell Mozan and the modern adjacent village.[2]

1 Riehl, 2010, pp. 13-77.

2 Deckers & Riehl, 2007: 343.

Tell Mozan, identified as the ancient city of Urkesh, is situated 5 kilometres east of the city of Amuda in Hasakah province. This settlement was continuously inhabited from the Halaf Period (sixth millennium B.C) until its abandonment around 1300 B.C, coinciding with the Assyrian expansion across Northern Mesopotamia. During the Early and Middle Bronze Ages, Tell Mozan covered an area exceeding 130 hectares, making it one of the largest cities in the region. Its strategic location near Wadi Dara, a tributary of Wadi Khanzir, and south of the Mardin Pass—a natural corridor linking the Anatolian Highlands with the Mesopotamian Lowlands—enhanced its importance. This position provided access to the Tur-Abdin range and the Anatolian Plateau, establishing Urkesh as a critical node within an ancient communication network connecting north and south, as well as the east-west trade routes encircling the Taurus Mountains.

Urkesh served as a central gateway on major trade routes that brought resources from the Anatolian Plateau to the south, including metals, timber, and stone. Its location also offered a favourable climatic niche, characterized by abundant rainfall and a rich water table, which enabled a highly productive system of dry farming.[3] Additionally, Urkesh's position at the northern edge of the Khabur Plains, near the Mardin saddle, likely allowed it to control access to the copper mines of eastern Anatolia and other valuable resources such as obsidian and timber.[4]

Evidence also indicates interactions between Tell Mozan and the Early Transcaucasian cultures of the Anatolian Mountains, which were connected to metal resources and trade networks during the third

3 Buccellati & Kelly-Buccellati, 1997: 5.

4 Akkermans & Swartz, 2003.

millennium B.C.[5] This connection is further supported by the discovery of Early Transcaucasian pottery and Andirons (Fig. 2) at Tell Mozan.[6] The ethnic and cultural ties between the inhabitants of Urkesh and those of the surrounding highlands, combined with its strategic control over the Mardin Pass, enabled Urkesh to persist as an independent city in the ancient Near East. While other settlements in the region disappeared by the end of the third millennium B.C, Urkesh endured, retaining its prominence in the region.

2.2 Historical Background

2.2.1 Initial Excavation Attempts at Tell Mozan

The site of Tell Mozan was first surveyed and partially excavated through the excavating of three trial trenches conducted by the British archaeologist Max Mallowan in 1934. However, Mallowan's expedition at Tell Mozan was brief; after just one week of excavation and study, he reached a conclusion that did not align with the mound's size or the potential it concealed within its layers. He hypothesized that the site had Roman origins—a theory inconsistent with his research interests—which prompted him to shift his focus to excavations at Chagar Bazar.[7]

His wife, the renowned novelist Agatha Christie, described their experience, stating: *"Three tells competed for the honor of our attention: Tell Hamdun, Chagar Bazar, and a third, Tell Mozan. However, Tell Mozan was reluctantly removed from our list. There are several layers of*

5 Kelly-Buccellati, 1990, pp. 117-130.

6 Buccellati & Kelly-Buccellati, 1988: 22.

7 Tell Chagar Bazar is one of the most important archaeological sites dating back to the third millennium B.C. Excavations have also revealed earlier settlement layers dating to the Halaf period (sixth millennium B.C.). The site is located on Wadi Dara, a tributary of the Khabur River, north of the city of Hasakah, approximately 35 kilometers away.

Roman occupation, and although the periods we were interested in lay deeper, excavating them would have required several seasons—beyond the time and financial resources we had available. Today, we head towards our old friend, Chagar Bazar.".[8]

2.2.2 The excavations

In 1948, two small bronze lion statues were sold in the city of Amuda by antiquities dealers (Fig. 3). One of the lions ended up in the Metropolitan Museum of Art in the United States, while the other went to the Louvre Museum in Paris. Accompanying the latter statue was a tablet bearing Hurrian inscriptions that read: "Tish Atal, builder of the temple of Nergal."[9] This inscription played a prominent role in motivating many researchers and enthusiasts to search for this legendary city. Among these researchers were those who came to the city of Amuda, where the archaeological site of "Tell Shermola" is located, believing it to be the source of the inscription.

Giorgio Buccellati and Marilyn Kelly-Buccellati assumed that Tell Shermola was the intended site, but they ruled out this assumption after failing to find evidence linking it to the Hurrians.[10] As a result, they directed their attention to Tell Mozan, where they began excavations in 1984 with the support of the International Institute for Mesopotamian Area Studies (IIMAS).

8 Buccellati & Kelly-Buccellati, 1988.

9 Milano, 1991: 16.

10 Buccellati & Kelly-Buccellati, 1995: 7.

2.2.3 Confirmation of the Urkesh site

In 1995, the expedition announced the discovery of the city of Urkesh at the current site of Tell Mozan, following the finding of a collection of seals belonging to King Tupkish, his wife Uqnitum, and members of his court. Among these seals, one was found bearing the name "Tupkish, *endan* of Urkesh,"[11] where the name Urkesh appeared clearly through an inscription providing a complete reading of the title "*endan*," the name of the figure *"Tupkish"*, and the name Urkesh (*Urkeš*) with the distinctive sign "*kèš*." Tupkish ruled during the height of the Akkadian dynasty, and thus the use of the term "*endan*" reflects a political significance aimed at highlighting Hurrian distinctiveness in the face of Akkadian expansionism.[12]

The site's area in the third millennium B.C reached about 130 hectares, and the mound rose to around 25 meters. It was surrounded by a defensive wall dating to the mid-third millennium B.C, made of mud-brick, with a width of no less than 8 meters and a height reaching 5 meters. The city was inhabited and ruled mainly by the Hurrians.[13]

2.2.4 Archaeological discoveries

Through excavation operations, the expedition arrived at many archaeological discoveries that proved the importance of the Urkesh site and its role in human civilization as the first documented Hurrian urban center from the earliest ages. Pottery sherds dating back to the Halaf culture of the sixth millennium B.C were found, as well as ceramics from the fourth millennium B.C on the temple terrace, considered typical local

11 Ibid.

12 Buccellati & Kelly-Buccellati, 1996: 8.

13 Frahm & Feinberg, 2013: 1868.

production from the Late Chalcolithic period. The ceramic vessels were characterized by their coarse texture with large pebble inclusions, including open bowls, hammer-head bowls, and casseroles. Separately, seal impressions were discovered, decorated with intertwined ribbons or snakes.[14] More than forty seal impressions were also found in the burnt debris outside the city wall in area KW, dating to the Early Dynastic III period.[15]

Among the prominent architectural landmarks discovered at the site was the temple (Fig. 4), dating to around 2400 B.C, which was built on a terrace forming the foundation of an earlier temple dating to 2700 B.C (*see section 2.5*). Among the discoveries as well, the royal palace was uncovered, including its service quarter fully and part of the formal quarter; this palace dates to the reign of Tupkish, around 2250 B.C, a period contemporary with the Akkadian Empire (*see section 3*). Many seal impressions belonging to Tar'am-Agade, daughter of the Akkadian emperor Naram-Sin, were also found. Additionally, the sacred area adjacent to the palace was discovered, consisting of the Abi (*see section 2.4*), a deep underground structure of ideological nature, and the platform known as the *"kaskal kur"*, both dating to around 2400 B.C.

2.2.5 Economy and trade

Urkesh community relied on agriculture[16] and animal husbandry, along with some crafts suited to the geographical nature and environment of the site. The inhabitants of Urkesh practiced trade, farming, and livestock raising, and the city was characterized by an organized

14 Buccellati & Kelly-Buccellati, 2007: 148.

15 Buccellati & Kelly-Buccellati, 1995: 392.

16 Deckers et al., 2010, pp. 159-378.

administrative system managing its economy, overseen either by members of the ruling family or their appointed representatives. This level of organization allowed Urkesh to compete with the cities of southern Mesopotamia in economic administration, enhancing its status as a Hurrian city with active trade, intensive agriculture, and diverse crafts. The kingdom's proximity to the copper mines in Ergani, located in southern Turkey, significantly boosted its wealth, as Mozan derived an important part of its economic resources from copper trade. Thanks to its strategic location as a northern gateway through the Mardin Pass and its central position along the trade route stretching from northern Mesopotamia to the Mediterranean.[17] Mozan controlled metal trade routes, including copper, which was used locally in the production of copper alloy pins and various military tools.

Moreover, Urkesh's geographic position, situated between southern Mesopotamia and northern Anatolia, enhanced its importance as a strategic point and transportation hub. Trade caravans passed through the city, highlighting its vital role as a gateway for economic and commercial exchange in the region. This commercial activity included the transport of materials between north and south, such as timber and metals, including tin and copper, which were key resources contributing to Urkesh's urban development. As a result, Urkesh played an important role as a commercial link connecting north and south, reinforcing its regional standing during that era.

Settlement at the site continued until the Nuzi period,[18] but the city gradually retreated toward the high central mound, shrinking in size to

17 Buccellati & Kelly-Buccellati, 1995, pp. 386-393.

18 The ancient city of Nuzi (present-day Yorghan Tepe), located in northern Iraq, thrived between 1500 and 1350 B.C.

about 30 hectares. Despite this contraction, the city retained its religious significance, even as its political role in the region diminished, until it was abandoned around 1300 B.C.

2.2.6 The political and cultural relations

Urkesh formed the Hurrian urban kingdom alongside Sumer and Akkad. The policy of the Akkadian king Naram-Sin toward Urkesh was characterized by an alliance-based approach,[19] unlike the military occupation he exercised in neighbouring sites such as Nagar (Tell Brak).[20] The presence of Tar'am-Agade, daughter of Naram-Sin, in Urkesh is interpreted within the framework of a dynastic marriage with a local king (*endan*), who is believed to be the successor of King Tupkish.[21] It is also worth noting that Queen Uqnitum was of foreign, perhaps Akkadian, origin, reflecting the reliance of Urkesh's rulers on political marriages as part of their strategy to maintain the kingdom's independence by establishing strong political relations with neighbouring kingdoms.

Before the excavations, Urkesh was known as the first documented city of a dynasty of Hurrian kings during the third millennium B.C. It was also considered a legendary city in Hurrian mythology, serving as the seat of the god Kumarbi. These myths had a significant impact on later Hittite religion, which preserved many Hurrian texts and borrowed specific gods and myths.[22]

19 Mazzoni, 2012.

20 Tell Brak, the ancient city of Nagar, is located in the Khabur Plain in north-eastern Syria and is considered one of the largest archaeological sites in northern Mesopotamia.

21 Buccellati & Kelly-Buccellati, 2001, pp. 63-69.

22 Buccellati & Kelly-Buccellati, 1997, pp. 77–96; Hoffner, 1998, pp. 40-64; Wilhelm, 1989.

The name Urkesh appeared in many old Babylonian and Assyrian records dating between 2000 and 1500 B.C, where historical sources from important cities such as ancient Kahat (modern Tell Barri)[23] pointed to the Hurrian presence in the region since the end of the third millennium B.C,[24] locating it in the Upper Jazira, west of the city of Qamishli.

What distinguished Urkesh was its rejection of any foreign authority ruling over it, meaning that the city's original cohesion—whether cultural, political, or religious—was preserved better compared to most other sites of the same period. This is evident from the letters of Zimri-Lim, king of Mari,[25] to the governors he appointed in Urkesh, namely Terru and Haziran,[26] where the contents of the letters reflect the ruler's anxiety due to the conditions in Urkesh. The letters show that the local inhabitants of Urkesh did not accept the control of these foreign Amorite governors, indicating clear resistance to external influence.

Given this chaotic political situation, it is likely that the urban Hurrian inhabitants of Urkesh were seeking to assert their ethnic identity and ties with the rural populations in the mountains to the north and east by using distinctive Hurrian cultural artifacts.[27]

2.3 The Hurrians in Urkesh

The Hurrians are among the most prominent peoples of the ancient Near East, having deeply contributed to the political and cultural history

23 The site of Kahat (modern Tell Barri) is located on the eastern bank of the Khabur River in Al-Hasakah Governorate, approximately 55 kilometers northeast of the city of Hasakah.

24 Salvini, 1983: 267.

25 The ancient city of Mari is situated on the right bank of the Euphrates River in eastern Syria, specifically in the Tell Hariri area near the Syrian-Iraqi border.

26 Buccellati, 2014: 54.

27 Buccellati & Kelly-Buccellati, 2007: 146.

of the region.[28] They played a key role in the emergence of one of the earliest major patterns of urban civilization some 5,000 years ago; while the Sumerians and Akkadians were building new urban civilizations in the south, the Hurrians were doing the same in the north.[29] The Hurrians entered Mesopotamia and settled in its northern part, establishing their urban sphere along the lower region stretching across the Tur-Abdin mountains, forming what could be called an "urban edge" that surrounded the vast rural spaces in the mountains north of the city of Urkesh, which served as the main center of this Hurrian urban edge.[30]

In the third millennium B.C, Hurrian cities — especially Tell Chuera[31] and Urkesh in northern Syria — lay along this edge, serving as important gateways toward the urban centers in southern Mesopotamia.

Urkesh is considered the only firmly identified Hurrian capital to date,[32] as it is the only city where a known sequence of Hurrian kings from the third millennium B.C has been found. Urkesh was also the main religious center, associated with Hurrian myths, particularly concerning the god Kumarbi, who was a central deity in Hurrian religion and one of the main protagonists of a series of myths transmitted to us by the Hittites conventionally referred to as 'Kumarbi Cycle'. From Urkesh, a seal impression was also found showing the god riding over a mountain range, later described in myths as walking in the mountains, especially in the myth of Silver (*see section 2.5*).[33]

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28 Wilhelm, 1989.

29 Buccellati & Kelly-Buccellati, 2001, pp. 16-27.

30 Buccellati & Kelly-Buccellati, 1997: 93.

31 Tell Chuera is an important archaeological site located in the Upper Jazira region of Syria, in the Raqqa Province.

32 Buccellati & Kelly-Buccellati, 1996, pp. 65-100.

33 Hoffner, 1998, pp. 40-64.

Another inscription comes from Urkesh from the late third millennium B.C, namely the foundation inscription of the temple built by King Tish-Atal, along with numerous inscriptions on the royal seals of King Tupkish, which included references to the Hurrian word *endan* — a non-Sumerian, non-Akkadian title meaning "king," equivalent to the Sumerian logogram LUGAL.[34] A seal impression of the king clearly referred to him as "Tupkish, *endan* of Urkesh," which, alongside the Tish-Atal inscription, constitutes the earliest confirmed evidence of the Hurrian presence and the records of their language.

The Hurrians used cuneiform in their writings, and the Hurrian language was employed for local inscriptions alongside Akkadian. The royal seals clearly displayed the ruling dynasty, represented by King Tupkish and Queen Uqnitum; the king bore a Hurrian name, while the queen bore an Akkadian name meaning "lapis lazuli", indicating she was not of Hurrian origin. Notably, the nurse Zamena and the cook Tuli both carried Hurrian names, reflecting the Hurrian cultural background of these figures in the royal court.[35] They performed particularly important functions, adding a Hurrian dimension to their roles, whether in raising children with Zamena or in preparing food and feasts with Tuli.

The Hurrian presence in Urkesh was not limited to a specific period or to the reign of King Tupkish alone but extended and continued until the Ur III period. This is evident in the names of the kings who succeeded Tupkish, including Shatar-mat, Atal-shen, and Ann-atal, with texts discovered referencing their names, as well as a facility discovered that was owned by a person with a Hurrian name, Pussham.[36]

34 Buccellati, 1999, pp. 229-250.

35 Buccellati & Kelly-Buccellati, 2002, pp. 127-133.

36 Kelly-Buccellati, 2004: 69.

Hurrian influence continued into the mid-second millennium B.C with the rise of the Hurrian-Mittani kingdom, as their myths and deities became known from the Tigris River to the Mediterranean and central Anatolia.

One of the most prominent pieces of evidence of Hurrian ideology and worship rituals in Urkesh is the structure known as the Abi in the Hurrian language, found in the palace area. It is a circular, well-like structure (*see section 2.4*), and the adoption of such a ritualistic tradition was considered among the unique practices and beliefs in Mesopotamia.[37]

2.4 The Abi

Near the palace, a large stone-lined architectural structure was discovered — a circular construction measuring approximately 5 meters in diameter and reaching a depth of 8 meters (Fig. 5). It is important to note that the depth extends even further, reaching levels that date back to the early third millennium B.C. The earliest layers likely correspond to the same period as the temple; however, around 2300 B.C, coinciding with the construction of the Tupkish Palace, a dome was erected over the structure, and it was expanded through the addition of a fore chamber.

Finds uncovered within the structure confirmed that this place is known in the Hurrian language as the Abi — a location where the spirits of the underworld were summoned. This represents a distinctive Hurrian ritual, in which the Abi was considered a passage to the underworld, underscoring its significant ideological importance tied to the Hurrians in the region. It was used by the king and queen during the night or at sunset. Notably, such rituals were not common in other Mesopotamian

37 Buccellati, 2005, pp. 3-28.

cultures, whether Sumerian or Akkadian.[38] Thus, the Abi stands as one of the Hurrian practices that strongly affirms the robust Hurrian identity of the city of Urkesh.

The Abi area consisted of a complex of installations that included, alongside the sacred structure, the sacred area and the platform interpreted as the kuskal-kur to its left — that is, the entrance to the underworld.[39]

Within the Abi, several metal tools such as pins were discovered, along with stone tools, including an obsidian blade and some flint blade fragments. A small vessel in the shape of a nude woman with three legs was also found (fig. 6). The miniature form of the vessel carried on the woman's head suggests that it once contained a specific liquid, possibly aromatic oils.[40]

Additionally, a large number of animal bones were uncovered, offered alongside grains as sacrifices to the gods. Textual sources indicate that the slaughtering of animals took place inside the pits, with the majority of bones belonging to calves and small pigs. Moreover, a substantial number of small dog bones were found, alongside the remains of more than 60 sheep or goats and 20 donkeys.[41]

2.5 The Temple

The temple stands as one of the most prominent monumental archaeological landmarks in Urkesh, dating back to the Late Dynastic period around 2400 B.C. However, its terrace and surrounding stone

38 Buccellati & Kelly-Buccellati, 2007, pp. 141–150.

39 Buccellati & Kelly-Buccellati, 2004: 14.

40 Buccellati, 2014.

41 Kelly-Buccellati, 2002: 136.

walls belong to an earlier phase, approximately 2800 B.C. Thus, it can be asserted that the temple's construction occurred in two main stages: an older phase dating to circa 2800 B.C and a later phase around 2400 B.C. Various locations within the temple, such as the terrace, beneath the ledge leading from the courtyard to the protective wall (fence), and near the staircase, yielded numerous seal impressions alongside large quantities of pottery materials dating back to the 4th millennium B.C, specifically to the Late Chalcolithic periods 3 and 4. This evidence suggests that the third-millennium terrace was built atop an earlier structure.[42]

The temple is distinguished by its elevated position atop the hill, making it the tallest structure in the central area of Urkesh, surpassing other buildings such as the AP Palace and the Abi, underscoring its central importance. The temple covers an estimated area of sixteen meters and consists of a single room constructed on a broad terrace of brick and stone, with a stone ramp leading up to it, in addition to a paved platform and stone foundations. At the center of the temple lies an altar measuring approximately 1.5 by 1 meter. Surrounding the temple's terrace is an oval-shaped wall measuring 25 meters east to west and 75 meters north to south, reaching a height of up to three meters. One of the temple's most notable features is the stone staircase on the southern side, which connects the courtyard to the terrace summit and then to the temple itself, forming an integrated urban complex comprising the temple, the courtyard, and the palace to the west.

The temple's construction on a high terrace likely relates to the local culture of Urkesh, particularly to the principal regional deity Kumarbi, a mythological figure in the Hurrian pantheon associated with

42 Buccellati & Kelly-Buccellati, 2007: 149.

mountainous terrain.[43] This connection is architecturally reinforced by the presence of the Betili pillars—two stones located at the foot of the staircase, one smooth and the other rough (Fig. 7)—as well as the triangular pattern on the oval wall. This pattern is believed to bear symbolic meaning, mimicking the iconic ideogram for the word "mountain" found in Hurrian carvings and reliefs, and is similarly comparable to the corresponding Sumerian logogram KUR in cuneiform script.[44]

Hittite texts discovered at Hattusha, the Hittite capital, reference the god Kumarbi as the deity of justice in Urkesh. The narrative of the orphaned child "Silver" recounts how his peers mocked him for having no father. His mother reassures him: "Oh Silver! The city you ask about I shall describe to you. Your father is Kumarbi, the father of Urkesh. He dwells in Urkesh, where he judges disputes justly for all lands. Your brother is Teshup, king of heaven and earth. Your sister is Šauška, queen of Nineveh. You should fear none of them, for the only god you must fear is Kumarbi, who stirs the enemy lands and wild beasts".[45]

This temple can be classified within the early architectural tradition of ziggurats in Mesopotamia, owing to its height and unique oval shape, which represents the earliest known example of this form in northern Syria and Mesopotamia during the third millennium B.C. The temple remained in use until the mid-second millennium B.C; despite Urkesh's decline in political significance by that time, it retained its status as a prominent religious center in the region.

43 Buccellati, 2016, pp. 35-117.

44 Buccellati, 2010, pp. 87-121.

45 Buccellati & Kelly-Buccellati, 1997: 77.

3 The Palace

3.1 The Historical Significance of the Urkesh Palace and its Components

3.1.1 The historical aspect of the palace

The Urkesh Palace is one of the most prominent archaeological monuments that sheds light on the political, social, and cultural dimensions of Hurrian civilization. The palace holds exceptional significance due to its strategic location, which enhances the understanding of the transformations that occurred in the region during the transition from the Early Bronze Age to the Middle Bronze Age.[46] This makes it a key reference for studying the development of civilizations during this period (Fig. 8).

The palace was built on the lower western slope of Tell Mozan using mud-brick, with stone foundations reaching up to about one meter in height. This building style was common in northern Mesopotamia and Syria during that time. The palace consists of two main structures: the service quarter AK, which has been fully excavated, and the Formal quarter AF, which two sectors H and I have been uncovered so far.

Additionally, the northern part of the palace includes several sections, among them Courtyard F and Sector E, which is believed to have served as a gateway for animals carrying goods into the palace storerooms adjacent to it. Furthermore, Sector G is thought to have functioned as a passage connecting the palace to the kitchen (*see section 4.3.1.3*).

46 Pfälzner, 2017, pp. 163-203.

The palace served as the administrative and governmental center during the reign of King Tupkish, around 2250 B.C, during the Akkadian period. Despite the decline of its primary functional role, the palace continued to be used for a long period. Some seals attributed to Queen Tar'am-Agade, daughter of the Akkadian Emperor Naram-Sin, suggest that the palace remained in use even after Tupkish's reign. Although its royal function diminished, the palace continued to operate for over a century before being abandoned and repurposed as residential settlements in later periods.

The significance of Tupkish's palace is highlighted by its central location within the city, making it part of a large urban complex that includes vital facilities such as the public plaza and the temple terrace (Fig. 9). This spatial overlap reflects the integration of functions between various elements of the urban complex.[47] The Urkesh Palace differs from other regional palaces, such as the palace of Qarni-Lim at Tell Leilan,[48] which was constructed near the city gate. The architectural grandeur of the walls of Urkesh Palace and the variety of its room designs suggest that it was not merely a royal residence but a vital administrative center. This is further supported by the abundance of seals discovered in the service quarter, indicating the palace's role in managing economic and political activities.

These architectural and organizational elements highlight the uniqueness of the Urkesh Palace in comparison to other palaces in the region, such as the one discovered at Tell Brak, where there is a clear

47 Buccellati, 2005: 3.

48 Tell Leilan is located on the left bank of the Jarrah Valley, about 120 km from the city of Hasakah. It is one of the large cities that developed across northern Mesopotamia and western Syria during the 26th century B.C.

distinction in structural and functional design, reflecting the unique social and economic dynamics of each site.

3.1.2 The Wings of the Palace AP

The palace of Tupkish consists of two main wings:

3.1.2.1 The Service Wing AK

The service wing is the only part of the palace that has been fully excavated to date, providing a clear picture of daily life within the palace. This wing is composed of four main sections: the kitchen, the storeroom, the administrative section, and another section that has not been precisely identified due to erosion and weathering of the site, as well as the removal of some stones by the modern inhabitants of the Mozan village who used them in building their homes.

The service wing played a central role in the palace of Tupkish, as it not only served for meeting the daily needs of the royal family but also included political and administrative functions. A group of staff was assigned various duties, including managing agricultural activities, livestock breeding, and conducting trade exchanges with neighbouring regions. These employees worked under the direct supervision of representatives of the royal authority. The seals they used bore royal symbols rather than personal names, reflecting their direct allegiance to the throne. This mechanism is similar to what is known from Mari in the records of the office of Silāmun, where documents clarified that the "servant of the lord" functioned as a mediator and possibly as a supervisor, controlling workflow and distributing wages.[49]

49 Colonna d'Istria, 2014: 181.

In this wing, materials coming from farmers or manufacturing centers were stored before being redistributed according to royal needs. Part of these materials was allocated for immediate consumption by the queen and her courtiers, while the rest was stored for later use on behalf of the king.

These functions are substantiated by the large number of seal impressions found within the wing. Among the notable seals were those of the cook Tuli and the nurse Zamena, reflecting the meticulous organization of daily and administrative activities within the palace.

The service wing consists of four main sections, which will be discussed in detail below.

3.1.2.1.1 Sector A

As previously mentioned, the nature of this sector remains unclear due to the damage it sustained, which resulted from the significant impact of the valley[50] passing along the southern edge of the palace from the east, in addition to the destructive activities carried out by the inhabitants of Mozan village, who used stones from the site to build their homes.

Despite these challenges, it can be hypothesized that this sector served as a complement to Sector B. It is likely that it was designated for receiving incoming goods rather than for storage, given its direct connection to Sector B through room A7. This spatial relationship between the two sectors suggests that Sector A may have played a crucial role in facilitating the flow of materials within the palace, either for storage in Sector B or for the redistribution of goods.

50 This valley was formed as a result of rainwater flowing down from the top of the mound to its base during the winter.

3.1.2.1.2 The Storage (Sector B)

The key characteristic that distinguishes this sector and confirms that it was designated as the palace's warehouse is the large number of seal impressions found, which were used to seal containers within its rooms, particularly in room B1. This sector consists of three main chambers:

3.1.2.1.2.1 Room B1

This room was used for receiving and storing goods. A large number of fragmented seal impressions, exceeding 600, were found on the floor,[51] which were used to seal the containers entering the storage. These seals reflect a high level of organization and precision in the process of receiving and storing materials within the palace, suggesting the existence of a developed administrative system for inventory management.

3.1.2.1.2.2 Room B2

This room is an iwan[52] that leads to another small room inside Sector B, and it also connects to room A7 to the south. It was used as a transitional space or for storing less important materials compared to those stored in the other rooms, indicating a careful functional division within the storage.

3.1.2.1.2.3 Room B3

This room was designated to secure goods of significant importance or those prone to spoilage, as important materials were stored here to protect

51 Buccellati, 1997: 61.

52 The iwan is an architectural element characterized by a rectangular or sometimes square shape, surrounded by three walls, while the fourth side is completely open, usually overlooking an internal courtyard or a large room.

them from climate changes. The design of the room reflects the thickness of its walls, which were intended to provide thermal insulation, ensuring the protection of stored materials from the heat of summer and the cold of winter. In front of this room, 80 seal impressions were found on the floor accumulation, where the seals were rolled over box covers and door coverings.

It is assumed that the function of this room aligns with historical texts related to royal storerooms, such as the É.KIŠIB storerooms, which were used to store important items in boxes, jars, baskets, or bundles sealed behind secured doors.[53]

3.1.2.1.3 The Administrative Quarter (Sector C)

Sector C functions as the administrative quarter within the palace's service wing, a role supported by the discoveries of clay tablets and an archive that might have been located in this sector. This hypothesis is supported by findings at similar sites such as Ebla,[54] where records were found in a room containing shelves.[55] Furthermore, near room C4, clay tablets were discovered detailing individuals and their tasks, such as singers, as well as other subjects related to economic life, such as crop harvesting. These findings confirm the vital administrative and economic role of this sector within the palace (*see section 3.2.1.2.1*).

Sector C consists of an iwan and seven rooms, with the iwan located in room C5, and the other rooms distributed around it. This sector can be described as designated for administrative activities within the palace, based on the discoveries found in various rooms. Below are the details of the rooms within this sector:

53 Buccellati & Kelly-Buccellati, 1996: 5.

54 Ebla is an archaeological site that flourished in north-western Syria in the mid-third millennium BC.

55 Peyronel et al., 2014, pp. 3-36; Tammum et al., 2014-2015.

3.1.2.1.3.1 Room C1

It is likely that this room served as the residence for scribes or an archive room, as a several tablets were found next to the western wall of the room. The large size of the room suggests that this sector might have been used as residential quarters for the scribes, supporting the understanding that the sector had an important administrative role within the palace.

3.1.2.1.3.2 Room C2

This room represents an iwan and contained a rectangular basin and a raised platform beside the basin (Fig. 10). Additionally, a jar was found buried in the ground at one of the alcove's corners.

3.1.2.1.3.3 Room C3

This room functioned as a waiting room, leading to other rooms, particularly room C6. The two rooms were connected by a drainage channel that carried water from room C6 to room C3 and then outside the building, indicating the importance of logistical functions in this sector.

3.1.2.1.3.4 Room C4

In this room, partially burned wood or planks were found within an unburned clay matrix. As no signs of a general fire were found in the room, nor any remnants of the ceiling, it is likely that the wood was leftover from shelves, indicating its use in storing or displaying written materials or other administrative activities. Additionally, an underground drainage channel approximately 20 cm wide was discovered, reflecting advanced hydraulic engineering used in the construction of the palace.[56]

56 Buccellati, 2005: 19.

3.1.2.1.3.5 Room C6

This room was designated as a bathroom, where an installation comprising two baked brick components was discovered: a lined vertical shaft and a drain made of baked bricks, which was covered with stone. The drain extended from room C6 to room C3, then continued southward to the outside of the building, passing through room C2.

3.1.2.1.3.6 Room C7

This room served as a central control room within the service wing.

3.1.2.1.3.7 Room C8

Although no detailed information is available about this room, it can be assumed that it was used for various tasks related to economic and administrative activities.

3.1.2.1.4 The Kitchen (Sector D)

Sector D is characterized by the diversity of its structures, each serving specific functions, which contributes to understanding the importance and vital role of this sector in the palace and the service wing (*see section 4*). Among these structures, room D1 stands out as it contains several features that clearly indicate cooking and food preparation activities, such as a tannur, a hearth, and platforms. These elements show that the room was primarily used for food preparation,[57] reflecting its fundamental role as the kitchen of the palace, one of the most important facilities to meet the palace's food requirements.

As for room D2, it served as an iwan that connected sector D to other sectors located to the south, through room C7. This room

57 Ellison, 1978.

functioned as a transitional space or corridor to access other areas of the palace, facilitating the movement of people and food materials between different parts of the service wing. This design reflects the well-planned architectural layout of the palace.

Regarding room D3, the room's design and layout share similarities with room B3 (*see section 4.1.1.1.3*), suggesting that it was used to store important perishable food or drink items. This hypothesis is reinforced by the possibility that the room was dedicated to securing the palace's essential supplies, such as wine or other foodstuffs that required special storage conditions.

3.1.2.2 The Formal Wing AF

The Formal wing has been exposed only partially, revealing a limited number of rooms. Among the prominent sectors discovered in this wing are the following.

3.1.2.2.1 Sector H

This sector includes a set of important rooms, some of which feature unique architectural characteristics, reflecting the significant official role of this wing in the palace.

3.1.2.2.1.1 Court H3

Court H3 is one of the distinguishing elements of this sector, as it is a stone-paved courtyard containing a large hydraulic installation made of fired bricks beneath the floor. This court serves as a link between the formal wing and the service wing, separated by a strong wall extending from north to south between rooms (C1) and the court (H3).[58] Despite

58 Buccellati, 2016.

some damage caused by excavations conducted in later periods of the region's history, particularly during the Khabur periods, this court remains a prominent architectural feature of the palace design.

3.1.2.2.1.2 Room H1

This room is distinguished by the plastering of one of its walls with white plaster, indicating its importance in both the architectural and artistic context within the formal wing.

3.1.2.2.1.3 Rooms H4 and H6

These two rooms are connected via a wide opening, defined by a threshold in room H6, which is about 10 cm higher than the floor of room H4. This opening reflects an open and flexible design style in the interior layout. Room H6 features a well-preserved floor made of beautiful mud-bricks, although there is no sign of plastering on it.

3.1.2.2.1.4 Room H2

Room H2 is another part of the group of rooms in Sector H, where seals belonging to the daughter of Naram-Sin, Queen Tar'am-Agade, were found, along with two other officials, Ewrim-Atal[59] and Ishar-Bēli.[60]

3.1.2.2.2 Sector I

Sector I is another area that is believed to have served as a point of access between the plaza and the palace or vice versa. This sector consists of three small rooms.

Among the most important discoveries related to Sector I is the tablet found on the floor of room (H4), which contains an architectural

59 Buccellati & Kelly-Buccellati, 2001: 64.

60 Buccellati, 2016, pp. 35-117.

plan for Sector I (Fig. 11). However, this plan remains undetailed and does not provide precise information about the architecture or construction; rather, it appears to be a general architectural sketch reflecting the basic lines of the planned spaces and walls. This tablet points to the planning efforts of the overseers or engineers responsible for designing this part of the palace and stands as a tangible relic of the architectural practices of ancient engineers and officials in charge of building the palace.

3.2 The Function and Importance of the Palace in Relation to the Site as a Whole

The palace in Urkesh played a central role as a hub for managing livestock and vast agricultural fields, as well as overseeing administrative matters and trade exchanges both within and beyond the kingdom.

3.2.1 Functional Evidence in the Palace AP

3.2.1.1 Evidence from Sector B

Archaeological evidence points to the significant economic role played by Urkesh during the third millennium B.C, particularly through the royal palace, and specifically the service wing and sector B. This sector contains strong evidence highlighting its use as a center for the storage of foodstuffs and goods, as seen in the large jars discovered, along with a significant quantity of clay seal impressions. These seals were used to stamp the jars and the doors of the storage rooms, demonstrating the presence of large storage with a distribution function in the city.

Similar to the city of Mari, where storage rooms were integrated into the palace as a symbol of the kingdom's power and wealth, these storage areas were identified through their distinctive architecture and the seal impressions found on the doors.[61] The use of seals by officials working on behalf of the ruling authority reflects the economic prosperity of Urkesh and the scale of its royal administration, as economic management required the involvement of many employees and servants.

Within this sector, clay seal impressions were discovered that document its economic function, including a variety of texts and economic documents. Hundreds of clay figurines representing animals and humans were also found, supporting the economic and agricultural nature of the establishment. The animal figurines included cows, sheep, goats, dogs, leopards, and horses. Clear evidence of domestication was found, such as ropes and harnesses visible on the horse figurines, where the front legs are securely fixed, the long neck is shown, along with the genitalia and mane.

Additionally, the prominent motifs on Urkesh seals reflected the domestication process, highlighting features of animals such as sheep and goats, including their reproductive organs.[62] The realistic depictions of pigs, especially on the seals of the queen, indicate their hybridization as a local domesticated species. This extensive use of inscriptions and realistic portrayals of animals supports the role of Urkesh as an active economic center and underscores the significance of sector B as part of the advanced administrative and organizational system of the time.

61 Margueron, 2014: 119.

62 Hauser, 1998, pp. 63-74.

3.2.1.2 Administrative Evidence

3.2.1.2.1 Tablet A10.377

Tablet A10.377 was discovered in Room C4 within the service wing of the royal palace in Urkesh (Fig. 12). Written in Akkadian, the tablet contains nine lines on its front side, while the back side is blank. The text features a list of individuals' names, as mentioned in the first line, alongside references to their professions, such as singers, as well as agricultural economic activities, most notably harvesting, as stated in line seven.

The text includes the preposition *a-na* in lines 4, 5, and 6, which means "to" or "toward." In line 5, the phrase *a-na PA.TE-si* appears, which in Akkadian means "to the governor." This likely refers to a governor associated with the administration of Urkesh, who may have been subordinate to a higher authority, such as Tupkish. This highlights the palace's role as an administrative and political center.

In the first line, the Sumerian term DUMU, meaning "son," appears and is believed to denote a category of individuals, such as singers, who were assigned specific tasks or were associated with certain figures, as mentioned in the second line (x-tim.KI). Furthermore, line seven features the term GUR,, eṣēdum, which means "harvest," indicating the significance of agricultural activities and their supervision as a central component of Urkesh's economic system.[63]

The tablet reflects a diverse range of topics from the management of individuals and professions to economic aspects tied to agricultural production. This underscores that the service wing of the palace

63 Buccellati, 2005: 21.

functioned as a hub for resource management and the organization of daily activities.

The tablet clearly demonstrates Urkesh's role as an advanced administrative system where seals and documentary texts were integral to the management of the city's affairs and economy. It serves as a notable piece of evidence for the flourishing administrative and economic activities overseen by the palace, reaffirming its central role in the daily life of the city.

3.2.1.2.2 Tablet A10.163

Tablet A10.163 (Fig. 13) is a significant clay tablet and one of the earliest epigraphic discoveries in Sector C of the service quarter in the palace. It was found near the platform in Room C2 and represents the upper left corner of an administrative text recording a quantity of copper. The tablet dates back to the Akkadian period and is characterized by having the administrative text inscribed on its front, while the reverse side is blank.[64]

This tablet plays a crucial role in determining the construction date of the palace, providing clear archaeological evidence that links the administrative activities within the palace to the Akkadian period. It also highlights the presence of scribal workshops within the palace, indicating the palace's role as an integrated administrative establishment where official documents and texts were prepared.

The tablet serves as a testament to the advanced administrative organization of Urkesh and underscores the functional importance of the

64 Buccellati & Kelly-Buccellati, 2000, pp. 133-183.

palace in overseeing economic and administrative activities, particularly in recording and documenting resources such as copper.

3.2.1.3 Agricultural Evidence

The geographical location of Urkesh significantly contributed to the growth and prosperity of agricultural activities. The city benefited from its proximity to the Tur-Abdin Mountains, which provided abundant water from melting snow flowing southward toward the plains surrounding the city. This ample water supply facilitated the irrigation of fields and ensured the continuity of agricultural activity.

Moreover, the region experienced sufficient annual rainfall, further enhancing Urkesh's agricultural economy. The area lies within the geographic threshold known as the "420 mm line,"[65] which denotes the amount of seasonal rainfall the region receives, particularly during winter. Even in the present day, the border strip between Syria and Turkey is characterized by higher rainfall compared to neighbouring areas, making it a key factor in supporting agriculture.

This line is locally referred to as the "First Stability Zone," a geographic and climatic term that designates a region in north-eastern Syria near the Turkish border. This zone is distinguished by its higher rainfall levels, making it an ideal environment for agricultural activities both in the past and the present.

This climatic advantage directly contributed to Urkesh's agricultural and economic prosperity. It provided the foundation for establishing a robust agricultural economy that sustained the city's population and solidified its position as an agricultural hub in the region.

65 Deckers et al., 2010: 159.

3.2.1.3.1 Tablet A7.314

Tablet A7.314 (Fig. 14) was discovered on the floor of the presumed entrance to the royal palace in Urkesh.[66] This tablet is an important document that highlights the economic and administrative role of the palace in organizing agriculture and animal husbandry, which were the primary food sources for the city as well as central pillars of its economy and wealth.

The text inscribed on the tablet refers to agricultural lands and the commercial tax imposed on three parcels of land located in the countryside, to the left of the city. It also addresses the concept of an "irrigation tax in exchange for livestock," specifically sheep, reinforcing the idea of an advanced administrative system for documenting agricultural quotas and regulating tax collection.

The tablet demonstrates that the palace oversaw agricultural production, underscoring that all economic activities were under its administration. These activities included levying taxes, distributing land, and issuing legal decisions related to land use. The text further suggests that the imposition of the "irrigation tax in exchange for livestock" might be evidence of a shift toward irrigated agriculture in Urkesh during a particular period, likely as a response to the increasing drought that began affecting the region in the late third millennium B.C.

Archaeological evidence supports this hypothesis, with plant remains indicating a significant decline in rainfall levels around 2200 B.C.[67] This transition underscores how Urkesh adapted to climate change by relying on irrigation systems to maintain agricultural production.

66 Maiocchi, 2011, pp. 191-203.

67 Frahm & Feinberg, 2013, pp. 1122-1135.

This organized agricultural system reflects the strength of the palace in managing economic resources and illustrates its pivotal role in sustaining Urkesh's stability and development during periods of environmental and economic challenges.

3.2.1.3.2 Seal Impression A6.121

Seal impression A6.121 (https://urkesh.org/MZ/A/A06/D/I/0121.htm), was discovered in the kitchen (Fig. 15). The depiction features a frontal-facing standing figure, showing the upper part of her body. The figure appears to wear a belt and may have a bracelet on her left arm. The extension of the belt suggests that the figure might be positioned behind a deity, with her hands clasped at her waist, possibly holding an object. Next to this figure is another partially preserved figure dressed in a decorated garment with a belt and an ornate skirt. This figure extends her arms, holding a long, cone-shaped goblet with a broad base. The arms are stretched out directly toward the deity, who is oriented to the right. Below this figure is a vase or bucket containing what appears to be small plants in pots.

The deity in the scene is a bearded figure facing left. He wears a pleated skirt, with his upper body exposed. Only part of his head is preserved, but he is depicted holding stems of tall, straight plants, possibly stalks of grain (such as stalks of wheat) or vegetation symbolizing agricultural abundance.

This seal impression can be interpreted through two possible lenses: The first interpretation is economic, suggesting the scene represents an exchange, such as paying a tax or offering to the deity to seek blessings for crops. The second is symbolic and ritualistic, highlighting the interaction between human and divine figures in

agricultural or fertility-related ceremonies. The inclusion of a vase or bucket with plants underscores the connection of the scene to nature and agriculture, reflecting the intertwined economic, religious, and agricultural practices in Urkesh society.

3.2.1.3.3 Seal Impression A6.97

Seal impression A6.97 (https://urkesh.org/MZ/A/A06/D/I/0097.htm) was discovered in the kitchen (Fig. 16), stamped on a jar. This impression represents wheat stalks and the god of grain, indicating that the jar likely contained grains or another agricultural product. The depiction of the grain deity shows stalks of wheat emerging from the lower part of his garment, reflecting his direct association with agriculture and fertility. The deity is portrayed seated, facing left, wearing a multi-layered long robe, with his feet resting on a decorated platform.

The seal's cap features a deep engraving in the form of an "X"-shaped design. This was visible when the seal was extracted while the ground was still damp but disappeared once it dried. Additionally, the impression of the seal cap on its edges was clear, suggesting it had been pressed firmly during use.

The representation of the grain deity in this seal serves as a symbol of fertility and growth, closely tied to agriculture. The depiction of wheat stalks as part of the deity's clothing underscores the abundance of agricultural yields, particularly wheat, symbolizing agricultural prosperity.

Studies of archaeological plant remains collected from Tell Mozan indicate a significantly higher use and cultivation of wheat compared to barley during the third millennium B.C. This suggests that the region

benefited from favourable agricultural conditions, as wheat requires more water and can only be harvested in stable moisture conditions. Further analysis of wood samples from Tell Mozan revealed that the surrounding area consisted of open plains with a relatively large variety of plant species indicating abundant moisture. These findings support the hypothesis of a suitable agricultural environment for wheat cultivation.[68]

3.2.1.4 Pastoral Evidence

The breeding of sheep and goats played a vital role in the economy of northern Mesopotamia from the mid-third millennium B.C. Among the domesticated animals were cattle, goats, and sheep, which were utilized for milk, meat, wool, and hides.[69] Cattle, alongside donkeys, were also used for agricultural labor and transport. The economic returns primarily relied on four types of animals: cattle, sheep, goats, and pigs, with sheep and goats being notably more prominent in this regard.

The location of Urkesh in the plains facilitated pastoralism, which is reflected in the animal figurines discovered within the city, highlighting the role of livestock in the kingdom's economy. In the service wing of the palace, a large number of animal figurines were found, some fragmented and others intact. These figurines were classified into various species, including sheep, cattle, goats, dogs, horses, gazelles, and pigs, indicating the importance of livestock farming in the prosperity of the local economy. Organized pastoral production strategies were crucial in helping Urkesh endure and maintain strength during the droughts that affected the region in the late third millennium B.C.

68 Koliński, 2011: 205.

69 Ellison, 1978: 38.

It is worth noting that many horse figurines were found in the service wing, indicating the significant role horses played in the society of Urkesh. These horses were used for pulling chariots and in transport, reflecting the local use of horses in the community. This is considered a unique marker of the importance of horses in the region.

3.2.1.4.1 Seal Impression from K1

The scenes depicted on one of seals from the formal wing AF, found in the palace, reflect the role of textiles in the development of the royal economy. In one seal belonging to the king (Fig. 17), two female servants are shown, one of whom is likely holding a ball of wool or thread in her extended palm. To the left of the seal, a table and a seated figure, possibly the king, appear.[70]

The hat of one of the characters and the shape of the table leg can be compared to an unengraved Urkesh seal from the same layer. This wool ball symbolizes the pastoral and industrial role in Urkesh, representing part of the kingdom’s economic wealth. Given that these symbols appeared in royal inscriptions, it is likely that textile production was confined to the royal palace, indicating that the palace played a significant role in the economic activity and managed livestock herds under the supervision of slaves.[71]

The palace's role in textile production parallels that of contemporary sites such as Ebla (Tell Mardikh), where the role of textiles in wealth accumulation was well known. Additionally, there are seal impressions that highlight aspects of the wool economy in Mari texts, emphasizing the role of women in wool processing by focusing on their

70 Buccellati & Kelly-Buccellati, 1996, pp. 72-76.

71 Wilhelm, 1989.

wages. Some texts from Mari also link musicians with the management of wool processing in the royal palace, associating wool with the production of textile goods received by a female musician.[72]

3.2.1.4.2 Seal Impression A5q680.1

This seal depicts a human figure facing to the right (Fig. 18), extending its arm towards the animals in the scene. The animals include three sheep and a dog with its mouth open, displaying an expression of surprise as it looks upward towards an eagle, of which only part of the tail and one wing are visible. Below the eagle, part of another bird's wing can be identified.[73]

Despite the mythical and dramatic nature of the scene, it clearly symbolizes the life of herding and guarding. The dog accompanying the flock plays a significant role in its protection, as herders relied on dogs to safeguard their herds, particularly against predators or theft. This seal also reflects the domestication process in Urkesh, both of the sheep and the dogs, with the human figure representing the shepherd and the sheep symbolizing the livestock. Studies of animal bones and seal engravings suggest that wild mountain animals were present in Urkesh, making it unlikely that they retained their wild nature.

This seal provides additional evidence that herding was a fundamental part of Urkesh society and had a strong influence on the economic structure of the kingdom.

72 Colonna d'Istria, 2014: 179-180.

73 Kelly-Buccellati, 2006: 404.

3.2.1.5 Industrial and Commercial Evidence

The seal impression A1.364[74] presents a scene depicting a phase in pottery production (Fig. 19), featuring a double-register design. In the upper register, resembling a shelf, two jars are placed on pottery stands, while the lower register shows a woman working on a jar placed on an open stand. Behind the scene, a standing figure wearing a soft hat and an embellished garment suggests the importance of organization and specialization in industry. This image affirms the high craftsmanship and industrial specialization of the period, serving as evidence of industrial development in Urkesh.

Furthermore, the early Transcaucasian pottery discovered in Mozan, with its polished gray and black surface, and occasionally red, stands as one of the most significant artifacts of evidence for trade relations between Mozan and the north.[75] Additional evidence points to the importation of copper and tin, which were essential resources, highlighting Mozan's role as a commercial hub between the north and south. Obsidian, a raw material imported from Anatolia, was also found in the service wing (Fig. 20), providing strong proof of trade links between the two regions. Obsidian debris, such as blades and flakes, was used in handcrafts, particularly in textile production, showcasing the artisans' skill in the city.

Moreover, Urkesh served as a major supplier of raw materials from the north to neighbouring areas. Due to the lack of evidence for a thriving metal industry in the Eastern Anatolian Highlands, it can be inferred that metal tool manufacturing was widely conducted in the lowlands,[76]

74 Buccellati & Kelly-Buccellati, 1996, pp. 1-32.

75 Kelly-Buccellati, 1990, pp. 119-132.

76 Kelly-Buccellati, 1990: 122.

particularly in large cities like Tell Mozan, which offered milder living conditions compared to the mountainous regions.

This economic diversity, combining agriculture and trade, provided a solid foundation for Urkesh’s prosperity. Trade and industry played a pivotal role in boosting the city's economic power, even during periods when neighbouring kingdoms experienced decline due to climate change and its adverse effects on agriculture or other reasons leading to the abandonment of many kingdoms in the region, such as Leilan.[77] Urkesh's resilience against waves of drought reflects its reliance on a robust trade network, along with a self-sufficient industrial system, which required skilled labor and experienced artisans. This combination of industrial and commercial efficiency resulted in an economic strength that enabled Mozan to maintain stability and prosperity in the plains of northern Syria-Mesopotamia.

77 Arrivabeni, 2012, pp. 261-278.

4 The kitchen area

4.1 The spatial limits and the occupation phases of the unit A6

4.1.1 The spatial limits of A6

The excavation of unit A6 began in 1992. Unit A6 is situated entirely in the northeast corner of the service quarter of AP Palace and extends southwestward with a narrower width from north to south. The area of the unit is approximately 94.4 square meters. Unit A6 adjoins unit A1 to the west and unit A10 to the east. To the north, it shares a common wall with unit A9, facilitating access to both A6 and A1. Furthermore, unit A6 shares its stratigraphy with sector A8 in the southeast corner (unit G). Unit A6 can be divided into two main sections:

4.1.1.1 The Northern section

This section consists of three rooms:

4.1.1.1.1 The Room D1

It is the largest room in Sector D, serving as a cooking area and containing a tannur https://urkesh.org/MZ/A/A06/D/F/0356.htm and a cooking stove (hearth) https://urkesh.org/MZ/A/A06/D/F/0376.htm in the center of the room.[78] Room D1 shares a wall with Sector G in the formal Suite to the east, rising about 2.5 meters. To the north, it connects through a doorway to Sector F1 in unit A9, which was a courtyard with a pebble floor. The room mirrors room B1, albeit B1 appears slightly larger due to the functional nature of Sector B within the service quarter, serving as storage for important goods belonging to the royal family.

78 Buccellati, 1998: 12.

4.1.1.1.2 The Room D2

It is an iwan that connects room D1 through a large door with room D3, and mirrors room B2 in the west, but it is slightly smaller than it.

4.1.1.1.3 The Room D3

It is known as the closet where many seal impressions of the king, the queen, and their courtiers were found in its accumulations. It also mirrors Room B3 in the west, sharing the same area, as the area of the two rooms is 2.9 square meters. On the other hand, this room is characterized by thick walls.

4.1.1.2 The Southern section

This section consists of two rooms:

4.1.1.2.1 Room C7

It is a nodal room with three doors and is too small to allow any activity other than the possibility of housing a controller.

4.1.1.2.2 Room C6

It is a small room with a toilet and a small channel for water to flow from the doorway between C6 and the antechamber C3 towards the main drainage network that comes from the north and then to the outside of the building.

4.1.2 The occupation phases of A6

4.1.2.1 The Northern section (The kitchen)

The excavations in Unit A6 reflect a rich and diverse history spanning several centuries. The archaeological analysis conducted during excavation seasons indicates that Unit A6 underwent multiple stages of history, suggesting a continuity of activity over time. Discoveries indicate

the presence of remains and artifacts dating back to the Akkadian period, when its functional use was clearly well defined as part of a larger structure, the palace of Tupkish. Occupation of the area continued until the Khabur period.[79] Additionally, excavations also show indications of activity in Unit A6 during the Early Dynastic period, reaffirming its significant role in the region over the ages.

4.1.2.1.1 The Early Dynastic III or Pre-Palace period (Phase I)

It is clear that there are earlier layers beneath the structure of the service quarter, as excavations show that there is substantial deposition below the Akkadian levels and that the pre-palace surface slopes sharply to the southwest. This suggests that significant leveling occurred during the pre-palace period. Such leveling is typical in palace construction processes. For example, in the Naram-Sin Palace at Tell Brak, a portion of the palace's foundation was built on the remains of the Eye Temple, while the majority was constructed atop the remains of a large building dating back to the Early Dynastic III period after the leveling of its walls.[80]

Small-scale excavations below the Akkadian levels were conducted in Unit A6, specifically in Room D2, where a deep sounding has been conducted to determine the chronological sequence preceding the palace.

These excavations led to the discovery of a compact deposit beneath the negative wall trace and also yielded the first floor associated with the stone walls in Unit A1. This deposit was not fundamentally part of the palace but belonged to the pre-palace level. This sounding constituted the only excavation that reached levels predating the palace's

79 Pfälzner, 2017, pp. 163-203.

80 Oates, 1977, pp. 233- 244.

construction, in addition to some excavations discovered in the formal quarter, specifically in Unit A16, where several seal impressions dating back to the Early Dynastic III period were found nearby.

4.1.2.1.2 The Akkadian period (Phase II)

The archaeological excavations in Unit A6 yielded numerous artifacts dating back to the Akkadian period, known as a prosperous era at the site of Urkesh, evident in the construction of both its service and formal quarters of the palace. Our conclusion is drawn from the size and use of mud-brick walls with stone foundations, as several walls forming an integral part of the service quarter were discovered. The uniformity in color and size of the mud-bricks, along with a gypsum-coated platform, as well as the presence of a tannur and hearth in Room D1, along with a drainage system extending from the north through Room D1 to the south, underscore the significance of this unit as an intriguing sector within the royal palace.

Furthermore, the accumulations in Unit A6 yielded a vast quantity of seal impressions and cylinder seals, alongside a similar percentage of a stone “stamp” seal (A1.406, A1.221 and A1.455) exclusively associated with King Tupkish, his wife Uqnitum, and their courtiers in Room D3. Akkadian-style jars and bowls were also found, identified through their type of chaff-tempered ware. At this phase, we can safely identify the unit in the northern part as a kitchen through the discovered installations and three well-preserved rooms.

4.1.2.1.3 The non-residential use of the palace (Phase III)

The area continued to be used for royal administration purposes, but it ceased to serve as the residence of the royal family. The evidence

within the service quarter building predominantly derives from the seal impressions attributed to Queen Tar'am-Agade and her courtiers. The nature of the accumulations in Unit A6 varies from phase to phase.

Notably, there is often a deposited shift of contents of the accumulations between phases, where deposits associated with the current phase typically are deposited atop those from the previous phase. For instance, a seal impression discovered in a deposit belonging to this phase was found above an accumulation containing a conical cup from the preceding phase in Room D1. This pattern is consistent not only within this unit but also across other units of the palace, particularly concerning seal impressions.

Accumulations corresponding to the previous phase are consistently and exclusively associated with seal impressions belonging to Tupkish and his courtiers while those deposited above are linked to seal impressions of other royal figures, primarily Tar'am-Agade.[81]

There have also been architectural modifications, including the construction of new walls over existing ones from the preceding phase.

These walls, termed "secondary," are characterized by gray mud-bricks erected over the original red bricks, which defined the construction method of the palace walls during Settlement Phase 2. This indicates that these secondary walls were erected atop the original walls of the AK building.

Moreover, it is notable that the tannur located in the center of Room D1 was neglected during this phase. Inside the tannur, remains of shards, bones, and a layer of ash was discovered, clear evidence of its

81 Buccellati, 2016.

disuse after Phase II of the palace usage. Additionally, the hole found beneath the tannur serves as clear evidence that the presumed threshold beneath the doorway between D2 and D1 was reused during a later period of royal palace usage. This is evidenced by the alignment of the tannur hole with the accumulation level to the west of the threshold, which consists of three rows of mud-bricks in contact with the upper surface of the accumulation itself.

4.1.2.1.4 The Ur III / Isin-Larsa periods and the abandonment of the Palace (Phase IIII)

This phase can be subdivided into two parts, or alternatively, the fourth phase can be integrated with the fifth. This phase spans from the Isin-Larsa period around 2000 to 1900 B.C to the late Khabur period from 1900 to 1600 B.C. This latter period marks the onset of the Mittani era in the region and the relocation of political dominance to the city of Waššukanni,[82] while Urkesh continued to maintain its religious centrality.

The phase provides substantial evidence indicating the continued utilization of the area, albeit with significant deviation from its original purpose. The erstwhile palace, once a central seat of power, was abandoned, metamorphosing into the periphery of the settlement and a repository for debris, evident from the accumulation that contain pottery sherds and large stones at the foot of the upper AK walls.

Moreover, one seal impression from this phase (A6q721.1) https://urkesh.org/MZ/A/A06/D/QI/072101.htm contributes to the evidence of living occupation. Despite the presence of a negative wall, no

82 The site is believed to be located at Tell Fekheriye on the outskirts of Ras al-Ain city, north-west of Hasakah city, approximately 82 kilometres away.

corroborative evidence of flooring or other architectural elements exists at this level, save for pits and graves, exemplified by tomb A6f439 https://urkesh.org/MZ/A/A06/D/F/0439.htm, aligning with the settlement phase corresponding to the secondary wall level in Room D1. Additionally, upper-level excavations unearthed tannurs and hearths attributable to the late Khabur period.[83]

4.1.2.2 Southern Section of A6

This section has been significantly impacted by the Wadi, experiencing partial erosion due to rainwater runoff from higher elevations to lower ones on the mound. However, despite this erosion, the lower levels exhibit noteworthy examples of civilization in the third millennium B.C. For instance, Room C7 is considered a nodal room. This room, with three doors, was too small to allow for any activity other than possibly housing a controller. Two of the doors within Sector C were narrowed by a width of one full brick, which heightens the control of traffic within the sector[84] during the use of the Tupkish Palace.

Furthermore, excavations at the southernmost extremity of the unit revealed the existence of Room C6, showing an exemplary sewage system within the AK building. This room features a splendid toilet, with the upper part carefully constructed using baked bricks. Its water was drained southeastward through the entrance into the antechamber (C3) and subsequently out of the building. This meticulous engineering design demonstrates an efficient utilization of resources and underscores the attention to directing water flow appropriately, indicative of the advancement of civilization during this era.

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83 Mazzoni, 2012.

84 Buccellati & Kelly-Buccellati, 2000: 142.

4.2 The functional identification of the kitchen area

The northern section of Unit A6 provides a unique example of royal kitchens at the end of the third millennium B.C. Within this section, three rooms were discovered: Room D1, identified as the palace kitchen; Room D2, serving as the iwan; and Room D3, functioning as the kitchen storage. These three rooms are notable for their well-preserved walls and were constructed in a mirrored plan with the adjacent sector B, known as the palace storage, within the service quarter. Numerous jars, bowls, plates, cups, and strainers were found in the kitchen, all within the context of the Urkesh kitchen, along with various fire-related kitchen equipment.

4.2.1 Ceramics

4.2.1.1 Jars

Large jars are among the most prominent examples within the kitchen context. These large jars are typically made of simple pottery mixed with chaff (Chaff Tempered ware) and are designed with necks to facilitate carrying. Some jars are decorated with incised wavy and straight line patterns, while others are decorated using finger or cord impressions. In Room D1, sherds of hole-mouth jars (Fig. 21) were discovered, along with sherds of straight-necked jars (Fig. 22) that likely date back to the Tar'am-Agade period. This suggests that the kitchen may have been used during a later period than its original construction.

In Room D3, at the level of the room's stone foundation, sherds of a jars with a flaring neck, featuring internal grooves on the folded rim, were found (Fig. 23). These jars were likely used for storage in this room, as shelves were found that were used to place storage jars. These shelves

were made of a line of bricks running along the northern and western walls.

Additionally, shouldered jars and those with restricted necks and grooved rims were discovered, which were the most common group found in the archaeological units of the Palace of Tupkish.

4.2.1.2 Bowls

Round-sided bowls were very common during this period, characterized by a variety of colors. The exterior often displayed a red-orange color, with a gray-brown area around the exterior of the rim. In the north-eastern corner of Room D1, near the tannur and hearth, two rounded bowls were found (Fig. 24). These bowls are notable for being wide either at the center of the body or near the bottom. In the same accumulation, a deep bowl with two crescent-shaped handles near the rim was also discovered (Fig. 25). This is an example of cooking pottery known as "pebble ware." Additionally, a bowl with an internal projection rim was found (Fig. 26).

In Room D2, a round-sided bowl with a flat base was uncovered. It is made of a fine to medium mixture with fine chaff (FC), decorated with cord impressions, and shows signs of wheel manufacturing (Fig. 27).

In Room D3, near the shelves, a carinated bowl with a rounded carination, featuring an S-shaped profile near the rim, was found (Fig. 28).

4.2.1.3 Cups

The Akkadian pottery found in the Palace of Tupkish is characterized by being coarser and made with less attention to details of form, as evidenced by the bases cut with a string and wheel marks. The

most significant finds throughout the palace were conical cups, especially in the units adjacent to the kitchen. Rooms B1 and B2 (the storage area) yielded a large number of these cups. Additionally, these cups are prominently represented in the seal impressions discovered; for instance, one of the seal impressions belonging to Queen Uqnitum depicts the king raising a cup with his right hand (Fig. 29). Near the hearth in the center of Room D1, two conical cups were found.

Moreover, other types of cups were discovered in Room D1, such as cups with inturned mid-body, where the body height and rim diameter were roughly proportionate (Fig. 30).

4.2.1.4 Pots

Among the pots found in the Akkadian context at the Palace of Tupkish are cooking pots with two handles attached to the rim (Fig. 31). These were made in pebble-tempered ware and contain small quartz pebbles which are efficient heat retainers. These pots are characterized by brick red in color which blackens over time through exposure to fire. They include spherical pots with a hole mouth and rounded bases, designed for easy placement on the hearth. This type of pottery was found in Rooms B1 and B2, to the west of the kitchen, along with a rarer type, a medium-sized pot with pierced lug handles (Fig. 32). These handles were found in Room D1 near the southern wall. Additionally, a broken pot was discovered near the northern wall (A6f218) https://urkesh.org/MZ/A/A06/D/F/0218.htm, close to the tannur and hearth on the northern side.

4.2.1.5 Plates and Strainers

A concave base of a small plate (Fig. 33) was found near the tannur in Room D1. The general context of the palace includes various types of plates, particularly those with inverted rims. Additionally, plates with thick, straight walls and bases, and with handles, were discovered; some of these plates are shallow, while others are a little bit shallow.

On the other hand, a strainer was found in Room D2. This strainer has an upper incurved body, and the rim slanted to the interior (Fig. 34).

4.2.2 Seal Impressions

In the Urkesh kitchen, symbolic evidence of food handling has been discovered, most notably through large, flat bowls bearing seal impressions. These impressions, found on the kitchen floor, document the processes of food preparation and handling. They were used on clay to seal boxes, jars, bags, and baskets. Some of the discovered seal impressions depict the process of food preparation,[85] where on the kitchen floor, a seal impression belonging to the cook Tuli was found, reflecting a scene related to her profession (Fig. 35). The scene depicts a bent-over woman churning a substance in two pots placed within a basket, alongside a butcher who is leading an animal — possibly a goat or sheep — with one hand while holding a knife in the other. To their right, two vertical rows of cuneiform signs are visible.[86] It is likely that the intention of the composition is to convey a specific message, similar to that seen on the NIN seal (ql): the servants actively engaged in the tasks of food preparation are depicted facing, as a sign of respect, the inscription box that bears the title of the queen's cook. It is certain, in any case, that the

85 Kelly-Buccellati, 2019: 289.

86 Kelly-Buccellati, 2016: 58.

bent-over woman performing the manual labor is not the cook to whom the seal belongs.

The two pots contained within the basket are reminiscent of the pictograph underlying the sign GAR, which represents the logogram for *lildu* ("cream"). While the container represented by the pictograph might have been hung for churning, the scene portrayed on this seal may illustrate an alternative method for achieving the same purpose.[87]

Additionally, in Room D1, an uninscribed seal impression (Fig. 36) was found, depicting the performance of common tasks in Urkesh that are unusual in Akkadian seals. All the figures are engaged in activities that seem to involve preparing something in vessels, possibly related to food preparation. Seal impressions depicting scenes of dining were also discovered; for instance, in Room D1, a seal impression presents a scene with unclear details but suggests a scenario related to eating.

Another seal impression was discovered in Room D1 depicting a scene that is not entirely clear but suggests an association with food consumption. The scene features a hand holding a cup and a bird table containing two flat objects, likely representing bread, which are central elements (Fig. 37). Although the object held by the other figure is indistinct, its proximity to the table and resemblance to a cup imply that the scene involves communal eating or drinking.

The presence of a table bearing bread-like items, alongside figures interacting with cups, strongly supports the interpretation that the scene represents a meal or a ritual event related to food. This interpretation aligns with the broader context and similar iconographic scenes found on

87 Buccellati & Kelly-Buccellati, 1996, pp. 65-100.

other seals from the same palace environment, particularly the resemblance between this table and the bird table.

4.2.3 Kitchen Equipment

4.2.3.1 The tannur

A tannur was found in the middle of Room D1 within the service quarter of the royal palace. Its walls resemble burnt bricks in both color and hardness (Fig. 38). The tannur is characterized by a double wall, an uncommon design in ancient times, which provides additional strength and durability, indicating that it was placed directly on the ground surface rather than being buried. The dimensions of the tannur at Tell Mozan show a westward tilt, measuring 82 cm from east to west and 92 cm from north to south, with an internal diameter of 69 cm and wall thickness ranging between 8 and 13 cm. The maximum depth of the tannur reaches 50 cm at the eastern point, with a distance of 21 cm from the bottom of the tannur to the center of the flue. The interior surface of the tannur is smooth and well-preserved, with a circular opening in the wall located about 30 cm from the top at the western point, indicating a precise design that allows for efficient ventilation.

4.2.3.2 The hearth

Excavations revealed a hearth located near the tannur, in the middle of Room D1. This hearth was horseshoe-shaped, made from the same material as the tannur, and rested on a layer of ash. The hearth had an approximate depth of 15 cm and contained remnants of legume seeds.

Nearby, a layer of plaster was found, although it did not extend far from the hearth. Additionally, two conical cups were discovered adjacent to the hearth.

5.2.3.3 Platforms

Among the discoveries in Room D1 were a stone bench and a platform located next to the hearth and tannur. It is likely that the bench and platform were used to place pottery jars, as a broken vessel was also found beside them, offering further insight into the organization of household activities in this context. Additionally, another platform made of mud-brick was found along the northern wall of Room D1.

4.2.4 Kitchen from Tell Arbid

Tell Arbid is located in north east of Syria, in the upper Khabur Basin, approximately 45 kilometres south of the city of Qamishli. Since 1996, a Polish archaeological mission from the University of Warsaw, led by Professor Piotr Bieliński, has been conducting excavations at the site.[88]

During the 2010 season, in locus 7, located within Sector W in the southern part of the site, a room equipped with cooking equipment was discovered (Fig. 39). This included fire installations, a storage jar, and a large quantity of broken cooking pots and other vessels. The room covered an area of 2.80 square meters. The only possible entrance to the kitchen was located in the northern wall (W5), where later signs of blockage were observed, taking the form of vertical cracks in the wall. The entrance was approximately 0.50 meters wide. The kitchen is notable for having been used during two different phases.

4.2.4.1 The Latest Phase

In the kitchen, a mud-brick platform was found, measuring 0.50 meters in length, 0.34 to 0.40 meters in width, and 0.25 meters in height

88 Bagdo, 2009.

above the floor. A large jar (J1) was partially buried in the ground in the north-west corner. This jar had a rough surface, and a cup with an everted rim was also discovered nearby. As for the fire installations, a circular hearth with a diameter of 30 cm was found in the northern part of the room, next to the eastern wall.

Nearby, fragments of two cooking pots (P1 and P2) were discovered, along with another large jar (J2) featuring a globular body and a short, curved neck. This jar had a rough, it is chaff face and revealed traces of scraping inside. The cooking pots represented a single type of hole-mouthed vessel with crescent lugs.

4.2.4.2 The Earlier phase

The earlier phase of the kitchen's use included features and evidence such as a mud-basin connected to the eastern wall. Next to this basin, a hearth with a diameter of 38 cm (H2) was found. The front wall of the mud-basin was heavily burned due to the use of this hearth. Fragments of a large lid (L2) were found on top of the hearth, along with a jar (J3) that was partially buried in the floor. This jar had a broken neck, seemingly broken intentionally. Beneath the burnt clay of the hearth, there was a layer of fine gravel mixed with clay, forming a kind of substructure for the hearth.

Adjacent to the kitchen, on the western side, was a small room (Locus 26) that served as an ash dump for the kitchen activities. This room contained a 10 cm thick layer of ash, which matched the earlier floor level of the kitchen. Broken pottery sherds and seal impressions were also found within this layer.[89]

89 Reiche & Smogorzewska, 2013, pp. 371-386.

4.2.5 The comparative analysis

The kitchen at Tell Mozan is larger and more organized than the kitchen at Tell Arbid. The kitchen at Tell Mozan covers an area of 63.3 square meter[90] and consists of three rooms built in a mirror plan with storage rooms in the service wing of the royal palace, known as Sector B. The kitchen can be divided into three parts: Room D1, which is the main kitchen and serves as the workspace containing kitchen equipment as well as a drainage channel running from north to south; Room D2, the iwan; and Room D3, the kitchen storage room. These rooms correspond to their counterparts in Sector B but with some differences in size.

The walls of the kitchen at Tell Mozan are distinguished by their construction, with stone foundation, lower courses, and mud-brick upper sections. The kitchen is connected to adjacent sectors and the outside through two doors: one on the northern side, leading directly to a courtyard, and another connecting Room D2 (the iwan) to Room C7, the control room in the service quarter.

At Tell Arbid, the kitchen is a small, irregularly shaped room with an area of 2.80 square meters, sufficient for only one or two people at most.[91] No door to the room was found, but it is believed that the entrance was located on the northern side, where there is evidence of a later blockage, visible as vertical cracks in the wall. The kitchen shares a connection with another room used as an ash dump to the west by a wall but there is no direct passage between them and also with the adjacent southern temple or the ceremonial courtyard.

90 Buccellati, 2016.

91 Reiche & Smogorzewska, 2013: 373; Kelly-Buccellati, 2019: 289.

It is widely accepted that the kitchen at Tell Mozan was designated for official functions relating to court activities, particularly for the royal family and palace staff, especially those in the service quarter. This is evidenced by the large quantity of pottery jars distributed throughout the rooms in the service quarter, particularly in the storage area of Sector B.

In contrast, the kitchen at Tell Arbid appears to have been intended for the service of the southern temple, suggesting it was used as a "kitchen" during the temple's operational period[92] or for the ceremonial courtyard to the west of the kitchen. Its small size, combined with the kitchen's equipment and the pottery assemblage discovered, supports this interpretation.

The uniqueness of the kitchens at both sites stems from their contents and the relationships between these contents themself. Both kitchens contained fire installations. If we consider a specific phase of their use (the contemporary phase), we observe that in the kitchen at Tell Mozan, there is one tannur and one hearth. The tannur is relatively small compared to those discovered at Tell Beydar[93] and Tell Brak.[94] At Tell Beydar and Tell Brak, multiple tannurs were found, suggesting these were public ovens (neighbourhood ovens) even if they were potentially managed by the ruling authority.

In contrast, the kitchen at Tell Arbid features only a single hearth with no tannur. While tannurs have been discovered at Tell Arbid, notably one at Site 12, it is likely that this was part of a courtyard or an open platform, with no evidence suggesting its use as a kitchen.

92 Bieliński, 2013: 357.

93 An archaeological site located 35 km north-west from the city of Hasakah, on the road between Hasakah and Al-Darbasiye cities.

94 Rova, 2014, pp. 121-170.

Archaeological evidence at both sites indicates that the kitchens underwent two different phases of use, as reflected by seal impressions, pottery, and architectural modifications. At Tell Mozan, the large quantity of pottery fragments belonging to jars with straight necks found on the floor of Room D1 suggests active use of these jars by the occupants of the kitchen or palace.

Additionally, modifications in the kitchen's architecture are evident, such as the construction of a secondary wall over the northern wall of Room D1, extending 150 cm above the original wall. This secondary wall is distinguished by its smooth, greyish bricks, built over the original wall made of red bricks and stone at the base.

Another piece of evidence is the presence of a single, grey-buff brick among the bricks forming the threshold between Rooms D1 and D2.

The threshold is made up of a line of three bricks: the side bricks are red, while the middle brick is gray. This matches the previous observation regarding the northern wall of Room D1, where the color variation of the bricks aligns with these findings.

The discovery of the tannur and hearth in the lower work area of A6 strongly suggests that this area was used as a kitchen within building AK, particularly given a large amount of pottery and bone fragments found, as well as ash in the middle of Room D1 and towards the northern wall. The floor of this room included pottery sherds of various types, including small jars, pots with crescent handles, plates, and large storage jars. Additionally, grains and basalt grinding stones were found on the floor. The presence of grains inside the room indicates small storage

facilities or containers specifically for grains, as evidenced by the sherds of hole-mouth storage jars found in the kitchen.

Notably, the hearth is made from the same material as the tannur, highlighting the complementary relationship between these installations.

The hearths were used for heating, cooking, and lighting. However, the association with the tannur at Tell Mozan and additional evidence such as pottery sherds unequivocally indicate that the primary function was cooking, particularly given the discovery of legume seeds in the ash inside the hearth.

The archaeological record does not show the presence of pebbles or pottery sherds beneath the hearth, unlike the hearth at Tell Arbid, which had a layer of fine pebbles mixed with clay beneath the burnt clay of the hearth. The presence of pebble and pottery sherds likely facilitated water drainage and prevented accumulation under the hearth, which is important to avoid excessive moisture that could degrade the burnt clay or reduce the hearth's efficiency. Thus, the absence of this feature at Tell Mozan does not negate the hearth's use for cooking. The reason for the lack of this technique at Tell Mozan is likely due to the presence of an efficient drainage system running alongside the tannur and hearth, a feature not present in the kitchen at Tell Arbid.

Hole-mouth cooking pots were the most common type found at Tell Arbid. These pots were equipped with crescent-shaped or horizontal handles beneath the rim, a characteristic also observed in the kitchen at Tell Mozan. At Tell Mozan, numerous globular cooking pots with hole-mouth and rounded bases were found. The rounded base facilitated easy placement on the hearth. Additionally, there were cooking pots with two handles attached to the rim, as well as medium-sized pots with pierced

handles. These cooking pots were made from clay mixed with straw (Chaff Tempered ware), a technique that matches the pottery found in the kitchen at Tell Arbid, where similar pots were produced using the same technique.[95]

The large quantities of bone fragments discovered in the kitchen at Tell Mozan suggest that the space was used not only for food preparation but also for consumption. These dietary remains reflect food practices that included handling food after preparation, encompassing both its consumption and disposal. In contrast, no bone or plant remains were found in the kitchen at Tell Arbid, indicating that this kitchen was used solely for food preparation and cooking, with consumption occurring elsewhere.

This contrast between the two kitchens highlights differences in living patterns at the respective sites during that period. It suggests that Tell Mozan was a permanent settlement with more resources and an environment that allowed for the versatile use of space, supporting a more settled lifestyle, particularly given the kitchen's connection to the royal palace of the Kingdom of Urkesh.

4.3 The Role of the Kitchen in Relation to the Palace as a Whole

The service quarter of the royal palace stands as a cohesive unit, constructed using stone foundations and mud-brick walls, reflecting the traditional architectural style of the time. The use of a diverse range of fundamental materials, including stone, mud-brick, wood, plaster, straw, and clay, demonstrates a practical integration of locally available

95 Reiche & Smogorzewska, 2013, pp. 371-386.

resources and construction techniques, highlighting a high level of adaptability to environmental conditions.

The service quarter comprises the kitchen, storage rooms, and administrative sections, with its internal design offering a clear perspective on the nature of daily life within the palace. This configuration reflects a well-organized social structure that supports the palace's multifaceted functions, from food preparation and storage to managing various daily activities.

Located in the south-eastern part of the royal palace, the service quarter spans an area of approximately 711.9 square meters. The kitchen occupies a strategic position in the north-eastern section of this wing, ensuring proximity to other components and enabling it to perform its role efficiently in the palace's daily operations.

4.3.1 The Relationship between the Kitchen and the Royal quarter

4.3.1.1 The Dividing Wall

The formal and service quarters are interconnected through an integrated architectural structure characterized by massive stone walls, most notably the large eastern wall of Room C1 (Fig. 40). This wall serves as both an architectural and functional divider between the lower and upper levels of the palace. It clearly delineates the boundary between Room C1, situated in the service quarter at a depth of approximately 2.5 meters, and the royal quarter, which rises above it.

The kitchen is also associated with a similarly massive wall, the eastern wall of Room D1 (Fig. 41). This wall serves as an architectural extension of the C1 wall to the north, separating the kitchen from Sector

G. This structural design reflects the cohesive engineering and precise organization of the palace's spatial divisions.

4.3.1.2 The Drainage System

The drainage network discovered in the service quarter demonstrates an advanced level of engineering design, extending from Sector D in the north to Sector C in the south (Fig. 42). This system was carefully planned before laying the building's stone foundations or, more precisely, concurrently with the construction of the walls and floors. This is evident from the fact that the channels pass beneath the walls in several instances, indicating that they were part of a comprehensive drainage system approximately 20 cm wide, designed to serve the entire palace.

A distinctive feature of this system is its steep gradient, as the elevation difference between the formal quarter (AF) and the service quarter (AK) is approximately 2.5 meters. This significant slope necessitated the creation of a robust drainage channel capable of managing high water flow, which ordinary brickwork would not have been able to withstand.[96]

4.3.1.3 Accesses to the royal Palace

The drainage system discovered in the palace provides compelling evidence of a dynamic and functional relationship between the formal and service wings, particularly given the absence of direct doors or stairways connecting the two. Nevertheless, additional evidence highlights the functional link between the kitchen and the royal quarter, reinforcing the hypothesis of their integration.

96 Buccellati, 2005: 11.

In the northern section of Room D1, where the door leads to the courtyard (Unit 9), a floor covered with small stones was uncovered, indicating a high level of organization and deliberate construction. Additionally, an elegant platform made of fired bricks was discovered.

This platform, designed with a regular alternation of red and yellow bricks, is located in the south-eastern part of the courtyard (Unit 9), to the right of the exit from the kitchen, and just a few steps away (Fig. 43).

This platform is slightly elevated above another pathway made of fired bricks, reflecting a practical design aimed at facilitating movement and connectivity between different areas. Due to its location, this platform currently represents the only known functional link between the service and formal quarters. It appears to have been specifically designed to facilitate the transfer of food from the kitchen to Sector H above.

This system bears similarities to the kitchen discovered at Tell Arbid, which was located near the southern temple or ceremonial courtyard. However, a key difference lies in the absence of a direct connection or doorway between the kitchen and the temple or courtyard at Tell Arbid. In contrast, the kitchen at Tell Mozan features a platform that connects it directly to the throne hall or its courtyard, enabling the efficient transport of food and preparation of royal feasts in an organized manner.

The innovative design of the Mozan kitchen reflects a unique architectural advancement. Its role extends beyond food preparation to actively supporting royal activities, showcasing the importance of meticulous planning in achieving functional integration across the various sections of the palace.

4.3.2. The Kitchen's Relationship with Adjacent Sectors

4.3.2.1 Sector B

The working room of the kitchen (D1) connects to Room D2 through a large door on the western side, making Room (D2) function as an iwan that links to other rooms on its northern and southern sides. To the north lies Room (D3), designated as a storage area for the kitchen, while to the south, the iwan (D2) connects to a small room (C7), which served as a control and monitoring room within the palace's service quarter. This small room, equipped with three doors, was likely intended to house an official or overseer, facilitating access to other sectors.

Both Sectors (D) and (B) were constructed on the city's inner wall, which extended from north to south on the western side of the service quarter. Despite the absence of a direct doorway between the two sectors; it is believed that the main entrance to Sector (B) was located to the north, specifically north of Room (B1), where a door leading to Sector (F1) was discovered. This door was likely sealed later with bricks. Access from Sector (D) to Sector (B) required passing through the control room (C7) and then to Room (A7) in the west.

Sectors (D) and (B) share a remarkable degree of mirrored plan and similarities in their use of iwans. Each sector consists of three main rooms: a large working room (D1 and B1), an iwan (D2 and B2), and a small room (D3 and B3). The working rooms in both sectors are spacious, with large doors leading to the iwans. However, Room (B1) is larger than its counterpart (D1), likely reflecting the role of Sector (B) as a storage area for the royal palace. The other rooms are nearly identical in size, where Rooms (D3) and (B3) sharing the same design. Both are

constructed with thick mud-brick walls, distinguishing them from other rooms in the service wing. This design suggests that these rooms served as small storage units for valuable goods, providing protection from summer heat and winter cold.[97]

Both sectors also contain a significant number of ceramic vessels and jars. However, smaller to medium-sized jars were more prevalent in the kitchen (Sector D), whereas bigger and less portable vessels were found in greater quantities in Sector (B). These patterns align with the proposed functions of the two areas. Furthermore, the similarities between these sectors suggest a close relationship that goes beyond their architectural layouts and the seal impressions discovered within them.[98]

4.3.2.2 Sector C

As in Sector (B), access from Sector (D) to Sector (C) is exclusively through the control room (C7), located to the south of the iwan (D2). This pathway leads to the iwan (C5), which is larger than the iwans in Sectors (B) and (D), yet comparable in size to the Iwan (A5) in Sector (A). This similarity between Sectors (A) and (C) highlights a significant degree of spatial organization and room arrangement and reflects the mirrored plan that distinguishes the entire service quarter.

A drainage system connects Sectors (D) and (C), running from north to south beneath the walls of the palace's service wing. The presence of this network indicates a high degree of structural integration in the building's design. This system serves several excavated installations, including the bathroom(C6). The drainage channels exit the building from the southern side, reflecting an advanced level of

97 Buccellati, 2012, pp. 31-34.

98 Buccellati & Kelly-Buccellati, 2000, pp. 133-183.

engineering aimed at ensuring the cohesion and functionality of the palace as a unified entity.

5 Neighbouring Palaces

The phenomenon of urbanization in Mesopotamia began to emerge in the first half of the third millennium B.C, particularly during the Early Dynastic period of the Sumerians (2800–2370 B.C). This was characterized by the separation of political life from religious authority and the emergence of the palace, which was considered a small complex for managing state and societal affairs. The palace functioned as a self-sufficient center for the king and his court. Consequently, the authority of the temple and the priest, who previously managed the affairs of the settlement or kingdom, diminished.

The role of the palace evolved beyond being merely a place where political matters were conducted; it became a center for the collection of wealth and goods within the kingdom. As such, the palace economy became the backbone of the state's economy. The palace was the central institution to which wealth and agricultural and pastoral products from affiliated cities and villages were brought, and from which these resources were subsequently redistributed.[99]

Understanding the nature and functions performed in the palace—such as management of court affairs, receptions, royal appearances, and banquets—requires a detailed study of the palace's architectural design and its service areas, especially kitchens and storage sectors that contained incoming goods like grains, metals, oils, and other products. This illustrates the palace as an integrated administrative, economic, and political institution.

Palaces varied in size and complexity; some were large and included multiple sections or wings, while others were smaller and could

99 Abdul-Haqq, 2014, pp. 579-611.

not accommodate multiple divisions. Architectural studies indicate that palaces did not follow a uniform location within the city's layout; some were built in the city center due to its spatial importance, while others were located near city gates to facilitate access and oversight.

5.1 Tell Brak Palace

The Naram-Sin Palace (Fig. 44) is considered one of the most significant architectural monuments discovered at Tell Brak. This palace was constructed at the end of the third millennium B.C, approximately between 2254 and 2218 B.C, atop the ruins of an earlier building known as the Eye Temple.[100] The palace is distinguished by its square shape (95 × 90 meters) and includes a large courtyard to the south, measuring 41 × 41 meters. This spacious courtyard was used as a reception area for important dignitaries or merchants, in addition to three smaller courtyards located on the northern side. Surrounding these courtyards are narrow, elongated storage rooms, each approximately 2.2 meters wide, while the external walls reach a thickness of ten meters.

Archaeological evidence does not indicate any signs of actual residential use within the palace, leading to the hypothesis that the building functioned less as a royal palace and more as a military fortress, grain storage facility, or supply center for the Akkadian forces.[101] This theory is further supported by the remains of burnt grain found in three rooms, alongside clay tablets inscribed in cuneiform script that record names and types of goods. All these findings suggest that the palace operated as an administrative and economic complex.[102]

100 Oates, 1977, pp. 233- 244.

101 Abu Assaf, 1988: 282.

102 Schmidt, 2015, pp. 1-42.

Adjacent to the palace's eastern wall lies the CH area, where a building of currently unknown purpose and function was uncovered. Evidence from this area includes samples of grain stored in jars, dating back to the Akkadian period level.[103] The quality of this construction and its proximity to the palace may indicate that it held an official or administrative status.[104]

5.2 Tell Beydar Palace

Tell Beydar Palace (Fig. 45) was constructed in the mid-third millennium B.C, around 2500 B.C, and was partially rebuilt twice before the beginning of the Akkadian period, indicating that it was built in three distinct phases. The construction utilized square and rectangular red bricks. The palace covers an area of 40 × 40 meters and 40 × 20 meters, and it rises 27.5 meters above the plain. The palace comprises thirty rooms and includes a square inner courtyard featuring arches on two sides supported by square columns. This courtyard leads eastward through two arches into a long rectangular room, and westward to a square reception hall measuring 50 square meters.

The reception hall serves as a focal point for accessing the western section of the palace and functions as the main entrance to a triangular-shaped room containing a bench adjacent to its rear wall, indicating it was the throne room. From this room, a door opens to a long corridor that leads to four rooms in the north-west wing. On the northern and eastern sides of the palace façade, there is a series of small rooms ranging from two to four in number.

103 Mazzoni, 2012.

104 Oates, 1982: 193.

The palace's architecture is a genuine representation of Mesopotamian palace design during the third millennium B.C, characterized by central courtyards surrounded by wings of rooms.[105] On the eastern side of the palace lies the main street, a wide stone-paved road leading from the southern gate to the palace entrance. A drainage channel runs along the center of this street to carry rainwater away from the central courtyard.

Sixteen administrative tablets were discovered in 1996 in the northern wing, in an archaeological context datable of the 3rd phase of occupation[106], suggesting that this wing served as the palace's administrative section, housing workshops linked to and supervised by the king. The rectangular building on the eastern side, consisting of four rooms, was used as storage rooms, where goods were inspected and recorded. Additionally, the southern part contains rooms designed to support palace services.

Not far from the palace, also to the north, a crescent-shaped building was discovered, composed of large rectangular rooms with thin walls arranged around an open courtyard. This courtyard contained small workshops, and access to the rooms was only possible through the courtyard. These rooms lacked any installations, making the function of the building somewhat unclear. However, the discovery of numerous small circular footprints on the floor—compared with similar footprints left by sheep and goats in the modern village of Beydar on a rainy day—led to the hypothesis that this building served as sheepfolds, managed under the palace's central administration.[107]

105 Erarslan, 2011, pp. 129-146.

106 Lebeau, 2006: 7.

107 Lebeau & Suleiman, 2002: 21.

5.3 Tell Chuera Palace

The palace at Tell Chuera is located in the north-western part of the upper city [108]and dates back to the mid-third millennium B.C (Fig. 46). It was built in a square layout and consists of a front courtyard (Courtyard 3) equipped with a throne base adjacent to its northern wall. This courtyard leads to the central rooms, including Courtyard 8, which opens northward to a second reception hall (Room 6) and southward to the throne room (Room 12) through a door in the western part of its southern wall. South of the throne room lie two small rooms, 13 and 23, which served as a bath and toilet, respectively,[109] possibly used by the king. There is also Courtyard 16, situated south of Room 47, connected to it through Rooms 31 and 34.

Archaeological evidence indicates that the south-western section of the building was designated for economic and kitchen activities, as several ovens and thick ash layers were found on the floors of these rooms, especially Room 47. This room contains several installations and fittings confirming its function as a food storage and kitchen area, including ovens, hearths, shelves, benches, and ash layers.

The rectangular Courtyard 44 was paved with gravel and divided into small rooms. It also contained ovens and a drainage channel constructed from stones, some measuring up to 50 cm, covered by large stone slabs. This channel drained used water beginning from the south at Courtyard 16, passing through the small storage room 45, and ending at Courtyard 44. Additionally, a secondary drain started from the bath

108 Meyer, 2014: 19.

109 Al-Tunsi, 2021: 303.

(Room 43) and emptied into this channel, allowing wastewater to exit the building to the west.[110]

Some administrative indicators within the palace were found west of Courtyard 16, specifically in Room 54, where six impressions of cylinder seals were discovered, most of which were door seals. This room, alongside Room 45, was used to store valuable materials or items requiring strict supervision. Room 54 is notable for its large limestone slabs flooring and contains a large storage jar in the south-eastern corner, which was used as a drinking water container.

The economic wing was limited to an area of approximately 12 × 18 meters in the south-western part of the palace, where two plaster-covered basins were found. These basins were built successively in approximately the same place inside one of the rooms in this wing.[111]

5.4 Tell Leilan Palace

The excavated area of the Eastern Lower Town Palace (Fig. 47) at Tell Leilan measures 1,000 m², within a total area estimated at 1.25 hectares — meaning that only the north-eastern quarter of the palace has been uncovered so far. The palace was constructed from gray or red mud-brick, in square and rectangular shapes, with dimensions of 34 × 34 × 10 cm and 34 × 16 × 10 cm. Built in the Mesopotamian style, the palace features symmetrically arranged rooms around large courtyards and included service rooms, primarily kitchens. Archaeologists have

110 Pruß, 1996, *"Tell Chuera 1996 – The 19th Campaign of Excavations"* (Institut für Orientalische Archäologie und Kunstgeschichte, Martin-Luther-Universität Halle-Wittenberg), accessed May 19, 2025, https://orientarch.uni-halle.de/digs/chuera/tellchuera1996/?lang=en.

111 Pruß, 1997, *"Tell Chuera 1997 – The 20th Campaign of Excavations"* (Institut für Orientalische Archäologie und Kunstgeschichte, Martin-Luther-Universität Halle-Wittenberg), accessed May 19, 2025, https://orientarch.uni-halle.de/digs/chuera/tellchuera1997/?lang=en.

identified four construction phases. The palace dates to the end of the third millennium and the beginning of the second millennium B.C. Inscriptions and seal impressions indicate that Levels 3 and 4 were in use during the reign of Shamshi-Adad (1833–1776 B.C) and his capital, Šubat-Enlil.[112]

The excavated portion consists of 25 rooms situated between two courtyards: a northern courtyard (Courtyard 4) and a southern courtyard (Courtyard 20). These rooms include kitchens, such as Room 8 in the south-western part of the palace, and storage rooms. The wing consisting of Rooms 9, 10, and 11 in the south-eastern section represents the oldest construction phase. All these rooms were built from mud-brick, with walls approximately 2.75 meters thick, and a clay oven was found in Room 11. These rooms are located near the northern courtyard, with Room 9 sharing a wall with the eastern side of Courtyard 4. One of the most significant finds in this wing is a seal impression discovered in Rooms 9 and 10, confirming service activities during the time of Ishme-Dagan, son of Shamshi-Adad.[113]

Room 1 is one of the largest rooms in terms of interior space, measuring 3.75 × 9.5 meters. A door in its western wall leads to Room 6 (6 × 3.75 m), which then connects eastward to the long, narrow Room 3 (1.75 × 12.5 m). In the middle of Room 3's southern wall, a door opens onto Courtyard 20, which measures 14 × 12.5 m and is paved with square baked bricks measuring 42 × 42 cm and 6–7 cm thick. Room 5, on the other hand, is a small storage room with no discovered doorways.

From Courtyard 20, a door on the northern side leads into Room 2, and another on the north-eastern side leads to Room 16, both paved with

112 Eidem, 2011.

113 Ristvet & Weiss, 2013, pp. 257-272.

the same type of brick as the courtyard. West of the reception wing (Rooms 1, 2, 3, 6, and 16) lies Room 8, measuring 3.75 × 3.75 meters, which contained a baked brick platform and a drainage system, suggesting it may have been a bathroom. The only door to this room is on its western side, connecting to Room 7.

The quantity of ash, animal bones, pottery, and wastewater drains found on the floors of Rooms 12, 13, 14, and 17 — along with bitumen fragments on the floors of Rooms 12, 13, and 14 — indicates that this north-eastern wing of the reception area served as kitchens for food preparation. Room 13/14, measuring 2.5 × 6 m, contained an oven in the center and a baked brick platform in its south-western corner. South of this wing was the storage and kitchen wing, consisting of Rooms 21, 22, 23, and 24, which held storage jars, especially in Room 22, where two large jars were found. These storage rooms measured 2 × 2.75 meters, with access through the northern wall of Room 25.

5.5 Comparative Analysis

5.5.1 Courtyards

The palace of Tupkish at Tell Mozan was constructed according to the Mesopotamian architectural style, that is, with a design centered on courtyards around which the rooms are distributed. The iwans in the Tupkish Palace represent the most distinctive architectural feature linking it to its neighbouring palaces; here we find iwans D2, B2, C5, and A5, around which the other rooms in the palace's service quarter are arranged. Remarkably, although the iwan was an architectural element not commonly featured in the designs of that period, it appears prominently in the Tupkish Palace, thereby enhancing the overall similarity in layout

with other palaces, which are characterized by multiple courtyards and thick walls. This resemblance is especially evident in the four courtyards of the Naram-Sin Palace at Tell Brak and Tell Beydar, as well as in the courtyards of Tell Chuera and Tell Leilan. Notably, the iwans in the Tupkish Palace face north, ensuring they remain in shade throughout the day.

What sets the Urkesh Palace apart is its more organized construction compared to its neighbouring counterparts; this is manifested in the clear symmetry of the rooms, a feature not observed to the same extent in the other palaces, although some degree of symmetry can be noted in the Lower Eastern Town Palace at Tell Leilan—yet it does not match the precision of symmetry found in the architecture of the Urkesh Palace. Furthermore, by studying these palaces, one can observe the large number of doors, as the numerous wings with varying functions, the multitude of rooms, and the proximity of service wings and storage areas to the central courtyard required a system that ensured direct and rapid connectivity.

Another notable feature in the architecture of the palace at Tell Mozan is the construction of the walls, which employed stone foundations reaching a height of up to one meter, followed by mud-brick superstructures. Interestingly, the architectural studies of the aforementioned palaces do not reveal this type of construction in their design, except for the stone architecture of the palace at Tell Chuera. This leads us to believe that the common characteristic between the palaces at Tell Mozan and Tell Chuera lies in the use of stone in their construction, which can primarily be attributed to Hurrian influence on architecture in general, in addition to serving as a means of protecting the base of the walls from erosion that could result from exposure to moisture or water.

5.5.2 Kitchens

The palaces differed among themselves in terms of size, as some palaces were composed of adjacent wings or sections with multiple functions, including administrative and official functions, in addition to service sections that included storage areas, kitchens, and craft sections.

The excavated area of the Tupkish Palace reveals a harmonious architectural construction combining the official and service wings, reflecting a well-organized and developed architectural design for the service wing in the palace, which demonstrates the urban role of Urkesh at the end of the third millennium B.C.

The architectural design of the palaces at Tell Mozan, Tell Chuera, and Tell Leilan shows the proximity of the kitchen wing to the reception courtyard, which was crucial for ensuring the rapid service of the king and his guests, as well as for serving the courtyard during ceremonies and banquets. For example, at Tell Mozan, access from the kitchen (D1) to the reception courtyard (H3) is through a staircase located in the north-east corner, leading to a small room east of the kitchen that directly opens to the reception courtyard through a door in the western wall of the courtyard. Similarly, in the Lower Eastern Town Palace at Tell Leilan, the kitchen wing, composed of rooms 12, 13, and 14, is located north-east of the reception wing (courtyard 20).

At Tell Chuera, the kitchen (room 47) is located south-west of the reception courtyard (room 16), accessible through a door in the northern wall leading to room 44, which directly overlooks the reception courtyard, as well as through rooms 31 and 34. In contrast, at Tell Brak, no evidence of residential use was found, and therefore no kitchen

installations were discovered in the palace, which functioned more as a military fortress than a royal palace.[114] This stands in contrast to the palace at Tell Mozan, where archaeological evidence indicates the presence of storage areas, kitchens, bathrooms, and drainage systems — all pointing to this architectural complex being a permanent royal residence, not a temporary one.

Both Mozan and Chuera share a prominent architectural feature: the presence of a small storage room designated for storing high-value materials requiring special care. At Mozan, there is the small room (D3) within the kitchen sector (*see section 4.1.1.1.3*), and similarly at Tell Chuera, there is room (45), which served the same purpose. Among the most important contents of these rooms were beverages, especially wine, which was served to the reception courtyard of the palace. There is also the small storage room 5 at Tell Leilan; however, no door was discovered for this room, where a collection of tablets and door seals related to the servants was found. This room was adjacent to the northern wall of room 2, which opens directly through a door to courtyard 20. Notably, in room 2, door seals and a collection of seal impressions concerning wine, belonging to the ruler Jakūn-Ašar, were found,[115] indicating that the documents discovered near the reception courtyards in the northern Mesopotamian palaces were all, or mostly, related to wine. In any case, archaeological evidence revealed that room (16) served the same function — that is, presenting wine to visitors in the courtyard — and was connected via a door located on the south-eastern side of courtyard 20.

Sanitation channels are distributed throughout the service wing of the Urkesh Palace, where an advanced drainage system was uncovered

114 Tammum et al., 2014-2015.

115 Eidem, 2011: 18.

(*see section 4.3.1.2*) extending from the north through the service wing to drain used water, including water from the bathroom in room C6, and then out of the building (*see section 3.1.2.1.3.5*). This system shows a great similarity to what was found in the palace at Tell Chuera, where in the kitchen wing, specifically in room 44, which borders the kitchen (room 47) on the north, a stone-built drainage system was revealed. This channel carried wastewater from courtyard 16 through room 43, as well as water joining from the bathroom (room 43), to be discharged westward outside the building. This is evidence that room 44 was used as a food preparation room alongside kitchen room 47, which contained kitchen installations.

At Tell Leilan, a similar sanitation system can be observed in the kitchen wing, specifically in rooms 12, 13, 14, and 17, which was designated for wastewater disposal. Perhaps the most notable point in this context at Tell Beydar lies in the importance of the drainage channel that discharged wastewater and rainwater from the main courtyard through the main street to the south outside the building, where the sloping incline of the street from the top of the acropolis to the lower part of the site acted as an effective driving force to expel the water. This was also observed at the Urkesh Palace, where the drainage system begins from the formal wing, which is elevated about 2.5 meters above the service wing, providing the necessary force to push the water from the formal wing, passing through the service wing, and then out of the building.

Officials in Urkesh, particularly high-ranking figures, acted on behalf of the king or queen in many daily affairs and economic activities.

Notably, the role of the cook Tuli (*see section 4.2.2*) emerges, as indicated by seal impressions bearing her name, showing her involvement

in and supervision of food preparation within the palace, using seals in her name or on behalf of Queen Uqnitum. Tuli's profession points very directly to the function of the space as a kitchen. This administrative pattern can also be observed in some neighbouring Mesopotamian palaces; for example, at Tell Leilan, specifically in the kitchen and storage wing (room 23), seals were found belonging to Sin-Iddin, who held the title "palace baker," along with hundreds of other seals belonging to servants who served all the kings of Leilan.[116]

From the above, we can deduce the vital role that the service wing — especially the kitchens — played in the organization and administration within the royal palaces of northern Mesopotamia. These kitchens were not merely architectural structures whose function was to prepare food through the presence of ovens, hearths, and platforms, but were also part of an architectural and administrative system reflecting the role of the cooks in serving the palace and its officials.

5.5.3 The Economic Role of the Service Wings

The diversity and number of wings in the royal palaces at the end of the third millennium B.C provide clear evidence of the immense development that the city itself underwent — a development that encompassed political, economic, and social dimensions alike. This also indicates that these palaces were not merely royal residences but served as centers of commercial and economic activity within the framework of the kingdom or state.

The cultivation of economic power was one of the most important factors contributing to the emergence of administrative authority during the third millennium B.C, which gradually led to the decline of the

116 Ristvet & Weiss, 2010, pp. 11-47.

priest's role and the rise of the king's authority and stature. As societies evolved and became more stable, the need emerged for architectural structures more suited to the authority of the king, especially the palace, which became the secure and primary refuge for hosting economic power, protecting it through storage in large and spacious warehouses[117] directly managed by the king or through officials subordinate to him.

The great palaces were constructed and divided into several wings that corresponded to the economic and commercial strength of each kingdom; a powerful and wealthy kingdom was capable of building a massive palace reflecting its wealth and prominent political role. Each section or wing of these palaces had a specific function, as seen in the royal palace at Tell Mozan, where the service wing played a prominent role in showcasing the kingdom's economic strength, particularly through the storage sector (Sector B) (*see section 3.1.2.1.2*), which contained many seal impressions placed on jars and containers arriving at the storage facilities from the surrounding lands and countryside.

5.5.3.1 The Economic sector

The storage sector constituted the primary economic element within the palace, playing a pivotal role as the connecting link between the palace center and the external world. These sectors were typically positioned at the entrances of palaces to facilitate the movement of goods carried in and out by donkeys and bulls. This pattern can be observed at the site of Mozan, where the storage sector, represented by Sector B, includes a large room (B1) and a smaller one (B3) measuring 2.9 square meters, in addition to an iwan (B2) that connects the two rooms. In this sector, more than 1,000 seal impressions were found, along with storage

117 Emberling, et al., 2001, pp. 21-54.

jars, especially in Room B1 — a large rectangular room measuring 67.2 square meters, making it the largest room in this sector.

At Tell Beydar, the storage facility consisted of four small sequential rooms on the eastern side of the palace, forming a rectangular building used as the palace's storeroom. Notably, these rooms were quite distant from the main entrance. Meanwhile, on the southern side of Temples C and B, there is a cluster of sixteen rooms built as an integrated unit, located directly west of the palace's main entrance, containing large quantities of ceramics and several large storage jars. It is likely that these rooms formed a series of workshops connected to the temples, suggesting that the temples played a larger role in the life of the city than the palace did — indicating that the city functioned more like a military garrison situated along trade caravan routes, with the palace serving primarily as the governor's headquarters rather than the king's or royal family's residence.

At Tell Leilan, the storage wing appears in the south-eastern part of the palace, consisting of a series of rooms measuring 2 × 2.75 meters, including Rooms 21, 22, 23, and 24. Excavations in this wing revealed several storage jars, especially in Room 22. What distinguishes this sector is its proximity to the palace's main entrance, as well as the size of the rooms, which recalls the size of Room B3 in the Tell Mozan storeroom, measuring 2.9 square meters — a size very similar to the storage rooms at Leilan. It is worth noting that Room B3 at Mozan was designated for storing jars containing valuable or perishable goods, i.e., items of significant importance or those prone to spoilage.

At Tell Brak, archaeological evidence suggests that the entire palace functioned as a warehouse and storage facility, given the absence

of any residential indicators within it; its rooms consisted of narrow, elongated spaces with thick walls.

5.5.3.2 The Administrative Sector

It appears that the storage sector at Tell Leilan served multiple simultaneous functions, as its role was not limited to storage alone but also formed an administrative wing housing archives and sometimes even a kitchen. This is evident from the discovery of an oven, burnt bones, and ceramic sherds on the floor of Room 21. Administratively, Room 22 emerged as one of the most important architectural units, where approximately 600 complete tablets were found alongside several hundred tablet fragments, including administrative documents, treaties, and letters.[118]

This scene contrasts with Tell Mozan, where each sector had a distinct and separate function without overlapping roles. For example, Sector C played a critical administrative role within the palace's architectural and service wing structure. This wing demonstrates a high level of organization and complexity compared to the storage sectors of neighbouring palaces, as seen in the number of rooms distributed around the courtyard of iwan C5. Archaeological discoveries in this sector confirmed the presence of scribal quarters, particularly with the identification of a basin and small platform in iwan C2, which were part of a writing installation — the basin held clay used for preparing tablets and seals. Numerous tablets were also uncovered, addressing topics related to social and administrative life within the palace.

At Tell Chuera, some administrative indicators were found in Room 54 through the discovery of cylinder seal impressions used for

118 Weiss et al., 2002, pp. 59-74.

sealing doors. Meanwhile, at Tell Beydar, the palace's administrative wing was located north of the central courtyard and consisted of a series of four interconnected rooms, which housed a variety of administrative tablets.

5.5.3.3 Agriculture

One of the most prominent factors that contributed to the prosperity of the kingdom of Urkesh was its geographical location as an important commercial intermediary linking Mesopotamia and Anatolia. This was similar to the case of the kingdom of Mari, which was distinguished by its border location between northern and southern Mesopotamia on one side, and between northern Mesopotamia and ancient Syria on the other. This strategic position made it a vital and significant commercial center, playing a fundamental role in controlling the movement of trade caravans loaded with goods and agricultural produce.

Furthermore, Urkesh's location in an area with relatively high rainfall levels, reaching approximately 420 mm annually, encouraged its reliance on agriculture, similar to other neighbouring sites.[119] However, Tell Leilan, Chuera, and Beydar all experienced abandonment due to drought waves that struck the region at the end of the third millennium B.C,[120] while life continued at the sites of Tell Mozan and Tell Brak[121] as a single entity known as Urkesh–Nawar, as evidenced by the seal of King Atal-Shen.[122]

119 Buccellati, 2012, pp. 314-319.

120 Weiss et al., 2002, pp. 59-74.

121 McMahon, 2019: 300; Oates, 2005: 12.

122 Eidem & Matthews, 1993: 202.

The continued prosperity of these two sites is attributed to two main reasons: first, their strategic control over important trade routes,[123] which made them depend more on trade than agriculture; and second, Urkesh's control over Tell Brak,[124] which granted it an additional advantage in maintaining good relations with the inhabitants of Anatolia. These relations formed one of the key reasons that helped Urkesh remain prosperous despite climatic fluctuations, which also reflected, to some extent, on Tell Brak.[125]

The storerooms in all the aforementioned palaces revealed the prominent role agriculture played in the economies of these kingdoms, through the large quantities of grains such as barley, wheat, and legumes found in the storerooms. Moreover, the hundreds of seal impressions discovered in the storeroom of Tell Mozan demonstrated the extent of wealth the palace derived from agricultural produce. Conversely, the warehouses in Tell Brak contained remnants of burned grain found in three rooms inside the palace.

As in the present day, taxes represented one of the most important measures used by the state or kingdom to achieve economic security and promote growth. These policies were among the fundamental and decisive means that contributed to economic development in Mesopotamia. Tablet A7.314 (*see section 3.2.1.3.1*) highlights the pivotal role played by the palace in developing the economy and managing the affairs of the kingdom through organizing agriculture, animal husbandry, and imposing taxes, including the so-called "irrigation tax in exchange for livestock."

123 Canby, 2003, pp. 171-173.

124 Weiss, 1983, pp. 39-52.

125 Riehl, 2010, pp. 13-77.

On the other hand, the primary function of the palace of Naram-Sin in Tell Brak was administrative, relying on tax collection from surrounding areas,[126] with goods stored in this building. Undoubtedly, this system was one of the most significant factors that contributed to the wealth of Tell Brak during the late third millennium B.C.

5.5.3.4 Textiles

The tablets discovered in the service wing of the Tell Leilan palace address various economic topics, such as livestock breeding, wheat and barley cultivation, as well as the recording of administrative names, functions, and professions related to the management of economic affairs.[127] The palaces played a central administrative and economic role by owning large herds of livestock and managing vast areas of agricultural fields under their control. They also dominated specialized economic centers involved in trade exchanges between different regions. Tell Leilan Palace offers a clear example of these activities; its archive shows that the palace managed the import and export of a wide range of products, such as wine, silver, and clothing.

A large collection of seals and seal impressions documents various artisanal activities, most notably wool processing. Most of these impressions came from the doors leading to storage rooms within the palace and were linked to officials in the royal court. In Tupkish palace, for example, seal impressions were found showing women carrying balls of wool, a clear indication of their work in wool spinning (*see section 3.2.1.4.1*). This pattern also appears at other sites such as Tell Beydar and Mari, where the textile sector was considered one of the most important

126 Oates, 2005: 10; Tammum et al., 2014-2015: 111.

127 Sallaberger, 2011, pp. 327-342.

productive sectors in Mesopotamia, primarily relying on large quantities of wool.

At Tell Beydar, administrative texts revealed that the central palace authority received goods such as wool through its appointed agents. These texts also provided details about agricultural and livestock activities. One notable discovery at the site was a crescent-shaped building north of the palace, consisting of large rectangular rooms with thin walls. These thin walls were considered additional evidence that the building was not a storage facility but rather stables designated for animals.

At Mari Palace (Fig. 48), the archive revealed numerous exchanged letters that mentioned women tasked with textile production, highlighting the role of women in the textile industry in both Mari and Urkesh. The archive also mentioned one of the king's officials, who was responsible for the palace's warehouses related to clothing, textiles, and laborers, named Mukannišum.[128] This reminds us of the role played by Inin-shadu, the prominent figure in the administration of Uqnitum, whose significant involvement in palace management is evident through the abundance of his seal impressions on containers in the storage rooms, alongside those of the governess Zamena.[129]

It appears that palaces in the third millennium B.C were not merely residential quarters inhabited by the king and his family but rather served as a model of a miniature fortified city situated within the larger city walls. These palaces controlled vast resources of labor, agricultural, pastoral, and industrial products, making them vital centers of economic

128 Michel, 2016, pp. 127-138; Al-Khalesi, 1978.

129 Kelly-Buccellati, 2015, pp. 111-130.

and political power. One cannot overlook the crucial role played by the service wings within the palaces, as these wings constituted the true backbone of economic development and the wealth of the kingdom or state. They were not merely auxiliary or marginal spaces in the palace's life but were an integral part of its operational mechanism, directly contributing to the organization and management of resources and supporting royal authority.

6 Conservation

Archaeological excavations often lead to significant destruction, as excavation is a systematic process aimed at removing archaeological layers, making the preservation of archaeological evidence over time critically important. In this context, the process of data collection and preservation in archaeology assumes exceptional significance, as initial observations are considered the only remaining evidence after the completion of excavation operations. During these processes, artifacts are separated from their environmental context, where these elements had been continuously interacting with their surroundings for thousands of years.[130] Therefore, the archaeologist's task is to reassemble and preserve these fragments, and then revive them—transforming them from individual pieces into integrated entities capable of narrating the history of the past. This differs entirely from the case in which a preserved artwork is found in a museum.

For example, in the service quarter of the royal palace at Tell Mozan, broken and scattered seal impressions were found on the ground. This scattering resulted from the seal breaking when opening containers that held goods shipped from nearby farms to the palace. Hence, the archaeologist's task focuses on reassembling and preserving these pieces, which contributes to deriving insights into storage and transport practices, as well as identifying the owners of the containers. These fragments, which were an integral part of the context of a past civilization, require proper preservation and meticulous reassembly, making them a key tool for deepening historical understanding for researchers.

130 Buccellati, 2020, pp. 247-258.

Working in the archaeological field involves more than just excavating and retrieving archaeological materials; it also entails addressing several key issues at the moment of discovery. Among these is the critical process of conserving the discovered materials and extending their lifespan. While excavation and other archaeological techniques have advanced significantly over the past fifty years, the standards of conservation for excavated materials have not evolved to the same extent. Therefore, both aspects must be considered together to ensure that the finds are preserved and remain accessible for future generations.[131]

Conservation is an essential part of the excavation process because it not only informs us about the excavation itself, but it also plays a pivotal role in shaping strategies, such as the identification of emplacement, the attribution to a specific typological class, an awareness of historical conditions, and the recognition of function. The conservator is not merely an expert to be consulted, even before excavation begins, to maintain the relic and possibly reconstruct it later. Instead, the conservator is an integral voice in the dialogue that shapes understanding during the excavation process. In this light, conservation becomes archaeology itself.[132]

The conservation process requires a high level of decision-making and integrated conceptual planning. It is necessary to apply a methodology that adheres to standard approaches in site conservation planning, intervention, and management. This means that any incorrect decisions or failure to adopt a comprehensive approach to conservation early on can have a cumulative effect, leading to adverse consequences over time.

131 Stanley Price, 1995, pp. 1-9.

132 Buccellati, 2006: 74.

The most important preservation criteria that must be met during any preservation process are as follows:

1. Harmony with the context of the site and the landscape: The conservation resources should be derived from the surrounding environment, ensuring compatibility with the monument's configuration.
2. Functionality without compromising protection: The preservation must effectively fulfil its interpretive and display functions, but not at the expense of the monument's protection.
3. Utilization of local materials and resources: The composition of the shelter should be made from available resources in the surrounding environment. This is crucial for the periodic maintenance of the shelter, as it cannot fulfil its primary function of protection if it is not properly maintained. It is also essential to involve the local community in the maintenance process, as this contributes to strengthening their connection to the place and enhances cultural and historical awareness. This enables the community to play an active role in preserving their heritage.
4. Demonstrated protective ability over time: The preservation process must ensure the monument’s protection from natural factors such as rain, wind, heat, and humidity.
5. Aesthetic consideration: The protective shelter should blend seamlessly with the context of the site and its surrounding landscape. It should serve its protective function while also allowing for public viewing.
6. Finally, environmental study and climate monitoring: This involves the quantitative monitoring of meteorological parameters, such as

temperature, humidity, wind, and rainfall, to assess their impact on preservation efforts.[133]

6.1 The conservation at Tell Mozan (Urkesh)

Although the primary focus of this research is the royal palace at Tell Mozan (Urkesh), it is necessary to also address the conservation of some of the other discovered monuments, such as the Abi and the temple. It is important to highlight the conservation efforts made for these two archaeological landmarks for two reasons. First, it is crucial to emphasize the vital role played by the mission in applying an integrated approach when dealing with the site as a whole from the very first moments of the discovery process. The mission showed a shared commitment to preserving all parts of the site without favoring one structure over another. In other words, the attention was not solely directed towards the fragile mud-brick structures but also extended to the stone components, reflecting a comprehensive and profound vision of the site's significance as an integrated whole, within a unified context.

Second, due to the complex architectural and functional interconnections between these structures, which together form a massive architectural composition, understanding the reciprocal relationship between the palace and the temple reinforces the notion of the site's prominent role during a specific historical period. The temple, associated with the god Kumarbi, had a significant influence on the political and religious life of Urkesh, in addition to the ethnic ties with the north that deeply impacted the kingdom's economy.

133 Agnew, 2001: 8.

6.1.1 Conservation in the Abi area

Initially, a metal grid in the shape of a dome was placed over the opening of the Abi, which was then covered with thick fabric. However, a significant problem arose: the interior of the dome was completely hollow, allowing strong winds to move freely beneath it, which easily damaged the fabric (Fig. 47). As a result, it became necessary to find a more durable solution. By the end of 2013, the first phase of the solution was implemented: the fabric was replaced with overlapping metal sheets, and the gaps between them were sealed with silicon. Additionally, openings were made at the base of the metal sheets for ventilation. The top edges of these openings were tilted upwards, creating a small drainage channel to direct water away from the base of the dome (Fig. 50).

In the second phase, carried out in 2014, the entrance to the Abi was covered with a fixed metal grid, which was also covered with overlapping metal sheets (Fig. 51). The edges of the metal grid were similarly tilted upwards to form a drainage channel that directed rainwater away from the Abi.[134]

Finally, in 2016, the entire metal structure was painted in a color that closely matched the surrounding soil.

6.1.2 Conservation in the temple area

The conservation work in the temple area involves placing clay mortar between the stones after removing weeds, and covering the newly applied mortar with a piece of fabric over the old mortar. Two major threats to the temple's preservation are: first, the temperature, which

134 Buccellati et al., 2018.

causes the mortar to become frail and dry, leading to erosion; and second, rain, which wears away the mortar, making the stones vulnerable to loosening. In the worst case, the stones could become dislodged and lost. In such an event, the stones would be carried away by water, and despite the building's solidity, it would gradually deteriorate. Weeds and bushes are periodically removed from the temple area, as their roots penetrate deep into the ground, destroying archaeological layers and weakening the structure (Fig. 52).

In April 2019, a problem occurred in area J5 of the temple: the collapse of the retaining wall, caused by heavy spring rainfall (Fig. 53). Water seeped between the original wall and the retaining wall, eventually leading to the collapse of the latter. This situation presented two major challenges. First, there were large accumulations of stones scattered on the ground, which marred the view of the site, especially in areas where visitors move (Fig. 54). Second, this retaining wall, with its complex structure, was designed to strengthen the temple wall in that area. The temple wall was constructed in later periods, and the loss of the retaining wall would gradually weaken it. As such, it was crucial to address both issues, starting with the problem of rainwater seeping between the large stones. The restoration process was particularly difficult due to the wall’s complex structure and the lack of local experts in the field of restoration.

However, a temporary solution was implemented: local construction experts carefully stacked the stones atop one another (Fig. 55) to create a new wall that would fulfil the original function of protecting the temple wall. Additionally, the newly formed wall was surrounded on both sides and at the top with burlap bags filled with the same fallen accumulations (Fig. 56). Once this work was completed, it was decided to protect the area between J1 and J5 of the temple by

covering it with a thick fabric (known locally as *Shadir*) during the winter, to be removed at the end of spring, to prevent any further damage to the temple wall.

Looking at the daily records of temperature, humidity, and rainfall from the fall of 2018 to the spring of 2019—the period leading up to the collapse of the retaining wall—we found that the amount of rainfall was exceptionally high compared to previous and subsequent years. The total rainfall reached 718 mm, a significant amount compared to the drought-prone years in Hasakah province, and sufficient to cause considerable damage to an archaeological site.

6.1.3 Conservation in the palace area

After discussing the stratigraphy and functional analyses of the Tupkish palace, which is the main focus of this research, we must now review the methods of conservation applied to it from the moment of excavation to the present, and assess its sustainability over more than twenty years. Since 1990, the archaeological expedition has faced significant challenges in conservation. The royal palace differs from the neighbouring Abi and the temple in that its walls are more fragile, although some parts have been well preserved. The walls consist of a stone base, with the upper portion made of unbaked mud-brick, a material that cannot withstand rain, snow, or heat. Initially, the expedition covered the walls with burlap blankets sewn together. However, a sustainable strategy was needed to preserve the walls of the Palace.

To address this, a simple and temporary protection program was initially devised. The walls were covered with plastic sheeting, and over this, a layer of burlap was placed. Burlap, a locally used fabric for making

wheat bags, was chosen for its durability and brown color, which blends with the color of the surrounding soil. This system worked well by offering a sense of the original volumes of the architecture, while simultaneously protecting the mud-brick walls from further deterioration.

However, three problems arose: first, the tightly secured covers were prone to tearing in the wind; second, there was no air cerculating, so humidity could concentrate and damage the walls; and third, the process of removing the fabric to reveal the walls was time-consuming.

As excavations progressed and new blocks were uncovered, the expedition faced a new challenge—about 400 linear meters of mud-walls were exposed, requiring an upgraded protection system to address the scale of the structure. This need for a more detailed and effective solution led to a revised conservation method in 2003. The expedition introduced a more sustainable approach, relying on local resources, materials, workers, and stakeholders. The goal was twofold: to preserve the walls as valuable archaeological documents, and to maintain the perception of the original architectural volumes.[135]

The conservation method employed for the *Tupkish* palace is not complex or technically advanced, nor does it require substantial materials. It deliberately avoids the use of sophisticated, modern techniques that could potentially endanger the stability of the walls. Instead, the approach relies on simplicity, utilizing basic techniques and locally available materials. This strategy has allowed the conservation efforts to endure even under the most challenging conditions.

The protective system was designed by the expedition, consisting of a metal framework with a trellis-style roof. Over this, metal sheets,

135 Buccellati & Kelly-Buccellati, 2005, pp. 27-59.

known locally as *al-Tutiya*, were fixed. On some walls, a thick layer of mud was applied on top of the metal sheets. In other areas, the walls were covered with a thick fabric layer, followed by a thick layer of mud instead of metal sheets. All sides of the structure are accessible and covered with brown burlap curtains that blend harmoniously with the surrounding environment of the archaeological site (Fig. 57).[136]

Aesthetic considerations were a priority in the design of the protective system; however, these were not pursued at the expense of the archaeological integrity or the conservation process. The aim was to preserve the sense of the original architectural volumes while maintaining an approach that is respectful to the ancient remains. It is important to note that we are dealing with the remains of a building dating back to the third millennium B.C, not a modern structure. This balance between protection, aesthetics, and conservation has been central to ensuring the longevity of the site.

This system is simple and user-friendly, as it can be easily removed and reinstalled in a short amount of time. Inspecting the walls also requires minimal effort because the burlap curtains can be removed from any section at any time. Additionally, the curtains can be opened and closed with ease.

To further reinforce the weaker walls, saddlebags—pieces of burlap filled with sand—were added. These saddlebags were placed like a saddle on the wall, providing additional support and stabilization (Fig. 58).

136 Buccellati & Kelly-Buccellati, 2014.

5.5.3.1 Palace Conservation between (2011 – 2021)

In 2011, the Syrian crisis began, severely impacting Syrian society. The unrest spread throughout all Syrian governorates, including Hasakah province, where Tell Mozan is located. As the situation escalated, all foreign expeditions left. Although the Urkesh expedition also physically left Syria, it remained fully present and active coordinating, directing, and financing the local work at the site in order to preserve the site and carry out regular maintenance work, unlike other foreign expeditions operating in north-east of Syria at that time. At the time, ISIS was just a few miles away from Tell Mozan, having reached Tell Arbid, located about 33 km south of Tell Mozan. From Tell Arbid, one could reach Tell Mozan in just 30 minutes by car.

That year marked the last time the expedition directors, Professors Marilyn Kelly-Buccellati and Giorgio Buccellati, were able to meet with the local assistants at the site, giving them specific instructions for on-going work. Despite being physically absent from Syria, the Urkesh archaeological expedition considered it a moral obligation to care for the Tell Mozan site. They remained committed to safeguarding this important cultural heritage, ensuring that it would be preserved for future generations.[137]

The expedition was able to successfully combine archaeology and conservation through fruitful cooperation with local communities. The result was the preservation of the site over an extended period, despite the challenges posed by the environment and on-going conflict. This dedication also served the local population, a commitment that set the Urkesh team apart from other foreign expeditions working in the Hasakah

137 Buccellati, 2019, pp.187-204.

province, none of which engaged in similar preservation efforts or took responsibility for the protection of their own archaeological sites and housing.

The protective program at Tell Mozan has proven effective; however, this requires periodic maintenance to ensure its sustainability and achieve the desired results. This is where the importance of having local helpers from the nearby village of Mozan becomes crucial, as their primary role is to maintain both the site and its protective program.

Due to the simplicity of the protective system, the curtains that form part of it are vulnerable to wear and tear due to weather conditions, such as heat and rain, or even damage from wild animals, such as foxes. As a result, the curtains require regular maintenance, which typically involves re-sewing the holes with pieces of the same fabric (Fig. 59). However, sometimes the damage is too extensive for repair, and in these cases, the curtains are completely replaced with new ones, measured and tailored to fit the metal structure perfectly (Fig. 60).

The most effective way to ensure the long-term success of the conservation methods is to implement a careful, preventive monitoring system. The curtains are regularly opened to inspect the condition of the walls, assess the integrity of the plastic covering at the top of the walls, and determine whether it needs replacement. Any damage or changes are noted and recorded, allowing for timely interventions when the condition of the mud-brick walls deteriorates.[138]

138 Buccellati et al., 2018.

5.5.3.1.1 Monitoring system of Palace walls

The main objective of the monitoring system is to provide a detailed and accurate record of the condition of the walls over the years.

Each sector is monitored separately through characterization and photography, enabling on-going comparisons with earlier phases of the project. This approach provides a clear understanding of the "state of health" of the walls, allowing for timely interventions and informed decision-making.

Since 2001, systematic photographs of every wall face in the Palace have been taken. Over the years, the number of views has increased, and now nearly every single wall face of the Palace is documented. Ideally, each wall is photographed in its entirety, but in cases where the size of the wall makes this difficult, it is photographed in two halves or three sections. The photographs are taken directly facing the wall, with indirect light during the early morning or late afternoon to avoid harsh shadows (*see conservation section* https://urkesh.org/mz/a/AP-0/ugr/-frame.htm).

In 2010, Elizabeth Drolet, a professional restoration expert, contributed to the monitoring process by adding an accurate text description. She printed the original photographs of each wall face, taken in 2001, and brought them to the site to assess the condition of the walls nine years after the protective system was implemented. Drolet's observations provided a comprehensive evaluation, noting issues such as salt deposits, cracking, delamination, crumbling, detachment, and erosion. These written observations were included in the *Urkesh Global Record (https://urkesh.org/MZ/A/AP/TEXTS/A2/pw-over.htm)*, a key document for tracking the conservation progress.

During the Syrian crisis, I personally continued to oversee this intensive conservation program for the palace walls. In the research appendix (*see section 9*), I provide an overview of wall monitoring in the palace in general, based on previous records and my personal observations, similar to the approach taken by Drolet in 2010. I also evaluate the effectiveness of the system and identify the key issues affecting the palace as a whole.

Beginning in 2010, the monitoring views were systematically labelled according to the following criteria:

1. **Wall Faces**: Each wall face is assigned a sequential number starting from the north-eastern corner of a room. The full designation of each wall face includes the room number followed by the wall face number, separated by a hyphen. For example, a wall in sector D1 would be labelled D1-1, and this numbering system is applied across all sectors of the service wing in the palace.
2. **Doorways**: Doorways are treated as independent units, similar to rooms, and are labelled based on the two rooms they connect. For example, D1-D2n refers to the doorway between kitchen room D1 and the iwan D2.
3. **Door Jambs**: The door jambs are identified with lowercase letters that correspond to the cardinal directions (north, south, east, or west). These directions are based on the perspective from within the doorway, with "east" indicating the direction one faces when standing in the doorway and looking at the jamb. This detailed labelling system ensures that all parts of the site are systematically

monitored, allowing for precise tracking of the condition and changes over time.

Despite the simplicity of the protective system at Mozan, it offers several significant benefits that make it an effective and adaptable solution for the preservation of the site. The major benefits of the system include:

A. Enhanced Interpretation for Visitors: The wrapped reconstruction of the walls significantly contributes to the site's presentation and interpretation for external visitors. It offers a visual reference to the original architectural layout, making the ruins more comprehensible and engaging.
B. Simplicity and Accessibility: One of the greatest virtues of the system is its simplicity. It can be applied and maintained with basic tools: a metal smith to assemble the frame, and a strong sewing machine to create the fabric covers. This makes the system highly adaptable and easy to implement in varying conditions.
C. Non-Intrusiveness: The system does not interfere with the ancient structures themselves. The metal framework simply rests on the floor or, in most cases, on the backfill, and the vertical uprights are positioned about 10 centimetres away from the wall faces. This ensures that the protection method is minimally invasive and respects the integrity of the original walls.
D. Effectiveness in Conservation: Despite its simplicity, the protective system has proven to be an effective conservation method. While some damage has occurred to a few walls over time, this damage is minimal compared to the fragile

condition of the walls when they were first excavated. When compared with the present state of the walls, the system has been largely successful in preserving them in excellent condition.

However, there are some factors that negatively impact the system:

1. Strong Winds: Wind, particularly between the walls and the protective structure, can sometimes cause crumbling of the drywall or tear the burlap fabric. These conditions can lead to localized damage if not monitored closely.
2. Rainwater: Rainwater that seeps through the protective curtains or from the top of the shelters can lead to erosion of the walls. While this is a concern, the overall impact remains minimal thanks to periodic maintenance and constant monitoring. Timely repairs and adjustments are made to address any potential damage caused by these environmental factors.[139]

In conclusion, while there are challenges, the protective system at Mozan has proven to be a reliable and sustainable conservation method. The periodic maintenance and on-going inspection help to minimize damage, ensuring that the site remains preserved for future generations.

139 Buccellati & Bonetti, 2003: 21.

7 Digital Publication

Archaeology occupies a special place in providing primary sources for historical research, as it grants access to the most important data for testing, evaluation, re-analysis, and reinterpretation of both the data and the hypotheses arising from it. Both archaeology and history aim to investigate the human past, meaning they are twins within the same environment. The difference between them lies in the historians' use of written sources and dates, whereas archaeologists focus on material remains and the spatial origin of the material. Reliance on archaeological sources is a priority for any historian, especially in research related to ancient periods[140], due to the crucial role played by tablets, seals, coins, and even ceramics and pottery shards in historical events. All of these materials provide us with stories and facts in which the ancient human was the protagonist and the central figure in their narration. With the emergence of digitization, or what is called the digital revolution, technology has become the best tool for researchers to expand their knowledge. It has also transformed information into a commodity that is rapidly disseminated, widely accessible, and easily available—particularly through the use of computer technology and, subsequently, the provision of digital data online.

7.1 Documentation at Tell Mozan

At the dawn of the computer age, during the international conference on Mari held in 1978 in Deir ez-Zor, Giorgio Buccellati and Marilyn Kelly – Buccellati hosted the participants for lunch in Tell Ashara (ancient Terqa). On this occasion, they presented the first results of their computer-based work using data from Terqa.[141] In this way,

140 Crelin, 2020, https://search.ebscohost.com/login.aspx.

141 Buccellati, 2006: 49.

Buccellatis are considered among the first researchers to introduce computers into the field of documentation in Syria. They also adopted a digital approach to archaeological publication from the very beginning of archaeological documentation at the site. This approach allows for long-term investigations based on the detailed analysis of a large number of primary sources, enabling the formulation of new types of research questions to construct the historical and archaeological narrative through a website that dynamically combines aggregation and storytelling—that is, a systematic, multi-threaded website where the two features are interconnected without relying on just one of them.

Proper documentation of events is of great importance, as it must provide information about the contents and source of the dataset. It must also be comprehensive enough to allow others to fully explore the resource, and detailed enough to enable someone who was not involved in the data creation process to understand the data collection and the process through which it was generated.

Documentation is not only about collecting important data, but also about the systematic arrangement of that data to demonstrate decision-making processes and support diverse needs and priorities in an ever-changing context. This is where the role of digitality comes in: the digital representation of a physical object, converting it into a series of numbers, which can then be used to recreate a likeness of that object on a computer screen.

The current aggregation in most websites relies on linear, analog storytelling, whether in printed texts or electronics such as PDFs and scanned versions. All of these are just collections of information within the "computer" environment, without giving priority to narrative

storytelling, which is one of the most essential skills for historical thinking. This is because comprehension and understanding are the foundation of systematic thinking, which helps any researcher reach a stage where they can live through and recall events in their mind.

Due to the tremendous development and significant increase in digital materials in recent years,[142] there is a need to think about an advanced publishing methodology,[143] just as humans did in the fourth millennium B.C. The increase in goods led to the invention of writing—moving from the process of preserving Tokens as indicators of specific goods within a clay envelope to the creation of a tablet inscribed with specific symbols, each representing a particular commodity in a specific context and arrangement.[144]

This ancient method of calculation not only led to writing but also to numbers, providing us with an excellent example of how human perception has evolved. From here, the idea of the Urkesh Global Record (UGR) emerged, which offers a comprehensive collection of information and digital documents on a website within a complete documentary database. It also contains content organized in a unique conceptual and grammatical structure.

7.1.1 The Urkesh Global Record (UGR)

I was not part of the excavations at Urkesh (Tell Mozan), which were suspended in 2010 due to the war in Syria, nor was I involved in any other site outside Tell Mozan. Despite the abundance of archaeological sites in Syria, particularly in Hasakah Governorate, to which I belong,

142 Zaagsma, 2023, pp. 830-851.

143 Siebold & Matteo, 2022, pp. 170-177.

144 Schmandt-Besserat, 1986, pp. 32-39.

both my studies and the war did not grant me the opportunity to work in excavation. The war led to the suspension of excavations throughout Syria.

As for Urkesh expedition, during the crisis in Syria, the work was limited to awareness-raising activities and conservation, which I directly supervised. On the other hand, parallel to these activities, the digital preservation of materials discovered at Urkesh continued. The goal from the outset was to coordinate between the two preservation processes: the first being the preservation of the site with all its natural and archaeological features, and the second being the preservation of the vast archive accessed from over 25 years of excavations, through reliance on the previous digital excavation approach and the publication of current digital data through the website in the form of digital books.

As a part of my doctoral thesis, which has two components, the first is a written text that addresses the role of service quarters in palaces in the third millennium B.C, focusing particularly on the Palace in Tell Mozan, these are the chapters 1-5 of the thesis. The second is the work on the digital publication of Unit A6 https://urkesh.org/mz/a/A06/TEXTS/MainPage.htm, which is the primary focus of my thesis and largely represents the royal kitchen at the Palace of Urkesh. This unit is considered one of the most important aspects of my dissertation. The work on the most detailed features of this unit is a critical step in producing a high-value scholarly research.

After several years of the completion of excavations in Unit A6, and thanks to the Balzan Prize, we began working on the digital publication of this unit. This work is the result of years of excavation efforts. The work began first with the right-hand side of the webpage for

Unit A6, which involved correcting and reviewing errors, making it easier to complete the left side (Fig. 61). In this. I was able to benefit from the guidance and help of Dr. Lorenzo Crescioli, who as a member of the Urkesh excavation team, could best control the original content of the field notes.

It is also important to acknowledge the crucial role played by the field directors, Professors Raju Kunjummen and Jamal Omer, who meticulously recorded all observations during the excavation.

As a second step, I worked on the left side, which includes the interpretive aspects of the unit. This involved focusing on the chronicle and stratigraphic aspects of the unit, such as excavations and diagramming, as well as dealing with typological aspects, thus creating a comprehensive digital book that can be utilized by many interested parties and researchers. This digital book aims to reconstruct the entire site, compare it in detail, and add different "webpages." Below, I will present some examples that demonstrate the importance of this work and its impact on my research.

7.1.1.1 Excavation and Digital Publication

Excavations in archaeology often cause significant destruction, as they are considered a systematic process of destruction. Consequently, preserving archaeological evidence—whether on paper or on disks that deteriorate over time—is essential. Therefore, the issue of data collection is of great importance in archaeology, as the initial observation often constitutes the only remaining evidence after the completion of excavation activities.

The major excavations took place in the years 1992, 1996, and 1997 in area A6. The temporal distance from the time of excavation

presents a genuine challenge, making the task somewhat difficult for two main reasons. First, as mentioned above, I am not familiar with the general approach of the excavations. Second, the time gap since the excavations means working with old paper archives often requires considerable scrutiny. However, thanks to both the digital approach that was adopted to preserve every note made during the excavation process, and the coherent grammatical methodology applied during the excavations, I am now in a position to work on the excavation process itself—not only on the results. When one deals with fragments to reconstruct a whole, the work returns to the concept of the initial excavation processes, that is, from the first layer to the subsequent ones in terms of the stratigraphic and spatial descriptions of discoveries and excavation boundaries.

Conducting any Sondage in a specific archaeological site provides a wealth of information about the stratigraphic sequence of the site to be excavated. However, this information remains insufficient to fully understand the nature of the site and the relationships among the archaeological layers. This necessitates a systematic excavation process in order to delve deeper into understanding these relationships. In the course of this process, artifacts are separated from their original context —a context with which they were in harmony for thousands of years, existing together as parts of a whole. The archaeologist's task is to connect these scattered parts and bring them back to life.

This is where the concept of the digital discourse emerges: transforming the fragment into a living element that tells us about the past. For example, in the service quarter of the Royal Palace at Tell Mozan, fragmented and scattered seal impressions were found on the

ground. This occurred as a result of the seal being broken once the container—holding goods transported from nearby farms to the palace—was opened.[145] Thus, the archaeologist's task is to reassemble these parts to provide insight into the methods of storage and shipment, as well as the names of the owners of these containers. These fragments were once alive in the past and need to be reassembled to become tools that enrich the excavator's deeper understanding of the past.

Also, a tannur was discovered in the kitchen of Unit 6 and was digitally recorded as f356 https://urkesh.org/MZ/A/A06/D/F/0356.htm. Inside the tannur, remains were found and recorded as f357 https://urkesh.org/MZ/A/A06/D/F/0357.htm. These remains consisted of various contents including pottery sherds, bones, and ash. In addition, a large piece matching the wall of the tannur was found inside the tannur, along with a small stone located about half a meter to the north-west.

After removing this layer (the remains) from inside the tannur, a circular hole was found in the wall of the tannur, approximately 30 cm from the top. The idea here is to determine whether or not we have reached the original floor level of the kitchen. In fact, the presence of this small hole is not for the extraction of ash from the tannur due to its small size. It was certainly used for ventilation, as in order for the tannur to ignite in a closed space, there must be a hole at the bottom. A proper system is required to supply the tannur with the oxygen necessary for combustion. With this hole, the tannur is opened to the air from below, which aids in combustion and effective heat production. This method is still practiced in Mozan village and in the surrounding villages. As for the small stone, it was used to seal the hole after the cooking process in order to prevent ash from rolling out of the tannur. Typically, this hole is

145 Buccellati, 2023: 7.

located at the base of the tannur, i.e., the part directly in contact with the ground surface. In this case, it comes to mind that we have not yet reached the original floor.

The idea of connecting these parts together is unique and certainly enhances the excavation's awareness and understanding to any researcher. In other words, precise documentation regarding how things unfold in the field is not a random act or documentation for the sake of documentation. The practical aim of digital stratigraphic publication is to record every observation and every piece of evidence as a building block in constructing the larger picture. The manner in which any discourse is narrated—if not rigorous and based on facts—will inevitably lead to failure.

An additional point of ambiguity concerns the threshold recorded as f142 https://urkesh.org/MZ/A/A06/D/F/0142.htm: was it truly a threshold separating Room D1 from Room D2 of the kitchen, or rather a barrier that divided the two rooms during the period of the kitchen's use? f142 consists of three rows of bricks and was coated with plaster. It was covered by accumulation layer f215 https://urkesh.org/MZ/A/A06/D/F/0215.htm, which raises doubts about whether f215 served as a floor at the time the threshold was constructed —implying that it postdates f142.

Accumulation f220 https://urkesh.org/MZ/A/A06/D/F/0220.htm was defined as the deposit covered by f215 and extends up to the upper level of threshold f142. However, there is no clear transition between the two accumulations—f215 and f220—so there is no distinguishable difference between them. Both are composed of solid pinkish deposits

with gray patches, inclusions of charred material, as well as pottery sherds and bones.

Furthermore, the hole found in the tannur, as previously discussed, provides clear evidence that threshold f142 was reused during a period later than that of the Royal Palace. This is supported by the alignment of its level with accumulation f113 https://urkesh.org/MZ/A/A06/D/F/0113.htm to the west of f142, where three brick layers appear in direct contact with the upper surface of accumulation f113.

Therefore, it must be noted that digital publication, as adopted at the site, has played a vital role in developing my understanding of archaeological excavation by enhancing my awareness and connecting me to the past. It has fostered in me a relational understanding between perceiving the past and comprehending the present by placing historical subjects within their proper historical context—after analysing and interpreting them from a personal perspective.

Working on the UGR gives me the impression of engaging in a comprehensive excavation process. If we consider the archaeological mound as a web, then clicking on the mouse button to move from one digit to another resembles the very act of excavation itself.

7.1.1.2 Archaeological Research and Digital Publication

Unit 6, located in the service quarter of the Tupkish Palace, plays a fundamental role and serves as the cornerstone of my doctoral dissertation due to its spatial and functional connections with the adjacent units. Together, these units form a massive architectural complex that supports the idea of the distinctive role of service quarters in royal palaces at the end of the third millennium B.C. To highlight this role—

particularly in the context of my dissertation—it is essential to return to the archaeological data preserved in the expedition archive for evaluation, re-analysis, and interpretation in order to align with the broader vision of my study on the palace's service quarter. Therefore, I must sincerely acknowledge the role of the Urkesh Global Record in enhancing this perspective.

At the outset, it should be noted that it is challenging for any archaeological researcher to rely on paper archives—or even digital ones in the form of PDF files—for study and analysis. In such cases, completing the task takes a considerable amount of time due to the sheer volume of archaeological data, which is often unorganized and written in a scattered manner on paper. Moreover, a significant portion of the data remains unpublished, and access to it—even when published—is often difficult or inconvenient. At the same time, it is also not feasible to describe countless digital materials in detail, as the vast quantity of data available in the digital realm can be overwhelming, potentially leading to confusion in the virtual world,[146] and consequently failing to motivate the researcher to collect the necessary data.

One of the key aspects of my study is to shed light on the conservation activities at Tell Mozan in general, and within the Royal Palace in particular, during the period between 2011 and 2021. During this timeframe, one can observe cracks in the palace walls—some wide, others more minor—as well as varying degrees of erosion depending on the nature of each wall. Among the most significant observations that can be noted in this context are two particular cases: one outside the palace in the temple area, and the other within the palace itself.

146 Nygren, 2012, pp. 78-116.

In the temple area, the retaining wall of the temple fence collapsed in the spring of 2019. Meanwhile, in the palace, the wall identified as Doorjamb D2-C7 E showed a noticeable widening of an existing crack in one of the foundation stones during the same year. To understand the causes of these two instances, I consulted the temperature and humidity records available on the website https://urkesh.org/hi-links/sub3a-temp-hum.htm. It became evident that the rainfall levels during the winter of 2018–2019 were significantly higher than in previous years, which had been marked by severe drought.

Thus, it can be said that the drought led to the formation of surface cracks on the temple terrace, particularly along the interface between the retaining wall and the original fence. The large volumes of rainwater subsequently infiltrated through these cracks, weakening the wall and ultimately causing its collapse. As for the stone in Doorjamb D2-C7 E, the heavy rainfall washed away the soil that had surrounded the base of the wall, leading to a subsidence that resulted in the widening of the crack in the stone.

The idea behind these two examples is that the Urkesh Global Record is not limited to the publication of digital books alone, but also demonstrates a deep concern for the finest details of the site as a whole. This is accomplished through the creation of a digital register in the form of a database within the complete site record. For instance, by consulting the temperature and humidity record, I was able to determine the level of rainfall during the same year in which the temple retaining wall collapsed and the crack in one of the palace wall stones widened.

What distinguishes UGR is the high degree of coordination among its components through an expansive web interface that enables

researchers possible with any database. In the UGR we aim to have an interplanar narrative that links multiple components.[147] This feature, I must say, provokes me. The word *provokes* might seem unusual or even strange to the reader, but what I mean is that when reading a particular page, one encounters a set of components in the form of hyperlinks leading to other interconnected elements. One might initially assume that not all these components are necessary or directly helpful in achieving a research goal. Yet, sometimes, out of curiosity, one clicks on them—only to find oneself moving from one page to another, from one component to the next.

As a result, you are soon immersed in a vast amount of information that you genuinely need. This points to the profound integration between pages and portals within the record, forming a seamless, interactive, and highly functional digital ecosystem for archaeological research.

Indeed, linking information through a system of hyperlink is a unique feature. This system includes coded links that enable navigation from one component to another, allowing the user to actively engage with the elements in order to construct a comprehensive narrative. Although this narrative is inherently fragmented, it remains deeply and organically coherent in its structure.

It is essential for any historical researcher to base their writings on studies and research that prioritize utmost accuracy—especially in an age where a wide array of electronic and online sources are readily available. This requires extracting historical facts from primary sources,[148] which contain original material not derived from the interpretation,

147 Buccellati & Kelly-Buccellati, 2023, pp. 1-21.

148 Lee King et al., 2019, pp. 47-52.

summarization, or analysis of another person's work. Historical data must be collected through systematic and thorough research within such primary sources.[149]

In the case of the Urkesh Global Record, one observes a fusion of two types of primary sources. First, the narrative is written by the excavator supervising the fieldwork; second, there is the visual component—whether a photograph or a drawing. These two elements are interconnected through structured digital pathways and hyperlink chains that reveal implicit or hidden assumptions. As a result, they place the researcher face-to-face with the past.

The idea of interrelated links, both formally and conceptually, strengthens for me the notion of the spatial connection of archaeological discoveries with one another. Or rather, it is the same spatial connection of archaeological materials on the ground. This system allows me to study each artifact or archaeological material from its functional aspects and understand its use in the spatial context in which it was discovered, in addition to studying the changes that have occurred at the archaeological site over time.

For instance, the color difference in the bricks on the northern wall of Kitchen D1, which appears as a single block on the ground, is divided into two features in the digital publication of the unit 6: f44 https://urkesh.org/MZ/A/A06/D/F/0044.htm, which is characterized by a grey color, and f78 https://urkesh.org/MZ/A/A06/D/F/0078.htm, which has red bricks. This leads to the conclusion that the wall originally consisted of two sections, or more accurately, that the wall was used in

149 Chassanoff, 2013: 462.

two different time periods. Wall f78 is the original, while f44 was built over the original wall in a later period of the palace's use.

Additionally, the tannur discovered in the kitchen (f356) provides an insight into the system of using tannurs and their positions during that time. This raises the idea that the tannur found in Unit A16 in south-east of A6, which penetrates the courtyard, belongs to a later period of the courtyard's use in the royal palace. All of this allows me to engage directly with the past in order to achieve the various goals of archaeological inquiries related to my research topic, as I am conducting a comprehensive excavation—not on the ground, but through web pages.

8 Conclusion

This study reveals the vital role played by the service quarter as part of the architectural and functional diversity in royal palaces at the end of the third millennium B.C. They were not merely secondary or marginal spaces in palace life, but rather a clear indication and direct cause of the significant development experienced by both the palace and the city. This development encompassed intertwined economic and social dimensions, as evidenced by the abundance of seal impressions discovered in the service quarter of the Tupkish Palace, which highlight the palace's pivotal role in managing economic activities and the wealth of the kingdom.

The location of Urkesh, situated in a water-rich area within a rain-fed stability zone, contributed to the growth and sustainability of agricultural activities. In addition, its strategic position on trade routes linking the northern Anatolian plateau—rich in metals, wood, and stone—with southern Mesopotamia, made the palace a central hub for commercial exchanges within and beyond Urkesh. It also functioned as a central economic institution managing wealth through a well-organized storage system located within the service quarter, indicating an advanced administrative organization for managing and distributing the kingdom's resources. Agricultural and pastoral products were brought to the palace from subordinate towns and villages, and redistributed through it. A comparison with neighboring palaces shows the proximity of storage areas to the main gates, facilitating access for animals transporting goods.

The evidence discovered in the service quarter of the Tupkish palace revealed the palace's supervision over a high-level administrative

organization, managed by members of the royal family or individuals appointed by them. This advancement is reflected in the abundance of seal impressions and, to a limited extent, tablets that addressed social, administrative, economic, and agricultural topics, in addition to the recording and documentation of resources—particularly the tablet that discussed tax imposition, land distribution, and the issuance of legal decisions related to land use. The imposition of a "water irrigation tax in exchange for livestock" stands as clear evidence of the process of domestication.

The study's results showed a high level of administrative and functional organization within the architectural planning, which was closely tied to royal authority. This authority also oversaw artisanal activities, such as textile and wool production, in which women played a pioneering role, as was also evident in the palaces of Mari and Tell Beydar. The palaces possessed large herds of livestock and managed vast agricultural lands, in addition to producing local pottery—documented in Urkesh through seal impressions—which indicates significant industrial development, alongside imported pottery, particularly Caucasian ware.

Comparative analysis with contemporary palaces enabled the identification of shared patterns and architectural differences, such as the presence of courtyards and the proximity of kitchen wings to reception and ceremonial courtyards, as well as storage rooms located near main gates. Differences appeared in the scale and layout of construction. A similar architectural structure is also seen in the palace of Tell Chuera, especially in the use of stone and drainage installations, indicating shared ethnic and cultural links between the two sites.

Some architectural modifications in the service quarter—especially the kitchen, such as the construction of later walls over earlier ones—along with subsequent ceramic formations and grain and plant remains, indicate continued settlement at the site for centuries, during a time when most neighboring palaces had been abandoned. The abundance of finds in the Tupkish Palace—including storage rooms, kitchens, bathrooms, and drainage systems—suggests that the Mozan Palace functioned as a permanent royal residence, unlike some other palaces.

The study also revealed the role of the kitchen in Tell Mozan in daily life and in serving the palace. It functioned as a cooking center, as evidenced by architectural elements such as the tannur (oven), hearth, platforms, its spatial connection to formal and service quarters, and its developed sewage system. Seal impressions point to food preparation and storage activities within the service quarter, reflecting the kitchen's essential role in meeting the palace's nutritional needs.

Among the activities highlighted in this study are the conservation and maintenance efforts carried out by the archaeological expedition from the moment of the site's discovery to the present day. The preservation program included two main components: one focused on maintaining structures such as the temple, palace, and the abi (a necromantic shaft), alongside site maintenance and environmental preservation, with the involvement of the local community and stakeholders—an approach that contributed significantly to the site's sustainability. The second component was digital publication through the (UGR) Urkesh Global Record website, which serves as a pioneering model in connecting traditional archaeological excavation results with modern research tools,

thereby enhancing the scientific value of archaeological data and supporting its continuity and impact on any researcher.

9 Appendix

9.1 Sector D

9.1.1 The kitchen D1

9.1.1.1 The wall D1-1

The wall remains solid and coherent, as noted in Drolet's report in 2010. While some erosion is observable, it is minimal, particularly on the right side of the wall. The cracks, though present, are only slightly wider than in previous years, indicating a slow but gradual change. The stone base of the wall remains in very good condition, with no visible damage over the years.

The primary factors contributing to the observed dryness on most of the palace walls, as confirmed by the temperature and humidity monitoring records of the expedition, are the high humidity levels during the winter and the intense heat in the summer. Syria, in general, has been experiencing severe drought conditions since the early 2000s. Recent reports from the United Nations highlight that Syria is facing its worst drought in approximately 70 years, a situation exacerbated by climate change, reduced rainfall, and rising temperatures. North-eastern Syria, where Tell Mozan is located, is particularly affected, suffering the most from these harsh environmental conditions.

This combination of extreme weather conditions—high humidity in the winter followed by intense summer heat—has contributed to the gradual deterioration of the palace walls, further emphasizing the importance of continuous monitoring and maintenance to preserve this archaeological site.

9.1.1.2 The Wall D1-2

In the fall of 2010, the lower part of the mud-wall, which was labelled with red bricks in Drolet's report, was plastered with mud to protect it from further erosion and potential collapse.

Despite the cracks and slight erosion, particularly on the right side (western side) of the wall, it remains largely preserved. The wall is dry and fragile at the right and left corners, with some loss of the mud-plaster in these areas. Additionally, part of the mud-brick on the top left side of the wall has been lost. The primary damage that has worsened over the years is the continuous drying out of the mud-brick section, particularly the red bricks, along with the gradual loss of the mud-plaster, which began in 2012 and continues to date.

Referring to the temperature and humidity monitoring records for 2012 and 2013, it is evident that the humidity levels during the winter reached very high percentages, exceeding 90% in many months. This was compounded by a very hot summer, where temperatures began rising in April and continued until November, often exceeding 40°C during the peak summer months. The combination of high humidity in the winter and extreme heat in the summer significantly impacted the structure of the mud-brick wall, contributing to substantial erosion of the mud-plaster during these two years. Moreover, red mud-bricks, which are less heat-resistant than gray ones, suffered more under these conditions, exacerbating the deterioration.

9.1.1.3 The Wall D1-3

In comparison with previous years, it is evident that the upper part of the wall, made of mud-brick, has remained fragile since its excavation. Additionally, the wall shows signs of peeling, with the mud-plaster eroded slightly in the middle section of the mud-brick part, primarily due to drought conditions. However, the stone base remains in good condition.

The mud-plaster on the left side of the wall began to peel off in 2015, with the erosion reaching its peak in 2021. Despite these issues and the overall fragility of the wall, it has remained relatively well-preserved over the years.

9.1.1.4 The wall D1-5

There has been no loss of mud-bricks or mortar in the wall. However, some small stones on the left side of the stone section have been lost due to dryness. These stones served as a bonding mortar between the stone and mud parts of the wall. The cracks in the wall remain almost the same as in previous years. Overall, the wall is in good condition.

9.1.1.5 Doorjamb D1-D2 n

There has been no loss of large or small stones, nor any loss of mud-bricks. No visible changes have occurred except for slight erosion on the left side of the wall over the past 10 years, primarily due to dryness.

9.1.1.6 Doorjamb D1-D2 s

The mud-brick section of the wall is frail and dry, with slight cracks present. The wall on the right side of the mud-brick part has eroded, and some bricks are missing. However, the stone base remains in good condition.

Previous reports have indicated that the wall has been in poor condition since 2001, appearing dry and partially collapsed. The ongoing dryness has exacerbated its deterioration, leading to the loss of parts of the wall over the past 10 years. There have been no additional significant changes or damages since then.

9.1.1.7 Doorjamb D1-F1 e

The wall appears dry and crumbly, with erosion visible on both the left and right sides of the mud-brick section. Parts of the mud-brick and mud-plaster have been lost, and the impact of water seepage is evident in the middle of the wall, an issue that will be addressed this year.

Although we lack documentation from 2010 or earlier, the records from 2012 clearly indicate that the structure of the wall was already fragile and experiencing signs of collapse.

It is evident that the wall suffered a slight collapse in its upper part, with parts missing from the lower right section in 2018. The temperature and humidity monitoring records show a significant increase in humidity during the fall of 2017 and winter of 2018, reaching an average of around 80% in some months. This was further compounded by a significant rise

in temperature during the summer of 2018, which contributed to the wall's deterioration.

9.1.1.8 Doorjamb D1-F1 w

The upper part of the wall is frail and dry, but the stones remain in good condition. No visible changes have occurred, except for very slight erosion on the upper section.

Although we lack documentation from 2010, photos taken from 2012 to 2021 show that the wall has remained well-preserved with no significant changes over this period.

9.1.2 The iwan D2

9.1.2.1 The wall D2-2

The stone section of the wall has lost some small stones, particularly those positioned between the larger stones at the base. Additionally, two small stones in the upper part of the same section have disappeared. The upper part has also lost some mud-bricks on the left side, and the wall appears frailer and drier compared to previous years.

It seems that the small stones were used as mortar between the large stones to provide fixation. Due to the dryness and the crumbling of the mud mortar between the small stones, they were displaced and eventually lost. This same issue caused the loss of three stones in 2020, which had been connecting the upper mud-brick parts with the lower stone sections. The fragile and dry condition of the wall contributed to this displacement.

9.1.2.2 The wall D2-5

There has been no loss of stones or mortar, and the wall remains in good condition.

Fortunately, the wall is made of stone, which has helped it remain in excellent condition over time.

9.1.2.3 Doorjamb D2-C7 E

The stones remain in their original positions, although the lower stone on the right side has broken. The upper part of the wall has become more fragile and slightly eroded, with cracks appearing wider than in previous years due to dryness.

This wall appears somewhat different from others. Despite the fragility of the mud section, it has remained preserved, with only slight erosion observed over the years. As for the stone section, it has experienced a slight subsidence into the ground, which led to the widening of a crack in the lower large stone during 2018 and 2019. This was caused by heavy rainfall, as discussed in section (Conservation in the temple area), which resulted in the erosion of the soil surrounding the wall. This erosion caused the wall to slump into the ground, thus expanding the crack.

9.1.2.4 Doorjamb D2-C7 W

The wall is in good condition due to its stone structure, which has helped maintain its stability over time.

9.1.3 Storage Room D3

9.1.3.1 The wall D3-1

The stone base has lost some small stones: one from the right corner and another from the upper part of the stone section. The upper

part has also lost some mud-bricks on the right side and appears frailer than in previous years. The wall has developed slight cracks.

Overall, the wall is in good condition compared to past years. It appears to have slightly eroded in its upper mud-brick section over the past decade, while the lower stone section has lost a few small stones due to drought and the deterioration of the mud mortar between them.

9.1.3.2 The wall D3-4

The wall is in good condition, with no visible changes over the past years.

9.1.3.3 The wall D3-5

There is no loss of stones or mud-bricks. Very slight erosion is visible on the upper part, but overall, the wall is in good condition.

Compared to previous years, the wall remains in good condition, with no significant changes except for slight erosion at the top caused by drought and wind.

9.2 Sector C

The walls in Sector (C) units have generally remained in good condition for over 10 years. The damage is minimal, ranging from very slight to slight, considering that most of the walls have been fragile since their excavation. The damage is limited to simple erosion, peeling mud-plaster, loss of mud mortar, or slight cracks, either on the face of the walls or at the top, primarily due to humidity, high temperatures, wind, and, occasionally, rainwater seeping through the roof of the protective shelters.

However, it is important to mention some of the significant damages that have occurred in this sector since it was excavated. These damages were limited to:

9.2.1 The Wall C1-5

It should be noted that the wall has been frail since its excavation. Drolet's report from 2010 indicates that the eastern half of this wall was in very poor condition, with the entire right edge having been lost. The remaining section on the left is severely gapped. Despite attempts to protect the wall, the face of the wall was subjected to erosion and collapsed during the winter of 2019. This was due to the high percentage of rainfall during 2018 and 2019, which, by the end of 2019, reached 1011 mm, a significant increase compared to previous years. This excess rainfall caused the wall to absorb moisture, leading to the collapse of its dry and fragile face, in addition to rainwater seeping through the protective shelter into the middle of the wall.

9.2.2 The wall C2-3

This wall has been severely damaged since its excavation and has sustained significant losses over time. The right part of the wall has largely been lost, with large cracks forming despite attempts to preserve the remaining sections. Dryness and wind have been some of the major factors that hindered the wall's protection. In the summer of 2020, the right part of the wall became a temporary shelter for a greyhound, which further contributed to its collapse. This situation required prompt intervention to address the damage.

It is known that wild animals, such as greyhounds, often seek out cool places during the hot summer months. Archaeological mounds, like those at Tell Mozan, offer a suitable shelter for these animals to protect them from the heat. This is precisely what occurred with the greyhound taking refuge in the right part of the wall C2-3. In addition, foxes created

several holes in the temple area and on its large staircase at the end of 2021 before we intervened and addressed the problem.

To deal with such wildlife issues, we use traps to catch the animals, after which they are relocated to a place far from the site. The soil is then restored to its original condition, repairing any damage caused by the animals' burrowing.

9.2.3 The wall C2-4

The wall completely collapsed in 2007 due to its inherently frail structure since it was excavated.

9.2.4 Doorjamb C2-C1n

In 2017, the wall experienced erosion, which led to the collapse of some mud-bricks on the right side. Since then, no further changes have occurred. The wall remains fragile but has been preserved.

9.2.5 Doorjamb C5-C7s

The face of the wall was subjected to erosion in 2016 and 2017, which ultimately led to its collapse. However, it is important to note that the collapsed section does not belong to the original structure, but rather to a reconstructed portion from when the palace served as an administrative building during Phase 3. During this period, the entrances were narrowed. This conclusion is supported by two key observations: first, the collapsed section lacks a stone base and is built directly on the ground, and second, there is a noticeable color difference in the mud-bricks. The collapsed part is made of gray mud-bricks, while the original wall is constructed with red mud-bricks.

9.3 Sector B

The overall condition of the sector walls have remained good over the past 10 years.

9.4 Sector E

The general condition of the walls is good, with the exception of some slight erosion caused by dryness, particularly on the E1-2 wall. This wall appears to have collapsed on the right side, and the cracks have become wider compared to previous years.

9.5 Sector F

Some of the walls in sector F are in very poor condition and have crumbled, particularly wall F1-2. Despite efforts to protect it by wrapping it with thick fabric to prevent further crumbling and fragmentation, the wall continues to collapse, with cracks widening progressively. It is at high risk of collapsing completely due to severe dryness. Additionally, wall F1-4 has suffered erosion in the middle.

As for the Doorjamb F1-G1s, the wall appears to have collapsed, and the cracks have significantly widened compared to previous years. Large sections of the mud-bricks have been lost, leaving the wall highly susceptible to complete crumbling at any moment. The cracks that have led to the fragmentation of this wall began to appear and widen continuously in 2005 and 2006. The temperature and humidity records from those years indicate that both the winter humidity and summer temperatures were exceptionally high, which severely impacted the wall. The resulting dryness, combined with the increasing cracks, contributed to its deterioration over the following years. This same issue also affected wall F1-2.

10 Figures

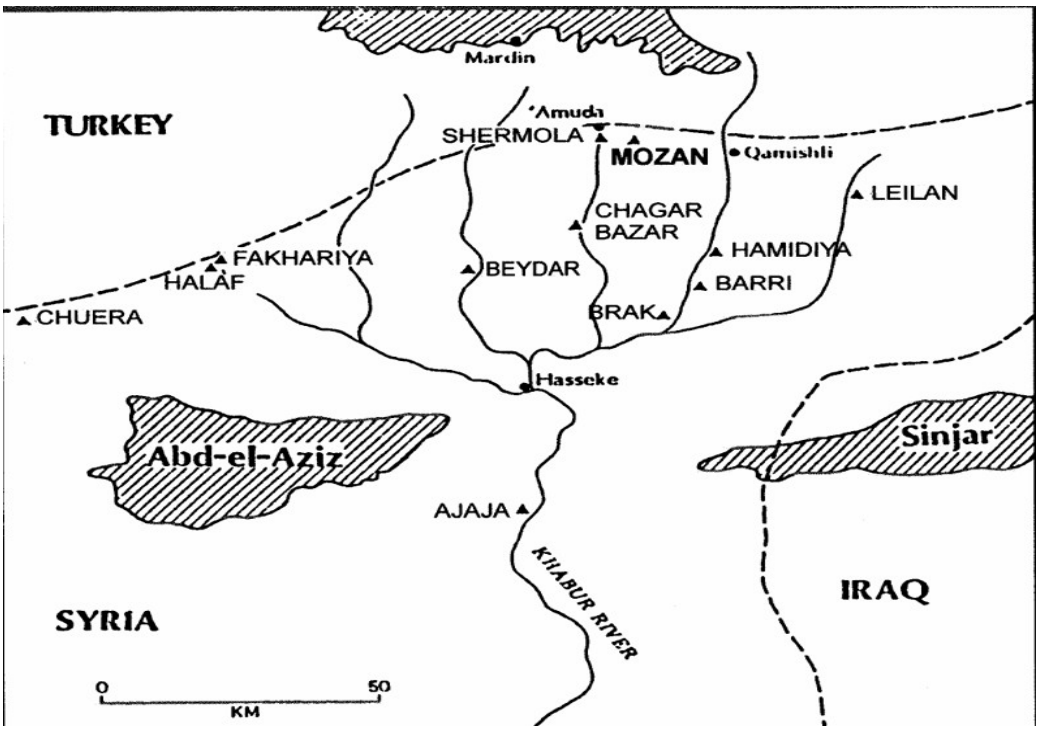

Figure 1: An illustrative image of the location of Tell Mozan and the tributaries of the Khabur River. Source: Buccellati and Kelly-Buccellati. 1995, 67.

Figure 2: An Andiron from Urkesh. Source: Buccellati and Kelly-Buccellati. 2007, 146.

Figure 3: Two small bronze lion statues from Urkesh. Source: Buccellati and Kelly-Buccellati. 2014, 52.

Figure 4: The temple staircase in Urkesh. Source: Buccellati and Kelly-Buccellati. 2014,63.

Figure 5: The Abi structure discovered in Urkesh. Source: Buccellati and Kelly-Buccellati. 2014,70.

Figure 6: A small vessel in the shape of a nude woman miniature form on her head. Source: Kelly-Buccellati. 2016,51.

Figure 7: The Betili pillars in front of the staircase of the temple. Source: Buccellati and Kelly-Buccellati. 2014,63.

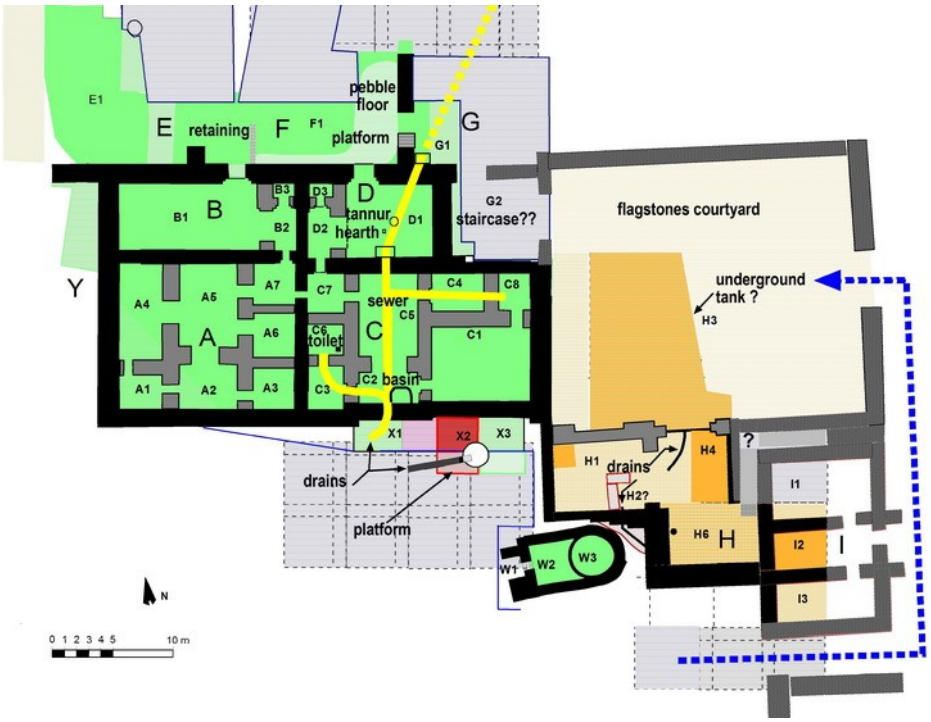

Figure 8: General Plan of the Urkesh Palace. Source: The Urkesh Website, accessed June 23, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-intro.htm.

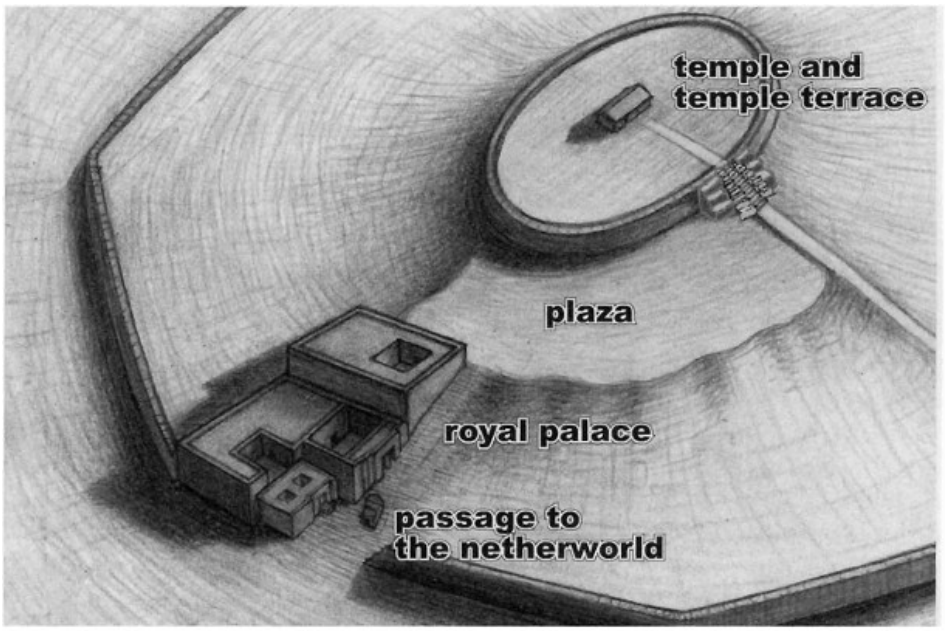

Figure 9: General Plan of the large urban complex in Urkesh. Source: Buccellati. 2005, 7.

Figure 10: A rectangular clay basin inside Room C2.
Source: Buccellati. 2016, 62.

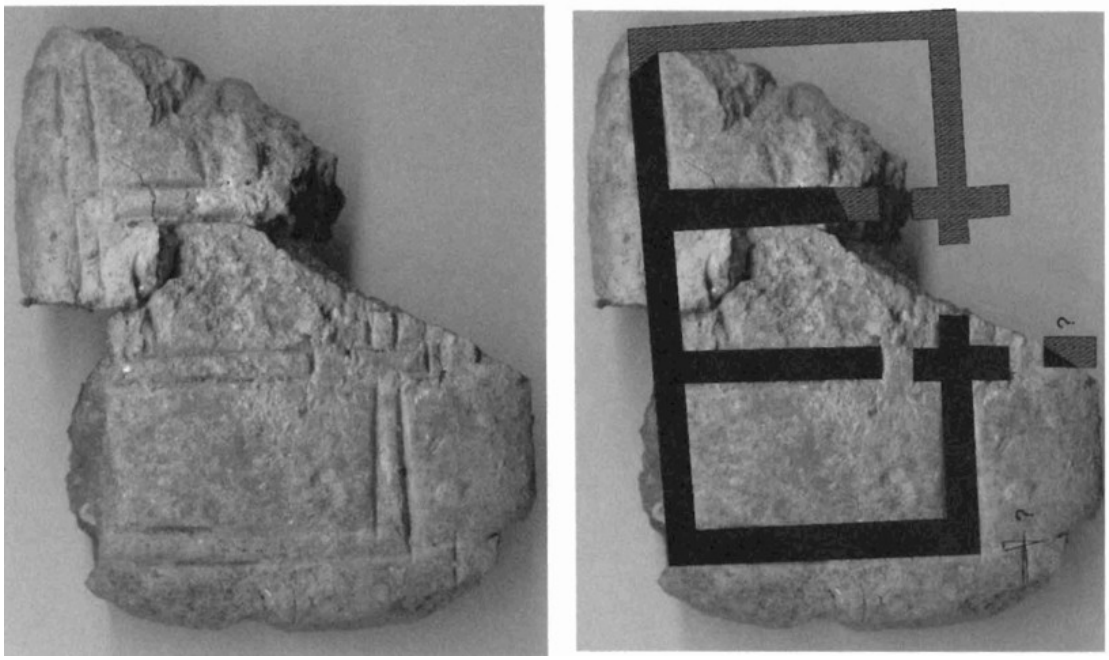

Figure 11: An architectural plan for Sector I. Source: Buccellati. 2005, 18.

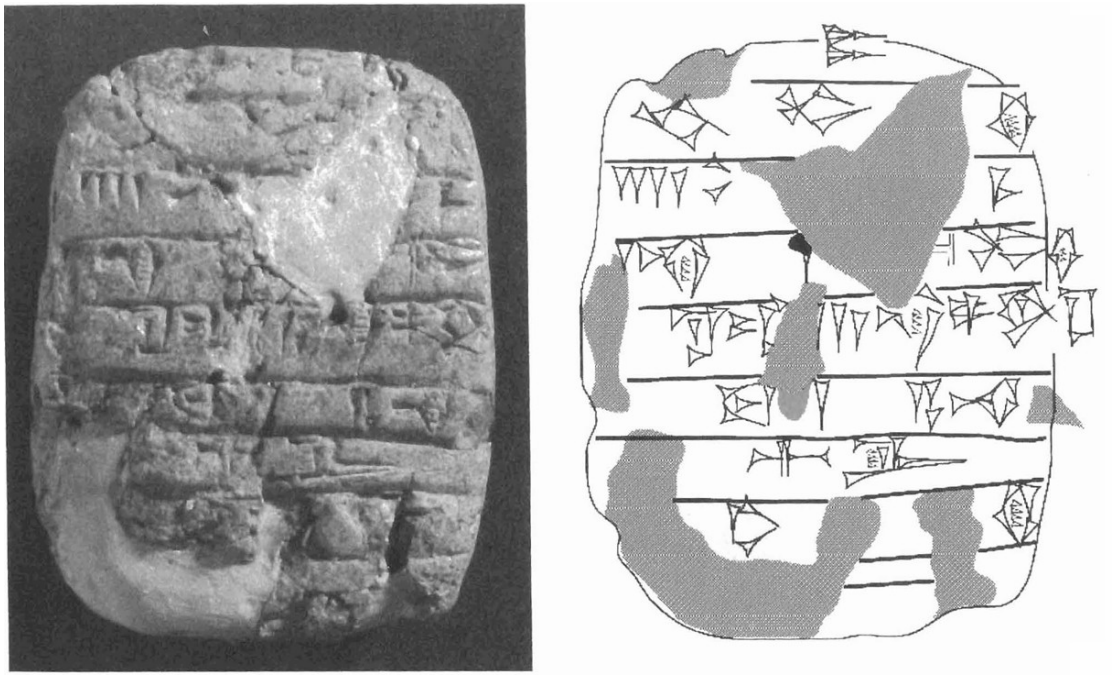

Figure 12: Cuneiform tablet A10.377. The tablet was found in room C4 of the service quarter. It is an administrative text written in Akkadian. Source: Buccellati. 2005, 22.

Figure 13: Cuneiform tablet A10.163 . An administrative text was found in Room C2 in the service quarter. Text written in Akkadian. Source: The Urkesh Website, accessed September 23, 2025, https://urkesh.org/MZ/A/A10/D/I/0163.htm.

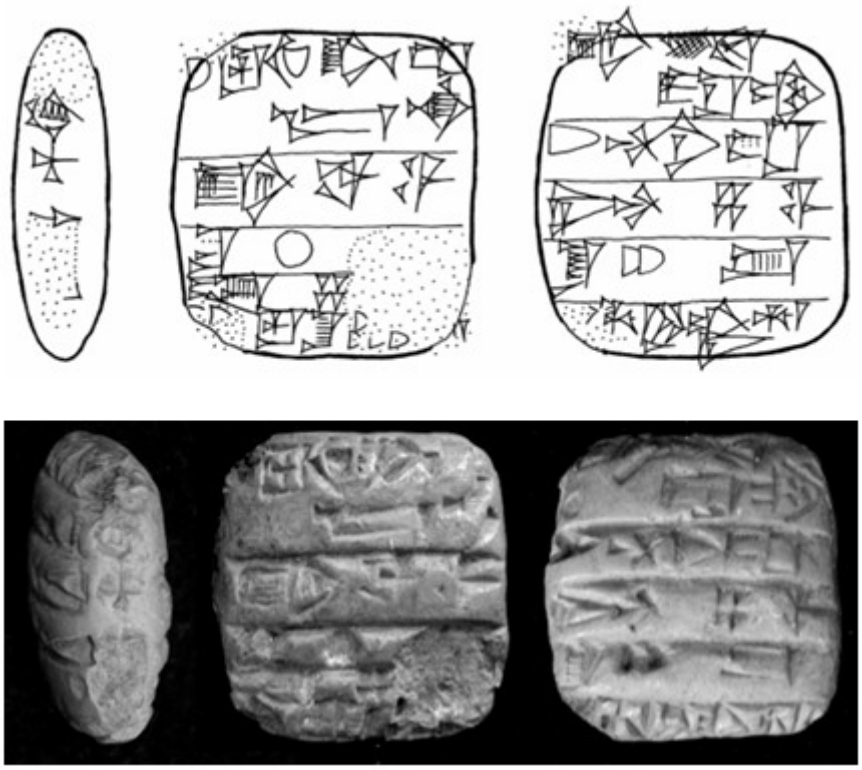

Figure 14: Cuneiform tablet A7.341 . An important document that highlights the economic and administrative role of the palace. Source: Maiocchi. 2011, 191-203.

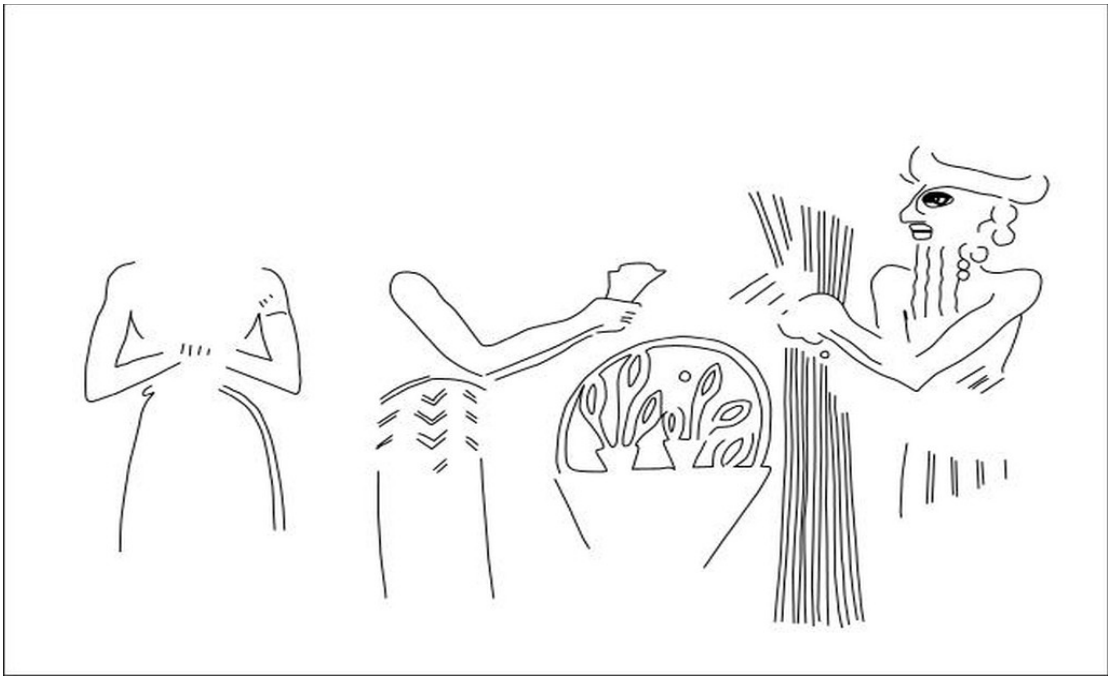

Figure 15: Seal impression A6.121, discovered in the kitchen. The Urkesh Website, accessed June 23, 2025, https://urkesh.org/MZ/A/A06/D/I/0121.htm.

Figure 16: Seal impression A6.97, discovered in the kitchen. Source: The Urkesh Website, accessed June 23, 2025, https://urkesh.org/MZ/A/A06/D/I/0097.htm.

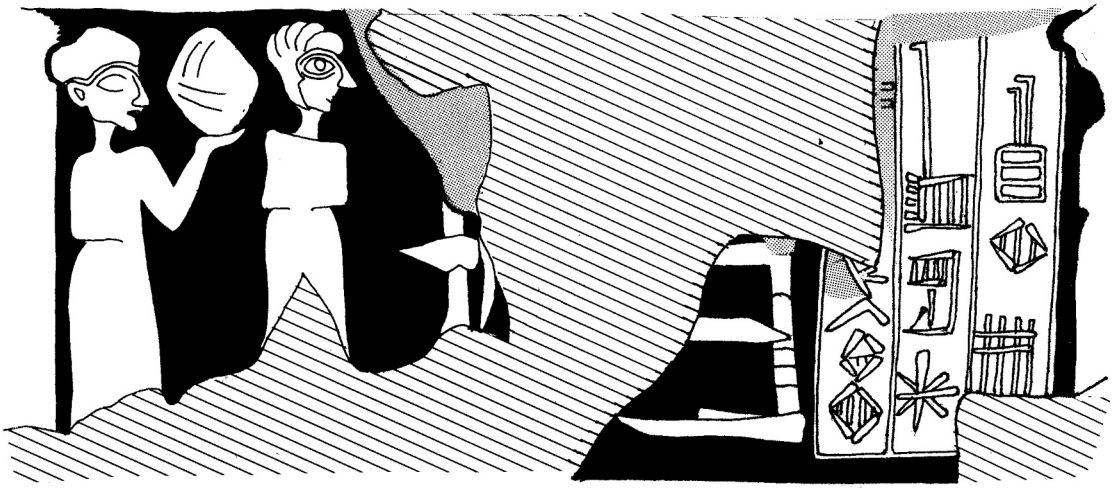

Figure 17: Seal Impression from K1. Two female servants are shown, one of whom is likely holding a ball of wool. Source: Buccellati and Kelly-Buccellati. 1995,11.

Figure 18: Seal Impression A5q680.1 from Urkesh. The seal depicts a human figure and the cattle. Source: Kelly-Buccellati. 2006,411.

Figure 19: The seal impression A1.364 from Urkesh.
The seal depicts a phase in pottery production.
Source: Kelly-Buccellati. 2015,125.

Figure 20: A collection of blades and flakes core made of obsidian was found in the service wing. Source:Kelly-Buccellati. 2013, 1869.

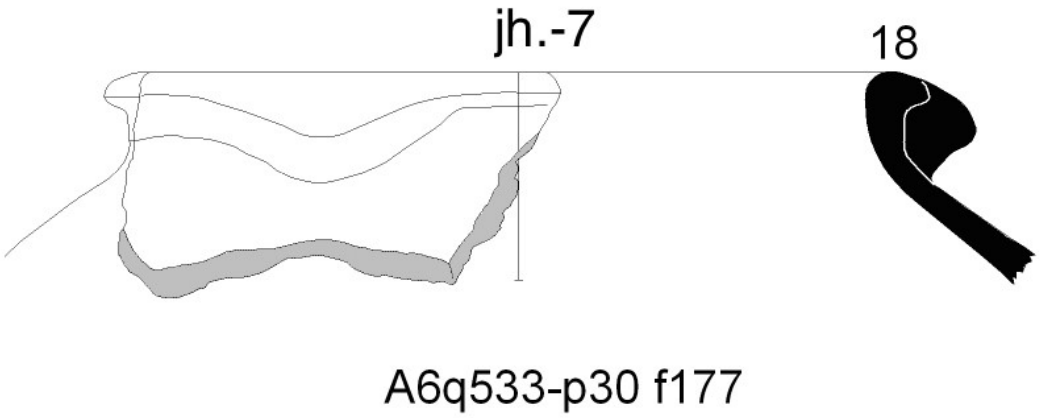

Figure 21: Hole-mouth jar was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-jars.htm#hole.

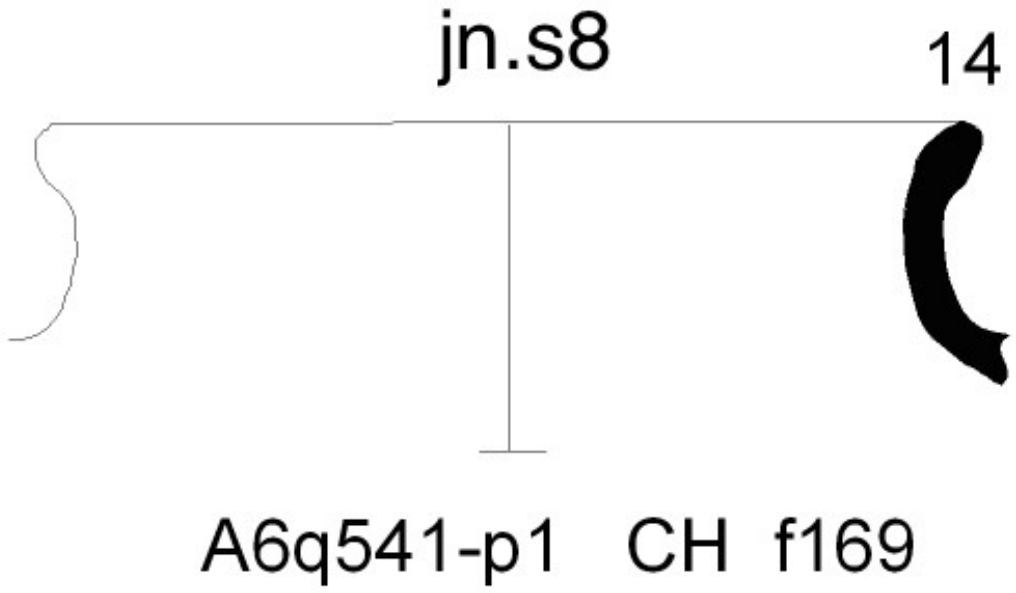

Figure 22: Straight-necked jar was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-jars.htm#straight.

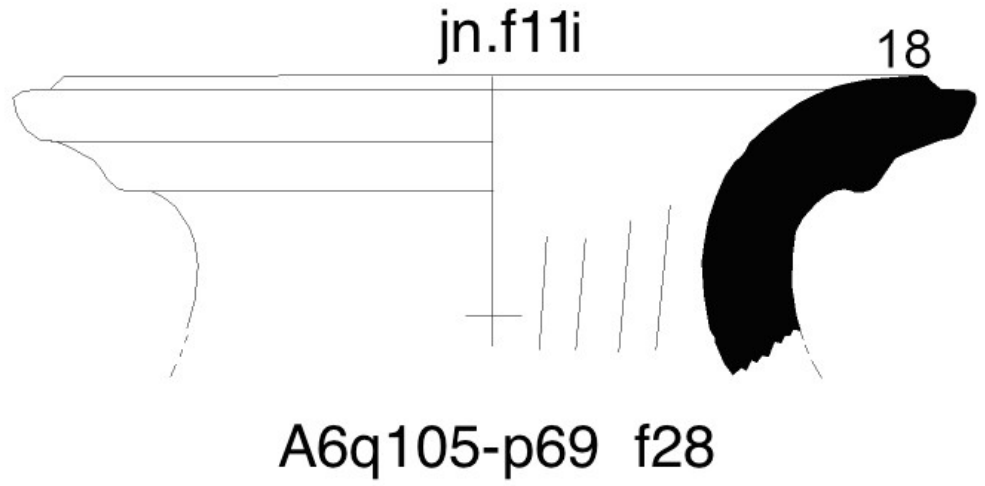

Figure 23: Jar with a flaring neck was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-jars.htm#flaring.

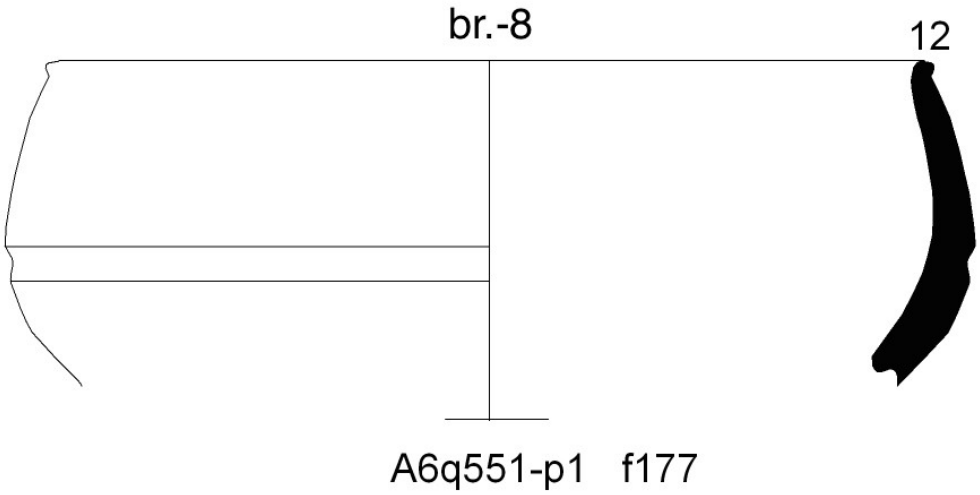

Figure 24: Rounded bowl was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-bowls.htm#round.

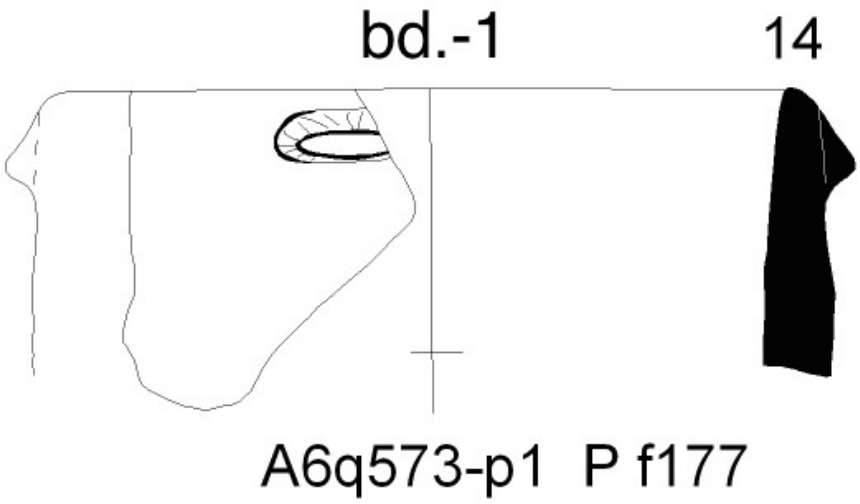

Figure 25: Deep bowl with two crescent-shaped handles was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-bowls.htm#deep.

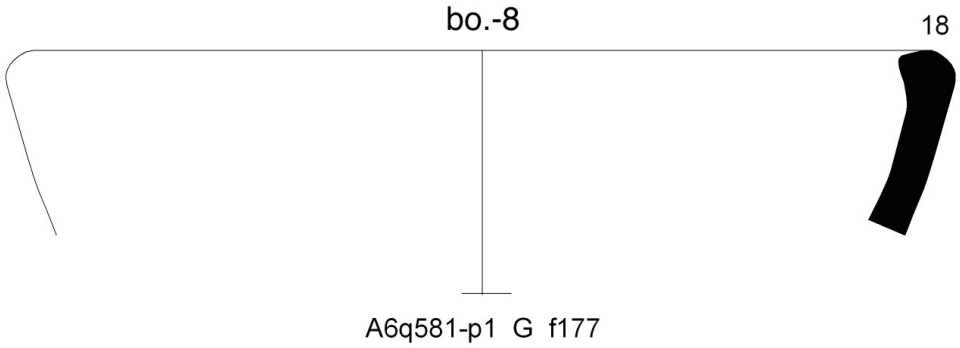

Figure 26: Bowl with an internal projection rim was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-bowls.htm#other.

Figure 27: Round-sided bowl with a flat base was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/A06/D/I/0094.htm.

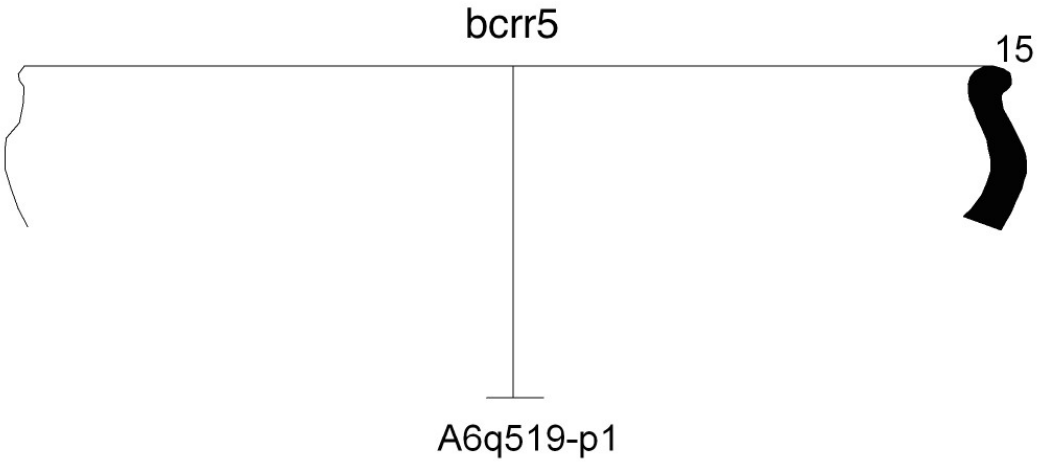

Figure 28: Carinated bowl with a rounded carination was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-bowls.htm#carinated.

Figure 29: Seal impressions depicts the king raising a cup with his right hand. Source: Kelly-Buccellati. 2015, 113.

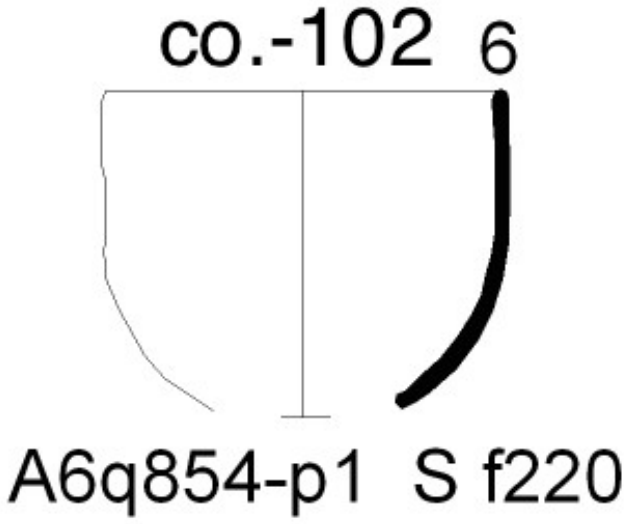

Figure 30: Cup with inturned mid-body was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-cups.htm#other.

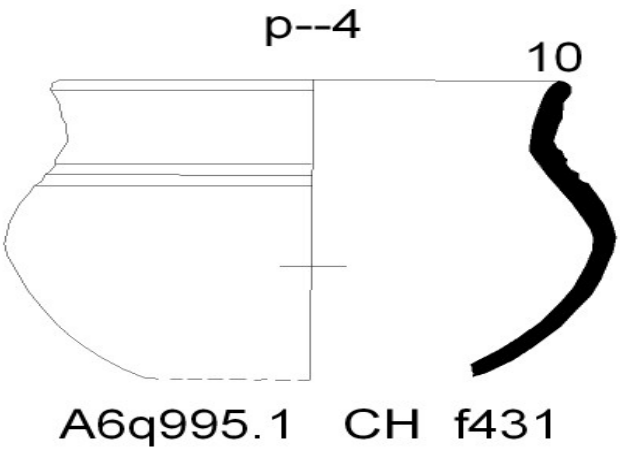

Figure 31: Cooking pots with two handles attached to the rim was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-pots.htm#pots.

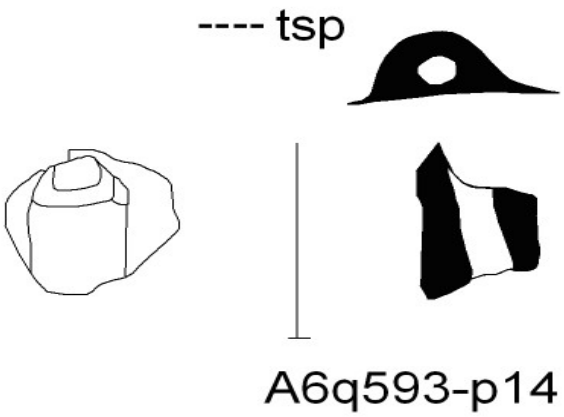

Figure 32: Medium-sized pot with pierced lug handles was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-handles.htm#single.

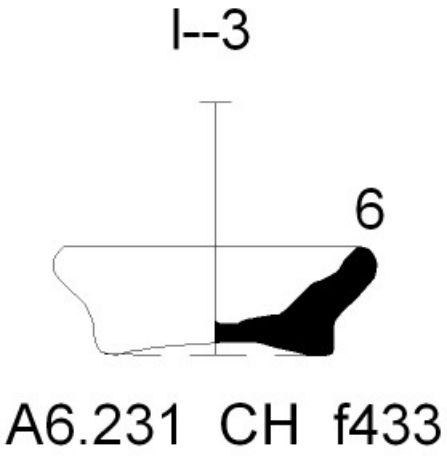

Figure 33: Concave base of a small plate was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-bases.htm.

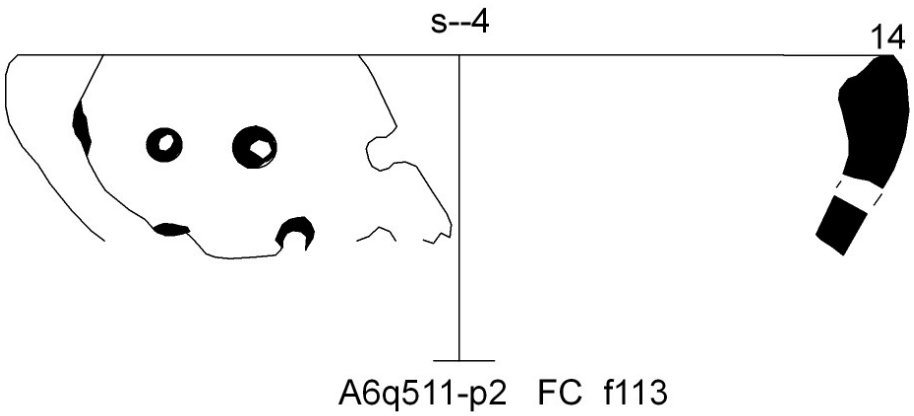

Figure 34: A Strainer was discovered in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/TCR/TEXTS/C1/Imperial/Ak-strainers.htm.

Figure 35: The cook Tuli's seal impressions from the kitchen. Source: Buccellati and Kelly-Buccellati. 2014,48.

Figure 36: An uninscribed seal impression from the kitchen depicts figures engaged in preparing food. Source: Buccellati and Kelly-Buccellati. 1997,82.

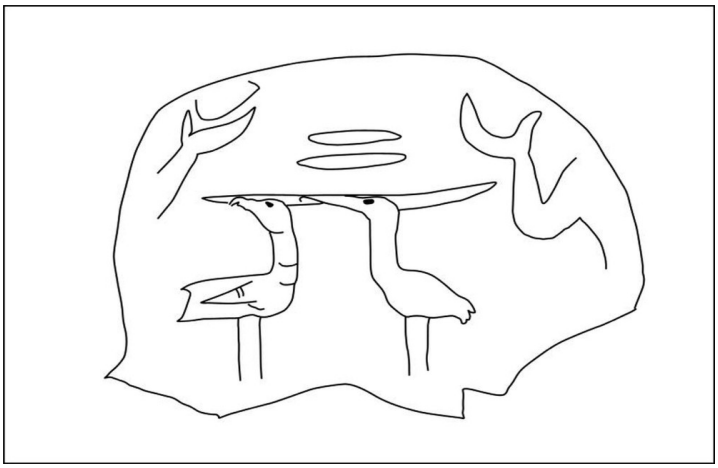

Figure 37: A seal impression from the kitchen depicts a hand holding a cup and a bird table containing two flat objects. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/A06/D/QI/069102.htm.

Figure 38: A tannur and hearth were found in the kitchen. Source: The Urkesh Website, accessed June 24, 2025, https://urkesh.org/MZ/A/A06/D/F/0356.htm.

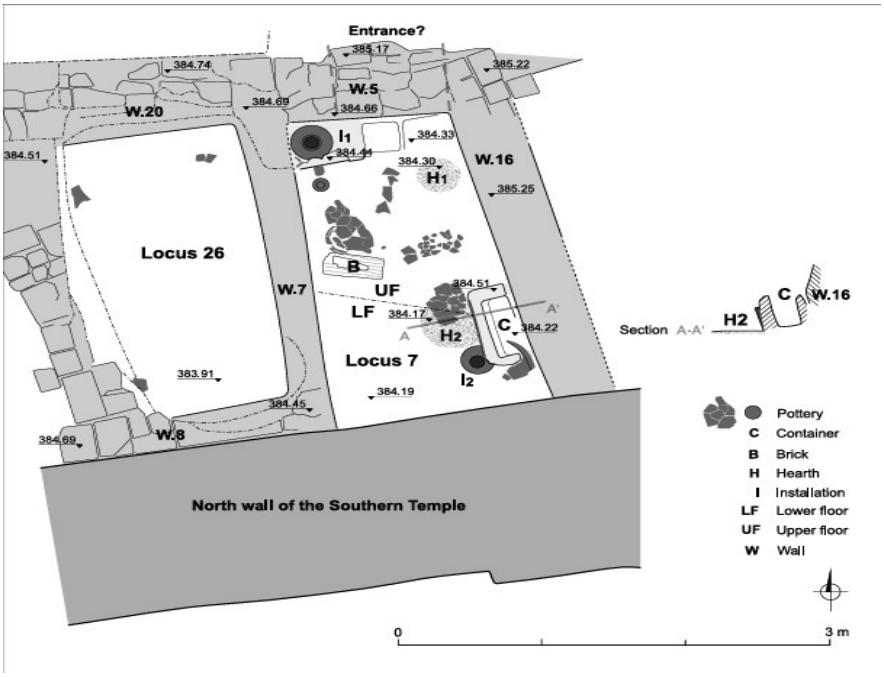

Figure 39: A plan showing both Locus 7 and Locus 26 from the site of Tell Arbid. Source: Reiche and Smogorzewska. 2013,373.

Figure 40: The large eastern wall of Room C1 (C1-1) in service wing.
Source: The Urkesh Website, accessed June 24, 2025,
https://urkesh.org/mz/a/AP/TEXTS/A2/C1/pw-C1-1.htm.

Figure 41: The eastern wall of Room D1 (D1-1) in service wing.
Source: The Urkesh Website, accessed June 25, 2025.
https://urkesh.org/mz/a/AP/TEXTS/A2/D1/pw-D1-1.htm.

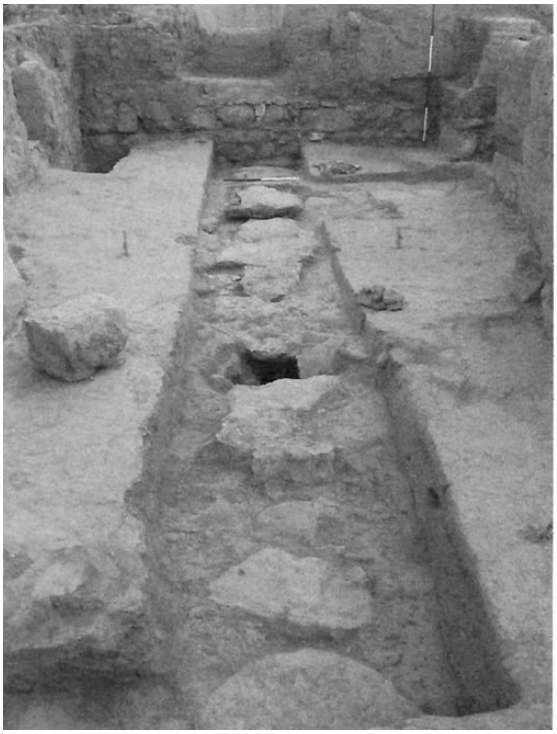

Figure 42: Part of a comprehensive drainage system in service wing. Source: Buccellati. 2005,20.

Figure 43: The brick platform between F1 and G1 in the north-east of the kitchen. Source: Buccellati. 2016,65.

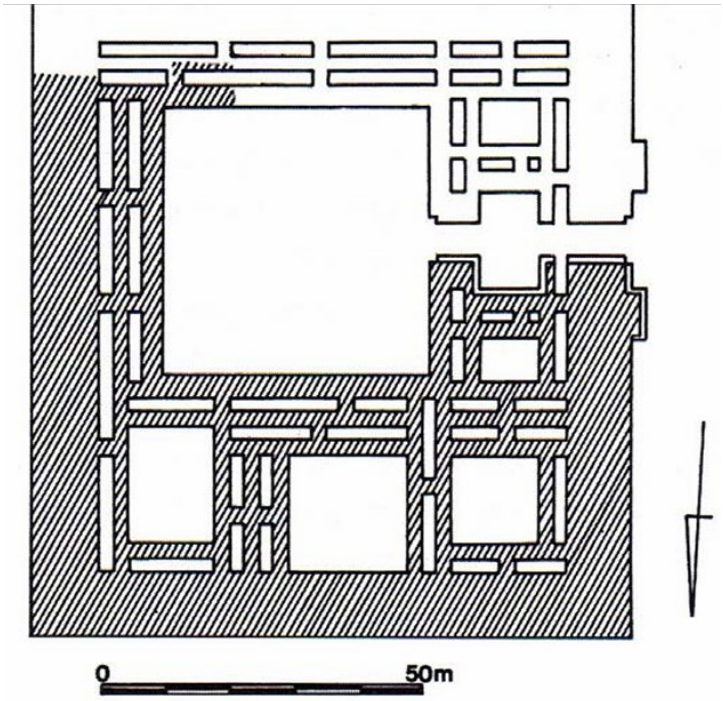

Figure 44: The plan of Naram-Sin Palace in Tell Brak. Source: Bagdo. 2009,74.

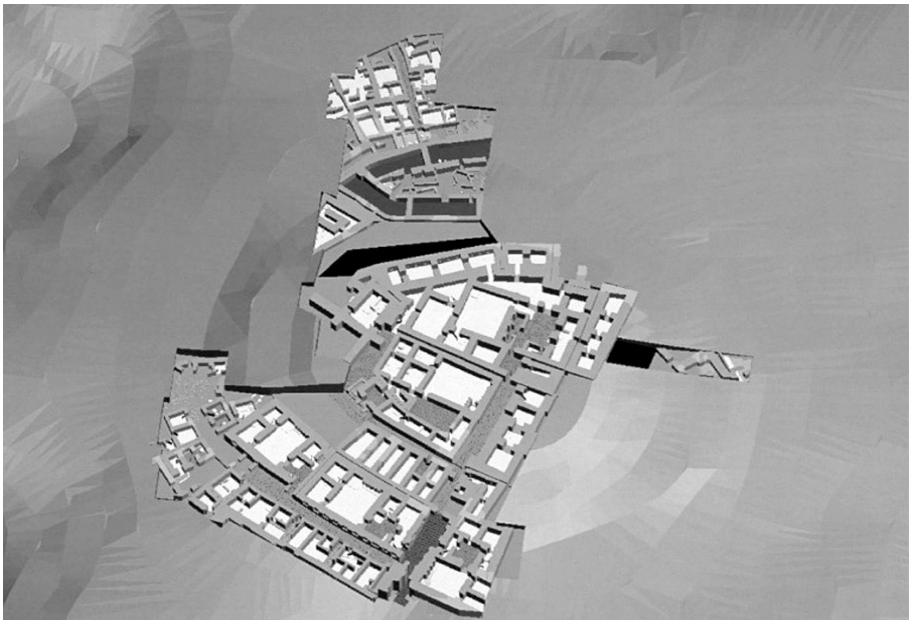

Figure 45: The plan of Tell Beydar Palace. Source: Lebeau and Suleiman. 2002, fig. 51.

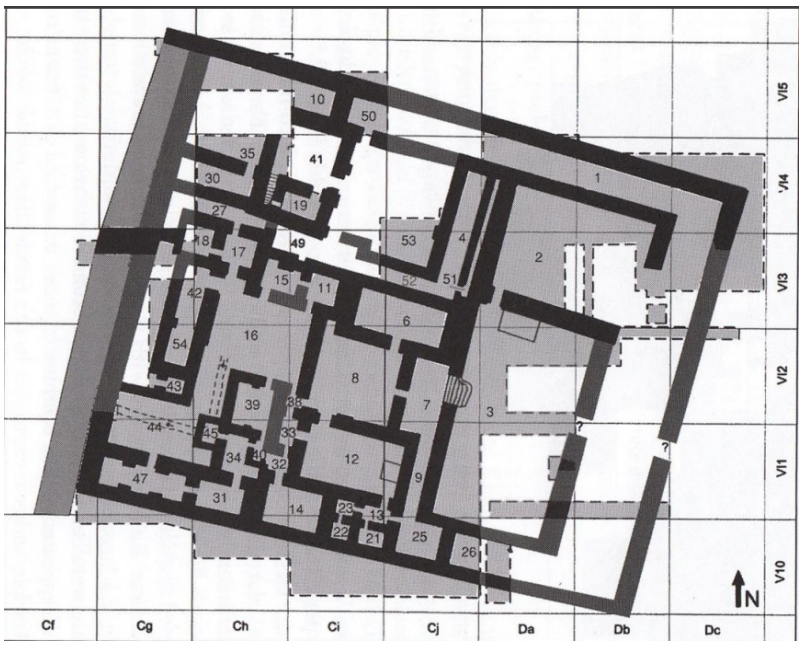

Figure 46: The plan of Tell Chuera Palace. Source: Al-Tunsi. 2021, 330.

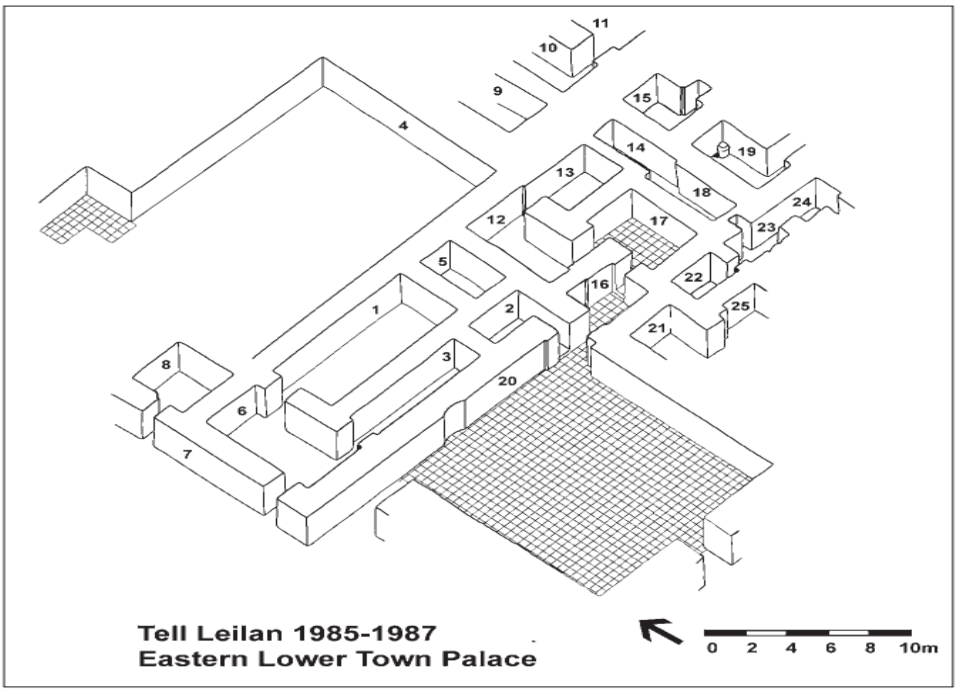

Figure 47: The plan of the Eastern Lower Town Palace at Tell Leilan. Source: Ristvet and Weiss. 2013, 267.

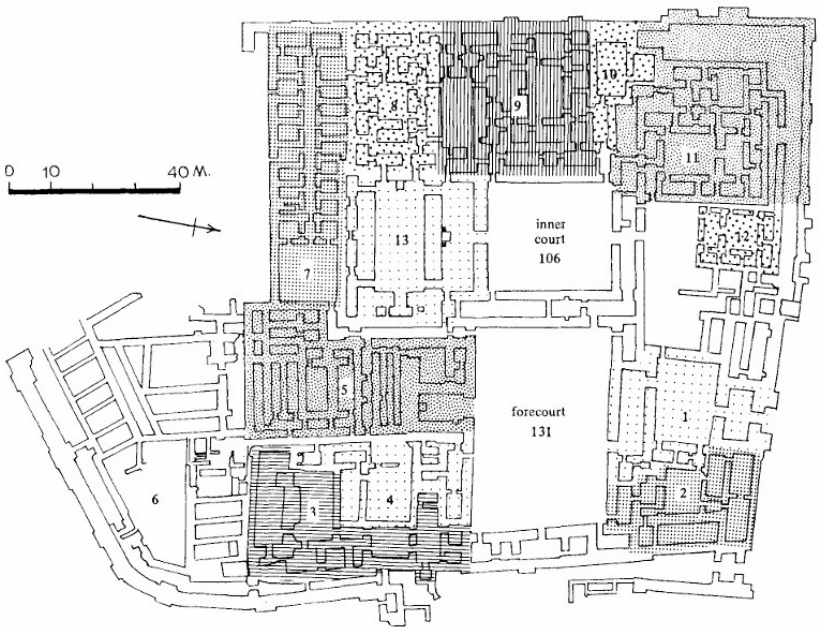

Figure 48: The plan of the Palace at Mari. Source: Al-Khalesi. 1978, I.

Figure 49: Metal grid in the shape of a dome which was placed over the Abi. Source: Buccellati et al. 2018, 36.

Figure 50: The new dome completed, with openings at the base. Source: Buccellati et al. 2018, 36.

Figure 51: The new metal sheets with a fixed metal grid covering the entrance of the Abi. Source: Buccellati et al. 2018, 37.

Figure 52: The application of clay mortar between the stones after removing weeds, with the newly applied mortar covered by a piece of fabric placed over the old mortar on the staircase of the temple. Source: Buccellati et al. 2019, 3.

Figure 53: The collapsed retaining wall in Area J5 of the temple. Personal photograph by the author, 2019.

Figure 54: The accumulations of stones scattered on the ground in Area J5 of the temple. Personal photograph by the author, 2019.

Figure 55: The construction process of the retaining wall in Area J5 of the temple. Personal photograph by the author, 2019.

Figure 56: Both sides surrounding the retaining wall in Area J5 of the temple, with burlap bags filled with the same fallen stone accumulations. Personal photograph by the author, 2019.

Figure 57: The wall covered with brown burlap curtains in the palace area. Source: Buccellati et al. 2018, 41.

Figure 58: The reinforcement of weak walls with sand-filled saddlebags in the palace area. Source: Buccellati. 2006, 76.

Figure 59: The routine maintenance work on the burlap covering in the palace area. Source: Buccellati. 2019, 194.

Figure 60: The new curtains being made: top left, taking measurements of a torn curtain to be replaced; top right, designing a new curtain; bottom left, sewing a new curtain; bottom right, a completed curtain before installation. Source: Buccellati. 2019, 194.

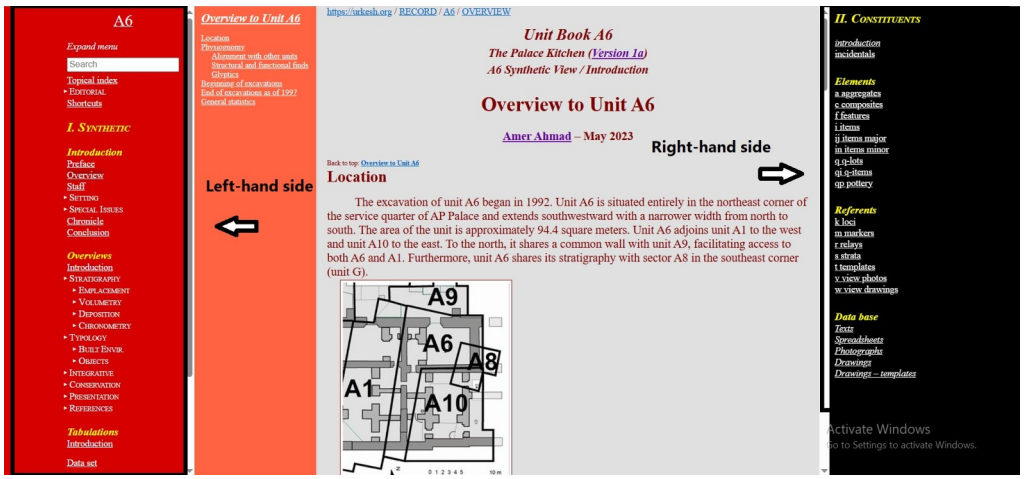

Figure 61: The scope of my work on Unit A6, displaying both the right and left sides. Digital publication. Source: https://urkesh.org/MZ/A/A06/TEXTS/A2/overview.HTM.

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