

# Glazed Brick Decoration in the Ancient Near East

Proceedings of a Workshop at the  
11th International Congress of the Archaeology  
of the Ancient Near East (Munich) in April 2018

For the Vorderasiatisches Museum – Staatliche Museen zu Berlin

edited by

Anja Fügert and Helen Gries



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## Foreword and Acknowledgements

Over the last decade a number of excavations have supplied new evidence from glazed bricks that once decorated the facades of the Ancient Near East's public buildings during the Iron Age. Significant progress has further been achieved from revived work on glazed bricks excavated more than a century ago which today are kept in various museum collections worldwide. Although the latest summarising works on Ancient Near Eastern glazed architectural decor published several decades ago by Reade (1970), Nunn (1988), and Moorey (1994) still hold and by no means have lost their validity, in the meantime considerable insight into the subject has been gained. Over the last years issues pertaining to polychromy in antiquity have gradually moved into the spotlight of scholarly attention, especially with regard to architecture, statues, reliefs etc. The Ancient Near East's glazed brick decor has certainly much to contribute to this discussion.

The workshop 'Glazed Brick Decoration in the Ancient Near East' held in Munich at the 11th International Congress of the Archaeology of the Ancient Near East (ICAANE) in 2018 aimed at establishing a network for researchers working on glazed bricks, in order to enhance the exchange of information and experience on scientific methods of analysis, appropriate conservation measures, optical imaging, and visualisation techniques. Focus was laid on the development of glazing technologies from the early Neo-Assyrian time onwards. The brick manufacturing processes, the use and variety of fitters' marks, epigraphic and figural stamp impressions, and other auxiliary marks were discussed. The workshop fixed a point of departure only, as the discussion on this topic is set to continue at the 12th ICAANE in Bologna in a workshop called 'Decorated Bricks of the Achaemenid Period and their Forerunners' organised by Julien Cuny (Musée du Louvre, Paris) and Emad Matin (University of Bologna, Department of Cultural Heritage).

We thank all the lecturers and participants at the workshop for their valuable contributions and hope to close in a little more on the knowledge gap with this publication. All papers in this volume have been peer-reviewed. We would like to thank the reviewers for their swift and constructive assessments as well as May-Sarah Zeßin for her help in the editing work and Paul Larsen for conscientious proofreading. Furthermore, we are indebted to Sigrid Wollmeiner and Marika Mäder from the publications department of the *Staatliche Museen zu Berlin* for their support. Our thanks also go out to Archaeopress Publishing Ltd, especially David Davison for their constructive and supportive cooperation.

Anja Fügert and Helen Gries



# Chapter 1: ‘I had baked bricks glazed in lapis lazuli color’<sup>1</sup> – A Brief History of Glazed Bricks in the Ancient Near East

Anja Fügert and Helen Gries

**Abstract:** This contribution is an updated introduction to the glazed bricks in the Ancient Near East. It traces the development of this building decoration from the 2nd half of the 2nd millennium BC to the Seleucid Era (3rd and 2nd century BC) and shows the regional differences.

**Keywords:** Building Decoration; Polychromy; Glazed Bricks; Glazed Tiles; Iron Age; Elam; Assyria; Babylonia; Achaemenid; Seleucid

## 1 The<sup>1</sup>development and manufacture of glazed architectural decoration<sup>2</sup>

Intentionally produced glass vessels are attested from the 16th century BC onwards and the technique of applying glaze to clay objects is known since the 14th century BC. The advent of glaze technologies had a profound impact on Ancient Near Eastern material culture.<sup>3</sup> In architectural contexts in Mesopotamia (Syria and Iraq) and Elam (Iran), vitreous materials were used to adorn architectural facades as well as interior features, such as wall plaques, knobs, and door bolts. The technology was also used for portable objects like vessels, seals, and beads. Although the ingredients of vitreous materials like glass and glaze, which consisted of sand or quartz pebbles, plant ash as flux and lime were easily accessible, the application of glaze to clay objects was challenging for craftsmen, since clay and glaze have diverging coefficients of thermal expansion and contraction.<sup>4</sup> The majority of the earliest glazed clay objects bore only a single translucent or monochrome glaze, mostly a light blue or green colour, due to the added copper oxide colourants.<sup>5</sup> It was during the course of the 1st millennium BC only that the colour range of the glazes on bricks increased significantly through the addition of other metal oxides.<sup>6</sup> The technique of glazing bricks made it possible to decorate walls with brilliant

and waterproof surfaces, and thus became suited for exterior facades exposed to the weather. Mesopotamia and Elam were forerunners in the development and use of this technique. In neighbouring Egypt the technique of glazing clay surfaces did not become established until the introduction of the lead-glazed pottery in the 1st century BC.<sup>7</sup>

In looking at the development of Ancient Near Eastern glazed brick production, we can identify two different brick types. One with a coarser clay body was used across the Near East, whereas a second type, made of a finer siliceous material, was developed in Elam in the 12th century BC. These bricks are particularly distinctive in the Middle and Neo-Elamite and Achaemenid Periods. In Mesopotamia inscriptions from the Middle Assyrian kings of the second half of the 2nd millennium BC attest to the invention of glazed bricks with clay bodies. In his inscriptions from Nineveh, King Tiglath-Pileser I (c. 1114–1076 BC) boasted about the building works at the palace: ‘I raised its walls and towers ... with a facade of bricks glazed [the colour of] obsidian, lapis lazuli, *pappardilū*-stone, [and] *parūtu*-alabaster.’<sup>8</sup> In the material record, however, glazed bricks are not attested in Assyria earlier than the 9th century BC.

## 2 The invention of vitreous building decoration in Elam

As from the Middle Elamite Period (c. 1500–1100 BC), various vitreous materials consisting of glass, glazes on clay, and siliceous bodies were used in Elam in a local manifestation as architectural decor. This type of building decoration remained characteristic of Elamite architecture until the end of the Neo-Elamite Period (c. 1000–520 BC).<sup>9</sup>

<sup>1</sup> Thus the Assyrian king Ashurnasirpal II (883–859 BC) as he praised himself in his description of his palace (Grayson 1987: A.0.101.30, 32); translation after CAD A1: 162, s.v. *agurru*.

<sup>2</sup> This contribution has been published in slightly modified form in the exhibition catalogue ‘A Wonder to Behold: Craftsmanship and the Creation of Babylon’s Ishtar Gate’ (2019) of the Institute for the Study of the Ancient World at New York University (Fügert and Gries 2019). We thank the curators of the exhibition A. Amrhein, C. Fitzgerald and E. Knott for their constructive remarks.

<sup>3</sup> Barag 1970; Moorey 1994: 196–202; Schmidt 2019: 9–10.

<sup>4</sup> Paynter and Tite 2001: 243; Tite *et al.* 2008: 189–190; Caubet 2012: 157.

<sup>5</sup> The colours of glass objects from this time already had a wider range including an opaque red, white, yellow, and blue-green; see Tite *et al.* 2008: 188.

<sup>6</sup> For the possible colourants and their sources, see Schmidt 2019: 139–141 with further references.

<sup>7</sup> Paynter and Tite 2001: 240, 242 fig. 13.1; Tite *et al.* 2008.

<sup>8</sup> Trans. after Grayson 1987: 54, A.0.87.10, ll. 65–66.

<sup>9</sup> For the Elamite architectural decorations, see Daucé 2018, with further references.

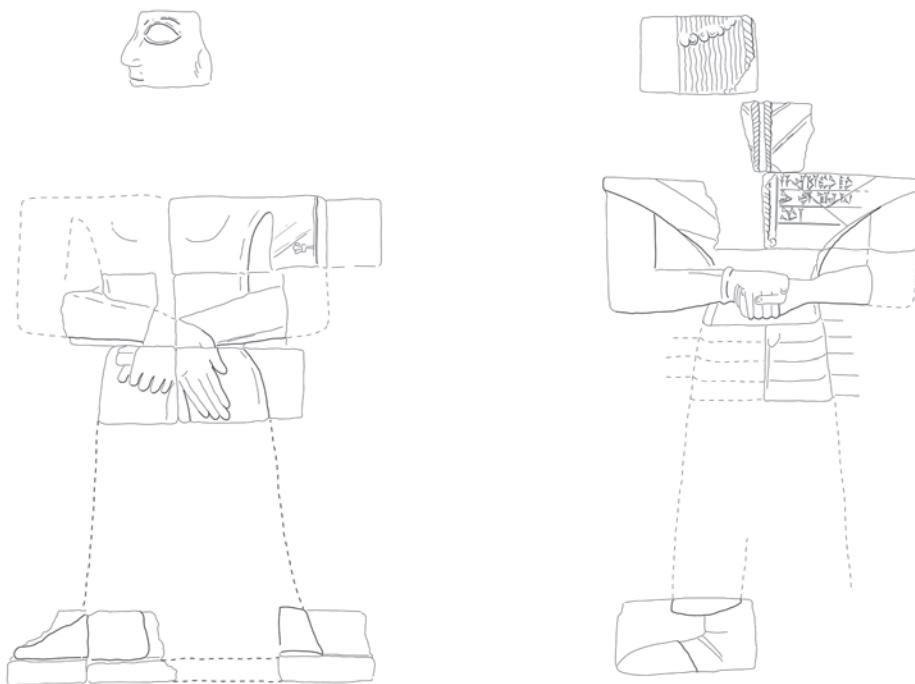


Figure 1. Glazed brick facade from Susa (Iran) probably showing the Elamite king Shilhak-Inshushinak and his wife (drawing by Anja Fügert, after Amiet 1976: figs. 3 and 22).

Particularly numerous were the glazed objects unearthed at Choga Zanbil, a 14th century city newly built as a religious centre and residence of the Elamite kings, located 40 km southeast of Susa. The variety of decoration and simultaneously used techniques and materials at this site is outstanding, as polychrome glass tubes, knobbed plaques, figurative nails and protomes as well as glazed bricks – all of them either with a siliceous or clay body –, and large animal figures made of glazed ceramics and used as door guards have been found.<sup>10</sup>

One focal point in the development of bricks in high-relief can be observed for the second half of the 2nd millennium BC in Elam. In contrast to the older relief bricks from the Kassite Period in Mesopotamia, the Elamite counterparts could also be glazed and consisting of siliceous bodies. The earliest known glazed brick facade comes from Susa and dates to the 12th century BC. It is probably the Elamite king Shilhak-Inshushinak (c. 1150–1120 BC) and his wife who are depicted (Figure 1).<sup>11</sup> Besides these outstanding moulded siliceous bricks, there are also mono- and polychrome clay bricks without relief.

### 3 Tracing glazed bricks in Assyria and Western Iran

By contrast to Elam, only glazed mudbricks were used in Assyria and Babylonia before the Achaemenid Period. The archaeological records attest to highly diverse brick formats as well as figurative repertoires for the 9th to the 7th century BC in Assyria. Glazed bricks decorated facades, crenellations, and doorways of palaces and temples, as well as city gates and other structures like altars and podiums.<sup>12</sup> Unfortunately, the glazed surfaces of most Assyrian bricks are in a worse state of preservation than the later glazed bricks from the Neo-Babylonian, Achaemenid, and Seleucid periods. Corrosion processes and the subsequent fading of the glazed surface, if not the flaking of the glaze, can be observed on most objects from this early period. Additionally, lines that were probably originally black now often appear whitish to the naked eye, due to the corrosion of their surface.<sup>13</sup>

In the early Neo-Assyrian Period (9th century BC), decorative glazed bricks appeared in different formats. The so-called wall tiles are glazed on their square sides but not on their edges, as is the case for the glazed bricks of the ‘normal’ format. The oldest known glazed tiles date to the reign of Tukulti-Ninurta II (890–884 BC). Their average size is about 65 by 45 cm, and their depictions are very carefully executed and

<sup>10</sup> Ghirshman 1966: 18, 37, 73–76, pls. 17–19, 33–35, 52, 97, 98; Heim 1989: 51, 82–86, 102, 168–170, 177; Daucé 2018: 573–576, with further references.

<sup>11</sup> Amiet 1976; Nunn 1988: 166, pl. 120; Heim 1992: 125, fig. 13.

<sup>12</sup> Moorey 1994: 316–317.

<sup>13</sup> For examples of this phenomenon, see in this volume Lehmann and Tallis: figs. 7, 8; Fügert and Gries: figs. 10, 17; Thomas: fig. 2.



Figure 2. Tile from Ashur (Iraq) of Tukulti-Ninurta II, drawing by Walter Andrae  
 (© Archive Deutsche Orient-Gesellschaft).

detailed (Figure 2). Most of these tiles exhibit complete motifs and could thus stand alone.<sup>14</sup> Whether the tiles were part of the wall bond is not known, since none was found *in situ*. Glazed tiles can be found throughout the Neo-Assyrian Period in Assyria proper and further east beyond the Zagros Mountains. Outside the Assyrian heartland in West Iran (e.g. Qalaichi, Rabat Tepe, Ziwiye, Hasanlu, Tepe Shinawe) and the Autonomous Region of Kurdistan, Iraq (Satu Qala), the motifs of glazed architectural elements and bricks partly resemble Assyrian motifs and partly show distinctly

local traits.<sup>15</sup> The latest examples of glazed tiles dating to the second half of the 7th century BC originate in Nimrud and depict a military campaign against Egypt. By contrast to the older period, these compositions were now created by assembling several tiles.<sup>16</sup>

<sup>14</sup> Andrae 1923: 12–14, pls. 7–9; Reade 1970: 211; Reade 1979: 20–21; Nunn 1988: 165–170; Fügert and Gries in this volume.

<sup>15</sup> A comprehensive work on the glazed tiles and bricks from West Iran and Kurdistan is not yet available; for Ziwiye and Hasanlu, see Moorey 1994: 314; Qalaichi: Hassanzadeh 2006; Hassanzadeh and Mollasalehi 2011; 2017; Rabat Tepe: Afifi and Heidari 2010; Reade and Finkel 2014; Salimi, Ebrahimipour and Sorkhabi 2019; Satu Qala: Van Soldt *et al.* 2013: 202, 212–213, figs. 4, 5, 13; for a more general summary see Reade and Finkel 2014; Hassanzadeh and Curtis 2018; Gries and Fügert 2019.

<sup>16</sup> The Assyrian king Esarhaddon commanded three military expeditions against Egypt in the years 674, 671, and 669 BC. He died during the last campaign. Which of the three campaigns is depicted

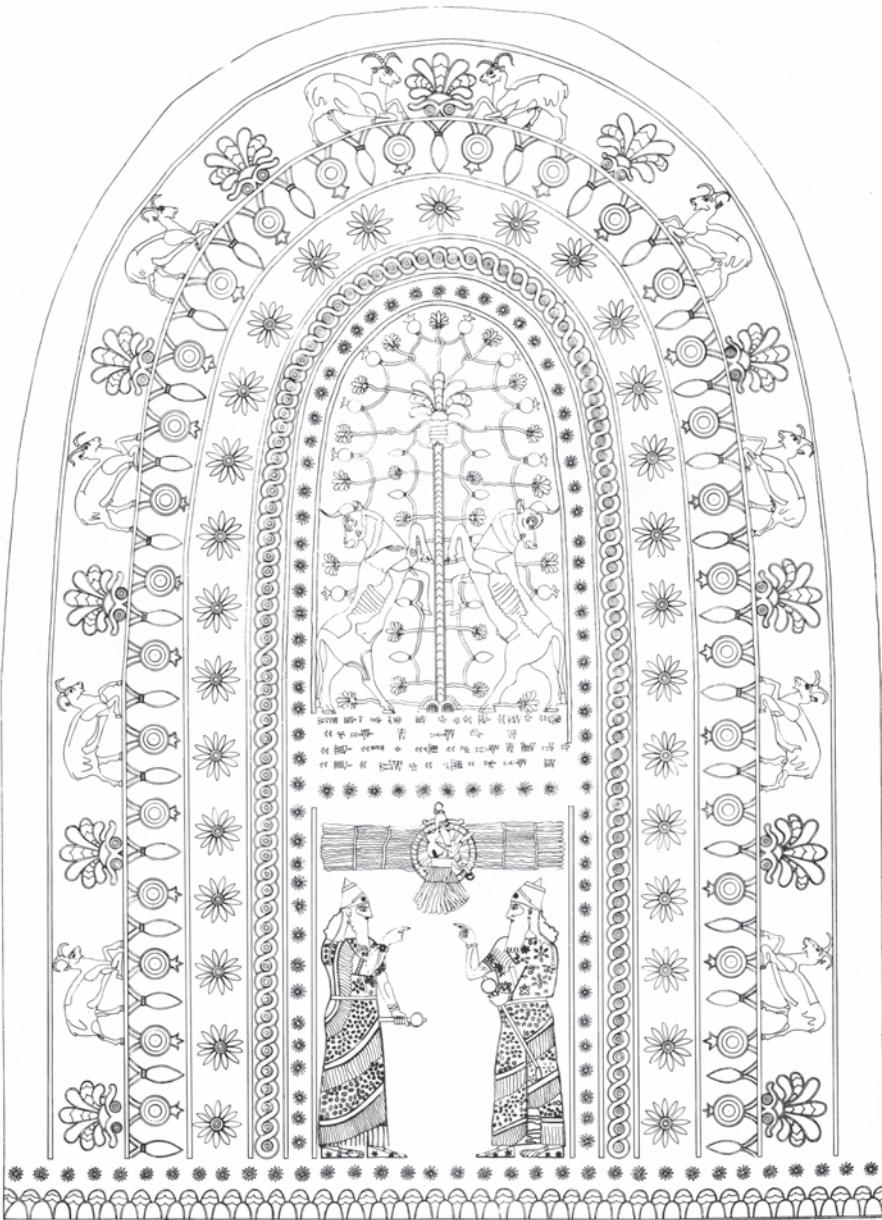


Figure 3. Brick panel of Shalmaneser III from Fort Shalmaneser (courtyard T) at Nimrud (Iraq), Iraq Museum (drawing by Julian Reade, 1963).

From Ashurnasirpal II onward, we observe decoration with glazed bricks of the 'standard' format (approximately 30–35 cm in side length and 9–13 cm in height). They were used to embellish monumental buildings and gateways and comprise not only ornamental patterns<sup>17</sup> but also complex figurative depictions and narrative scenes. Entire wall panels showing narrative scenes were assembled from hundreds of glazed bricks. Fitters' marks were a crucial means by which such complex scenes could be

assembled.<sup>18</sup> The motifs of the glazed bricks that were used to adorn gateways and wall crenellations are often more ornamental in character, presenting either floral or geometric elements or different kinds of patterned borders.

The impressive panel from Fort Shalmaneser in Nimrud (Figure 3 and Thomas in this volume: Figure 7) dates to the reign of Shalmaneser III (858–824 BC). The more than three hundred bricks belonging to this panel, which could be fully reassembled after the excavation

cannot be determined; see Nadali 2006; Lehmann and Tallis in this volume.

<sup>17</sup> Campbell Thompson and Hutchinson 1931: 83, pls. 28–32.

<sup>18</sup> Zeßin 2019 with further references.

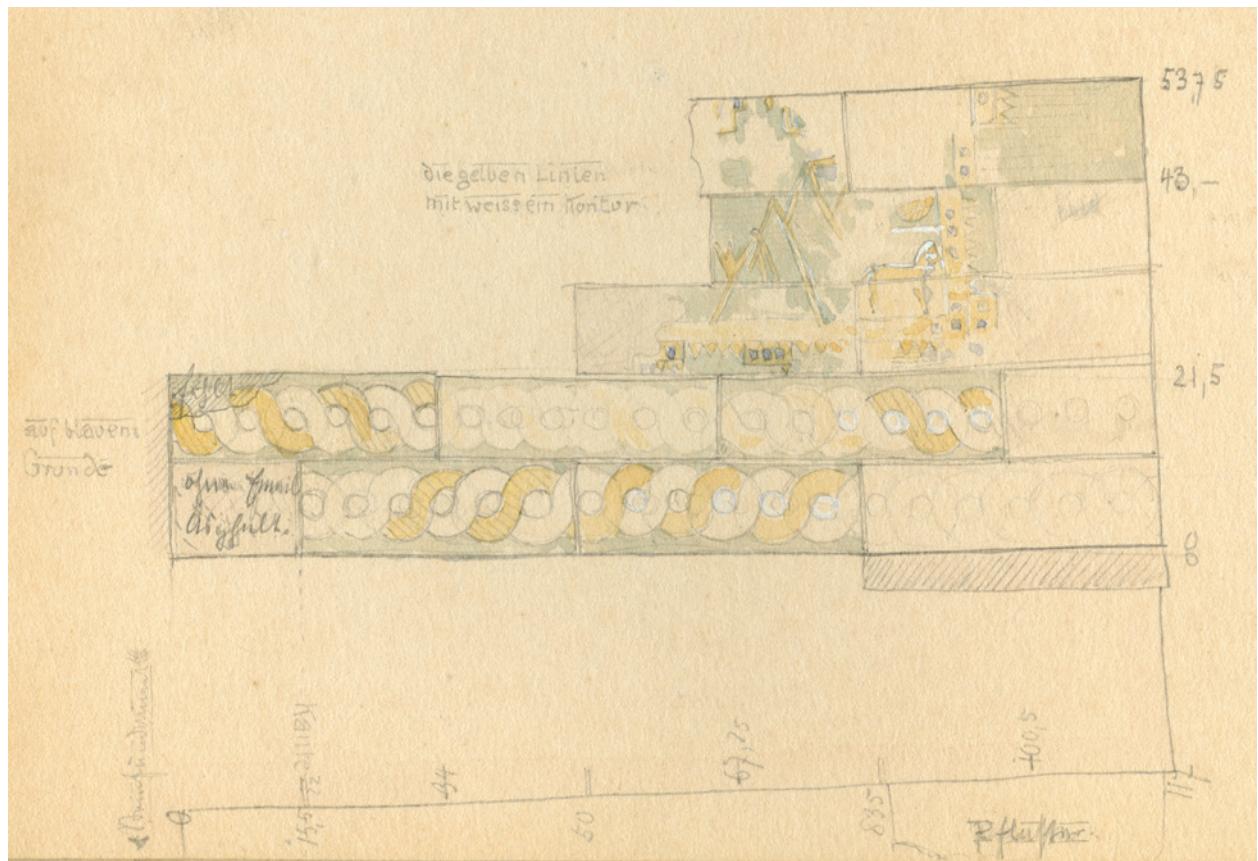


Figure 4. Sketch of north-western face of facade 16 of the Ashur Temple at Ashur (Iraq) by Ernst Herzfeld, 1909  
 (© Archive Deutsche Orient-Gesellschaft).

and are now part of the exhibition of the Iraq Museum in Baghdad, give an impression of its former glory, although most of its colours are much faded. The panel was originally situated above the horizontal lintel of an outer doorway behind the throne-room suite. It measures over 4 m in height and nearly 3 m in width at its base. In a central arch, two kings face each other while praying and holding a mace in their left hands as the winged sun hovers above them. Above this scene is a stylized tree flanked by rampant bulls, below which appears a four-line cuneiform inscription. These images are framed by a band of arcaded buds, and within the outermost framing band wild goats kneel in front of small palmettes. The base of the panel is formed by a row of scale-shaped mountains and a row of small rosettes. The excavators of the British School expedition and Julian E. Reade, who reconstructed the panel, observed fitters' marks on the surfaces of most of the bricks.<sup>19</sup>

The Temple of Ashur at Ashur is an exceptional example of a temple decoration with glazed bricks, since eighteen facades were found *in situ*. They were located at the entrances to the main building and also

embellished various podiums in the large forecourt of the sanctuary. The south-eastern facade of the temple was easily visible to a large audience from the forecourt and richly decorated with glazed depictions. Most of the panoramas facing the forecourt either narrate the military campaigns of the Assyrian army in great detail (Figure 4) or depict scenes of the royal court. Other fragments prove that gods and religious scenes also decorated the temple's walls. Noticeable are similarities between the broad thematic range of glazed depictions and the Assyrian palace reliefs.<sup>20</sup>

In Dur-Sharrukin (modern Khorsabad), the new imperial capital founded by Sargon II (721–705 BC) 16 km north of Nineveh, in several locations within the city, including the palace, the temples, important portals, and even a bridge, glazed brick decor was used.<sup>21</sup> The excavators found many fragments of glazed bricks bearing ornamental patterns and inscriptions that celebrate the greatness of Sargon's empire.<sup>22</sup> The precise original location of most of these fragments is unfortunately unknown, but it seems that they might

<sup>19</sup> For further references, see Fügert and Gries in this volume.

<sup>21</sup> See, e.g., Loud and Altman 1938: 42, pl. 12.

<sup>22</sup> Reade 1995: 227, 232.

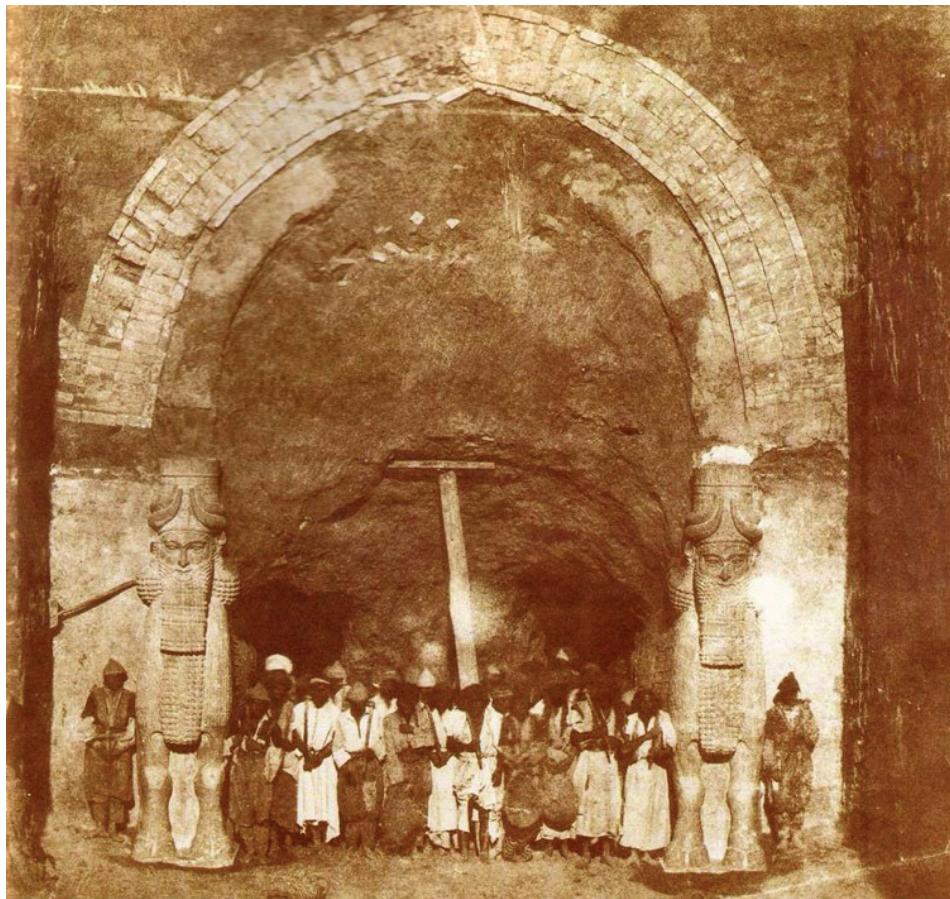


Figure 5. Town Gate 3 at Khorsabad (Iraq) with stone colossi and glazed brick archivolt during excavations under Victor Place (photograph by Gabriel Tranchand, 1853).

have formed smaller panels or bands that were set into the walls of the buildings on the citadel.

The glazed-brick archway that was found intact at one of Dur-Sharrukin's gates is renowned (Figure 5). The drawings of this archway, whose bricks were lost in the Tigris River during their transport to Paris, showed winged genii, each holding a bucket and cone, alternating with encircled rosettes and framed with bands of much smaller rosettes (Thomas in this volume: Figure 3a). Numerous glazed-brick fragments hint at the existence of other gates and temple entrances decorated in a similar manner. The placement of purifying winged genii at liminal and possibly threatened areas, such as gates and entrances to sacred places, served the protection of the city and its monumental buildings.<sup>23</sup> Several flat panels with rounded tops can be reconstructed from brick fragments found within the premises of Sargon's palace. These panels are comparable, even though larger, to the complete one found at Fort Shalmaneser.<sup>24</sup>

Several courtyard facades, found within the Palace Temple complex of Sargon II as well as at the Nabu Temple located to the southeast of the palace, were furnished with podia bearing glazed-brick decor.<sup>25</sup> In the Palace Temple, these podia flanked the entrances to the shrines of Sin (Figure 6), Shamash, and Ningal. In the Nabu Temple, a pair of podia was found in the forecourt and another in the central court at the entrance leading to the cella. Best preserved were the abutting podia located in front of the shrine of the moon-god Sin. Each side of all these entrances to the different shrines was decorated with mirrored motifs: the Assyrian king, a striding lion and bull (Figure 7), a bird of prey, a fig tree, a plow, and another man holding a spear. The two human figures are placed on either side of the podia, the other elements on the faces. Most scholars agree that these motifs, which glorify Sargon and his kingship, form the oldest evidence of rebus writing in Assyria.<sup>26</sup> This kind of rebus writing is also attested for

<sup>23</sup> Reade 1995: 228.

<sup>24</sup> Thomas 2016: 205–207, No. 211; Thomas in this volume.

<sup>25</sup> For the description of characteristics and the archaeological contexts of the several podia, see Loud and Altman 1938, 41–42; for the glazed bricks currently in the Oriental Institute Museum Chicago, see Whyte *et al.* 2004.

<sup>26</sup> Reade and Finkel 1996; Roaf and Zgoll 2001.

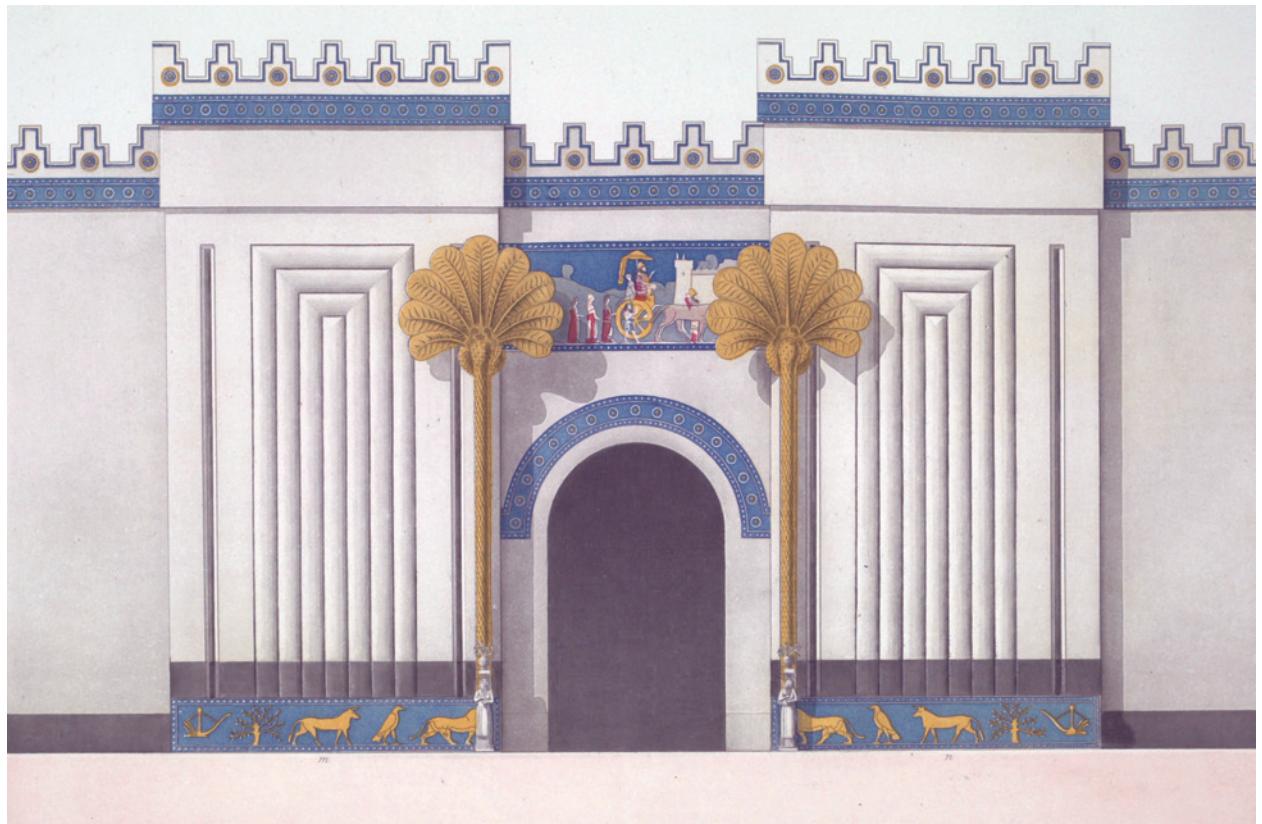


Figure 6. Reconstruction of glazed podia at the entrance of the Sin Temple in the Palace Temple complex of Sargon II at Khorsabad (Iraq) (etching by René Henri Digeon and Antoine René Digeon after Félix Thomas, 1867).

Sargon's successors and can be found on other types of objects, as well. Glazed bricks from Nineveh that might have belonged to a similar podium were convincingly assigned to Sargon's grandson Esarhaddon.<sup>27</sup>

The use of glazed bricks in Assyria extends beyond architecture to freestanding installations like altars or pedestals. At Khorsabad remnants of a free-standing square altar (?) were found in the central court of the Nabu Temple. Although the glaze on the bricks was poorly preserved, the faces of the altar might have shown some of the same emblematic elements as the podia. Traces of another structure adorned with glazed bricks were found in a courtyard in the Palace Temple.<sup>28</sup> In the western provinces of Assyria, further altars decorated with glazed bricks were found. For example, the altar found at Tell Halaf was constructed with glazed bricks in various special shapes and decorated with rosettes, scales, and rhombs, as well as the omnipresent guilloche motif (Figure 8).<sup>29</sup>

In the later Neo-Assyrian Period, most probably starting with Esarhaddon's reign (680–669 BC), the first

glazed high-relief bricks began to be used in Assyria. Fragments of those were found in Nineveh. Their decor resembles the motifs found on the podia in front of the temple shrines at Khorsabad.<sup>30</sup> Again, to the west, glazed high-relief bricks were possibly recognised at Carchemish, where they originally embellished the upper part of the facade of the temple of the storm god.<sup>31</sup>

#### 4 The Golden Age of glazed bricks under Nebuchadnezzar II

The earliest attested evidence for glazed bricks in Southern Mesopotamia can be attributed to the Assyrian king Ashurbanipal (669–631 / 627 BC), who decorated the ziggurat in Nippur with them.<sup>32</sup> However, the most spectacular glazed wall decorations from the region are known from Babylon: the Ishtar Gate, the Processional Way, and the Throne Room Facade with its friezes of striding lions and palm trees are among the most famous monuments of the Ancient Near East. Although the site of Babylon is inseparably connected with these decorations, all of them are witnesses for the building mania of one man only: the Late Babylonian

<sup>27</sup> Nadali 2008: 95–99.

<sup>28</sup> Loud and Altman 1938: 42, pl. 22C.

<sup>29</sup> Langenegger, Müller and Naumann 1950: 71–78, colour pls. I–III; Cholidis, Dubiel and Martin 2010, 345, fig. XV.6.

<sup>30</sup> Nadali 2008.

<sup>31</sup> Woolley 1952: 169, frontispiece.

<sup>32</sup> Clayden and Schneider 2015.



Figure 7. Reconstructed glazed bricks from left podium of the Sin Temple at Khorsabad (Iraq) (A11810; courtesy of the Oriental Institute, Chicago).



Figure 8. Reconstructed glazed facade of an altar found at Tell Halaf (Syria) (© Vorderasiatisches Museum, SMB, photo: Olaf M. Teßmer).

king Nebuchadnezzar II (604–562 BC). It is therefore possible that the idea of glazed building decoration in this region was adopted from Assyria or neighbouring Elam.

As opposed to the Assyrian glazes, the Babylonian examples are characterised by their brilliant colouring. The deep blue tint, obtained using cobalt oxide as

colouring agent, is considered as particularly distinctive for Late Babylonian glazes. Cobalt oxide, which might have been imported from Anatolia or Egypt, was for the first time added to glazes during the Late Babylonian Period.<sup>33</sup>

<sup>33</sup> Cobalt has been used as a colourant of glass since the 2nd century BC. Cobalt ores are rare in the Eastern Mediterranean and Mesopotamia, and sources are known from Egypt only

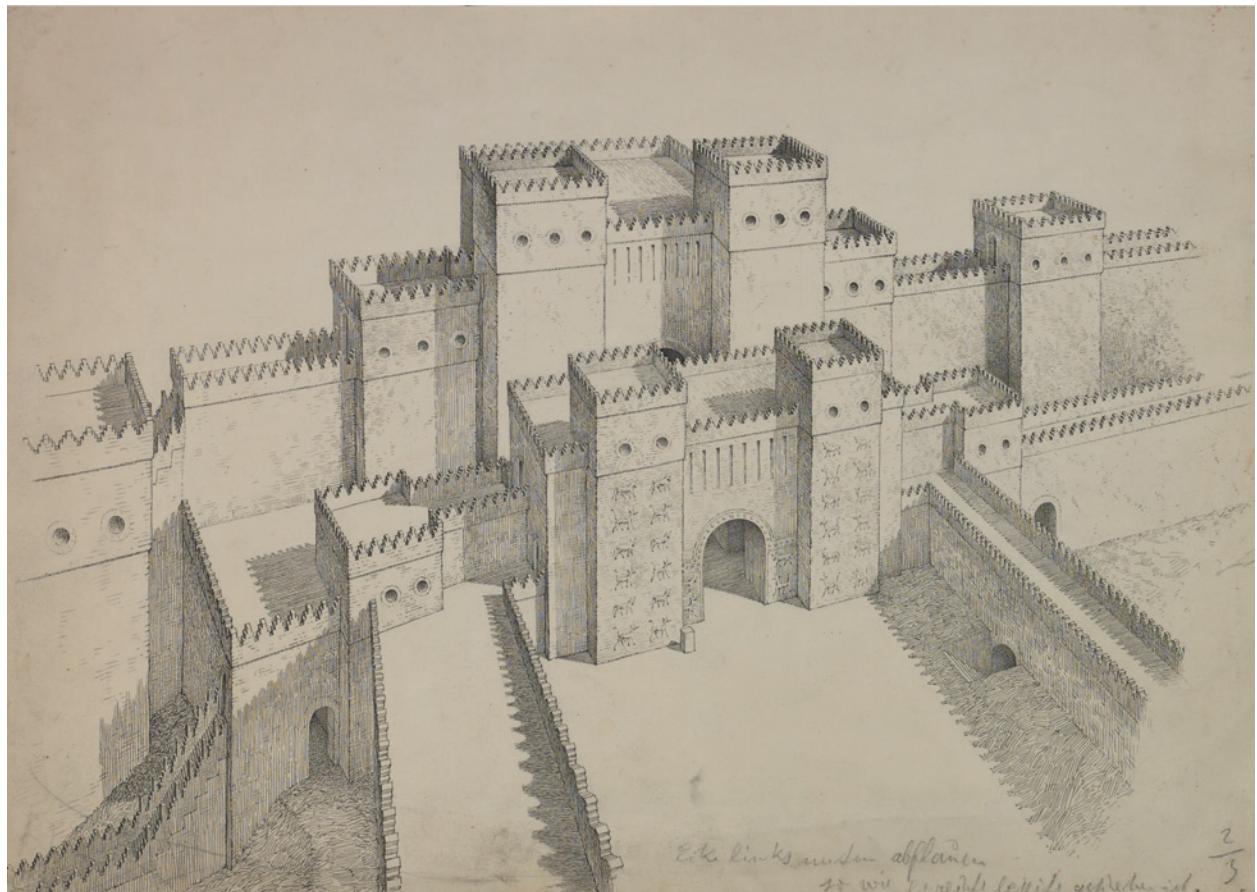


Figure 9. Last building stage of the Ishtar Gate at Babylon (Iraq) drawing by Alfred Böllacher, 1918 (© Archive Deutsche Orient-Gesellschaft, photo: Olaf M. Teßmer).

The Ishtar Gate complex with its three constructional phases reveals the available technical possibilities and how craftsmen played with them. Each time the gate was rebuilt, the street level was raised by several metres. In all three phases the gate was decorated with the same motifs: bulls and snake-dragons (*mušušu*). In the first and earliest phase moulded unglazed bricks in high-relief were used. In the second phase the gate was erected using glazed but flat (!) bricks. Only the third and last phase consisted of glazed bricks in high-relief, but none of these bricks were found *in situ* any more. The Ishtar Gate, which can be admired today at the *Pergamon Museum* in Berlin, is a reconstruction using small brick fragments and mostly modern bricks. The Processional Way with its striding lions is contemporary with the last building stage of the Ishtar Gate (Figure 9). Although it is unknown why Nebuchadnezzar II had the Ishtar Gate redesigned three times,<sup>34</sup> it almost stands to reason that the visibility of the motifs increased

(Schmidt 2019: 139–140). Further cobalt sources are suspected in Anatolia (Caubet 2012: 159; Henderson 2013: 74). However, the origin of the cobalt used for the Late Babylonian bricks is unknown.

<sup>34</sup> For the construction and reconstruction of the Ishtar gate, see Koldewey 1918; Marzahn 1995; Pedersén 2018, with further references; Pedersén in this volume.

noticeably – first by the use of colour and second by relief.

From Nebuchadnezzar II's inscriptions, we know also that the crenellations of the Northern Palace (*Hauptburg*) as well as the temple on the top of the ziggurat were clad in lapis-lazuli-blue glazed bricks.<sup>35</sup> However, in the area of the ziggurat, no trace of glazed bricks from this building was found. Several scholars have suggested that the glazed brick fragments observed in the brick dump at the Homera mound of Babylon might have been brought there during Alexander the Great's reign or later.<sup>36</sup> It was repeatedly assumed that the Ancient Near Eastern temple towers, the ziggurats, were colourfully decorated. These presumptions probably go back to a text passage by Herodotus<sup>37</sup>

<sup>35</sup> For the inscriptions, see Pedersén in this volume.

<sup>36</sup> It is unclear when the ziggurat was removed; see Wetzel, Schmidt, and Mallwitz 1957: 2; Schmid 1995: 93–94; Pedersén in this volume.

<sup>37</sup> He describes the walls of the city of Ecbatana as follows: 'The battlements of the first circle are white, of the second black, of the third circle purple, of the fourth blue, and of the fifth orange; thus the battlements of five circles are painted with colours; and the battlements of the last two circles are coated, the one with silver and the other with gold.' Herodotus, *Histories* 1.98, trans. Godley 1920.



Figure 10. Pastel drawing of the throne room facade at the South Palace in Babylon (Iraq) drawing by Elisabeth Andrae  
(© Vorderasiatisches Museum, SMB, photo: Olaf M. Teßmer).

and are unconfirmed. However, some archaeological hints provide information on the earlier decoration of ziggurats with glazed materials across the Ancient Near East. The earliest evidence is known from Choga Zanbil, where the ziggurat was decorated with both glazed bricks and knobs (see above). In Mesopotamia the decoration of ziggurats with glazed bricks could only be verified at Nippur, Ur, and Borsippa, but it is possible that in the 1st millennium BC more ziggurats had been decorated with these shiny materials.<sup>38</sup>

Other glazed bricks were also found in the North Palace and the South Palace of Babylon. In the main court of the South Palace, the southern wall leading to the throne room was elaborately decorated with glazed bricks. The facade depicted striding lions and stylized floral ornaments applied to flat bricks (Figure 10).<sup>39</sup> The decoration of the Throne Room Facade with its lions made of glazed bricks in high-relief is probably contemporary with the latest phase of the Ishtar Gate.

The glossiness of the glazed bricks at the Throne Room Facade, the Ishtar Gate, and the Processional Way were not isolated phenomena, but may rather be understood

as part of a larger dynamic tradition of architectural decoration. For example, in the city of Borsippa, about 20 km southwest of Babylon, fragments of glazed relief bricks were also found. These belonged to bull and dragon figures and thus show the same motifs found at the Ishtar Gate. Due to the numerous surface finds of such bricks in Babylon and the proximity of both sites, one could assume that these had been relocated to Borsippa. This, however, can be excluded, because the ones at Borsippa differ slightly from those at Babylon as they originate from different moulds. These glazed bricks from Borsippa can most likely be attributed to Nebuchadnezzar II, who claims to have also decorated buildings there with glazed bricks.<sup>40</sup> Glazed bricks are also known from the Nabu Temple at Borsippa, but these probably date to the Achaemenid or even the Seleucid Period.<sup>41</sup>

<sup>38</sup> Nunn 1988: 235–237, with further references; for Nippur, see Clayden and Schneider 2015.

<sup>39</sup> Koldewey 1931: 84–91, pls. 37–38; Marzahn 1995: 32; Pedersén in this volume.

<sup>40</sup> In the East India House Inscription (BM 129397), he describes that he adorned the entrance of the cella, the way to the temple, and the top of the ziggurat with glazed bricks; see Langdon 1912: 128–129 (Nebukadnezzar no. 15).

<sup>41</sup> The reconstruction of the animal figures from Borsippa extends back to Kaniuth 2013; for further references, see there. Since the glazed bricks in Borsippa all come from more recent contexts, the dating to the reign of Nebuchadnezzar II is not certain; see Kaniuth 2018.

## 5 Glazed brick decoration during the Achaemenid Period

Darius I (522–486 BC), king of the Achaemenid Empire, singles out the Babylonians in his famous, trilingual inscription (the so-called *Foundation Charter of the Palace*) as ‘the men who wrought the baked brick, those were Babylonians.’<sup>42</sup> The text also mentions people from abroad who had brought all kinds of rare and highly valued building materials as well as foreign workers, whose special skills had been used to build and embellish his palace in Susa.

Glazed brickwork was still an important element of the royal architecture of the Achaemenid kings, and glazed bricks were found in the principal sites of this period – in Susa, Persepolis, and Babylon. That the Achaemenid builders aimed to decorate their monumental buildings partly in the tradition of the preceding Elamite and Mesopotamian empires becomes particularly perceptible with the residence of King Darius I in Susa, where decorative brickwork was the most prominent feature. Achaemenid kings utilized both siliceous and clay bricks that were either glazed, with or without relief, or unglazed with relief. It is estimated that more than 100,000 decorative bricks, covering a surface of approximately 2500 to 3000 m<sup>2</sup>, were used to adorn the facades of the more than a few courtyards in the royal residence.<sup>43</sup>

The highly detailed motifs depicted include processions of the royal archers – the so-called immortals (Figure 11) – and servants, striding lions, and a variety of mythological creatures, such as winged bulls, sphinxes, and griffin-lions. Bands with geometrical and interwoven floral patterns and rosettes framed the friezes and ornamented flights of stairs. Cuneiform inscriptions were executed in glazed brickwork as well. The chromatic spectrum of the Susa reliefs consists of light and dark blue, turquoise and green, yellow and orange, brown and black, and white. Mixing different metal oxides resulted in a range of hues between these colours. In order to minimise the thickness of the facing joins, the artisans at Susa gave most bricks a special wedge-like shape.<sup>44</sup> The art of decorating royal residences with glazed brickwork is attested from the reign of Darius I to that of Artaxerxes II (404–358 BC).<sup>45</sup>

An astonishing find was made recently in Tol-e Ajori, a site near Persepolis, one of the capitals of the Persian Empire in southern Iran. There the remains of a gate were discovered that was decorated with glazed bricks also showing bulls and dragons very similar to the



Figure 11. Royal archer of Darius I at Susa (Iran)  
(© Vorderasiatisches Museum, SMB, photo detail: Olaf M. Teßmer).

ones found at Babylon.<sup>46</sup> The gate had not been built before 539 BC<sup>47</sup>, conventionally understood as the end of the Neo-Babylonian Empire, and thus the discovery in Tol-e Ajori raises many questions, including that of a late dating of the most recent construction stage of the Ishtar Gate within or even after the reign of Nebuchadnezzar II. In any case, it also proves that Neo-Babylonian art had a strong influence on the succeeding Achaemenid rulers.<sup>48</sup>

<sup>42</sup> Trans. after Kent 1950: 144, DSf §3k, 49–55.

<sup>43</sup> Daucé 2018.

<sup>44</sup> Razmjou 2004: 384–385, fig. 3; Daucé 2013: 307, figs. 328–330.

<sup>45</sup> Razmjou 2004: 385–386.

<sup>46</sup> For the preliminary results of the excavation at Tol-e Ajori, see Askari Chaverdi, Callieri, and Matin 2016.

<sup>47</sup> Askari Chaverdi, Callieri, and Matin 2016: 223, 226.

<sup>48</sup> For the interrelationships between Late Babylonian and Achaemenid art and the possible late date of the last construction stage of the Ishtar Gate, see Kaniuth 2018.

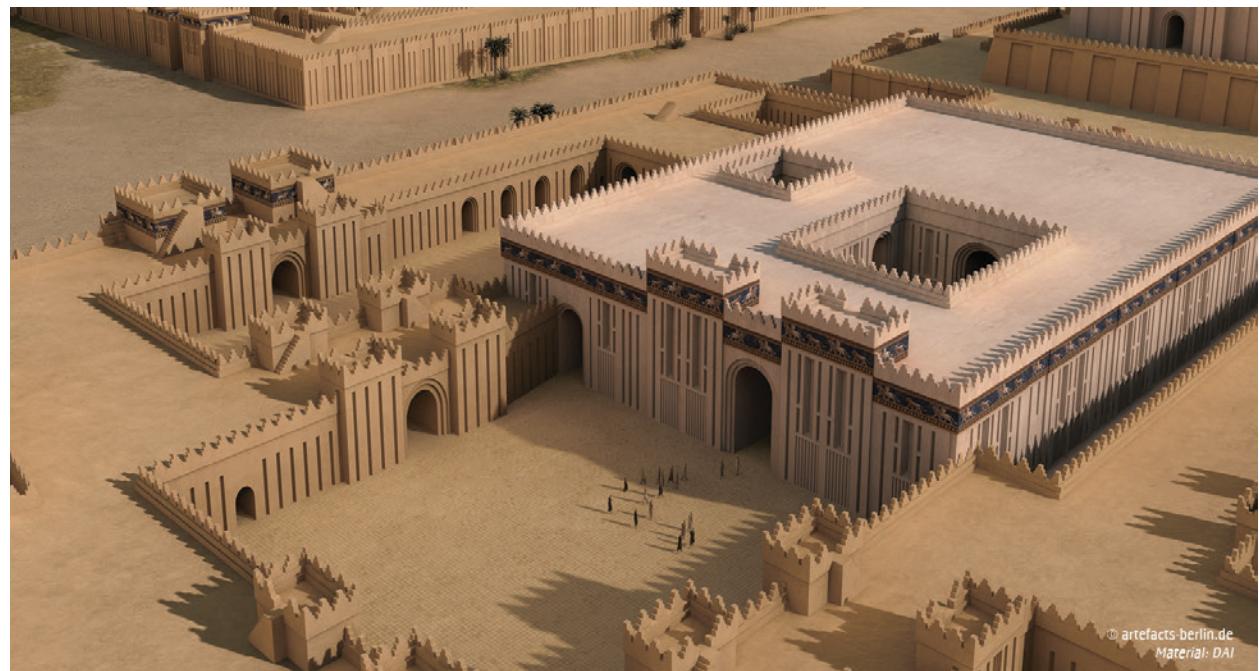


Figure 12. Reconstruction of the Anu-Antum Temple at Uruk (Iraq)  
(© artefacts-berlin.de; Material: German Archaeological Institute).

## 6 Seleucid Era: A revival?

During the Seleucid Period (302–129 BC), the southern Mesopotamian city of Uruk was an important religious centre. Two enormous temple complexes, the Bit Resh with its adjoining ziggurat and the Irigal, revived the older Babylonian architectural tradition with respect to both plan and decor. Both sacred complexes were decorated with glazed bricks bearing ornamental and figural motifs as well as inscriptions.

The excavators of the Anu-Antum Temple in the centre of the Bit Resh complex, erected in 202 BC under Anu-uballit Kephalon, the head of the temple administration, found fragments of glazed bricks at the foot of the temple's exterior walls. With these fragments, they postulated the existence of a glazed brick frieze below the roof edge, consisting of yellow lions and winged white lion-griffins striding right and left, and several framing ornamental bands.<sup>49</sup> Further fragments belonging to a similar frieze were also found at the contemporaneous Irigal sanctuary. The main cella of Irigal was decorated with deep-blue glazed bricks and an Aramaic inscription in white glaze. Positioning the frieze on the entablature was clearly an inspiration from the *peripteros* in Greek religious architecture, though the iconography and the chosen manufacture technique remained within the Ancient Near Eastern tradition (Figure 12).<sup>50</sup>

## 7 Future outlook for research on glazed bricks

There are still hosts of yet unanswered questions about the production, installation, conservation, and preservation of glazed bricks. Furthermore, numerous glazed bricks from excavations in the 19th and early 20th centuries, still today, remain unpublished. Higher standards in documenting excavation contexts may lead to drawing far-reaching conclusions and rethinking theses which until recently have been taken for granted. In addition, new and more easily accessible probing methods as well as new imaging technologies may result in new insights and headways on other questions. This workshop on the glazed brick decoration of the Ancient Near East therefore marks a starting point only for coming research on this complex but often neglected group of objects.

Further interdisciplinary exchange of information and experience about scientific analysis methods, appropriate conservation measures, and optical imaging and visualisation techniques are urgently needed. We therefore trust the ongoing and renewed studies of long-established findings as well as the abundant flow of new evidence pertaining to glazed bricks will finally move these objects back into their erstwhile splendour as an epitome of the Ancient Near East's architectural decoration from the 2nd millennium BC onward.

<sup>49</sup> Kose 1998: 162.

<sup>50</sup> Kose 2013.

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