

Deutsches Archäologisches Institut • Eurasien-Abteilung  
Außenstelle Teheran

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# Archäologische Mitteilungen aus Iran und Turan

BAND 46 • 2014



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# **Archäologische Mitteilungen aus Iran und Turan**

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# Tol-e Ajori: a Monumental Gate of the Early Achaemenian period in the Persepolis Area. The 2014 excavation season of the Iranian-Italian project 'From Palace to Town'

By Alireza Askari Chaverdi, Pierfrancesco Callieri and Emad Matin

With an appendix by Gian Pietro Basello, A fragment of another inscribed glazed brick from Tol-e Ajori

Schlagwörter: Persepolis, Proto-achämenidisch, Ishtar-Tor, glasierte Ziegel, Inschriften  
Keywords: Persepolis, Proto-Achaemenid Fars, Ishtar Gate, Glazed bricks, Cuneiform inscription

کلید واژه ها  
پارسه، دوره آغاز هخامنشی، دروازه ایشتر، آجر لعابدار، خط میخی

## Introduction

In the frame of the research programme 'From Palace to Town', carried out by the Iranian-Italian Joint Archaeological Mission in Fars<sup>1</sup> and focussed on the knowledge of the archaeological context of the Persepolis Terrace,<sup>2</sup> a monumental building is being brought to light at the site of Tol-e Ajori, in the area of Bagh-e Firuzi, 3.5 km to the SW of the Terrace. This unique building, entirely built in mud-brick and baked bricks and with decoration of relief glazed bricks, appears to be of the utmost interest for the evidence it offers of the early settlement in the Persepolis area. The site was first excavated in 2011, with works continuing yearly until 2014. Preliminary information on the two first seasons has appeared in the on-line journal *Arta*, with a full presentation not only of the excavations but also of the surveys and interpretation of them.<sup>3</sup> We wish to present here the results of the work carried out in 2014.<sup>4</sup>

The reason for the continuation of the activities there were manifold. The plan of the monument, known from the 2013 seasons to be rectangular, had to be completed with evidence regarding the NW side, which had not yet been brought to light by excavations. At the same time, since an entrance to the building was discovered in 2013 in the SE

side, the existence of a second entrance on the same axis on the NW side should be verified: this information would characterize the function of the monument either as a closed building or as a monumental gate. The inner room of the monument, finally, had been exposed on a very short area and information on the floor of the room and of the access corridor(s) was very scanty.

The study of the glazed relief bricks carried out to date had given evidence of an exceptional similarity with the same materials from pre-Achaemenian Babylon, namely the brick panels decorating the third building phase of the Ishtar Gate and the Processional Pathway (see below). However, more elements were still to be gathered for a full reconstruction and understanding of the original aspect of the glazed bricks decoration.

## The 2014 excavations<sup>5</sup>

Three new trenches were excavated at Tol-e Ajori in the 2014 season (**Fig. 1**). Trench Tr. 8, measuring

<sup>1</sup> The Iranian-Italian Joint Archaeological Mission in Fars operates under the aegis of the Research Institute for Cultural Heritage and Tourism of the Islamic Republic of Iran (RICHT), and is supported by the Iranian Centre for Archaeological Research (ICAR), the Parsa-Pasargadae Research Foundation (PPRF), the Fars Cultural Heritage Handicrafts and Tourism Organization, the Shiraz University, the Shiraz University of Arts, the University of Bologna, the Italian Ministry of Foreign Affairs, the Lighthouse-Group. The authors thank these institutions for their support.

<sup>2</sup> Askari Chaverdi/Callieri 2012.

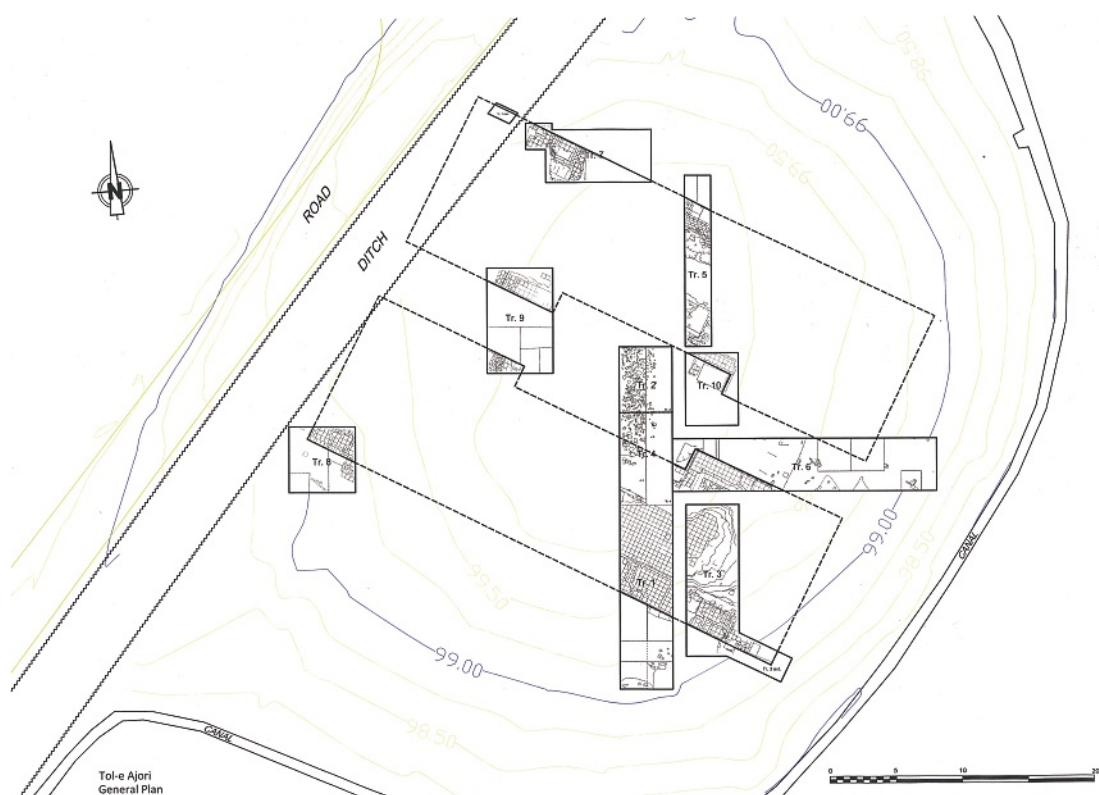
<sup>3</sup> Askari Chaverdi et al. 2013.

<sup>4</sup> A preliminary report on the 2014 season was presented by A. Askari Chaverdi & P. Callieri at the 13<sup>th</sup> Annual Symposium of Iranian Archaeology, Tehran, 1<sup>st</sup>–3<sup>rd</sup> March 2015.

<sup>5</sup> The team has been composed by Alireza Askari Chaverdi (Shiraz University) and Pierfrancesco Callieri (University of Bologna), directors; by Vahid Barani (archaeologist, field supervisor), Marco Galuppi (archaeologist), Nabil Ibnoerrida (archaeologist), Fati-meh Jalali (archaeologist, official representative of the Iranian Centre for Archaeological Research), Emad Matin (archaeologist), Alan Mercuriali (archaeologist, field supervisor), Davide Maria Meucci (archaeologist), Davide Pierantoni (archaeologist), Domiziana Rossi (archaeologist), Maryam Soleimani (conservator), Aldo Tare (archaeologist), Stefano Tilia (topographer), Vahid Younesi (archaeologist). Five students from the M. A. Course in Archaeology at the Shiraz University (Habibeh Abbasi, Addiyan Guraki, Maryam Hosseini, Farhad Khosravanipur, Hadi Mehran-pur) were also present. Abdorreza Esnaashari and Fatemeh Farazandeh Shahraki have worked as draughtspersons from the Shiraz University of Arts.

The Joint Mission has enjoyed the presence of a team of geophysicists, composed by Sébastien Gondet and Kourosh Mohammadkhani, who have continued with profit their studies in the area surrounding the Terrace: special stress has been given to the study of the topographical context of Tol-e Ajori.

**Fig. 1**  
Tol-e Ajori. General  
plan with the indication  
of the excavated  
trenches, 2011–2014  
(Iranian-Italian Joint  
Archaeological Mission  
in Fars, drawing  
S. S. Tilia)



5.00 × 5.00 m, was dug at the W preserved edge of the *tepe*. The aim of this trench was to investigate the supposed W corner of the monument.

Trench Tr. 9, measuring 7.50 × 5.00 m, with main N–S axis, was dug in the W half of the monument. The aim of this trench was to offer evidence on the possible existence of a second gate opening into the NW wall.

Trench Tr. 10, measuring 5.50 × 4.00 m, with main N–S axis, was dug between trenches Tr. 4, Tr. 5 and Tr. 6. The aim of this trench was to investigate on a broader area the inner room and its floor and to verify the indented plan of the inner room corner.

The main discoveries of the 2014 season correspond to the objectives of the three trenches. The first one, in Tr. 9, regards the location of a second entrance on the NW side of the perimeter, where both the two side walls of the entrance corridor were found; in this area the original floor was also discovered. The second important discovery came from Tr. 10, where the perimeter of the inner room could be better defined: here the original floor was brought to light to a larger extension and more elements for the building technique as well as for the chronology of the secondary phases and wall-robbing trenches were collected; here archaeo-

logical evidence prior to the construction of the monument was also brought to light for the first time. The third important discovery came from Tr. 8, where the W corner of the building was brought to light giving confirmation that the building has a rectangular plan and allowing the final definition of its measurements. In this area an interesting feature was also detected: a low structure built in mud-brick with upper surface in baked bricks which abutted against the two sides of the W corner, perhaps the remain of a fence wall in which the gate opened or a buttress for this critical point of the masonry.

The ruins of the monument, as found in the previous seasons, had been reused as a source for building materials, and a series of wall-robbing trenches have been evidenced in the upper stratigraphy of the *tepe*, reaching to a considerable depth so that most of the baked brick walls were found spoliated in parts as far down as the clay basement on which the structure had been built. The wall-robbing trenches then got filled in with discarded baked bricks and clay from the collapsed mud-brick. These conditions have made excavation extremely difficult and slow. The 2014 season also confirmed the existence of an earlier phase of abandonment and of a first destruction, when the good quality baked bricks were broken down into small fragments.



**Fig. 2**  
Tol-e Ajori, Trench  
Tr. 1. The mud-brick  
and baked bricks  
sections of the wall  
(Iranian-Italian Joint Ar-  
chaeological Mission in  
Fars, photo L. Tortella)

### The monument: an outline

On the basis of the preliminary and fragmentary information obtained through the ten trenches excavated from 2011 to 2014, amounting to less than 1/3 of the whole original area, we can suggest a general reconstruction of the building. Various stretches of the four sides of the perimeter wall have been brought to light, along with the S and W corners.<sup>6</sup> Since the structure of the excavated wall stretches is on the whole similar, we propose to extend this information to the whole building, keeping in mind that particular features may eventually be discovered in the areas not yet excavated.

The building (**Fig. 1**) has an orientation from WNW to ESE, with a 20° shift to N from the E–W axis. It has a rectangular shape measuring 29.06 m (NE–SW) × 39.07 m (NW–SE), and is formed by a massive wall 10.47 m wide, which encloses an inner space 8.00 m wide and 14.33 m long, probably pro-

vided with side benches along the two long walls<sup>7</sup> and accessed through two corridors 4.63 m wide and 12.24 m long. The function of the building was therefore that of a monumental gate.

Two of the four sides of the perimeter wall, SW and NE, have proven to be characterized by a symmetrical structure, with only minor differences:<sup>8</sup> a mud-brick core c. 5 m in width encased on its two outer and inner sides by two sections, each 2.5 m wide, made in baked bricks (**Fig. 2**): the facing of the outer and inner baked brick sections is in glazed bricks (**Fig. 3**).<sup>9</sup> The two outermost rows of baked bricks of the elevation use bitumen as a mortar, with the aim of avoiding penetration of humidity in the wall. Fragments of glazed brick reliefs found in the various destruction layers constitute evidence of a rich relief and glazed figural decoration which was placed above the plain glazed lower courses. Of considerable significance was the discovery of fitters' marks painted in white on the upper surface of the glazed bricks fragments and

<sup>6</sup> The S corner of the building was exposed in the SW extension of Tr. 3, even though that area had been severely looted and only one part of one single row of the corner brick had been preserved *in situ*. While the N corner, supposedly located in the area of Tr. 7, could not be found in 2013 due to the fact that it lay in an area of the *tepe* destroyed by a ditch dug across its N slope, in 2014 the W corner could be found in the area of Tr. 8, making possible the reconstruction of the measurements of the long sides.

<sup>7</sup> The short excavated portions of the walls of the inner rooms suggest the existence of benches (see *infra*, Tr. 10).

<sup>8</sup> The main difference regards the structure of the baked bricks outer section of the NE side of the wall (Tr. 5).

<sup>9</sup> Both, the mud brick and the baked bricks are square and measure on average 33 × 33 × 8 cm, with half-size rectangular bricks (33 × 16.5 × 8 cm) for course shifting.





**Fig. 3**  
Tol-e Ajori, Trench  
Tr. 1. The glazed brick  
facing of the wall  
(Iranian-Italian Joint Ar-  
chaeological Mission in Fars, photo L. Tortella)



**Fig. 4**  
Tol-e Ajori, Trench  
Tr. 1. Fitters' marks on  
the two uppermost  
glazed bricks courses  
of the wall (Iranian-  
Italian Joint Archaeolo-  
gical Mission in Fars,  
photo A. Mercuriali)

notably in the outermost rows of glazed bricks found *in situ* in Tr. 1, belonging to two successive courses (Fig. 4). In particular, we learn from this discovery that the central mark showed the mason the progression of the superimposed horizontal courses of bricks, while the two side marks helped the mason fitting the brick in with the adjoining bricks on the two sides in the same course.<sup>10</sup>

Below this elevation is a partly visible foundation of baked bricks which appears in the form of a series of six to three courses in unglazed baked bricks, topped by a similar course recessed by 0.10 m, above which the glazed bricks elevation rises. The hypothesis that this foundation in unglazed baked bricks extends through the whole structure, also below the mud-brick core, has been suggested by the presence of baked bricks courses appearing below the mud-brick core in the cuts of the wall-robber trenches and seems to be confirmed by the result of a drilling carried out in 2013<sup>11</sup> in the mud-brick core in Trench Tr. 1, where the auger could not reach the natural clayey soil due to the

<sup>10</sup> See *infra*.

<sup>11</sup> The geomorphological investigations were carried out by Prof. Morgan De Dapper, University of Ghent, Belgium, in the frame of a collaboration with the Iranian-Italian Joint Archaeological Mission in Fars on a project concerning the geomorphology of Marvdasht plain and the Persepolis area.

presence of a hard surface, possibly the baked brick foundation. This feature would have met the preoccupation to avoid penetration of humidity in the wall, also evident in the use of bitumen mortar in its outer rows.

As for the study of the construction procedures, on the basis of the information collected in the excavated trenches, particularly as a consequence of the wall pillage activity which exposed the foundation levels, it appears that the whole area of the building was prepared with an artificial levelling of the existing deposits, which created a sort of under-basement in levelled clay. In 2014 this surface was exposed more extensively in an area of Tr. 9, where all the baked bricks of the building had been pillaged; the clay of the area underlying the wall, which bore the tremendous weight of the building, was extremely pressed and showed the square impressions of the lowermost course of baked bricks. At the same time, in Tr. 9 and Tr. 10 foundation trenches were discovered along the inner face of the walls, cutting in the existing pre-building deposits which were at a higher level than the bottom of the foundations. The floor of the building in both trenches consisted in the upper surface of a layer which covered the foundation filling: the poor appearance of this earth floor as compared to the elaborated wall decoration can be explained either by the fact that the monument was not finished or by the fact that the bricks of a possible floor were pillaged along with the other bricks of the monument.

Investigation of the pre-building levels was carried out in a few areas. A trial trench opened in the W corner of Tr. 8 outside the building has shown that here the building rises on the natural soil and there is no earlier occupation of the area. A short sounding in Tr. 9 has also shown that the foundation trench of the corridor wall here was probably dug into sterile soil. On the contrary, the excavation in Tr. 10 of the layer in which the foundation trench was cut has brought to light scanty evidence of a preceding occupation, consisting in a red-painted potsherd possibly of the Shoga culture phase and in the long pit of a disturbed grave (?) containing bones and a few tiny potsherds.

As regards the function of the monument, on the evidence of the second entrance on the NW side of the rectangular building we may conclude that the building represents a monumental gate, similar in plan to the inner section of the Ishtar Gate. The gate has therefore to be understood in connection with the nearby building at the site of Firuzi 5 as well as with other buildings not yet discovered. Completion of the geophysical and geomorphological survey in the area around the two monuments will contribute to a better understanding of it.

### Trench Tr. 8<sup>12</sup> (Figs. 5, 6)

In this trench the earliest phase evidenced (Phase 7) is represented by the compact clayey layer cut by the foundation trenches of the monument's structure<sup>13</sup> and by the underlying compact clayey layer evidenced in the sounding at the SW corner of the trench:<sup>14</sup> in both the layers no artificial component was found, and the layers represent sterile soil.

The following phase (Phase 6) represents the construction of the monument, of which the baked bricks wall of its NW corner<sup>15</sup> has been brought to light in this trench. The SW face of this wall was built in a foundation trench<sup>16</sup> dug in the surface of the pre-building layer SU827, extending for a width of c. 0.60 m beyond the wall. The lowermost row of baked bricks of the wall was partly set in the underlying layer, in a very compact mortar of soil with the probable addition of lime, yet to be analyzed; at the level of the sixth row of bricks from the bottom, the wall has an offset and recedes by 0.10 m. The area of the foundation trench was then filled by soil<sup>17</sup> containing a few fragments of baked bricks. As for the NW face of the wall,<sup>18</sup> it could be studied only from the inside of the robbery pit: from here it was understood that an offset in the wall occurs at the level of the upper surface of the third brick from the bottom. Therefore apparently the foundation of wall had projecting feet of different height in its two faces joining at the corner.

On the top of two compact soil accumulations brought to light in the small E sounding,<sup>19</sup> the following episode (Phase 5) consists in the construction of a mud-brick structure<sup>20</sup> which ran around the outer face of the corner wall abutting against the projecting foot of the baked brick wall SSU820. Actually the mud-brick was found in a very decayed state and the excavation did not produce evidence of any individual brick: however, the wall texture in mud-brick was visible in the NW face of the successive robbery pit. Here the mud-brick lies on the projecting foot offset; besides, a few odd baked bricks set in the same texture parallel to the wall confirmed that originally they were part of a mud-brick structure, as noticed in Trench Tr. 1. Unfortunately the outer limits of this mud-brick structure were not

<sup>12</sup> The following abbreviations have been used: SU = stratigraphic unit, SSU = structural stratigraphic unit, NSU = negative stratigraphic unit.

<sup>13</sup> SU827, SU823.

<sup>14</sup> SU825.

<sup>15</sup> SSU820.

<sup>16</sup> NSU828.

<sup>17</sup> SU826.

<sup>18</sup> SSU820.

<sup>19</sup> SU824, SU822.

<sup>20</sup> SSU811.



**Fig. 5**  
Tol-e Ajori, Trench  
Tr. 8. General view  
from south (Iranian-  
Italian Joint Archaeolo-  
gical Mission in Fars,  
photo D. M. Meucci)

understood, since the structure was found in a collapsed state towards the outside and the baked bricks on its surface were partly pillaged by the wall-robber trenches of the successive phase. The structure could represent the lower part of a mud-brick enclosure wall joining to the Gate or a buttress.

A small looting pit<sup>21</sup> separates physically the surface of this mud-brick wall from another secondary structure to the S of it, adjoining to the baked bricks wall, composed of two rows of whole baked bricks running parallel to the wall, with an intermediate space filled with fragmented baked bricks:<sup>22</sup> this structure seems to be built above the top of the mud-brick structure, but the presence of the looting pit makes the relationship between the two parts uncertain.

The following episode in the life of the site here (Phase 4) was the accumulation of a soil deposit<sup>23</sup> against the W limit of the mud-brick structure, which had collapsed, and the successive construction of a structural feature consisting in a row of reused baked bricks cut into smaller square or rectangular shape with a few bricks on edge, run-

ning almost parallel to the W limit of the mud-brick structure:<sup>24</sup> this feature is slightly winding and sloping to SE, and has been interpreted as a simple drain.

There is not enough solid evidence to link this episode to the main episode of pillage, the wall-robber trench<sup>25</sup> which pillaged the baked bricks wall and was carried out at the same time as a smaller pit<sup>26</sup> pillaging the bricks on top of the mud-brick structure SSU813 (Phase 3): these actions left on a wide part of the area of the baked bricks wall only the compact clay layer at the bottom of the foundation, on which the impression of the lowermost course of baked bricks was visible.

In the following phase (Phase 2) the robbery pit was filled by a series of deposits:<sup>27</sup> differently from the other wall-robber trenches, here the layers filling the pit are rather compacted, probably due to the lesser thickness of the stratification; also the area to the SW of the collapsed mud-brick structure is covered by an accumulation of soil with fragments of baked bricks.<sup>28</sup>

<sup>21</sup> NSU815.

<sup>22</sup> SSU813.

<sup>23</sup> SU821.

<sup>24</sup> SSU818.

<sup>25</sup> NSU819.

<sup>26</sup> NSU815.

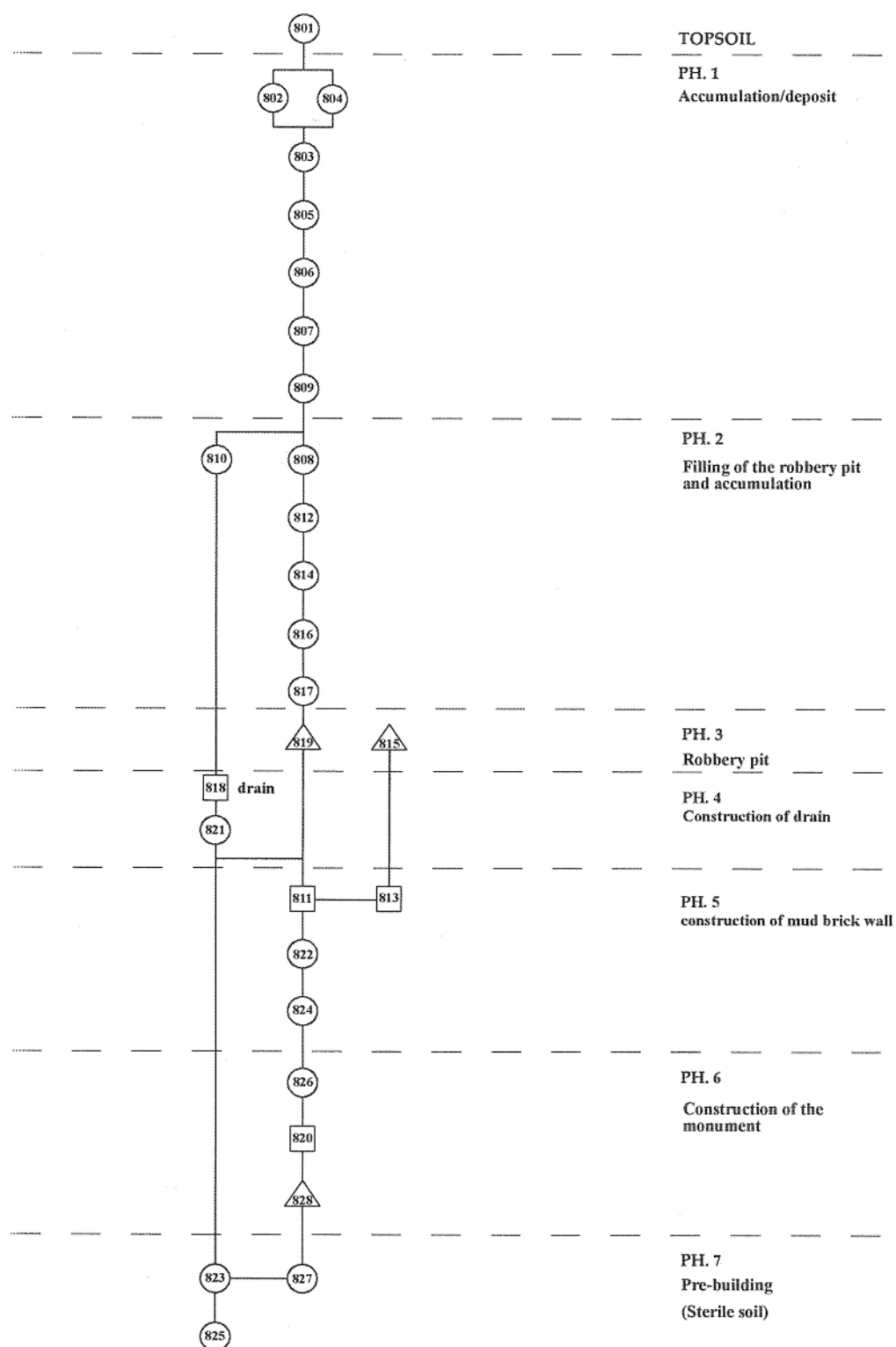
<sup>27</sup> SU817, SU816, SU814, SU812, SU808.

<sup>28</sup> SU810.



# Iranian-Italian Archaeological Mission - Campaign 2014

## Site Taj-Tr08



**Fig. 6**  
Tol-e Ajori, Trench  
Tr. 8. Stratigraphic  
matrix (Iranian-Italian  
Joint Archaeological  
Mission in Fars, drawing  
N. Ibnoerrida)



**Fig. 7**  
Tol-e Ajori, Trench  
Tr. 9. General view  
from north (Iranian-  
Italian Joint Archaeolo-  
gical Mission in Fars,  
photo D. M. Meucci)

The final phase in the sequence (Phase 1) consists in a series of accumulations of soil, with or without baked bricks fragments.<sup>29</sup> The topsoil<sup>30</sup> covers the whole area.

#### Trench Tr. 9 (Figs. 7, 8)

In this trench the earliest phase evidenced (Phase 6) is represented by the compact clayey layer<sup>31</sup> cut by the foundation trenches of the monument's structure, as well as by the clayey layers appearing at

<sup>29</sup> SU809, SU807, SU806, SU805, SU803, SU804, SU802.

<sup>30</sup> SU801.

<sup>31</sup> SU929.

the bottom of the wall-robbet trenches, which bore the impression of the lowest course of bricks.<sup>32</sup> Only SU929 was excavated in a small sounding and resulted as very compact depurated yellowish clay, sterile.

The following phase (Phase 5) represents the construction of the monument, of which the two parallel baked bricks walls forming the N<sup>33</sup> and S<sup>34</sup> sides of the NW corridor of the building have been brought to light in this trench. The horizontal cuts at the bottom of wall SSU912<sup>35</sup> and of wall SSU920<sup>36</sup> represent the procedure for levelling the soil below the structures: the latter cut extends vertically to obtain from the hard clay of the area the lower part of the mud-brick Block C. As far as the area of the inner corridor is concerned, the projecting foot below the foundation offset of wall SSU912, made of four courses of unglazed baked bricks, was built in a foundation trench<sup>37</sup> dug in the surface of the pre-building layer SU929: the foundation trench resulted c. 0.20 m wider than the foundation along the N face of the wall and was filled by compact soil,<sup>38</sup> while along the E face it was disturbed by an animal hole.

The wall SSU912 on the S side of the corridor preserves the corner between the corridor (N face) and the inner room (E face). The wall is well preserved for a stretch 1.50 m long from its SE corner, and above the foundation courses of unglazed bricks the elevation rises recessing by a 0.10 offset, with one course of unglazed brick (very deteriorated) and 13 superimposed courses of baked bricks bearing glazed decoration of various type: from the bottom five courses with white or brown (?) glaze, one with orange yellow glaze, one alternating yellow and white squares, again one with orange yellow glaze, one with yellow or white (?) glaze, three courses forming a row of open rosettes (of which three are partly preserved) and finally a white glazed course (Fig. 9).<sup>39</sup> The wall SSU920 on the N side of the corridor was on the contrary extensively looted.

The original floor level of the room has been identified as an occupation surface at the level of the offset in the baked bricks wall, corresponding

<sup>32</sup> SU934, SU927.

<sup>33</sup> SSU920.

<sup>34</sup> SSU912.

<sup>35</sup> NSU935.

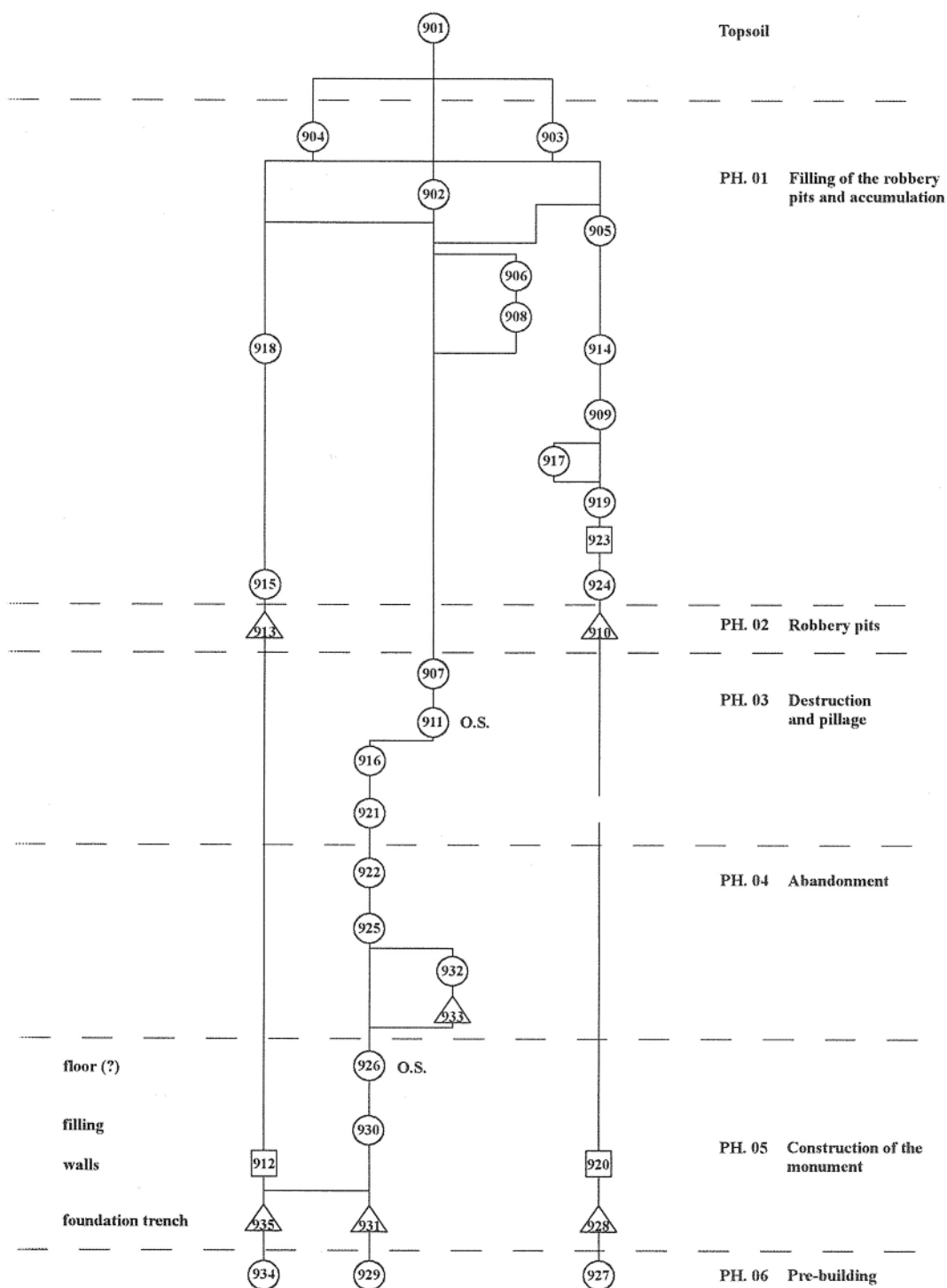
<sup>36</sup> NSU928.

<sup>37</sup> NSU931.

<sup>38</sup> SU930.

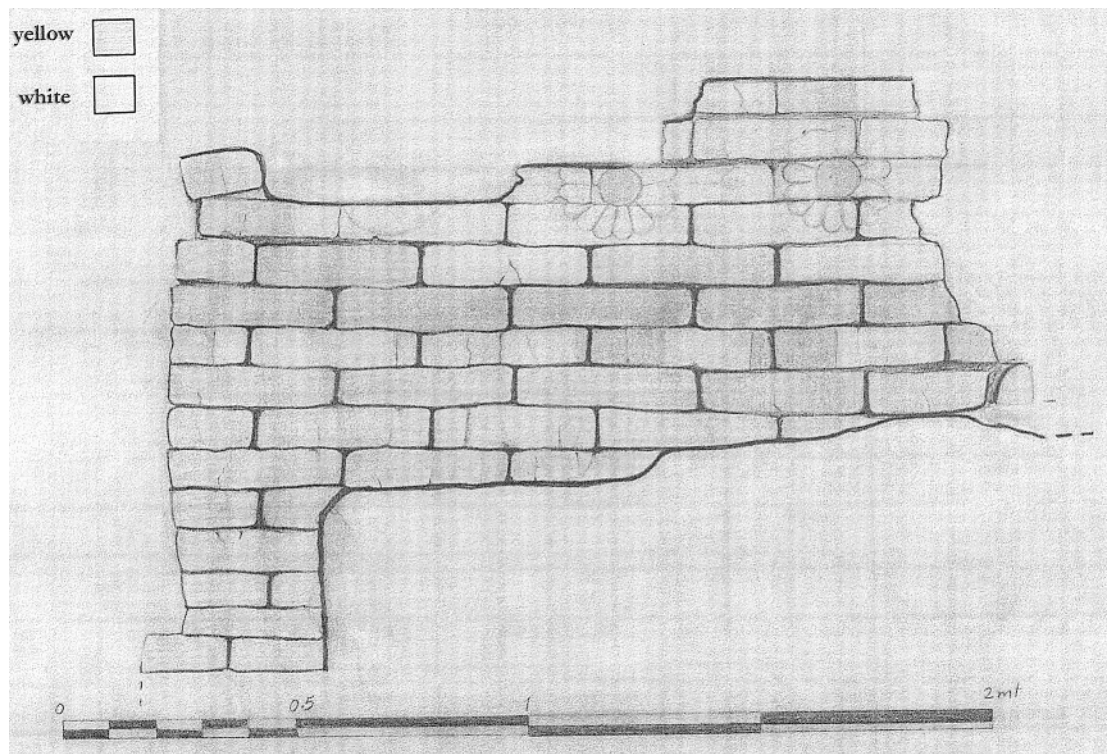
<sup>39</sup> The same sequence is visible on the short stretch of the E face of the corner, halting at the level corresponding on the N face with the first course of the row of open rosettes: here all the bricks of this course are decorated with two horizontal bands in yellow and white glaze.

**Iranian-Italian Archaeological Mission - Campaign 2014**  
**Site TAJ - Tr. 9**



**Fig. 8**  
 Tol-e Ajori, Trench  
 Tr. 9. Stratigraphic  
 matrix (Iranian-Italian  
 Joint Archaeological  
 Mission in Fars, draw-  
 ing A. Mercuriali)





**Fig. 9a-b**  
 Tol-e Ajori, Trench  
 Tr. 9. Preserved stretch  
 of wall SSU912 with  
 glazed bricks decora-  
 tion (Iranian-Italian  
 Joint Archaeological  
 Mission in Fars, photo  
 D.M. Meucci, drawing  
 F. Shahraki)

to the upper surface of a layer of light depurated clayey soil of medium hardness which covers the previous stratification and levels the area:<sup>40</sup> no real indicators of the surface's utilisation as a floor have been found, and also the scarce compactness of the floor suggests a very limited usage.

The following phase (Phase 4) represents a moment of abandonment, as evidenced by the presence of animal holes<sup>41</sup> cutting the existing stratigraphy in front of wall SSU912. On top of original floor level, two successive layers of clayey soil are then accumulated.<sup>42</sup>

In the following phase (Phase 3) a layer of compact soil with very small fragments of baked and glazed bricks<sup>43</sup> probably represents a first destruction of the monument, followed by a series of large accumulations of baked bricks and clay from the collapsed mud-brick which extend throughout the trench:<sup>44</sup> these baked bricks accumulations are likely to represent, rather than a collapse, a first episode of pillage from the portion of the monument emerging from the existing deposits, because the shape of the bricks accumulation is nowhere suggesting a collapse.

From this surface two large wall-robber pits<sup>45</sup> were dug for the pillage of the baked bricks of the still extant part of the walls against which the previous deposits had accumulated (Phase 2). The pit NSU910 pillaged almost the whole baked bricks of the projecting foundation foot and elevation of the N wall of the corridor SSU920, leaving the vertical cut of the stratigraphy accumulated against the wall, while the pit NSU913 saved, as we saw, a part of the S wall SSU912.

The layers filling these pits, containing loose soil and smaller fragments of baked bricks, and the soil and baked bricks accumulations deposited successively outside the pits represent the following phase (Phase 1). Inside NSU910 we have a first soil accumulation<sup>46</sup> followed by an episode of reuse of two baked bricks;<sup>47</sup> other soil and bricks accumulations follow,<sup>48</sup> among which a pile of baked bricks<sup>49</sup> is an interesting evidence of the activity of the looters. A pit<sup>50</sup> was also found, filled with soil layers.<sup>51</sup> In the area between the two wall-robber trenches

are other soil accumulations,<sup>52</sup> until the topsoil<sup>53</sup> with signs of ploughing.

Thanks to the results of the excavation of Trench Tr. 9, the actual function of the Tol-e Ajori building could be ascertained.

#### Trench Tr. 10 (Figs. 10, 11)

In this trench the earliest phase evidenced (Phase 6) is represented by the layers cut by the foundation trenches of the monument's structures, which differently from other trenches here are not all sterile. The lowermost of these layers,<sup>54</sup> depurated clayey soil of dark yellow colour, is cut by a probable grave<sup>55</sup> unfortunately disturbed by a large animal hole which left apparently untouched only the NW long side of the grave pit. The grave has an orientation from SE to NW, parallel to one of the walls of the building:<sup>56</sup> since a long bone was found in the W area, the head should have been to the E. This episode was then covered by the following layer of depurated yellowish clay,<sup>57</sup> which yielded a fragment of red-painted rim of a small jug possibly belonging to the Shoga Ware phase.

The following phase (Phase 5) represents the construction of the monument, of which the two baked bricks walls<sup>58</sup> forming the inner room of the building, at the junction with the access corridor on the SE side, have been brought to light in this trench.

Investigations below the floor level have shown that the walls have been built in a foundation trench<sup>59</sup> dug from the surface of the uppermost layer of the previous stratification,<sup>60</sup> extending for c. 0.18–0.20 m beyond the limit of the walls and parallel to them. As in the other trenches, an offset marks the top of the foundation: however, while the foundation of the NE wall SSU1021 has only the upper offset, in the foundation of the SE wall SSU1020 there is a second offset three rows of bricks below the first one. The empty space of the foundation trench was filled by two successive layers,<sup>61</sup> the lower one more compact: along the SE wall SSU1020, the lower part of the foundation trench was occupied by the projecting bricks of the first offset and the inferior layer of filling<sup>62</sup> is very narrow. The presence of a fragment of yellow

<sup>40</sup> SU926.

<sup>41</sup> NSU933, SU932.

<sup>42</sup> SU925, SU922.

<sup>43</sup> SU921.

<sup>44</sup> SU916, SU911, SU907.

<sup>45</sup> NSU910 on SSU920 and NSU913 on SSU912.

<sup>46</sup> SU924.

<sup>47</sup> SSU923.

<sup>48</sup> SU919, SU909, SU914.

<sup>49</sup> SU917.

<sup>50</sup> NSU913.

<sup>51</sup> SU915, SU918.

<sup>52</sup> SU908, SU906, SU905, SU902, SU903, SU904.

<sup>53</sup> SU901.

<sup>54</sup> SU1038.

<sup>55</sup> NSU1036, SU1037.

<sup>56</sup> SSU1021.

<sup>57</sup> SU1034.

<sup>58</sup> SSU1020, SSU1021.

<sup>59</sup> NSU1032.

<sup>60</sup> SU1034, sampled for <sup>14</sup>C analyses.

<sup>61</sup> SU1035, SU1033.

<sup>62</sup> SU1035.





**Fig. 10**  
Tol-e Ajori, Trench  
Tr. 10. General view  
from south (Iranian-  
Italian Joint Archaeolo-  
gical Mission in Fars,  
photo D.M. Meucci)

glazed brick in this filling is indeed important because it attests to the fact that the glazed bricks had arrived on the spot before the completion of the foundations.

The preserved part of the two walls, which have been severely looted by successive episodes, belong to the projecting foot in unglazed baked bricks and to the elevation in glazed baked bricks. However, given the fact that the S face of the NE wall SSU1021 is not on the same line as that discovered in trench Tr. 5 but is projecting by exactly three rows of bricks, we could be in presence of a low bench in glazed bricks adjoining to the S face of the proper elevation.

The original floor level of the room has been identified as an occupation surface at the level of the upper offset, corresponding to the upper surface of a layer of light depurated clayey soil of medium hardness which covers the previous stratification and levels the area:<sup>63</sup> no real indicators of the surface's utilisation as a floor have been found, and also the scarce compactness of the floor suggests a very limited usage.

The presence on this floor of several animal holes<sup>64</sup> indicates that the following phase (Phase 4) represents a phase of abandonment of the build-

ing: the absence of later superimposed floors suggests that this phase occurred not long after the construction was completed.

The upper surface of the subsequent accumulation of clayey soil deriving from the collapse of the mud-brick core<sup>65</sup> represents the occupation surface of the following phase (Phase 3) with clear marks of anthropic activity: the NE wall or bench SSU1021 is partly spoliated<sup>66</sup> in its top course of baked (and probably glazed) bricks, so that the bitumen mortar layer appears; in front of this bench a fireplace<sup>67</sup> is built parallel to the room's walls, using four baked bricks for the bottom and other baked bricks on edge for the delimitation two of its sides; finally a series of post-holes<sup>68</sup> are dug all around the fireplace and the room's corner, showing the existence of a tent. The fireplace produced ashes<sup>69</sup> which were scattered in the following deposit,<sup>70</sup> in which bones and potsherds are also present.

This episode is the main evidence of the secondary occupation of the ruined building, and is followed by a thick soil accumulation containing a

<sup>63</sup> SU1027.

<sup>64</sup> Indicated altogether as NSU 1028, SU1029.

<sup>65</sup> SU1024.

<sup>66</sup> NSU1026.

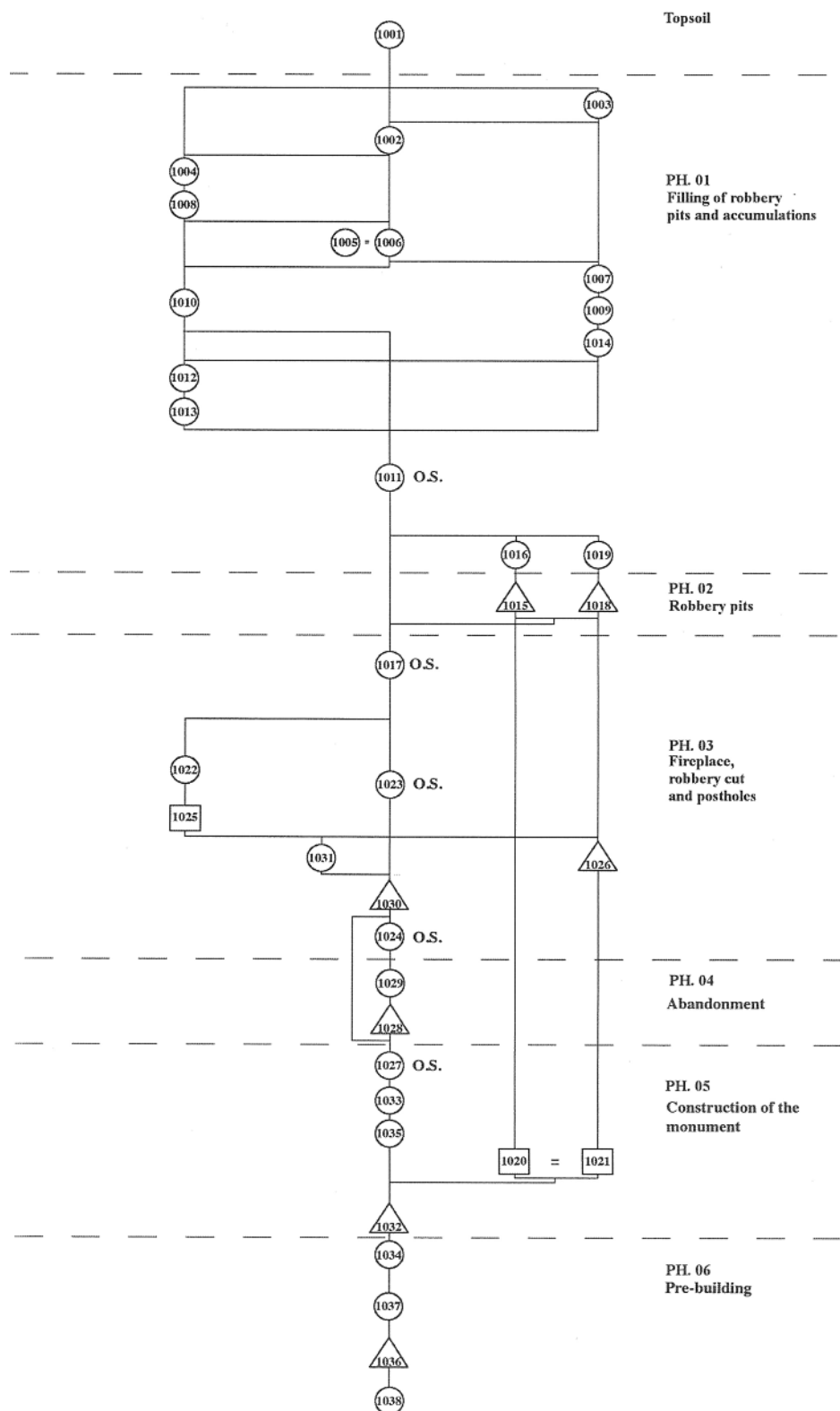
<sup>67</sup> SSU1025.

<sup>68</sup> Indicated altogether as NSU1030, SU1031.

<sup>69</sup> SU1022.

<sup>70</sup> SU1023, sampled for <sup>14</sup>C analyses.

## Iranian -Italian Archaeological Mission - Campaign 2014 Site TAJ - Tr.10



**Fig. 11**  
Tol-e Ajori, Trench  
Tr. 10. Stratigraphic  
matrix (Iranian-Italian  
Joint Archaeological  
Mission in Fars, draw-  
ing M. Galuppi)

few fragments of worked stone:<sup>71</sup> the presence of some potsherds lying flat on its surface suggests its use as an occupation surface.

It is from this level that two wall-robber trenches<sup>72</sup> are dug in order to spoliage the baked bricks of the two walls SSU1020 and SSU1021: the episode represents Phase 2 of the sequence.

In the following phase (Phase 1), the two wall-robber trenches get filled with loose soil and fragments of baked bricks.<sup>73</sup> A compact clayey soil layer<sup>74</sup> seals these fillings: the presence of potsherd and bone fragments suggest also in this case a limited secondary occupation. On top of this level a series of dense deposits,<sup>75</sup> some of them with great amount of baked bricks fragments,<sup>76</sup> mark the final destruction of the building. These accumulations are then covered by ploughed topsoil.<sup>77</sup>

### Comparative study

The peculiar plan of the Tol-e Ajori building has the nearest comparative evidence in the Inner Section of the Ishtar Gate at Babylon,<sup>78</sup> which is also characterized by a rectangular plan with side walls of considerable thickness, even though on the whole in smaller dimensions. While the Tol-e Ajori building presumably measures c. 39.07 × 29.06 m, the Inner Section of the Ishtar Gate measures c. 29.20 × 22 m.<sup>79</sup> At Babylon, the narrow dimensions of the inner room made possible a ceiling with simple wooden beams without intermediate supports, as mentioned for the Babylonian gate by the text of Nebuchadnezzar's inscription referring to the gate's inner space.<sup>80</sup> The same solution for the roof can also be proposed for the Tol-e Ajori building, where no trace of column bases was found. The presence of the long corridor with two openings on the two short sides each, widening in the central room, also makes it possible to characterize Tol-e Ajori as a monumental Gate, as the Ishtar Gate is.

The main architectural difference, however, is represented in plan by the probable benches located along the side walls of the inner chamber, missing at Babylon and in construction technique

by the mud-brick core of the elevation of the Tol-e Ajori building, whereas the Ishtar Gate was entirely built in baked bricks. At the same time, the Ishtar Gate presents a lower section entirely built in unglazed bricks, an intermediate section with plain glazed bricks and an upper section with relief glazed bricks.<sup>81</sup> Furthermore, at Tol-e Ajori, besides, the baked bricks floor present in the Ishtar Gate is missing, perhaps due to pillage. Nevertheless, despite these relevant differences, we cannot deny that the Tol-e Ajori building was deeply inspired by the Ishtar Gate, as the analysis of the decoration does also confirm (see 'The decorated bricks'). We can, therefore, also propose that the two buildings also had a similar function.

Even though the use in the building of both mud-brick and baked bricks, of bitumen mortar and of glazed bricks for decoration is typical of the Elamite tradition too, as also the system of fitters' marks shows, the main inspiration seems to have come from Babylon, as shown in the preceding chapter. Even the measures of bricks coincide.<sup>82</sup>

The Tol-e Ajori Gate represents a new, Mesopotamian-inspired, variety of an architectural type already known to scholars in Achaemenian architecture, the monumental gate. The nearest example of this type in the Persian architecture so far known to us is represented by Pasargadae Gate R,<sup>83</sup> with which the Tol-e Ajori Gate shares the rectangular plan, different from the Persepolis Gate of square plan.<sup>84</sup> However, while in the Pasargadae and Persepolis examples the central room belongs to the type of the hypostyle hall, the plan of the Tol-e Ajori Gate has no inner columns.

As for the decoration, as far as we can reconstruct from the existing information, Gate R of Pasargadae has yielded only stone reliefs. The famous relief representing the genius with four wings still stands on a minor door opening on one of the long sides,<sup>85</sup> while the two main entrances were supposedly flanked<sup>86</sup> by imposing stone reliefs, the presence of which is suggested by the few hints by E. Herzfeld<sup>87</sup> and by the few fragments of reliefs found by A. Sami.<sup>88</sup> At Tol-e Ajori the presence of

<sup>71</sup> SU1017.

<sup>72</sup> Respectively NSU1015 and NSU 1018.

<sup>73</sup> SU1016, SU1019.

<sup>74</sup> SU1011.

<sup>75</sup> SU1013, SU1012, SU1010, SU1008, SU1004 in the W part of the trench; SU1014, SU1009, SU1007, SU1003 in the E part of the trench; SU1005, SU1006, SU1002 in the S part of the trench.

<sup>76</sup> SU1005.

<sup>77</sup> SU1001.

<sup>78</sup> Koldewey 1918, Taf. 3.

<sup>79</sup> Koldewey 1918, 31.

<sup>80</sup> Koldewey 1918, 40.

<sup>81</sup> On the basis of the Nebuchadnezzar's inscription mentioning the glazed bricks of his construction, R. Koldewey formulated the hypothesis that the unglazed part represents an earlier building which was used as a foundation for the upper, glazed, section (Koldewey 1918, 40–41). J. Marzahn speaks of three successive building phases, with decoration using respectively the three techniques (Marzahn 1992, 24–28).

<sup>82</sup> Marzahn 2008, 46.

<sup>83</sup> Stronach 1978, 44–55.

<sup>84</sup> Schmidt 1953, 65–68.

<sup>85</sup> Stronach 1978, 46.

<sup>86</sup> See Stronach 1978, 44–46.

<sup>87</sup> Stronach 1978, 44, fn. 7.

<sup>88</sup> Sami 1996, 102.

fragments of stone is limited to part of a lion (?) jaw in black limestone, discovered in 2011,<sup>89</sup> and a fragment of a claw of a lion (?) in yellowish stone, discovered in 2014.<sup>90</sup> For both pieces, it is difficult to propose the original location and function, given that stone does not show any link with architecture. On the other hand, at Tol-e Ajori there is a flourishing decoration on the walls in glazed bricks, which has a clear model in the Ishtar Gate.

The Mesopotamian general character of iconography both at Pasargadae Gate R and Palace S and Tol-e Ajori, probably due to the fact that both sites belong to Early Achaemenian age, does not show further similarities when we examine the motifs appearing at the two sites in detail. Indeed, one of the two main motifs of Tol-e Ajori, the *mushkhushshu*, is completely absent from Pasargadae, as also it is from Susa and Persepolis Terrace, where also the bull and the lion are present in a form different from that at Tol-e Ajori.

Therefore, rather than a monument having relations with the architectural tradition of Pasargadae and Persepolis, the Tol-e Ajori gate appears to be a copy on the Iranian plateau of a Babylonian monument, built in the same technique, with a similar plan and in larger dimensions, bearing a similar decoration rendered casting relief bricks probably with the help of similar moulds.<sup>91</sup>

What is necessary to stress, after the discovery of the function of the Tol-e Ajori building, is the need to put the gate in connection with an inner area where monumental buildings of official character rose, in a way similar to that in which at Pasargadae Gate R introduces to Palace S and Palace P: the Tol-e Ajori building, therefore, was not the main architectural focus of the area of Bagh-e Firuzi.

One of the constructions accessed through the Tol-e Ajori gate must surely be the large building discovered at the nearby site of Firuzi 5.<sup>92</sup> Both, the Tol-e Ajori Gate and the Firuzi 5 building share the same orientation, different from that of the Persepolis Terrace, and the main axis of the Tol-e Ajori Gate is exactly parallel to the row of basements located on NE side of the Firuzi 5 building.

That this complex belonged to a dynastic environment is borne out by the fact that a fragment of Babylonian cuneiform sign rendered in colour on the surface of a glazed brick, found at Tol-e Ajori in 2012, according to the interpretation by Dr Gian

Pietro Basello represents the beginning of the word *sharru*, i.e. 'king' in Babylonian.<sup>93</sup>

## Chronology

Apart from a few bone fragments which have been submitted to <sup>14</sup>C analyses (see *infra*), so far no archaeological evidence for absolute chronology has been yielded by the Tol-e Ajori Gate. As a preliminary remark, the landscape organization on a grid totally different from that of the area around the Persepolis Terrace and the fact that the architecture of Tol-e Ajori and of the Persepolis Terrace belongs to two different traditions suggests that the two complexes should be considered of different ages. In order to establish a chronological succession between them, we can rely on several features for setting our monument in the Early Achaemenian period, and in any case before the construction of the Persepolis Terrace.

The architectural plan of a monumental gate leading to the palace area recalls the plan seen at Pasargadae with Gate R, while the imagery consisting solely of mythical creatures recalls Pasargadae Palace S.

The most important of these pieces of evidence, however, as shown in the paragraph about the glazed bricks, consists of the presence of the *mushkhushshu* motif, which is on the contrary completely absent at Pasargadae as well as in the abundant imagery on the Persepolis Terrace (see 'The decorated bricks').

As for the striking similarity in plan, building technique and iconography with the Neo-Babylonian Ishtar Gate, the inspiration could have occurred at any time during the Achaemenian period, but it is more likely to have come about at an early age, when an Achaemenian court style in architecture and art had yet to be created. Again, the fact that the two fragments of inscriptions so far found during the excavations are in Babylonian while Old Persian is absent, also points to an early age.

On these bases, it seems reasonable to assume that the Tol-e Ajori Gate was built in the period between 539 BC, the year of the Persian conquest of Babylon, and 518 BC, the presumed beginning of activity on the Persepolis Terrace.

Even though both W. Henkelman<sup>94</sup> and R. Boucharlat<sup>95</sup> have convincingly shown that the Gate at Takht-e Rostam, to the North of Bagh-e Firuzi, must have been associated with Darius' father Hystaspes

<sup>89</sup> TAJ Inv. 17.

<sup>90</sup> TAJ Inv. 90.

<sup>91</sup> A detailed and metrical comparison between the two sets of bricks on the basis of 3D images would make it possible to understand if the same moulds were used in the two monuments.

<sup>92</sup> see Askari Chaverdi et al. 2013, fig. 32.

<sup>93</sup> Basello 2013.

<sup>94</sup> Henkelman 2003; Henkelman, forthcoming.

<sup>95</sup> Boucharlat/Bessac 2010.

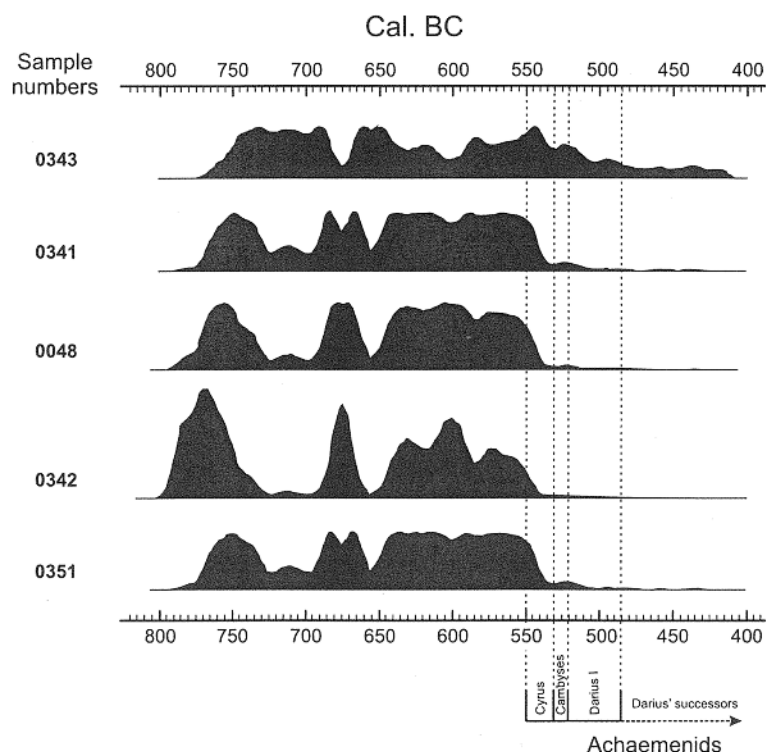
rather than with Cambyses, as proposed in the past, and therefore built during Darius I's reign, evidence from Tol-e Ajori, in fact, suggests that the occupation of the area of Bagh-e Firuzi started during the reign of Cyrus the Great or Cambyses.

At the same time, the presence not only of the bull but also of the *mushkhusshu* on this monument, in Babylon considered a symbol of the royal god Marduk and adopted by the Elamite religious iconography, corresponds well with the also heterogeneous religious environment of Early Persia which Henkelman outlined on the basis of the Persepolis Fortifications Tablets.

The suppression of the *mushkhusshu* from subsequent Achaemenian monumental iconography must be explained perhaps at the light of its snake nature which may have recalled evil creatures. The chronology of the first destruction of the monument, therefore, needs the maximum attention.

What is more important is that all the collected archaeological evidence till now points to the possibility that the Gate had a very short use, if it was ever finished, and that the first destruction occurred after a phase of abandonment. In particular, the absence of a true floor with evidence of occupation, joined to the relatively small volume of brick collapses which we must expect in the case of an elevation similar to the Babylonian prototype, open up the possibility that the building was never finished.

**Fig. 12**  
Tol-e Ajori. The results of  $^{14}\text{C}$  datings (Iranian-Italian Joint Archaeological Mission in Fars, graphic elaboration M. Djamali)



### The $^{14}\text{C}$ analyses

Thanks to the support of the Franco-German project 'Paleopersepolis' led by Dr. Morteza Djamali at the IMBE, Aix-en-Provence – Marseille, five bone samples were submitted to  $^{14}\text{C}$  dating, carried out at the Laboratory of the Center for Isotopic Research on Cultural and Environmental Heritage, Second University of Naples at Caserta, Italy, directed by Professor Filippo Terrasi.

One of the samples (Sample 0351) was collected in one of the stratigraphic units below the floor level of the central room in Trench Tr. 10, three samples (0341, 0342, 0343) were collected in the same trench in stratigraphic units of the first episode of reuse of the ruins after the first abandonment and pillage, while a fifth one (Sample 0048) was collected in one of the units of the first phase subsequent to destruction in the outer area of Trench Tr. 1.

The  $^{14}\text{C}$  dating analyses of the bone sample collected in the layer earlier than the construction should provide information on the age of the archaeological horizon prior to the construction of the gate, while the  $^{14}\text{C}$  analyses of the bone samples collected in the layers belonging to the secondary occupation in Tr. 10 must provide a *terminus post quem* for its destruction.

The results of the analyses of four of the samples strike for their similarity (Fig. 12). Indeed, Sample 0341 and Sample 0351 have given a calibrated age (2σ-range) of 696–540 BC respectively at 76% and 75.6% probabilities, Sample 0342 has given a calibrated age (2σ-range) of 647–547 BC at 48.2% probabilities and Sample 0048 has given a calibrated age (2σ-range) of 654–541 BC at 59.2% probabilities. Only Sample 0343 has yielded a wider chronological range, with a calibrated age (2σ-range) of 764–477 BC at 97.3% probabilities.

What is indeed striking is the same age of the sample from the pre-building phase and of the samples from the secondary occupation after the first destruction. The lower limit of the latter samples coincides with that of the former. The fact that in the four similar samples, the calibration curve is practically constant throughout the duration of the range and that there are no evident peaks means that the better approximation can be anywhere within the range and at the same time shows the biases of  $^{14}\text{C}$  dating analyses for the Achaemenian period. In theory, given that the historical situation forces us to exclude a pre-Achaemenian dating for this Babylonian-inspired building, the significant section of the curve is reduced to its end, i.e. around 540 BC: to this date we should add the time difference provoked by the apparent age at burial due to the fact that the samples consisted in bones, corre-

sponding to c. 10 years,<sup>96</sup> bringing thus the lower limit to c. 530 BC. However, the problems shown by the calibration curve during the Achaemenian period reduces the reliability of this dating.

(A.A.C. & P.C.)

## The decorated bricks

As in the previous seasons, the main finds were represented by fragments of relief glazed bricks very similar to those discovered in 2011–2013 in the heaps of destruction and looting. Here a comprehensive study of the decorated bricks of the first three seasons of the excavation at Tol-e Ajori is presented.<sup>97</sup>

Most of the decorated bricks were found in the accumulation layers during the excavation at Tol-e Ajori, some of these layers being original collapses and others fillings of the spoliation robbery pits arriving until recent times.<sup>98</sup> Also, the *tell* had already been cut by farmers for making a ditch and irrigation water flows in the fields all around during the agricultural season, producing high humidity in the soil. Therefore, it is not surprising that most of the bricks have been corroded, the decorated faces of bricks have severely been damaged, and the glazes have only partly been preserved.

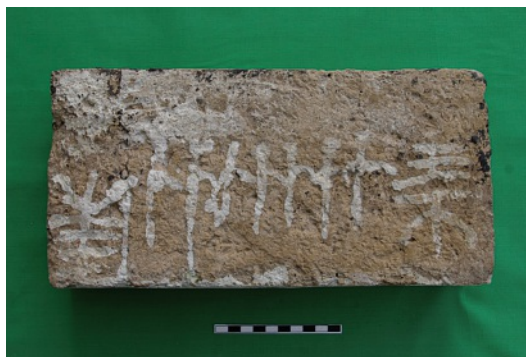
Few complete decorated bricks were found in the excavation. In a few cases, the bricks were almost whole and only chipped, while some others were found to be broken into several fragments which could be recomposed. In short, most of the bricks have reached us in the form of fragments rather small in size.<sup>99</sup>

All the bricks had been produced by firing clay. The fabric has pink, red and cream colors depending on firing conditions. In a lot of cases, the interior (core) and the exterior part of the bricks have different colors, probably due to different oxidization process. Based on measures, these bricks can be divided in two main size groups: the larger group measures on average  $33 \times 33 \times 8$  cm (the measures are slightly different from a brick to another), and

the smaller group, in which the thickness is the same while the length is almost half of its width, actually measures on average  $33 \times 16.5 \times 8$  cm.<sup>100</sup> The latter ones can be considered as 'half-size bricks', which made it possible to lay the bricks in a shifted position course by course.

All the bricks in the monument of Tol-e Ajori were used in horizontal position. On different surfaces of the bricks, traces of bitumen mortar are documented (cf. *supra*). In some cases, traces of mat impression are present on the upper or lower surface of the bricks.<sup>101</sup> Probably the mats had been placed on the ground during the preparation of the bricks so as to prevent them from sticking to it when the clay was being thrown into moulds.

An extremely interesting element found on the *in situ* parts of walls is the fact that the upper surface of each brick bears three marks painted with a brush along its outer edge: one in the middle and two at the two sides.<sup>102</sup> The marks include linear signs with a combination of circles and straight lines. Marks of this type are found on the upper surfaces of some of the glazed bricks found in the collapse layers, even monochrome bricks, which show that each glazed brick was laid according to a scheme prearranged in the brick workshop (Fig. 13). These marks were used to assist the reassembly of the decorated bricks in their final setting in the architecture, preventing fitters from making mistakes in laying every brick in its right place. Using a very similar system is documented at other sites in the Middle East, like Nimrud,<sup>103</sup> Nineveh,<sup>104</sup> Babylon,<sup>105</sup> Susa and Persepolis.<sup>106</sup> Their function is evident



**Fig. 13**  
Tol-e Ajori. Three fitters' marks on a glazed brick Reg. No. GB00248 (Iranian-Italian Joint Archaeological Mission in Fars, photo L. Tortella)

<sup>96</sup> I wish to thank Professor Filippo Terrasi, director of the laboratory where the datings were carried out, for his detailed explanation of the possible interpretation of the analytical results, and Dr Morteza Djamali for the elaboration of the graphics.

<sup>97</sup> The study of the decorated bricks of the first two seasons of excavation at Tol-e Ajori was the subject of the author's master thesis; in addition to the directors of the excavation, the author wishes to thank Dr Gian Pietro Basello, co-tutor of his thesis, who read the text and provided him with important advices and corrections.

<sup>98</sup> Askari Chaverdi et al. 2013, 26.

<sup>99</sup> Several very small pieces of glaze colour were also found during the excavation, which were collected as samples for archaeometric analysis.

<sup>100</sup> Not only the measures of the bricks are not standardized, but the number of bricks with complete length and width is also limited.

<sup>101</sup> The mat impressions may be found either on the upper or on the lower surface of a brick, with no general rule.

<sup>102</sup> Askari Chaverdi et al. 2013, 19.

<sup>103</sup> Reade 1963, 39–40; Curtis 1993, 8–10.

<sup>104</sup> Russell 1999, 97–99.

<sup>105</sup> Andrae 1902.

<sup>106</sup> Razmjou 2004, 387.



**Fig. 14**

Tol-e Ajori. Monochrome glazed brick fragment, Reg. No. GB00248 (Iranian-Italian Joint Archaeological Mission in Fars, photo L. Tortella)

**Fig. 15**

Tol-e Ajori. Polychrome glazed brick fragment showing part of some petals and central yellow disc of rosette, Reg. No. GB00308 (Iranian-Italian Joint Archaeological Mission in Fars, photo N. Ibnoerrida)

**Fig. 16**

Tol-e Ajori. Brick with relief glazed decoration showing part of a bull hoof to right, Reg. No. GB00503 (Iranian-Italian Joint Archaeological Mission in Fars, photo D. M. Meucci)



thanks to the original position of the two topmost rows of some monochrome bricks found *in situ* in Trench Tr. 1 (see 'The monument: an outline'). In Trench Tr. 3 no fitters' mark was present on the upper surface of the *in situ* glazed bricks: since in this trench only the lower section of brown bricks was preserved, it seems that the glazed bricks of the lower sections bore no fitters' marks.<sup>107</sup>

With regard to the technique of brick preparation, it is possible to see a joint between the body of the brick and the decorated part in some frag-

ments. Although the subject needs further enquiry, a few examples seem to reveal that the decorated surface consisted in a layer which was added onto the already shaped raw brick by preparing it in clay with the aid of a mould.<sup>108</sup>

The colored glaze not only covers the entire decorated face of a brick but also runs with drippings on the other surfaces of bricks, especially the upper and lower ones. These drippings indicate that the bricks were probably painted and maybe fired with the glazed face up. Also, it shows that the glaze was distributed just after attaching the decorated part to the brick body. In many cases, it is very difficult to indicate the colour of the decoration. Blue color was not immediately noticed on the Tol-e Ajori bricks and only analytical information proved its original presence.<sup>109</sup> Only in few cases, the preservation of glaze is excellent. The technique of glazing is still under study with the help of archaeometric investigations.<sup>110</sup>

It was necessary to study the bricks together as regards the motifs, since no single brick shows the whole motive and each brick is part of a larger scene.

The bricks of Tol-e Ajori can be divided in four groups according to the type of decoration:<sup>111</sup>

Painted monochrome bricks: they are in different colors, but each of them presents just one color (Fig. 14). In the first two years of excavation, they were also found *in situ* in the outer face of the wall exposed in trenches Tr. 1 and Tr. 3 in the south-west side of the monument.<sup>112</sup>

Painted polychrome bricks: various colors were used in the process of making these bricks, which show flat surfaces where the design is rendered solely by colors, with geometric and floral motifs (Fig. 15). The most common geometric motif consists of alternating rectangles such as those appearing between the rows of monochrome glazed bricks *in situ* in the south-west outer side wall (Tr. 1). The floral bricks show parts of petals and of the yellow central disc of an open flower.

Glazed relief bricks: in this group the decoration with design in relief is associated with coloured glaze (Fig. 16). From the first year of the excavation, it was clear that some of these bricks represent parts

<sup>108</sup> This conforms more with the interpretation proposed by N. Daucé for the bricks from Susa (Daucé 2013, 310–311) rather than J. Marzahn's description of the production of Babylon bricks (Marzahn 1992, 9).

<sup>109</sup> Amadori et al. 2014.

<sup>110</sup> The archaeometric studies on the bricks and glazes are carried out by Professor Maria Letizia Amadori of the University of Urbino and Professor Amin Emami of the Art University of Isfahan and are still in progress.

<sup>111</sup> Decorated faces of some of the bricks are severely damaged and they cannot be classified due to the bad preservation.

<sup>112</sup> Askari Chaverdi et al. 2013, 19; 21 Fig 17.

<sup>107</sup> Askari Chaverdi et al. 2013, 19. Not every brick found in collapse layers shows these marks, mainly due to bad preservation. On many brick fragments just one or two marks are preserved; on some of them the marks are only partly preserved or completely missing. In some cases the marks were under the bitumen mortar and were discovered after removing the bitumen.

of bull limb, while other bricks seemed to show the body of different animals. The successive studies allowed to interpret more fragments as parts of bull images and also demonstrated that all the other fragments could correspond to the body of one creature, the dragon-snake called *mushkhusshu* in Babylonian sources.<sup>113</sup>

Unglazed relief bricks: they are in relief, as the bricks of the previous group; however, colour was not used, or at least no trace of colour is visible. They are very few and some of them show figures similar to those of the glazed relief bricks group (Fig. 17).

Besides, there are also some bricks with fragments of Babylonian cuneiform inscriptions.<sup>114</sup>

As mentioned above, the decorated bricks of the 2014 season, though their study is still in progress, are very similar to the bricks of the previous seasons and helped us to complete the graphical reconstruction of the brick panels of Tol-e Ajori.<sup>115</sup> A particularly important fact is that during the fourth season of excavation, in Trench Tr. 9 some decorated bricks were found *in situ*: on the SW face of the NW corridor, the preserved stretch of the wall still bore a frieze with three open rosettes, in yellow and white colour glaze made up by three superimposed rows (Fig. 9). This was the first discovery of decorated bricks *in situ*, after the discovery of plain glazed bricks in trenches Tr. 1 and Tr. 3.

From the first year of excavation at Tol-e Ajori, the excavators thought that the comparative study of the decorated bricks of the Palace of Darius I in Susa (restored and re-assembled in different museums<sup>116</sup>) could be very useful for understanding the nature of the decorated bricks of Tol-e Ajori. Besides strong similarities in the use of fitters' marks and in some other technical aspects, it was also possible to compare the similar motifs.

However, while all the bricks from Tol-e Ajori have clayey fabric, the majority of the bricks from Susa are in a siliceous fabric. The clayey bricks at this site are very few and by large in unglazed relief.<sup>117</sup> A. Caubet suggests even the possibility that the latter were repair pieces made to match missing or broken pieces to be replaced in the larger series



Fig. 17

Tol-e Ajori. Brick with relief decoration, showing part of a bull body to left, Reg. No. RB0002 (Iranian-Italian Joint Archaeological Mission in Fars, photo L. Tortella)

of siliceous bricks.<sup>118</sup> The use of siliceous paste bricks was an Elamite tradition since the Middle Elamite Period, while the Babylonian tradition is represented by the moulded clay bricks.<sup>119</sup> In Susa, both traditions were used with preference for the first one.

The author had the chance of studying the glazed bricks of Susa in the Louvre Museum in Summer 2013.<sup>120</sup> Considering the lack of time, 50 fragments of the decorated bricks which seemed to be more similar to the bricks of Tol-e Ajori have been selected by the author for this study. A comparison on the shape and size of the bricks of the two sites<sup>121</sup> is difficult, due to the fact that the bricks of Susa frequently seem to have been deliberately cut on back surfaces, probably in order to send them from Iran to France.<sup>122</sup> At any rate, the back of Susian siliceous bricks has generally a wedge-shaped form with a greater thickness on the front face and a lesser thickness at the back: this shape was used in order to make more space for mortar,<sup>123</sup> but it was not used for clayey bricks, neither in Susa nor at Tol-e Ajori.

<sup>118</sup> Caubet 1992, 223.

<sup>119</sup> Caubet 2010, 411.

<sup>120</sup> The author would like to thank the following persons and institutes for helping him with this project: IFRI (Institut Français de Recherche en Iran) for funding his mission; Prof. Rémy Bouchard for all his support and help for organizing it; Ms. Béatrice André-Salvini, former Director of the Department of Oriental Antiquities of the Louvre Museum, and all the staff at the Louvre Museum for their kindness and hospitality at the time of the mission; Ms. Marielle Pic, Director of the Department of Oriental Antiquities of the Louvre Museum, and Dr. Julien Cuny, Curator in charge of the Achaemenian and Sasanian collections in the Louvre Museum, for their collaboration and for allowing the author to publish this information. The author also wishes to thank particularly Ms. Annie Caubet and Ms. Noëmi Daucé for kindly sharing with him their valuable information.

<sup>121</sup> It is necessary to consider that the number of the bricks studied by author was very limited. For the measures of the bricks of Susa see Daucé 2013, 307.

<sup>122</sup> Daucé 2013, 311.

<sup>123</sup> Daucé 2013, 307–310.

<sup>113</sup> Lambert 1985, 87.

<sup>114</sup> See 'Appendix' and Basello 2013b.

<sup>115</sup> Actually some of these fragments are used in the Fig. 21 and Fig. 22.

<sup>116</sup> There are no less than 13,000 brick fragments in the museum collections, divided between France (Louvre) and Iran (Daniel Museum at Susa and the National Museum of Iran in Tehran) (Curtis 2014, 15–25).

<sup>117</sup> The number of clayey glazed bricks of Susa is so small that N. Daucé does not count them while calculating the number of decorated bricks in different museums (Daucé 2013, 306).



**Fig. 18**  
Incised mark on a brick  
from Susa, Louvre  
Museum (Courtesy  
Louvre Museum, photo  
E. Matin)



It seems that on the whole the fitters' marks at Susa and at Tol-e Ajori are similar, whereas there is a difference in their colour: they are mostly in white and in some cases in yellow on the bricks of Tol-e Ajori, while at Susa white and blue colours are used for making these marks. Also, on the upper or lower surface of some bricks from Susa, a bigger incised mark is visible (**Fig. 18**) yet never recorded at Tol-e Ajori.

As regards other technical aspects, the decorated bricks of the Palace of Darius I at Susa, both with and without relief, are usually characterized by 'outlined decoration' in which a thin relief line is outlined around the border of figures of different elements in order to separate them and to show them in a better way (**Fig. 19**).<sup>124</sup> On the contrary, all the decorated bricks of Tol-e Ajori are in relief decoration (glazed or not glazed) or with glazed decoration (solely by the colours) on a flat surface without relief lines.

With respect to iconography, the sphinxes, the griffins and the human figures (especially the 'Archers') of Susa do not have parallels in the pa-

**Fig. 19**  
Brick fragment with  
'outlined' relief decoration from Susa, Louvre  
Museum (Courtesy  
Louvre Museum, photo  
E. Matin)



<sup>124</sup> It seems that the spaces inside these contour lines were dyed (in glazed cases) after making the thin lines in relief, mostly in grey or black. This kind of projecting border is used also on decorated part of bricks in relief.

nels of Tol-e Ajori. There are also differences between the details of different motifs, like limbs and feathers of animal and rosettes.<sup>125</sup> For example, on the bricks found at Susa the rosette with outlined petals has a central disc with three concentric outlined circles, while in the rosettes found at Tol-e Ajori the central discs are plain.

In the end, the results of the comparative study show that, despite a few similarities in the techniques used for making the decorated bricks found at Susa and the decorated bricks of Tol-e Ajori, differences prevail.<sup>126</sup>

Relevant is also the comparison between the decorations of Tol-e Ajori and those of another Achaemenian site, Persepolis, where a much smaller group of glazed bricks was found bearing decorative motifs.<sup>127</sup> As regards the technique, the decorated bricks of Persepolis, like the majority of the decorated bricks of Susa, are siliceous bricks with mixture of sand and lime; besides, the motifs on the bricks of the Persepolis terrace are similarly 'outlined'.<sup>128</sup> Despite iconographical differences, such as the fact that at Persepolis there is no brick representation of animals, mythological or human figures,<sup>129</sup> the glazed bricks from Persepolis and Susa, are very similar in size, shape, producing method and even in their fitters' marks. They are so similar that S. Razmjou postulates that 'perhaps the artists, who worked on the Susian workshops for producing glazed bricks, were moved to Persepolis to start a new project'.<sup>130</sup> We can thus assign the decorated bricks of Susa and of the Persepolis terrace to the same category, different from the decorated bricks of Tol-e Ajori.

Rather than with Susa and Persepolis, on the contrary, the strongest similarities of almost all the decorated bricks from Tol-e Ajori, despite its location in an Achaemenian topographical and chronological context, have been found with the glazed bricks of the Neo-Babylonian third phase of the Ishtar Gate in Babylon, since most of the fragments of bricks of Tol-e Ajori belong to the same figures visible on the Babylonian bricks. In most cases, the similarity allows to understand to which part of those figures the Tol-e Ajori fragments correspond.

The decorative vegetal motifs which appear both in Babylon and at Tol-e Ajori include the open

<sup>125</sup> Considerable differences are also visible in the proportions of the width and thickness of the reliefs.

<sup>126</sup> Even though it is very difficult to make a comparison about colours with naked eye, it seems that the variety of colours used for decorated bricks found at Susa is larger than that of the bricks from Tol-e Ajori.

<sup>127</sup> Razmjou 2004, 384.

<sup>128</sup> Razmjou 2004, 384.

<sup>129</sup> Razmjou 2004, 384.

<sup>130</sup> Razmjou 2004, 386.

rosette. Rosettes were present not only on the walls of Processional Way<sup>131</sup> but also on the adjacent Ishtar Gate (Fig. 20). The only apparent difference with Tol-e Ajori is that Babylonian rosettes are designed on a blue background,<sup>132</sup> while the background of the rosette now shows a light green-grey colour in the monument of Tol-e Ajori (Fig. 15). In fact, the background part of the wall of Ishtar Gate found *in situ*, as drawn by the German excavators, was also designed in greenish-grey, and blue colour was visible just partly on it probably because it was also weathered (Fig. 20). Future archaeometric analysis would confirm the exact colour of these bricks.<sup>133</sup>

The main bulk of the relief glazed fragments of the Tol-e Ajori bricks show limbs of two animals, the bull and the *mushkhusshu*; the bulls from Tol-e Ajori correspond exactly with those of the bull panels on the Ishtar Gate, while many brick fragments from Tol-e Ajori correspond exactly to panels representing the second creature on the Ishtar Gate.<sup>134</sup> The panels formed by the assemblage of bricks of these two animals seem to be copied from the Babylonian monument and are designed in both directions exactly as on the Ishtar Gate building.<sup>135</sup> What seems indeed truly striking is not only the similarity between the two whole panels, as the correspondence of each brick composing the animal motifs to be seen on the glazed bricks of Tol-e Ajori and in Babylon on the Ishtar Gate, even in details: the drawings prepared by R. Esnaashari made possible to verify in most cases a perfect superimposition of the two sets of bricks, even in size and in the composition of the panels through the individual bricks (Figs. 21–22). The Tol-e Ajori fragments fit in the drawn scheme of the Babylon bull and *mushkhusshu* panels, to the extent that we can state with certainty that one of them was built under the influence of the other. The decoration of the Ishtar Gate and the Processional Way derives from earlier Mesopotamian traditions; the bulls and the lions of the Babylonian monuments are similar to the same



**Fig. 20**  
Drawing of the upper preserved section of the Ishtar Gate wall (after Koldewey 1918, Taf. 17)

figures on the Neo-Assyrian glazed brick panels of Khorsabad,<sup>136</sup> while information about the *mushkhusshu* in Mesopotamian world dates from the Old Akkadian period.<sup>137</sup> An inscription of Gudea (c. 2150 BC) shows that, even at that time, the entrances were guarded by the combination of a *mushkhusshu* and a bull.<sup>138</sup> Considering that we have no similar documentation for Iran before the Achaemenian period, it is evident that the glazed brick panels of Tol-e Ajori were built following the decorative models of the Ishtar Gate of Babylon. The dating suggested for the relief glazed part of the third building phase of the Ishtar Gate is about 580 BC.<sup>139</sup>

Nonetheless, the presence of the Mesopotamian dragon-snake in the panels of Tol-e Ajori is very surprising. The *mushkhusshu* had two important functions in Mesopotamia. First, from the old time it was associated with some gods, especially with Marduk in the Neo-Babylonian period; his second role was to keep enemies out.<sup>140</sup> The *mushkhusshu* figure in the architecture of the Achaemenian period and in Iran is attested for the first time at Tol-e Ajori. Elsewhere, in both textual and archaeological evidence, it has just been documented on some seal impressions from Persepolis Fortifications.<sup>141</sup> Indeed, it has been proposed that the Babylonian *mushkhusshu* was replaced on the bricks of Susa

<sup>131</sup> Rossi 2010, 319.

<sup>132</sup> Rossi 2010, 319–320.

<sup>133</sup> Preliminary results of archaeometric analyses have shown that probably here too was a blue colour (personal communication of M.L. Amadori, M. Emami and G.L. Poldi).

<sup>134</sup> The colour of the background of these bricks corresponds to that of the brick with rosette motifs.

<sup>135</sup> During the excavation of Tol-e-Ajori, few fragments of lion image were found, too. The best preserved fragment shows part of a lion mouth, and there are also some fragments that are likely to correspond to the mane of the lion. All these fragments belong to the relief unglazed category, while no relief glazed brick fragment that belongs certainly to lion images was found. In Babylon, the walls along the third phase of the Processional Way were clad for about 180 meters with relief glazed images of lions above decorative motifs (Marzahn 2008, 50).

<sup>136</sup> Matson 1986, 138; for the glazed bricks of Khorsabad see Reade 1995.

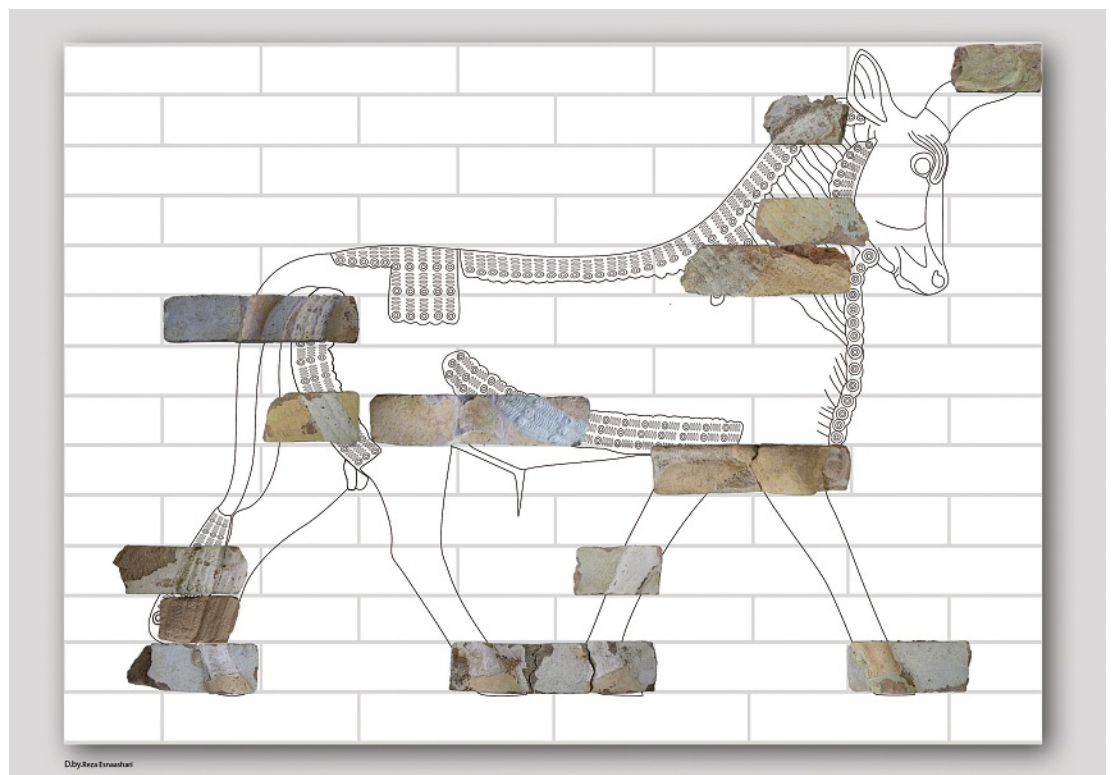
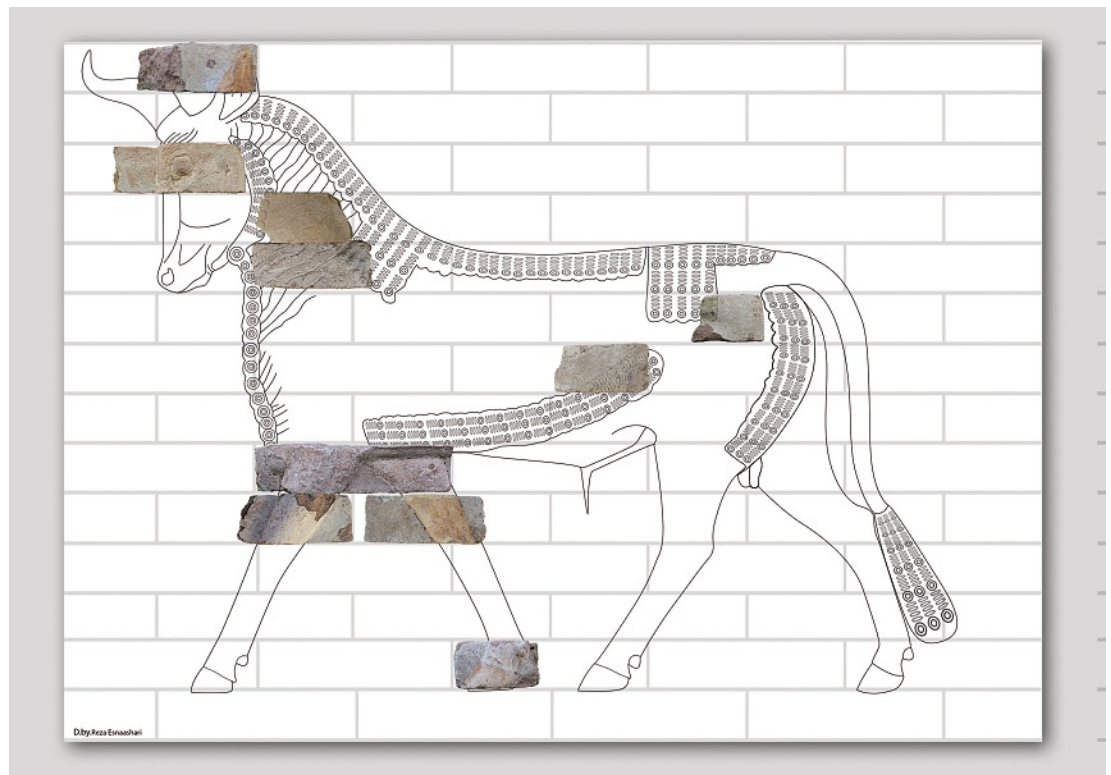
<sup>137</sup> Lambert 1985.

<sup>138</sup> Lambert 1985, 92–93.

<sup>139</sup> Koldewey 1918, 51. This represents the *terminus post quem* for the monument of Tol-e Ajori.

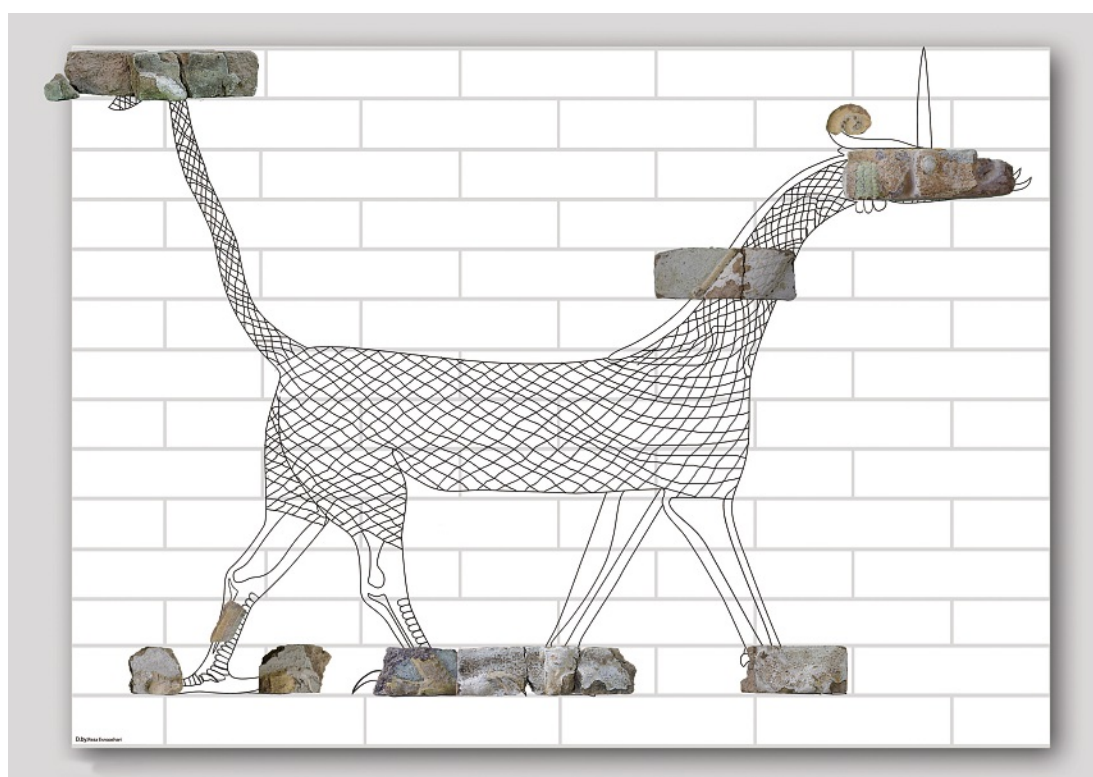
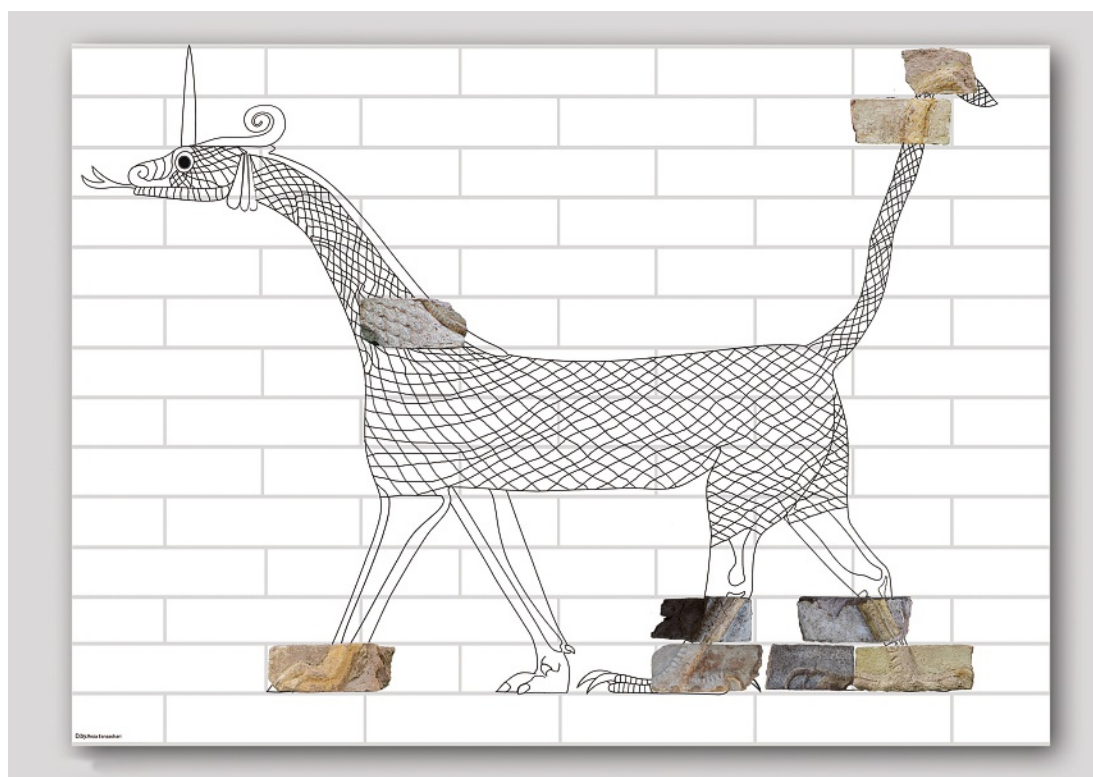
<sup>140</sup> Lambert 1985.

<sup>141</sup> Garrison, forthcoming. For the following periods, P. O. Harper has proposed that the form of *mushkhusshu* figure had some influence on the scales of the iconography of some *senmurvs*, the imaginary bird also known as *simorg* in Iranian literature (Harper 1961, 98).



**Fig. 21a-b**  
Decorated bricks of  
Tol-e Ajori fitting in the  
drawn scheme of the  
Babylonian bull panels  
(Iranian-Italian Joint  
Archaeological Mission  
in Fars, drawing  
R. Esnaashari)





**Fig. 22a–b**  
Decorated bricks of  
Tol-e Ajori fitting in the  
drawn scheme of the  
Babylonian *mushkhus-  
shu* panels (Iranian-  
Italian Joint Archaeolo-  
gical Mission in Fars,  
drawing R. Esnaashari)

by the Elamite-inspired griffin as a distinctly Elamite iconography.<sup>142</sup>

As noticed above, on the some bricks of Susa some incised marks are visible that could be considered as 'mason' or 'fabric' marks. There are different kinds of these marks, found even on non-decorated bricks,<sup>143</sup> which could suggest that they were made by different workshops, maybe with artisans coming from different places or schools. Hence, it is not amazing that we did not find any of these kinds of marks on the bricks of Tol-e Ajori, where they were possibly produced by a single workshop. Therefore, we can suppose that under the reign of Darius, a new tradition of 'decorated bricks' was established by putting together different artisans, traditions and cultures at Susa and later at Persepolis, as a consequence of the multiculturalism of the Achaemenian kingdom. This link with the earlier traditions would explain the partial similarity of Susian and Persepolitan bricks with the bricks of Tol-e Ajori and of the Babylonian Ishtar Gate and Processional Way.<sup>144</sup>

Scholars agree that we can divide the Achaemenian period in two parts, based on the dynastic lineages. The first one is represented by Cyrus and his son Cambyses, the second one by Darius and his successors. The relationship between these two lineages has been discussed by many scholars.<sup>145</sup> It seems possible to suppose that the bricks of Susa, which are more mature, mixed and composite as compared to the bricks of Tol-e Ajori, were made in a new style under the reign of Darius I and also continued in the subsequent periods.<sup>146</sup> We should also consider that even the glazed bricks that have been used in the Achaemenian palace of Babylon dated to the reign of Artaxerses I were made with the same technique that was used at Susa and Persepolis, and not like the traditional Neo-Babylonian bricks, such as those from Tol-e Ajori.<sup>147</sup> In this case, we can propose that the monument of Tol-e Ajori is

earlier than the Achaemenian buildings at Susa and Persepolis.

The study of the decorated bricks of Tol-e Ajori is still in progress; there are a lot of open questions about different aspects of these materials and a lot of points are yet unclear. Also, the archaeometric studies on the bricks and glazes are still continuing. The results of these analyses will enable us to extend the comparative studies to the technical and compositional aspects of the glazes.

(E.M.)

## Appendix: A fragment of another inscribed glazed brick from Tol-e Ajori

By Gian Pietro Basello<sup>148</sup>

On October 23, 2014, the Iranian-Italian Joint Archaeological Mission discovered a fragment of an inscribed glazed brick (TAJ Inv. 101; **Fig. 23**) at Tol-e Ajori, in a collapse layer inside the inner chamber of the building.<sup>149</sup> This epigraphic discovery has to be added to the two joining fragments of an inscribed glazed brick (TAJ Inv. 45; **Fig. 24**)<sup>150</sup> found in 2012 in the same chamber.<sup>151</sup>

The glazed surface of TAJ Inv. 101 represents the right part of an inscribed brick, ca. 1/3 of a complete surface according to the standard brick width of ca. 33 cm. The right part of a cuneiform sign, painted in white glaze, is visible on the extant glazed surface. The extant part of the sign consists of a rectangle-like feature formed by four wedges (two horizontal and two vertical) showing the following peculiarities:

<sup>148</sup> Tuscia University, Viterbo/"L'Orientale" University, Naples.

<sup>149</sup> I am most grateful to the directors of the Mission, Alireza Askari Chaverdi and Pierfrancesco Callieri, for alerting me of the discovery and for getting me involved in its study. Emad Matin (University of Bologna) has also been helpful in sharing his knowledge of Achaemenid glazed bricks. The comparative study of inscribed glazed bricks from Takht-e Jamshid/Persepolis and Shush/Susa has been carried out in the framework of the DARIOH Project, directed by Adriano V. Rossi ("L'Orientale" University, Naples) and partially funded by the Italian Ministry of Education under PRIN contract 2009JHSEE7, together with Ela Filippone (Tuscia University, Viterbo) and Grazia Giovannazzo ("L'Orientale" University). The bricks from Susa in the National Museum of Iran (Tehran) were studied in collaboration with Shahrokh Razmjou in January 2014; thanks are due to Mahnaz Gorji (former director), Sedigheh Piran (head of the Inscription Department), and Masoumeh Ahmadi (head of International Affairs). The bricks in the Persepolis Museum were studied thanks to Mohammad Hassan Talebian (Parsa-Pasargadae Research Foundation, former director) and Hassan Rahsaz (former head of the Restoration Department) in January-February 2008.

<sup>150</sup> Basello 2013b, 41–44.

<sup>151</sup> Askari Chaverdi et al. 2013, 43; Trench 5, SU 517; see also p. 26.

<sup>142</sup> Maras 2010, 210–211; on the Elamite griffin, see Álvarez-Mon 2010, 109–128.

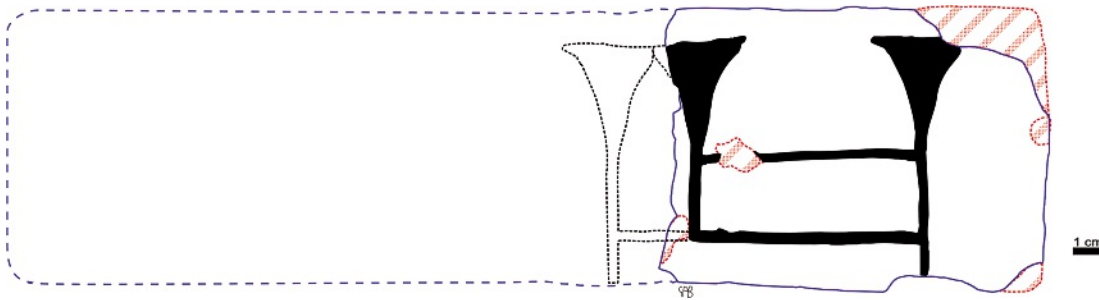
<sup>143</sup> Maras 2010, 212–216.

<sup>144</sup> For example S. Maras considers the striding lion found on bricks from Susa as a direct reference to the Babylonian lions of the Processional Way (Maras 2010, 210).

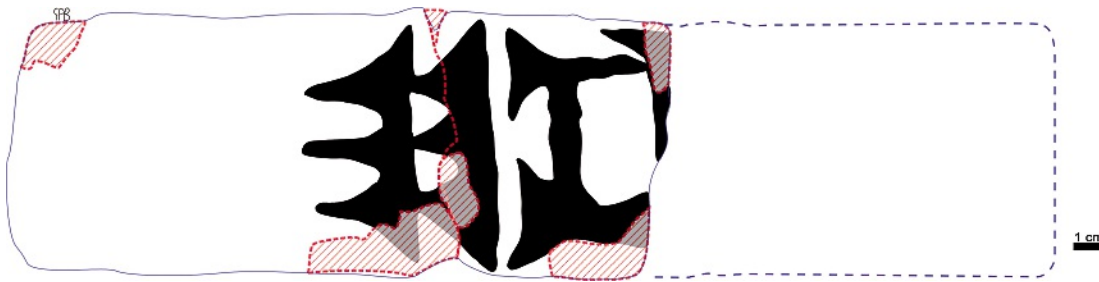
<sup>145</sup> See Henkelman 2011, 577–582.

<sup>146</sup> This could support the idea of the scholars like D. Stronach who distinguishes the period of Cyrus II and his successors until Darius I from the period of Darius I and his successors with the two terms of 'Early Achaemenian' and 'Mature Achaemenian' (Stronach 1997, 41–50). Previously Stronach had mentioned Darius as the creator and codifier of Classical Achaemenian art (Stronach 1978, 106).

<sup>147</sup> Haerinck 1997, 30. It is interesting that R. Koldewey, observing the Achaemenian bricks of Babylon, believed that the outlines were done with a glaze which had a higher melting point than the coloured glaze and proposed that these bricks must have been imported to Babylon from Persia (Canby 1979, 315–316).

**Fig. 23**

Drawing of the brick fragment TAJ Inv. 101 after a photograph, with tentative restoration of the Babylonian sign UR: blue line = extant margin of the glazed surface; black fill = white glaze; diagonal pattern = effaced surface; black dashed line = restored wedge; blue dashed line = restored margin of the glazed surface according to a standard brick size (CAD: G. P. Basello)

**Fig. 24**

Drawing of the brick fragment TAJ Inv. 45 after a photograph. See the caption to Fig. 23 for drawing conventions (CAD: G. P. Basello)

1. the two horizontal wedges are without head (unless their heads were in the lost part of the brick and therefore their legs crossed the extant left vertical wedge);
2. the two horizontal wedges are quite long, without vertical or corner wedges in the middle;
3. the upper horizontal wedge is not in the upper half of the glazed surface but remains at the limit of the lower half.

The peculiarity no. 1 can be explained as a form of stylization of the wedges on a glazed surface. Cuneiform is a three-dimensional writing (just like the Braille writing system is today) made for being impressed on wet clay: each impression of the stylus produced a notch (the wedge with its distinctive 'head', where the vertex of the stylus hit, and 'leg', where the main contact edge<sup>152</sup> of the stylus touched the clay) and its rendering on a two-dimensional surface (like glaze or plaster) required a stylization, i.e. a process quite similar to the wedge interpretation implied by the cuneiform copies drawn today by Assyriologists on paper.<sup>153</sup> The same process took place also when three-dimensional wedges

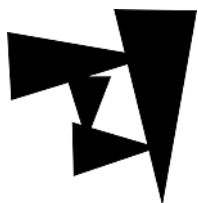
had to be carved in a hard material (like stone). On clay, the difference between a diagonal and a corner wedge could be very subtle, just like between a small vertical and a small horizontal wedge. On glaze or stone, a choice had to be done to represent the one or the other type of wedge. Even the wedge size, which is related to the depth of the impression and the tilt of the stylus on clay, could entail different styles: for example, a corner wedge having a full line height could be shaped as an open '<', while a small one which had to remain in 1/2 or 1/3 of the line height could be shaped as a filled triangle. Therefore the writing on materials other than clay represents an interpretation of the cuneiform signs, showing how they were perceived and understood in their distinctive elements by the ancient scribes. For this reason the form of a cuneiform sign on stone (and on glaze if more exemplars

<sup>152</sup> 'Directional edge/spine' in Cammarosano 2014, 80 Fig. 17 (but note that the 'main contact edge' corresponds to different edges of the stylus depending on which type of wedge had to be impressed; see Basello 2013b, 6; 30 Fig. 2). Finkel/Taylor 2015 (especially chapter 7) also attests the growing interest towards the physical act of writing.

<sup>153</sup> Cuneiform copies (drawings) of clay tablets are interpretations, not only with regards to what the scholar/copyist has seen, but also for the stylization used to render the wedges. Usually there is not a methodological reflection on how to transpose a three-dimensional impression on a two-dimensional surface like paper. This would imply also a reflection on how they wrote cuneiform from a physical point of view. The same tablet could be copied in different ways by scholars using (sometimes unconsciously) different wedge stylizations. A certain two-dimensional wedge stylization could be distinctive of a certain scholar, making him easily recognizable as the author of a cuneiform copy.



**Fig. 25**  
Exemplar of the Elamite sign *taš* (UR) in the name of the king Untash-Napirisha (ca. 1340-1300 in ultra-low chronology) on a glazed tile knob from Chogha Zanbil (after Louvre Sb 3937, currently exhibited in Room 10 of Near Eastern Antiquities) (CAD: G.P. Basello)



**Fig. 26**  
Exemplar of the Babylonian sign *se* in DNa/AB:31 (after the photograph in Schmitt 1970, Pl. 31) (CAD: G. P. Basello)



**Fig. 27**  
Exemplar of the Babylonian sign *se* in DB/AB:81 (detail from Rawlinson 1870, Pl. 40, drawing 'copied by photograph from Sir H. Rawlinson's cast taken from the rock' as reported in the heading of Pl. 39)

were known and collected in a palaeographical repertory) can be used as a reference and its comparison with the forms attested on clay represents an effective methodology to learn cuneiform today.

The same process of stylization leading to peculiarity no. 1 can be observed in the lack of head in the left vertical wedge of the inscribed fragment found in 2012 campaign (TAJ Inv. 45). Together with other details like the corner wedges represented as filled triangles, this peculiarity seems to attest that the writing of the signs on the Tol-e Ajori bricks was quite rough, especially with respect to the Achaemenid inscribed glazed bricks from Takht-e Jamshid/Persepolis and Shush/Susa where each wedge is carefully outlined, also in the smaller size signs of the two-line inscribed bricks from Susa.<sup>154</sup> A similar stylization can be seen in the writing on the clay glazed tile knobs from Chogha Zanbil (e.g. **Fig. 25**),<sup>155</sup> which – however – are much earlier than Tol-e Ajori bricks. In view of the strong similarities found at figurative level between the glazed bricks from Tol-e Ajori and those on the Gate of Ishtar in Babylon,<sup>156</sup> it seems more relevant to look for comparisons in the monumental inscription of Nebuchadnezzar, the glazed bricks of which were found scattered 'in the immediate vicinity of the gateway'.<sup>157</sup> Actually one can find the same stylization of TAJ Inv. 45 in the sign *SAR/ŠAR* on line 35 (in *ū-šar-ši-id-ma* from *rašādu*).<sup>158</sup> It is also possible that the rough writing of the two Tol-e Ajori bricks was conceived for being read from a certain distance from below. In this case a careful representation of each wedge would have hampered the recognition of the signs.

The peculiarity no. 2 can be explained assuming that the sign was the last in a line or that the next sign to be written was too wide for the remaining space on the brick, so the sign was widened prolonging the horizontal wedges, a common practice in cuneiform writing, to reduce the blank space. However, considering also the previous epi-

graphic discovery (the above-mentioned TAJ Inv. 45), it seems that only one or two signs were written on each glazed brick.<sup>159</sup> This practice has no comparisons in Persepolis and Susa where more signs were written on each brick (at least three but usually five in Babylonian and even more in Old Persian),<sup>160</sup> while it is attested in the Nebuchadnezzar's inscription on the Ishtar Gate (usually with two-three signs on each brick, but sometimes also one).

The peculiarity no. 3 seems to be especially useful in distinguishing the sign on TAJ Inv. 101 from other signs showing a rectangle-like feature formed by four wedges. In the Achaemenid royal inscriptions, one can find this feature in the Babylonian signs *SI/SE* (e.g. **Figs. 26–27**), *KIL* (*kīr*) (e.g. **Fig. 28**), *SIK/SIG* (e.g. **Fig. 29**), *KA* (e.g. **Fig. 30**) and also *UM*,<sup>161</sup> but only in *UR* (e.g. **Figs. 32–33**) the position of the two horizontal wedges in the lower half of the line is distinctive.<sup>162</sup> This position is not distinctive for the sign *KA* but it is attested in the form used in the Bisotun inscription according to Rawlinson's copy (e.g. **Fig. 30**; cf. the form in Darius' rock tomb inscription at Naqsh-e Rostam, e.g. **Fig. 31**). If the reading *UR* is correct, another vertical wedge was originally written to the left of the left extant vertical wedge, and the lower horizontal wedge started to the right of it, crossing the left extant vertical wedge as in the proposed restoration (**Fig. 23**). In view of the stylization discussed with regard to the peculiarity no. 1, the head of the lower horizontal wedge is considered as not necessary and therefore it is not drawn in **Fig. 23**. Furthermore, it seems to be intentional (unless the glaze was chipped away) the detail that the left extant vertical wedge was not prolonged below the lower horizontal wedge (cf. the right vertical wedge). This detail is, again, a distinctive feature of the sign *UR* as can be seen, for example, in the exemplar on line 16 of the stone table fragment DSf/AB 006 (**Fig. 33**; cf. the above-mentioned *KA* in Bisotun).<sup>163</sup>

<sup>159</sup> Therefore it is not possible to make inferences on the position of the sign in the line (see also Basello 2013b, 41).

<sup>160</sup> Susa: e.g. the bricks copied in Scheil 1929, 54. Persepolis: e.g. the bricks copied in Herzfeld 1938, 39 Figs. 12–13; 40 Fig. 14 (most of the bricks with just one extant sign are fragmentary).

<sup>161</sup> *SI/SE*: e.g. *is-se-dan-nu* '(he) assisted me' from *sēdu* in DB/AB:81 or DNa/AB:31. *KIL* (*kīr*): e.g. *ut-tak-kīr* '(he) made (it) hostile' from *nakāru* in DB/AB:94 (two times). *SIK/SIG*: e.g. *sik-kāt* from *sikkatu* 'nail' in DPi/AB:2 and XPi/AB:2. *KA* and *UM*: several exemplars in many inscriptions.

<sup>162</sup> Distinctiveness has to be evaluated in the given corpus or scribal context, i.e. in all the products of a school or scribal tradition that was homogeneous in treating similar sign components in similar ways.

<sup>163</sup> Photograph in Scheil 1929, Pl. I D, restored in Louvre Sb 9722 and currently exhibited in Room 15 of Near Eastern Antiquities. See also the copy in Steve 1987, 74.

<sup>154</sup> E.g. Curtis/Tallis 2005, 91 nos. 63–65

<sup>155</sup> See also the copies in Steve 1967, 103 no. 60; Fukai 1981, 5 Fig. 2; Fiandra 1982, 2 Fig. 1. On wall knobs as a typology of artefacts, see Basello 2012 and Tourtet 2013. Two further inscribed glazed tile knobs from Chogha Zanbil have been published by Bruno Overlaet in Gubel/Overlaet 2007, 132 nos. 176–177. On material and technique, see Caubet 2007, 123–125.

<sup>156</sup> Matin 2014.

<sup>157</sup> Berger 1973, 226 *Ištar-Tor-Inschrift* I/3. Photo in Marzahn 1992, 29 Fig. 14b; Finkel/Seymour 2008, 85 Fig. 63: the arrangement of the bricks is the result of a reconstruction (Berger 1973, 31). Its original position is not known. Quotation from Marzahn 1992, 29.

<sup>158</sup> The writing is archaizing as in other Neo-Babylonian royal inscriptions (Da Riva 2008, 76–77).

The sign **UR** is well attested also in Achaemenid Elamite, where its form is different due to the different principles of wedge composition. Since vertical and horizontal wedges could not cross in Elamite,<sup>164</sup> the sign **UR** had to be preferably written with the two horizontal wedges fully detached from the vertical ones (e.g. **Fig. 34**). Therefore, it seems more probable that the extant wedges on TAJ Inv. 101, just like TAJ Inv. 45, were part of an inscription in Babylonian. In any case, the identification of the sign and the language remains highly speculative being based on a scanty and fragmentary evidence.

The sign **UR** is frequently attested in the Babylonian texts of the Achaemenid royal inscriptions, e.g. in the name of the god Auramazda (e.g. <sup>d</sup>a-hu-ur-ma-az-da-'),<sup>165</sup> but not in the spellings attested in the Bisotun inscription.<sup>166</sup>

Like TAJ Inv. 45, TAJ Inv. 101 does not show the white horizontal rule which runs along the upper edge of the glazed surface separating each line of text in the Achaemenid inscribed bricks from Susa and Persepolis.<sup>167</sup> It is doubtful if the lack of this rule is enough to infer that TAJ Inv. 45 and 101 were part of a one-line inscription. It seems easier to explain this lack considering that the rule is not attested also in the multi-line inscription of Nebuchadnezzar on the Gate of Ishtar.

Regarding the original location of the inscription represented by TAJ Inv. 45 and 101, one may compare the find-spots of inscribed glazed bricks inside and around the so-called Apadana at Persepolis. They were found scattered in three areas: 'by Herzfeld in debris east of the building',<sup>168</sup> along the northern front (**Fig. 35**),<sup>169</sup> and to the south and west of the south-eastern sector (**Fig. 36**).<sup>170</sup> Schmidt remarked that the majority of the inscribed bricks from the last two areas, excavated under his directorate, 'rested on debris 30–50 cm above the floors' and that '[t]he debris beneath some units was as high as 0.80–1.40 m'. As a consequence, he related the inscribed glazed bricks to the massive towers (ca. 25 m per side) at the corners of the main hall, suggesting that inscriptions were originally set 'into the center of the west face of the [south-east] tower – above the roof of the storerooms – flanked

by patterned glazed bricks'<sup>171</sup> and 'near the center of the [north-east] tower wall ... – presumably near the roof'.<sup>172</sup>

While the epigraphic material from Tol-e Ajori remains meagre, the mere presence of few inscribed fragments assures that a monumental inscription was set up on a wall of the building, probably high in the inner chamber. This location fully supports the interpretation of the building as a gate, since entrances and passages were meaningful places where a royal inscription could fulfil its functions of displaying the name of the king and invoking protection.<sup>173</sup> Fitting comparisons may be represented by the Achaemenid royal inscriptions high in the monumental doorways of the Gate of All Countries in Persepolis (XPa, on stone slabs)<sup>174</sup> and in the inner chamber of the Gate of Darius in Susa (XSd, on stone column bases).<sup>175</sup>

### Inventory record (Iranian-Italian Joint Archaeological Mission)

TAJ Inv. 101

Brick fragment with glazed decoration bearing part of a cuneiform sign (Babylonian KA?). On all preserved outer surfaces, white drippings.

Pink terracotta; white glaze and grey underglaze.

Context: TAJ-Tr. 9, SU916 – GB01134.

Th. 8.2, max. w. 12.5, max. l. 14 cm.

Broken on two sides. White glaze and grey underglaze partly preserved.

### Sigla

DB/AB: (Achaemenid) Babylonian text of the inscription of Darius at Bisotun. Copy in Rawlinson 1870, Pl. 39–40; transliteration and translation in Von Voigtlander 1978. See also Malbran-Labat 1994.

DNa/AB: (Achaemenid) Babylonian text of the tomb inscription of Darius at Naqsh-e Rostam. Transliteration and translation (to be updated) in Weissbach 1911, 86–91; photograph in Schmidt 1970, Pl. 31.



**Fig. 28**  
Exemplar of the Babylonian sign **kīr** in DB/AB:94 (detail from Rawlinson 1870, Pl. 40)



**Fig. 29**  
Exemplar of the Babylonian sign **sīk** in DPIa:2 (detail from Herzfeld 1938, 23 Fig. 11; see also the photograph of exemplar DPId in Schweiger 1998 Vol. 2, 36 Fig. 5). The original drawing of Herzfeld is in the Smithsonian Institution, Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Ernst Herzfeld Papers, FSA A.6 05.1476 (see also FSA A.6 05.1479)



**Fig. 30**  
Exemplar of the Babylonian sign **ka** in DB/AB:79 (detail from Rawlinson 1870, Pl. 40)



**Fig. 31**  
Exemplar of the Babylonian sign **ka** in DNa/AB:16 (after the photograph in Schmitt 1970, Pl. 31) (CAD: G. P. Basello)

<sup>164</sup> This compositional principle is called 'stilema di separazione' in D'Erme 1990, 79–80. For a complete reassessment of D'Erme's researches on Old Persian and Elamite systems of writing, see Rossi 2005.

<sup>165</sup> Tavernier 2007, 43, no. 2.1.1.

<sup>166</sup> Tavernier 2007, 11, no. 1.1.2.

<sup>167</sup> Sometimes also segments of the vertical rule delimiting the inscribed field on the left or right have been preserved.

<sup>168</sup> Schmidt 1953, 71.

<sup>169</sup> Schmidt 1953, 70–72.

<sup>170</sup> Schmidt 1953, 77–78.

<sup>171</sup> Schmidt 1953, p. 78.

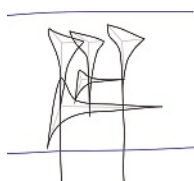
<sup>172</sup> Schmidt 1953, p. 71. Schmidt added that he believed that the related fragments 'belong to one inscription, namely an Elamite version' of the inscription published in Herzfeld 1938, 38–41 no. 16.

<sup>173</sup> See Joannès 2011 for further considerations on the functions of Neo-Babylonian royal inscriptions.

<sup>174</sup> The name of the Gate is provided by the Old Persian text of the inscription and given as a calque in the Elamite and Babylonian texts.

<sup>175</sup> The building of the Gate is attributed to Darius in the inscription.





**Fig. 32**  
Exemplar of the Babylonian sign *ur* on the clay cylinder fragment DSe/AB 002:9 (after the photograph in Steve 1987, Pl. XI 2) (CAD: G. P. Basello)



**Fig. 33**  
Exemplar of the Babylonian sign *ur* on the stone table fragment DSf/AB 006:16 (= Scheil 1929, Pl. I D, restored in Louvre Sb 9722 and currently exhibited in Room 15 of Near Eastern Antiquities) (CAD: G. P. Basello)



**Fig. 34**  
Exemplar of the Elamite sign *UR* on the glazed brick fragment TJM 1941 (= Herzfeld 1938, 40 Fig. 14, now in the Takht-e Jamshid/Persepolis Museum) from Persepolis (courtesy Parsa-Pasargadae Research Foundation and DARIOSH Project) (CAD: G. P. Basello)

DPI<sup>a</sup>, DPI<sup>d</sup>: exemplars of the trilingual inscription of Darius on blue composition knobs from Persepolis. See Basello 2012, 31–42, with further references.

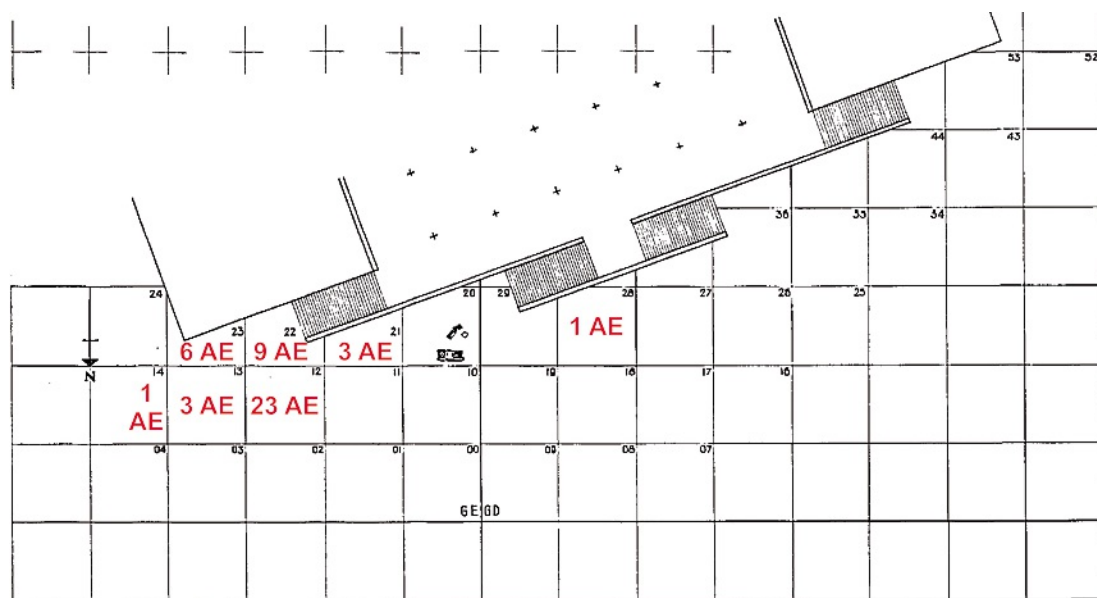
DSe/AB: (Achaemenid) Babylonian text of a trilingual inscription of Darius from Susa known in many exemplars and on several kinds of material supports. See Steve 1987, 56–63 no. 28, with further references.

DSf/AB: (Achaemenid) Babylonian text of a trilingual inscription of Darius from Susa known in many exemplars and on several kinds of material supports. See Steve 1987, 64–77 no. 29, with further references.

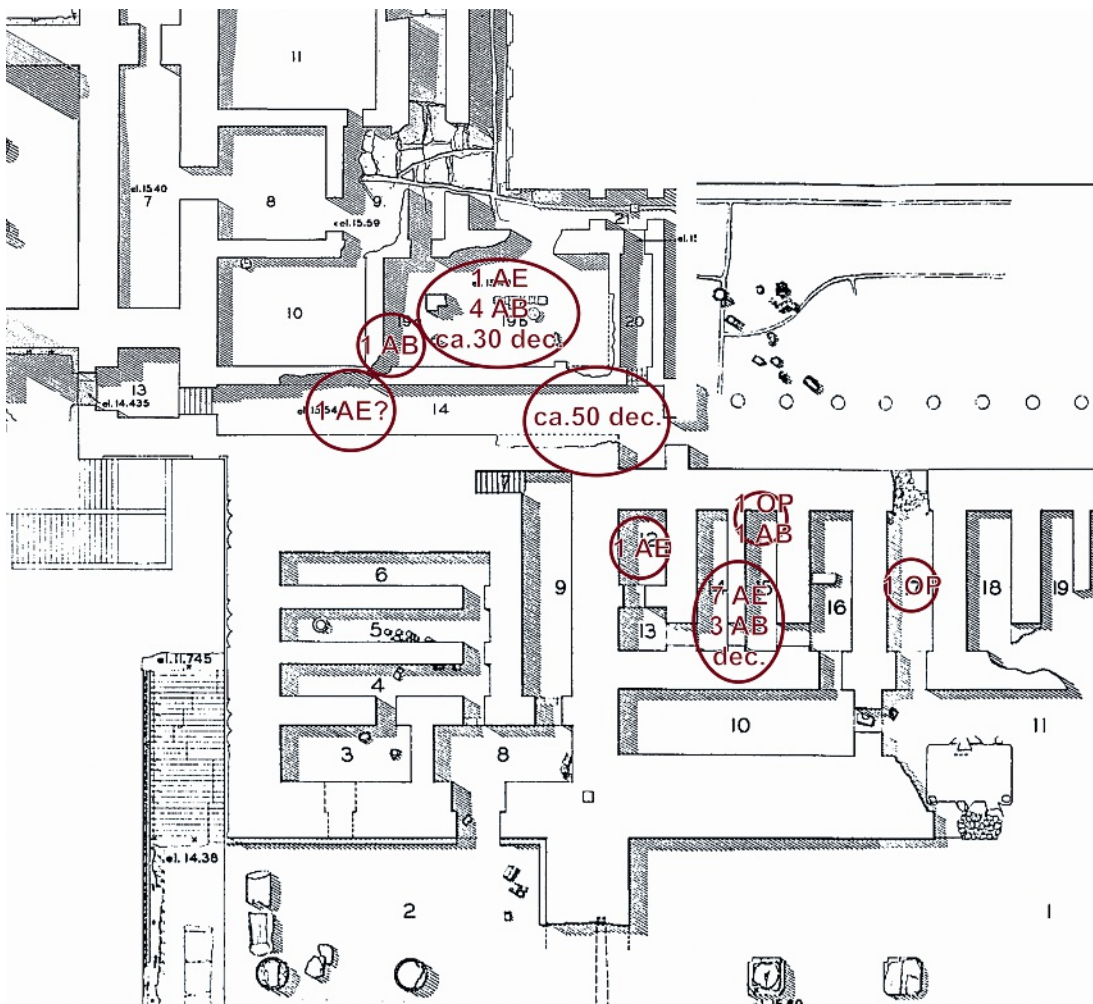
XPa: trilingual inscription of Xerxes in four exemplars on both sides of the two monumental doorways of the Gate of All Countries in Persepolis. See Schmitt 2009, 19, with further references.

XPi: trilingual inscription of Xerxes on a blue composition knob from Persepolis. See Basello 2012, 31–42, with further references.

XSd: trilingual inscription of Xerxes attested in two exemplars (and two more fragments) on square column bases in the Gate of Darius at Susa. Copy, photographs, transliteration, and translation in Valat 1974.



**Fig. 35**  
Find-spots of inscribed (AE = Achaemenid Elamite) glazed bricks along the northern front of the so-called Apadana at Persepolis (plan from Schmidt 1953, 71 Fig. 31; data from Schmidt 1953, 71). North is towards the bottom.



**Fig. 36**  
Find-spots of inscribed (OP = Old Persian; AE = Achaemenid Elamite; AB = Achaemenid Babylonian) and decorated (dec.) glazed bricks in the southern sector of the so-called Apadana and the northern sector of the so-called Council Hall at Persepolis (plan from Schmidt 1953, Fig. 29 and p. 108 Fig. 51; data from Schmidt 1953, 77–78)

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## Summary

Thanks to the 2014 excavations campaign at Tol-e Ajori, Persepolis (Fars), the Iranian-Italian Joint Archaeological Mission has been able to acquire new information on this building, which can now be safely interpreted as a monumental Gate built on the plan model of the Neo-Babylonian Ishtar Gate of Babylon. The preliminary report presented here on the three trenches excavated in 2014 illustrates the archaeological evolution of the building, from construction to destruction, and provides evidence for a series of comprehensive remarks on its topographical context and function, as well as its still uncertain chronological position within the Early Achaemenid period.

The study of the glazed brick decoration, while confirming imitation of the Ishtar Gate in iconography and technique, shows significant differences from the glazed bricks used in both Susa and Persepolis and offers a basis for characterization of the craftsmanship involved in their production.

## چکیده

در طی فصل چهارم (۱۳۹۳) کاوش هیأت ایرانی-ایتالیایی در تل آجری (پارسه، فارس)، اطلاعات جدیدی در مورد این بنا به دست آمد. به کمک این داده‌ها اکنون با اطمینان می‌توان بیان نمود که این ساختمان-دروازه بر اساس حرط بنای بابلی نو دروازه ایشتر ساخته شده است. بر اساس گزارش حفاری سه کارگاه این فصل کاوش می‌توان بخشی از تاریخچه این بنا از زمان ساخت تا تخریب و حتی پس از آن را بازسازی نمود. همچنین این شواهد، این امکان را می‌دهند تا بتوانیم رابطه این بنا با محوطه‌های مجاور و همچنین کاربری آن را بهتر درک نماییم. داده‌های جدید همچنین تاریخ گذاری این بنا به دوره ی آغاز هخامنشی (که همچنان در هاله‌ای از ابهام است) را تأیید میکنند.

بررسی آجرهای لعابدار این بنا اطلاعات جدیدی در مورد تزئینات و روش ساخت آن‌ها ارائه کرده است. این مطالعات نشان می‌دهند که نگاره شناسی و ساختار این آجرها بسیار شبیه نمونه‌های بابلی دروازه ایشتر هستند. همچنین مشخص شده است که این آجرها تفاوت‌های آشکاری با آجرهای لعابدار هخامنشی شوش و تخت جمشید دارند.