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CONTENT INHALT

Vorwort.....	7
<i>Andrea Csapláros</i>	
Milestones in the research of Savaria.....	9
<i>Ottó Sosztarits</i>	
Excavation in the middle of Scarbantia.....	31
<i>Attila Mrenka – Dániel Kovács</i>	
Bratislava Castle, Excavation and Presentation of the Celto-Roman Acropolis.....	53
<i>Margaréta Musilová – Branislav Resutík</i>	
Stadtarchäologie in Wien 2022. Projektorganisation mit aktuellen Fallbeispielen.....	77
<i>Martin Mosser – Kristina Adler-Wölfl – Michaela Kronberger</i>	
Die Vorstädte der <i>colonia Septimia Aurelia Antoniniana</i> Carnuntum.....	89
<i>Christian Gugl – Silvia Radbauer – Mario Wallner – Eduard Pollhammer</i>	
Interpreting space. A case study of Arrabona (Győr, HU).....	121
<i>Szilvia Bíró</i>	
Living and working in Brigetio. The architectural frame of life in the Roman civil town.....	141
<i>Linda Dobosi</i>	
Late Roman earthquake in Brigetio?.....	179
<i>Linda Dobosi – Miklós Kázmér</i>	
Many a little makes a mickle. Unusual construction technologies with great archaeological results in the Aquincum Civil Town.....	209
<i>Orsolya Láng</i>	
A recently discovered road in the area of Aquincum's civil town.....	223
<i>Barbara Hajdu</i>	
Neue Daten zu den weißen Flecken der Topographie von Aquincum.....	237
<i>Gabriella Fényes</i>	
New results of excavations of the Imperial Palace in Sirmium.....	255
<i>Stefan Pop-Lazić – Bojan Popović</i>	
Lost & found in Raetia. Defining Roman archaeological heritage in Bregenz (Austria).....	279
<i>Karl Oberhofer – Andreas Picker</i>	
Der Domplatz von St. Pölten. Eines der herausforderndsten innerstädtischen Grabungsprojekte Österreichs.....	299
<i>Ronald Risy</i>	

Liebe Leserin, lieber Leser!

Die vorliegende Publikation dokumentiert die Beiträge der gleichnamigen Tagung des NKA Projektprogramms, die am 25. und 26. November 2021 in Iseum Savariense in Szombathely stattfand.

Archäologie ist ein wichtiges Thema in der integrierten Stadtentwicklung. Die aktuellen Grabungen in den antiken Städten, wie in Savaria, Scarbantia, Carnuntum, Arrabonna, Aquincum, Brigetio, Sirmium, Mursa, Aelium Cetium, Napoca etc. belegen dies eindrucksvoll. "Die Stadt unter der Stadt" stößt auf ein immer größer werdendes Interesse bei Bewohnern, aber auch bei Besuchern. Die Themen dieses Bandes beschäftigen sich mit den neuesten Grabungsergebnissen, methodischen Problemen rund um das Thema „Bewahren und Präsentieren“ in der Stadtarchäologie hauptsächlich in der Provinz Pannonien. Bei den Vorträgen geht es nicht nur um die Ergebnisse der archäologischen Ausgrabungen, sondern auch die Ausgrabungsmethodik und verschiedene Ausgrabungstechniken. In den letzten Jahren wurden großflächig geophysikalische Untersuchungen von antiken Siedlungen und deren Umgebung durchgeführt. Die Ergebnisse dieser Forschungen tragen dazu bei, die räumliche Struktur und Landnutzung antiker Städte besser zu verstehen.

Die archäologischen Relikte in den modernen Städten werden zunehmend Bestandteil von Umbau- und Neubaumaßnahmen und als "Fenster in die Vergangenheit" inszeniert. Im öffentlichen Raum weisen neue Wegführungen, archäologische Pfade, Pflasterungen und Informationstafeln auf das archäologische Erbe hin.

Der Weg dahin ist nach wie vor steinig: In der öffentlichen und vor allem in der Investorenwahrnehmung gelten Grabungen als schwer kalkulierbares Hemmnis. Die Integration der Funde in zukünftige Projekte gilt als wertmindernd. Das muss nicht sein: Auf der Basis der archäologischen Bestandserfassung können die Innenstädte planerisch und gestalterisch sinnvoll weiterentwickelt und Orts- und Stadtbilder erhalten werden. Entscheidend ist das gemeinsame Handeln!

Savaria – Szombathely, April 2022

*Andrea Csapláros
Museumsdirektorin
Savaria Museum*

Living and working in Brigetio The architectural frame of life in the Roman civil town

*Linda Dobosi**

The Roman civil town of Brigetio lies under the houses of present-day Komárom-Szöny. Archaeological research, therefore, is limited to the so-called Komárom/Szöny-Vásártér site, the only unbuilt area within the boundaries of the Roman civil settlement. The research excavations of 1992–2016 and the geophysical survey of 2019 yielded important data about the spatial structure and the time frames, along with the domestic buildings and workshops of the town. The four known streets of the orthogonal road network of the town divided the excavated area into insulae where long strip houses stood perpendicular to the limes-road. Beside the high-standard provincial houses with hypocaust heating and figurative wall paintings, traces of four workshops came to light. Industrial activity practised at Vásártér include metal working (bronze and lead), glass manufacturing, bread baking and possibly bone working. The civil town seems to have been existed from the turn of the 1st and 2nd centuries A.D. to after the middle of the 3rd century, when the civil town was abandoned by its inhabitants. Although four building phases can be distinguished, the majority of the remains can be linked to the time of the Severan emperors, the heyday of the town.

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Introduction

Underneath present-day Komárom, Hungary lies the Roman settlement complex of Brigetio. Mainly built over by modern structures, planned excavations are limited to a few sites in Komárom, while at most locations only development-led excavations are possible.

The most important part of the settlement complex was undoubtedly the legionary fortress (*castra legionis*), which called the other two settlement parts into

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Fig. 1.

Map of the civil town of Brigetio with the line of the supposed city walls and amphitheatre and with the remains excavated at the Komárom/Szőny-Vásártér site or known from the geophysical survey (Drawing: L. Dobosi)

being, the military town (*canabae*) and the civil town (*municipium*), at the end of the 1st century A.D. or in the beginning of the 2nd century at the latest. After its heyday under the Severan emperors, when it was elevated to the rank of *municipium*,¹ then *colonia*,² the civil town was soon abandoned by its inhabitants sometime after the 250s. From the late 3rd – early 4th century only sporadic finds are known.³

The topography of the civil town is not known in detail, due to the fact, that most of its area lies under modern houses (Fig. 1). According to László Barkóczi, the civil town was surrounded by city walls in the first half of the 3rd century,⁴

1 The civil town probably became a *municipium* under the rule of Septimius Severus (193–211), most probably in 194, at the same time when Aquincum and Carnuntum became *coloniae*. See: BARKÓCZI 1951, 28; BARKÓCZI 1953, 202; KOVÁCS 2007, 146; MRÁV 2013, 208–209; BORHY 2021, 19; BORHY 2019, 39. The town was named *municipium Brigetionensium Antoninianum* in an inscription from 217 (CIL III 11007 = RIU 450; MÓCSY – FITZ 1990, 62) Based on inscriptions RIU 501 and RIU 773 Brigetio was elevated to the rank of *municipium* before 205.

2 CIL III 4335 = RIU 604; L. Barkóczi dated the inscription to the second half of the 3rd century (BARKÓCZI 1951, 28). By that time, the Brigetio civil town entered into a steep decline, and the *canabae* became larger and more significant than the *municipium*. Moreover, the *canabae* were administratively incorporated into the civil towns in Aquincum, Carnuntum, Brigetio and probably Vindobona by emperor Septimius Severus. This means, that the rank of *colonia* must have been in fact given to the *municipium* and *canabae* together. KOVÁCS 2001, 65–66; MRÁV 2013, 209; BARKÓCZI 1953, 201.

3 BORHY – SZÁMADÓ 2003, 153; BORHY ET ALII 2011, 51; JUHÁSZ 2018, 18–19.

4 BARKÓCZI 1951, 6–7 and 28.

when also an amphitheatre was built somewhere near its southwestern corner.⁵ Neither the amphitheatre, nor the city wall has been found so far, therefore there is no data concerning their exact location, shape, or structure. In comparison, Aquincum, Carnuntum and Vindobona all had city walls 2.0–3.0 m thick with several *fossae*. The walls of Aquincum were possibly first built by emperor Hadrian (117–138) and were several times renewed and rebuilt.⁶ In Carnuntum, the city walls were probably built around 200 A.D.⁷ and in Vindobona during the 2nd century A.D.⁸

Recent research showed that Brigetio was also protected by a sub-channel of the Danube from the south, the water level of which was controlled by two flood gates. In consequence, the settlement complex of Brigetio stood on a peninsula surrounded by water on three sides.⁹

Although the whole area of the civil town of Brigetio is estimated to have been about 32–34 hectares (about 850 × 400 m),¹⁰ only less than 10%, an appr. 3 ha large area of it is unbuilt and available for archaeological research. This area is the so-called Komárom/Szőny-Vásártér site, a marketplace left empty of buildings all through the centuries after Roman times. Local tradition held the site the location of the Roman forum,¹¹ which made it the ideal spot for starting the modern planned excavations in 1992.

The site

Before the systematic archaeological research led by László Borhy and Emese Számadó began,¹² only three excavations touched the area of the civil town. In 1935 Aladár Radnóti found wall painting and stucco fragments belonging to Roman domestic buildings in the surroundings of Vásártér.¹³ Later, in 1970 Endre Bíró conducted a development-led excavation preceding the building of the grocery store in the northwestern corner of Vásártér.¹⁴ In 1989 Julianna Cseh and Sándor Petényi observed the layers of the Roman limes-road and parts of a hypocaust-heated building during a sewage construction in the northern part of Vásártér.¹⁵ Finding the exact location of past excavations is not without problems, as attested by Bence Simon who attempted to localize the trenches of the Bíró-excavation.¹⁶

⁵ BORHY 2009, 15.

⁶ ZSIDI 1990; ZSIDI 2002, 57–61; LÁNG 2013a; GROH ET ALII 2014, 393–395.

⁷ GROH ET ALII 2014, 395–396.

⁸ MÜLLER 2008, 105; MÜLLER ET ALII 2011, 46–47.

⁹ NAGY ET ALII 2013; VICZIÁN ET ALII 2013; BORHY ET ALII 2017, 126.

¹⁰ The boundaries of the civil town are presumed to have been at Endre Ady Street in the south, Nádor street in the west, at the intersection of Virág Street and Széchenyi Street (Road 1) in the east. The line of the northern city wall could still be seen on an aerial photograph in 1984 near a branch of the Danube. BARKÓCZI 1951, 6–7 and 28; BORHY – SZÁMADÓ 2003, 151–152; SZÁMADÓ 2010, fig. 14; BORHY 2021, 11.

¹¹ BARKÓCZI 1951, 6.

¹² László Borhy is member of the Hungarian Academy of Science, rector of Eötvös Loránd University; Emese Számadó is the director of the Klapka György Museum of Komárom.

¹³ BARKÓCZI 1951, 6; SZÁMADÓ 1997, 156. Unpublished.

¹⁴ BÍRÓ 1971, 40; SZÁMADÓ 1997, 156; SIMON 2018.

¹⁵ SZÁMADÓ 1997, 159.

¹⁶ SIMON 2018.

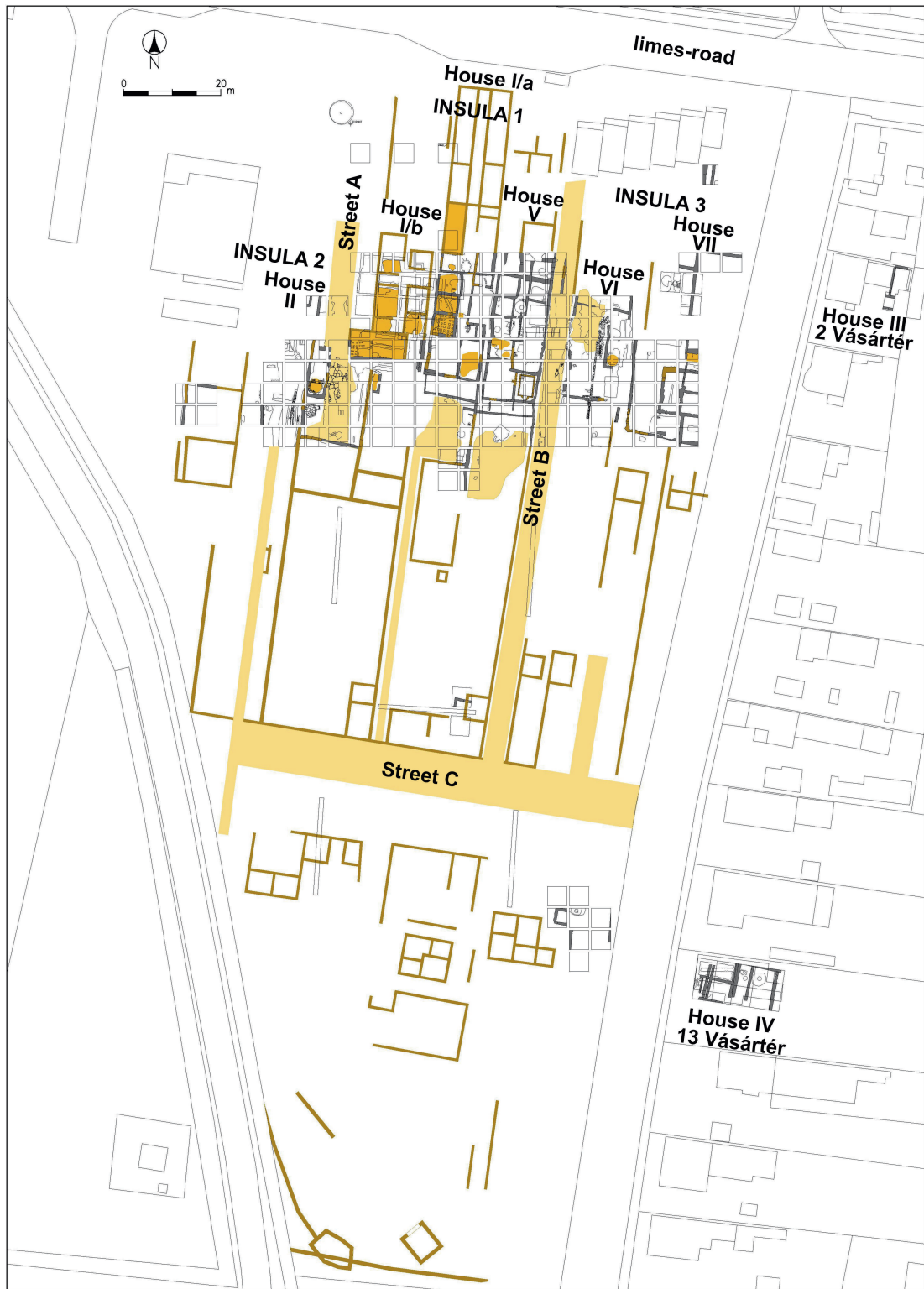


Fig. 2.
Map of the Komárom/Szőny-Vásártér site
(Drawing: L. Dobosi)

After collecting data through field walks, the research excavation in 1992 started with the opening of fifteen 4 × 4 m large excavation units in the northern part of Vásártér, where Roman remains appeared to be denser. In the southern half of Vásártér five long, 0.9 × 20 m large trial trenches were dug, but they were mostly empty of archaeological finds.¹⁷ The northern part of Vásártér, however, turned out to be very promising: terrazzo floors, colourful wall paintings and stucco fragments were uncovered along with the remains of removed walls.¹⁸ Until 2016, when the systematic excavations at Vásártér came to a halt, approximately 3000 m² were excavated, about 1% of the estimated area of the civil town. Two small-scale development-led excavations complemented the planned excavations: the first at 2 Vásártér between 1999–2001 and the second at 13 Vásártér in 2006. To conclude the archaeological research of the civil town, a geophysical survey was conducted in 2019 which scanned the whole surface of Vásártér (*Fig. 2*).¹⁹ The survey not only revealed several structures, a street, and buildings in the unexcavated part of Vásártér, but also helped to interpret the excavated remains and put them in a broader context.

The internal structure of the civil town

The internal structure of the civil town was defined by the orthogonal set of streets, that ran in north–south and east–west directions. The main street, the limes-road ran through the northern part of the civil town from east to west, the same way it ran through the *canabae* and the legionary fortress. Parallel to the limes-road another street was detected by the geophysical survey in the middle of Vásártér, the so-called Street C. Perpendicular to these, two north–south running streets were excavated, Streets A and B (*Fig. 3*). The orientation of the street system must have been marked out at the formation of the town because the orientation of even the earliest remains is in accordance with the orientation of the streets. Apparently, the orientation of the *insulae* did not change during the life of the Roman town, as was the case in Aquincum. In the civil town of Aquincum the orientation of the Severan *insulae* was slightly different from the orientation of the earlier *insula*-system.²⁰

The structure of the limes-road was observed in 1989 by S. Petényi when a drainpipe was laid along present-day Road 1 (otherwise known as Széchenyi Street). According to his observations the limes-road was paved with large stone slabs with a thick foundation including a 1 m thick layer of large rocks and several layers of gravel and sand.²¹ The limes-road as the main street, or *decumanus ma-*

¹⁷ Except for the northeastern trial trench 1 in which layers of gravel, sand and clay were found that later proved to be the foundation layers of Street B.

¹⁸ BORHY – SZÁMADÓ 1994.

¹⁹ The geophysical survey was conducted by Zsombor Klembala (Department of Geophysics and Space Department, Loránd Eötvös University), László Rupnik (Institute of Archaeological Sciences, Loránd Eötvös University) and András Bődócs (Institute of Archaeological Sciences, Loránd Eötvös University). An earlier magnetometric survey was conducted by Sándor Pusztai in 1995.

²⁰ ZSIDI 2002, 49; LÁNG 2013b, 244.

²¹ SZÁMADÓ 1997, 159.



Fig. 3.

The street system of Brigetio civil town (Drawing: L. Dobosi)

ximus of the civil town, must have had a considerable width. The *decumanus maximus* in Aquincum was 11 m wide, while in Carnuntum 11.7–12 m wide,²² which points to a 11–12 m wide road in Brigetio, as well.²³

The best-preserved Street A in Brigetio was also paved with flagstones and the large limestone slabs remained *in situ* on an 8 m long segment of the street. In its last phase the street was 3.8 m wide at its narrowest point and 8.5 m wide at its widest. During the last excavation season a removed wall was uncovered that ran across Street A, blocking it.²⁴ The uncertain chronological relationship between the wall and the street was cleared by the geophysical survey of 2019: Street A was proved to be a dead-end-street which started at the limes-road and went south halfway to Street C. Street A was probably built under or after the Antonine dy-

²² GROH ET ALII 2014, 388–389.

²³ This means roughly the width of present-day Road 1 at Vásártér, under which the Roman limes-road ran.

²⁴ In excavation unit -A19 and -B19.

nasty based on the ceramic find material dated to that time period, and was covered with flagstones during the Severan emperors.²⁵ A few early wall remains from the first half of the 2nd century A.D. were found 0.6–0.65 m below the flagstones,²⁶ which corroborates the hypothesis that Street A might not have existed in the earliest building phase of the town in the first half of the 2nd century.

The appr. 5.0 m wide Street B lay roughly 35.0 m to the east from Street A, which means a distance of 1 Roman *actus*. Street B connected the limes-road with Street C as shown by the geophysical surveys of 1995 and 2019. Also, its gravelly, sandy, and clayey foundation layers were found in the trial trench 1 of 1992. Street B must have been paved during the Severan emperors just like Street A, but only a few stones were found.²⁷ About 0.8 m below the level of the flagstones a pair of deep ruts made by cartwheels came to light.²⁸ The ruts indicate that the street was used as a dirt road for a long period of time before it was eventually paved. The distance between the ruts measured 1.15 m,²⁹ which is narrower than the usual distances measured in Pompeii, where A. Kaiser and E. Poehler found that ruts were generally 1.35–1.40 m apart, 1.60 m at the most.³⁰ According to the research of G. Pike, the distance between the cartwheels was in correlation with the animal-type that drew the cart. She found four categories, the narrowest of which belonged to hand-drawn or donkey-drawn carts with a wheel distance of 1.15–1.20 m. The ruts of Street B fell into this category. Carts drawn by one horse had a wheel distance of 1.35–1.40 m (the most frequent case in Pompeii), vehicles drawn by two horses had their wheels 1.45–1.50 m apart, and the largest vehicles were drawn by two oxen and had a wheel distance of 1.55–1.70 m.³¹ In comparison, the ruts found in the legionary fortress of Brigetio were 1.62 m apart. These ruts were preserved in the stone slabs of the *via praetoria* in the surroundings of the *porta praetoria*.³²

It can be observed that the streets were wider before the Severan construction phase of the town, when they were occasionally made narrower in different places with some of the perimeter walls of the houses raised on the surface of Streets A and B. This phenomenon is frequently seen in Aquincum as well, where it was named “wall-pushing”. The concept of wall-pushing meant that as the town became densely populated and the houses grew bigger during the Severan dynasty, the buildings were broadened at the expense of the streets: new perimeter walls or porticoes were erected on the road surface, thus making the streets narrower.³³ A north–south wall erected in the mid-third century on the surface of Street B narrowed the remainder of the street to merely 2.7 m (see House V).³⁴

25 FÉNYES 1999, 5; BORHY – SZÁMADÓ 1999, 144.

26 The remains belonged to 250–300 mm thick mud and stud walls. They were found in excavation units -A18, -A19, A17, A18 and A19.

27 In excavation units J16 in 2009, J15 in 2010, K14 in 2010.

28 BARTUS – BORHY – SZÁMADÓ 2012, 7.

29 All rut and wheel distances are measured centre-to-centre.

30 KAISER 2011, 183 and Table 7.1; POEHLER 2017, 109–120 and Table 5.1.

31 KAISER 2011, 181–182. with more evidence; PIKE 1967.

32 BARTUS ET ALII 2020, 183 and fig. 5.

33 LÁNG 2013b, 238 and 245; ZSIDI 2002, 49. For Brigetio examples see in the description of Houses I/b and V.

34 Along the eastern side of excavation units J11–J12.

Streets in Aquincum and Carnuntum could be placed in three categories: the main streets were 11–12 m wide, while side streets 5.6–7.5 m wide and smaller streets 2.4–3–7 m wide. It was usual that the roads were only paved during the Severan dynasty, after being used as dirt roads for a century.³⁵ Brigetio seems to fit well into this Pannonian pattern.

The street network in a town marked out the building plots and *insulae* of the town. As Street A turned out to be a dead-end-street, it is hard to detect well-defined *insulae* in the civil town at this point. Nevertheless, the area between Streets A and B was named *Insula 1*, the area west of Street A was named *Insula 2* and the area east of Street B is called *Insula 3*.³⁶ The length of the *insulae* is uncertain, but the distance between the limes-road and Street C measures roughly 140–144 m, about 4 *acti*. This would mean an unusually lengthy *insula* with a 1:4 ratio (35 × 140

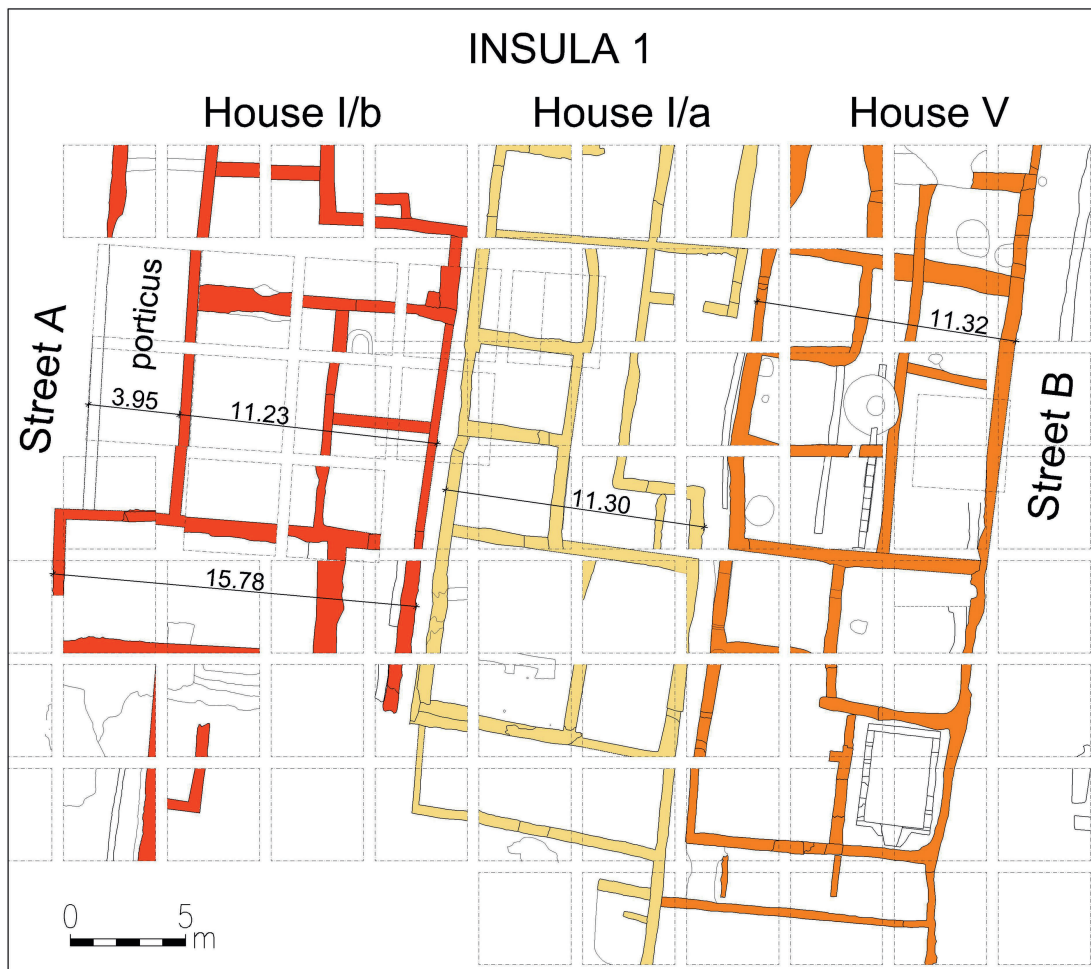


Fig. 4.
The strip houses in Insula 1 (Drawing: L. Dobosi)

35 GROH ET ALII 2014, 389–390.

36 The streets, insulae and buildings were mainly numbered consecutively as they were found in the course of the excavations.

m = 1 × 4 *acti*) bordered by Streets A, B, and C and the limes-road. Average *insula* sizes in Aquincum measured 35 × 105 m (1 × 3 *acti*) and 70 × 105 m (2 × 3 *acti*),³⁷ while in Carnuntum *insulae* of 34.5 × 57 m, 64.5 × 142 m and 66.6 × 66.3 m are known.³⁸

The limes-road was undoubtedly the main street, the *decumanus maximus* of the town, and the richest, most decorative domestic buildings in the excavated area seem to have been arranged along the limes-road.

Living in Brigetio

Although local tradition held that the Vásártér site hid the ruins of the Roman forum, the area turned out to be an industrial-commercial-living quarter instead. Domestic buildings and several workshops came to light during the excavations. Large parts of three strip houses in *Insula* 1 were excavated along with a small portion of another domestic building, House III. In the so-called *Insulae* 2 and 3, on the other hand, remains of workshops came to light.³⁹

Three elongated strip houses stood side-by-side in *Insula* 1, between Streets A and B (Fig. 4). They were separated by narrow, only 0.7–0.8 m wide alleys, called *angiportus/angiportum*. Based on the geophysical survey, the complete length of the houses must have been around 60–65 m, and their main entrance opened from the limes-road, although Houses I/b and V also had entrances opening from Streets A and B, respectively. Only the southern half, a 30–35 m long segment of the houses was excavated, because in the northernmost part of Vásártér the present-day surface seems to be lower than the Roman floor level. This means that only the lower part of the foundations survived, and nothing much of the floors or upper parts of the houses. In the southern half of the houses, however, the Severan floors lay 0.2–0.7 m below the present-day surface, making archaeological research more fruitful. All three houses in *Insula* 1 had a width of around 11.30 m, although House I/b was enlarged by a *porticus* along Street A.

The best-known strip house in Brigetio, House I/a, stood in the middle of *Insula* 1 (Fig. 5). The excavation revealed the living quarters of the house, which was probably adjoined by a commercial area (workshop, shop or taberna) on its northern side and followed by a courtyard and garden on its southern side. The most decorative part, the “heart” of the house is the room-complex of Rooms I/1, I/2 and I/3 along the L-shaped corridor named Room I/11. This row of rooms stood opposite a small courtyard, which provided air and light for them. Rooms I/1 and I/2 were heated with a hypocaust heating system and had terrazzo floors. The 4.2 × 3.05 m large Room I/1 standing in the middle of the room-complex even had a barrel vault bearing the depictions of Pégasos and Andromeda in the middle and the personifications of the four seasons in the corners.⁴⁰ The walls of the room

³⁷ ZSIDI 2002, 49; MÁRITY 1992, 67; GROH ET ALII 2014, 369.

³⁸ GROH ET ALII 2014, 381; MASCEK 2011, 35–36.

³⁹ More about Vásártér: DOBOSI 2014; about the building techniques of the houses: DOBOSI – BORHY 2015; DOBOSI 2021.

⁴⁰ The wall paintings were restored by Eszter Harsányi and Zsófia Kurovszky and interpreted by László Borhy. More about the paintings: BORHY 2001a; BORHY ET ALII 2010; HARSÁNYI – KUROVSZKY 2002.

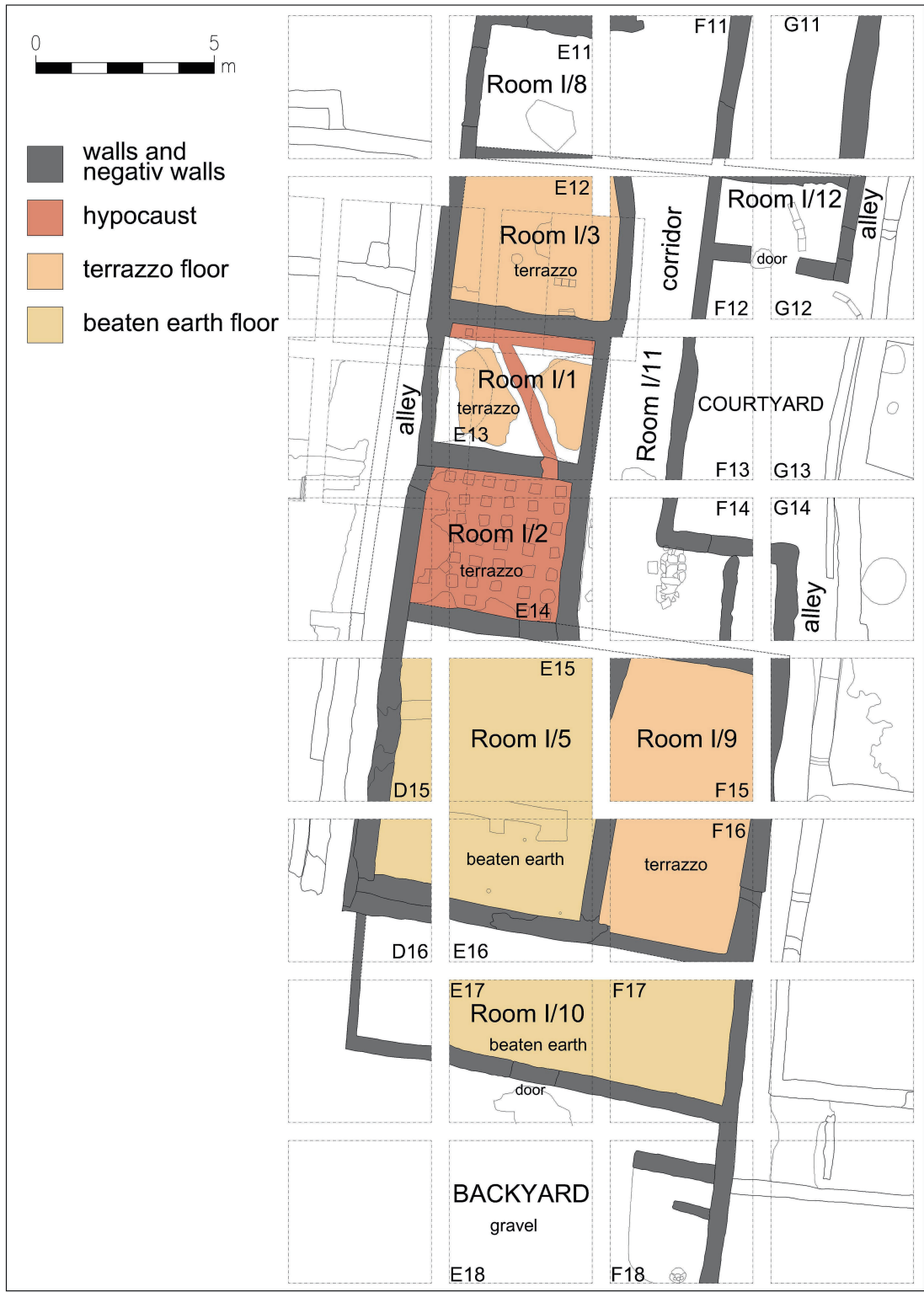


Fig. 5.
Ground plan of House I/a (Drawing: L. Dobosi)



Fig. 6.

Possible reconstructions for House I/a. Two versions for the little courtyard (above) and two versions for the southern end and backyard of the house (below) (Reconstructions: L. Dobosi)

were decorated with figurative wall paintings with mythological scenes featuring the young Bacchus, a Satyr, and *thyrsi*. The wall paintings found in the 4.05×4.0 m large Room I/2 depict the nude Perseus with a Phrygian cap, but it is uncertain whether the painting adorned the ceiling of Room I/2 or the walls of the adjacent Room I/1.⁴¹ The northernmost Room I/3 was the largest but simplest of the three rooms: it measured 4.45×4.25 m, had a terrazzo floor without hypocaust heating and was painted white with occasional red stripes. The larger rooms occupying the southern end of the house were unheated. Room I/5 was 7.75×5.95 m large and had a beaten earth floor. Surprisingly a wall painting with the portrayal of Fortuna was found in its southwestern corner.⁴² In contrast, the neighbouring Room I/9, which measured 3.7×7.9 m had a terrazzo floor but simply painted walls. The southernmost room of the house, the 10.5×3.6 m large Room I/10 opened onto the gravelly backyard as attested by a 1.3 m long imprint of a stone threshold in the mortar. The room might have been a semi-open, portico-like structure and was probably a later addition to the house. A stone wall bordered the backyard where a small outbuilding stood, a shed and/or latrine, partly built of stone (Fig. 6).

No datable find material helped to determine the date of construction in the case of House I/a. The finds in the destruction layers of the house indicate that it collapsed in the second half of the 3rd century A.D.⁴³ as most buildings at Vásártér.

⁴¹ For the first possibility see BORHY – SZÁMADÓ 2010, 41. But one of the season personifications were also found in Room I/2 (HARSÁNYI – KUROVSZKY 2010, 31), which makes it possible that Perseus was painted on the southern wall of Room I/1.

⁴² MAGYAR 2010a, 66–67.

⁴³ Latest coins found in House I/a are *denarii* of Caracalla: Inv.nr. 996.E13.034.1. and 993.E11.127.2. Samian ware finds were mostly from Rheinzabern, Westerndorf and Pfaffenhofen workshops (BECK 2003).

House I/b on the western side of House I/a is more problematic concerning its floor plan (*Fig. 7*). The uncertainties are due to the extreme number of removed walls (hardly any foundation walls remained in place) and other modern disturbances which led to gaps in the plan in the excavated area and made the geophysical survey of the unexcavated northern part of the house almost useless. The house must have been at least 55.0 m long, about 23.0 m of which was excavated. The archaeological research revealed the living quarters of House I/b. Just like in the case of House I/a, south of the living area lay a gravelly backyard, and north of it a workshop, shop and/or taberna is supposed. The ground plan of House I/b differed from the plan of House I/a, mostly because it lay along Street A, and had at least one side entrance onto it, beside the supposed main entrance opening onto the limes-road. The focal point of the house was the southernmost Room I/4, a large, hypocaust-heated decoratively painted room of roughly 5.0 × 11.0 m, a probable reception room. The room must have had several entrances connecting it to the adjacent Rooms I/6 and I/7b, but it also had a door opening to the porticus along Street A: the 1.30 m long impression of its threshold was preserved in the mortar. The room had a terrazzo floor and a hybrid hypocaust heating system, which had a long, narrow channel and a T-shaped pillared hypocaust in the western side of the room. The terrazzo floor was probably built in the second quarter of the 3rd century, 210/220 A.D. at the earliest, based on the Samian ware finds found in the layers of the terrazzo floor.⁴⁴ Under the terrazzo floor, an earlier wooden structure, a rectangular well was found with some of its wood planks in situ. Similar rectangular wells were found at other Roman sites in the Little Hungarian Plain by Eszter Szőnyi, who dated these structures to the 1st – 2nd centuries A.D.⁴⁵ The room was decorated with colourful wall paintings which were studied by Myrtill Magyar.⁴⁶ The base of the wall was a bordeaux coloured marble imitation separated with a yellow and a black stripe from the large Pompeian red panels that covered most of the wall. The red panels were framed with green and yellow stripes and were separated from each other by black bands with candelabra. The panels incorporated small figurative scenes, one depicting Amor as a child, and two portrays of female figures. The location of these scenes remained unclear, along with the location of the three tondos also found in the room. The red panels were bordered by a 210 mm wide band of stucco reliefs on top of the painted surface.⁴⁷

Room I/4 was adjoined by another large room on its northern side. The roughly 5.75 × 9.50 m large Room I/6 had a terrazzo floor and wall paintings but was unheated. The wall painting fragments covered the terrazzo floor in thick layers,

⁴⁴ The latest shards were made in Pfaffenhofen and can be dated to 210/220–260/270 A.D. (Inv.nr. 995.B15.049.2. and 995.B15.049.4. Other shards from the layers of the terrazzo floor: Inv.nr. 993.B15.107.1-3; 993.B15.210.1-2; 995.B15.023.1-2; 995.B15.025.1-2. BECK 2003, catalogue. Kapitän II amphora shards dated to the end of the 2nd century A.D. – beginning of the 3rd century A.D. came from the terrazzo (Inv.nr. 992.15.212.13-20.) HÁRSHEGYI 2004, 116.

⁴⁵ Examples can be found for instance in Árpás other Ménfőcsanak-Szeles. SZŐNYI 2003, 143–144.

⁴⁶ MAGYAR 2010b.

⁴⁷ MAGYAR 2010b, 52–66.

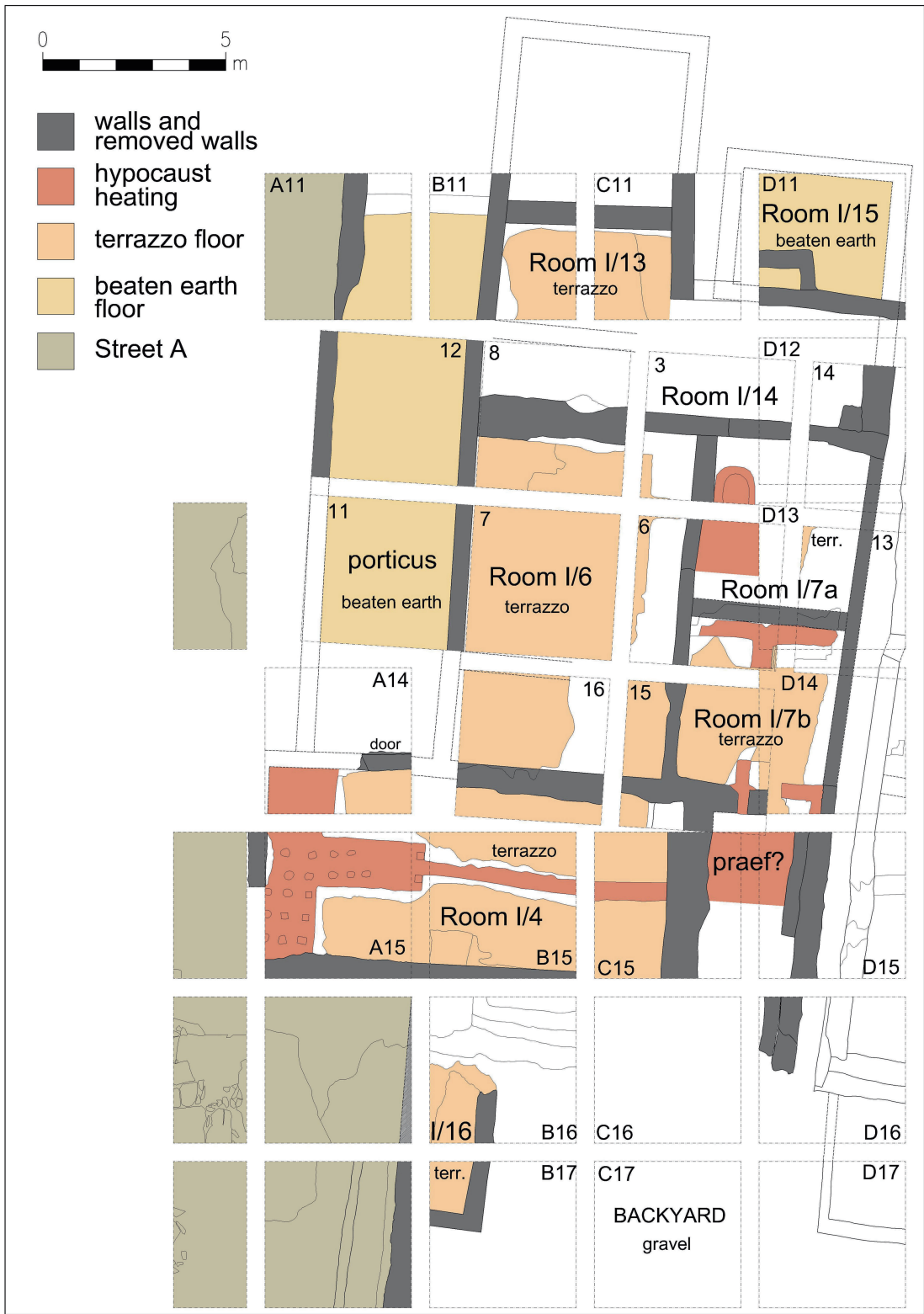


Fig. 7.
 Ground plan of House I/b (Drawing: L. Dobosi)

but they have not been restored yet. According to the observations of M. Magyar, the base of the wall in this room might have been a yellow ochre coloured marble imitation.

On the east side of Room I/6 lay Room I/7, which in fact must have been two separate rooms: Rooms I/7a (roughly 4.5 × 4.0 m) and I/7b (about 4.1 × 4.0 m). The partition wall between the two rooms was the northern wall of the hypocaust heating channel at the same time. Room I/7b had a hypocaust heating system and a terrazzo floor, while Room I/7a was not hypocaust-heated, but probably had a terrazzo floor. This terrazzo floor was mostly destroyed, except for a very small part. The remains of a domestic oven were found under the level of the terrazzo, therefore it might have belonged to an earlier phase of the house.

The *praefurnia* of the hypocaust heating systems of Rooms I/4 and I/7b probably opened from a small, supposedly covered yard in the intersection of the two rooms.

The western side of Room I/6 was occupied by a long, roughly 3.5–3.6 m wide *porticus* (Fig. 8). Both the western side of Room I/4 and the *porticus* seem to have been erected on the surface of Street A expanding beyond the original plot of the house, narrowing Street A to a 3.8 m width in this part of the street. The structure of the *porticus* is uncertain, only a removed wall remained, which could have belonged to the foundation or base of pillars or columns made of stone, bricks, or wood.

North of Room I/6 the ground plan becomes more obscure. A room with terrazzo floor was named Room I/13, but its exact boundaries are uncertain, especially in the south. Its well-preserved terrazzo floor did not continue to the south or to the east, but no sign of a wall came to light during the excavation. Another room with beaten earth floor was found on the eastern side of Room I/13 and was named Room I/15. An L-shaped wall made of tile fragments built onto the surface of the floor was either a later addition, or – more probably – the part of a built “kitchen counter”, contemporaneous with the rest of the room. The beaten earth floor and a lead weight⁴⁸ found on the surface of the floor make it likely that Room I/15 served as a kitchen.

South of Rooms I/13 and I/15 a long, corridor-like room was named Room I/14. No traces of the Roman floor survived, but the room had a pillar in its southeast corner. One idea concerning the function of the pillar could be that it was part of a household shrine, a *lararium*.

Not much is known about the northern half of House I/b. The geophysical survey only shows two north–south running walls, and an excavation pit in this area contained the small segment of a pillared hypocaust.⁴⁹

The gravelly backyard stretching south of House I/b was separated from Street A by a stone wall. In its northwest corner stood a small outbuilding with terrazzo floor and an internal size of 1.2 × 4.2 m. Its function is unknown due to the lack of decisive find-material.

⁴⁸ Inv.Nr. 994.D11.114.1. Unpublished.

⁴⁹ Excavation pit E6 in 1993. The small segment of a terrazzo floor and the bases of three *suspensura pilae* lay 50 cm below ground level.



Fig. 8.

Possible reconstruction for the porticus of House I/b (left) and the courtyard named Room V/1 (right)
(Reconstructions: L. Dobosi)

The third strip house in *Insula 1*, the so-called House V stood on the east side of House I/a (Fig. 9). Its surface is full of modern disturbances, which makes it hard to interpret the remains. House V had similar dimensions and general ground plan as House I/a, but it does not seem to have been a wealthy, hypocaust-heated and highly decorated strip house like House I/a. Its excavated part was 33.7 m long, while its northern, unexcavated part added roughly another 25 meters to the length of the house. The backyard south of the building was covered with gravel as in the case of Houses I/a and I/b, and was separated by a stone wall from Street B. The Severan floor levels inside the house were mostly destroyed, they only survived in the southernmost rooms. Room V/1 in the southwest corner of House V was a large room, about 5.9×7.9 m, and had a beaten earth floor mixed with gravel. The imprint of the threshold of two of its doors were preserved in the mortar: they connected Room V/1 with Rooms V/2 and V/3. Both door openings were protected by wall projections as if to shelter them from the wind and rain. The gravelly earth floor and the protected door openings both indicate that Room V/1 might have been an unroofed yard (Fig. 8). The adjacent Room V/2 measured about 5.5×4.1 m, but its Severan floor did not survive. The remains of an earlier cellar, the so-called Cellar 1, were found in the room, which was put out of use and filled in before Room V/2 or the Severan stone foundation walls of House V were built.⁵⁰ The 3.95×2.55 m large and 1.8 m deep cellar had stone walls and terrazzo floor. The sockets of six joists in the top of the wall belonged to the wooden ceiling of the cellar. Its wooden staircase ascended from the northwest corner to the northeast corner of the cellar, based on its imprint preserved in the wall plaster shows. A splayed window in the middle of the southern wall provided air and light in the cellar, and shelves were attached to the eastern and western walls. Room V/3 to the north measured 5.95×5.4 m, had terrazzo floor and a domestic oven by the middle of its eastern wall, which indicates that it might have served as a kitchen. The smaller Room V/4 (4.4×4.0 m) also had a terrazzo floor, but the

⁵⁰ More about the cellar: BARTUS – BORHY 2016, 101–102; DOBOSI 2014, 20–21. Dating of Samian ware finds: SZÓRÁDI 2010.

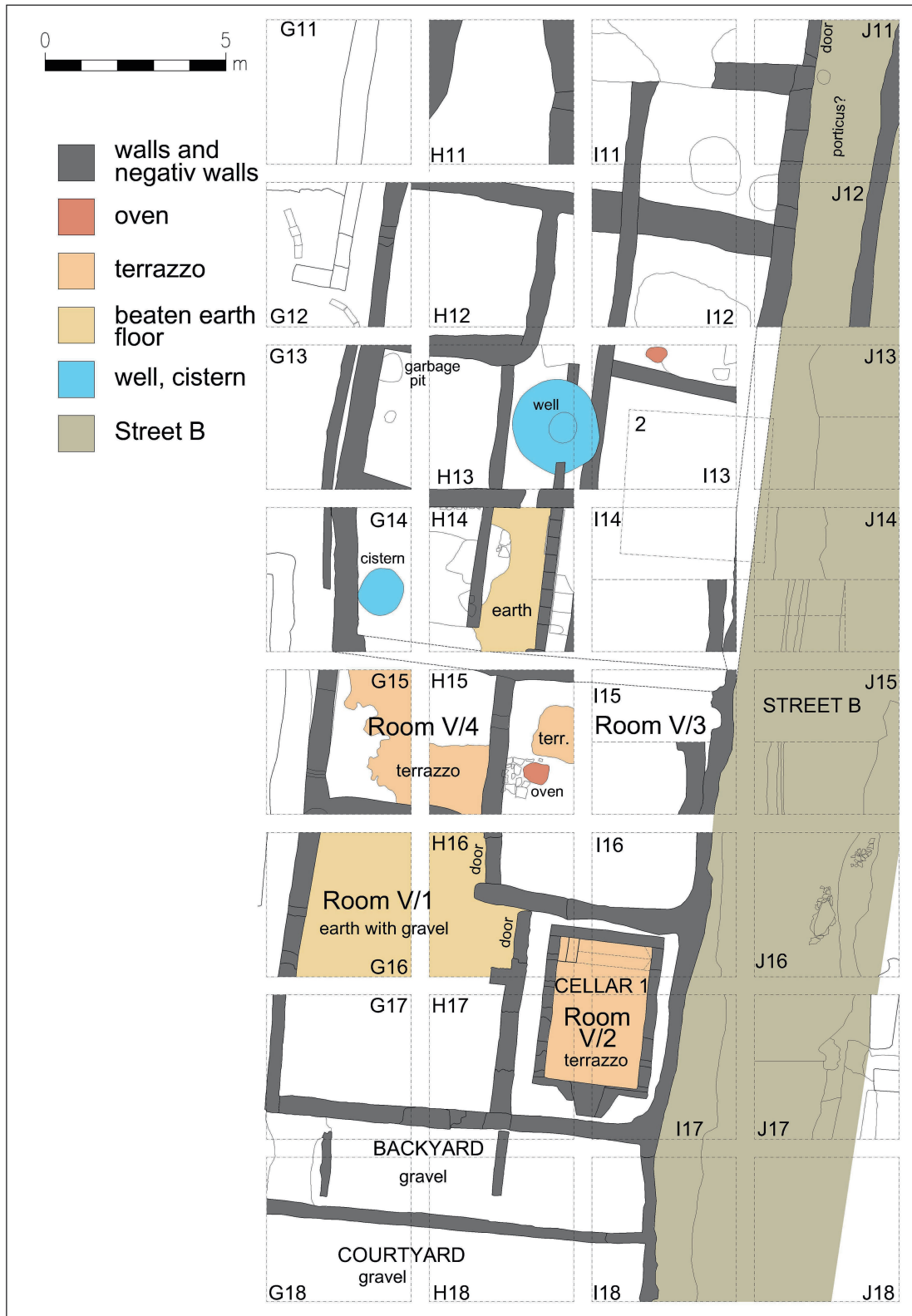


Fig. 9.
Ground plan of House V (Drawing: L. Dobosi)

location of its door or doors is unknown. In the northeastern corner of the room, on top of the terrazzo floor twenty pieces of lead net sinkers used on fishing nets were found.

North of this point the Severan ground plan of the house is diffuse and incoherent, specific rooms cannot be defined. Some of the structures belong to earlier, others to later phases of House V. Several adobe walls and a beaten earth floor can be dated to the Antonine dynasty.⁵¹ Based on these adobe wall segments, the Antonine perimeter wall of House V along Street B was 0.6–0.7 m to the west from the Severan perimeter wall of the house, which means that during the Severan dynasty Street B was 0.6–0.7 m narrower than earlier. An early garbage pit in excavation unit G13 seems to belong to the same period. It was probably filled in around the turn of the 2nd and 3rd centuries A.D., before the stone foundation wall of House V was built.⁵² The cistern in excavation unit G14 was built at an unknown date, but it was filled in during or after the late 270s A.D.⁵³ The cistern had a diameter of 1.25–1.3 m and 0.6 m remained intact of its original depth. It was lined with a wooden barrel: some of its staves were *in situ* and marks of its metal hoops were visible both on the staves and in the soil. The latest finds from the in-fill of the cistern include Samian ware from the Pfaffenhofen workshop and an *antoninianus* dated to 276–282 A.D. The most interesting find was an unscathed iron helmet of Weisenau type.⁵⁴ If the cistern had indeed the function to collect rainwater from the roof, then this part of the house must have been unroofed. Similar circular vats lined with barrel staves, however, were used for different purposes in workshops as well: for tanning, for example.⁵⁵ A large well in excavation units H13/I13 was built as late as the 260s at the earliest but was already filled in during or after the 280s.⁵⁶ The well had a diameter of 2.60 m and was more than 4.0 m deep. Its underground wall was built of clay and the find material found in the wall construction can be dated to the third quarter of the 3rd century. The latest finds were two Samian ware shards from Pfaffenhofen (233–259/260),⁵⁷ a Trierer Spruchbecher (around 260–270 A.D.)⁵⁸ and an *antoninianus* of Trebonianus Gallus (251–253).⁵⁹ Again, the most interesting find was a bronze helmet of Fellhelm type.⁶⁰ It seems that this part of the house no longer existed when the well was built, for the well cut two walls and was deepened in the clayey destruction layers of the adobe walls of the house. Another late structure of the mid-3rd century A.D.

51 Walls in excavation units H13, H14, I14 and I15; earth floor in excavation unit H14. These probably belong to the same construction phase as Cellar 1.

52 The imported pottery shards found in the pit can be dated to the turn of the 2nd and 3rd centuries, TÓKÉS 2007. The Samian ware fragments that could be dated are from the middle of the 2nd century at the latest: Inv.nr. 2001.G13.141.58-61. and 2001.G13.169.146-147. Dated by Barbara Hajdu. The most significant find was a female terracotta head: Inv.nr. 2001.G13.169.1. (unpublished).

53 BORHY 2005, 80–81; DOBOSI 2014, 19.

54 BORHY 2005, 80–81.

55 LÁNG 2016, 368.

56 More about the well and its find material: DOBOSI 2014, 19–20; BENES 2017, 117–125.

57 Inv.nr. 2004.H13/I13.100.27-28.

58 Inv.nr. 2003.H13.079.20.

59 Inv.nr. 2004.I13-H13.103.122.

60 BORHY 2016, 28.

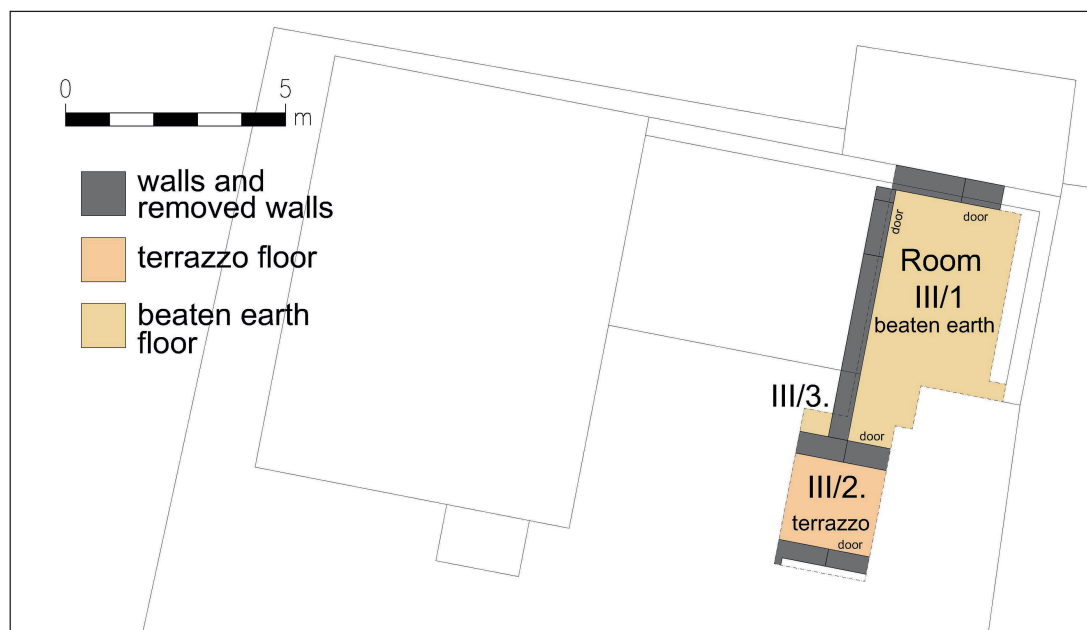


Fig. 10.

Ground plan of House III at 2 Vásártér (Drawing: L. Dobosi)

was a north–south oriented wall built on the surface of Street B. Based on the Samian ware shards that came from layers under the wall, the wall was built not earlier than the second third of the 3rd century.⁶¹ It could have belonged to a newly built *porticus* of the northern part of House V, but it was placed in the middle of Street B, reducing its width to 2.7 m. This controversial situation might indicate that Street B lost most of its importance by that time.

House III was probably another north–south oriented strip house along the limes-road (Fig. 10). Only a very small, a merely 25 m² portion of the house was unearthed during a rescue excavation at 2 Vásártér. Only small parts of three rooms were excavated, but even so, the excavation produced a large surface of late Roman wall paintings from the middle of the 3rd century A.D.⁶² Most of the excavated area lay in Room III/1, a highly decorated room with beaten earth floor and no hypocaust heating. The walls were covered with figurative wall paintings from floor to ceiling, where panels with portraits of servants with food trays in their hands alternated with panels depicting bear and panther skins. The wall painting covered the long western wall of the room and continued onto the northern and southern walls. The height of the painted walls was at least 3.7 m, and the length of the restored surface reaches more than 6 m in length. The beaten earth floor of the room

⁶¹ BORHY – BARTUS – SZÁMADÓ 2010, 67. The Samian ware shards were dated by Barbara Hajdu. The latest shards were from Westerndorf: 175/180–235.

⁶² The wall paintings have been and are still being restored by Eszter Harsányi and Zsófia Kurovszky. More about the house and the wall paintings: BORHY – SZÁMADÓ 2001; BORHY ET ALII 2010, 83–117; DOBOSI 2014, 24–26.

was probably not meant to be final but must have been the foundation of a terrazzo floor or some other floor later to be executed. South of Room III/1 a cor-ridor named Room III/2 was found. The two rooms were connected by a doorway with a wooden threshold. Of Room III/3 we only know that it had a beaten earth floor. This part of the house was probably destroyed by a fire, traces of which can be seen on the surface of the wall paintings and on a burnt adobe wall that fell inside Room III/1. The building must have collapsed in the second half of the 3rd century. The destruction layers contained a Greek coin of Severus Alexander minted in Samos.⁶³

Not much is known about the owners and inhabitants of these houses. The Severan emperors brought prosperity to Brigetio, and from the end of the 2nd century many people came to the town from the eastern provinces, such as traders from Syria, Antiochia, or Seleucia Zeugmae.⁶⁴ Signs of the eastern population can be detected in the find material, as well as on the wall paintings. The depicted men in House III had dark brown skin and wore *tunicae* with purple *clavi* ending in arrows, a characteristic feature of the male attire of Syria.⁶⁵

Working in Brigetio

The traces of several different industrial activities were observed in the excavated part of the civil town of Brigetio (*Fig. 11*). Bronze, lead, and glass objects were produced in a metal and a glass workshop, bread was made in a bakery and bone was used as raw material or left as residue in a supposed workshop behind the bakery. The known workshops were scattered throughout the Vásártér site: the bakery and possible bone workshop along Street A, the metal workshop along Street B, and the glass workshop in the southeastern part of Vásártér. It is most probable that the front parts of the strip houses discussed above were also occupied by artisanal or retail functions of unknown type. In addition, there might have been a pottery workshop right outside the western city walls, where three kilns were still seen by László Barkóczi.⁶⁶ As attested in other cities of the Roman Empire, industrial activities took place in the busy parts of the towns, often in the city centre along the main roads, even if they were smelly or smoky businesses.⁶⁷

The bakery on the western side of Street A had a small, elongated building with two large bread ovens (*Fig. 12*). The entrance from the street opened to the 3.5 × 7.0 m large Room II/1, which had a beaten earth floor. The floor was covered with pottery shards, a broken grinding stone, fragments of wall paintings and window glass, and in the infill of a removed wall the fragment of a *crustulum* was found.⁶⁸ The southern half of the room was completely taken up by a rectangular

⁶³ BORHY 2006, 227; BORHY 2021, 22–23; BORHY 2019, 40.

⁶⁴ BORHY 2021, 21–23; BORHY 2019, 39–40.

⁶⁵ PAETZ GEN. SCHIECK – PÁSZTÓKAI-SZEŐKE 2013; PÁSZTÓKAI-SZEŐKE – PAETZ GEN. SCHIECK 2013.

⁶⁶ BARKÓCZI 1951, 6. If it had indeed existed, the pottery workshop must have largely been destroyed by modern superstructures even by the time Barkóczi researched the topography of Brigetio.

⁶⁷ LÁNG 2009, 169; LÁNG – BÍRÓ 2018, 609.

⁶⁸ BORHY – SZÁMADÓ 1999, 144–145; BORHY 2001b, 30; DELBÓ 2015, 99.

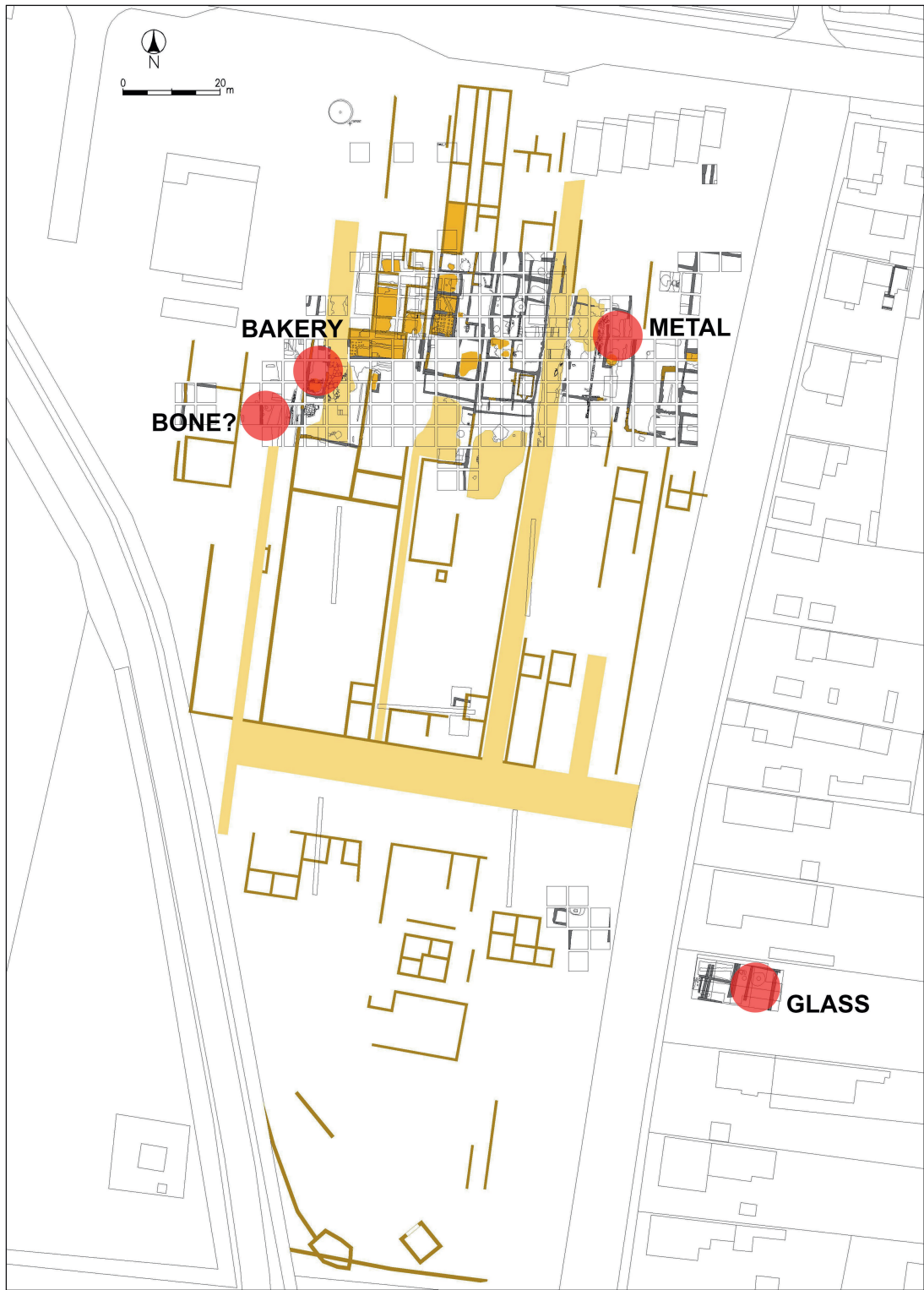


Fig. 11.

Spatial distribution of the workshops at the Komárom/Szöny-Vásártér site (Drawing: L. Dobosi)

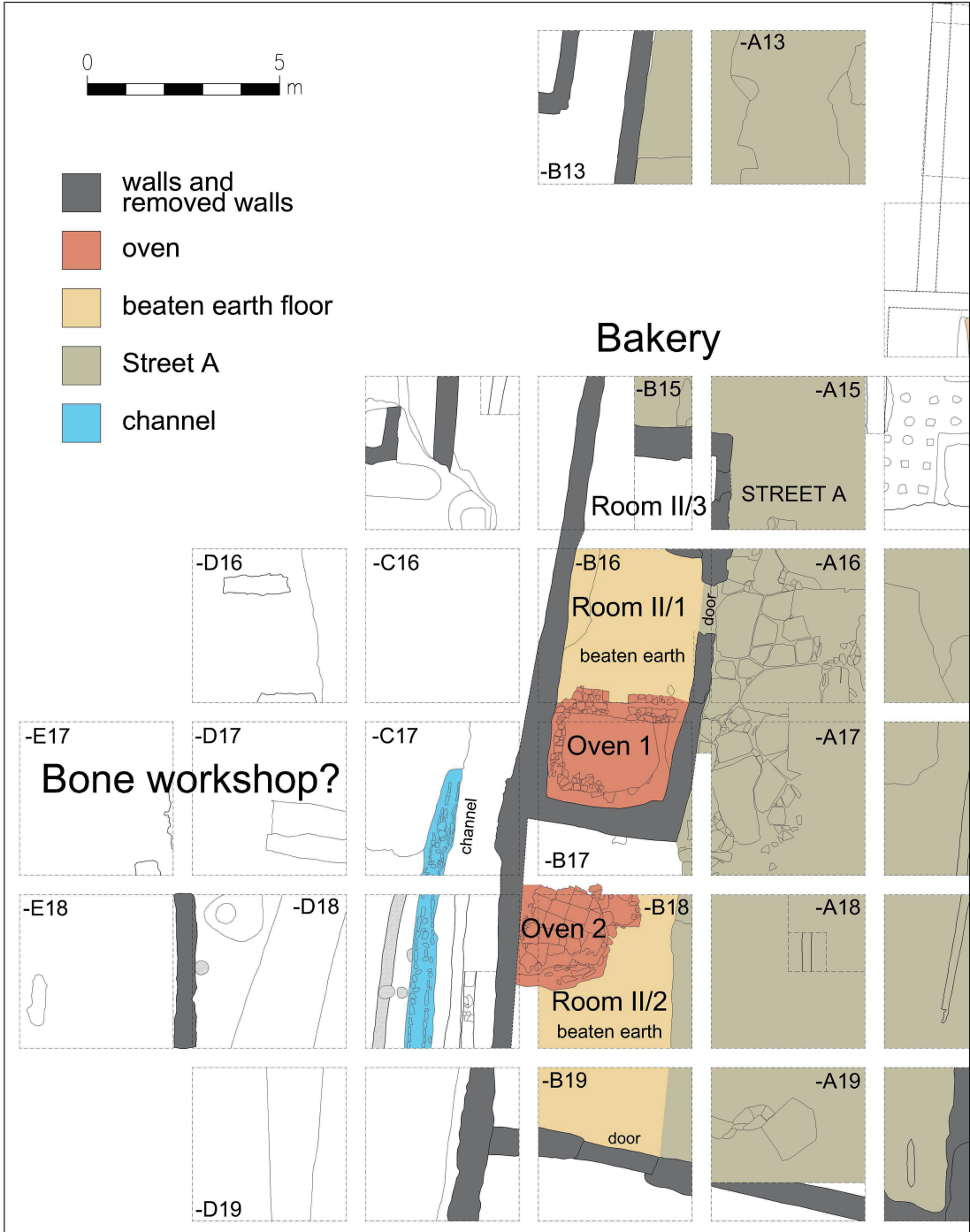


Fig. 12.
Ground plan of House II, the bakery (Drawing: L. Dobosi)



Fig. 13.

Possible reconstruction of *Insula 1* from the south (left) and the eastern façade of the bakery (right)
(Reconstructions: L. Dobosi)

oven, which was dated to the first third of the 3rd century based on the pottery shards in the oven floor.⁶⁹ This dating corresponds with the dating of the building itself: a Samian ware fragment from Pfaffenhofen was collected from the standing wall segment of the bakery, which dated the building to after 210/220 A.D.⁷⁰ North of Room II/1 stood the small Room II/3 measuring only 3.3 × 1.8 m. The southern half of the building, called Room II/2 did not have a wall towards Street A. This could either mean that the room was open to the street, or that the wall was built of wood, in the manner of taberna shutters.⁷¹ A large, round oven stood in Room II/2 as well. The Samian ware shards from Westerndorf in the oven floor date the oven to the first half of the 3rd century.⁷² The eastern façade of the bakery was covered with white wall paintings with red geometrical decoration (**Fig. 13**).⁷³

Adjoining the bakery on the south, the outline of a rectangular building can be seen on the geophysical survey. Only a segment of the northern wall of the building was excavated, and during the excavation the imprint of a 2.0 m wide threshold came to light, indicating a door opening to Room II/2 of the bakery.

Behind the bakery a drainage channel lined with *tegulae* and stones ran from north to south, probably contemporaneous with the bakery. This part of *Insula 2* was mostly destroyed by modern disturbances but might have been originally a yard where industrial activity took place. The extreme amount of animal bones, mainly cattle and pig, along with bone hairpins and other bone objects suggest a workshop in the area where bone was processed. Glue making, bone carving or the mending of bone objects come to mind,⁷⁴ but the building of the actual work-

⁶⁹ FÉNYES 2002.

⁷⁰ Inv.nr. 995.-A16.052.1. BECK 2003.

⁷¹ For examples of taberna shutters and doorways see: MAC MAHON 2003, 91–99. In the case of wooden shutters, stone thresholds must have been present, however, the traces of them would not necessarily have survived.

⁷² Inv.nr.: 2000.-B18.097.3-4.

⁷³ Parts of the wall paintings were restored by István Bóna. Now Eszter Harsányi and Zsófia Kurovszky are working on other parts of the wall painting.

⁷⁴ BARTUS 2001; BARTUS 2003. Some of the bone needles and hairpins bore the traces of mending or re-carving.

shop has not been found yet. The identification of bone workshops is difficult even at the best of times, because no special tools or installations are needed that are exclusive to bone working.⁷⁵

The remains and traces of a metal workshop covered a large area in *Insula 3*, namely the eastern half of House VI and the whole of House VII. The remains found in the area belong to different construction phases, and the chronological relationship between them is not always clear.

The excavation in House VI revealed a 10.8 m wide, and 18.7 m long courtyard enclosed by stone walls (**Fig. 14**). The “building” continued both to the north and the south, but the geophysical survey only showed the western wall of the northern part, and the eastern wall of the southern part in the unexcavated area. The courtyard had a 2.4 m wide entrance gate in the middle of the northern wall. A roughly 3.5 × 11.3 m large building stood in the northeastern corner, and the so-called Cellar 2 occupied the southeastern corner of the courtyard. The 2.6 × 4.3 m large Cellar 2 was built of stone like Cellar 1, but its walls were not carefully plastered, neither did it have a window. Its wooden ceiling, which covered the northern two thirds of the cellar, survived the centuries in an exceptionally good condition. The cellar was probably put out of use in the late 2nd century A.D.⁷⁶ In the middle of the courtyard, a long drainage channel ran from north to south, leaving the yard through an opening in the middle of the southern wall. By the southern side of the southern wall a purse with 4 sestericii was found, probably left there by the owner by accident. The two coins of Trajan and two of Hadrian were minted between 107–122, but it is likely that they had no connection to the building at all.⁷⁷ Three furnaces of the workshop were situated in the northeastern corner of the courtyard and a fourth furnace was discovered south of the courtyard. Furnace 4 lay 1.3 m below the surface of the other three furnaces and was covered by layers of later construction phases. Samian ware shards dated to the 2nd century were found in the layer of clay directly covering Furnace 4.⁷⁸ The furnace was probably used during the 2nd century, and the walls around it were built later, possibly during the Severan dynasty. Furnaces 1–3, however, were of later date. Although the chronological relationship between the furnaces, the cellar and the drainage channel is rather unclear due to the scant datable find material, it seems that metal working was practiced for a long time in this area. Bronze brooches, casket handles and objects with enamel decoration⁷⁹ were produced in the workshop along with lead votive figurines.⁸⁰

The residue of the metal workshop covered the whole area of the so-called House VII in the eastern part of *Insula 3* as well. The incomplete remains of the house is hard to decipher (**Fig. 15**). In the northern part of the house a room with terrazzo floor and a domestic oven on top of the floor were found. Eight Samian

75 SEY 2018. Signs of bone working are also attested in the legionary fortress.

76 More about the cellar: BARTUS – BORHY 2016, 102–103; BARTUS ET ALII 2018, 63–66.

77 JUHÁSZ 2019.

78 Layer 2015.L19.048. The dating of the Samian ware is the work of Barbara Hajdu.

79 SEY 2015, 226–228.

80 BARTUS 2014.

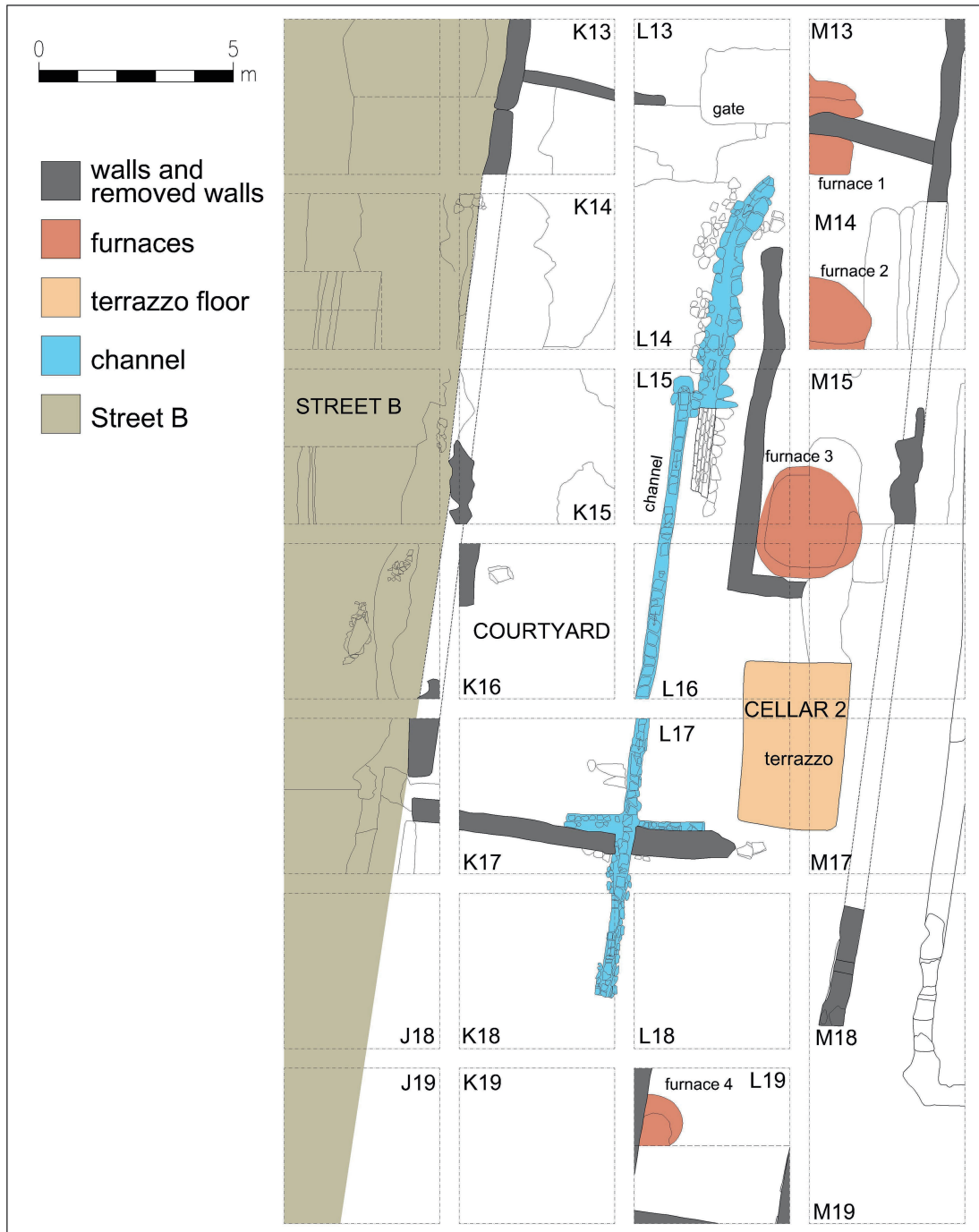


Fig. 14.

Ground plan of House VI with furnaces of the metal workshop (Drawing: L. Dobosi)



Fig. 15.
Ground plan of House VII (Drawing: L. Dobosi)

ware shards were extricated from the terrazzo floor: most of them could be dated to 150–190, but three to 150–230/260.⁸¹ In the neighbouring room a well or cistern came to light. It was probably filled in at or after the middle of the 3rd century.⁸² In the southern end of the house, a third cellar was discovered, in a courtyard surrounded by stone walls. Unlike Cellars 1 and 2, Cellar 3 was larger and oriented in an east-west direction. Its beaten earth floor lay 3 meters below the surface. The cellar was filled with the rubbish of the metal workshop in or after the middle of the 3rd century. Most interesting, however, are the walls of the cellar: only 2 short and low segments of stone walls stand, while another collapsed wall slid into the cellar from above.⁸³ The wall must have slid from the east–west running wall south of the cellar, which was only 0.5 m away. This phenomenon can be explained in several ways, but most plausible is the following explanation: the pit of the cellar was deepened in the clay ground, and after the rising of the stone walls began, the wall from the south collapsed into the cellar. This means that the cellar was built in the middle of the 3rd century and was left unfinished because of this incident.

The glass workshop was situated in the southeastern part of Vásártér under a present-day house at 13 Vásártér (*Fig. 16*). Only an 8.5 × 18.0 m large area could be excavated, therefore most of the Roman house remained unknown. The house of several construction phases had rooms with terrazzo floors decorated with figurative wall paintings, one of them heated with a hypocaust heating system during the Severan dynasty. At the same time, a secondary glass workshop operated in the backyard of the house, where two furnaces and a well were found. The larger, rectangular furnace and the smaller, circular one stood in close proximity to each other. The waste material of the glass workshop (raw material, colouring agents, spoiled pieces, three tools etc.) were found in four garbage pits in the courtyard. Based on the find material, glass beads as well as vessels were produced in the workshop from reused raw material. The workshop operated for a short time in the first half of the 3rd century A.D., then was abandoned with the house in the second half of the 3rd century.⁸⁴

The time frames of the civil town

The time frames of the civil town can be approximately defined based on the datable find material, such as coins, Samian ware and amphora shards, and – to a lesser extent – bronze and glass objects.

The more than 250 coins from the Vásártér excavation were evaluated by L. Juhász. Twelve of the coins were minted earlier than the supposed foundation of the civil town at the turn of the 1st and 2nd centuries, but all of them were still in circulation during the reign of emperor Trajan (98–117) as well.⁸⁵ The first econo-

⁸¹ Inv.nr. 992.4.074.1-8. BECK 2003.

⁸² The infill contained the products of Rheinzabern, Westerndorf and Pfaffenhofen. BECK 2003.

⁸³ BARTUS – BORHY 2016, 103; BARTUS ET ALII 2018, 66.

⁸⁴ About the glass workshop and its products in detail: DÉVAI – GELENCSEÉR 2012a; DÉVAI – GELENCSEÉR 2012b; DÉVAI 2015a; DÉVAI 2015b.

⁸⁵ JUHÁSZ 2018, 16.

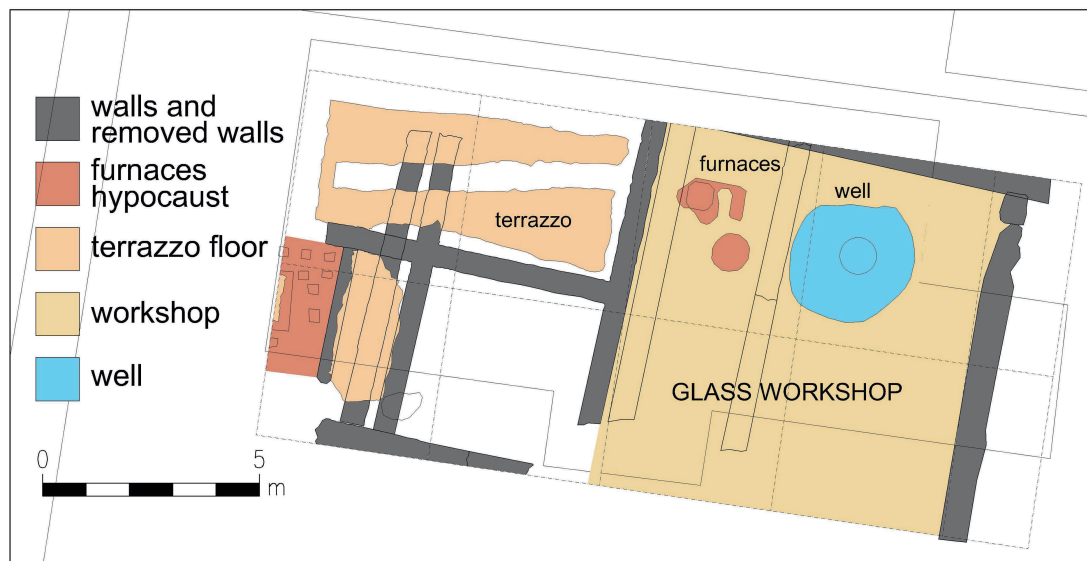


Fig. 16.

Ground plan of House IV with the glass workshop (Drawing: L. Dobosi)

mic upsurge in the second third of the 2nd century can be seen in the high number of the coins of Hadrian and Marcus Aurelius. After the backdrop due to the Marcomannic Wars, the town was flourishing during the Severan emperors. However, monetary circulation decreased to next to nothing after the reign of emperor Trajan Decius (249–251). The last coins from the turn of the 3rd and 4th centuries A.D. can be explained with the limes-road still being in use in the otherwise abandoned settlement.⁸⁶ The evaluation of 50 additional coins from the *municipium* collected by T. Fehér,⁸⁷ and two coin hoards found in 1925 and 1930 strengthen this picture. One of the coin hoards could be dated to the Marcomannic Wars, but the other could be linked to the abandonment of the settlement. The hoard of 508 coins closed around 251–252, the same time when coin circulation stopped in the civil town.⁸⁸

A similar picture takes shape based on the Samian ware finds.⁸⁹ The earliest of the nearly 9000 shards were the products of North Italian workshops. These take up only 2.3% of the find material and were in circulation along the *ripa Pannonica* until the reign of emperor Trajan. The amount of the South Gaulish Samian ware dated from the end of the 1st century to the middle of the 2nd century was 2.6%. The first boom in the Samian ware trade during the Antonine dynasty is signalled by the large number of the Central Gaulish products, especially those of Lezoux between 120–200 A.D. (24.2%). Most of the finds can be linked to the heyday of the town during the Severan dynasty: Samian ware coming from the workshops of

⁸⁶ JUHÁSZ 2018, 16–19.

⁸⁷ FEHÉR 2020.

⁸⁸ FEHÉR 2019, 45–48; JUHÁSZ 2018, 18; RADNÓTI 1945–1946, 6–8.

⁸⁹ Samian ware shards were identified and dated by Tamás Beck (1992–1996), Gabriella Fényes (1998–2001), Zsófia Szórádi (2009–2010) and Barbara Hajdu (2011–2016).

Rheinzabern (37.1%) and Westerndorf (22.3%). The small number (3.2%) of the products from the workshop of Pfaffenhofen marks the end of the era.⁹⁰ As the workshops at Rheinzabern and along the Inn River stopped production in the 260–270s due to Alemannic attacks,⁹¹ North African *terra sigillata chiara* was imported to Pannonia from the middle of the 3rd century A.D. instead. In the 4th century it was the only imported pottery type in Pannonia.⁹² Only 5 shards of *terra sigillata chiara* were found in the civil town: most of them (4 pieces) *terra sigillata chiara C*, dated to the second half of the 3rd century and one shard of *terra sigillata chiara D* from the 4th century.⁹³

The amphora finds from Vásártér fit well into this picture.⁹⁴ Two-thirds of the shards can be connected to the Antonine and Severan dynasties, while hardly any shards can be dated to after the middle of the 3rd century, when the import of amphorae and amphora-borne food (wine, olive oil, fish sauce, dried fruit, etc.) came to a halt in Brigetio⁹⁵ and in Pannonia in general.⁹⁶

Apart from a dozen coins and a single *terra sigillata chiara D* shard only a few bronze objects can be dated to the 4th century. A bronze propeller shaped belt mount found in 1994 could be dated to between the early 4th – early 5th centuries.⁹⁷ Two rings with gemstones from the 4th century came to light in the western part of Vásártér: a silver ring and a gilt bronze ring with a red paste gem.⁹⁸ A little older are the three bronze cross-bow brooches of Kovrig XIII/1 type, which come from the late 3rd century.⁹⁹ No glass objects can be securely dated to the 4th century.¹⁰⁰

The construction phases

It is almost impossible to date exactly most of the remains unearthed during the Vásártér excavations, due to the meagre number of datable finds in closed contexts. Based on the findings, four main construction phases transpired for the c. 150–200 years of lifespan of the civil town, roughly one construction phase for every half century.

The earliest structures can be dated to the first half of the 2nd century A.D. Post holes and impressions of ground beams are the only traces of the early earth-fast and timber-framed structures. These were soon replaced by mud and stud walls, also belonging to the first half of the 2nd century. The first adobe walls with stone foundations seem to have appeared during the second half of the 2nd century

⁹⁰ This evaluation was made based on 8664 shards from the following works: BECK 2003; FÉNYES 2002; SZÓRÁDI 2010; HAJDU 2018.

⁹¹ GABLER 2006, 90.

⁹² GABLER 2006, 94; HÁRSHEGYI – OTTOMÁNYI 2015, 474–478.

⁹³ BECK 2003, 65; HAJDU 2018, 456.

⁹⁴ Amphora shards were identified by Piroska Hárshegyi and Anna Nagy.

⁹⁵ BEZECZKY 1999; HÁRSHEGYI 2004; NAGY 2015.

⁹⁶ MAGYAR-HÁRSHEGYI 2016.

⁹⁷ Inv.nr. 994.A16.188.1. BORHY 2005, 78 and 81.

⁹⁸ Inv.nr. 998.-H17.017.1. SEY 2006, 23.

⁹⁹ Inv.nr. 994.D15.031.1; 2001.G13.044.1; 2001.G13.002.19. SEY 2006, 20.

¹⁰⁰ Email communication with Kata Dévai.

along with stone-walled cellars. Approximately 90% of the remains unearthed at Vásártér could be linked to the third construction phase during the Severan era when richly decorated strip houses with proper stone foundations, adobe walls, terrazzo floors and hypocaust heating systems were built. Constructions were still going on with great intensity during the second quarter of the 3rd century. However, after the middle of the century building activity appears to have stopped as only a well and a wall can be dated to the fourth construction phase in the second half of the 3rd century. A few decades later, sometime after the 250s the civil town was abandoned by its inhabitants and the houses were left to decay.

Conclusions

The civil town of Brigetio was part of a tripartite settlement complex along with the legionary fortress and the *canabae*. Modern research excavations in the heart of the Roman civil town, at the so-called Komárom/Szöny-Vásártér site uncovered a commercial-industrial-living quarter instead of the *forum* expected to be there. The structure of the strip houses made of adobe walls with stone foundations, terrazzo floors, hypocaust heating and wall paintings resembled the buildings known from the *canabae* or the legionary fortress.¹⁰¹ The same can be said for the workshops: similar industrial activities are attested in the other two settlement parts. Traces of a metal workshop were discovered in the *canabae* in 2014–2015,¹⁰² and traces of a bone workshop were documented in the legionary fortress in 2015.¹⁰³ Furthermore, a glass workshop was located in the eastern part of the *canabae* near the legionary fortress.¹⁰⁴ Based on the building remains and find material, the civil town of Brigetio went through the same stages as Carnuntum, Aquincum, and Vindobona, the other Pannonian civil towns near a legionary fortress. Although the urbanization process started earlier in Aquincum and Carnuntum, the overall picture was similar: the orthogonal street network, long strip houses standing side-by-side in the *insulae*, the workshops, the building techniques. Even their end is similar: the civil towns of both Aquincum and Vindobona seem to have come to an end by the end of the 3rd century A.D., like Brigetio, as they were abandoned by their inhabitants. Only the civil town of Carnuntum lived to see the late 4th century.¹⁰⁵

¹⁰¹ BORHY ET ALII 2011, 48.

¹⁰² SEY 2018, 225–226.

¹⁰³ SEY 2018, 223–225.

¹⁰⁴ BARKÓCZI 1951, 8.

¹⁰⁵ MASCHEK 2019, 69–70; LÁNG 2018, 164–165.

Literature

BARKÓCZI 1951

Barkóczi L.: Brigetio. Dissertationes Pannonicae Ser. II. Vol. 22. Budapest, 1944–1951.

BARKÓCZI 1953

L. Barkóczi: Beiträge zum Rang der Lagerstadt am Ende des II. und Anfang des III. Jahrhunderts. Acta Archaeologica Academiae Scientiarum Hungaricae 3 (1953), 201–203.

BARTUS 2001

Bartus D.: Csontfaragó műhely Brigetióban? – Az 1999-2000-ben feltárt faragott csonttárgyak katalógusa (Kat. 54-162). In: Borhy L. – Számadó E. (szerk.): Római kori csontfaragványok és modern hamisítványok. Csontfaragóművészet Brigetióban. Acta Archaeologica Brigetionensia Ser. I. Vol. 2. Komárom, 2001, 28–54.

BARTUS 2003

Bartus D.: Adatok a brigetiói csontfaragó műhely lokalizálásához. Komárom-Esztergom Megyei Múzeumok Közleményei 10 (2003), 55–75.

BARTUS 2014

Bartus D.: Terrakotta öntőforma ólom Mercusius szobrok készítéséhez Brigetióból. In: Balázs P. (szerk.): FIRKÁK III. Fiatal Római Koros Kutatók III. Konferenciakötete. 2008. november 25-27. Szombathely, Savaria Múzeum. Szombathely, 2014, 161–168.

BARTUS – BORHY 2016

Bartus D. – Borhy L.: A brigetiói „pincesor”. Ókor 15 (2016), 101–107.

BARTUS – BORHY – SZÁMADÓ 2012

Bartus D. – Borhy L. – Számadó E.: A régészeti feltárás eredményei. In: Bartus D. – Borhy L. – Dévai K. – Kis Z. – Nagy A. – Sey N. – Számadó E. – Szórádi Zs. – Vida I.: Jelentés a Komárom–Szőny, Vásártéren 2010-ben folytatott régészeti feltárások eredményeiről. Komárom-Esztergom Megyei Múzeumok Közleményei 18 (2012), 7–58, 7–8.

BARTUS ET ALII 2018

D. Bartus – L. Borhy – N. Sey – E. Számadó: Excavations in Brigetio (2012-2016). In: L. Borhy – K. Dévai – K. Tankó (eds.): Celto – Gallo – Roman. Studies of the MTA-ELTE Research Group for Interdisciplinary Archaeology. Paris, 2018, 63–81.

BARTUS ET ALII 2020

D. Bartus – L. Borhy – Sz. Johácz – E. Számadó: Excavations in the legionary fortress of Brigetio in 2019. Dissertationes Archaeologicae Ser. 3. No. 8. Budapest, 2020, 181–188.

BECK 2003

Beck T.: Brigetiói terra sigillaták 1992–1996. PhD Thesis, Eötvös Loránd University. Budapest, 2003.

BENES 2017

A. Benes: Roman wells in Pannonia: the well excavated in Brigetio, Szőny-Vásártér site. *Alia Miscellanea Antiquitatis. Proceedings of the 2nd Croatian-Hungarian PhD Conference on Ancient History and Archaeology. Hungarian Polis Studies* 23 (2017), 111–128.

BEZECZKY 1999

T. Bezeckzy: New amphora finds from Brigetio. *Antaeus* 24 (1999), 65–72.

BÍRÓ 1971

Bíró E.: Szőny-Vásártér. *Régészeti Füzetek* I/24 (1971), 40.

BORHY 2001a

Borhy L.: Pannoniai falfestmény. A Négy Évszak, az Idő és a Csillagok ábrázolása egy brigetiói mennyezetfestményen. Budapest, 2001.

BORHY 2001b

L. Borhy: Neues zur Tätigkeit und zu den Vorbildern der modernen Fälscherwerkstatt in Brigetio (Komárom/Szőny, Ungarn). *Budapest Régiségei* 34 (2001), 29–37.

BORHY 2005

L. Borhy: Militaria aus der Zivilstadt von Brigetio (FO: Komárom/Szőny-Vásártér. Indirekte und direkte Hinweise auf Beginn, Dauer und Ende der Zivilsiedlung im Lichte der neuesten Ausgrabungen (1992–2004). (In Zusammenarbeit mit Emese Számadó, Dávid Bartus und István Vida). In: *Die norisch-pannonischen Städte und das römische Heer im Lichte der neuesten archäologischen Forschungen. II. Internationale Konferenz über norisch-pannonische Städte. Aquincum Nostrum* II.3. Budapest, 2005, 75–81.

BORHY 2006

L. Borhy: IEΠΟΣ ΓΑΜΟΣ. Überlegungen zu einer griechischen Münze aus Brigetio. *Acta Archaeologica Academiae Scientiarum Hungaricae* 57 (2006), 225–233.

BORHY 2009

Borhy L.: Brigetiói amphitheatrumok? Budapest, 2009.

BORHY 2016

Borhy L.: *Troianum dicitur agmen*. Római kori díszpáncélok Brigetióból és környékéről (Petényi Sándor tárgyleírásaival, Döbröntey-David Szilvia restaurátori észrevételeivel). *Acta Archaeologica Brigetionensia Ser. I. Vol. 9*. Budapest, 2016.

BORHY 2019

L. Borhy: Brigetio – Kultur einer römischen Grenzstadt an der Donau. *Humboldt-Nachrichten* 36 (2019), 29–56.

BORHY 2021

Borhy L.: Brigetio – Egy pannoniai határváros társadalmi és kultúrája. Székfoglaló előadások a Magyar Tudományos Akadémián. Budapest, 2021.

BORHY ET ALII 2010

Borhy L. – Harsányi E. – Kovács L. O. – Kurovszky Zs. – Magyar M. – A. Paetz gen. Schieck – Pásztókai-Szeőke J. – Számadó E.: Római kori falfestmények Brigetióból. A komáromi Klapka György Múzeum római kori falfestményeinek katalógusa. Acta Archaeologica Brigetionensia Ser. I. Vol. 3. Komárom, 2010.

BORHY ET ALII 2011

Borhy L. – Bartus D. – Czajlik Z. – Rupnik L. – Számadó E.: Brigetio (Komárom/Szőny): Tábor-város a Duna mellett. Brigetio (Komárom/Szőny): Fortress/city next to the Danube. In: Visy Zs. (szerk.): A Ripa Pannonica Magyarországon mint világörökségi helyszín. – Romans on the Danube. The Ripa Pannonica in Hungary as a World Heritage Site. Pécs, 2011, 42–51.

BORHY ET ALII 2017

Borhy L. – Czajlik Z. – Rupnik L. – Nagy B. – Pusztas S. – Bödőcs A. – Bartus D.: Nondestruktív lelőhelykutató módszerek integrált alkalmazása Brigetióban és környékén 2014–2015-ben. In: Benkő E. – Bondár M. – Kolláth Á. (szerk.): Magyarország régészeti topográfiája. Múlt, jelen, jövő. Archaeological topography of Hungary. Past, present and future. Budapest, 2017, 125–136.

BORHY – BARTUS – SZÁMADÓ 2010

Borhy L. – Bartus D. – Számadó E.: A Komárom/Szőny-Vásártér lelőhelyen 2008-ban a Nemzeti Kulturális Alap támogatásával folytatott régészeti feltárások eredményei. In: K. Kuzmová – J. Rajtár (zost.): Rímský kastel v iži. Výskum 1978–2008. Archaeologica Slovaca Monographiae. Communicationes, Tomus XII. Nitra, 2010, 67–76.

BORHY – SZÁMADÓ 1994

Borhy L. – Számadó E.: Komárom (Szőny)-Vásártér. Régészeti Füzetek I/46 (1994), 41–42.

BORHY – SZÁMADÓ 1999

Borhy L. – Számadó E.: Beszámoló a Brigetióban (Szőny-Vásártér és Molaj „A”-út lelőhelyen) 1998-ban végzett régészeti feltárások eredményeiről. Komárom-Esztergom Megyei Múzeumok Közleményei 6 (1999), 143–162.

BORHY – SZÁMADÓ 2001

Borhy L. – Számadó E.: Beszámoló a Komárom/Szőny Vásártér 2. számú háznál 1999–2001 folyamán végzett feltárásokról. Komárom-Esztergom Megyei Múzeumok Közleményei 8 (2001), 83–104.

BORHY – SZÁMADÓ 2003

L. Borhy – E. Számadó: Brigetio. In: Zs. Visy (ed.): The Roman Army in Pannonia. An Archaeological Guide of the Ripa Pannonica. Pécs, 2003, 75–77 and 151–153.

BORHY – SZÁMADÓ 2010

Borhy L. – Számadó E.: Az I/2. számú helyiség mennyezetfestménye. In: BORHY ET ALII 2010, 41.

DELBÓ 2015

G. Delbó: Kuchenformen aus Brigetio. In: L. Borhy – K. Tankó – K. Dévai (dir.): *Studia archaeologica Nicolae Szabó LXXV annos nato dedicata*. Budapest, 2015, 95–104.

DÉVAI 2015a

K. Dévai: The secondary glass workshop in the civil town of Brigetio. *Dissertationes Archaeologicae Ser. 3. No. 3*. Budapest, 2015, 83–104.

DÉVAI 2015b

K. Dévai: New Data to the Products of the Glass Workshop of Brigetio. In: L. Borhy – K. Tankó – K. Dévai (eds.): *Studia Archaeologica Nicolae Szabó LXXV Annos Nato Dedicata*. Budapest, 2015, 105–112.

DÉVAI – GELENCSÉR 2012a

Dévai K. – Gelencsér Á.: Római kori lakóépület és üvegműhely Brigetióból. (The secondary glass workshop in civil town of Brigetio.) *Komárom-Esztergom Megyei Múzeumok Közleményei* 18 (2012), 59–102.

DÉVAI – GELENCSÉR 2012b

Dévai K. – Gelencsér Á.: Római kori lakóház és üvegyártó műhely Brigetióban. In: Bíró Sz. – Vámos P. (szerk.): *FIRKÁK II. Fialat Római Koros Kutatók II. Konferenciakötete*. Győr, 2012, 439–468.

DOBOSI 2014

Dobosi L.: Városi lakóházépítészet Brigetióban. A Komárom/Szőny-Vásártér lelőhelyen 1999–2013 között folytatott ásátások építészeti vonatkozású eredményei. *Acta Archaeologica Brigetionensia Ser.I. Vol.6*. Komárom, 2014.

DOBOSI 2021

L. Dobosi: Building techniques and building materials in Brigetio: With the virtual reconstruction of House I/a of the civil town of Brigetio. *Dissertationes Archaeologicae Ser. 3. No. 9*. (2021), 313–335.

DOBOSI – BORHY 2015

L. Dobosi – L. Borhy: Roman building techniques observed in the municipium of Brigetio. *Acta Archaeologica Academiae Scientiarum Hungaricae* 66 (2015), 183–202.

FEHÉR 2019

T. Fehér: Not lost only transformed. New data on three Roman coin hoards from Brigetio. In: *Numismatica Pannonica I. Proceedings of the conference held by the Antique Numismatic Workshop on the 10th September 2018 at the Hungarian Numismatic Society Budapest, Hungary*. *Acta Numismatica Hungarica Supplementum I*. Budapest, 2019, 45–50.

FEHÉR 2020

T. Fehér: Roman Coins from the Municipium of Brigetio. In: Numismatica Pannonica II. Proceedings of the conference held by the Antique Numismatic Workshop on the 9th September 2019 at the Hungarian Numismatic Society Budapest, Hungary. Acta Numismatica Hungarica Supplementum II. Budapest, 2020, 22–28.

FÉNYES 1999

G. Fényes: Die Auswertung des Keramikmaterials der Ausgrabung 1998, und die Chronologie der Straße und der Bäckerei mit den Informationen der Ausgrabung 1999, Fundort: Komárom/Szöny-Vásártér. Manuskript, 1999.

FÉNYES 2002

Fényes G.: Import kerámia Brigetióban és az importáru hatása a helyi fazekasságra. PhD Thesis, Eötvös Loránd University. Budapest, 2002.

GABLER 2006

Gabler D.: Terra Sigillata, a rómaiak luxuskerámiája. Budapest, 2006.

GROH ET ALII 2014

S. Groh – O. Láng – H. Sedlmayer – P. Zsidi: Neues zur Urbanistik der Zivilstädte von Aquincum-Budapest und Carnuntum-Petronell. Auswertung und archäologische Interpretation der geophysikalischen Messungen 2011 und 2012. Acta Archaeologica Academiae Scientiarum Hungaricae 65 (2014), 361–404.

HAJDU 2018

B. Hajdu: Terra sigillata from the territory of the civil town of Brigetio. Dissertationes Archaeologicae Ser. 3. No. 6. (2018), 445–460.

HARSÁNYI – KUROVSZKY 2002

E. Harsányi – Zs. Kurovszky: Traces of geometric construction on the second century AD Roman ceiling composition of Szöny. Acta Archaeologica Academiae Scientiarum Hungaricae 53 (2002), 151–169.

HARSÁNYI – KUROVSZKY 2010

Harsányi E. – Kurovszky Zs.: A mennyezetfestmény szerkezete. In: BORHY ET ALII 2010, 30–32.

HÁRSHEGYI 2004

P. Hárshgyi: Roman amphorae from the civil town of Brigetio/Szöny-Vásártér 1992–2001. Communicationes Archaeologicae Hungariae 2004, 113–121.

HÁRSHEGYI – OTTOMÁNYI 2015

P. Hárshgyi – K. Ottományi: Imported and Local Pottery in Late Roman Pannonia. In: L. Lavan (ed.): Local Economies? Production and Exchange of Inland Regions in Late Antiquity. Leiden – Boston, 2015, 471–528.

JUHÁSZ 2018

L. Juhász: Monetary circulation in the municipium of Brigetio. The excavations of Komárom/Szőny-Vásártér (1992-2015). In: V. Ivanišević – B. Borić-Brešković – M. Vojvoda (eds.): *Circulation of Antique Coins in Southeastern Europe. Proceedings of the International Numismatic Symposium. Held in Viminacium, Serbia, September 15th to 17th 2017.* Belgrade, 2018, 9–21.

JUHÁSZ 2019

L. Juhász: Purse find from the municipium of Brigetio. *Numizmatikai Közlöny* 116–117 (2017–2018), 121–124.

KAISER 2011

A. Kaiser: Cart and Traffic Flow in Pompeii and Rome. In: R. Laurence – D. J. Newsome (eds.): *Rome, Ostia, Pompeii. Movement and Space.* Oxford, 2011, 174–193.

KOVÁCS 2001

P. Kovács: The Pannonian canabae in the 3rd century. *Laverna* 12 (2001), 42–66.

KOVÁCS 2007

Kovács P. (szerk.): *Az antik Pannonia forrásai a Severus-korban (Fontes Pannoniae Antiquae in aetate Severorum).* Fontes Pannoniae Antiquae Vol. IV. Budapest, 2007.

LÁNG 2009

O. Láng: „Unpleasant to live in, yet it makes the city rich”: Functions of strip-buildings in the Aquincum Civil Town in the light of new discoveries. In: Bíró Sz. (ed.): *Ex officina... Studia in honorem Dénes Gabler.* Győr, 2009, 135–146.

LÁNG 2013a

Láng O.: Aquincum polgárvárosának keleti városfala: egy 120 éve várt felfedezés. *Ókor* 12 (2013), 80–84.

LÁNG 2013b

O. Láng: Urban problems in the Civil Town of Aquincum: the so-called “northern band”. *Dissertationes Archaeologicae Ser.* 3. No. 1. (2013), 231–250.

LÁNG 2016

O. Láng: Industry and Commerce in the City of Aquincum. In: M. Flohr – A. Wilson (eds.): *Urban Craftsmen and Traders in the Roman World.* Oxford, 2016, 352–376.

LÁNG 2018

O. Láng: Is that really the end, or what happened in the civil town of Aquincum in the fourth century AD? *Acta Archaeologica Academiae Scientiarum Hungaricae* 69 (2018), 143–168.

LÁNG – BÍRÓ 2018

O. Láng – Sz. Bíró: „Unpleasant to live in, yet it makes the city rich”. Industry and Commerce in Military and Civil Settlements along the Pannonian Limes. In: C. S. Sommer – S. Matešić (Hrsg.): *Limes XXIII. Proceedings of the 23rd International Congress of Roman Frontier Studies Ingolstadt 2015*. Mainz, 2018, 609–619.

MAC MAHON 2003

A. Mac Mahon: *The Taberna Structures of Roman Britain*. British Archaeological Reports, British Series 356. Oxford, 2003.

MAGYAR 2010a

Magyar M.: Az I/5. számú helyiség festett díszítése - Fortuna. In: BORHY ET ALII 2010, 66–67.

MAGYAR 2010b

Magyar M.: Az I/3. és I/4. számú helyiség. In: BORHY ET ALII 2010, 52–66.

MAGYAR-HÁRSHEGYI 2016

P. Magyar-Hárshegyi: The trade of Pannonia in the light of amphorae (1st–4th century AD). *Dissertationes Archaeologicae Ser. 3. No. 4* (2016), 427–438.

MÁRITY 1992

E. Márity: Chronological problems and special features in the structure of the civilian city of Aquincum. *Communicationes Archaeologicae Hungariae* 1992, 65–73.

MASCHEK 2011

D. Maschek: Die Therme des Zivilstadtviertels im Archäologischen Park Carnuntum in ihrem urbanistischen Kontext: Neue Befunde zur Parzellierung und Wasserversorgung des Wohnstadtviertels. In: F. Humer – A. Konecny (Hrsg.): *Römische Thermen. Akten des internationalen Kolloquiums. Archäologischer Park Carnuntum und Gesellschaft der Freunde Carnuntums*. 17–18. 9. 2009. Hainburg, 2011, 33–45.

MASCHEK 2019

D. Maschek: Die spätantiken Erdbebenschäden in der Zivilstadt Carnuntums. Städtebauliche und historische Deutung eines Zerstörungshorizontes. In: A. Konecny – F. Humer – K. Decker (Hrsg.): *Das Carnuntiner Erdbeben im Kontext. Akten des III. Internationalen Kolloquiums veranstalt vom Land Niederösterreich und der Archäologischen Kulturpark NÖ Betriebsges. m. b. H. 17.–17. Oktober 2013 Kulturfabrik Hainburg. St. Pölten*, 2019, 67–78.

MÓCSY – FITZ 1990

Mócsy A. – Fitz J. (szerk.): *Pannonia régészeti kézikönyve*. Budapest, 1990.

MRÁV 2013

Zs. Mráv: Septimius Severus and the Cities of the Middle Danubian Provinces. *Antiquitas* 61 (2013), 205–240.

MÜLLER 2008

M. Müller: Wohnbauten in der Zivilsiedlung von Vindobona – Lebensorte. In: P. Scherrer (Hrsg.): *DOMUS. Das Haus in den Städten der römischen Donauprovinzen. Akten des 3. Internationalen Symposiums über römische Städte in Noricum und Pannonien*. Wien, 2008, 105–121.

MÜLLER ET ALII 2011

M. Müller – I. Mader – R. Chinelli – S. Jäger-Wersonig – S. Sakl-Oberthaler – U. Eisenmenger – S. Czeika – C. Litschauer – C. Öllerer – E. Eleftheriadou: *Entlang des Rennwegs. Die römische Zivilsiedlung von Vindobona*. Wien, 2011.

NAGY 2015

A. Nagy: La circulation des amphores dans la colonie civile de Brigetio. Rapport préliminaire. In: L. Borhy – K. Tankó – K. Dévai (dir.): *Studia archaeologica Nicolae Szabó LXXV annos nato dedicata*. Budapest, 2015, 183–190.

NAGY ET ALII 2013

Nagy B. – Deák M. – Viczián I. – Jámbor Zs. – Rupnik L.: A jó időben a jó helyen: a Duna menti ártérfejlődés és a római kori Brigetio. *Földrajzi Közlemények* 137 (2013), 278–286.

PAETZ GEN. SCHIECK – PÁSZTÓKAI-SZEŐKE 2013

A. Paetz gen. Schieck – J. Pásztkai-Szeőke: Power dressing in Pannonia. Tunics with arrow-shaped purple decoration represented in a Roman wall-painting at Brigetio. In: C. Alfaro Giner – J. Ortiz García – M. J. Martínez García (eds.): *Luxury and dress. Political power and appearance in the Roman Empire and its provinces*. Valencia, 2013, 181–216.

PÁSZTÓKAI-SZEŐKE – PAETZ GEN. SCHIECK 2013

Pásztkai-Szeőke J. – A. Paetz gen. Schieck: Inspiráció, imitáció és imázs. A Kr.u. 3. századi katonai viselet szír eredetű elemei. *Ókor* 12/2 (2013), 61–68.

PIKE 1967

G. Pike: Pre-Roman Land Transport in the Western Mediterranean Region. *MAN (Journal of the Royal Anthropological Institute)* 2 (1967), 593–605.

POEHLER 2017

E. E. Poehler: *The Traffic Systems of Pompeii*. Oxford, 2017.

RADNÓTI 1945-1946

Radnóti A.: Néhány adat a consecratiós érmekhez. *Numizmatikai Közlöny* 44–45 (1945–1946), 6–12.

SEY 2006

Sey N.: *Római kori bronztárgyak Brigetióból (Komárom-Szőny-Vásártér, 1992–2005)*. Szakdolgozat, ELTE Régészettudományi Intézet. Budapest, 2006.

SEY 2015

Sey, N.: Roman bronze workshop in the civil town of Brigetio. In: L. Borhy – K. Tankó – K. Dévai (eds.): *Studia archaeologica Nicolae Szabó LXXV annos nato dedicata*. Budapest, 2015, 225–236.

SEY 2018

N. Sey: Bronze and bone workshop in the territory of the legionary fortress and canabae of Brigetio. In: L. Borhy – K. Dévai – K. Tankó (eds.): *Celto – Gallo – Roman. Studies of the MTA-ELTE Research Group for Interdisciplinary Archaeology*. Paris, 2018, 223–242.

SIMON 2018

B. Simon: Attempts to localize a past excavation on the territory of the municipium of Brigetio. In: L. Borhy – K. Dévai – K. Tankó (eds.): *Celto – Gallo – Roman. Studies of the MTA-ELTE Research Group for Interdisciplinary Archaeology*. Paris, 2018, 215–222.

SZÁMADÓ 1997

Számadó E.: Brigetio kutatástörténete. *Komárom-Esztergom Megyei Múzeumok Közleményei* 5 (1997), 149–174.

SZÁMADÓ 2010

Számadó E.: Régészeti kutatások Komárom/Szőny területén, a római kori Brigetióban, 1990–2010 között. http://cclbsebes.ro/docs/Sebus_2_2010/08_Szamado_Emese.pdf (last checked: 01.21.2022.)

SZŐNYI 2003

E. Szőnyi: Römische Brunnen in der Kleinen Tiefebene. *Antaeus* 26 (2003), 141–158.

SZÓRÁDI 2010

Szórádi Zs.: *Terra sigillata*. Leletek a Brigetio-Vásártéren 2009-ben feltárt pincéből. BA Thesis, Eötvös Loránd University. Budapest, 2010.

TÓKÉS 2007

Tőkés T.: A Komárom/Szőny-Vásártéri ásatások római kori import kerámialeletei. (2001–2005). MA Thesis, Eötvös Loránd University. Budapest, 2007.

VICZIÁN ET ALII 2013

I. Viczián – B. Nagy – M. Deák – J. Szeberényi – L. Rupnik: Environmental reconstruction of the area of Roman Brigetio (Komárom, Hungary). *Studia Geomorphologica Carpatho-Balcanica* 47 (2013), 95–105.

ZSIDI 1990

Zsidi P.: Aquincum polgárvárosának városfala és védművei az újabb kutatások tükrében. *Communicationes Archaeologicae Hungariae* 1990, 141–169.

ZSIDI 2002

Zsidi P.: *Aquincum polgárvárosa*. Budapest, 2002.