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O urbanizmu Ise u svjetlu novih arheoloških istraživanja

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U radu se donose rezultati istraživanja koja se provode proteklih godina u jugoistočnom dijelu Ise (*intra muros*). Dosad su tim istraživanjima pronađeni ostatci dviju ulica orijentiranih u smjeru S-J (*stenopos*), te triju inzulaa (*insulae*). U inzulama su pronađeni i prvi ostatci kuća, od kojih ni jedna za sada nije u potpunosti istražena, pa se rad ponajprije temelji na istraženim dijelovima ulica i organizaciji prostora unutar grada. Uz kraći osvrt na povijest istraživanja koja su pridonijela boljem sagledavanju urbanizma Ise, u tekstu se raspravlja o stepenastim ulicama i kanalima u njima, potom se objavljuju dosad nepoznati podaci o ulicama u Isi pronađenima tijekom istraživanja s kraja pedesetih godina prošlog stoljeća u zapadnom dijelu grada; zatim se govori o veličini inzulaa i u preliminarnom obliku iznose se zapažanja o kući I u inzuli I (I, 1). Donosi se novo viđenje isejskog rastera i daju usporedbe sa sličnim urbanističkim rješenjima gradova u južnoj Italiji, Epiru, sjeverozapadnoj Grčkoj i južnoj Francuskoj.

Cljučne riječi: Isa, urbanizam, per strigas, stambeni blok, inzulaa, ulica, stenopos, kuća

On urbanism in Issa in light of new archaeological research

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This work contains the results of research which has been ongoing in the south-east section of Issa (*intra muros*) in recent years. The remains of two streets with a north-south orientation (*stenopos*), and three insulae have been found thus far in the course of this research. The first remains of houses were found in the insulae, of which not one has been thoroughly examined, so this work is based primarily on the researched sections of the street and the organization of space inside the city. In addition to a brief overview of the course of research, which has contributed to a better understanding of urbanism in Issa, the text contains a discussion of the stair-like streets and the gutters in them, while previously unknown data on the streets of Issa found in the western section of the city during research from the late 1950s are also published. This is followed by discussion of the size of the insulae and observations on house I in insula I (I, 1) are provided in preliminary form. A new view of the Issa urban layout is also presented, together with comparisons with similar urban planning solutions in southern Italy, Epirus, north-western Greece and southern France.

Key words: Issa, urbanism, per strigas, residential block, insula, street, stenopos, house

Uvod

Gradski prostor Ise (*Issa*), smješten na brijegu Gradini u Visu, do danas je u najvećoj mjeri ostao pošteđen gradnje. Suvremenim građevinskim aktivnostima stradao je samo njegov obalni dio, dok je najveći dio površine nekadašnjega grada korišten za poljoprivrednu djelatnost. Ta je djelatnost do polovice prošlog stoljeća bila intenzivna, no premda je uništila dio površinske arhitekture grada, u donjim slojevima ti su ostatci uglavnom dobro očuvani, posebno u južnom dijelu Gradine.

Unatoč toj činjenici dosadašnja arheološka istraživanja isejskih ostataka vrlo su se malo usmjeravala na prostor unutar gradskih zidina, pa su podatci o gradskim komunikacijama, stambenim objektima i drugim javnim i sakralnim građevinama ostali gotovo posve nepoznati.

Ostatci isejske arhitekture bili su površinski vidljivi sve do 18. st., a do tog je vremena bila prepoznatljiva i funkcija mnogih građevina. O tome su vrijedna svjedočanstva ostavili Ciriaco Pizziocolli, Marin Gazarović, Antun Matijašević Karamaneo i drugi.¹

Ozbiljnijih radova o isejskom urbanizmu nije bilo sve do Branimira Gabričevića. Početkom pedesetih godina 19. st. Šime Ljubić provodi manja istraživanja na prostoru jugozapadne nekropole i u radovima koje

1 Ciriaco Pizziocolli je prigodom posjeta Visu u srpnju 1436. vidio ostatke isejske arhitekture i ostatke rimskog teatra, za koji kaže da je djelomično srušen. U to vrijeme, prije izgradnje franjevačkog samostana iznad teatra, ti su ostatci djelovali impozantno, jer u zapadnom dijelu viške uvale u tom trenutku nije bilo gotovo nikakvih kuća. Ciriaco Anconitano 1747, str. XXIII. O ostacima kazališta piše i Šibenčanin Johanes Fefella. Novak 1961, str. 66. Nadalje, Mletački *sindik* Zan Battista Giustinian u svojem putopisu po Istri, Dalmaciji i Mletačkoj Albaniji godine 1553. spominje ostatke palače te dijelove stupova, lukova i različitih mramornih ploča koji se vide u Visu. Ljubić 1877, str. 65, 179, (220). Marin Gazarović (o. 1575.-1638.) u svojoj morskoj pastoralu *Murat gusar*, početkom 17. st., navodi kako se vide ostatci zidova isejske arhitekture te spominje kako se na prostoru nekadašnjega grada sije žito i sade vinogradi. Gazarović 1623, (65) str. 73; Fisković 1968, str. 121-122. Stanje isejskih ostataka u drugoj polovici 17. st. opisuje i Antun Matijašević Karamaneo (1658.-1721.). Piše kako se odnosi kamen s isejskih građevina, kako se ruše bedemi i jedna kula, od čijeg je kamena sagrađen dio crkve Svetog Duha i dio rive u Kutu. Matijašević Karamaneo također navodi kako su u to vrijeme vidljivi i ostatci hrama i prostranih zgrada. Novak 1961, str. 130, 173. Ovi podatci zorno svjedoče o tome kako se urbani prostor Ise s vremenom pretvorio u poljodjelsko zemljište i u takvom obliku ostao do današnjih dana.

Introduction

The urban space of Issa situated on Gradina Hill has been spared of construction development for the most part. Only its shoreline section was devastated by contemporary construction activities, while most of the surface of the former city was used for agriculture. Even though such activity, which was rather intensive until just over fifty years ago, did destroy a part of the city's surface architecture, in the lower layers these remains have remained largely well-preserved, particularly on the southern part of Gradina.

Despite this fact, previous archaeological research into the Issaeian remains has focused very little on the area inside the city walls, so data on urban communications, residential structures and other public and sacral buildings have generally remained entirely unknown.

The remains of Issaeian architecture were visible at the surface, and many structures were also functionally recognizable until the 18th century. Very vivid testimony to the latter aspect was left to us by Cyriacus of Ancona, Marin Gazarović, Antun Matijašević Karamaneo and others.¹

1 Cyriacus of Ancona (Ciriaco de'Pizziocolli), during his visit to Vis in July of 1436, observed the remains of Issaeian architecture and a Roman theatre, which he described as partly demolished. At the time, these remains - without the Franciscan monastery built on them subsequently - had an imposing appearance because there were almost no houses in the western shore of Vis Bay; Ciriaco Anconitano 1747, p. XXIII. Šibenik native Johanes Fefella also wrote about the remains of the theatre, Novak 1961, p. 66. Furthermore, the Venetian *syndic* Zan Battista Giustinian, in his travelogue about Istria, Dalmatia and Venetian Albania in 1553 mentioned the remains of a palace and portions of columns, arches and various marble slabs that could be seen in Vis. Ljubić 1877, pp. 65, 179, (220). Marin Gazarović (ca. 1575-1638), in his maritime pastore, *Murat gusar*, written in the early 17th century, stated that the faded remains of the walls of Issaeian architecture could be seen, and he noted that grain was reaped and grapes were cultivated in the urban zone. Gazarović 1623, (65) p. 73; Fisković 1968, pp. 121-122. The condition of the Issaeian ruins in the latter half of the 17th century were also described by Antun Matijašević Karamaneo (1658-1721). He mentioned that stone from the Issaeian buildings was taken away, walls were being torn down, as was a tower, from which the stone was used to build part of the Church of the Holy Spirit and part of the waterfront in Kut. Matijašević Karamaneo also stated that the remains of the temple and spacious buildings could be seen. Novak 1961, pp. 130, 173. These data lucidly show that the former urban area of

objavljuje nakon toga donosi podatke o nekropoli i svoje viđenje oblika grada, opcrtavajući linijom bedema cijeli brijeg Gradinu. Na planu ucrtava i položaj jugozapadne nekropole i drugih arheoloških lokaliteta, čime je prvi put načinjen topografski plan Ise. Iako oblik grada kakvim ga Ljubić ucrtava ne odgovara stvarnom stanju, taj njegov plan značajan je zbog toga što je na njemu jasno ucrtan položaj južnih isejskih zidina, čiji ostatci više nisu vidljivi.²

Nakon Ljubića, istraživanja Apolonija Zanelle, viškog kanonika, bila su vezana uz terme i teatar i značila su daljnji korak prema upotpunjavanju topografskog (urbanističkog) plana Ise.³ Dvadesetih godina prošlog stoljeća Isa postaje i predmetom zanimanja Ejnara Dyggvea, koji za svojih obilazaka Visa vodi bilješke te izrađuje mnoge crteže i skice isejskih ostataka, prije svega termi i teatra; danas se ti radovi čuvaju u arhivu Dyggve.⁴

Tridesetih godina prošlog stoljeća češki su arheolozi tijekom svojih ljetnih boravaka na Visu uočili potencijal isejskih ostataka, te su pokrenuli istraživanja na prostoru jugozapadne nekropole, u njezinom sjevernom dijelu. Tom su prigodom uz velik broj grobova pronašli i ostatke jedne građevine, vjerojatno kuće. Jan Bouzek navodi da je Jindřik Čadik, voditelj istraživanja, pronašao kuću vjerojatno tipa *pastas*, s nekoliko prostorija i manjim dvorištem. To su jedini podatci s tih istraživanja vezani uz stambenu arhitekturu Ise kojima raspolažemo, a oni su, nažalost, općeniti i šturi.⁵

Istraživanja Mihovila Abramića godine 1948. bila su usredotočena na sjeverni dio jugozapadne nekropole i prostor uz unutarnje lice zapadnog bedema grada; ta su istraživanja iznijela na vidjelo izgled i tehniku gradnje bedema, no i ovdje je izostala cjelovita objava rezultata istraživanja.⁶

There were no serious works on the topic of Issaeian urbanism until those by written by Branimir Gabričević. In the early 1850s, Šime Ljubić conducted modest research in the area of the south-west necropolis, and in the works he published thereafter he provided data on the necropolis and his vision of the city's contours, drawing the line of the city walls to encompass all of Gradina Hill. He also sketched in the location of the south-west necropolis and other archaeological sites on his map, which was the first topographic map of Issa ever made. Although the city's form as sketched by Ljubić did not correspond to its actual appearance, this map is important because he drew in the location of Issa's southern walls, of which the remains are no longer visible.²

After Ljubić, the research by Apolonije Zanella, the Vis canon, focused on the baths and theatre, and this constituted a further step that supplemented the topographic (urban) map of Issa.³ In the 1920s, Issa caught the interest of Einar Dyggve, who in his tours of Vis drew numerous illustrations and sketches and wrote down his observations on the Issaeian ruins, above all the baths and theatre, which are today held in the Dyggve Archives.⁴

In the 1930s, Czech archaeologists observed the potential of the Issaeian ruins during their summer holidays on Vis, so they launched research in the area of the south-western necropolis in its northern section. On this occasion, besides a high number of graves, the remains of a structure, probably a house, were found. Jan Bouzek stated that Jindřik Čadik, the research leader, probably found a *pastas*-type house with several rooms and a small yard. These are the only data from this research on Issa's residential architecture, which are unfortunately quite meagre and vague.⁵

2 Ljubić 1859, str. 32-38. Opširno o istraživanjima Ise i njezinih spomenika vidi Kirigin 1999, str. 405-458; Čargo 2003, str. 399-469; Čargo 2010, str. 8-12.

3 Zanella 1893, str. 72-77, 83-91; Zanella 1895, str. 202-205.

4 Dyggve 1958, str. 99, bilj. 3. Arhiv Dyggve čuva se u Konzervatorskom odjelu u Splitu.

5 Zbog oskudne dokumentacije o češkim istraživanjima znamo veoma malo. Ta su istraživanja, vođena u barem dvije kampanje, bila prilično opsežna, no pronađeni materijali i dokumentacija odneseni su u Češku, gdje im se gubi trag. Iako su istraživanja bila ponajprije vezana uz jugozapadnu nekropolu, moguće je da su dijelom obuhvatila i prostor unutar gradskog područja. O tim istraživanjima vidi Kirigin 1999, str. 418; Bouzek 2009, str. 390-391; Čargo 2010, str. 26.

6 U prostoru nekropole pronašao je i dobro očuvanu lončarsku peć te time potvrdio proizvodnju keramičkih

Issa was transformed over time into agricultural land and remained as such to the present day.

2 Ljubić 1859, pp. 32-38. For more on research into Issa and its monuments, see Kirigin 1999, pp. 405-458; Čargo 2003, pp. 399-469; Čargo 2010, pp. 8-12.

3 Zanella 1893, pp. 72-77, 83-91; Zanella 1895, pp. 202-205.

4 Dyggve 1958, p. 99, note 3. Dyggve Archives are held in the Conservation Department in Split.

5 Very little is known about the Czech research due to the scant documentation. This research, conducted in at least two campaigns, was rather extensive, but the materials found and the accompanying documentation were taken to what is today the Czech Republic, where all trace of them was lost. Although the research was primarily tied to the south-western necropolis, it is possible that they partially also encompassed the area inside the city limits. On this research, see Kirigin 1999, p. 418; Bouzek 2009, pp. 390-391; Čargo 2010, p. 26.

Tek će Branimir Gabričević godine 1959. pokrenuti istraživanja sa svrhom upotpunjavanja podataka o Isi i njezinim spomenicima, kako bi, koliko je to tada bilo moguće, donio topografsku situaciju Ise unutar i izvan gradskih zidina. To je vrijeme njegova intenzivnog bavljenja isejskim urbanizmom, a rezultati istraživanja, koji su objavljeni u nekoliko radova, postali su temeljni i prihvaćeni od svih koji su se poslije u svojim radovima doticali te teme. Gabričević je sondiranjem na nekoliko mjesta po Gradini unutar gradskih zidina pronašao ostatke ulica i kuća, no rezultate istraživanja nije nikada integralno objavio.⁷ Prvi je put donesen precizniji plan Ise, s ucrtanim pretpostavljenim pravcima protezanja gradskih zidina i ulica u smjeru S-J. Gabričević je na temelju pregleda zračnih fotografija i katastarskih planova te arheološkom reambulacijom brijega Gradine na kojem je podignuta Isa zamijetio četiri dugačka uzdužna kamena nasipa, te je iznio mišljenje kako su se ti kameni nasipi formirali nad nekadašnjim gradskim komunikacijama kao posljedica poljodjelske obrade zemljišta.⁸ Iznio je mišljenje da su se unutar gradskog prostora nalazile četiri ulice orijentirane S-J, uz mogućnost da je mogla postojati još poneka, i to u sredini gradskog prostora.⁹ To njegovo mišljenje preuzimaju svi kasniji istraživači isejskog urbanizma.¹⁰

Sljedećih nekoliko desetljeća nije bilo ozbiljnijih pokušaja da se pronikne u urbanu strukturu Ise. Tijekom Kiriginovih istraživanja na Martvilu, jugozapadnoj nekropoli Ise, godine 1984. ljubljanski je Fakultet

Mihovil Abramić's research in 1948 was focused on the northern section of the south-western necropolis along the internal face of the western city wall, which revealed the appearance and construction technique of this wall, but even here the comprehensive publication of research results was lacking.⁶

Only Branimir Gabričević would launch research in 1959 with the objective of completing the palpable lacunae in knowledge on Issa and its monuments and - to the extent possible at the time - to chart the topographic layout of Issa both inside and outside of its city walls. This was his period of intense preoccupation with Issaeans urban planning, and the results of this research, published in several works, became fundamental and accepted by all of those who later dealt with this topic in their own works. He excavated test trenches at several places on Gradina inside the city walls, finding the remains of streets and houses, although he never published in the research results in integral form.⁷ For the first time, a more precise map of Issa was made, with indications of the assumed directions in which the city walls and streets in the north-south direction extended. Based on an examination of aerial photographs and cadastral maps, and then a renewed archaeological land survey of Gradina Hill on which Issa developed, Gabričević observed four long lengthwise stone embankments, and he put forth the view that these stone embankments were formed above the former urban transit routes as a result of cultivation of agricultural lands.⁸ According to him, there were four north-south oriented streets inside the urban space, with the possibility of one or more in the middle of this urban space.⁹ All subse-

posuda u Isi; Abramić 1949, str. 9-17. Pronađena lončarska peć je iz 1.-2. st., a kasnija istraživanja na prostoru nekropole rezultirala su pronalaskom ostataka još jedne lončarske peći iz istog razdoblja, ali i tragova lončarske radionice iz 2.-1. st. pr. Kr. Nalazi svjedoče da su Isejci svoje lončarske radionice smjestili u prostoru jugozapadnog prilaza gradu. O lončarskim radionicama Ise i proizvodnji keramičkih oblika vidi Čargo, Miše 2010, str. 7-40.

- 7 Istraživanja je vodio B. Gabričević, a sudjelovali su još Željko Rapanić i Vladimir Kokan, koji je izradio terensku dokumentaciju. Dokumentacija s ovih istraživanja je nažalost zagubljena, jer je voditelj radova mijenjao radna mjesta,
- 8 Gabričević 1970, str. 557, bilj. 12.
- 9 Gabričević 1958, str. 117-118, vidi plan na str. 115. Nakon provedenih istraživanja na nekoliko mjesta po Gradini, krajem pedesetih i početkom šezdesetih godina prošlog stoljeća, unatoč tome što je pronašao ostatke nekoliko ulica orijentacije S-J, Gabričević u svojim objavama i dalje zagovara mišljenje da su postojale četiri ulice orijentacije S-J, Gabričević 1973, str. 151-152; Gabričević 1968, str. 22-23.
- 10 Suić 1976, str. 84-86; Cambi 2002, str. 18-19; Cambi 2010, str. 30; Katić 2009, str. 74-80.

- 6 He also found a well-preserved pottery kiln in the necropolis area, and thereby confirmed ceramic production in Issa, Abramić 1949, pp. 9-17. The kiln dates to the 1st/2nd centuries, and later research in the necropolis resulted in the discovery of the remains of another pottery kiln from the same period, as well as traces of a pottery workshop from the 2nd/1st centuries BC. These finds show that the Issaeans had their pottery workshop at the south-west entrance to the city. On the pottery workshops of Issa and production of ceramic vessels, see Čargo, Miše 2010, pp. 7-40.
- 7 The research was led by B. Gabričević, with participation by Željko Rapanić and Vladimir Kokan, who drafted the field documentation. The documentation from this research was lost when the research leader moved to a different job.
- 8 Gabričević 1970, p. 557, note 12.
- 9 Gabričević 1958, pp. 117-118, see the map on p. 115. After conducting research at several places on Gradina at the end of the 1950s and in the early 1960s, despite finding the remains of several north-south running streets, Gabričević still insisted in his published works



Sl. 1. Pogled na brijeg Gradinu s označenim mjestom istraživane stambene arhitekture

Fig. 1. View of Gradina Hill with the site of the examined residential architecture marked

za arhitekturu, graditeljstvo i geodeziju izradio geodetsku snimku Gradine. Na tom planu ucrtan je pretpostavljeni pravac protezanja gradskih zidina koje se nalaze pod velikom kamenom gomilom nastalom tijekom dugogodišnje obrade zemljišta. Time je približno određen oblik grada i omogućen je izračun njegove površine, no nikakve gradske (arhitektonske) strukture koje su vidljive na površini nisu ucrtavane.

Proći će dvadeset pet godina do nove interpretacije unutarnje planimetrije grada. U doktorskom radu Miroslav Katić raspravlja o urbanizmu Ise, iznosi mišljenje o veličini inzula i broju kuća u njima. Obavlja manja istraživanja i detaljno geodetsko snimanje Gradine. Uz prihvaćanje Gabričevićeva mišljenja da se pod uzdužnim krčevinskim gomilama nalaze ulice, u geodetsku snimku sada se ucrtavaju pravci protezanja tih gomila i donose udaljenosti između njih.¹¹ Na temelju toga te reljefnih obilježja terena Katić iznosi pretpostavljenu veličinu inzula koje su prema njegovu

quent researchers of Issaeian urban planning assumed this view.¹⁰

There were no serious attempts to discern Issa's urban structure in the next few decades. In 1984, during Kirigin's research at Martvilo, Issa's south-western necropolis, a land survey map of Gradina was made by the Faculty of Architecture, Construction and Geodesy in Ljubljana. The assumed position of the city walls, under a large stone mound made by many years of land cultivation, was drawn onto this map. The approximate contours of the city and the possibility of computing its surface area were thereby obtained, although no urban (architectural) structures visible on the surface were drawn in.

Twenty-five years would pass before a new interpretation of the city's internal planimetry was made. In his doctoral dissertation, Miroslav Katić discussed the urbanism of Issa, and put forth an opinion on the size of the insulae and the houses in them. He conducted minor research and a detailed geodesic measurement of Gradina. Accepting Gabričević's view that there are streets beneath the lengthwise mounds made when the terrain was cleared, the lines of these mounds were now drawn into the geodesic map and the distance between them was indicated.¹¹ Based on this and the relief features of the terrain, Katić presented the estimated size of the insulae, which according to him had an east-west orientation on their longer axes, with a size of approximately 50 x 40 m, while inside them there were eight houses in two rows.¹²

Research in the south-eastern part of Issa, *intra muros*, conducted in recent years, provides the possibility of partial insight into the city's layout (Fig. 1). Although the researched portion is still insufficient to envision the city's overall urban layout, it nonetheless provides the foundation for a partial reconstruction.

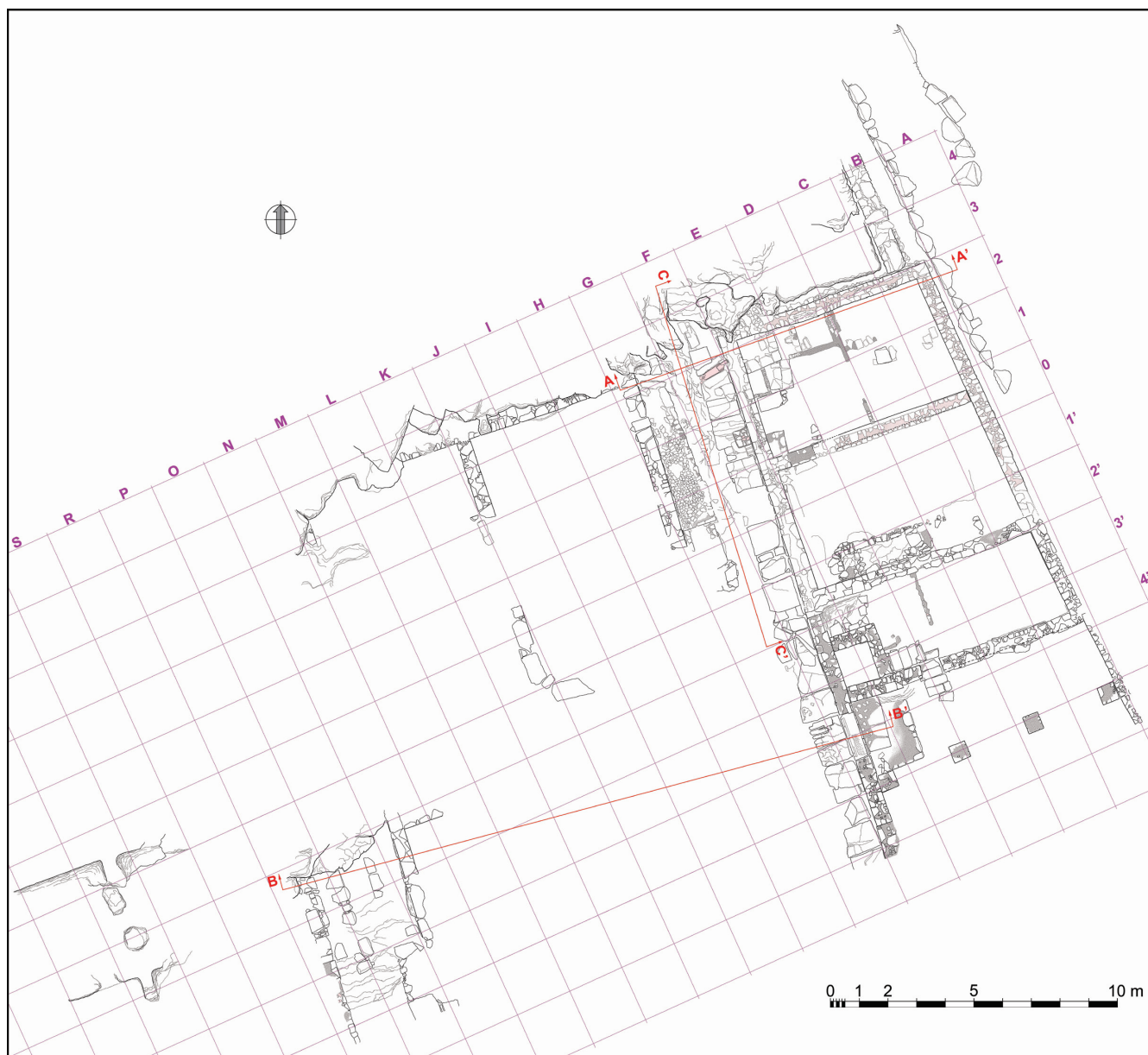
that there were four north-south streets, Gabričević 1973, pp. 151-152; Gabričević 1968, pp. 22-23.

10 Suić 1976, pp. 84-86; Cambi 2002, pp. 18-19; Cambi 2010, p. 30; Katić 2009, pp. 74-80.

11 The streets in the map are marked with the letters A through D, and the distances between them would be: from western wall to street A 32 m, street A to street B 55 m, street B to street C 55 m, street C to street D 55 m, street D to eastern wall 52 m, Katić 2009, pp. 78, 80.

12 Katić set forth from the hypothesis that the internal grid of Issa was very similar to that of Priene, and based on this he reconstructed the appearance of the Issaeian insulae which in his view contained eight houses arranged in two rows. Consequently, the peripheral eastern and western houses were entered from the street that extended north to south, while the houses in the middle of the insula were entered from the street that extended from east to west, Katić 2009, pp. 79-82.

11 Ulice su na planu označene slovima A - D, a udaljenosti među njima iznosile bi: od zapadnog bedema do ulice A 32 m, od ulice A do ulice B 55 m, od ulice B do ulice C 55 m, od ulice C do ulice D 55 m, od ulice D do istočnog bedema 52 m; Katić 2009, str. 78, 80.



Sl. 2. Plan istraženog dijela stambene arhitekture s ulicama (crtež: B. Penđer)

Fig. 2. Map of the researched part of the residential architecture with streets (sketch: B. Penđer)

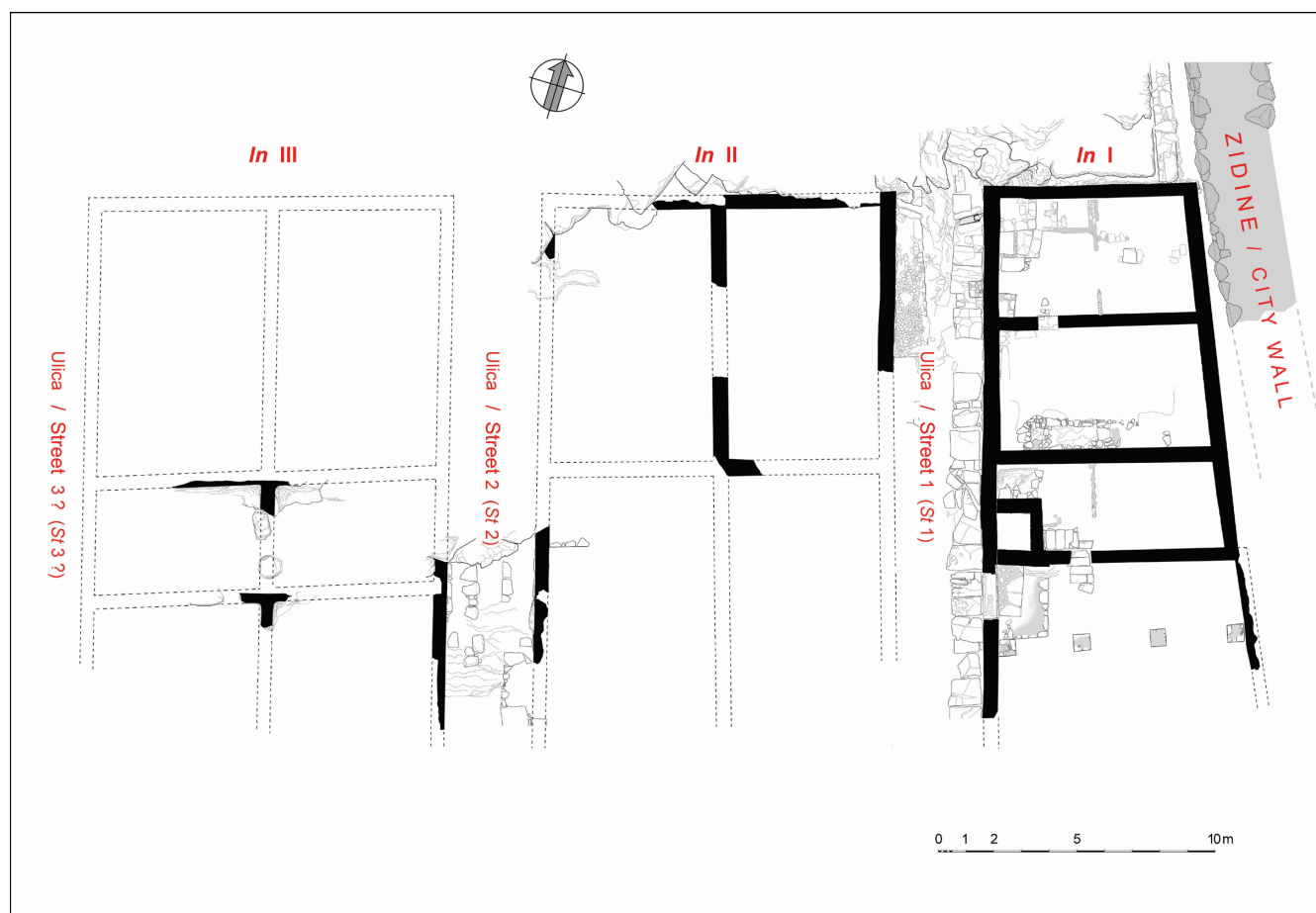
mišljenju po svojoj dužoj osi bile orijentirane I-Z, veličine oko 50 x 40 m, a unutar njih nalazilo se osam kuća u dva reda.¹²

Istraživanja u jugoistočnom dijelu Ise, *intra muros*, koja se provode proteklih godina, pružaju mogućnost djelomičnog uvida u raster grada (sl. 1). Iako je istražen dio još uvijek nedostatan za sagledavanje

This research sheds some additional light on this matter and provides a sound basis to alter some until-now accepted notions of the city's internal organization.

For now, the remains of two streets extending in the north-south direction (*stenopos* 1 and 2, hereinafter *St* 1 and *St* 2), which border two city *insulae* (*insulae* I and II, hereinafter *In* I and *In* II) (Fig. 2, 3), have emerged into view. The first remains of houses were also found in the *insulae*, but none have yet been entirely examined. This text will therefore primarily be based on the researched portions of the streets and the spatial organization inside the city. Residential architecture will only be noted in passing, and its comprehensive publication will follow

12 Katić polazi od pretpostavke da je unutarnji raster Ise vrlo sličan prienskom (*Priene*), te na tom temelju rekonstruira izgled isejske inzule; inzule su po njemu imale osam kuća poredanih u dva reda. Shodno tome, ulazi u krajnje istočne i zapadne kuće bili su iz ulica koje su se protezale u smjeru S-J, dok su ulazi u one u središnjem dijelu inzule bili iz ulica koje su se pružale u smjeru I-Z; Katić 2009, str. 79-82.



Sl. 3. Plan istraženog dijela stambene arhitekture s označenim insulama i ulicama (crtež: B. Penđer)

Fig. 3. Map of the researched part of the residential architecture with insulae and streets marked (sketch: B. Penđer)

cjelokupnog urbanističkog plana grada, on ipak daje osnove za njegovu djelomičnu rekonstrukciju. Ta istraživanja unose malo više svjetla u problematiku i donose argumente koji daju dobre osnove za mijenjanje dosad prihvaćene slike unutarnje organizacije grada.

Za sada su u jugoistočnom dijelu grada na vidjelo izišli ostaci dviju ulica koje se protežu u smjeru S-J (*stenopos* 1 i 2, dalje *St* 1 i *St* 2), i koje omeđuju dvije gradske insule (*insulae* I i II, dalje *In* I i *In* II) (sl. 2, 3). U insulama su pronađeni i prvi ostaci kuća, od kojih zasad nijedna nije u potpunosti istražena. U ovom tekstu stoga ćemo se ponajprije usmjeriti na istražene dijelove ulica i organizaciju prostora unutar grada. Stambena arhitektura bit će samo usputno spomenuta, a njezina cjelovita objava uslijedit će selektivno po završetku istraživanja pojedinih kuća.¹³

13 U *In* I do sada su pronađeni ostaci dviju kuća, u *In* II jedna, dok se u *In* III vide ostaci vjerojatno dviju kuća kojima je temeljni dio arhitekture i dio plašta zidova uklesan u živcu kamenu. Od spomenutih kuća najcjelovitije je istražena kuća 1 u *In* I (kuća I, 1), gdje

selectively upon the completion of research into individual houses.¹³

Streets

The street (*stenopos*) designated with number 1 (*St* 1), extends in the north-south direction, with a width of 3.2-3.3 m depending on where it is measured. Thus far a length of 21.5 m has been examined, with clear indications that it extends farther toward both the north and the south.¹⁴ It consists of two staired pavements -

13 So far, the remains of two houses were found in *In* I, one house in *In* II, while in *In* III the remains of probably two houses are visible - their foundational structure and part of their wall surfaces were carved into the bedrock. Of these houses, the most comprehensively examined was house 1 in *In* I (house I, 1), where the staircase landing, vestibule and flooring of the original Greek house beneath the Roman-era structure have yet to be examined.

14 The street does not have the ideal north-south orientation, rather it deviates from the north roughly 20 degrees westward.

Ulice

Ulica (*stenopos*) označena brojem 1 (*St 1*) proteže se u pravcu S-J, širine je 3,2-3,3 m, ovisno o mjestu mjerenja, a za sada je istražena u dužini od 21,5 m, s jasnim njezinim daljim protezanjem prema sjeveru i jugu.¹⁴ Sastoji se od dvaju stepenastih pločnika-nogostupa, koji se nalaze s objiju strana ulice, naslanjajući se na zidove kuća koji su je omeđivali i kanala za oborinsku vodu između njih (sl. 4, 5). Istočni pločnik dobro je očuvan, s nedostatkom tek poneke ploče ili jednoga njezinog dijela, dok je onaj zapadni sačuvan znatno lošije. Njegovi ostatci vidljivi su samo u sjevernom dijelu istraženog prostora ulice, gdje je preslojen kasnijim popravcima, odnosno niveliranjem hodne površine manjim kamenjem.

Pločnik na istočnoj strani ulice čine četvrtaste kamene ploče dimenzija oko 1,0-1,1 x 0,9-1,1 m, koje su slagane bez vezivnog sredstva na način da jedna naliježe na drugu 15-20 cm, a debljina im je oko 15 cm. Ploče su polagane na živu stijenu i zemljano-kamenu podlogu kako bi se mogle bolje nivelirati. Sa zapadne strane, prema kanalu, građen je zidić od jednog reda kamenja do tri reda, na koji su ploče nalijegale s te strane. Taj zidić je također zidan *u suho*, dosta nepravilno, bez vezivnog sredstva i od klesanaca ne osobito precizno obrađenih. Zidić je mjestimice propao. Ploče pločnika ne završavaju ravno s linijom tog zidića, već je prelaze 5-15 cm, nalaze se *in situ*, neke od njih površinski su raspukle, no većina je zadržala svoj izvoran četvrtasti oblik.

U sjevernom dijelu pločnika nalazi se manji kanal položen pod kutom od oko 25 stupnjeva (sl. 6, b). Dno mu je pokriveno dvama necjelovitim crjepovima, a primjetno je priklesavanje brida zapadnog zida kuće 1 kako bi se voda lakše usmjerila u njega. Kanal je dubine 25 cm, dužine 1,0 m i širine 23-28 cm.

Zapadni pločnik lošije je očuvan od istočnoga i u sjevernom dijelu ulice doživio je naknadne preinake. Vjerojatno je došlo do propadanja hodnih ploča, koje nisu zamijenjene novima, već je s istočne strane izrađen manji zidić čije je kamenje povezano vapnenim mortom, a na površinskom dijelu izrađeno je zemljano poravnanje s površinski posloženim manjim kamenjem uglavnom nepravilnog oblika (sl. 6, d). Ovako izrađena površina dobila je oblik manjeg trijema pred kućom 1 u *In II*, dužina joj je 6 m, na najširem dijelu širine je 1,2 m, dok je na sjevernom, užem, dijelu

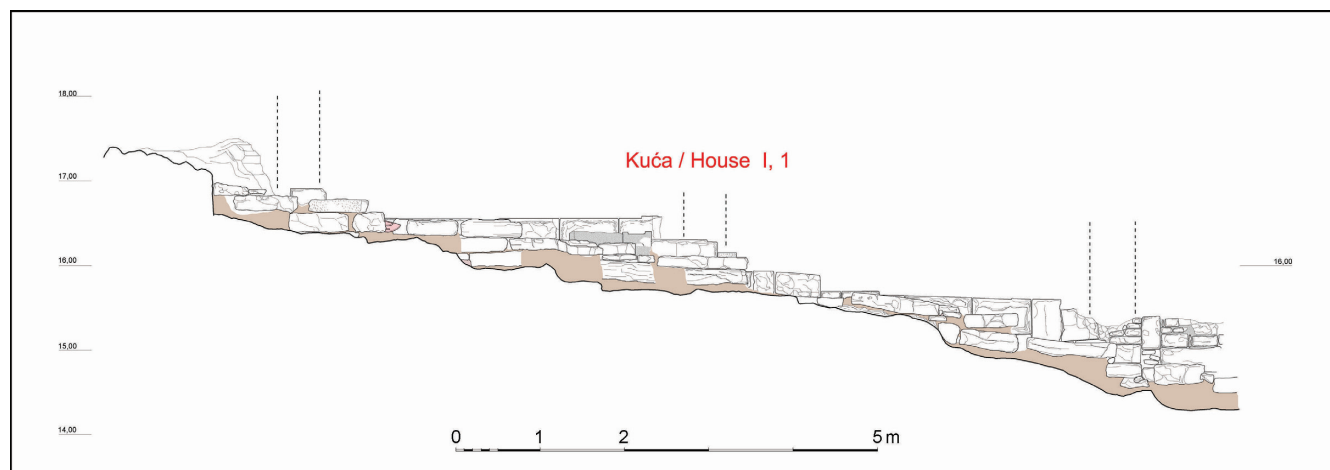


Sl. 4. Pogled na ulicu 1 (*St 1*) (foto: S. Govorčin)
Fig. 4. View of street 1 (*St 1*) (photo: S. Govorčin)

walkways - on each side of the street that touched the houses they bordered, and a rain gutter between them (Fig. 4, 5). The eastern pavement is well preserved, lacking only occasional flagstone or a part thereof, while the western one has been preserved in a much poorer state. Its remains are visible on in the northern part of the examined area of the street, where it was overlaid by subsequent repairs and levelling of the footway with small stones.

preostaje istražiti podest stubišta, ulazni prostor i podnicu izvorne grčke kuće koja se nalazi ispod one rimskodobne.

14 Ulica nema idealnu orijentaciju S - J, već je otklon od sjevera oko 20 stupnjeva prema zapadu.



Sl. 5. Uzdužni presjek (C - C') kroz ulicu 1 (St. 1) i pogled na zid kuće 1 u In I (I, 1) (crtež: B. Penđer)
Fig. 5. Lengthwise cross-section (C - C') through street 1 (St. 1) and view of the wall of house 1 in In I (I, 1) (sketch: B. Penđer)

širine 1,0 m. Na sjevernoj strani završava spojem u živoj stijeni u kojoj je uklesana stuba na koju se vjerojatno naslanjala hodna ploča kako bi se uspostavila komunikacija dalje prema sjeveru. Ispred stuba nalazi se manji kanal, usporedan s onim na istočnoj strani. I ovaj kanal skošen je pod kutom od približno 25 stupnjeva, njegovo dno ne čini crijep, već kamena litica. Dužine je 1 m, širine 20-25 cm i prosječne dubine oko 40 cm (sl. 6, c).

Zbog nedostatka hodnih ploča s južne strane ovog poravnjanja stvorena je veća visinska razlika, koja je bila prevladana stubama, jednom ili dvjema, izrađenima od klesanaca povezanih vapnenim mortom (sl. 6, e). One su temeljene na kamenoj ploči izvornog pločnika; ploče južno od nje nisu sačuvane. Da je i u ostatku ulice u njezinom protezanju prema jugu postojao pločnik poput onog s istočne strane, svjedoči njegov otisak na površini živca kamena koji se ogleda u ravnoj liniji. Čini se da se od trenutka propadanja nogostup s ove strane više nije ni obnavljao, pa je površina kamena živca zapravo služila kao ulica. Sudeći prema keramičkim nalazima, popravci ovog dijela pločnika poduzeti su u 1.-2. st. po. Kr.

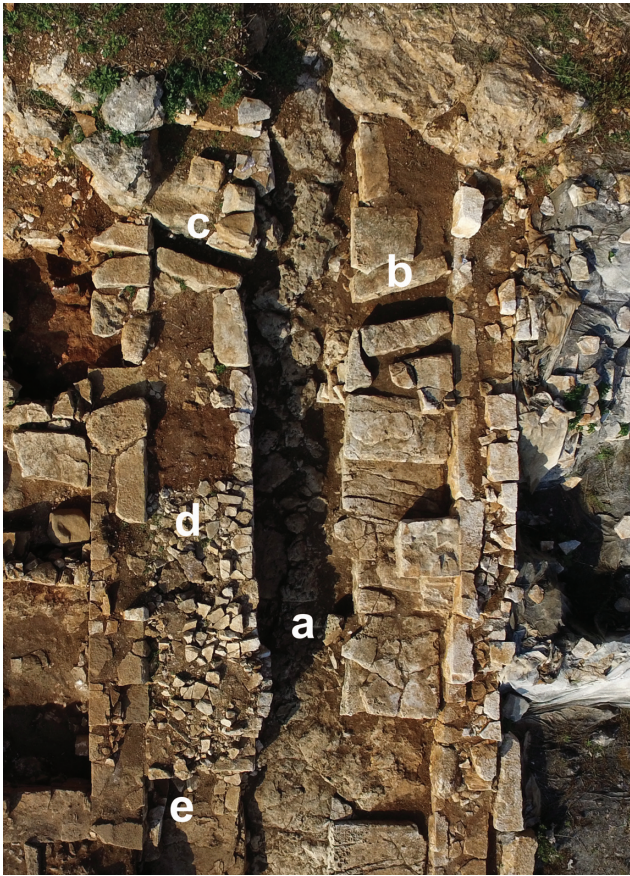
Između opisanih pločnika nalazi se kanal čije je dno neobrađena kamena litica. Bočne stijenke kanala čine kameni zidovi koji pridržavaju i niveliraju ploče nogostupa, no s njegove zapadne strane ta zidna stijenka je, kako smo prije rekli, u većem dijelu propala zajedno s cijelim pločnikom. Širina kanala varira od 0,9 do 1,1 m, što je posljedica naknadnih popravaka zapadnog pločnika. S obzirom na stepenasto protezanje ulice, kanal nije mogao biti pokriven pločama, već je stajao otvoren (sl. 6, a).

Druga ulica (St 2) istovjetna je prvoj, dakle čine je dva stepenasta nogostupa s kanalom između njih; istih je dimenzija kao i prva, no s obzirom na intenzivnu obradu zemljišta, i tanak recentni sloj, u istraženom

The pavement on the eastern side of the street consists of rectangular flagstones with dimensions of ca. 1.0-1.1 x 0.9-1.1 m, which were set without bonding material such that they lay one over the other by approximately 15-20 cm; their thickness is approximately 15 cm. The flagstones were laid on bedrock and an soil-and-stone foundation so that they could be better levelled. On the western side, toward the gutter, a small wall of one to three rows of stones was built onto which the flagstones were laid from that side. This small wall was also erected *dry*, rather irregularly, without bonding material, and using not particularly precisely dressed stones. The wall collapsed at places. The flagstones of the pavement do not terminate flush with the line of this small wall, rather they surpass it by 5-15 cm; they are *in situ*, with some fractures on their surfaces, although most have maintained their original rectangular shape.

There is a smaller gutter on the northern section of the pavement set at roughly a 25 degree angle (Fig. 6, b). Its bottom is covered with two incomplete tiles, and subsequent masonwork on the surface of the western wall on house 1 to more easily channel water into it is visible. The gutter is 25 cm deep, 1.0 m long and 23-28 cm wide.

The western pavement was more poorly preserved than its eastern counterpart, in its northern section it endured subsequent modifications. The flagstones probably crumbled and were not replaced by new ones, rather a small wall was built from the eastern side, with the stones bonded by limestone mortar, while the surface was levelled with soil and a surface layer of mostly irregularly shaped small stones (Fig. 6, d). The surface so rendered acquired the shape of a small porch in front of house 1 in *In II*; it is 6 m long, and 1.2 m at its widest point, while in is 1.0 m wide at the narrower northern part. On the northern side,



Sl. 6. Pogled na sjeverni dio ulice 1 s kanalima (a-c), kamenim poravnanjem uz kuću II, 1 (d) i ostacima stube (e) (foto S. Govorčin)

Fig. 6. View of the northern part of street 1 with gutters (a-c), stone levelling next to house II, 1 (d) and remains of stairs (e) (photo S. Govorčin)

dijelu ona je znatno lošije očuvana od prve (sl. 7). Istočni nogostup sačuvan je u ulomcima dviju ploča, dok je onaj zapadni potpuno uništen; preostao je samo zidić s istočne strane na koji su se ploče nogostupa naslanjale. Taj zidić je ujedno bio i stijenka kanala. Na obje strane sačuvano je zemljano poravnanje s dosta manjeg kamena na koji su nalijegale kamene ploče, a u istočnom dijelu St 2 izoliran je površinski manji sloj morskog šljunka, koji je mogao poslužiti kao zamjena za ploču nogostupa, ili je pak to bila izvorna podloga na koju je postavljena ploča ulice.¹⁵ Ulica je istražena u dužini od 7 m.

Uz ove dvije ulice na istočnoj strani grada Gabričevićima su istraživanjima krajem pedesetih i početkom šezdesetih godina prošlog stoljeća pronađene još tri, sve s karakterističnim stepenastim protezanjem svojstvenim za gradove građene na padinama. U svima se također mogu vidjeti i ostatci kanala za odvodnju. Na ove ulice osvrnut ćemo se kasnije.



Sl. 7. Pogled na istraženi dio ulice 2 (St 2), s kanalom u sredini i zidićima koji su pridržavali ploče nogostupa (foto: B. Čargo)

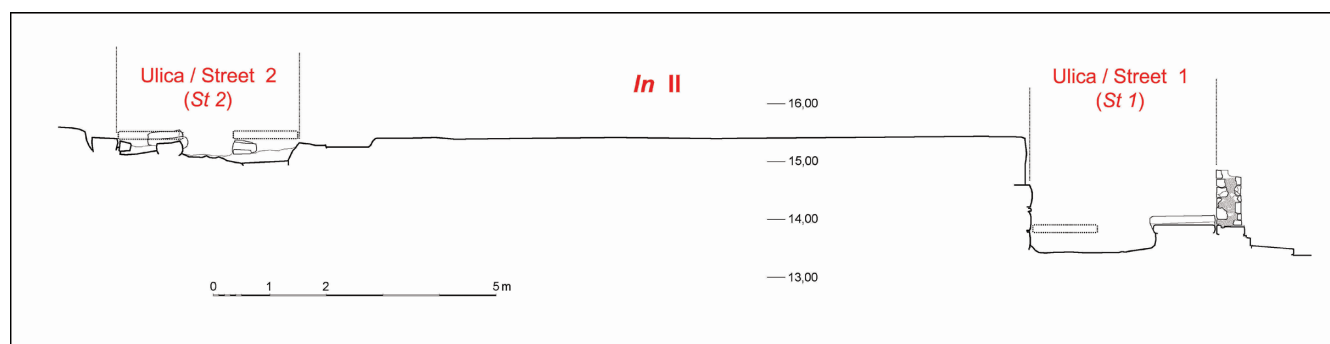
Fig. 7. View of the researched part of street 2 (St 2), with a gutter in the middle and small walls that held the walkway flagstones (photo: B. Čargo)

it terminates into the bedrock, in which a stair was carved to accommodate the walkway slab in order to facilitate communication farther northward. There is a small gutter in front of the stair, parallel to the one on the eastern side. This gutter is also set at a roughly 25 degree angle, but its bottom is not lined with tiles, rather it is solid rock. It is 1 m long, 20-25 cm wide and has an average depth of approximately 40 cm (Fig. 6, c).

This levelling done due to a lack of flagstones created a discrepancy in heights to its south, which was overcome with one or two stairs, made of dressed stone bonded with limestone mortar (Fig. 6, e). They were set on the flagstones of the original pavement, while the other, more southerly flagstones had not been preserved. That there was a pavement in the remainder of the street as it continued southward like the one on the eastern side is indicated by its imprint in the surface of the bedrock, which is visible in a straight line. It would appear that from the moment of its dilapidation, the walkway on this side was not even restored, so the surface of the bedrock served as the street. The repairs to this part of the pavement, based on the ceramic finds, occurred in the 1st/2nd century AD.

Between the above-described pavements there is a gutter, the bottom of which is unworked solid rock. The side walls of the gutter consist of stone walls that hold and level the pavement flagstones, but on their western side, these wall sides have, as already noted, become dilapidated together with the entire western pavement. The width of the gutter varies from 0.9 to 1.1 m, which is the result of subsequent repairs to the western pavement. Given the stair-like structure of

¹⁵ Čargo 2013, str. 12-13.



Sl. 8. Presjek (B - B') kroz ulice 1 i 2 (St. 1 i 2) (crtež: B. Penđer)

Fig. 8. Cross-section (B - B') through streets 1 and 2 (St. 1 and 2) (sketch: B. Penđer)

Ovako građene ulice s kamenim pločnicima omogućavale su lagan uspon padinom, no zasigurno će buduća istraživanja na nekim mjestima pokazati da su se niveletne razlike na padini rješavale ne samo ovakvim pločama nego i usijecanjem stuba s manjom gazišnom plohom u živu stijenu na mjestima gdje je strmina padine veća. Pojedinačno usijecanje jedne stube u živac primjetno je u *St 1* u zapadnom pločniku uz sjeverni kut kuće iznad kanala; u zapadnom pločniku *St 2* uklesane su dvije stube. Klesanje stuba unutar komunikacija često se primjenjuje kod gradova na padini.¹⁶

Odnos među ulicama pokazuje da su istog smjera i dimenzija, ali različitih niveleta. Obje su trasirane na živcu kamenu, i graditelji nisu posezali za ukopavanjem u kamenu liticu kako bi im izjednačili niveletne razlike, jer bi to istodobno tražilo da se i cijeli prostori kuća unutar inzula ukopavaju, što bi bilo nelogično i nepotrebno. Graditelji su nastojali sa što manje zahvata postići ukopavanje u živu stijenu, pa su samo na nekim mjestima poravnavali teren radi lakšeg naliježanja ploča.¹⁷ Sukladno tome *St 2* se nalazi na nešto višoj niveleti u odnosu na *St 1*. Mjereći ih u istoj liniji, visinska razlika među njima je oko 1,5 m (sl. 8). Također, sukladno nagibu žive stijene *St 3* bit će vrlo vjerojatno na većoj visinskoj koti u odnosu na *St 2*.

the street, the gutter could not be covered with tiles, rather it remained open (Fig. 6, a).

The second street (*St 2*) is identical to the first, meaning that it consists of two staired pavements with a gutter between them and it has the same dimensions as the first, but given the intensity of land cultivation and the thinness of the recent layer, it has been much more poorly preserved than it in the examined portion (Fig. 7). The eastern pavement has been preserved in fragments of two flagstones, while the western one has been entirely destroyed; all that has been preserved is the small wall from the eastern side on which the pavement's flagstones rested. This small wall was also formed the side of the gutter. The earthen levelling fill, containing a considerable amount of small stones that overlaid the flagstones, has been preserved on both sides, while on the eastern side of *St 2* a smaller layer of marine gravel has been isolated. It may have been used to replace the pavement flagstones, or it may have also been the original base onto which the street's flagstones were set.¹⁵ The street has been researched to a length of 7 m.

Besides these two streets on the eastern side of the city, three more were discovered during Gabričević's research at the end of the 1950s and early 1960s, all with the characteristic staired course typical of cities built on slopes. The remains of precipitation gutters can also be seen in all of them. These streets will be considered below.

Streets built in this manner with stone pavements allowed for a gentle ascent along the slope, but future research will certainly show that the differences in level on the slope were resolved not only using such flagstones but also by cutting stairs with smaller walking surfaces into the bedrock at places where the slope was steeper. Individual cuts of a stair into solid rock was noted in *St 1* in the western pavement along the northern corner of a house above the gutter, and also

16 Vidi primjerice stubište usječeno u živu stijenu grada Orika (*Orikos*) u epirskoj Haoniji. Consagra 2011, str. 11, fig. 5; Berti *et al.* 2013, str. 100-101, Pl. 24,1. O Prieni vidi Giuliano 1966, str. 126-127.

17 Za sada je primjetno da su veće intervencije u priklesavanju žive stijene rađene za potrebe gradnje kuća u prostoru *In III*, gdje ostatci kuća koji su vidljivi nad zemljom pokazuju da je na tom mjestu živac kamen klesan najviše do visine od oko 1 m. I kod sve druge dosad pronađene stambene arhitekture primjetno je klesanje i prilagođavanje živca u temeljnoj razini objekta, no to nisu veliki zahvati, a rađeni su u svrhu stvaranja pravih kutova i ravne linije zidova kuća.

15 Čargo 2013, pp. 12-13.



Sl. 9. Pogled na ulicu u zapadnom dijelu grada, s vidljivim zidom kuće i stepenastim pločnikom uz nju. Istraživanja Gabričević 1959. (foto: Ž. Rapanić)
 Fig. 9. View of the street in the western section of the city with visible wall of the house and the stair-like pavement extending alongside it. Research by Gabričević, 1959 (photo: Ž. Rapanić)

Uspoređujući izgled ovih ulica s onima koje su pronađene Gabričevićevim istraživanjima na zapadnoj strani grada, lako je zamijetiti isti izgled i istu tehniku gradnje. Gabričevićevim istraživanjima pronađene su tri ulice, sve istog smjera, S-J. Prva među njima, ujedno i najbolje očuvana, pokazuje zapadni nogostup ulice izrađen od velikih kamenih ploča s dijelom kanala s njegove istočne strane (sl. 9).¹⁸ Nogostup od kamenih ploča u drugoj ulici nije se sačuvao (slično kao i kod *St 2* u jugoistočnom dijelu grada); preostao je samo dio jedne ploče koji se vidi u sjevernom profilu sonde (sl. 10). Ovdje je dobro sačuvan zid koji je predstavljao istočnu zidnu stijenku kanala ove ulice i na koji su se naslanjale kamene ploče stepenastog nogostupa.¹⁹

18 Ova istraživanja na žalost nikada nisu objavljena, osim jedne bilješke s fotografijom; Gabričević 1968, str. 32-33. Dokumentacija je zagubljena tako da se ne može precizno odrediti mjesto istraživanja; može se samo ustvrditi da su pronađeni ostatci stambenih objekata s ulicama bili na zapadnoj strani grada. Gabričević 1968, str. 12, plan grada, položaj M.

19 Iz fotografije je vidljivo da su istraživači, ne našavši ostatke kamenih ploča nogostupa, iskopali temeljnu podlogu na kojoj su one ležale. Prema sačuvanim fotografijama može se zaključiti da je bila pronađena

in the western pavement of *St 2* carved into two stairs. The cutting of stairs insider communication routes was often done in cities on slopes.¹⁶

The relationship between the streets shows that they have the same directions and dimensions but different levels. Both were laid out on the bedrock, and the builders did not resort to digging into the stone to even out their differences in level, because this would have required digging in the entire rooms of houses inside the insulae, which would have been illogical and unnecessary. The builders attempted to dig into the bedrock as little as possible, so they only levelled the terrain at certain places in order to more easily lay down the flagstones.¹⁷ In this vein, *St 2* is at a somewhat higher level than *St 1*. When measured along the same vertical alignment, the difference between them is approximately 1.5 m. Additionally, in line with the grade of the solid rock of *St 3* it is very likely that it will be at a higher elevation than *St 2*. (Fig. 8).

Comparing the appearance of these streets with those found during Gabričević's research on the western side of the city, it is easy to note their identical appearance and construction techniques. Three streets were found during his research, all running in the same north-south direction. The first among them, also the best preserved, shows the western walkway of the street made of large flagstones with part of a gutter from its eastern side (Fig. 9).¹⁸ The walkway made of flagstones in the second street has not been preserved (as was the case with *St 2* in the south-eastern part of the city), with only part of a single flagstone remaining, which can be seen in the northern profile of the

16 See, for example, the stairs cut into solid rock in Orikos in Chaonia, Eprius, Consagra 2011, p. 11, fig. 5; Berti *et al.* 2013, pp. 100-101, Pl. 24,1. For Priene, Giuliano 1966, pp. 126-127.

17 For now it is noticeable that there were major interventions which involved carving into solid rock for the needs of housing construction in the area of *In III*, where the remains of houses visible above ground show that the cut into the bedrock reached a maximum of 1 m. In all other residential architecture found thus far, the carving and adaptation of the bedrock was observed at the foundational level of the structure, but there were no major undertakings, and they were done with the aim of creating right angles and straight lines for the house walls.

18 Unfortunately, this research was never published, rather only a single note with a photograph, Gabričević 1968, pp. 32-33. The documentation was lost, so that the precise location of the research cannot be ascertained, rather one may only state that the discovered remains of residential structures with streets were found in the western side of the city, Gabričević 1968, p. 12, city street map, position M.



Sl. 10. Pogled na ulicu u zapadnom dijelu grada s vidljivim zidom kuće i ostatkom zidića na koji su se naslanjale kamene ploče stepenastog nogostupa. Istraživanja Gabričević 1959. (foto: Ž. Rapanić)
Fig. 10. View of the street in the western section of the city with visible wall of the house and the remainder of the small wall on which the flagstones of the stair-like walkway rested. Research by Gabričević, 1959 (photo: Ž. Rapanić)

Gabričevićeva istraživanja, dakle, potvrđuju postojanje jednako građenih ulica i na suprotnoj, zapadnoj strani grada. Iako na temelju fotografija ne možemo utvrditi njihovu točnu širinu, s obzirom na način gradnje i istovjetan nogostup u ulici koja je ovdje prva opisana, logično je pretpostaviti kako se radi o ulicama istih (ili vrlo sličnih) dimenzija.

Stambeni blokovi koji su se formirali između ulica bili su uski, širine oko 13 m, izduženi, po dužoj osi orijentacije S-J. Ovako prikazan plan Ise jasno pokazuje njezinu ortogonalnost, kako su pretpostavili svi raniji istraživači.²⁰

Kanali u ulicama značajka su mnogih gradova građenih na padinama. U Prieni (*Priene*), gradu koji je orijentiran prema jugu kao i Issa, u stepenastim ulicama smjera S-J nalaze se kanali za vodu.²¹ Izgled tih ulica

još jedna ulica, iste orijentacije S-J, kojoj također nije sačuvan nogostup; ni ona nije bila istražena u cijeloj širini (foto-arhiv Arheološkog muzeja u Splitu, br. negativna 5132).

20 Gabričević 1958, str. 117-118; Gabričević 1968, str. 22-23; Cambi 2002, str. 49-55; Cambi 2003, str. 18-19; Cambi 2010, str. 30; Katić 2009, str. 74-82.

21 Giuliano 1966, str. 126-127.

test trench (Fig. 10). Here there is a well-preserved wall which formed the eastern wall surface of the gutter in this street, onto which the flagstones of the stair-like walkway leaned.¹⁹

Gabričević's research therefore confirmed the existence of streets built identically on the opposite, western side of the city. Even though their exact width cannot be ascertained on the basis of photographs, given the construction method and the identical walkway on the street described first, it is logical to assume that these were streets of identical (or very similar) dimensions.

The residential blocks that formed between the streets were narrow, approximately 13 m wide, oblong and oriented on the north-south axis. The layout of Issa presented so clearly shows that orthogonal character as assumed by all earlier researchers.²⁰

Gutters are present in the streets of many cities built on slopes. In Priene, a city with a southward orientation like Issa, there are runoff gutters in the stair-like streets with north-south orientation.²¹ The appearance of these streets is not entirely the same as those in Issa, because they are on a steeper hill slope, so the stairs themselves are thereby steeper and their walking surfaces are narrower. The case in Orikos, in Epirus, is similar, where the stairs were carved into solid rock on the slope, and the gutter is on the western edge of the street.²²

Considering the territory of central Dalmatia, thus far the remains of a 2.8 m wide street with two walkways on both sides of the street and a gutter in the middle were discovered in neighbouring Pharos, which adhered to a model similar to Issa's.²³ Thus, the same model can be seen, with the only difference being that in the street in Pharos the stair solution is absent, because the terrain is on a gentle, almost flat grade.

19 From the photographs it is apparent that the researchers, not having found the remains of pavement flagstones, dug out the foundation base on which they had rested. According to preserved photographs, it may be concluded that another street had been discovered with the same north-south orientation, on which the walkway had also not been preserved, nor was it examined over its entire width (photographic archives of the Archaeological Museum in Split, negative no. 5132).

20 Gabričević 1958, pp. 117-118; Gabričević 1968, pp. 22-23; Cambi 2002, pp. 49-55; Cambi 2003, pp. 18-19; Cambi 2010, p. 30; Katić 2009, pp. 74-82.

21 Giuliano 1966, pp. 126-127.

22 Berti *et al.* 2013, pp. 100-101, Pl. 24,1.

23 For data tied to the street, I would like to thank my colleague J. Jeličić Radonić. See also Popović 2011, p. 723.

nije sasvim isti kao isejski, jer se nalaze na strmijoj padini brda, pa su samim time i stube strmije, a gazišna ploha je uža. Slično je i s Orikom (*Orikos*) u Epiru, gdje je u ulicama na padini stubište uklesano u živu stijenu, a kanal se nalazi u zapadnom rubu ulice.²²

Na prostoru srednje Dalmacije, u Isi susjednom Faru (*Pharos*) za sada su, slično isejskom modelu, otkriveni ostatci ulice širine 2,8 m, s dva nogostupa uz obje strane ulice i kanalom u sredini.²³ Vidimo, dakle, isti model gradnje, s tom razlikom što u farskoj ulici izostaje stepenasto rješenje jer je teren na blagoj padini, gotovo ravan.

Ulice s kanalom nalazimo i u Sikulima (*Siculi*) u blizini Kaštel Štafilića u Kaštelima, gdje ih je pronađeno deset. Te su ulice uže od isejskih, širine 2,5-2,8 m, s iznimkom središnje, koja je široka 4 m.²⁴ I u Sikulima također izostaje stepenasto rješenje, jer se gradić nalazi u ravnicu, slično Faru. Popločanje se najčešće nalazi uz istočni dio ulice, dok se u drugom dijelu ulice nalazio kanal.

U Traguriju (*Tragurion*), ulica pronađena u središnjem dijelu gradskog prostora nema kanala, a široka je oko 3 m.²⁵

Vodovodni sustavi

Postojanje kanala u svim dosad pronađenim ulicama u Isi pokazuje način kako su graditelji rješavali problem drenaže i odvodnje voda za vrijeme kiša i periodičnih velikih kišnih bujica. Kanali su orijentirani usporedno s pravcem protezanja ulica i sudeći prema dimenzijama mogli su drenirati velike količine vode. Odvodni kanali javnih odvodnih sustava u grčkim gradovima vrlo se često grade u smjeru osi glavnih ulica,²⁶ a njihovo smještanje u ulicama orijentacije S-J u Isi je sasvim logično jer se grad nalazi na padini.²⁷ S obzirom na nepostojanje izvora na višim padinama Gradine, kanali su građeni ponajprije za odvodnju i usmjeravanje kišnice prema moru, dok se jedan dio zasigurno kanalizirao i filtrirao u vodospremnike i krške jame koje su se mogle koristiti kao prirodne

Streets with gutters can also be found in Siculi, situated near Kaštel Štafilić in Kaštela, where ten of them were found. These streets are narrower than those in Issa, with a width of 2.5-2.8 m, with the exception of the middle one which is 4 m wide.²⁴ The stair solution is also absent in Siculi, given that the town is on a plain similar to Pharos. The stone lining is most often on the eastern side of the street, while the gutter was on the opposite side.

In Tragurion, the street located in the central section of the urban space has no gutter, and its width was approximately 3 m.²⁵

Water supply system

The existence of gutters in all streets discovered thus far in Issa illustrates the method employed by the builders to resolve the problem of drainage and runoff during periods of precipitation and periodic heavier rain torrents. The gutters were oriented parallel to the direction in which the streets ran, and given their dimensions they could drain considerable quantities of water. The construction of runoff gutters as a public drainage system in the Greek cities was quite often oriented in the directional axis of the main streets,²⁶ and their installation in streets with north-south orientation in Issa was entirely logical, because the city was situated on a slope.²⁷ Given the lack of water sources on the higher slopes of Gradina, the gutters were made primarily to drain and route precipitation toward the sea, while a portion of it was certainly channelled and filtered into water basins and karst pits that could be used as natural cisterns, and which were recorded in certain parts of the urban zone.²⁸

22 Berti *et al.* 2013, str. 100-101, Pl. 24,1.

23 Na podacima vezanim uz ulicu zahvaljujem kolegici J. Jeličić Radonić. Vidi i Popović 2011, str. 723.

24 Kamenjarin, Šuta 2007, str. 460-461; Brusić 2010, str. 147; Šuta 2011a, str. 35-36.

25 Kovačić 2010, str. 139.

26 Sconfienza 1996, str. 34.

27 Iako nije isključeno da će buduća istraživanja pokazati i postojanje nekog kanala u *plateiais*, ti kanali zasigurno neće imati takvu važnost kanaliziranja vode kao ovi u *stenopois*.

24 Kamenjarin, Šuta 2007, pp. 460-461; Brusić 2010, p. 147; Šuta 2011a, pp. 35-36.

25 Kovačić 2010, p. 139.

26 Sconfienza 1996, p. 34.

27 Even though one cannot discount the possibility that future research will demonstrate the existence of a gutter in the *plateiais*, these gutters certainly will not have such importance to the channelling of water as these in the *stenopois*.

28 In the central part of Issa's urban zone, there is a large cistern that was probably used since the city was established. A vaulted Roman-era cistern and a complex of karst pits used as natural cisterns are nearby, Gabričević 1968, p. 12, city map, positions N and O, pp. 34-35; Katić 2009, pp. 79-80, 143. Given the relief character of Gradina, the discovery of numerous such examples of the use of karst pits as cisterns is to be expected. One well, roughly 4 deep and 1.5 m wide, was in the southern section of Gradina near the sea, Gabričević 1958, p. 115, city map, position A, p. 120. Gabričević left open the possibility that was a spring in the area of

cisterne, a zabilježene su u nekim dijelovima gradskog prostora.²⁸

Zdenci i cisterne u Isi svakako su morali imati važnu ulogu u opskrbi vodom pojedinih domaćinstava. To je slučaj i kod grčkih gradova u Velikoj Grčkoj, na Siciliji, u južnom Iliriku i Epiru, pa i onih koji su se nalazili u blizini riječnih tokova. Voda je bila zajedničko dobro i pravo za sve, pa je polis stvarao strukture za opskrbu i javnu distribuciju, koja je dopunjavana zdencima i cisternama u privatnoj izvedbi.²⁹ Uređeni sustav zbrinjavanja kišnice i njezine odvodnje izgradnjom vodovodnih sustava te njezino kanaliziranje u pojedine vodospremnike bila su za Isejce pitanja od životnog značenja.

U sjevernom dijelu istraženog dijela *St 1* nalaze se dva manja kanala unutar pločnika, koji su kišnicu usmjeravali od kuće prema glavnom uličnom kanalu.

28 U središnjem dijelu gradskog prostora Ise nalazi se veća cisterna, vjerojatno korištena još od osnivanja grada. U njezinoj blizini nalazi se i rimska cisterna građena na svod te sklop krških jama koje su se koristile kao prirodne cisterne, Gabričević 1968, str. 12, plan grada, položaji *N* i *O*, str. 34-35; Katić 2009, str. 79-80, 143. S obzirom na reljefnost Gradine, moglo bi se pronaći više primjera korištenja manjih kraških jama kao cisterni. Jedan zdenac, dubine oko 4 m i širine oko 1,5 m, nalazio se u južnom dijelu Gradine, blizu mora. Gabričević 1958, str. 115, plan grada, položaj *A*, str. 120. Gabričević ostavlja otvorenim mogućnost postojanja izvora na prostoru termi. Gabričević 1958, str. 120; Gabričević 1968, str. 27-28, 34. Vjerojatna cisterna unutar stambenog objekta nalazila se uz unutarnje lice istočnoga gradskog bedema, Čargo 2003, str. 418-419, 459-461.

Cisterne iz rimskog razdoblja pronađene su i izvan grada na širem prostoru viške uvala: na prostoru Martvila (jugozapadne nekropole), Abramić 1949, str. 10, 14; Kirigin, Marin 1985, str. 54-55; Čargo, Miše 2010, str. 16-17; dvije na poluotočiću Prirovu, Čargo 2003, str. 462, sl. 19-20; jedna, s mozaičnom podnicom, u predjelu Valica, Fisković 1968, str. 164; dvije, dijelom uklesane u kamenu liticu, uz obalu s istočne strane grada, u uvali Stonca, Gabričević 1958, str. 120; Gabričević 1968, str. 32, bilj. 36; Kirigin 1983, str. 28; Čargo 2003, str. 424, 468, sl. 29. Ove potonje dimenzije odgovaraju veličini pojedinih prostorija istražene stambene arhitekture, te stoga nikako ne treba isključiti mogućnost da zapravo nije riječ o cisternama, nego o nekom objektu funkcionalno vezanom uz luku, koji je mogao biti i iz helenističkog razdoblja. No s obzirom na stanje sačuvanih ostataka i neistraženost njihova okoliša, teško je bilo što sigurnije reći o njima kako bi se izišlo iz hipotetskih okvira.

29 O sustavu odvodnje i zbrinjavanja vodnih resursa na primjeru nekih velikogrčkih gradova vidi Sconfienza 1996, str. 25-66.

Wells and cisterns in Issa certainly had to have played a major role in supply water to individual households. This was also the case in the Greek cities of Magna Graecia, Sicily, southern Illyricum and Epirus, and even those situated in the vicinity of large rivers. Water was a common resource to which everyone was entitled, so the polis created structures for its supply and public distribution, which was supplemented with privately-held wells and cisterns.²⁹ For the Issaeans, it was an extremely vital matter to have a regulated system to receive and drain runoff waters by constructing a water supply system that could channel it into individual water holding basins.

In the northern section of the researched part of *St 1*, there are two small gutters inside the pavement which channelled runoff from the houses to the main street gutter. Both gutters were set at a place where we assume there were houses in *In I* and *II*, so that the obvious intention was to prevent the flooding of these houses by torrents during heavy rainfall (Fig. 6, b-c). The eastern gutter was lined with tiles which improved water drainage, while such tiles are lacking in the gutter on the opposite side.

In the case of the central gutters in the city streets, it may be stated with certainty that these were public resources. The above-described smaller gutters inside *St 1* were exclusively meant to prevent water from

the baths, Gabričević 1958, p. 120; Gabričević 1968, pp. 27-28, 34. A probable cistern inside a residential structure was situated on the inside face of the city's eastern wall, Čargo 2003, pp. 418-419, 459-461.

Roman-era cisterns were also found outside of the wider area of Vis Bay: in the area of Martvilo (the south-western necropolis), Abramić 1949, pp. 10, 14; Kirigin, Marin 1985, pp. 54-55; Čargo, Miše 2010, pp. 16-17, two on the small Prirovo Peninsula, Čargo 2003, p. 462, Fig. 19-20, one with a floor mosaic in the Valica section, Fisković 1968, p. 164, two partially carved into solid rock next to the seashore to the eastern side of the city in Stonca Cove, Gabričević 1958, p. 120; Gabričević 1968, p. 32, note 36; Kirigin 1983, p. 28; Čargo 2003, pp. 424, 468, Fig. 29. These latter examples, based on their dimensions, correspond to the size of individual rooms examined in the residential architecture, so one should not discount the possibility that these were not cisterns but rather some structure functionally tied to the harbour, which could even date to the Hellenistic Era. However, given the state of preservation of the remains and the fact that their surroundings have not been researched, it is difficult to make anything but conjectural assertions about them.

29 On the system of drainage and storage of water resources based on the example of certain Magna Graecian cities, see Sconfienza 1996, pp. 25-66.

Oba su kanala postavljena na mjestu gdje pretpostavljamo da su se nalazili ulazi u kuće u *In* I i II, čime se očito željelo spriječiti plavljenje kuća od bujica za vrijeme velikih kiša (sl. 6, b-c). U istočnom kanalu nalaze se i crjepovi koji su bili ugrađeni radi poboljšavanja dreniranja vode, dok u suprotnom kanalu oni nedostaju.

Za središnje kanale unutar gradskih ulica nedvojbeno se može tvrditi da se radi o javnom dobru. Isključiva namjena opisanih manjih kanala unutar *St* 1 bila je sprječavanje prodora vode u kuće te su najveće koristi od njihove gradnje imali upravo vlasnici objekata. Stoga bismo mogli pomišljati da su oni izgrađeni u privatnoj izvedbi. Međutim, sve ukazuje na to da su građeni istodobno s uličnim pločnicima i središnjim kanalom; stoga se, s obzirom na malu istraženost, treba suzdržati od konačnih zaključaka. Manji kanali bili su pokriveni pločama, koje se nisu sačuvale.

Već je spomenuto da se u jedinoj zasad pronađenoj ulici u Faru nalazi i kanal u njezinoj sredini, rađen s istom namjenom. U Sikulima je, pak, zabilježeno da su se ulica i kanal u njoj koristili i kao deponij otpada.³⁰ Sikuli prestaju s postojanjem krajem 1. st. pr. Kr. ili poč. 1. st. po. Kr., kada u njih car Klaudije naseljava veterane, čemu prethodi potpuno rušenje naselja. Stoga arheološki potpuno zatvoreni i intaktni sloj u Sikulima jasno potvrđuje da se kanal koristio kao deponij.

Možemo pretpostaviti da je slična situacija bila i u Isi. Naime, u mnogim grčkim gradovima stambeni blokovi unutar inzula (dva bloka ili više njih) odijeljeni su uskom uličicom (tal. *ambitus*), koja je služila za kanaliziranje oborinskih i otpadnih voda.³¹ Logično je pretpostaviti da je ista situacija bila i u Isi u središnjem uličnom kanalu.³² Ulomci životinjskih koštanih ostataka pronađeni su unutar *St* 1 najviše u sloju 3. st. po. Kr., i to u njezinom sjevernom dijelu više negoli u južnom, gdje je propao zapadni pločnik.³³

Otvoreni kanal bio je izložen kišnim bujicama koje su ga periodično ispirale, a s obzirom na kosinu

seeping into homes and the greatest benefit from their construction was derived by the owners of these structures. It is therefore conceivable that they were built by private arrangement. However, all indications are that they were built at the same time as the street pavement and the central gutter, so that, given the limited scope of the research, one must refrain from drawing any final conclusions. The smaller gutters were covered with tiles that have not been preserved.

It has already been noted that in one of the streets found at this point in Pharos, there was also a gutter running down its middle, crafted with the same intention. In Siculi, however, it was noted that the street and the gutter in it were also used to dispose of waste.³⁰ Siculi ceased its existence at the end of the 1st century BC or at the onset of the 1st century AD, when Emperor Claudius resettled veterans there, but had the settlement entirely demolished prior to that. The archeologically entirely closed and intact layer in Siculi thus clearly confirms that the gutter was used to discard waste.

A similar situation may be assumed in Issa. In many Greek cities in which there were two or more residential blocks inside an insula, they were separated by a narrow street (Ital. *ambitus*) that served to drain precipitation and wastewater.³¹ It is logical to assume that the same situation applied in Issa in the central street gutter.³² Fragments of bone remains were found inside *St* 1, mostly in the layer from the 3rd century AD, and more in its northern than in its southern section, where the western pavement decayed.³³

The open gutter was exposed to rain torrents that periodically washed it out, and given the grade of the slope and the gutter's relative shallowness, the torrential waters flowed rapidly and certainly rinsed it quite thoroughly. As a consequence, the stratigraphic units inside the gutter disappeared and were then reformed, which raises the question of how reliably they can be

30 Kamenjarin, Šuta 2007, str. 461; Šuta 2011a, str. 36.

31 Sconfienza 1996, str. 33-34. Prisutnost uske ulice u funkciji odvajanja stambenih blokova i drenaže voda dokumentirana je u mnogim grčkim gradovima. Za neke primjere u gradovima Sicilije vidi literaturu. Lissi Caronna 1983-1984, str. 204, bilj. 18.

32 Miše 2010, str. 79.

33 U sjevernom dijelu istraženog dijela u *St* 1, unutar stratigrafske jedinice 35.000, pronađen je značajan broj koštanih životinjskih ulomaka u sloju crne boje, što je posljedica raspadanja organskih tvari. Po svoj prilici radilo se o otpadnom materijalu iz obližnjih kuća. Pretpostaviti je da je ulica služila kao mjesto za bacanje otpada iz kuća od trenutka njezine gradnje.

30 Kamenjarin, Šuta 2007, p. 461; Šuta 2011a, p. 36.

31 Sconfienza 1996, pp. 33-34. The presence of narrow streets which served to separate the residential blocks and to drain water has been documented in many Greek cities. For some examples in the Sicilian cities, see, Lissi Caronna 1983-1984, p. 204, note 18.

32 Miše 2010, p. 79.

33 In the northern part of the research portion of *St* 1, a considerable number of animal bone fragments were found inside stratigraphic unit 35.000 which has assumed a black tone because of the decomposition of organic matter in it. This was likely waste from the nearby houses. It may be assumed that the street was used as a place to discard household waste from the moment of its construction.

padine i relativnu plitkost kanala bujične vode bile su brze i sigurno su ga temeljito ispirale. Posljedica toga bilo je nestajanje, a zatim i ponovno nastajanje i miješanje stratigrafskih jedinica unutar kanala, pa se postavlja pitanje njihove pouzdanosti prilikom datiranja.³⁴ Najstariji pronađeni materijal pripada *Gnathia* keramici i crnopremazanoj keramici s kraja 3. st. pr. Kr., a tome odgovara i pronađeni novac.³⁵ Tako kasno datirani materijal zapravo potvrđuje da unutar kanala nije sačuvana intaktna slojevitost, već su oni najstariji slojevi odneseni bujicama. Međutim, ulicu koja je građena istovremeno sa stambenim objektima uz nju, ne možemo promatrati izolirano od njih. Stoga će tek potpuna analiza keramičkih ulomaka iz kuća pomoći u dataciji gradnje ulice. Zadnji tragovi korištenja kanala, odnosno ulice su iz sredine 4. st. po. Kr.³⁶

Inzule

Otkriće ulica pokazuje i raspored inzula; tako se *In I* nalazila između istočnih gradskih zidina i *St 1*. Njezina širina mjerena uz sjeverni zid kuće 1 iznosi 7,8 m, dok joj je širina uz južni zid kuće 8,9 m. Na ovom mjestu kuća zahvaća čitavu širinu inzule, a od gradskih zidina udaljena je 0,2-0,7 m. Kako je razvidno iz dimenzija, inzula nije bila ujednačene širine, jer se istočni gradski bedem trapezoidno širi prema jugu, pa je na nižim kotama grada *In I* bivala sve šira.

Druga inzula, između *St 1* i *St 2*, širine je oko 13 m, jednako kao i *In III*, a unutar njih uočavamo postojanje središnjeg zida, koji ih dijeli na dva jednaka dijela³⁷ (sl. 3).

Pronađene su inzule, dakle, široke oko 13 m, s izuzetkom prve, koja nema ujednačenu širinu, zbog linije bedema koja nije usporedna s pravcem protezanja *St 1*. Iako ovakav urbanistički model planiranja grada s

dated.³⁴ The oldest found materials are Gnathian and Black-gloss ware from the end of the 3rd century BC, which corresponds to the coins found there as well.³⁵ Such late dated material actually confirms that intact layers were not preserved in the gutter, rather the oldest layers were taken away by torrents. However, the street that was constructed at the same time as the residential structures in it cannot be considered without them. Thus a complete analysis of the potsherds from the houses will help to date the street's construction. The final traces of use of the gutter and the street date to the 4th century AD.³⁶

Insulae

The discovery of the streets also revealed the disposition of the insulae, so that *In I* was situated between the eastern city wall and *St 1*. Its width measured along the northern wall of house 1 is 7.8 m, while its width along the house's southern wall is 8.9 m. At this point the house covered the entire width of the insula, and it was 0.2-0.7 m from the city walls. As seen by the aforementioned dimensions, this insula did not have a uniform width, given that the eastern city wall extended southward trapezoidally, so that in the lower points of the city *In I* became progressively wider.

The other insula between *St 1* and *St 2* is approximately 13 m wide, just like *In III*, while between them a central wall dividing them into two equal halves is visible³⁷ (Fig. 3).

It is therefore apparent that the discovered insulae are approximately 13 m wide, with the exception of the first, which does not have a uniform width due to the line of the city wall which did not run parallel to the direction of *St 1*. Although such an urban planning

34 U preliminarnoj obradi keramičkog materijala pronađenog u kvadrantima unutar ulice M. Miše je ustanovila kako je došlo do miješanja slojeva. Miše 2010, str. 76.

35 Najstariji pronađeni novac je novac Dirahija, datiran u 3.-1. st. pr. Kr. (SGN III, Pl. 10, br. 501-512; inv. br. AMS 14012), i Kartage, 221.-210. g. pr. Kr. (SGN III, Pl. 12, br. 309-313; AMS inv. br. 14002). Na pomoći pri dataciji novca zahvaljujem kolegici Maji Bonačić Mandinić.

36 Datirano prema novcu Konstancija II., 351.-355. g. (RIC VIII, br. 121; inv. br. AMS 14011).

37 U *In III* površinski su vidljivi ostatci stambene arhitekture koje je uočio već B. Gabričević povezujući ih sa stambenom namjenom, odnosno temeljima kuće koji su usječeni u živac kamen. Gabričević 1968, str. 32, bilj. 36. Površinski ostatci stambene arhitekture vidljivi su i na mjestu pretpostavljene *In IV*.

34 In the preliminary analysis of the ceramics found in the quadrants inside the street, M. Miše ascertained that the layers had become intermingled. Miše 2010, p. 76.

35 The oldest coins found were those minted in Dyrachium, dated to the 3rd-1st centuries BC (SGN III, Pl. 10, no. 501-512; inv. no. AMS 14012), and Carthage, 221-210 BC (SGN III, Pl. 12, no. 309-313; AMS inv. no. 14002). I would like to thank my colleague Maja Bonačić Mandinić for her assistance in dating the coins.

36 Dated based on the coins of Constantius II, 351-355 AD (RIC VIII, no. 121; inv. no. AMS 14011).

37 In *In III*, the remains of residential architecture are visible on the surface, as already noted by B. Gabričević, linking it to a residential use, i.e., the foundations of houses cut into the bedrock. Gabričević 1968, p. 32, note 36. The surface remains of residential architecture are also visible at the site of the assumed *In IV*.

malom širinom inzula nije čest u urbanizmu grčkih gradova (i onih indigenih koji su pod njihovim utjecajem), jer inzule u pravilu bivaju uglavnom znatno šire,³⁸ sličnih primjera ima, a nalazimo ih u bliskim Sikulima na istočnojadranskoj obali i u gradovima u južnoj Italiji, južnoj Francuskoj i južnoj Albaniji, odnosno sjeverozapadnoj Grčkoj.

Na prostoru Bazilikate male širine inzula ponajprije se ogledaju u planimetriji lukanskoga gradića Pomarico Vecchio, gdje im širine variraju od 9,5 do 10,5 m. Inzule su odvojene ulicama širine 2,3-2,8 m. Kao i kod isejskih, i ovdje se zamjećuje približna podjela inzula središnjim zidom.³⁹

Nedaleko od Pomarica Vecchia, u blizini bazilickanskog naselja Motescaglioso, na lokalitetu Cozzo Presepe pronađeni ostatci arhitekture pokazuju kako je širina inzule u ovom gradiću bila 14,1-14,6 m.⁴⁰

Sličnu širinu inzule imaju i neki gradići na jugu Francuske, u prvom redu masalijska kolonija Olbija (*Olbia*), gdje širina inzule iznosi 11 m (34,5 x 11 m).⁴¹ Inzule su odijeljene ulicama širine 2,1 m, a sam grad ima površinu od oko 2,6 ha.

Drugi gradići kod kojih primjećujemo sličnosti u širini inzula građenih u helenističkom razdoblju su keltski gradići Lattara i Entremont. Dimenzije inzule u Entremontu, gradiću čije antičko ime nije poznato, približno iznose 24 x 10,5 m, odijeljene su ulicama

model with a small insula width was not common in the urban planning of Greek cities (including those inhabited by indigenous peoples but under their influence), because the insulae were generally much wider as a rule,³⁸ there are similar examples, and they can be found in nearby Sicily in the eastern Adriatic seaboard and in the cities in southern Italy, southern France and southern Albania and north-western Greece.

In the area of Basilicata, the small widths of insulae are primarily reflected in the planimetry of the Lucanian town of Pomarico Vecchio, where the widths vary from 9.5 to 10.5 m. The insulae are separated by streets that are 2.3-2.8 m wide. As in Issa, here the approximate division of the insulae by a central wall is noticeable.³⁹

Architectural remains found not far from Pomarico Vecchio, near the Basilicata settlement of Motescaglioso at the Cozzo Presepe site, show that the width of the insulae in this town was 14.1-14.6 m.⁴⁰

The insulae in certain towns in the south of France had a similar width, first and foremost the Massalian colony Olbia, where the width of the insulae was 11 m (34.5 x 11 m).⁴¹ The insulae were divided by 2.1 m wide streets, and the city itself covered a surface of ca. 2.6 ha.

38 Širine inzula grčkih gradova južne Italije i Sicilije kreću se od 27 do 28 m, primjerice Megara Hibleja (*Megara Hyblaea*), Epizefirski Lokri (*Lokroi Epizephyrioi*), do 32-35 m, kakvu širinu imaju mnogi sicilski polisi (Barra Bagnasco 1999, str. 122, bilj. 10), pa i preko toga, npr. Herakleja lukanska (*Herakleia*), Giardino 1996, str. 139.

39 Barra Bagnasco 1996a, str. 155-156; Barra Bagnasco 1996b, str. 224-229; Barra Bagnasco 1997, str. 9.

40 Morel 1994, str. 323-324. Širina inzule u lukanskom gradiću na lokalitetu Cozzo Presepe je 14,5 m. Unutar nje kuće su raspoređene pod pravim kutom, a inzule obrubljaju ulice širine 4,5 m, Barra Bagnasco 1999, str. 124, bilj. 12; Nava 1998, str. 481-483.

M. Barra Bagnasco smatra da je na urbanističko rješenje s uskom inzulom indigenih gradića Bazilikate utjecala sibarska kolonija *Laos*, smještena na obali Tirenskog mora u blizini ušća rijeke Lao. Urbani prostor Laosa organiziran je po shemi *per strigas*, tvoreći pravokutne inzule širine 96 m, unutar kojih se nalaze četiri stambena bloka međusobno odijeljena uskim ulicama širine 0,8 m, stvarajući tako stambene prostore čija je širina 23 m; Barra Bagnasco 1999, str. 124. Urbanistička slika Laosa nije još sasvim jasna i moguće su dvije varijante unutarnje podjele inzule. No u obje varijante stambeni blokovi koji se stvaraju unutar inzule širine su 23 m. Greco 1996, str. 129.

41 Bats 2009, str. 204.

38 The width of the insulae in the Greek cities of southern Italy and Sicily was 27-28 m and more; for example, in Megara Hyblaea and Lokroi Epizephyrioi it reached up to 32-35 m, the same width as in many Sicilian polises, Barra Bagnasco 1999, p. 122, note 10, and even more, e.g., Heraclea (*Herakleia*) Lucania, Giardino 1996, p. 139.

39 Barra Bagnasco 1996a, pp. 155-156; Barra Bagnasco 1996b, pp. 224-229; Barra Bagnasco 1997, p. 9.

40 Morel 1994, pp. 323-324. The width of the insulae in the Lucanian town at the Cozzo Presepe site is 14.5 m. Within them, the houses were set at right angles, and the insulae were bordered by 4.5 m wide streets, Barra Bagnasco 1999, p. 124, note 12; Nava 1998, pp. 481-483.

M. Barra Bagnasco believed that the urban planning solution with narrow insulae in the indigenous towns of Basilicata was influenced by the Sybarean colony Laos on the shore of the Tyrrhenean Sea near the mouth of the Lao River. The urban space of Laos was organized according to the *per strigas* scheme creating rectangular insulae with a width of 96 m, while inside them there were four residential blocks separated from one another by narrow, 0.8 m wide streets, thus forming residential spaces with a width of 23 m, Barra Bagnasco 1999, p. 124. The urban planning picture of Laos is not entirely clear and two variations of the internal division of the insulae are possible. But both variations are residential blocks created inside 23 m wide insulae, Greco 1996, p. 129.

41 Bats 2009, p. 204.

širine 2,5-4 m, dok je u Lattari širina inzule različita, ovisno o tome između kojih ulica se nalaze, no ona ne prelazi 13 m.⁴²

Urbanistička rješenja gradova s uskim inzulama nisu nepoznanica ni na prostoru Epira. Urbanistički plan najbliži isejskom nalazimo u mološkom gradiću Oraonu (*Orraon*), s jasnom ortogonalnom planimetrijom. Dosadašnja istraživanja na prostoru toga mološkog grada na svjetlo dana donijela su dvije ulice smjera I-Z (*plateia*) i dvanaest užih smjera S-J (*stenopos*), koje, križajući se, stvaraju mrežu inzula širine 15 m.⁴³

Tesprotski gradovi Kasopa (*Kassope*) i Gitana (*Gitana*) mogu se također komparirati s Isom iako imaju nešto širu inzulu, no stambeni blokovi unutar nje slične su širine. Kasopa je utemeljena u prvoj četvrtini IV. st. pr. Kr., a urbanističku strukturu čine inzule širine 30 m (30 x 126 m), smještene između ulica širine 4,2-4,5 m. Unutar inzule nalaze se dva stambena bloka koje po dužoj osi dijeli uska središnja ulica širine 1,2 m, odvajajući tako stambene blokove čija je širina 14,4 m.⁴⁴ Ovakva širina stambenog bloka odgovara širini inzule lukanskoga gradića na lokalitetu Cozzo Presepe kod Montescagliosa.

Širina inzule u Gitani je 34 m (34 x 74 m), s unutarnjom podjelom koju čini uska ulica širine oko 2 m, što stvara dva stambena reda od oko 16 m širine.⁴⁵

Na istočnoj jadranskoj obali osim Ise, kako vidimo, i Sikuli imaju istu urbanističku matricu, dok za druge jadranske kolonije i potkolonije nema sigurnih podataka.⁴⁶

U istraženom dijelu *In I* razvidno je da je kuća 1 zahvaćala cijelu njezinu širinu. Je li ista situacija bila u *In II* i *III*, ne može se sa sigurnošću reći. Budući da dosad nije istražena cijela njihova površina, nije moguće zaključiti je li se i unutar tih uskih inzula nalazila samo jedna kuća koja se naslanjala vanjskim zidovima na obje ulice i zahvaćala čitavu širinu inzule, ili su pak unutar inzule bile dvije manje kuće od kojih je svaka imala ulaz iz druge ulice.⁴⁷ Kod isejskih inzula

Other towns with a notable similarity in the width of the insulae built in the Hellenistic era are the Celtic Lattara and Entremont. The dimensions of the insulae in Entremont, a town whose name in Antiquity is not known, were approximately 24 x 10.5 m, separated by streets with a width of 2.5-4 m, while in Lattara the width of the insulae varied depending on which streets ran between them, but they were never wider than 13 m.⁴²

The urban planning solutions in cities with narrow insulae were not unknown in the territory of Epirus as well. The urban plan closest to that of Issa can be seen in the Molossian town of Orraon, with a clear orthogonal planimetry. Previous research in the area of this Molossian city brought to light two streets running in an east-west direction (*plateia*), and twelve narrower ones in a north-south direction (*stenopos*), which, when intersecting, create a grid of 15 m wide insulae.⁴³

The Thesprotian cities of Kassope and Gitana can also be compared to Issa even though they have somewhat wider insulae, but the residential blocks inside them have similar widths. Kassope was established in the first quarter of the 4th century BC, and its urban structure consisted of 30 m wide insulae (30 x 126 m), situated between streets that were 4.2-4.5 m wide. Inside the insulae there were two residential blocks which were divided along the lengthwise narrow axis of the central street with a width of 1.2 m, thereby separating the residential blocks, which were 14.4 m wide.⁴⁴ This width of the residential block corresponds to the width of the insulae in the Lucanian town at the Cozzo Presepe site at Montescaglioso.

The width of the insula in Gitana is 34 m (34 x 74 m), with an internal division consisting of a narrow, roughly 2 m wide street, which created two residential rows with a width of approximately 16 m.⁴⁵

On the eastern Adriatic seaboard, besides Issa, we can see that Siculi had the same urban planning matrix, while there are no certain data for the Adriatic colonies and sub-colonies.⁴⁶

42 Benoit 1960, str. 348-349; Benoit 1968, str. 13. Za Lattaru, Garcia 1990, str. 306-309.

43 Antoniou *et al.* 2006, str. 459-460.

44 Dakaris 1995, str. 175-178; Schwandner 1985, str. 462-476; Moderato 2015, str. 314.

45 Kanta-Kitsou 2008, str. 39-42; Moderato 2015, str. 315.

46 Šuta 2011a, str. 31-32. Ovdje možemo spomenuti kako je i u Traguriju (*Tragurion*) ustanovljeno pružanje inzula po dužoj osi u smjeru S-J, te da je pretpostavljeni omjer inzule 1 : 2,5. Kovačić 2002, str. 378; Kovačić 2010, str. 139-140.

47 Ako bismo sudili po sličnim rješenjima u masalijskoj Olbiji i lukanskom gradiću Pomarico Vecchio te Oraonu

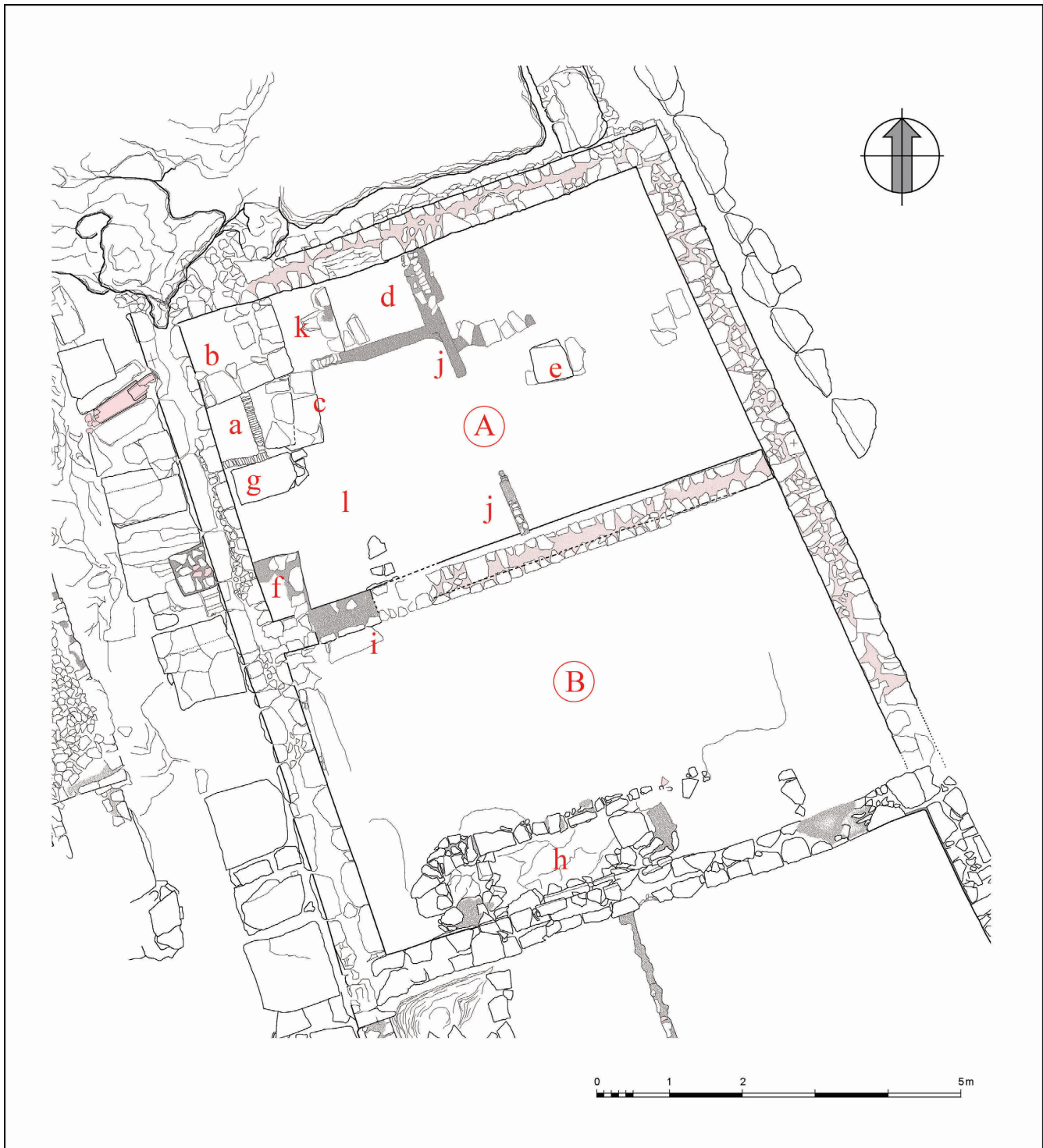
42 Benoit 1960, pp. 348-349; Benoit 1968, p. 13. For Lattara, Garcia 1990, pp. 306-309.

43 Antoniou *et al.* 2006, pp. 459-460.

44 Dakaris 1995, pp. 175-178; Schwandner 1985, pp. 462-476; Moderato 2015, p. 314.

45 Kanta-Kitsou 2008, pp. 39-42; Moderato 2015, pp. 315.

46 Šuta 2011a, pp. 31-32. Here it is worth mentioning that in Tragurion, it was ascertained that the insulae extended on their longer axis in a north-south direction, and that the assumed ratio of the insulae was 1:2.5, Kovačić 2002, p. 378; Kovačić 2010, pp. 139-140.

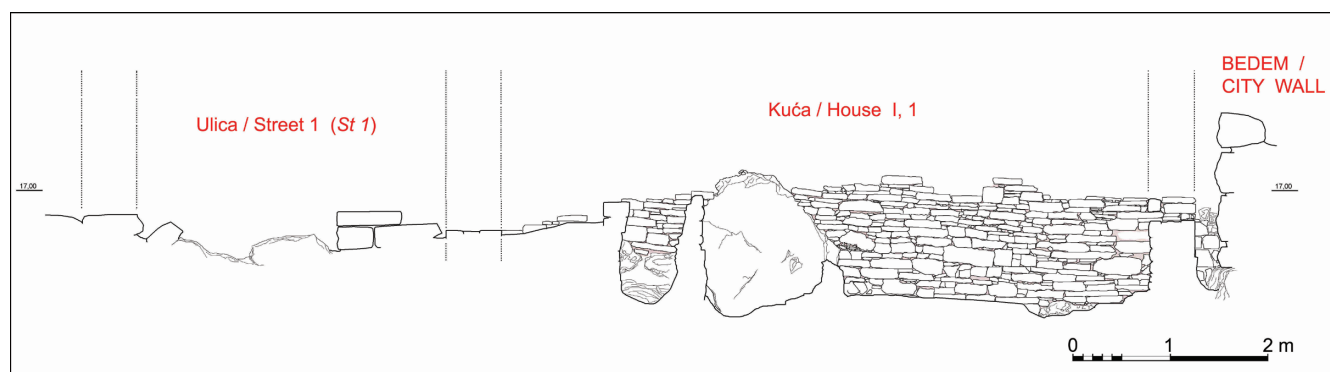


Sl. 11. Tlocrt kuće I, 1 (crtež: B. Penđer)
 Fig. 11. Floor plan of house I, 1 (sketch: B. Penđer)

primjetno je da se unutar njih nalazi središnji zid koji

i drugim epirskim gradovima, onda bi kuća zahvaćala čitavu širinu inzule; ima međutim primjera gdje i u ova-ko uskoj inzuli kuća ne zahvaća čitavu njezinu širinu, već samo njezinu polovicu, što je slučaj u Entremontu. Zahvaljujem kolegi I. Šuti što mi je skrenuo pozornost na urbanističko rješenje toga keltskog gradića.

In the researched part of *In* I it can be seen that house 1 encompassed its entire width. However, whether the same situation applied to *In* II and III cannot be said with certainty. Since their entire surface has not been researched thus far, it is impossible to say whether there was only a single house inside these narrow insulae which touched both streets with its external wall and covered the entire width of a given insula, or there were two smaller houses inside the



Sl. 12. Presjek (A - A') kroz sjeverni dio ulice 1 (St 1) i kuće I, 1 (crtež: B. Pender)

Fig. 12. Cross-section (A - A') through the northern part of street 1 (St 1) and house I, 1 (sketch: B. Pender)

ih dijeli u dva dijela unutar kojih se nižu prostorije.⁴⁸

Jednako tako nije poznat ni broj kuća unutar inzule pa ćemo odgovore na ta pitanja, s obzirom da su istraživanja isejskog urbanizma u svojim počecima, dobiti kada ona zahvate veću gradsku površinu.

Iz rečenog je vidljivo kako nova istraživanja u jugoistočnom dijelu grada pokazuju da je Isa imala znatno više ulica orijentacije S-J, *stenopoi*, negoli što se to dosad pretpostavljalo, te da je orijentacija i veličina inzula s rasporedom kuća unutar njih bila drugačija od onoga što predlaže Katić. Broj ulica bilo bi moguće odrediti slijedeći njihovo pravilno ritmičko ponavljanje, no ne želimo ovdje spekulirati o njihovu broju; još uvijek je naime nepoznato je li raspored inzula u središnjem dijelu grada bio onakav kakav nam se sada čini logičnim, odnosno, nepoznato nam je jesu li sve ulice bile iste širine. Planimetrijski sustav koji se uočava u istraženom dijelu Ise pokazuje izrazito jednosmjernu aksijalnu orijentaciju u smjeru S-J, s očito gustom mrežom ulica, i planiranje grada po modelu *per strigas*.⁴⁹

S druge strane, za sada nije pronađena ni jedna ulica smjera I-Z (*plateia*), pa o njihovim dimenzijama i broju nemamo nikakvih saznanja, no nedvojbeno ih je bilo znatno manje negoli *stenopoi*.

Ovdje je potrebno osvrnuti se i na urbanistički raster koji je vrlo blizak isejskom, a to je onaj u Sikulima.⁵⁰ Istraživači su u Sikulima dobili presjek

insulae with each having an entrance from different streets.⁴⁷ In the case of the Issa insulae, it is noticeable that within them there was a central wall which separated into two halves, in which the rooms were arranged.⁴⁸

By the same token, not even the number of houses inside the insulae is known, so the answers to these questions - given that research into Issaeian urban planning is in its initial stages - will only be obtained when the research covers a larger urban surface.

The aforementioned makes it apparent that the new research conducted in the south-eastern section of the city has shown that Issa had considerably more streets with a north-south orientation, *stenopoi*, than previously assumed, and that this orientation and size of the insulae with the arrangement of houses in them were not different than that proposed by Katić. The number of streets would be possible to ascertain by following their regular, rhythmic repetition, but the intention here is not to speculate on their number, because it is still unknown as to whether this arrangement of insulae existed in the central part of the city, which appears logical now, i.e., whether all of the streets were the same width is unknown. The planimetric system

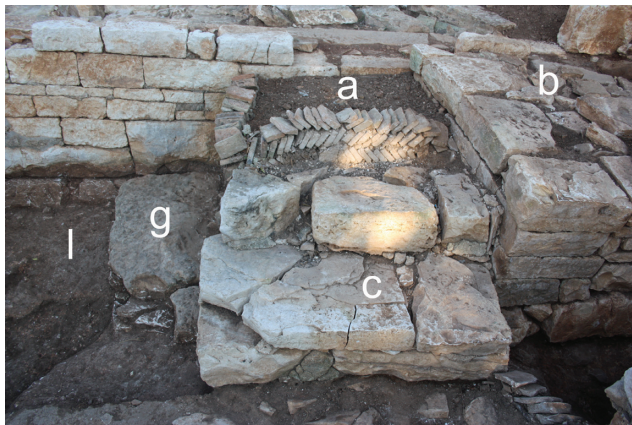
48 Podjela inzule središnjim zidom uočava se i kod gradića Pomaricho Vecchio. Barra Bagnasco 1996a, str. 224-228; Barra Bagnasco 1997, str. 9-13; Barra Bagnasco 1999, str. 122. Za primjere iz Olbije vidi Bats 2009, str. 204. Za Entremont vidi Benoit 1968, str. 2, sl. 1, dok je na istočnoj jadranskoj obali to vidljivo u Sikulima.

49 Castagnoli 1956, str. 17.

50 Prvi spomen ovog područja u izvorima je Plinijev podatak da car Kludije naseljava vojne veterane u Sikulima (*Siculi*), *Plin., NH, III, 141*. Pregled istraživanja i

47 Considering similar solutions in Massalian Olbia and in the Lucanian town of Pomarico Vecchio, and Orraon and other cities in Epirus, then the house would cover the entire width of the insula, although there are examples in which even in such a narrow insula the house did not cover its entire width, rather only half, which was the case in Entremont. I would like to thank my colleague I. Šuta for turning my attention to the urban planning solution in this Celtic town.

48 The division of the insulae by a central wall was also observed in the town of Pomaricho Vecchio, Barra Bagnasco 1996a, pp. 224-228; Barra Bagnasco 1997, pp. 9-13; Barra Bagnasco 1999, p. 122. For examples from Olbia, see Bats 2009, p. 204. Also, for Entremont, Benoit 1968, p. 2, Fig. 1, while on the eastern Adriatic seaboard this was visible in Siculi.



Sl. 13. Pogled na stubište (c), podest (b), "spremište" (a), ostatak prvotnih stuba (g) i izvornu podnicu prostorije A (l) (foto: B. Čargo)

Fig. 13. View of stairs (c), landing (b), "storeroom" (a), remainder of initial stairs (g) and original flooring of room A (l) (photo: B. Čargo)

kroz naselje lociravši deset ulica smjera S-J koje se pravilno ritmički ponavljaju zajedno s inzulama, no ni ovdje za sada nije definirana površina stambenog bloka. Širina pronađenih ulica je 2,5-2,8 m, dakle malo su uže od isejske, a širinom odgovaraju onoj u Faru. Iznimka je središnja ulica, sa 4 m širine, dok je širina stambenog bloka ista kao isejska, 13 metara.⁵¹ I. Šuta iznosi pretpostavku da je omjer veličine inzule bio veći od 1 : 4. Na sjevernoj strani pronađeni su ostaci zidina, s južne strane naselje je bilo naslonjeno na morsku obalu, sa zapadne uz potok Resnik, dok granica na istočnoj strani nije definirana. Ovako ocrtan prostor zauzima oko 3,6 ha.⁵²

Ovakvo planiranje grada koje se koristi u Sikulima zapravo je odraz isejske graditeljske prakse, koja se u ovom dijelu srednjeg Jadrana primjenjuje kojih dvjestotinjak godina kasnije, a u kojem se ogleda sustav strigacije, ista širina inzula i njihova izrazita planimetrijska aksijalnost u smjeru S-J.

Kućé

Postavlja se pitanje datacije kako gradnje ulica tako i pojedinih stambenih blokova, odnosno kuća unutar njih. Najbolje istražena je ona u *In I*, označena kao

povijesni okvir sa svom relevantnom literaturom vidi u Kamenjarin 2011, str. 9-18; Šuta 2011b, str. 19-23.

51 Kamenjarin, Šuta 2007, str. 459-461; Šuta 2011a, str. 31-38.

52 Kada se promatra raster Sikula, jasno se vidi njegova planimetrijska sličnost s masalijskom kolonijom Olbijom u južnoj Francuskoj, čije su dimenzije 160 x 160 m i površina oko 2,6 ha. Dimenzije inzule su 34,5 x 11 m (1 : 3), a širina ulice 2,1 m, Bats 2009, str. 204.

observed in the examined part of Issa shows with an obviously dense network of streets, and city planning based on the *per strigas* model.⁴⁹

On the other hand, thus far not a single street with east-west orientation (*plateia*) has been found, so there is no data on their dimensions and number, but they certainly numbered far less than the *stenopoi*.

Here it is necessary to also consider an urban grid very similar to that of Issa, the one in Siculi.⁵⁰ Researchers have determined a cross-section of the settlement in Siculi, locating ten streets with a north-south orientation which repeat regularly and rhythmically together with the insulae, but even here the surface of the residential block has not been defined thus far. The width of the streets found is 2.5-2.8 m, thus slightly narrower than in Issa, which corresponds to the width in Pharos. The exception is the central street with a 4 m width, while the width of the residential block is the same as in Issa, thirteen meters.⁵¹ I. Šuta proposed the hypothesis that the ratio in the size of the insulae was greater than 1:4. The ruins of city walls were found on the northern side, the settlement ran against the seashore to the south and was bordered by a stream called Resnik to the west, while its eastern side has not been defined. The area so delineated encompasses a surface of 3.6 ha.⁵²

This type of city planning, which was employed in Siculi, was actually a reflection of the Issaeian city-building practice, which was applied in this part of the central Adriatic roughly two hundred years later, and which reflects the system of strigation, the same width of insulae and their exceptional planimetric axiality in the north-south direction.

Houses

The question arises as to the dating of both construction of the streets and individual residential blocks and the houses in them. The best researched is

49 Castagnoli 1956, p. 17.

50 The first mention of this area in the sources is Pliny's notation that Emperor Claudius settled military veterans in Siculi, *Plin., NH, III, 141*. For an overview of the research and historical framework with all relevant sources, see Kamenjarin 2011, pp. 9-18; Šuta 2011b, pp. 19-23.

51 Kamenjarin, Šuta 2007, pp. 459-461; Šuta 2011a, pp. 31-38.

52 When viewing the grid of Siculi, one can clearly see its planimetric similarity to the Massalian colony of Olbia in southern France, with dimensions of 160 x 160 m and a surface of approximately 2.6 ha. The dimensions of the insulae are 34.5 x 11 m (1:3), while the width of the streets is 2.1 m, Bats 2009, p. 204.



Sl. 14. Pogled na vanjski zid kuće I, 1, s vidljivom anatirozom (foto: B. Čargo)

Fig. 14. View of external wall of house I, 1, with visible anathyrosis (photo: B. Čargo)

kuća 1 (kuća I, 1), no ni u njoj istraživanje nije u cijelosti završeno, ponajprije uz ulazni prostor te onaj dio koji se nalazi ispod rimskodobne podnice. Ova kuća zauzima prostor između *St* 1 i zidina grada, dakle cijelu širinu inzule, a kako se plašt zidina koso proteže prema jugu, taj prostor dobiva trapezoidan oblik (sl. 11, 12). Čitavu tu površinu zahvaća kuća 1, koja shodno gore rečenom i sama ima oblik pravokutnog trapeza, orijentiranog u smjeru S-J. Sastoji se od dviju približno istih prostorija (A i B), povezanih vratima. Vanjske dimenzije kuće su: sjeverni zid 7,7 m, južni 8,9 m i dužina 10 m, što iznosi 83 m² površine, a širina zidova varira od 50 do 60 cm. Unutarnja površina prostorije A je 29 m², a B 31,7 m².

Sukladno padini terena prostorije A i B nalaze se na različitim niveletama, a tu visinsku razliku od oko 0,50 m povezuju kamene stube (i). Ulaz u kuću bio je u prvoj prostoriji iz *St* 1, i to u zapadnom zidu kuće, u njegovom sjevernom dijelu. S obzirom na visinsku razliku od oko 0,60 m između nogostupa istočnog pločnika *St* 1 i podnice kuće, na ovome su se mjestu nalazile kamene stube koje su bile naslonjene na unutarnje lice istočnog zida. Od ovih stuba sačuvala se samo prva (g), dok su ostale stradale u kasnijoj gradnji manjeg "spremišta", podesta i novog stubišta (a, b, c) (sl. 13). Sačuvana podnica unutar kuće načinjena je od tankog i slabašnog vapnenog morta s mjestimičnim ostatcima kamenog popločanja. Na temelju malog istraženog uzorka od 1,5 m² razvidno je da se ispod nje nalazi starija helenistička podnica od nabijene zemlje (l).

Zidovi su građeni s dva lica od pločastog kamena s ispunom od manjeg kamena nepravilnog oblika u središtu, povezanog masnom glinastom crvenicom. Jedinu razliku u kvaliteti zidanja pokazuje istočni zid, posebno njegov vanjski dio, koji je površinski

the one in *In* I designated as house 1 (house I, 1), but even there research has not been entirely completed, primarily next to the entry room and that portion under the Roman-era flooring. This house occupies the space between *St* 1 and the city wall, i.e., the entire width of the insula, and since the wall's surface extended southward at an angle, this area has assumed a trapezoidal shape (Fig. 11, 12). This entire surface is encompassed by house 1, which in line with the aforementioned itself has the shape of a rectangular trapezium with a north-south orientation. It consists of two approximately identical rooms (A and B), connected by a door. The external dimensions of the house are: northern wall 7.7 m, southern wall 8.9 m and length 10 m, which is an 83 m² surface, while the width of the walls is varies from 50 to 60 cm. The internal surface of room A is 29 m², while that of B is 31.7 m².

In line with the gradient of the terrain, rooms A and B are at different levels, and this height difference of approximately 0.5 m is linked by stone stairs (i). The entrance to the house was in the first room from *St*-1 at the house's western wall in its northern part. Given the difference in height of approximately 0.6 m between the walkway of the eastern pavement of *St* 1 and the house's flooring, at this point there were stone stairs which rested on the internal face of the eastern wall. Only the first of these stairs (g) had been preserved, while the remaining ones were devastated during the subsequent construction of a small "storeroom", landing and new stairway (a, b, c) (Fig. 13). The preserved flooring inside the house consists of thin and brittle limestone mortar with the occasional pieces of stone tiles. Based on a limited examination of a sampling of 1.5 m², it can be seen that beneath it there was older Hellenistic-era flooring made of packed earth (l).

The walls were made with two faces of plate-like stones and filled with smaller stones of irregular shape in the middle, bound with greasy clayish terra rossa. Only the eastern wall exhibits a difference in the quality of its craftsmanship, particularly its external surface, which is bossed on the surface with very precisely finished and smooth at the edge (anathyrosis) (Fig. 14).⁵³

Along the northern wall of room A there is a wall (k) with one face and a square "storeroom" to its eastern side (d), while in the remainder of the room there is a squarish column made of large blocks (e). This

53 As stated in the introduction, this text will not deal with residential architecture in detail as it has not been fully researched, rather this will be left for upcoming studies on this topic. Here the general features of the house are provided, so that the scholarly public can be informed of the shape and construction technique of the Issaeen houses for the first time.

bunjiran, s vrlo precizno obrađenim rubnim zaglađenjem (*anathyrosis*) (sl. 14).⁵³

Uz sjeverni zid prostorije A nalazi se zid (k) s jednim licem i četvrtasto "spremište" s njegove istočne strane (d), dok se u ostatku prostorije nalazi četvrtasti stup zidan od velikih blokova (e). Ova prostorija bila je podijeljena u dva dijela zidom izrađenim od ulomaka tegula, imbreksa i dolija (*dolium*), koji su slagani u tehnici *opus spicatum* s obilnim korištenjem vapnenog morta (j). U kutu između zapadnog i južnog zida prostorije A nalazi se zidana četvrtasta konstrukcija nejasne namjene (f). Moguće je da se radi o ojačanju ovih zidova s unutarnje strane.

Unutar prostorije B, uz južni zid nalazi se četvrtasta jama ukopana u podnicu oko 80 cm, nejasne namjene, veoma loše zidana, sa slabim vezivom od vapnenog morta (h). Dno nije uređeno, već ga čini živac kamen.

U prostoru sjeverno od kuće pronađen je zid bez vapnenih veziva, s dva lica od klesanaca i velikih kamenih blokova te ispunom od manjeg kamenja. Iskapan je u dužini od 4,5 m, a širine je 0,75 m i paralelan s linijom bedema. Nije datiran, a čitav ovaj prostor nejasan je u odnosu na kuću.

Osim tlocrtno izvornog izgleda kuće i mjesta gdje su se nalazile ulazne stube, o eventualnim unutarnjim podjelama prostorija te određenju namjene pojedinih njihovih dijelova tijekom prve faze življenja kuće, ne možemo mnogo reći. Nije sigurno ni je li kuća građena kao katnica ili je pak bila prizemnica, jer bi se postojanje stuba s podestom moglo shvatiti ne samo kao ulazni prostor već i mjesto odakle se drvenim stubama moglo ići na kat. Postojanje kata u kući skromnih dimenzija svakako bi podiglo kvalitetu razine življenja i olakšalo određivanje namjene pojedinih prostorija. Prisutnost sličnih kuća oblikom i površinom nalazimo ponajprije u južnoj Italiji.

U Oppido Lucano, na lokalitetu Montrone u Bazilikati, istraženo je nekoliko kuća sličnih oblika podignutih u drugoj polovini 4. st. pr. Kr.⁵⁴ Riječ je o kućama manjih dimenzija s dvije ili tri prostorije, od kojih su dvije interpretirane kao monofamilijarne, a dvije kao bifamilijarne. Kuća A u Oppido Lucano istog je oblika kao i isejska, pravokutnog trapeza, nešto je manjih dimenzija i nepravilnije je gradnje. Sastoji se od dviju prostorija i ulaznog prostora s nadstrešnicom. Kuća C sastoji se od dviju prostorija, a interpretirana

room was divided into two halves by a wall made of shards of tegulae, imbrices and dolia which were stacked in the *opus spicatum* technique with abundant use of limestone mortar (j). In the corner between the western and southern walls of room A there is a mason-built squarish structure (f) whose function is unclear. It is possible that it was a reinforcement of these walls from the inside.

Inside room B, along the southern wall, there is a square pit dug approximately 80 cm into the flooring; its purpose is unclear, as it is very poorly crafted with poor bonding made of limestone mortar (h). The bottom is not worked rather it is the underlying bedrock.

In the area north of the house, a wall lacking limestone bonding was found; it has two surfaces made of dressed stones and large stone blocks, and filled with smaller stones. It has been excavated to a length of 4.5 m, and its width is 0.75 m. It is parallel to the line of the city wall. It has not been dated, and this entire space is ambiguous in relation to the house.

Besides the original layout appearance of the house and the location of the entry stairs, not much can be stated about the possible internal division of the rooms nor can the use of individual parts thereof during the first phase of living therein be determined. It is uncertain as to whether it was built as a two-story structure or if it only had a single floor, because the existence of stairs with a landing may be seen not only as an entry room, but also as a place whence one could have climbed to an upper floor on wooden stairs. The existence of an additional floor in a house of modest dimensions would have certainly raised the quality of living and simplified the determination of uses of individual rooms inside it. The presence of similar houses in terms of shape and floor space can be found primarily in Italy.

In Oppido Lucano, at the Montrone site in Basilicata, several houses with similar shapes from the latter half of the 4th century BC have been examined.⁵⁴ These are houses with smaller dimensions and two or three rooms, of which two have been interpreted as single family, and two as two-family. House A in Oppido Lucano has the same shape as the one in Issa, a rectangular trapezium, with somewhat smaller dimensions and more irregular construction. It consists of two rooms and a vestibule with a canopy. House C consists of two rooms, and it has been interpreted as two-family. As opposed to the house in Issa, this house was not inhabited for a long period.⁵⁵ In both cases, these are houses with small dimensions, of which the first has 33 m² and the second 49 m² of living space.

53 Kako je uvodno rečeno, u ovom tekstu nećemo se detaljno osvrtnati na stambenu arhitekturu jer nije u cijelosti istražena, već ćemo to ostaviti za skorašnje studije o toj temi. Ovdje su donesene opće značajke kuće, kako bi se stručna javnost prvi put upoznala s oblikom i tehnikom gradnje isejskih kuća.

54 Lissi-Carrona 1983-1984, str. 193-212.

54 Lissi-Carrona 1983-1984, pp. 193-212.

55 Lissi-Carrona 1983-1984, p. 193.



Sl. 15. Keramički ulomci pronađeni u kanalu ulice 1 i uz sjeverni zid kuće I, 1 (foto: B. Čargo, crtež: Z. Podrug)
Fig. 15. Ceramic shards found in the gutter of street 1 and along the northern wall of house I, 1 (photo: B. Čargo, sketch: Z. Podrug)

je kao bifamilijarna. Za razliku od isejske, ove kuće nisu imali dugi vijek življenja.⁵⁵ U oba slučaja radi se o kućama malih dimenzija, od kojih prva ima 33 m², a druga 49 m² životnog prostora.

Slični primjeri kuća prisutni su u bliskoj Peuceziji u Monte Sannaceu. Kuće se međusobno razlikuju veličinom i brojem prostorija, no većina je skromnih dimenzija, s dvije ili tri prostorije, s izlazom na otvorenu površinu vrta.⁵⁶

S obzirom da je isejska kuća, doživjela znatne preinake tijekom dugog korištenja objekta, javlja se problem njezine datacije. Helenistički slojevi uništeni su pod onim rimskodobnim, pa su preostala tek neka mjesta koja mogu dati koliko-toliko pouzdan odgovor o vremenu gradnje kuće. To su u prvom redu uski pojasevi uz sjeverni zid kuće, odnosno temeljna jama tog zida i također uzak pojas između istočnog zida kuće i zidina grada.

Keramički materijal pronađen u temeljnoj jami uz vanjsko lice sjevernog zida pokazuje da je kuća podignuta krajem 4. ili početkom 3. st. pr. Kr. U uskom pojasu uza zid izolirane su dvije stratigrafske jedinice, unutar kojih je u onoj nad živcem kamenom pronađen ulomak vjerojatno poklopca lekane (*lekanis*), izrađen od svijetlosmeđe gline iz druge polovice 4. st. pr. Kr. (sl. 15. 1). Izrađen je u crvenofiguralnoj tehnici, a rad je južnoitalskih radionica. Sačuvani fragment ukrasa na ulomku izveden je crnom i bijelom bojom, a predstavlja floralni vitičasti ukras. Ulomak je premalen za preciznije komparacije i sigurnu dataciju, a okvirno se može datirati u drugu pol. 4. st. pr. Kr.⁵⁷ Među drugim keramičkim materijalom prevladava kuhinjska keramika, a brojna je i crnopremazana keramika južnoitalske provenijencije s kraja 4. st. pr. Kr. *Gnathia* keramika također je prisutna i prvi je put u Isi nalazimo u stambenom kontekstu, za razliku od prijašnjih nalaza koji su redom iz nekropola. Kad govorimo o tim oblicima, treba spomenuti da se radi ponajviše o ulomcima skifa (*skyphos*) kanoške proizvodnje s početka 3. st. pr. Kr. (sl. 15. 2-5). Ovdje treba napomenuti da se radi o malom uzorku istraženosti najranijih slojeva objekta, i zaista maloj obrađenosti keramičkih oblika, pa spomenute kronološke okvire datacije kuće treba uzeti s oprezom.

Similar examples of houses are present in nearby Peucezia in Monte Sannace. The houses differ from one another in terms of size and number of rooms, but most of them have modest dimensions with two or three rooms and an exit into the open space of a garden.⁵⁶

Since the Issaeian house underwent considerable modifications during the structure's use, the problem of its dating arises. The Hellenistic layers were destroyed by those of the Roman era, so all that remains are places that can provide a somewhat reliable indication of the period when the house was constructed. These are above all the narrow belts along the northern wall of the house, i.e., the foundation trench of this wall and the narrow belt between the house's eastern wall and the city wall.

The ceramic materials found in the foundation trench along the external face of the northern wall show that the house was erected at the end of the 4th or the beginning of the 3rd century BC. In the narrow belt along the wall, two stratigraphic units were erected, within which a fragment of what was probably a lekane lid made of light brown clay was found in that one above the bedrock; it dates to the latter half of the 4th century BC (Fig. 15. 1). It was rendered in the Black Figure technique, and it is a product of the southern Italic workshops. The preserved part of an ornament on it was rendered with black and white paint, and it is a floral tendril decoration. The potsherd is too small for more precise comparisons and certain dating, but it may generally be dated to the latter half of the 4th century BC.⁵⁷ Among the other ceramic materials, kitchenware predominates, and there Black Gloss ware of southern Italic origin from the end of the 4th century BC is quite abundant. Gnathian ware is also present, and it was here found in the residential context for the first time in Issa, as opposed to previous finds which were all from necropolises. When speaking of these forms, it is worthwhile noting that most are shards of skyphoi, Canosan products from the early 3rd century BC (Fig. 15. 2-5). Here it should be noted that this is a small researched sampling of the earliest layers of the structure, and a truly limited analysis of the pottery

55 Lissi-Carrona 1983-1984, str. 193.

56 Scarfi 1962, str. 279. Vidi primjere kuća u inzuli I, 8 i 12, str. 197-198, 203-204. Kuća s dvije prostorije u inzuli II, Galeandro 2002, str. 56-57.

57 Inventarni broj ulomka je AMS 39022. Usporedi, Kirigin 2008, str. 65, br. 35. Slični vitičasti ukrasi mogu se vidjeti i na svadbenim lebetima (*lebes gamikos*) i posudama stila *Alto Adriatico*, no gledajući prema presjeku ulomka, vidljivo je da se ovdje radi o poklopcu.

56 Scarfi 1962, p. 279. See the examples of houses in insula I, 8 and 12, pp. 197-198, 203-204. For the house with two rooms in insula II, Galeandro 2002, pp. 56-57.

57 The shard's inventory number is AMS 39022. Cf. Kirigin 2008, p. 65, no. 35. Similar tendril ornaments can also be seen on wedding bowls (*lebes gamikos*) and vessels of the Alto Adriatico style, but considering the cross-section of the shard, it is apparent that this is a lid.

Izvorni oblik grčke kuće u svojim se vanjskim gabaritima nije mijenjao tijekom vremena, no prema keramičkim ulomcima i posebno prema žigovima na tegulama razvidno je da kuća doživljava znatne unutarnje preinake u 1. st. po. Kr.⁵⁸ Unutarnji prostor prostorije A se pregrađuje, grade se nove stube, zazidavaju se vrata između prostorija te se zida četvrtasti stup za pojačanje nosivosti gornjeg kata, koji kuća tada nedvojbeno ima.

Ostaje nejasno kako ove dvije prostorije sagledavati nakon zazidavanja komunikacije među njima. Jesu li one izgubile stambenu namjenu ili ih pak treba sagledavati u kontekstu bogatije kuće s njihove južne strane (kuća I, 2). Nejasan je i prostor sa sjeverne strane kuće, gdje nije sačuvana nikakva arhitektura, osim masivno građenog zida uz bedem. To su pitanja na koja ćemo odgovor dobiti s proširenjem istraživanja.

Zaključak

Novija istraživanja u jugoistočnom dijelu Ise i otkriće prvih ulica, inzula i kuća daju nam uvid u planiranje, izgradnju i uređenje prostora unutar grada. Ona nam prvi put omogućuju da iziđemo iz teoretskih okvira unutar kojih su se do sada vodile rasprave o urbanizmu grada te započnemo s proučavanjem njegove urbanističke strukture imajući pred sobom jasne i arhitektonski vidljive smjernice. Nalaz dviju krajnjih istočnih gradskih ulica (*St 1 i 2*), i pretpostavljena *St 3*, svojim smještajem ne odgovaraju položaju Gabričevićeve krajnje istočne ulice i samim time pokazuju da je ulica u smjeru S-J bilo znatno više negoli se do sada mislilo. Jednako tako do sada otkrivene inzule svojom širinom i orijentacijom pokazuju da se Katićeva razmišljanja o gradskom rasteru, dimenzijama i orijentaciji inzule po dužoj osi ne mogu prihvatiti.

Iz istraženog uzorka razvidno je da su graditelji istovremeno trasirali i gradili ulice i kuće. Problem na koji su pri tome naišli, gradeći na padini s mnogim morfološkim različitostima, uvjetovali su klesanje i prilagođavanje živca prije gradnje. To se prije svega očituje u gradnji kuća, koje su dijelom usječene u živac kamen, najviše u *In III*, ali i u *In I*. Takvo prilagođavanje žive stijene svojstveno je i gradovima u Epiru i južnoj Iliriji: u Oraonu, Bilisu (*Byllis*) i Dimokastru često se koristi uklesavanje stuba u živac kamen, dok se u Bilisu i posebno u Čuka e Aitoit uklesavaju i veći dijelovi kuća.

forms, so the aforementioned chronological frameworks for dating should be taken with caution.

The original shape of the Greek house in its external dimensions did not change over time, but based on the potsherds and particularly the stamps on the tegulae, it can be seen that the house underwent significant internal modifications in the 1st century AD.⁵⁸ The internal area of room A was partitioned, new stairs were constructed, the door between the rooms was filled in and a rectangular column was built to reinforce the upper floor, which the house undoubtedly had at the time.

It remains unclear as to how these two rooms should be viewed after communication between them was blocked. Did they cease serving a residential purpose, or should they be viewed in the context of the richer house from their southern side (house I, 2)? Also unclear is the space on the northern side of the house, where no architecture has been preserved with the exception of a massively built wall next to the city wall. These are questions that will be answered by more extensive research.

Conclusion

More recent research conducted in the south-eastern section of Issa and the discovery of new streets, insulae and houses give us some insight into the planning, construction and regulation of space inside the city. For the first time, it makes it possible to depart from the theoretical realm in which all previous discussions of the city's urban planning were conducted and to commence studying its urban structure while having before us clear and architecturally visible guidelines. The discovery of two extreme eastern city streets (*St 1 and 2*), and the assumed *St 3*, did not correspond to the position of Gabričević's extreme eastern streets, and this fact alone shows that there were more streets running in a north-south direction than previously believed. By the same token, the insulae discovered thus far, with their width and orientation, show that Katić's opinions on the city's grid, on the dimensions and orientation of the insulae along the lengthwise axis, cannot be accepted.

Based on the researched sampling, it can be seen that the builders simultaneously laid out and constructed the streets and houses. The problem which they encountered when building on a slope with many

58 Pronađeni su ulomci fine keramike tankih stijenki koji odgovaraju oblicima prve polovine 1. st. po. Kr. Uz to, pečati na tegulama rađenim u vrijeme Tiberija i Kaligule svjedoče o vremenu obnove kuće.

58 Shards of fine pottery with thin walls were found which correspond to the forms of the first half of the 1st century AD. Besides this, the stamps of the tegulae made during the reigns of Tiberius and Caligula testify to the time of the house's renovation.

Sve pronađene ulice orijentirane su S-J i imaju kanal u sredini, s jasnom nakanom odvodnje oborinskih voda prema moru (smjer brdo-more). Gradnja kanala u središtu ulice između dvaju pločnika iznimno je praktična jer su nekanalizirane oborinske vode na padini brijega lako mogle ugroziti temelje kuća.

Ujednačena širina inzula upućuje na zaključak da su one bile jednake i po dužini, stvarajući ortogonalnu mrežu inzula orijentiranih po dužoj osi u smjeru S-J, odnosno urbanistički model *per strigas*. Sasvim je jasno da je inspiracija graditelja grada bila u urbanističkom kanonu grčkog svijeta.

Očito je da je pri planiranju i gradnji grada korišten dorski metrički sustav. Širina ulica od 3,3 m odgovara mjeri od 10 dorskih stopa, jednako kao što širina inzule od 13 m odgovara mjeri od 40 dorskih stopa.

Kasnije rimske gradnje nisu u ovom dijelu grada mijenjale izvorno postavljene raster. On je poštivan u cijelosti, a preinake i građevinske intervencije ogledaju se tek u popravcima unutar ulica (*St 1*) i sasvim logično u pregrađivanjima i mijenjanju namjena pojedinih prostora unutar kuća (kuća I, 1).

Očito je da tada već stari i statički nesigurni pojedini isejski objekti, građeni u suho ili pak s vezivom od tankog sloja glinaste crvenice, više ne zadovoljavaju svojim stanjem i udobnošću. Nove okolnosti, koje su nastupile s gubitkom samostalnosti isejskog polisa te s doseljavanjem novog stanovništva i ulaskom grada u novi politički okvir, donose tehnološke novitete, koji se očituju ne samo u kvalitetnijoj gradnji nego i u kvaliteti življenja općenito.

Građevinski zahvati koji se odvijaju nad opisanom stambenom arhitekturom u 1. st. po. Kr. odgovaraju pojačanoj graditeljskoj aktivnosti koja je zahvatila Isu u tom razdoblju. To je vrijeme kada, oko 20. godine, u Isi boravi i predstavnik carske obitelji, Tiberijev sin Druz Mlađi, *da se privikne vojničkom životu i zadobije simpatije vojnika (Tacit, Anali, II, 44)*, koji je tom prigodom dao sagraditi ili pak urediti vježbalište (*campus*). O Druzovu posjetu Isi svjedoči natpis koji je pronađen u obalnom dijelu grada.⁵⁹ Taj je posjet izravno vezan uz promicanje carskoga kulta u Isi, gdje je po svoj prilici bio sagrađen i hram odmah nakon Augustove smrti.⁶⁰

59 Spomenik se čuva u Arheološkome muzeju u Splitu pod inv. br. A 5493; Rendić-Miočević 1952, str. 41-49.

60 Ciriak iz Ancone u svojem djelu *Inscriptiones, seu epigrammata graeca et latina reperta per Illyricum* donosi prijepis natpisa u kojem se spominje August: *Divvs Avgvstvs pater provident(iae)*, Ciriaco Anconitano 1747, str. XXIII, 154. Osim toga, mramorni kipovi pronađeni u Isi jasno pokazuju postojanje hrama i promicanje carskoga kulta, Jadrić-Kučan 2010, str. 85-90.

morphological differences led to the carving and adaptation of the bedrock prior to construction. This was primarily reflected in the construction of houses, which were partially dug into the bedrock, mostly in *In III*, but also in *In I*. Such an adaptation of solid rock was also typical of the cities in Epirus and southern Illyria: in Orraon, Byllis and Dimocastro they often carved stairs into solid rock, while in Byllis and especially Çuka e Aitoit they also carved in the larger portions of houses.

All discovered streets have north-south orientation with a gutter in the middle and they exhibit a clear tendency for the drainage of precipitation waters to the sea (downhill to the sea). The construction of gutters in the middle of the streets between two pavements is entirely practical, because unchannelled runoff on the slopes of a hill could easily jeopardize the foundations of houses.

The balanced width of the insulae leads to the assumption that they were also the same length, creating an orthogonal network of insulae oriented along the lengthwise axis in a north-south direction, i.e., the *per strigas* urban planning model. It is entirely clear that the city builders were inspired by the urban planning canon of the Hellenistic world.

The metric system used to plan and construct the city clearly shows the use of the Doric metric system. The 3.3 m width of the streets corresponds to 10 Doric feet, just as the 13 m width of the insulae corresponds to 40 Doric feet.

Later Roman-era construction works did not alter the originally established grid in this part of the city. It was entirely maintained, while modifications and architectural interventions were reflected only in repairs inside streets (*St 1*) and, quite logically, in the partitioning and alteration of purpose in individual rooms inside houses (house I, 1).

It is obvious that at that time the already old and statically unstable individual Issaeon structures, built dry or with bonding material consisting of a thin layer of clayish terra rossa, were no longer suitable in terms of their condition and comfort. So the new situation that arose with the loss of independence by the Issaeon polis and the immigration of a new population and the introduction of a new political framework in the city brought technological novelties which were reflected not only in higher quality construction but also in the quality of life in general.

The construction undertakings which were carried out over the above-described residential architecture in the 1st century AD corresponded to increased development which encompassed Issa in this period. This was a time, at around 20 AD, when a representative of the imperial family, Tiberius' son Drusus the Younger, was in Issa, "to be familiarised with military service,

U obalnom dijelu gradi se veliki termalni kompleks, a vjerojatno i teatar. Iako ima razmišljanja da je on podignut već u helenističkom razdoblju, arheološki to zasad nije dokazano. Gradnju teatra treba smjestiti u 1. ili 2. st. Sva ta i druga gradnja pokazuje kako Isejci prihvaćaju nove građevinske tehnike i korištenje kvalitetnijih veziva na vapnenoj bazi pri gradnji svojih objekata.

Dugotrajno korištenje stambenih objekata Ise uvelike je izbrisalo tragove one najranije faze njihova korištenja, što uvelike otežava dataciju prvotne gradnje i utvrđivanje namjene pojedinih dijelova građevina. Stoga u daljnjem istraživačkom radu posebnu pozornost treba posvetiti onim mjestima koja su ostala intaktna od vremena gradnje pojedinih objekata.

Premda su istraživanja isejskog urbanizma tek na početku, vjerujemo da smo ovim prilogom napravili značajan korak u njegovu poznavanju, osobito onog njegovog najstarijeg razdoblja.

and to win the goodwill of the army” (*Tacit, Anali, II, 44*), who on this occasion arranged for the construction or at least organized a training ground (*campus*). An inscription found at the city’s shoreline testifies to Drusus’ visit to Issa.⁵⁹ This visit was directly linked to the promotion of the imperial cult in Issa, where in all likelihood a temple was also built immediately after the death of Augustus.⁶⁰

A large thermal complex, and probably a theatre, were built in the city’s waterfront section. Even though some hold that it was built already during the Hellenistic era, this cannot be archeologically proven for the time being. Its construction should be placed in the 1st or 2nd century. All this and other construction shows that the Issaeans adopted new construction techniques and used higher quality bonding materials on a limestone base when building their structures.

The long use of the residential structures in Issa largely erased traces of the earliest phases of their habitations, which makes it quite difficult to date the initial building phase and determine the purpose of individual parts thereof. Particular attention in further research will thus have to be accorded to those places which remained intact from the time when individual structures were built.

Even though research into Issaeon urbanism is only at its beginnings, I believe that on this occasion considerable progress has been made in becoming more familiar with it, particularly its oldest period.

59 The monument is held in the Archaeological Museum in Split under inv. no. A 5493; Rendić-Miočević 1952, pp. 41-49.

60 Cyriacus of Ancona, in his work, *Inscriptiones, seu epigrammata graeca et latina reperta per Illyricum*, included a transcript of the inscription which mentioned Augustus: *Divvs Avgvstvs pater provident(iae)*, Ciriaco Anconitano 1747, p. XXIII, 154. Marble statues found in Issa also clearly demonstrate the existence of a temple and promotion of the imperial cult, Jadrić-Kučan 2010, pp. 85-90.

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