



PROBNO ARHEOLOŠKO ISTRAŽIVANJE U PODRUMU OSNOVNE ŠKOLE SILVIJA STRAHIMIRA KRANJČEVIĆA U SENJU

Archaeological trial excavations in the basement of Silvije Strahimir Kranjčević Elementary School in Senj

Godine 1972., tijekom izgradnje osnovne škole Silvija Strahimira Kranjčevića u Senju pronađeni su ostatci antičke vodospreme (SB2) koja je danas sačuvana *in situ* u podrumu škole (Glavičić 1973). Vodosprema SB2 jedna je od ukupno pet vodosprema koje su tijekom različitih građevinskih radova pronađene na ovom području i koje se vežu uz ostatke rimskodobnog kupališnog kompleksa (Glavičić 1973; Glavičić 1994/1995). Taj prostor na području današnje osnovne škole i školsko-sportske dvorane poznat je kao lokalitet Štela koji je od 40-ih godina 20. stoljeća pa sve do 1995.

In 1972, during the construction of Silvije Strahimir Kranjčević Elementary School in Senj, the remains of a Roman-era water reservoir (SB2) were found, which is presently preserved *in situ* in the basement of the school (Glavičić 1973). Water reservoir SB2 is one of a total of five water reservoirs that were found in this area during various construction works and which are associated with the remains of the Roman bathing complex (Glavičić 1973; Glavičić 1994/1995). That part of the area of today's elementary school and school sports hall is known as the Štela site, which was repeatedly devastated from



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Sjeverozapadni zid vodospreme (foto: V. Glavaš)
Northwestern wall of the water reservoir (photo: V. Glavaš)

godine u više navrata devastiran. Iako su podatci o postojanju antičkih kulturnih slojeva bili poznati, arheološka istraživanja nisu provedena u punom opsegu te su svi podatci koje danas imamo o Šteli prikupljeni tijekom arheološkog nadzora ili tijekom iskopavanja provedenih na manjim područjima zahvata. Upravo su zbog toga mnogi kulturno-kronološki podatci o ovom lokalitetu izostali (Konestra, Glavaš 2024).

Tijekom veljače 2023. godine na Šteli u podrumskim prostorijama Osnovne škole Silvija Strahimira Kranjčevića provedeno je probno arheološko istraživanje.¹ Istraživanje se sastojalo od dokumentiranja antičke vodospreme SB2 otkrivene tijekom izgradnje osnovne škole 1972. godine te probnog iskopavanja provedenog na dijelu poda vodospreme. Osnovni cilj ovog istraživanja bio je dokumentirati vodospremu suvremenijim dokumentacijskim tehnikama te probno sondirati pod vodospreme kako bi se utvrdila tehnika te kronološki okvir izgradnje.

Radovi koji su prethodili dokumentiranju postojećeg stanja vodospreme uključivali su uklanjanje

the 1940s until 1995. Although data on the existence of Roman-era cultural layers were known, archaeological research was not carried out in full, and all the information we have today about Štela was collected in archaeological monitoring or during excavations carried out in smaller areas. This is precisely why many cultural-chronological data about this site were missing (Konestra, Glavaš 2024).

During February 2023, archaeological trial excavations were conducted at the Štela site in Senj, in the basement of Silvije Strahimir Kranjčević Elementary School.¹ The excavation consisted of documenting the Roman-era water reservoir SB2 discovered during the construction of the elementary school in 1972, and trial excavation carried out on part of the floor of the water reservoir. The main goal of this research was to document the water reservoir using more modern documentation techniques and to open a trial trench under the water reservoir in order to determine the technique and the chronological framework of the construction.

The work that preceded the documentation of the current state of the water reservoir included

recentnog otpada koji se tijekom godina nakupio unutar vodospreme te čišćenje zidova vodospreme. Struktura vodospreme snimljena je fotogrametrijski za potrebe izrade nacrtna dokumentacije i 3d modela, a položaj fotočeka snimljen je totalnom stanicom.

Zidovi vodospreme građeni su od neobrađenih i grubo obrađenih kamenih blokova, a mjestimično i od većih oblutaka međusobno povezanih vodonepropusnom žbukom svijetle crvenkastosmeđe boje. Primjetna je i tendencija vodoravnog uslojavanja kamena. Zidovi vodospreme debljine su oko 50-55cm, ukopani su u tlo, i to, kako se čini, u sterilni sloj. Građeni su kao podzidi, bez vanjskog lica. Na vrhu sjeverozapadnog i jugozapadnog zida vodospreme vidljivi su tragovi elevacije zidova vodospreme koji se vjerojatno nalazio na tadašnjoj hodnoj razini. Zidovi vodospreme međusobno su i s podom vodospreme povezani debljim slojem vodonepropusne žbuke.

Dno vodospreme popločano je četvrtastim keramičkim pločama koje su međusobno povezane žbukom. Na mnogim pločama uočeni su životinjski tragovi (mačka, pas, srna?) te otisak cipele s potplatom s čavličima. Na svim zidovima uočljivi su tragovi finije i grube vodonepropusne žbuke. Gru-

the removal of recent waste that had accumulated inside it over the years and cleaning of its walls. The structure of the water reservoir was recorded photogrammetrically for the purposes of design documentation and 3D models, and the position of the photopoints was recorded with a total station.

The walls of the water reservoir were built from undressed and rough-hewn stone blocks, and in some places from larger pebbles connected with waterproof mortar of light reddish-brown color. The tendency of horizontal layering of the stone is also noticeable. The walls of the water reservoir are about 50-55 cm thick, they are dug in the ground, in a sterile layer as it seems. They were built as retaining walls, without an outer face. At the top of the northwestern and southwestern walls of the water reservoir, traces of the elevation of its walls are visible, which was probably at the walking level at the time. The walls of the reservoir are connected to each other and to the floor of the reservoir with a thicker layer of waterproof plaster.

The bottom of the reservoir is paved with square ceramic tiles that are connected with mortar. Animal tracks (cat, dog, doe?) and the imprint of a shoe sole studded with nails were observed on a number of tiles. Traces of fine and coarse water-



Popločanje vodospreme (foto: V. Glavaš)
Water reservoir paving (photo: V. Glavaš)

¹ Istraživanje su u suradnji proveli Odjel za arheologiju Sveučilišta u Zadru i Institut za arheologiju u Zagrebu.

¹ The research was carried out in collaboration between the Department of Archeology of the University of Zadar and the Institute of Archeology in Zagreb.





ba je žbuka bila premazana na zidove vodospreme, a preko nje se na nekim mjestima nalaze premazi finije žbuke ružičasto-bijele boje.

Uz sjeverozapadni zid vodospreme ostao je pričvršćen i preostatak zapune koji nije uklonjen tijekom istraživanja 1972. godine. Tijekom njegova uklanjanja ustanovljeno je da je riječ o ostatku sedimenta i slijepljenih komada vodonepropusne žbuke raznih veličina. Na pojedinim ulomcima vidljivi su i tragovi profilacije što upućuje na to da je riječ o stropu cisterne koji je urušen i kao takav postao sadržaj njezine zapune. Zapuna je sadržavala i nešto amorfnih ulomaka većinom građevinske keramike, nekoliko ulomaka amfora, veće *tesserae* te fragmente zidne žbuke.

Jedan od ciljeva ovog istraživanja bio je i utvrditi kronološki kontekst izgradnje vodospreme. Iz tog razloga uklonjen je dio (1/3) jedne ploče poda cisterne kako bi se uvidjelo na čemu leži vodosprema i kako bi se dobili podatci o vremenu izgradnje. Ustanovljeno je da ploče poda vodospreme leže na sloju čvrste vodonepropusne žbuke debljine 17 cm. Ispod tog sloja ustanovljeno je postojanje ranije podnice vodospreme izrađene u tehnici *opus spicatum* koji također leži na više slojeva vodonepropusne žbuke.

proof plaster can be seen on all the walls. The walls of the reservoir were coated with coarse plaster, and over it, in some places, there are coatings of finer pinkish-white plaster.

The rest of the fill, which was not removed during the research in 1972, remained attached to the northwestern wall of the reservoir. During its removal, it was found that it consisted of the remains of the sediment and pieces of waterproof plaster of various sizes stuck together. Traces of molding are also visible on some fragments, which indicates that it is the ceiling of the cistern that collapsed and became the contents of its fill. The fill also contained some amorphous fragments, mostly ceramic building material, several fragments of amphorae, larger *tesserae* and fragments of wall plaster.

One of the goals of this research was to determine the chronological context of the construction of the water reservoir. For this reason, a part (1/3) of one tile of the cistern's floor was removed in order to see what the water reservoir lies on and to obtain data on the time of construction. It was found that the floor tiles of the water reservoir lie on a layer of solid waterproof plaster 17 cm thick. Below that layer, there was an earlier floor of the

Zbog ograničenog prostora istraživanja žbuka na kojoj leži ranija podnica nije mogla biti uklonjena u potpunosti te je na dubini od 77 cm ispod razine poda iskopavanje zaustavljeno. Po završetku iskopavanja sonda je zatrpana te je uklonjeni dio podne ploče vraćen na originalni položaj.

Istraživanjem je ustanovljeno postojanje najmanje dviju faza cisterne. U ranijoj fazi dno je cisterne bilo popločano keramičkim pločicama složenima u tehnici *opus spicatum* koje su ležale na debljem sloju vodonepropusne žbuke. Vrlo vjerojatno su već tada izgrađeni i zidovi cisterne koji su premazani grubom žbukom. U drugoj fazi, možda zbog propuštanja vode, raniji pod cisterne izrađen u tehnici *opus spicatum* prekriven je debelim slojem žbuke na koju je postavljen novi pod, a spoj poda i zidova dodatno je zaštićen debelim nanosom vodonepropusne žbuke. Tada su zasigurno i pojedini dijelovi zidova vodospreme zaglađeni finijim slojem žbuke kako bi se popravili dotrajali dijelovi.

Vodosprema na Šteli bila je u funkciji cisterne i bila je ukopana u zemlju. Njezin je strop bio ravan što potvrđuju ostatci žbuke pronađeni unutar ostatka zapune cisterne, a hodna površina iznad nje mogla je biti popločana većim mozaičkim tesarima kakve su pronađene u ostatku zapune.

Dataciju cisterne moguće je smjestiti u šire ranorimsko razdoblje dijelom na temelju sadržaja cisterne koji, doduše, ne pruža siguran *terminus* svojeg nastajanja jer nije u potpunosti sačuvan, ali pruža *terminus ante quem* za gradnju cisterne, što bi odgovaralo razdoblju prije 3. stoljeća.

water reservoir made in the *opus spicatum* technique, which also rests on several layers of waterproof plaster.

Due to the limited research area, the plaster on which the earlier floor lies could not be completely removed, and the excavation was stopped at a depth of 77 cm below the floor level. At the end of the excavation, the trial trench was backfilled and the removed part of the floor tile was returned to its original position.

The excavations established the existence of at least two phases of the cistern. In the earlier phase, the bottom of the cistern was paved with ceramic tiles arranged in the *opus spicatum* technique, which lay on a thicker layer of waterproofing plaster. It is very likely that the walls of the cistern were already built then and coated with coarse plaster. In the second phase, perhaps due to water leakage, the earlier floor of the cistern, made in the *opus spicatum* technique, was covered with a thick layer of plaster on which the new floor was placed, and the joint between the floor and the walls was additionally protected with a thick layer of waterproof plaster. That is also when certain parts of the walls of the reservoir were surely smoothed with a finer layer of plaster in order to repair the worn parts.

The Štela water reservoir was in the function of a cistern and was dug in the ground. Its ceiling was flat, as confirmed by the remains of plaster found inside the remains of the cistern fill, and the walking surface above it could have been paved with larger mosaic *tesserae*, of the kind found in the rest of the fill.

It is possible to place the dating of the cistern in the broader early Roman period, partly based on the contents of the cistern, which, admittedly, does not provide a certain *terminus* of its creation because it is not fully preserved, but it does provide a *terminus ante quem* for the construction of the cistern, which would correspond to the period before the 3rd century.

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⋮ Ostatak zapune vodospreme (foto: V. Glavaš)
 ⋮ Remains of the water reservoir fill (photo: V. Glavaš)

