

A red Roman column from Emona (Ljubljana, Slovenia)

Rimski steber z rdeče barvanim ometom iz Emone

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Izvleček

Arheološka izkopavanja, ki so leta 1999 potekala v Ljubljani, v inzuli XXVII Emone, so odkrila ostanek trupa stebra z organskim jedrom, postavljenega na kamnito plinto. V prispevku predstavljamo najdbo, njen arheološki kontekst in morebitne analogije, mineraloško-petrografsko sestavo ometa, tip pigmenta ter analizo naravnega kamna, uporabljene za plinto. Od trupa stebra je ostal le zunanji del iz ometa, nanesenega v štirih plasteh in barvanega z rdečo okro, v notranjosti pa se je ohranil odtis trstičja. Plinta je pravokotni blok, narejen iz lokalnega spodnjajurskega oolitskega apnenca, verjetno z območja Podpeči. Oblika stebra kaže, da bi bil lahko del portika ali peristila, arheološki kontekst pa nakazuje povezavo z bazenom oz. kopališčnim kompleksom v tem delu poznorimske Emone.

Ključne besede: Ljubljana; Emona; poznorimsko obdobje; steber; lesena arhitektura; odtisi trstičja; podpeški apnenec; omet; pigmenti

Abstract

The excavation conducted in 1999 in Ljubljana (Slovenia), in Insula XXVII of the Roman colonia Iulia Emona, unearthed the remains of a column shaft with an organic core set onto a stone block. The contribution presents this find, its context and likely parallels, the mineralogical-petrographic composition of the stucco, type of the pigments used, as well as the rock of the plinth and its provenance. Of the shaft, only the stucco survives, applied in four mortar layers and painted in red ochre, while its interior surface shows the impressions of reeds. The plinth is a rectangular block made of locally available Lower Jurassic oolitic limestone, presumably from Podpeč. The column may have formed part of a porticus or peristyle, possibly associated with a pool or a bath complex in this part of Late Roman Emona.

Keywords: Ljubljana; Emona; Late Roman period; column; wooden architecture; reed impressions; Podpeč limestone; stucco; pigments

INTRODUCTION

The archaeological site of NUK II lies in Ljubljana,¹ Slovenia (*Figs. 1; 2*). It is part of the Roman town

of *colonia Iulia Emona*, built in the early 1st century AD according to a preconceived rectangular plan with a rectilinear street grid and enclosed with fortification walls. The NUK II site has been archaeologically investigated in several variously long campaigns, most extensively between 1996 and 1999, in advance of the planned construction of the new National and University Library of Slovenia (hence the acronym).

¹ Within the area of the monument of local importance named Ljubljana - Arheološko najdišče Ljubljana (listed under evidence heritage register number EŠD 329 [database RKD]).

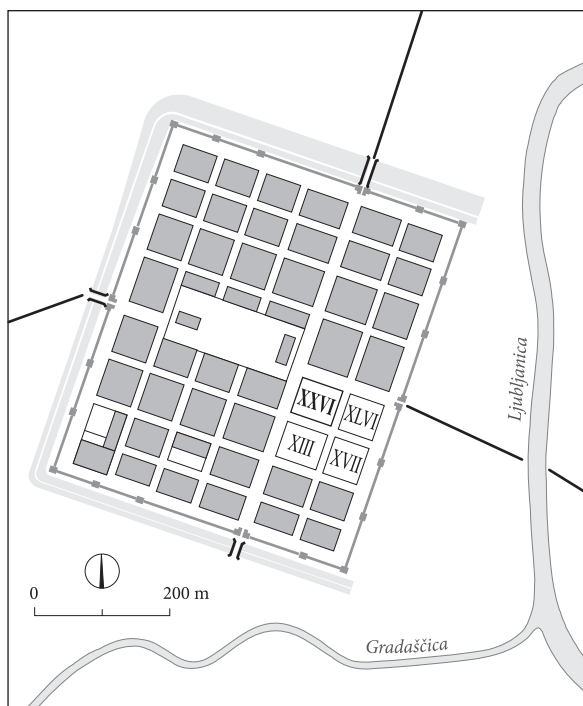


Fig. 1: Plan of Emona with marked Insula XXVII set against the street grid of modern Ljubljana.

Sl. 1: Načrt Emone z označeno inzulo XXVII in moderno Ljubljano v ozadju.

The excavation campaign in 1999, led by Ljudmila Plesničar-Gec and Damijan Snoj, unearthed a red painted column (Fig. 4), recorded as a special find (PN5983). The column is now held in the Mestni muzej Ljubljana under Inv. No. 510:LJU;0060969.

Upon discovery, the remains of the column were consolidated with animal glue and reinforced with plaster. It was then lifted and transferred to the storage facilities of the Mestni muzej Ljubljana. In December 2014, the plaster was removed at the Restavratorski center (Zavod za varstvo kulturne dediščine Slovenije).

Analyses ensued, with the characterisation of the mortar and paint layers of the column shaft, as well as the rock of the plinth, aimed at establishing the production manner and provenance.

ARCHAEOLOGICAL CONTEXT

Archaeological site

The NUK II site is located in the city centre of present-day Ljubljana and delimited by the streets of Rimska ulica, Emonska ulica, Zoisova cesta and Slovenska cesta. It extends across 7500 m² and comprises parts of Roman Insulae XIII,

XVII, XLVI and XXVII, as well as the intersection of Streets F and H (Figs. 2; 3).

The excavation records show that the column was found in Insula XXVII, in Grid Square R/18 and at the very edge of the excavation area. Plesničar-Gec writes that Insula XXVII, located south of the *decumanus maximus*, was a residential and artisanal area in the first few centuries of its existence, while in the late 4th and the first half of the 5th century it formed part of a public recreation complex that extended into Insulae XVII and XIII.²

The column was found in stratigraphic unit SE1916 described as a crumbly light grey-brown sandy layer with pieces of painted wall plaster, crushed brick and gravel. It was a mixed layer with finds that included a coin minted in AD 40–41.³ SE1916 was overlain by mixed SE69 that extended across the site and contained post-medieval, medieval and Roman finds; SE69 was partially removed by machine. The stratigraphic unit with the column lay above SE1918 that yielded, among other finds, a coin of Valentinianus I, which dates the layer to the last quarter of the 4th century. In adjacent Grid Squares P/18 and O/18, excavations revealed a red and white watertight floor such as were usually used for pools. At roughly the same altitude, SE1916 in Grid Squares R/18 and S/18 revealed a hypocaust.

For further details, the excavation records are less useful. The piece is not drawn in any of the plans and cross sections made during excavation.⁴ It only appears in the list of special finds with its grid square, coordinates, brief definition (“worked stone; column with fresco above stone”) and date of discovery. It also appears in a few photographs taken during excavation and after consolidation/reinforcement. The coordinates for the column give a single point, but it is not noted whether it was measured at the top, the bottom, the left edge, the right edge or at the centre of the 36 × 65 × 36 cm large piece. It is thus not possible to accurately locate the piece within the 0.12–0.78 m thick and 1.64–2.36 m wide SE1916. The photographs show the plinth lay between a straight wall to the north and a semicircular wall to the south, parallel with the straight wall, which is consistent with the given coordinates (Fig. 3). They also show that the bedding surface of the plinth was parallel with

² Plesničar Gec 1999, 236.

³ Acc. No. S0041324, Caius Germanicus.

⁴ It is drawn into the plan of Insula XXVII in Plesničar Gec 1999, Fig. 322a, but not mentioned in the text.

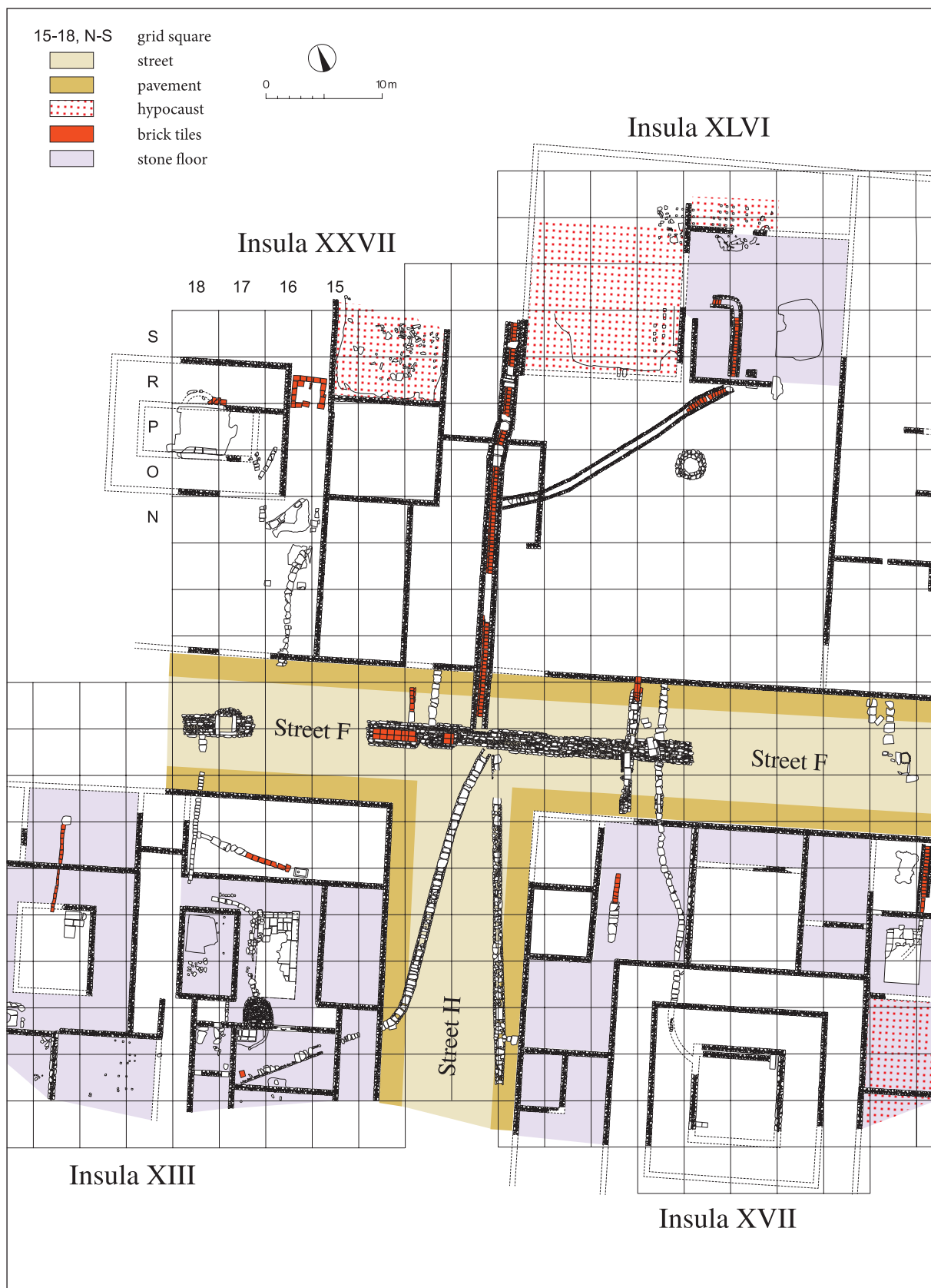


Fig. 2: Emona. Insulae XXVII, XLVI, XIII and XVII separated by Streets F and H (adapted from Plesničar, Brenk, see *Fn. 31*).

Sl. 2: Emona. Inzule XXVII, XLVI, XIII in XVII ter križišče cest F in H (prirejeno po Plesničar, Brenk, glej *op. 1*).

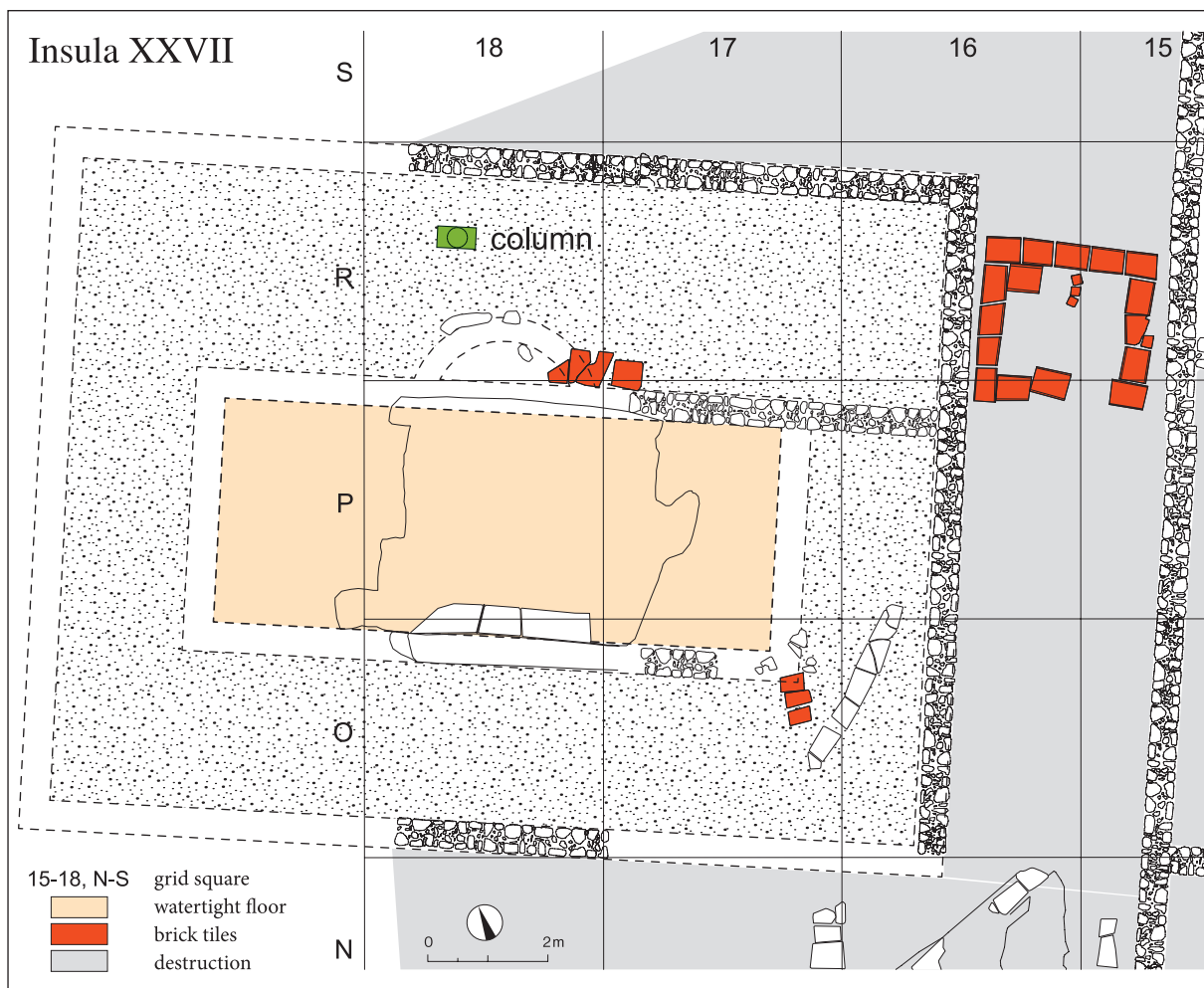


Fig. 3: Emona. Detailed plan of Insula XXVII with marked findspot of the column, located by presuming that the coordinates were taken in the centre of the piece (adapted from Plesničar, Brenk, see *Fn.* 31).

Sl. 3: Emona. Podroben načrt inzule XXVII z vrisano najdiščno lokacijo stebra, pri kateri se predpostavlja, da so dokumentirane koordinate vzete v središču kosa (prirejeno po Plesničar, Brenk, glej *op.* 1).

the surrounding ground, slightly raised above it (Fig. 4). In connection with the latter, the surface finish on the stone plinth (for detail see below) indicates that the plinth must have stood 10 cm above the surrounding ground on three sides. Having said that, available excavation records offer no confirmation of whether the surrounding ground on the photographs is the original top surface of SE1916 and whether mixed SE1916 was actually a levelling layer as part of construction activities, hence the original context of the column. Given the available evidence and pending the results of an integral evaluation of the NUK II site, it is only possible to say that the column was likely found *in situ* and that it postdates SE1918. It is certainly of a Late Roman date; according to the phases of the NUK II site as proposed by Plesničar Gec in one of her last publications, the column belongs

to the third construction phase dated between 400 and 452.⁵

Description of the column shaft and its plinth

The surviving piece of Roman architecture comprises the lower part of the painted stucco of the now hollow column shaft that is set directly onto a stone block (Fig. 5a).

The stucco survives in the maximum height of 17 cm. The lower diameter of the shaft measures 36 cm and the diameter of the hole for the organic core of the shaft measures 25 cm. The shaft is plain, red painted and without a base. The lower diameter

⁵ Plesničar Gec 2005, 403–404.



Fig. 4: Emona, Insula XXVII. The column upon discovery in 1999.

Sl. 4: Emona, inzula XXVII. Ostanki stebra ob odkritju leta 1999.

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Fig. 5: Fragment of the Roman column with (a) the most finely dressed long side, (b) the hollow interior of the shaft with visible reed impressions and (c) the undressed long side. Emona, Insula XXVII.

Sl. 5: Fragment rimskega stebra z najbolj fino obdelano daljšo stranico (a), odtisi trstičja v notranjosti votlega trupa (b) ter neobdelano daljšo stranico (c). Emona, inzula XXVII.

roughly corresponds with the width of the stone block; the edges of the two pieces are aligned on one of the longer sides of the block, while on the opposite side the shaft slightly exceeds it. Neither is the shaft completely centred along the longitudinal axis of the block. The interior surface of the stucco shows impressions of vertically positioned reeds (common reed – *Phragmites australis*)⁶ that enveloped an organic, most likely wooden core.

⁶ Jernej Jogan from the Oddelek za biologijo (Biotehniška fakulteta, Univerza v Ljubljani) identified the plant impressions and suggested that a thick bundle of reeds might also



The reeds were attached to the core with a cord spirally wound round the core at an interval of roughly 10 cm (Fig. 5b). The reed impressions between individual cord impressions are flat and curve neither vertically nor horizontally, suggesting that the core was of a solid material and that the reeds were not attached in bundles. Reeds on wood would have a double function: ensuring a better adhesion of the stucco and preventing the cracking of the stucco due to shrinkage of the wooden

have been sufficiently load bearing. We sincerely thank him for his contribution.

core. The combination of wood, reeds and stucco is used in Roman construction in specific circumstances, mostly on ceilings and vaults,⁷ but also in wattle-and-daub walls.⁸ Neither is the case for the column from Emona. In Roman construction, wooden elements would usually be roughened up and have the stucco applied directly onto it.⁹ The reed impressions certainly do prove, however, that the core was not made of natural stone or brick, as these materials would not require reed lining. Accepting a wooden core, it may have been a worked tree trunk, though it is also possible that we are dealing with a framework or some kind of wooden armature onto which the reeds were attached.¹⁰

The stucco stands on a stone block measuring 62.5–65.0 cm in length, 34–36 cm in width and 24.5–26.5 cm in height. Considering the dimensions, with the height close to the width, the block would be a pedestal if visible whole,¹¹ but as its surface finish (see below) shows that only the upper third stood above ground, the block actually served as a plinth. It shows imprecise workmanship, in both shape and surface finish. None of the surfaces is smoothly dressed. The bedding surface is dressed with a pointed chisel; there is no difference between the surface finish in the area covered with the shaft and the surrounding area. One of the longer side surfaces and both shorter ones are fairly smoothly finished in the height of roughly 10 cm from the bedding surface, with a very uneven and at places blurred border made with a flat chisel. Lower down, the surface is either coarse or undressed. The surface most smoothly finished (*Fig. 5a*), with a toothed chisel, is one of the longer sides, particularly its right end below the 10-cm strip that is finished with a finer toothed chisel. The purpose of this finer finish is not known and might indicate reuse of the block.¹² This longer and both shorter side surfaces also have a border at the bedding surface, which is dressed with a flat chisel roughly in the

height of 1.5 cm; this border does trace the edge of the surfaces, but as the edge is very uneven, so too is the border. The other of the two longer side surfaces, where the shaft exceeds the edge of the plinth, was left undressed (*Fig. 5c*). The surface finish of the plinth reveals that it was visible on one of the longer and both shorter sides in the height of roughly 10 cm, more precisely that it stood 10 cm above the surrounding ground or pavement on three sides, while on one side its bedding surface was levelled with the ground and the stucco in part reached onto that ground.

The shaft may have been plain along the entire height, but it may also have been plain only in the lower third and fluted above. The thickness of the stucco layers (4–7 cm) does allow for this possibility, though we should also note the substantial difference in the thickness that may indicate the existence of an adjacent structure at the thinner part rather than mere poor workmanship. The shaft was probably painted red only in the lower third. The absence of a base could signify a column with a Doric capital. According to Vitruvius' recommendations on the proportions of Doric columns in colonnades and walks,¹³ a shaft measuring 36 cm in diameter would be an estimated 2.7 m high together with the capital and 2.5 without it. Considering the general poor workmanship, as well as the location of the find within an insula, however, the column may also have been reduced to a simple cylindrical element on a plinth terminating above with a slab in the constructional function of a capital. The stucco does not survive along the entire circumference of the column, but in a sufficient measure to suggest that the column was not engaged into a wall or a masonry fence; the column was presumably either fully free-standing or associated with a (wooden) fence attached higher up. The fact that the column is positioned roughly at the centre of the length of the footing and even more so the surface finish that points to differing ground levels suggest that it was not a corner element and that it may have been one in a series of such columns, in a structure such as a porticus or a peristyle/colonnaded courtyard. Such an interpretation is corroborated by the observation of the surface finish on the plinth that suggests two differing ground levels.

⁷ Vitruvius VII, III, 2.

⁸ Vitruvius VII, III, 11.

⁹ See Ulrich 2007, 178pp.

¹⁰ This is a suggestion that Roger B. Ulrich (Department of Classics, Dartmouth College) put forward on the basis of a photo of the column remains. We heartily thank him for his opinion.

¹¹ Ginouvès 1992, 69–70.

¹² Considering the presumed source of the stone at Podpeč, the possibility of reuse is also suggested by the span of the datable artefacts from this rock, believed to have ended in the 3rd century AD (Šašel Kos 1997).

¹³ Vitruvius V, IX, 3.

EXPERIMENTAL

Materials

The samples of the stucco, consisting of one paint and four mortar layers, were taken across the profile of the column (samples ASL1-ASL3) in order to determine the mineralogical-petrographic composition of the mortars, i.e. the type of the aggregate and binder, the painting technique and the pigments used. Another sample (ASL 5) was taken from the stone plinth.

Methods

The polished thin-sections of the mortar layers for the stucco were studied with optical microscopy, using the Olympus BX-60 optical microscope equipped with a JVC3-CCD digital camera.

Polished cross-sections of the paint layer were studied by Raman microspectroscopy to identify the pigments of the red paint layer and the painting technique used. Raman spectra were obtained from the polished cross-sections of the paint layers with the Horiba Jobin Yvon LabRAM HR800 Raman spectrometer equipped with the Olympus BXFM optical microscope. Measurements were made using a 785nm laser excitation line, and the Leica 100× objective. The spectral resolution was about 1 cm^{-1} .

The stone plinth was examined macroscopically, sampled (sample ASL 5) and a thin-section prepared. It was studied under transmission light using the Zeiss Axiophot polarising optical microscope and classified according to Folk (1959; 1962) and Dunham (1962).

RESULTS

Painted stucco

The thickness of the stucco varies from 4 to 7 cm. The stratigraphy of mortar layers is as follows: (i) a red paint layer (ASL1) that covered four different mortar layers, (ii) first – ca 3.0 to 3.5 mm thick (ASL1), (iii) second – ca 17–20 mm thick (ASL1), (iv) third – ca 15–40 mm thick (ASL2) and (v) fourth ca 5–6 mm thick layer (ASL3).

As observed under the optical microscope, the red paint layer was applied using the fresco painting technique (Fig. 6a), i.e. the pigment was

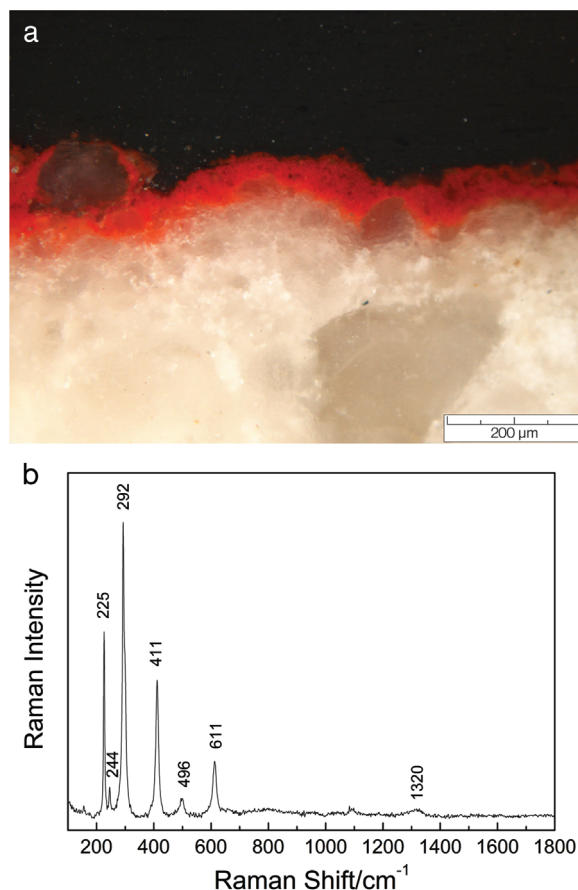


Fig. 6: Fragment of the Roman column. The red paint layer was applied *a fresco* (a). Raman spectrum of hematite indicating red ochre pigment (b). Emona, Insula XXVII. Sl. 6: Fragment rimskega stebra. Rdeča barvna plast je bila nanesena na svež omet (a). Ramanski spekter pigmenta rdečega okra (hematit) (b). Emona, inzula XXVII.

applied as a water suspension onto fresh stucco. Raman microspectroscopy revealed the presence of hematite (Fig. 6b), which indicates that the pigment used is red ochre, a common earth pigment. Pliny the Elder distinguished between 'florid' pigments, which were rare and expensive, and 'austere' or sombre pigments, which were common.¹⁴ Red ochre belongs to the latter. The analyses thus far performed of the wall paintings from Emona, including this particular insula, confirm the absence of the rare and expensive pigments.¹⁵

The aggregate of the first mortar layer, immediately under the paint layer, consists of angular and semi-angular dolomite grains measuring between 0.05 and 2.06 mm in size, 0.32 mm on

¹⁴ N. h. 35.30.

¹⁵ Gutman et al., 2016.

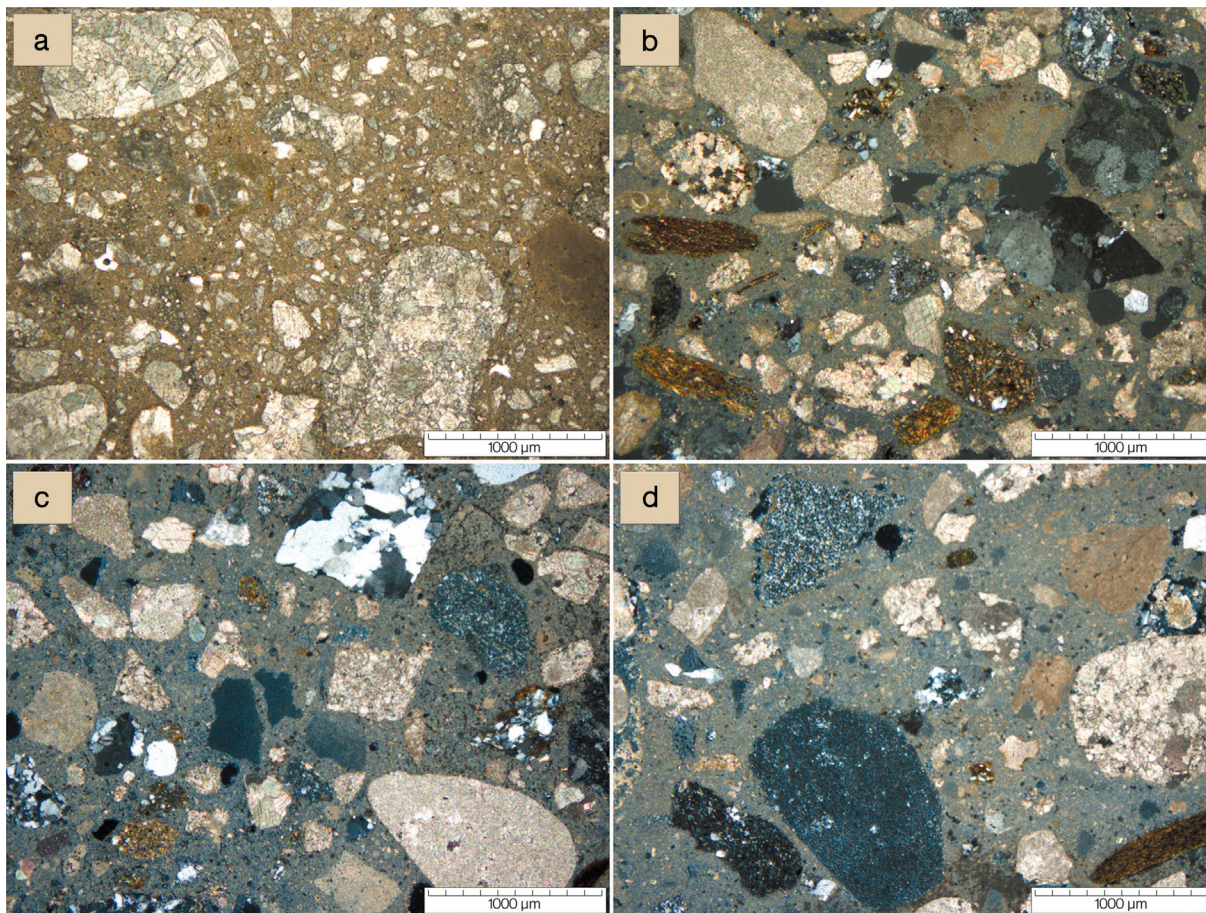


Fig. 7: Fragment of the Roman column. Microphotographs of the mortar layers of different mineralogical-petrographic composition, from the exterior (a) towards the interior layer (d) of the column shaft (transmission light, crossed polars). Emona, Insula XXVII.

Sl. 7: Fragment rimskega stebra. Mikrofotografije plasti ometa stebra različne mineraloško-petrografske sestave, od zunanje (a) proti notranji plasti (d) (presevna svetloba, navzkrižni nikoli). Emona, inzula XXVII.

average (Fig. 7a). The grains are poorly sorted with a high content of fine fractions (< 0.05 mm in size). The second mortar layer (Fig. 7b) has a 1:1 ratio of dolomite to silicate grains, which are poorly sorted, rounded, semi-angular and angular, measuring between 0.14 and 1.56 mm in size, 0.37 mm on average. Silicate grains such as quartz, mica, feldspar, chert and lithic grains of sediment and igneous rocks have been observed. The same composition of aggregate grains has also been observed in the third (Fig. 7c) and fourth (Fig. 7d) mortar layers with poorly sorted grains, measuring from 0.21 to 2.14 mm and 0.46 mm on average (for the third layer) and from 0.16 to 2.27 mm and 0.52 mm on average (for the fourth layer).

The binder of the mortar layers is lime, with lime lumps. The aggregate/binder ratio is approx. 1:1 for the first two layers, while binder prevails in the third and fourth layers, in the ratio of 1:2 and

1:3, respectively. High amount of fine fraction in the first layer resulted in a compact binder.

A similar stratigraphy of mortar layers was observed in the analysed fragments of wall paintings from Emona excavated in this area (Grid Squares R/18 and S/18).¹⁶ According to Vitruvius¹⁷, the Romans applied up to six preparation layers of mortar before painting (three medium- to fine-grained layers, now commonly called *arriccio*, and three more fine-grained layers, called *intonaco*). He also described the correct method of plastering walls and ceilings and of making a high-quality base for wall paintings. In the case of wall paintings, Vitruvius recommended the use of 'transparent grains of marble' for at least three coats. At Emona, dolomite and rarely coarse-

¹⁶ Gutman et al., 2016.

¹⁷ Vitruvius, VII, 3.

grained calcite was used instead.¹⁸ This has also been observed in the wall paintings from Celeia, a Roman town located some 60 km northeast of Emona.¹⁹ Moreover, at Emona most often a single layer has been observed, two at most, sometimes a mixture of the silicate and carbonate grains was used, while preparation layers for the Celeia wall paintings show up to three layers with carbonate aggregate, which underscores the differences in economic status between the two towns. These results suggest that the same recommendation was followed in case of the technology for the painted stucco columns.

The petrographic composition of the mortar aggregate usually reflects the local geological conditions. The presence of rounded and sub-rounded grains suggests a fluvial origin, most probably the alluvial deposits of the River Sava, which are composed of light and dark grey limestone and dolomite, grains of sandstones, quartz, schist and magmatic pebbles.²⁰ Angular grains of dolomite aggregate indicate the use of crushed rock, and are likely to have been obtained from the dolomite rock that occurs in the vicinity of Ljubljana. Similar composition of mortars was also found in the preparatory layers for Emona wall paintings.²¹

The rock of the plinth

The plinth is made of medium dark grey (N4 according to the Geological Rock-Color Chart) limestone. Running along the length of the block roughly at mid-height is a thin and highly uneven lamina of marly material that divides the otherwise uniform rock of the plinth in two parts (Fig. 5).

The plinth is made of oolitic packstone²² or oomicrite²³ (Fig. 8).

The packstone texture consists of allochemical grains (approximately 65%) and a prevailing (25%) micrite to microsparite matrix with a subordinate (10%) granular sparite cement. The allochemical grains measure from 0.12 to 2.5 mm, 0.6 mm on average, and are moderately well sorted. Their form and roundness mainly depends on the type of grains: the ooids and intraclasts are predomi-

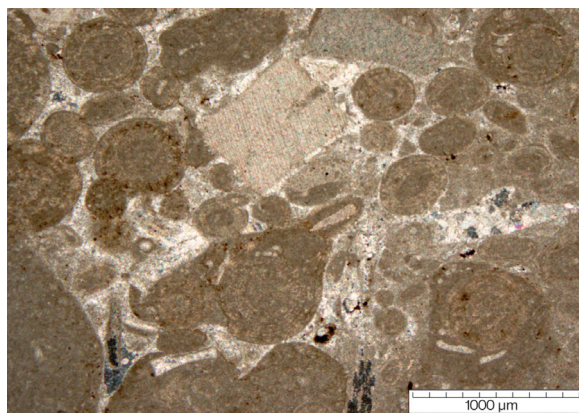


Fig. 8: Fragment of the Roman column. Thin-section of the rock of the plinth. The rounded grains are ooids, the angular grain (centre) is an echinoderm fragment, with a micritic matrix (light grey) and sparite (very light grey to white) between the allochemical grains (transmission light, crossed polars). Emona, Insula XXVII.

Sl. 8: Fragment rimskega stebra. Zbrusek kamna podstavka. Zaobljena zrna so ooidi, oglato zrno (sredina) je odlomek ehinoderma, z mikritno (svetlo sivo) in sparitno (zelo svetlo sivo do belo) osnovo med alokemi (presevna svetloba, navzkrižni nikoli). Emona, inzula XXVII.

nantly isometric and well rounded, the echinoderm plates are mostly angular to sub-rounded. The grain-to-grain relations are mainly characterised by point and long contacts, less frequently by concave-convex and saturated contacts.

Almost parallel, up to 0.05 mm thick sparitic veins are present in the rock, two of them near perpendicularly intersecting stylolites.

Allochemical components are ooids, intraclasts and bioclasts.

Ooids make up approximately 50% of the thin-section surface. They measure between 0.2 and 1.5 mm, 0.6 mm on average. Their cores are seldom visible. Fossil fragments (echinoderms and gastropods) can be observed at the centre in some cases. Cortical laminas mostly have a radial crystal structure, while some ooids reveal a dual microstructure. The inner part has a radial, the outer part a tangential crystal structure. Some of them are composed of two or more ooids. The ooids show different degrees of micritization, some are completely micritized.

Intraclasts are present in roughly 10%. They are micritic, oomicritic and biomicritic in composition, and measure between 0.2 and 2.5 mm. They are mostly isometric and intermediate in cross sections, mostly rounded and partly angular. Echinoderms, fragments of bivalves, gastropods and ostracodes have been detected in the biomicritic intraclasts.

¹⁸ Gutman et al., 2016.

¹⁹ Gutman et al., 2015.

²⁰ Premru 1980.

²¹ Gutman et al., 2016.

²² Dunham, 1962.

²³ Folk, 1959, 1962.

Bioclasts are present with about 5% and represented by echinoderms. Some are micritised at the edges. They measure 0.2 to 1 mm. They are isometric to long in cross section and angular to sub-rounded.

The matrix of micrite and microsparite, mostly of the pore type, is present in the rock with about 25%.

Sparite is present with about 10%. It is granular with equant crystals measuring between 0.04 and 0.2 mm. Genetically, it belongs partly to pseudo- and partly to orthosparite. The latter is of the pore and corrosive type (late diagenetic sparite).

Opaque minerals are present in traces and most probably belong to up to 0.04 mm large limonitised pyrite grains. They are mostly concentrated along the stylolites and in part randomly scattered in the rock.

The described limestone microlithofacies of the plinth has been documented for different geological periods in different areas of Slovenia. Considering that the plinth was excavated in Emona, we suspect that the material for its production came from the wider surroundings of the town, presumably from the area of Podpeč, roughly 15 km southwest of Emona. It is a known site of Roman quarrying with Lower Jurassic beds of oolitic limestone.²⁴

DISCUSSION

The column represents an exceptional find both in the town of Emona and in Slovenia. Parallels for columns with an organic core are few to be found. Column shafts with a wooden core are believed to have been used in Carnuntum, forming part of a porticus that lined a street (*Straßenhalle*) in Insula VI of the civil town.²⁵ As opposed to the column from Emona, these shafts were presumably placed between respective bases and capitals of stone. Together with the Temple of Diana, the *Straßenhalle* is attributed to the fourth construction phase and dated to the early 4th century.²⁶ We should mention that the said bases have no dowel holes that, together with the absence of pieces of shafts in either stone or brick, led the Austrian researchers to presume organic-core shafts. The plinth from Emona also bears no dowel holes on the bedding surface, nor any other markings that

would indicate reinforcement of the joint; the stucco must thus have sufficed to keep the shaft on its footing. The excavations in Emona revealed no stone bases or capitals in Insula XXVII. Recently, excavations in Celje also brought to light a hollow stucco shaft on a stone plinth, but the impressions in the interior suggest a different core, possibly organic and held together with a sort of a cord wrapped around the core.²⁷

The analyses of the paint and mortar layers of the stucco from Emona have shown that it is comparable in composition and number of applied layers with the samples of Emona's wall paintings thus far analysed.²⁸ The analysis of the rock for the plinth has shown that it came from the Roman quarries in the vicinity of the town, presumably at Podpeč.

The excavation records reveal that the column formed part of a building or complex with a limited use of stone; it was used for the plinth, but not for the shaft.²⁹ The shape of the plinth and its surface finish suggest that the column was part of a colonnade lining one or more sides of a building, as a porticus or a peristyle. The coordinates for the column show that the colonnade stood merely a metre from the wall to the north, which would mean a very narrow covered passage. The column was found in the central part of Insula XXVII that, according to Plesničar Gec,³⁰ formed part of recreation complex together with Insulae XVII and XIII. Insula XXVII also revealed a basin or pool south of the column,³¹ as well as a hypocaust in its vicinity, which indicates the existence of baths. However, the current state of analysis of

²⁷ Unearthed during the excavations that the Celje Regional Museum conducted in 2018 at the Muzejski trg site, the publication of which is in preparation. We sincerely thank Maja Bausovac and Jure Krajšek from the said museum for this information.

²⁸ Gutman et al. 2016.

²⁹ For Emona, Schmid writes of similar finds of a late date, of a wooden colonnade on masonry plinths in the peristyle court of Insula VII: Schmid 2013, 114–115; Gaspari 2014, 232. This suggests a common practice of using wooden architectural elements across Emona in its later phase.

³⁰ Plesničar Gec 1999, 236–241.

³¹ A pool in this part of the insula is presumed and drawn on the plan in L. Plesničar and M. Brenk, *Vizualizacija arheoloških ostalin Emone. Poročilo o obdelavi gradiva in vizualizaciji zadnje gradbene faze na najdišču UKL*, Ljubljana 2004 (Internal report available at the Institute for the Protection of Cultural Heritage of Slovenia, Ljubljana Regional Office, p. 7); Plesničar Gec 2005, 403, Fig. 2.

²⁴ Djurić, Rižnar 2017; Djurić et al. 2018.

²⁵ Humer 2003, 48.

²⁶ Humer 2003, 42–45.

this part and the whole of the NUK II site does not allow us to draw conclusions. Stratigraphic data certainly point to the late 4th century as the most likely *ante quem non* for the column, which would correspond with the general picture of this part of Emona as suggested by Plesničar Gec (large investment, public space and so forth). Dating is made even more difficult by the fact that the site is only partially published and that the publications focus on the more extensively investigated Insulae XIII and XVII. The dating of the last phase of Insula XXVII from 1999 places the column in the late 4th and first half of the 5th centuries,³² while the last published dating of the complex is even later.³³

The column as part of a large public bath complex in Insula XXVII and adjacent insulae (Fig. 3) corresponds well with what we know of Emona in the 4th and 5th centuries. Soon after the reign of Constantine, Emona entered into a period of economic prosperity reflected in the building activities documented at several sites within the Roman town. An extensive construction activity also took place at the NUK site, i.e. in Insulae XIII, XVII, XXVII and XLVI, which were transformed from private units to a vast public space for recreation and entertainment with baths, atria with impluvia, rooms with underfloor heating and a large public latrine, presumably all constructed in the late 4th century.³⁴ In her last publication of the site, Ljudmila Plesničar Gec dates the complex – also based on coin finds – to a time between 400 and 452,³⁵ while Andrej Gaspari places it in the late 4th or the early 5th century.³⁶

The changes described above can most readily be explained with the presence of army units at Emona and the role of the town in the hinterland of the Alpine barrier system.³⁷ In addition to the renovation of the fortification walls, the presence of the army in the town is revealed by the finds of weapons and military equipment.³⁸ This corresponds with the increase in population as reflected in the

expanding northern cemetery of Emona. In some places such as the Kozolec site,³⁹ this cemetery grew beyond the previous boundaries, with new burials predominantly from the second half of the 4th century,⁴⁰ some of which contained goods interpretable as military items.⁴¹ The complex unearthed at the NUK II site included a small Early Christian *aula primitiva* in Insula XIII,⁴² which is logical for a time when a large part of the army was Christian. The spatial proximity of Early Christian and bath complexes is a known practice, documented in several Roman towns.⁴³

The use of the recreation complex in Insulae XIII, XVII, XXVII and XLVI, and the remains of the column as its presumed constituent part, is dated to the Late Roman period, presumably the first half of the 5th century or late 4th/early 5th century. We should add that the stratigraphic record for the column allows for the earlier beginning, i.e. the late 4th century. Pending a comprehensive and integral analysis of the NUK II site, this is merely a hypothesis.

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³² Plesničar Gec 1999, 236.

³³ Plesničar Gec 2005, 403–404.

³⁴ Plesničar Gec 1997, 360; Plesničar Gec 1999, 236–241; Gaspari 2014, 230. Also cf. L. Plesničar Gec, *Preliminarni poskus valorizacije zadnje prenove stavb 13 in 17 (konec 4. in prva polovica 5. stoletja)*, Ljubljana 2004 (Internal report in the archives of the Muzeji in galerije mesta Ljubljana).

³⁵ Plesničar Gec 2005, 404.

³⁶ Gaspari 2014, 230.

³⁷ Plesničar Gec 2005, 404; Gaspari 2014, 235–238.

³⁸ Sivec 1997; Pflaum 2001, 23–24, Cat. Nos. 48–52; Gaspari 2014, 235–237.

³⁹ Miškec et al. 2020 (= Slovenian version); English translation is in preparation in: *Situla* 45, Ljubljana.

⁴⁰ Županek 2018.

⁴¹ Županek 2018; Miškec et al., see *Fn.* 39.

⁴² Djurić 2012.

⁴³ E.g. in Volpe, Anesse, Favia 2007.

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Rimski steber z rdeče barvanim ometom iz Emone

Povzetek

UVOD

Arheološko najdišče NUK II v Ljubljani leži znotraj rimske kolonije Emone (*sl. 1; 2*), zgrajene na začetku 1. st. s pravilnim uličnim rastrom in obdane z obzidjem. Najdišče je bilo arheološko raziskovano v več različno dolgih kampanjah, najbolj intenzivno v letih 1996–1999. Med izkopavanjem v letu 1999, pod vodstvom Ljudmile Plesničar Gec in Damijana Snoja, je bil odkrit steber rdeče barve (*sl. 4*), zabeležen kot PN5983. Steber danes hrani Mestni muzej Ljubljana pod inv. št. 510:LJU;0060969.

Ostanki trupa stebra – po propadu organskega jedra je votel – so bili na terenu za dvig utrjeni s klejem in zaščiteni z mavcem. Zatem je bil steber v kosu dvignjen ter shranjen v depoju Mestnega muzeja. Mavec je bil decembra 2014 odstranjen v Restavratorskem centru Zavoda za varstvo kulturne dediščine Slovenije. Sledile so analize barvne plasti in plasti ometa, pigmenta ter kamnine plinte z namenom ugotavljanja tehnologije izdelave in provenience kamnine.

ARHEOLOŠKI KONTEKST

Najdišče

Najdišče NUK II leži v centru današnje Ljubljane, na območju med Rimsko in Emonsko ulico ter Zoisovo in Slovensko cesto. Razteza se čez 7500 m² in obsega inzule XIII, XVII, XLVI in XXVII ter križišče cest F in H rimske Emone (*sl. 2*). Kot kaže terenska dokumentacija, je bil ostanek stebra odkrit znotraj inzule XXVII, v kvadrantu R/18, povsem na robu izkopnega polja. Inzula XXVII je bila po dognanjih izkopavalke L. Plesničar Gec v prvih stoletjih obstoja namenjena predvsem za stanovanja in obrtniške dejavnosti (Plesničar Gec 1999, 236). Konec 4. in v prvi polovici 5. st. je postala del rekreacijsko-zabavišnega kompleksa, ki sta ga sestavljali še inzuli XVII in XIII (Plesničar Gec 1999, 236).

Steber je bil odkrit v SE1916, ki je bila opisana kot drobljiva svetlo sivo rjava zemljeno-peščena

plast s koščki fresk, opek in prodrom. Mešana plast je kot edino časovno signifikantno najdbo vsebovala novec, kovan med letoma 40 in 41 (akc. št. S0041324, Caius Germanicus). Nad SE1916 je bila definirana obsežna, celotno mikrolokacijo prekrivajoča SE69, premešana plast, ki je vsebovala srednje- in novoveške ter antične najdbe in je bila delno odstranjena s strojnim izkopom. Pod SE1916 ležečo SE1918 lahko glede na novec Valentinijana I. postavimo v zadnjo četrtino 4. stoletja. V sosednjih kvadrantih P/18 in O/18 je bil odkrit vodotesen estrih rdeče in bele barve, kakršen je bil navadno uporabljan za bazene. V kvadrantu R/18 in sosednjem S/18 je bil v približno isti nadmorski višini odkrit hipokavst.

Za bolj natančno lociranje in interpretacijo arheološkega konteksta pa imamo bolj skope podatke. Kos ni vrisan v načrte in preseke najdišča NUK II. Vpisan je v seznam posebnih najdb z navedenim kvadrantom, koordinatami, kratko definicijo (obdelan kamen; steber s freskami nad kamnom) in datumom najdbe. Zabeležen je tudi na nekaj fotografijah, posnetih med izkopavanji in po konsolidaciji/utrditvi. Koordinate za steber so znane, ni pa specificirano, ali je podana točka vzeta na vrhu, na dnu, na desnem robu, na levem robu ali v središču kosa, ki meri 36 × 65 × 36 cm. Tako ni mogoče natančno locirati kosa znotraj 0,12–0,78 m debele in 1,64–2,36 m široke SE1916. Fotografije kažejo, da je bila plinta najdena med ravnim zidom na severu in polkrožnim zidcem na jugu, vzporedno z ravnim zidom, kar se ujema s koordinatami na načrtu¹ tega dela najdišča (*sl. 3*). Fotografije tudi kažejo, da je nosilna ploskev vzporedna z okoliškimi tlemi in malo dvignjena nad njih (*sl. 4*). V povezavi s slednjim je treba omeniti obdelavo površine kamnite plinte (za natančen opis glej spodaj), ki kaže, da je na treh straneh

¹ Načrt pri: L. Plesničar in M. Brenk, *Vizualizacija arheoloških ostalin Emone. Poročilo o obdelavi gradiva in vizualizaciji zadnje gradbene faze na najdišču UKL*, Ljubljana 2004 (interno poročilo, ki ga hrani ZVKDS, OE Ljubljana, str. 7). Na ta načrt smo naknadno vrisali lokacijo na podlagi koordinat znanih iz terenske dokumentacije. Vrisana lokacija se ujema z ono na načrtu inzule XXVII v Plesničar Gec 1999, sl. 322a (steber sicer v tej objavi ni omenjen).

gledala približno 10 cm iznad nivoja tal. Pri tem pa iz dokumentacije ni razvidno, ali so okoliška tla na fotografiji očiščena zgornja površina SE1916 in ali je premešana SE1916 predstavljala izravnavo terena ob gradnji, torej originalni kontekst stebra. Dokumentacija trenutno, pred celostno obravnavo najdišča, kaže na to, da je bil ostanek stebra verjetno najden *in situ* ter da ga lahko datiramo v poznorimski čas, kasneje od SE1918. Ostanek stebra nedvomno sodi v poznorimski čas; glede na faziranje, ki ga za najdišče NUK II predlaga L. Plesničar Gec v eni svojih zadnjih objav, v tretjo gradbeno fazo, datirano v obdobje med letoma 400 in 452.²

Opis stebra in njegove plinte

Ohranjeni arhitekturni kos sestavlja spodnji konec votlega trupa stebra iz rdeče barvanega ometa, postavljen na kamnito plinto (*sl.* 5).

Omet trupa stebra je ohranjen v največji višini 17 cm. Spodnji premer trupa meri 36 cm, premer votle notranjosti pa 25 cm. Trup je brez kanelur, brez baze in rdeče barvan. Spodnji premer meri približno toliko kot širina plinte; roba obeh kosov sta poravnana na eni strani, na nasprotni pa trup rahlo presega plinto. Trup prav tako ni postavljen na sredini plinte po dolžini. Na notranji strani ometa so vidni odtisi navpično postavljenega trstičja (navadni trst –*Phragmites australis*),³ ki je obdajalo organsko, najverjetneje leseno jedro. Trstičje je bilo pritrjeno na jedro z vrvjo, ovito okoli jedra v intervalu približno 10 cm (*sl.* 5b). Odtisi trstičja med posameznimi linijami vrvi niso ukrivljeni ne po navpični ne po vodoravni osi, kar kaže na to, da je bilo jedro iz trdnega materiala in ne iz vezanega šopa trstičja. Trstičje, pritrjeno na les, ima dvojni namen: zagotavlja dober oprijem ometa in preprečuje pokanje ometa zaradi krčenja/raztezanja lesenega jedra. To metodo oz. kombinacijo lesa, trstičja in ometa Vitruvij opisuje v povezavi s stenami iz prepleta (Vitruvius VII, III, 11) ter stropovi in oboki (Vitruvius VII, III, 2). Sicer pa je bila rimska praksa, da so lesene dele stavb (preklade vrat, oken ipd.) grobo obdelali za

boljši oprijem, nato pa nanесли omet neposredno čez les (glej Ulrich 2007, 178 ss). Vsekakor odtisi trstičja dokazujejo, da jedro stebra ni bilo iz naravnega kamna ali opeke, saj ta dva materiala ne bi potrebovala obloge iz trstičja. Leseno jedro je bilo verjetno obdelano deblo, lahko pa tudi neke vrste lesen okvir, na katerega je bilo navezano trstičje.⁴

Omet stoji na kamnitem bloku, ki je ohranjen v celoti in meri 62,5–65,0 cm v dolžino, 34–36 cm v širino in 24,5–26,5 cm v višino. Njegova izdelava ni najbolj natančna, ne po obliki ne po obdelavi površine. Nobena od stranic ni fino obdelana. Nosilna ploskev je grobo obdelana s točkastim dletom po celotni površini; ni vidne razlike med obdelavo na površini, prekriti s stebrom, in drugje. Ena izmed daljših in obe krajši stranski stranici sta dokaj fino obdelani v zgornjih 10 cm z neravnim in ponekod zabrisanim robom v širini 1,5 cm, izdelanim s ploščatim dletom. Nižje dol je površina grobo obdelana ali neobdelana. Najbolje obdelana površina z uporabo točkastega dleta je na eni izmed daljših stranskih stranic (*sl.* 5a), še posebej njen desni del pod zgornjim desetcentimetrskim pasom, kjer je vidna še bolj fina obdelava s točkastim dletom. Namen te finejše obdelave ni znan; morebiti je ostanek prejšnje rabe in torej kaže na preuporabo.⁵ Nasprotna daljša stranica, kjer trup stebra presega rob plinte, je neobdelana (*sl.* 5c). Obdelava površine torej razkriva, da je bila plinta vidna na eni od daljših in obeh krajših stranicah v višini zgornjih desetih centimetrov; z drugimi besedami, da je stala približno 10 cm iznad nivoja tal na treh straneh, na četrti pa je bila nosilna ploskev izenačena z nivojem tal in je bil omet stebra nanesen z majhnim delom na tla.

Trup stebra je bil lahko brez kanelur po celotni višini, lahko pa samo v spodnji tretjini, zgoraj pa kaneliran. Debelina ometa (4–7 cm) to možnost dovoljuje. Zelo neenakomerna debelina bi lahko bila posledica nenatančne izdelave, lahko pa bi tudi nakazovala obstoj neke strukture, na primer ograje, ki se je na steber navezovala s strani. Trup je bil verjetno barvan rdeče samo v spodnji tretjini. Odsotnost baze bi lahko kazala na steber dorskega reda. Če upoštevamo Vitruvijeva priporočila glede

² Plesničar Gec 2005, 403–404.

³ Rastlinske odtise je prepoznal Jernej Logan z Oddelka za biologijo Biotehniške fakultete Univerze v Ljubljani, za kar se mu najlepše zahvaljujemo. Poleg identifikacije je podal tudi mnenje, da bi bil vezan šop trstičja prav tako lahko zadostno nosilen.

⁴ Slednjo možnost je predlagal Roger B. Ulrich (Department of Classics, Dartmouth College) na podlagi fotografije predmeta, za kar se mu najlepše zahvaljujemo.

⁵ Glede na izvor kamna na območju Podpeči, možnost preuporabe podpira tudi do sedaj znano obdobje uporabe teh kamnin v Emoni, ki naj bi se končalo v 3. st. (Šašel Kos 1997), torej precej pred datacijo tu obravnavanega kosa.

proporcev dorskih stebrov in stebrišč, bi trup stebra premera 36 cm meril približno 2,5 m v višino brez kapitela in 2,7 m s kapitelom (Vitruvius V, IX, 3). Vendar pa ne smemo zanemariti možnosti, da je bil steber omejen na preprost valjast trup na plinti, ki se je zgoraj zaključil s ploščo v konstrukcijski vlogi kapitela. Omet stebra ni ohranjen v celotnem obsegu, a v zadostni meri, da lahko izključimo možnost, da je bil steber deloma potopljen v steno oz. zidano ograjo; steber je bil samostojen podporni člen, ki bi bil lahko povezan z (leseno) ograjo višje gor. Dejstvo, da je bil trup postavljen približno na sredino plinte po vzdolžni osi, še bolj pa razlika v obdelavi površine, ki kaže na različne nivoje tal, govori proti temu, da bi bil kos vogalni element, in v prid temu, da je bil del serije podobnih stebrov na plintah, kot del portika ali peristila neke večje stavbe.

NARAVOSLOVNE ANALIZE

Barvna plast in plasti ometa:

Vzorci plasti ometa smo preiskali z optičnim mikroskopom, s čimer smo določili strukturo in teksturo vzorcev ter njihovo mineraloško-petrološko sestavo. Debelina ometa je različna, od 4 do 7 cm. Apneni omet je sestavljen iz štirih plasti. Najbolj zunanja plast je debela približno 3,5 mm in ji sledi barvna plast z rdečim okrom (sl. 6). Barvna plast je bila nanosena na še svež omet, saj ni vidne jasne in ostre meje med barvno plastjo in ometom, kot je to navadno v primeru, kjer je barvna plast nanosena na že suh omet. Torej gre za t. i. tehniko fresco. Sledi plast ometa debeline približno 15 mm. Tretja plast je debela približno 10 mm, četrta plast na najbolj notranji strani stebra pa 5–6 mm.

Petrografska sestava agregata, uporabljenega v ometu, ponavadi odraža lokalne geološke razmere. Zaobljena in polzaobljena zrna kažejo na rečni izvor, najverjetneje v savskih rečnih sedimentih, ki so sestavljeni iz svetlo in temno sivih apnenčevih in dolomitnih zrn, zrn peščenjaka, kremena, skrilavca in magmatskih kamnin (Premru 1980). Oglata zrna dolomitnega agregata kažejo na uporabo zdrobljene kamnine, prisotne v okolici Ljubljane (sl. 7).

Kamen plinte:

Plinta je narejena iz srednje temno sivega (N4 po Geological Rock-Color Chart) oomikritnega ali ooidnega apnenca (sl. 8). Opisani mikrofacies nastopa v različnih geoloških obdobjih in na različ-

nih območjih Slovenije. Glede na datacijo stebra in mikrofacies apnenca sklepamo, da kamen izvira iz širšega območja Emone, bolj natančno iz območja Podpeči, znanega po rimski rabi spodnjejurjskih plasti oolitskega apnenca (Djurić, Rižnar, 2017).

DISKUSIJA

Steber je v emonskem in tudi slovenskem rimskodobnem gradivu izjemna najdba. Primerjave za stebre z organskim oz. lesenim jedrom smo našli izven Slovenije. Stebri z lesenim jedrom so znani iz Karnunta (Petronell, Avstrija), kjer so sestavljali portik vzdolž ulice, t. i. *Straßenhalle*, v inzuli VI civilnega mesta.⁶ V nasprotju z emonskim so imeli ti stebri bazo in kapitel narejen iz kamna. Skupaj z Dianinim templjem je portik datiran v IV. gradbeno fazo oz. zgodnje 4. st.⁷ Pri omenjenih bazah je omembe vredno dejstvo, da so nosilne ploskve, tako kot emonska plinta, brez lukenj za čepe, kar je osnova za domnevo o trupu iz organskega materiala. Na emonski plinti niti ni drugih indicev; omet je bil torej pri slednji zadostna učvrstitev spoja med trupom in plinto. Nedavno so v Celju prav tako odkrili votel trup stebra na kamniti plinti, a odtisi na notranji strani kažejo na drugačno jedro, mogoče organsko in ovito z nekakšno vrvjo.⁸

Na podlagi analiz barvne in plasti ometa ugotavljamo, da je omet stebra primerljiv z vzorci stenskih poslikav iz Emone po sestavi in številu plasti. Analiza kamnine pa je pokazala na izvor materiala iz širše okolice mesta, domnevno iz Podpeči.

Stratigrafski podatki kažejo, da je bil steber del stavbe oz. arhitekturnega kompleksa z omejeno rabo kamna; ta je bil uporabljen za plinto, ne pa tudi za steber.⁹ Oblika plinte in obdelava njegove površine nakazujeta stebrišče, ki se je naslonilo na jedro stavbe, kot portik ali peristil. Koordinate za steber kažejo, da bi stebrišče stalo manj kot meter

⁶ Humer 2003, 48.

⁷ Humer 2003, 42–45.

⁸ Odkrito med izkopavanji Pokrajinskega muzeja Celje, ki so potekala leta 2018 na Muzejskem trgu (objava je v pripravi). Za podatke se iskreno zahvaljujemo Maji Bauševac in Juretu Krajšku iz celjskega muzeja.

⁹ Schmid piše o podobnih najdbah iz poznejše faze, tj. o lesenem stebrišču na zidanih podstavkih v peristilnem dvorišču inzule VII (Schmid 2014, 114–115; Gaspari 2014, 232). To kaže na splošno prakso uporabe lesenih delov v poznorimski Emoni.

od zidu proti severu, torej nakazujejo zelo ozek pokrit hodnik. Steber je bil najden v osrednjem delu inzule XXVII, ki je po L. Plesničar Gec obsegala del rekreacijsko-zabavišnega kompleksa skupaj z inzulama XVII in XIII. V inzuli XXVII je bil južno od stebra najden bazen, v neposredni bližini tudi hipokavst, kar nakazuje obstoj term, vendar ob trenutnem stanju analize tega dela oz. celotnega najdišča NUK II ni mogoče delati zaključkov. Stratigrafski podatki vsekakor kažejo na pozno 4. stoletje kot najbolj verjeten *ante quem non* za steber, kar bi se skladalo s splošno podobo tega dela Emone, kot jo je predlagala L. Plesničar Gec (velika investicija, javni prostor itn.). Datacijo otežuje dejstvo, da je najdišče parcialno objavljeno in da je bil fokus objav na inzulah XIII in XVII, raziskanih v večjem obsegu. Datacija zadnje faze inzule XXVII iz leta 1999 postavlja tudi naš steber v konec 4. in prvo polovico 5. st.,¹⁰ medtem ko je zadnja datacija kompleksa še nekoliko mlajša.¹¹

Steber kot del večjega javnega termalnega kompleksa v inzuli XXVII in sosednjih inzulah (*sl. 3*)¹² se dobro ujema s sliko Emone v 4. in začetku 5. st., znano na osnovi dosedanjih odkritij. V Emoni je v času takoj po Konstantinu zaznati velik gradbeni in ekonomski razcvet, ki se kaže na več raziskanih lokacijah.¹³ Po obsegu izstopa velika investicija v ves kare območja NUK II (inzule XIII, XVII, XXVII in XLVI), ki je bil iz zasebnih inzul preurejen v ogromno javno "rekreacijsko-zabaviščno"¹⁴ območje, z bazeni, atriji z impluviji, hipokavsti, ogrevanimi prostori ter velikim javnim straniščem, zgrajenim konec 4. st.¹⁵ Celoten kompleks postavlja izkopavalka Ljudmila Plesničar Gec v zadnji objavi najdišča – tudi na podlagi novčnih najdb¹⁶ – v čas med letoma 400 in 452, Andrej Gaspari¹⁷ pa na konec 4. ali v začetek 5. stoletja.

Za naštetje spremembe je zadrževanje ali stacioniranje vojaških oddelkov v/pri Emoni oz. funkcija Emone znotraj sistema Claustra Alpium Iuliarum najbolj smiselna obrazložitev.¹⁸ V mestu vojaško navzočnost poleg ponovne utrditve obzidja dokazujejo številne najdbe vojaške opreme.¹⁹ To se

ujema s porastom prebivalstva, kot ga poznamo z emonskega severnega grobišča, s širjenjem grobišča čez dotedanje robove, dokumentiranim na lokaciji Kozolec,²⁰ in znatnim porastom grobov predvsem v drugi polovici 4. st.,²¹ tudi z nekaj grobovi, v katerih najdene predmete lahko interpretiramo kot vojaške.²² Namenske površine kompleksa na območju NUK II so vključevale manjšo zgodnjekrščansko molilnico v inzuli XIII,²³ smiselno v času, ko je velik del vojske krščanski. Prostorska povezava med zgodnjekrščanskimi in termalno-rekreacijskimi objekti je dokumentirana v več primerih.²⁴

Uporaba termalno-rekreacijskega kompleksa, katerega del arhitekture je naš steber, je torej postavljena v poznorimski čas, domnevno v prvo polovico 5. stoletja. Dostavljamo, da bi bil steber glede na parcialen vpogled v stratigrafijo lahko tudi nekoliko starejši, tj. iz poznega 4. stoletja. Seveda to ob pomanjkanju končne in celovite interpretacije raziskav najdišča NUK II 1990–1999 ostaja zgolj hipoteza.

¹⁰ Plesničar Gec 1999, 236.

¹¹ Plesničar Gec 2005, 403–404.

¹² Plesničar 1999, 236–241.

¹³ Plesničar Gec 1997.

¹⁴ Plesničar 1999, 321.

¹⁵ Prim. Plesničar Gec 1997, 361.

¹⁶ Plesničar Gec 2005, 404.

¹⁷ Gaspari 2014, 230.

¹⁸ Plesničar Gec 2005, 404.

¹⁹ Sivec 1997; Pflaum 2001, 23–24, kat. št. 48–52.

²⁰ Miškec et al. 2020.

²¹ Županek 2018.

²² Županek 2018; Miškec et al. 2020, 277.

²³ Djurić 2012.

²⁴ Npr. v Volpe, Anesse, Favia 2007.

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Illustrations: Fig. 4 (photo: D. Snoj, MGML); – Fig. 5 (photo: M. Paternoster, MGML); – Fig. 6, 7 (photo: M. Gutman Levstik, Restavratorski center ZVKDS); – Fig. 8 (photo: D. Skaberne, Geološki zavod Slovenije)

Slikovno gradivo: Sl. 4 (foto: D. Snoj, MGML); – Sl. 5 (foto: M. Paternoster, MGML); – Sl. 6, 7 (foto: M. Gutman Levstik, Restavratorski center ZVKDS); – Sl. 8 (foto: D. Skaberne, Geološki zavod Slovenije)

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