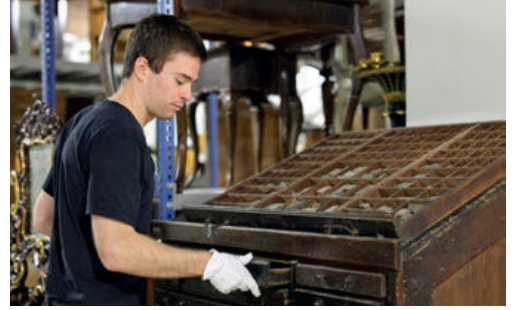




MESTNICA
MUZEJ MUSEUM
LJUBLJANA OF LJUBLJANA



Pogled z druge strani View from the Other Side

Strokovnjaki, združeni za ohranjanje skupne kulturne dediščine
Experts United to Preserve Our Common Cultural Heritage



Mestni muzej Ljubljana | City Museum of Ljubljana





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Experts United to Preserve
Our Common Cultural Heritage

Ljubljana, Februar 2024



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POGLED Z DRUGE STRANI

Strokovnjaki, združeni za ohranjanje skupne kulturne dediščine

SPREMNA BESEDA

Razstava *Pogled z druge strani*, ki jo je zasnovala in postavila konservatorsko-restavratorska ekipa MGML, je nekoliko nenavadna, posebna razstava, in sicer zaradi vsaj dveh stvari. Najprej prva: pri »običajnih« razstavah obiskovalci zremo v čiste, lepe, od starosti čim manj poškodovane predmete. Uživamo v njihovi lepoti in se poglobljamo v njihove zgodbe, le redkokdaj pa pomislimo, koliko truda in znanja je bilo vložnega v obstanek predmeta, ki ga gledamo, ter kdo je poskrbel – in kako – da je predmet po desetletjih, stoletjih, tudi tisočletjih še vedno prepoznaven, cel ali skorajda cel, prijeten za pogled. *Pogled z druge strani* odgovarja prav na to vprašanje, odkriva ozadje, drugo stran, zakulisje, ki ga ima, čeprav je večini ljudi nevidno, prav vsaka razstava. Vsak predmet, ki je nato predstavljen na muzejski razstavi, čisto vsak, gre skozi roke konservatorjev-restavratorjev. Tudi če je cel in na prvi pogled v dobrem stanju, ga temeljito pregledajo in se odločijo, ali so potrebni kakšni posegi in kateri. V večino predmetov, ki jih občudujemo na naših razstavah, so vtakane ure in ure njihovega natančnega in potrpežljivega dela.

Druga stvar, v kateri je ta razstava povsem drugačna od tistih, ki smo jih vajeni, pa je konceptualni razmislek avtorice mag. Katarine Toman Kracina, ki se je odločila, da bo razstava jasno odražala to dvojnost – »polikani« videz običajnih razstav (s katerim seveda ni nič narobe, saj je estetika del užitka ob ogledu) in živahno, nepredvidljivo delo v konservatorski delavnici, polno odločitev, kompromisov, improvizacije, eksperimentov. Zato razstavni del na eni strani prinaša »klasično«, estetsko izdelano razstavno steno z naslovi in podnapisi, na drugi strani pa ustvarjalni kaos prave konservatorsko-restavratorske delavnice. Povezovalna točka med tema dvema svetovoma so seveda predmeti, ki so razstavljeni tako, da so z eno, urejeno stranjo del razstave, z drugo, manj obdelano, pa del izziva v konservatorski delavnici.

V Mestnem muzeju Ljubljana hranimo, preučujemo in občasno razstavljamo več kot četr milijona predmetov. Prav vsi zahtevajo redno pozornost muzejskih strokovnjakov: kustosov in konservatorjev-restavratorjev. Naše delo poteka v tesnem sodelovanju, sprejete odločitve so rezultat mnogih posvetovanj in interdisciplinarnega znanja. Podnaslov razstave, *Strokovnjaki, združeni za ohranjanje skupne kulturne dediščine*, govori o pomembnem sporočilu, ki ga avtorji želijo izpostaviti. Namreč, da je moč v številnosti. Ne samo številnosti konservatorsko-restavratorskih strokovnjakov, »naših« in »zunanjih«, ampak skupaj z njimi tudi kustosov, specialistov za posamezna obdobja, z lastnimi uvidi in izkušnjami. Vse nas povezuje skupni cilj – ohraniti muzejske predmete ter s tem vedenje in zgodbe, vtkane vanje, za sodobnike in zanamce.

Razstava *Pogled z druge strani* je zajela tudi našo stalno razstavo *Ljubljana. Zgodovina*. Mesto: predmete, ki imajo še posebej zanimivo konservatorsko zgodovino, smo označili s QR-kodami, ki prinašajo več podatkov o izvedenih postopkih. QR-kode bodo ostale, in tudi na ta način bo razstava *Pogled z druge strani* z nami še dolgo po svojem uradnem zaključku.

Dr. Bernarda Županek
kustosinja razstave

THE VIEW FROM THE OTHER SIDE

Experts United for the Preservation of Our Common Cultural Heritage

PREFACE

The exhibition *The View from the Other Side* designed and staged by the conservation-restoration team of the Museum and Galleries of Ljubljana is a somewhat unusual, special exhibition, for at least two reasons. First, in “usual exhibitions” visitors see the clean, neat artefacts as much unscathed by time as possible. We enjoy their beauty and delve into their stories, while only rarely thinking of how much effort and knowledge has been invested in them to ensure their future existence. Who helped preserve the object we are looking at, and how, after decades, centuries, and even millennia of existence, have they enabled it to continue to be recognisable in its partial or complete entirety, and, enjoyable to look at today? This is the question *The View of the Other Side* provides an answer to. It reveals the background, the other side, the backstage, which, while invisible to most people, is part of every exhibition. Every object in museum exhibitions goes through conservator-restorers’ hands. Even if, at first sight, the object is complete and in good condition, it is thoroughly examined before the decision is made about whether any, and which, interventions are necessary. Hours and hours of conservator-restorers’ thorough and patient work are woven into most of these objects.

Secondly, what makes this exhibition completely different from those we are used to seeing is Katarina Toman Kracina’s conceptual idea and her decision to make the exhibition clearly reflect this ambivalence between the “polished” view of the usual exhibitions (and there is nothing wrong with this, because aesthetics is part of the pleasure of observing) and the dynamic, unpredictable work in the conservation workshop, filled with decisions, compromises, improvisation, and experimentation. This is why the exhibition consists of the “classical”, aesthetically constructed exhibition wall with titles and captions on one side, while its other side reveals the creative chaos of the actual conservation-restoration workshop. The connecting point between these two worlds is, of course, the objects themselves, exhibited in a way that shows their one, neatly prepared side that makes up part of the exhibition, while the other less enhanced segment poses a challenge for the conservation workshop.

In the City Museum of Ljubljana we store, maintain, study and occasionally exhibit over a quarter of a million artefacts. Each and every one of them requires regular attention from museum experts: curators and conservator-restorers. We work in close co-operation, and the decisions made are the result of many consultations and much interdisciplinary knowledge. The subheading of the exhibition, *Experts United for the Preservation of Our Common Cultural Heritage*, conveys an important message which the authors wish to emphasise, namely that power lies in numbers, not only in the number of conservation-restoration experts, “ours” and the “external” experts, but also in the numbers of curators, and specialists in individual time periods, providing their insights and experience. We are all united by a common goal – to preserve museum objects along with the knowledge and stories woven into them, for our contemporaries and descendants.

The exhibition *The View from the Other Side* has come to also encompass our permanent exhibition *Ljubljana. Its history. The city*. The objects in the exhibition which have an especially interesting conservation history are tagged with QR codes that provide more information on the interventions they were subjected to. The QR codes will remain there and make the exhibition *The View from the Other Side* stay with us long after its official closing.

Bernarda Županek, Ph.D.

Exhibition curator



Ko obiskovalci zremo v razstavljenе predmete in se poglobljamo v njihove zgodbe, redkokdaj pomislimo, koliko truda in znanja je bilo vložnega v obstanek predmeta. Kdo – in kako – je ohranil materiale, ki bi zaradi starosti in drugih okoliščin morali že zdavnaj propasti?

V zbirki muzeja hranimo več kot 250.000 predmetov. Pridobivamo jih na različne načine: z arheološkimi izkopavanji, z donacijami, darili in nakupi. Hranimo umetniška dela in uporabne predmete iz bližnje in daljne preteklosti: od prazgodovinskih najdb do predmetov, ki so bili v uporabi še včeraj. Predmeti so sestavljeni iz raznolikih materialov, razlikujejo se po starosti in po stopnji ohranjenosti.

When visitors look at the exhibited items and delve into their stories we rarely think of how much effort and knowledge has been invested into an object being preserved. Who - and how - preserved these items, which, due to old age and other circumstances, should have decayed a long time ago?

There are over 250,000 objects stored in our museum collection. They are typically acquired through archaeological excavations, donations, gifts as well as by purchases. We keep artworks and useful objects from the recent and ancient past: from prehistoric finds to items that were still in use yesterday. Made of diverse materials the objects differ in age and degree of preservation.



Muzejski konservatorji-restavratorji skrbimo za preventivno zaščito, konserviranje-restavriranje, varno hranjenje in razstavljanje predmetov. Trudimo se jih ohranjati v čim boljšem stanju. Kadar je dovolj preventivna konservacija, jih hranimo v primerni embalaži, v ustreznih klimatskih pogojih, zaščitene pred škodljivimi dejavniki. Na ogroženih in občutljivejših predmetih izvajamo zahtevne posege. Ne glede na to, koliko dela zahtevajo, izbiramo najprimernejše načine reševanja predmetov in skrbimo za njihovo varnost.

Za obravnavo nekaterih predmetov iz naših zbirk nimamo dovolj specialnega znanja, opreme, prostora in časa, zato sodelujemo z zunanjimi strokovnjaki. Ti so specializirani za posamezne materiale in postopke. Pri ohranjanju in preučevanju kulturne dediščine Ljubljane sodelujemo z Restavratorskim centrom ZVKDS, z Akademijo za likovno umetnost in oblikovanje, s študenti ustreznih smeri, z drugimi muzeji v Sloveniji in tujini ter s številnimi samostojnimi restavratorji, raziskovalci in znanstveniki. Sodelujemo z ljudmi, s katerimi nas povezuje skupen cilj – ohranjati fizični obstoj predmetov.

Museum conservators-restorers are in charge of preventive conservation, conservation-restoration, safekeeping and exhibition of the objects. We strive to keep them in the best possible condition. When the preventive conservation has been carried out sufficiently, they are stored in suitable packaging, at appropriate climate conditions and protected against harmful factors. The endangered and more delicate items are preserved through more complex interventions. Regardless of how much work they require, we select the most appropriate ways of rescuing the objects from decay and ensuring their safekeeping.



There are some artefacts in our collections for the treatment of which we require additional specialist knowledge, equipment, space and time, which is why we co-operate with external experts. They are specialised in individual materials and procedures. In preserving and studying the cultural heritage of Ljubljana, we collaborate with the Restoration Centre of the Institute for the Protection of Cultural Heritage of Slovenia, the Academy of Fine Arts and Design, students of relevant disciplines, other museums in Slovenia and abroad, and numerous independent restorers, researchers and scientists. We co-operate with people with whom we have a common goal – to preserve the physical existence of objects.

Četudi so konservatorsko-restavratorske obravnave deležni prav vsi razstavljeni predmeti, je strokovno delo konservatorjev-restavratorjev le redko izpostavljeno. Na razstavi *Pogled z druge strani*, ki je bila v Mestnem muzeju Ljubljana na ogled od 26. oktobra 2023 do 18. februarja 2024, smo predstavili delo, ki smo ga opravili na izbranih predmetih. Predmetov na razstavi ni združeval zgodovinski kontekst, temveč zanimivi restavratorsko-konservatorski posegi, ki odražajo kompleksnost ohranjanja kulturne dediščine.

Podatke o predmetih in posegih na njih, delovne fotografije, rezultate preiskav ter imena strokovnjakov in institucij, ki so s svojim strokovnim znanjem pomagali pri konserviranju-restavriranju, smo na razstavi ob predmetih predstavili v QR-kodah.



Although all the exhibited items receive conservation-restoration treatment, the expert work of conservators-restorers is only rarely given exposure. The exhibition *The View from the Other Side*, which took place in the City Museum of Ljubljana from October 26, 2023 to February 18, 2024, presented the work performed on selected artefacts. As opposed to sharing a historical context, the items share interesting restoration-conservation interventions that reflect the complexity of cultural heritage preservation.

The QR-codes which were displayed beside the exhibits offered the data on the objects and interventions performed on them, along with working photographs, the results of analyses and the names of the experts and institutions who helped in the conservation-restoration processes with their expert knowledge.





QR-kode smo dodali tudi nekaterim predmetom na stalni razstavi *Ljubljana. Zgodovina. Mesto*. Te bodo tudi po zaključku naše razstave ponujale vpogled v konserviranje-restavriranje predmetov in s tem bogatile vsebino stalne razstave. Izbrane vsebine, do katerih vodijo QR-kode, si lahko ogledate tudi v pričujoči publikaciji.

The QR-codes have also been added to some items at the permanent exhibition *Ljubljana. History. City*. They will continue to provide an insight into the conservation-restoration of objects after the temporary exhibition will have closed, and complement the content of the permanent exhibition. The QR-codes that lead to selected contents can also be seen in this publication.

Od 77 fragmentov do lončene posode

From 77 Fragments to a Ceramic Pot



Grobna posoda

keramika in bakrova zlitina, 27,3 x 25,5 cm, 8. stol. pr. n. št.
(510;LJU:0060413)

Posoda je bila položena v grob kot del bogate popotnice, ki jo je sestavljalo približno 20 predmetov. Odkrili so jo leta 2010, med izkopavanji ob gradnji garažne hiše na Kongresnem trgu v Ljubljani. Konservatorka-restavratorka je bila prisotna že na arheološkem najdišču in je predmet spremljala od samega začetka. Podoba posode razkriva, da je bila izdelana iz keramike, okrašene s kovinskimi gumbi, in da izvira iz starejše železne dobe. Z vidika ohranjanja je bila posoda izziv, kajti keramika in kovina potrebujeta različne načine obdelave. Po izkopu se je začelo kazati pospešeno propadanje kovinskega okrasa, zato smo ga najprej mehansko očistili in utrdili. Odpadle gumbce smo obdelali v naši konservatorsko-restavratorski delavnici, za obravnavo keramike pa smo se povezali z zunanjo strokovnjakinjo. Ohranili smo patino in korozijske produkte, ki so na keramični površini posode nastali kot posledica procesov v zemlji. Na koncu smo izvedli čiščenje in sestavljanje keramičnih fragmentov. Najprej smo uporabili lepilne trakove, ko smo se prepričali, da so vse črepinje na pravem mestu, pa lepilo, ki bo v prihodnosti lahko odstranljivo. Ob konserviranju-restavriranju predmeta smo se seznanjali tudi z obrtniški znanji, potrebnimi za njegovo izdelavo; ta so pomemben del razumevanja življenja ljudi in njihove kulture. Izpeljane so bile fizikalno-kemične analize materiala in korozijskih produktov. Skušali smo ugotoviti, kakšni so bili tehnika in materiali izdelave ter kaj je predmetu dodal čas, preživet v prodnati gomili pod današnjim Kongresnim trgom. To tematiko raziskujejo na Oddelku za arheologijo Filozofske fakultete UL.

Konservatorka-restavratorka Paola Korošec, zunanja sodelavka Muzeja in galerij mesta Ljubljana - MGML

Konservator-restavrador Matjaž Bizjak, MGML

Raziskave materialov: Manca Vinazza, Oddelek za arheologijo, Filozofska fakulteta Univerze v Ljubljani, Nastja Rogan Šmuc, Oddelek za geologijo, Naravoslovnotehniška fakulteta Univerze v Ljubljani, Lidija Korat, Zavod za gradbeništvo Slovenije

Funerary vessel

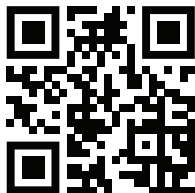
ceramic and copper alloy, 27, 3 x 25, 5 cm, 8th century BC
(510;LJU:0060413)

The sepulchral pot was placed in the grave as part of rich provisions for the afterlife, consisting of around 20 objects. It was discovered during excavations in 2010 when a parking garage was being built underneath Kongresni trg (Congress Square) in Ljubljana. A conservator-restorer was present at the very archaeological site and monitored the object from the outset. The image of the vessel reveals it was made of ceramic ornamented with small metal buttons from the Early Iron Age period. The vessel presented a challenge from a conservation aspect because ceramic and metal call for different treatment methods. After the excavation, the metal decoration began to show signs of rapid deterioration and thus it was first mechanically cleaned and consolidated. The buttons that had fallen off were treated in our conservation-restoration laboratory, and we connected with an external expert regarding the treatment for the ceramic. We preserved the patina and products of the corrosion on the vessel's ceramic surface that had formed as a result of processes in the soil. In the end, we performed the cleaning and reassembly of the ceramic fragments. First, we used adhesive tapes, and once we were sure that all the pieces were in the correct places, a glue was used that will be easily removable in the future. During the conservation-restoration works, we also acquired knowledge of the craft skills needed to manufacture the vessel. This constitutes an important part of understanding the people's life and culture. Physical and chemical analyses of the materials and products of corrosion were conducted. We tried to identify the technique and materials used to produce the vessel, and what had been added during the time it spent in the gravel mound beneath what is today the Congress square. This topic has been researched at the Department of Archaeology of the University of Ljubljana, Faculty of Arts.

Conservator-restorer Paola Korošec, external associate of the Museum and Galleries of the City of Ljubljana – MGML

Conservator-restorer Matjaž Bizjak, MGML

Research of materials: Manca Vinazza, University of Ljubljana, Faculty of Arts, Department of Archaeology, Nastja Rogan Šmuc, University of Ljubljana, Faculty of Science and Technology, Department of Geology, Lidija Korat, Slovenian National Building and Civil Engineering Institute.



Skrita fibula

Hidden Fibula



Aucissa fibula

železo in bakrena zlitina, 6 x 2,5 cm, 1. stol. (PG0101524)

Najdb ob izkopu pogosto ni mogoče določiti, saj so prekrite z debelo plastjo oblog. Prav konservator-restavrator je tisti, ki ob odstranjevanju zemlje in peska natančno sledi obliki predmeta in odkrije vse njegove oblikovne značilnosti in detajle. Na območju Ljubljane in okolice poteka veliko arheoloških izkopavanj. V muzej zato sprejemamo velike količine arheoloških najdb. Predvsem za kovinske najdbe velja, da jih je treba stabilizirati čim prej, saj dvig iz zemlje zanje pomeni velik stres in lahko hitro začnejo propadati. Da bi jih lahko ohranili čim več, večkrat poiščemo pomoč tudi zunaj naše institucije.

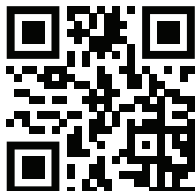
Konservator-restavrator Jože Lorber, zunanji sodelavec MGML

Aucissa Fibula

iron and copper alloy, 6 x 2.5 cm, 1st century (PG0101524)

It is often impossible to identify finds at an excavation because they are covered in a thick layer of deposited material. It is the conservator-restorer who, while removing the dirt and grit minutely follows the object's shape and uncovers all of its visual characteristics and details. There are many archaeological excavations underway in the area of Ljubljana and its surroundings. Our museum is therefore in receipt of large quantities of archaeological finds. Metal finds in particular have to be stabilised as soon as possible since removing them from the soil acts as a huge stress on them and they can begin to deteriorate very quickly. To be able to preserve as many of them as possible, the Museum often seeks help beyond our institution.

Conservator-restorer Jože Lorber, external associate of the MGML



Dvakrat sestavljena žara

The Urn Twice Assembled



Kroglasta žara

steklo, 20,6 x 21 cm, 1.–3. stol. (510:LJU;0064445)

Steklena žara je bila leta 1962 pridobljena z arheološkimi izkopavanji na Severnem emonskem grobišču. Žara ni bila najdena prazna, vsebovala je pepel posmrtnih ostankov. Kmalu po izkopu je bila izpraznjena in zlepljena. Leta 1997, ko je staro lepilo začelo popuščati, je bil potreben ponovni konservatorsko-restavratorski poseg. Odstranili smo staro lepilo ter očistili vsak posamezen kos in vse robove črepinj. Pripravili smo grafični načrt vseh kosov, jih oštevilčili in znova zlepili skupaj. Manjkajoče dele žare smo dopolnili z epoksidno smolo, ki smo jo v tankem sloju po obliki predmeta nanесли v manjkajoče predele.

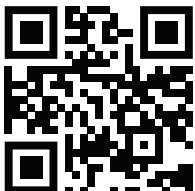
Konservator-restavrator Gorazd Lemajič, zunanji sodelavec
MGML

Spherical Urn

glass, 20, 6 x 21 cm, 1st–3rd centuries (510:LJU;0064445)

The spherical urn was obtained in 1962 during archaeological excavations on the Northern Emona Cemetery. It was not found empty, it contained the ashes of post-mortem remains. Soon after it had been unearthed, it was emptied and glued together. In 1997, when the old adhesive started to slacken, a new conservation-restoration intervention was required. The old adhesive was removed and each individual piece and all the edges of the shards were cleaned. We prepared a graphic map of all the pieces, numbered them and again glued them back together. The missing parts of the urn were filled in with epoxy resin that was added in a thin layer along the shapes of the object to fill in the missing areas.

Conservator-restorer Gorazd Lemajič, external associate of the
MGML



Jantar ali les? Amber or Wood?



Rožni venec

bakrena zlitina, les, 10 x 10 cm, novi vek (510:LJU;0061600)

Rožni venec je bil odkrit leta 2010 med arheološkimi izkopavanji na Vodnikovem trgu. Verižica je bila prekrita z zemljo, zaradi korozije pa je razpadla na več delov. Ob čiščenju se je porodilo vprašanje, ali so bile jagode morda izdelane iz jantarja. Vzorce smo poslali na naravoslovne preiskave na Naravoslovni oddelek Restavratorskega centra ZVKDS. Pregledani so bili z optično mikroskopijo pod vidno in ultravijolično svetlobo ter z metodo FTIR. S slednjo je bila določena njihova materialna sestava. Izkazalo se je, da so večje kroglice lesene, povezovalni elementi pa so iz bakrove zlitine. Kovinske dele predmeta smo stabilizirali in zaščitili pred korodiranjem. Vse kose predmeta smo impregnirali z lakom in povoskali ter delce nato postavili v smiselno celoto.

Konservatorka-restavratorka Mojca Zver, zunanja sodelavka MGML

Naravoslovne raziskave: Katja Kavkler, Oddelek za naravoslovne preiskave Restavratorskega centra ZVKDS

Rosary

copper alloy, wood, 10 x 10 cm, New Age (510:LJU;0061600)

The rosary was unearthed in 2010 during archaeological excavations in the Vodnikov trg (Vodnik Square). The chain was covered in dirt, and had fallen into several pieces due to the corrosion of its metal parts. While being cleaned, the question arose of whether the beads may have been made of amber. The samples were sent for scientific examination to the Natural Science Department of the Restoration Centre of the Institute for the Protection of Cultural Heritage of Slovenia. The samples were surveyed with an optical microscope under visible and ultraviolet light, and with the FTIR method. The latter was used to define their material composition. It turned out that the larger beads were wooden while the connecting elements were copper alloys. Metal parts of the object were stabilised and protected against corrosion. All pieces of the object were impregnated with varnish and waxed. The pieces were then assembled to form a sensible whole.

Conservator-restorer Mojca Zver, external associate of the MGML

Scientific examination: Katja Kavkler, Natural Science Department of the Restoration Centre of the Institute for the Protection of Cultural Heritage of Slovenia



Večplastni izziv (izziv v izzivu v izzivu v izzivu ...)

A Multilayered Challenge (a challenge within a challenge within a challenge...)

Kanopa

bakrena zlitina, steklo, tkanina, organski ostanki, 18,5 x 12,7 cm, 18. stol. (510:LJU;0061627)

Kanope so se uporabljale za hrambo notranjih organov umrlega, v tem primeru srca. Posoda, ki jo predstavljamo, je bila odkrita leta 2010 med arheološkimi izkopavanji na ljubljanski tržnici. Predmet je sestavljen iz zunanje bakrene posode s pokrovom, v katerega sta bila vgravirana ime Ferdinanda von Auersperga in njegov družinski grb (dobesedni prepis s pokrova: FERDINANDI PRINCIPIS-AB.AVERSBERG-QVL OBYT-DIC-ZZIVLY *COR*1706). V notranjosti je bila steklena posoda, obdana z žaganjem in pokrita s tkanino, v njej pa so bili ostanki srca pokojnega. Pločevina je bila deformirana, steklo pa razbito.

Konserviranje-restavriranje predmeta je začel Matjaž Bizjak. Poseg je v okviru magistrske naloge nadaljevala Nežka Faganel pod vodstvom Helene Pucelj Krajnc in mentorstvom prof. dr. Blaža Šemeta. Kanopa je sestavljena iz več materialov, ki zahtevajo različne postopke. Iz notranjosti smo previdno vzeli ostanke srca, stekleno čašo in žaganje. Kovino smo pod mikroskopom mehansko očistili korozije, kar je bilo zahtevno ročno delo. Kose stekla smo očistili in zlepili, organske ostanke pa začasno utrdili in shranili v hladno komoro.

Konservatorja-restavratorja Matjaž Bizjak, Helena Pucelj Krajnc, MGML

Nežka Faganel, študentka konserviranja-restavriranja likovnih del, ALUO UL (mentor Blaž Šeme)

3D-skeniranje: Andrej Žužek, Intri, d. o. o.

Sodelavci: Inštitut za sodno medicino, Medicinska fakulteta UL (Irena Zupanič Pajnič), Naravoslovnotehniška fakulteta UL (Klara Kostanjšek), Inštitut za arheologijo ZRC SAZU (Tjaša Tolar)



Canopic jar

copper alloy, glass, fabric, organic remains, 18,5 x 12,7 cm, 18th century (510:LJU;0061627)

Canopic jars were used to keep internal organs of the deceased; in this case, a heart. The vessel presented here was found in 2010 during archaeological excavations at the Ljubljana open market. The object is composed of the external copper vessel with a lid, which has the name of Ferdinand von Auersperg and his family's coat of arms engraved (the literal transcription from the lid reads: FERDINANDI PRINCIPIS-AB.AVERSBERG-QVL OBYT-DIC-ZZIVLY *COR*1706). Inside the jar, there was a glass vessel surrounded with sawdust and covered in fabric, holding the remains of the heart of the deceased prince. The sheet-metal was deformed and the glass was broken.

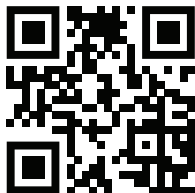
Conservation-restoration works were first undertaken by Matjaž Bizjak. The intervention was then continued in the framework of Nežka Faganel's MA thesis under the supervision of Helena Pucelj Krajnc and mentorship of Blaž Šeme. The canopic jar consisted of several materials that called for different treatments. The remains of the heart, the glass cup and the sawdust were all carefully removed. The metal was cleaned of corrosion under a microscope, which entailed demanding manual work. The pieces of glass were cleaned and glued together, while the organic remains were temporarily consolidated and stored in a cooling chamber.

Conservator-restorers Matjaž Bizjak, Helena Pucelj Krajnc, MGML

Nežka Faganel, student of Conservation and Restoration of Works of Art, University of Ljubljana, Academy of Fine Arts and Design (advisor Blaž Šeme)

3D scanning: Andrej Žužek, Intri d.o.o.

Associates: Irena Zupanič Pajnič, University of Ljubljana, Faculty of Medicine, Institute of Forensic Medicine, Klara Kostanjšek, University of Ljubljana, Faculty of Natural Sciences and Technology, Tjaša Tolar, Scientific and Research Centre of the Slovenian Academy of Sciences and Arts, Institute of Archaeology



Kdo je opral Vidku srajčico? Who Washed Videk's Little Shirt?



Otroška srajčka

beljen lan in bombažna čipka, 37 x 20 cm, začetek 20. stol.
(510:LJU;0027275)

Otroška srajčka iz lanene tkanine je bila pred konservatorsko-restavratorskim posegom umazana in zmečkana, na njej pa je bilo tudi precej madežev, ki so nastali med uporabo oblačila in zaradi narave materiala. Oblačilo smo oprali v destilirani vodi in detergentu, s čimer smo odstranili prah in v vodi topne nečistoče. Madeže smo poskusili odstraniti z lokalnim beljenjem, kar pa nam ni uspelo v celoti – postali so samo nekoliko svetlejši. Uporabili smo detergente in kemikalije, ki se uporabljajo v konservatorstvu-restavratorstvu. Ti so do starih in občutljivih tkanin nežni ter na njih ne puščajo sledov. Ravnanje srajčke je potekalo ročno, s sušenjem s hladnim zrakom, s hladno paro in obteževanjem.

Madeži, ki jih pogosto najdemo na otroških oblačilih, so madeži od hrane, sadja. Zastarani madeži na oblačilih so običajno že trajno in nepovratno poškodovali tekstilna vlakna. Agresivnih belil in čistil v konservatorstvu-restavratorstvu ne uporabljamo. Osnovno vodilo našega dela je, da predmete ohranjamo za kar se da dolgo obdobje. Zato uporabljamo le blaga čistilna sredstva, ki vlaken dolgoročno ne poškodujejo. Na oblekah, srajčkah, slinčkah in podobnih oblačilih tako za vedno ostajajo dokumenti preteklih malic in kosil.

Konservatorica-restavratorica Ana Motnikar, SEM

Konservatorici-restavratorici Katarina Toman Kracina, Liza Lampič, MGML

Aleksa Radonjić, Rebeka Novak, študenta konserviranja-restavriranja likovnih del, ALUO UL

Children's shirt

bleached linen and cotton lace, 37 x 20 cm, beginning of the 20th century (510:LJU;0027275)

Before the conservation-restoration intervention, the child's shirt made from linen was dirty and wrinkled. It also had many stains that emerged during use of the garment and due to the nature of the material. The clothing was washed in distilled water and detergent, which enabled us to remove the dust and water-soluble impurities. We tried to remove the stains with local bleaching, yet were not fully successful – they only became paler. We applied detergents and chemicals used in conservation-restoration treatment. These are gentle to old and delicate fabrics and do not leave traces on them. The shirt was straightened out manually, through drying in cold air, cold steam and by the use of weights.

Stains found on children's clothes often come from food like fruit. Old stains on clothes generally permanently and irreparably damage the fibres in the textile. Aggressive bleaches and cleaners are not used in conservation and restoration. The basic principle of our work is to preserve the objects for as long as possible. This explains why we only use mild cleaners that do not damage the fibres in the long run. This is why the signs of past snacks and lunches permanently remain on clothes, shirts, bibs and similar clothing items.

Conservator-restorer Ana Motnikar, Slovene Ethnographic Museum

Conservator-restorers Katarina Toman Kracina, Liza Lampič, MGML

Aleksa Radonjić, Rebeka Novak, students of Conservation and Restoration of Works of Art, University of Ljubljana, Academy of Fine Arts and Design



Celostna podoba škofa Tomaža Hrena

The Complete Image of Bishop Tomaž Hren



Podoba škofa Tomaža Hrena

Valentin Kos, mavec, 54,5 x 30 x 20 cm, ok. 1913
(510:LJU;0019052)

Mavčni odlitek podobe škofa Tomaža Hrena, delo kiparja Valentina Kosa, je študija za celopostavni kip. Portretu je pred konservatorsko-restavratorsko obravnavo manjkala konica nosu, bil je umazan in na več mestih obtolčen. Referenca za manjkajoči kos nosu je bil kamniti celopostavni kip škofa na zunanjščini ljubljanske stolnice. Rekonstruirana konica nosu je na kip pritrjena z magnetom in jo je mogoče zlahka odstraniti. Mavčni odlitek je bil tudi očiščen, manjše poškodbe pa so bile pokitane in retuširane.

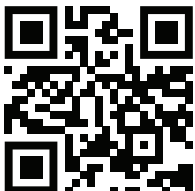
Urh Tacar, študent konserviranja-restavriranja likovnih del, ALUO UL (mentor Blaž Šeme, somentorica Martina Vuga)

Image of Bishop Tomaž Hren

Valentin Kos, plaster, 54, 5 x 30 x 20 cm, around 1913
(510:LJU;0019052)

The plaster cast of Bishop Tomaž Hren, the work of the sculptor Valentin Kos, is a study for a full-length statue. Prior to the conservation-restoration treatment, the statue was missing the tip of the nose, it was dirty and chipped in several places. The full-length stone statue located on the exterior of the Ljubljana Cathedral of St. Nicholas, served as the reference for the missing piece of the nose. The reconstructed tip of the nose is attached to the plaster cast with a magnet and is easily removed. The statue was also cleaned and smaller damage was filled in with putty and retouched.

Urh Tacar, student of Conservation and Restoration of Works of Art, Academy of Fine Arts and Design, University of Ljubljana (advisor Blaž Šeme, co- advisor Martina Vuga)



Razkritje emonske stenske slike

Unveiling of the Emona Wall Painting



Fragment rimske stenske slike

kombinacija fresko in seko tehnike, 389 × 111 × 17 cm, 1. stol.
(510:LJU;0067186)

Fragment stenske poslikave z notranje stene emonske hiše na insuli XVII (Zoisova cesta) je datiran v drugo polovico 1. stoletja. Izkopan je bil leta 1997 in tedaj so terenski konservatorji poslikavo pred poškodbami zaščitili z gazo in lepilom. Zaradi svoje velikosti je bil fragment za obdelavo velik zalogaj, zato je šele leta 2022 postal predmet magistrske naloge. Od izkopavanj naprej je bila poslikava zakrita z gazo. Pred razkritjem lica fragmenta je bilo potrebno utrditi omet s hrbtni strani in fragment pritrčiti na nov nosilec. Zaščito lica smo nato odstranili, omet lokalno utrdili s sprednje strani, poslikano površino očistili in izdelali okrasni omet. Novi nosilec je lahek in trden, kar je zaželeno zaradi lažjega razstavljanja in ravnanja s fragmentom. Po konservatorsko-restavratorskem posegu se je izkazalo, da je freska ena izmed večjih in lepše ohranjenih poslikav iz obdobja Emona.

Urh Tacar, študent konserviranja-restavriranja likovnih del,
ALUO UL (mentor Blaž Šeme)

Fragment of a Roman wall painting

fresco-secco technique, 389 × 111 × 17 cm, 1st century
(510:LJU;0067186)

The fragment of an Emona wall painting dates back to the late 1st century. It was located on an internal wall of an Emonan house on the insula XVII (Zoisova cesta, Zois Road). It was unearthed in 1997 when field conservators protected the painting against damage with gauze and glue. Due to its large size, its treatment represented quite a challenge, which is why it was only in 2022 that it became the subject of an MA thesis. Since being excavated, the wall painting has been covered by gauze. Before the unveiling of the front of the fragment, it was necessary to consolidate the wall plaster from the rear side and attach the fragment to a new base. The protection of the front was then removed, the wall plaster was consolidated from the front side, the painted surface was cleaned and the decorative plaster surrounding the fragment was made. The new base is light and strong, which is useful for the fragment's exhibition and handling. After the conservation-restoration treatment, it turned out that the fresco is one of the largest and most beautifully preserved wall paintings from the period of Emona.

Urh Tacar, student of Conservation and Restoration of Works of Art, University of Ljubljana, Academy of Fine Arts and Design (advisor Blaž Šeme)



Spajanje nitk – nitko za nitko Fusing the Threads - Thread by Thread



Brez naslova

I. Zupan, olje na platnu, 35 x 50 cm, 20. stol. (ni evidentirana)

Zupanova slika je v konservatorsko-restavratorsko delavnico MGML prišla strgana in precej umazana. Tudi barva in slikarska podloga na licu sta bili poškodovani, odkrušili sta se in odpadli. Raztrganino je bilo treba sanirati. Posamezne pretrgane niti smo natančno zlepili pod mikroskopom, zato je poškodba po popravilu skorajda nevidna. Za to je bilo uporabljeno zelo fino orodje – tanke entomološke bucike, drobne injekcijske igle, oftalmološki pripomočki, koničaste pincete, čopiči in drugo. Uporabili smo prožna in manj močna lepila, ki v prihodnosti na nitih ne bodo povzročala dodatnih poškodb. Po odstranitvi umazanije s površine slike je bila manjkajoča barvna plast dopolnjena s kitom in nazadnje retuširana z obstojnimi barvami, kakršne se v konservatorstvu-restavratorstvu običajno uporabljajo.

Konservatorka-restavratorka Liza Lampič, MGML

Untitled

I. Zupan, oil on canvas, 35 x 50 cm, 20th century (unregistered)

Zupan's painting was brought to the conservation-restoration studio of the MGML torn and dirty. The paint and ground on the front side were also damaged, they were flaking and had fallen off around the tear. The tear needed to be repaired. Individual broken threads were meticulously glued together under a microscope, which is why after the repair the damage is almost invisible. To accomplish this, very fine tools were used such as thin entomological pins, tiny injection needles, ophthalmological accessories, pointed tweezers, brushes and others. We used flexible and less strong adhesives, which will not cause additional damage to the threads in the future. After the dirt was removed from the painting's surface, the missing colour layer was filled in with putty and finally retouched with lightfast paints commonly used in conservation-restoration.

Conservator-restorer Liza Lampič, MGML



Senatus consulto pod mikroskopom Senatus Consulto Under a Microscope



Srebrnik

bakrena zlitina, posrebritev, 3 cm, 1. stol. (PG0127593)

Kratice »SC«, ki je vidna na rimskem srebrniku, je okrajšava za izraz »senatus consulto«, ki pomeni, da je bil novец uradno potrjen s strani rimskega senata. Da smo lahko prišli do te informacije, je bilo treba izvesti konservatorsko-restavratorski poseg. Pod mikroskopom smo s površine s skalpelom in omočeno vato odstranili večino prsti in korozije. Trdovratnejše skorje smo odstranili z jekleno kolutno ščetko. Sledil je dolgotrajen postopek, ki ga izvajamo na večini kovinskih arheoloških najdb. Očiščen predmet vsakodnevno namočimo v svežo destilirano vodo, ki jo segrejemo do vretja. Ob ohlajanju vode pride do izpiranja škodljivih kloridnih soli, ki v predmetih povzročajo korodiranje. Postopek ponavljamo, dokler s kemijskim testom soli v vodi ne zaznamo več. V primeru srebrnika je bil ta proces končan v dobrem mesecu, v povprečju pa traja od tri mesece do pol leta. Novец smo pred zrakom in vlago zaščitili z impregnacijo s posebnim lakom, ki vsebuje tudi inhibitor korozije. Na koncu smo ga zaščitili še z voskom. V muzejskem depoju ga hranimo v neprepustni embalaži, v kateri s pomočjo sušilnega sredstva vzdržujemo konstantno nizko zračno vlago.

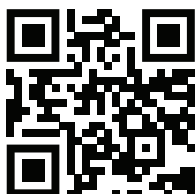
Konservatorica-restavratorica Zala Rebernak, MGML

Silver coin

copper alloy, silver-plated, 3 cm, 1st century (PG0127593)

The abbreviation »SC« visible on the Roman silver coin stands for Senatus Consulto. It means that the coin was officially confirmed by the Roman senate. We were only able to detect all of the inscriptions after the conservation-restoration treatment. Most of the dirt and corrosion was removed from the surface under a microscope with a scalpel and soaked cotton pad. The most stubborn parts of the crust were removed with a steel wire rotary brush. This was followed by a time-consuming procedure with respect to most of the metal archaeological finds, whereby the cleaned artefact is soaked daily in fresh distilled water that has been heated to 100 °C. When the water is cooling down, the damaging chloride salts causing corrosion of the object are washed out. The procedure is repeated until no salt in the water is detected when using a chemical test. In the case of the silver coin, this process took over a month, while on average it can take 3 and up to 6 months. The coin was protected against air and humidity through impregnation with a special varnish containing a corrosion inhibitor. In the end, it was also protected with wax. It is kept in the museum depot in an airtight container in which constant low relative humidity is maintained with the help of a desiccant.

Conservator-restorer Zala Rebernak, MGML



Ko nepremično postane premično

When the Immobile Moves



Spomenik talcem

Boris Kalin, bron, 137 x 60 x 140 cm, 1957
(510:LJU;0060217)

Bronasti kip kiparja Borisa Kalina Spomenik talcem je bil 22. septembra 2011 ukraden iz Gramozne jame v Ljubljani.

Razrezanega na manjše kose, pomečkanega, stisnjenega in deformiranega so tatovi po tržni ceni materiala ponudili v odkup livarju. Ta je k sreči prepoznal vrednost kipa, zato so bili kosi ohranjeni. Potrebneje je bilo veliko znanja in strokovnega dela, pa tudi sredstev, da je kip dobil nazaj svojo prvotno podobo. Restavratorsko in kiparsko delo je izvedel akademski kipar, ki je na novo izdelane, rekonstruirane dele kipa v sodelovanju z livarjem združil z rešenimi originalnimi. Ohranjeni del kipa (telo) je temneje obarvan, rekonstruirani deli pa so nekoliko svetlejši. Posege na originalu in na novo modeliranih delih kipa je v vseh fazah dela potrjevala štiričlanska strokovna komisija.

Restavriranje in rekonstrukcija kosov: Matjaž Rebec

Livarstvo: Borut Kamšek, Livartis, d. o. o.

Memorial to the Hostages

Boris Kalin, bronze, 137 x 60 x 140 cm, 1957,
(510:LJU;0060217)

The bronze statue, *The Memorial to the Hostages*, made by the sculptor Boris Kalin, was stolen from Gramozna jama (the Gravel Pit) memorial site in Ljubljana on 22 September 2011.

Cut into smaller pieces, crumpled, compressed and deformed, the thieves offered the pieces for sale to a foundry worker for the market price of the material. Luckily, he recognised the value of the statue, and preserved the pieces. Much knowledge and professional work as well as resources were needed for the statue to reacquire its original appearance. The restoration and sculpting work was performed by an academic sculptor who, working together with the foundry man, assembled the newly-made reconstructed parts of the statue with the original ones that had been saved. The preserved part of the statue (the body) has a darker colour, while the reconstructed parts are slightly brighter. Interventions on the original and on newly modelled parts of the statue were approved by a four-member expert commission in all phases of the work.

Restoration and reconstruction of pieces: Matjaž Rebec

Foundry: Borut Kamšek, Livartis d.o.o.



Adam in zlatolaska

Adam and Goldilocks



Adam in Eva

Janez Lipec, peščenjak, 118 x 38 x 33 cm in 101,5 x 42,5 x 36 cm, 1484 (510:LJU;0034697, 510:LJU;0034698)

Kipa Adama in Eve sta bila prvotno del fasade ljubljanske mestne hiše, zgrajene leta 1484, ko pa je bila postavljena nova, baročna palača, so ju z nje umaknili. Dolga leta sta bila izpostavljena ljubljanskemu vremenu in sta zato utrpela kar nekaj škode. Ob podrobnem pregledu kipov smo opazili majhne predele ohranjene barve. Te so analizirali strokovnjaki z Oddelka za naravoslovne preiskave Restavratorskega centra ZVKDS in ugotovili, da sta bila kipa ob svojem nastanku res pobarvana, prameni Evinih las pa so bili pozlačeni. Nekateri vzorci so pokazali celo več različnih plasti barve, kar pomeni, da je bila poslikava kipov v času, ko sta krasila fasado Magistrata, večkrat obnovljena. Nekateri predeli, kjer je bila barva sicer ohranjena, so bili na pogled črni, saj se je na površini ustvarila skorja, v katero so se ujeli delci saj iz zraka.

Določitev pigmentov bi lahko služila tudi za rekonstrukcijo polihromacije, ki se je skoraj v celoti sprala s površine. To bi bilo mogoče izvesti v digitalni obliki ali na kopijah skulptur.

Analiza vzorcev: Konservatorica-restavratorka Katja Kavkler, Oddelek za naravoslovne preiskave, Restavratorski center ZVKDS

Adam and Eve

Janez Lipec, sandstone, 118 x 38 x 33 cm and 101.5 x 42.5 x 36 cm, 1484, (510:LJU;0034697, 510:LJU;0034698)

Originally, the statues of Adam and Eve made part of the front of the Ljubljana Town Hall, built in 1484, but were later removed when the new baroque palace was built. For a long time, the statues were exposed to the weather conditions of Ljubljana and suffered considerable damage. A detailed examination of the statues revealed small areas of preserved colour. They were analysed by experts from the Natural Science Department of the Restoration Centre of the Institute for the Protection of Cultural Heritage of Slovenia who established that the statues were indeed painted when originally made, and the locks of Eve's hair were gilded. Some samples even showed several different layers of paint, which means that the statues were repainted several times during their time at the front of the Town Hall. A few areas, where the colour was preserved, appeared black as particles of soot from the air were caught in the crust that had formed on the object's surface.

Identification of pigments could also serve to reconstruct the polychromation that had almost entirely been washed off the surface. This could be carried out in digital form or on copies of the sculptures.

Sample analysis: Katja Kavkler, Natural Science Department of the Restoration Centre of the Institute for the Protection of Cultural Heritage of Slovenia



Leseno orožje

A Wooden Weapon



Konica

tisovina, 16 x 4,8 x 2,4 cm, ok. 40.000 pr. n. št.
(510:LJU;0058948)

Leta 2008 so podvodni arheologi v strugi Ljubljanice v Verdu pri Vrhniki odkrili 16 cm dolgo ožgano konico iz lesa tise. Predmet je bil po obliki podoben kamnitim paleolitskim konicam, zato smo predvidevali, da gre za zelo staro najdbo. Natančneje je bila njena starost določena z radiometričnim datiranjem, ki je bilo opravljeno v več neodvisnih laboratorijih. Raziskava je v enem od njih pokazala, da je les starejši od 43.970 let, v drugem pa, da je star 38.490 ± 330 let. Datacija predmeta je tako potrdila prisotnost paleolitskih lovcev na zahodnem obrobju Ljubljanskega barja.

Predmet je bil konserviran z melaminsko metodo, pri kateri vodo v celicah namočenega lesa postopoma nadomestimo z raztopino melaminske smole. Razstavljen je v komori z nadzorovano klimo.

Konservator-restavrator Markus Wittköpper, Rimsko-germanski muzej v Mainzu, Nemčija

Dendrokronološke raziskave: Martin Zupančič, Oddelek za lesarstvo, Biotehniška fakulteta

Radiometrično datiranje: Beta Analytic, Miami, ZDA, in Oxford Radiocarbon Accelerator Unit, Oxford, VB

Spear point

yew, 16 x 4.8 x 2.4 cm, around 40,000 BC. (510:LJU;0058948)

In 2008, underwater archaeologists discovered a 16-cm-long scorched yew spear point in the Ljubljanica River bed in the village of Verd near the town of Vrhnika. In its shape the object resembled palaeolithic stone spear tips, which is why it was assumed to be very old. A more precise age of the object was determined with radiometric dating conducted in several independent labs. The examination in one of them showed that the wood was older than 43,970 years, and in another lab that it was $38,490 \pm 330$ years old. Dating of the object confirmed the presence of palaeolithic hunters on the Western edge of the Ljubljana Marshes.

The spear point was conserved with the melamine method in which water in cells of the soaked wood is gradually replaced with the melamine resin solution. It is on display in an air-controlled chamber.

Conservator-restorer Markus Wittköpper, Roman-German Museum in Mainz, Germany

Dendrochronological examination: Martin Zupančič, University of Ljubljana, Biotechnical Faculty, Department of Wood Science and Technology

Radiometric dating: Beta Analytic, Miami, USA and Oxford Radiocarbon Accelerator Unit, Oxford, UK



Veličastno kolo

The Magnificent Wheel



Del kolesa z osjo

jesenov in hrastov les, premer kolesa 72 cm, dolžina osi 126 cm, okoli 3.200 pr. n. št. (510:LJU;0035518, 510:LJU;0035519)

Med vzorčenjem lesa v enem od drenažnih jarkov na kolišču Stare gmajne v Verdu pri Vrhniki so arheologi leta 2002 odkrili dva čolna deblaka in kolo z osjo, ki je najverjetneje pripadalo dvokolesnemu vozu. Kolo je bilo sestavljeno iz dveh jesenovih plošč, ki sta bili spojeni s štirimi hrastovimi zagozdami. Dendrokronološke raziskave so pokazale, da je deblo jesena, uporabljenega za kolo, v premeru merilo vsaj 40 cm, drevo pa je bilo ob poseku staro okoli 80 let. Os je bila izdelana iz enega kosa hrastovega lesa. Radiokarbonsko datiranje in dendrokronološka metoda sta pokazala, da je kolo z osjo staro okoli 5.200 let. Po starosti – pa tudi po tehnološki dovršenosti – tako sodi v sam vrh svetovne kulturne dediščine.

Z odgovorno kustosinjo smo preučili različne metode ohranitve kolesa. Odločili smo se za melaminsko metodo, pri kateri vodo v celicah namočenega lesa postopoma nadomestimo z raztopino melaminske smole. Kolo z osjo je razstavljeno v komori z nadzorovano klimo.

Konservator-restavrator Markus Wittköpper s sodelavci, Rimsko-germanski muzej v Mainzu, Nemčija

Radiokarbonsko datiranje: laboratorij VERA – Vienna Environmental Research Accelerator, Dunaj, Avstrija

Dendrokronološke raziskave: Katarina Čufar, Biotehniška fakulteta Univerze v Ljubljani

Part of a wheel with an axel

ash and oak, wheel diameter 72 cm, length of axel 126 cm, around 3,200 BC (510:LJU;0035518, 510:LJU;0035519)

In 2002, while sampling wood in one of the drainage trenches at pile-dwelling settlement in the area of the Old Commons (Stara gmajna) in the village of Verd next to the town of Vrhnika, archaeologists discovered two dug out canoes, i.e. boats carved from tree logs, and a wheel with an axle, most likely belonging to a two-wheeled cart. The wheel was made from two ash boards bound together with four oak wedges. Dendrochronological examination showed the ash log used for the wheel was at least 40 cm in diameter and the tree was around 80 years old when cut down. The axle was made of a single piece of oak wood. Radiocarbon dating and dendrochronological method showed that the wheel with the axle is around 5,200 years old. In terms of both their age and technological perfection, they belong among the very top items of world cultural heritage.

Together with an authorised curator, we studied different methods of object preservation. We decided to use the melamine method in which the water in waterlogged wood is gradually replaced with a melamine resin solution. The wheel with an axle is exhibited in a climate-controlled chamber.

Conservator-restorer Markus Wittköpper and associates, Romano-Germanic Central Museum in Mainz, Germany

Radiocarbon dating: VERA-Vienna Environmental Research Accelerator, Vienna, Austria

Dendrochronological examination: Katarina Čufar, University of Ljubljana, Biotechnical Faculty



Razkritje lovskega prizora A Hunting Scene Unfolds



Pasna spona

bron, 5. stol. pr. n. št. (510:LJU;0036128)

Pravokotna pasna spona iz bronaste pločevine s prazgodovinskega grobišča na Molniku pri Ljubljani (arheološka izkopavanja so potekala leta 1986) sodi v 5. stoletje pr. n. št. in upodablja lovca, ki ob spremstvu psa preži na jelena. Pri pregledu predmeta pred začetkom konservatorsko-restavratorskega posega smo ugotovili, da je bila spona že popravljena, a na precej neposrečen način. Ko se je zlomila, sta bila kosa nazaj spojena tako, da je bil precejšen del okrasa zakrit. Predvidevamo lahko, da pokojnik, pri katerem smo jo našli, ni bil prvi lastnik dragocene predmeta.

Zaradi zahtevne problematike smo spono previdno zapakirali in poslali strokovnjakom v Mainz. Tam so s predmeta odstranili zemljo in korozijo. Stabilizirali so ga in zaščitili pred korodiranjem. Pasno spono so tudi razstavili in dokumentirali njeno prvotno obliko s celotnim motivom. Izdelali so njeno kopijo, nato pa predmet vrnil v prejšnje stanje. Na razstavi sta v vitrini na ogled tako originalna pasna spona kot tudi kopija s prikazom celotnega motiva.

Konservator-restavrator Markus Egg, Rimsko-germanski muzej v Mainzu, Nemčija

Belt buckle

bronze, 7th -6th centuries BC (510:LJU;0036128)

The rectangular belt buckle from bronze sheet metal was found at a prehistoric cemetery on Molnik Hill near Ljubljana (the archaeological excavations took place in 1986) and dates back to the 5th century BC. It depicts a hunter with a dog, preying on a stag. While examining the object prior to the start of the conservation-restoration intervention, it became apparent that the buckle had already been repaired, albeit quite sloppily. After it had broken, the two pieces were held back together in a way that covered a substantial part of the ornamentation. Presumably, the deceased person next to whom the belt buckle was found was not the first owner of the precious object.

Due to the demanding challenges created by the condition of the buckle, it was carefully packaged and sent to experts in the conservation-restoration laboratory of the Romano-Germanic Central Museum in Mainz, Germany. There the object was cleaned of soil and corrosion. It was stabilised and protected against corrosion. The buckle was also taken apart so its original shape presenting the entire motive was documented. A copy was made and the object was then returned to its original state. The exhibition display case shows the belt buckle as it was originally found, and the copy showing the whole motive.

Conservator-restorer Markus Egg, Romano-Germanic Central Museum in Mainz, Germany



Premična tla

The Portable Floor



Mozaik

apnenec, opeka in apneni omet, celota 560 x 960 cm, druga polovica 4. stol. (510:LJU;0060357)

Mozaik je pokrival tla prostora, namenjenega obredom emon- skih kristjanov, ki je nekoč stal v insuli XIII ob križišču današnje Aškerčeve in Slovenske ceste. Ko je bil mozaik med izkopavanji dvignjen iz zemlje, so ga zaščitili z gazo in lepilom, da ni dodatno razpadel. Ta zaščita je bila med konserviranjem-restavriranjem odstranjena, mozaik pa stabiliziran z malto in lahкими premičnimi nosilci. Mozaične kocke smo očistili s krtačkami in vodo, s topili, pa tudi z laserjem. Manjkajoče dele smo zapolnili z dekorativnim ometom, manjše lakune (vrzeli v motivu) pa so bile retuširane, da so barvno ustrezale vzorcu.

Konservatorke-restavratorke Ajda Mladenovič, Jelka Kuret, Maja Gutman, Anja Novak, Andreja Ravnikar in Katarina Žagar, Restavratorski center ZVKDS

Konservatorja-restavratorja Matjaž Bizjak in Katarina Toman Kracina, MGML

Sabina Kramar, Zavod za gradbeništvo Slovenije

Mosaic

lime stone, brick and lime plaster, totalling 560 x 960 cm, late 4th century (510:LJU;0060357)

The mosaic covered the floor of a room designed for Emonan Christian rituals in a building once situated at insula XIII at the intersection of what are today Aškerc and Slovenska Roads. When the mosaic was unearthed during excavations, it was protected with gauze and glue to prevent further decomposition. During conservation-restoration, this protection was removed and the mosaic was stabilised with mortar and a light mobile mounting. The mosaic cubes were cleaned with small brushes and water, solvents, as well as a laser. The missing parts were filled in with decorative plaster, and smaller lacunae (gaps in the motive) were retouched to match the colour of the pattern.

Conservators-restorers Ajda Mladenovič, Jelka Kuret, Maja Gutman, Anja Novak and Andreja Ravnikar and Katarina Žagar, the Restoration Centre of the Institute for the Protection of Cultural Heritage of Slovenia

Conservators-restorers Matjaž Bizjak and Katarina Toman Kracina, MGML

Sabina Kramar, Slovenian National Building and Civil Engineering Institute



Vrč, ki ne drži vode

A Pitcher that doesn't Hold Water



Vrč

steklo, 12,1 x 9,8 cm, prva polovica 2. stol. (510:LJU;0034898)

Stekleni vrč je bil v preteklosti že zlepljen, a nepravilno. V debeljem sloju naneseo lepilo je začelo preperevati. Trije kosi so bili že odlomljeni. Leta 2010 smo s predmeta odstranili postarani lepilni film (kjer je bilo to mogoče brez poškodb) in tudi nečistoče, nismo pa se odločili za rekonstrukcijo manjkajočih kosov. Ponekod lepilnega filma s krhkega stekla ni bilo mogoče varno odstraniti, da bi lahko predmet znova, bolj natančno zleplili. Ko se bodo z razvojem stroke pojavili novi materiali in metode, bodo lahko prihodnji konservatorji-restavratorji to nalogo opravili varno.

Konservatorka-restavratorka Alenka Drol, zunanja sodelavka
MGML

Jar

glass, 12.1 x 9.8 cm, early 2nd century (510:LJU;0034898)

In the past, the glass jar was already glued together, yet incorrectly. The glue that had been applied in a thick layer had started to decay, so three pieces had already been broken off. In 2010, the aged adhesive was removed where possible without causing damage. Grime was removed from the object, but we decided not to reconstruct its missing parts. In certain areas, it is impossible to safely remove the adhesive film from the fragile glass and again glue the object together with greater precision. When the profession develops new materials and methods that become available, future conservators-restorers will be able to perform this task more safely.

Conservator-restorer Alenka Drol, external associate of the
MGML



Za večno življenje

For Eternal Life



Modra posoda

steklo, 7 x Ø 21 cm, 4. stol. pr. n. št. (510:LJU;0063966)

Modra posoda je bila odkrita leta 2018 na Gosposvetski cesti. Kot grobni pridelek je bila najdena skorajda nepoškodovana. Skoraj 2000 let je v kamnitem sarkofagu, zaščitena pred svetlobo in v stalni vlagi, hranila vsebino. V delavnico smo jo dobili v mokrem stanju, s folijo zaščiteno pred izsušitvijo, da so se ohranile podobne razmere, kot jih je imel predmet v zemlji. Na nekaterih mestih je bila modra površina stekla motna, opraskana, na robovih pa se je pokazala mavrična obarvanost (irizacija). Ta pojav je kazal, da se je začel proces mikro plastenja stekla. Najprej smo posodi odstranili vsebino in jo oprali. Zatem smo se lotili odstranjevanja sprijete zemlje in trde kalcitne obloge. Sledilo je postopno sušenje stekla, s katerim preprečimo poškodbe, ki se pojavijo ob izhlapevanju vode. Posodo smo namakali v raztopini destilirane vode in etanola. Koncentracijo etanola v raztopini smo vsak teden zvišali, dokler ni posoda počivala v čistem etanolu. Po odstranitvi iz kopeli smo z nje očistili še zadnje sledove sige in trdih kalcitnih oblog.

Posoda je razstavljena v klimatski komori s konstantno relativno vlažnostjo (55 %), ki je najprimernejša za arheološko steklo.

Konservator-restavrator Matjaž Bizjak, MGML

Konservatorki-restavratorki Alenka Drol in Mojca Zver, zunanji sodelavki MGML

Strokovno svetovanje: konservator-restavrator Gorazd Lemajič, Narodni muzej Slovenije

Blue vessel

blue glass, 7 x 21 cm, 4th century BC (510:LJU;0063966)

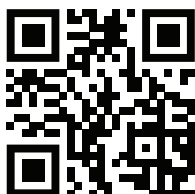
The blue vessel was discovered in 2018 at Gosposvetska cesta (Maria Saal Road). As a funeral accessory, it was found almost intact. For almost 2,000 years the vessel was closed in a stone sarcophagus, keeping its contents protected from light and in constant relative humidity. It was received in the workshop in a wet state, protected against desiccation with the plastic film that maintained conditions similar to those the object was in while still underground. In some places, the blue surface of the glass was opaque and scuffed with a rainbow taint (irisation) showing on the edges. The irisation indicated the beginning of the process of micro layering of the glass. First, we removed the contents from the vessel before washing it. Then we started to remove the compacted soil and hard calcite deposits. This was followed by gradually drying the glass to prevent damage caused by water evaporation. The vessel was soaked in a solution of distilled water and ethanol. The concentration of ethanol in the solution was raised every week until the vessel was sitting in pure ethanol. After taking the vessel out from the bath, the last traces of flowstone sinter and hard calcite deposits were removed.

The vessel is exhibited in a climate-controlled chamber with a constant relative humidity (55%), which is the most appropriate for archaeological glass.

Conservator-restorer Matjaž Bizjak, MGML

Conservators-restorers Alenka Drol and Mojca Zver, external associates of the MGML

Expert counselling: conservator-restorer Gorazd Lemajič, National Museum of Slovenia



Iz mokrega v suho

From Wet to Dry



Lesena posoda

les, konec 10., začetek 11. stol. (510:LJU;0062777)

Lesena posoda je bila odkrita med arheološkimi raziskavami na Krojaški ulici v Ljubljani. Ohranjene stare lesene posode so redke, saj so za njihovo ohranitev potrebni posebni pogoji. Pričujoča posoda je bila najdena v mokrem stanju. Celična struktura lesa je bila prepojena z vodo in naravno sušenje na zraku bi predmet nepopravljivo deformiralo. Zato smo se odločili za liofilizacijo, metodo izsuševanja predmetov iz organskih materialov z zamrzovanjem. Pri tem postopku moker predmet v komori hitro globoko zamrznemo in znižamo tlak. Pri dodajanju toplote zamrznjena voda tako ne izhlapi, ampak sublimira. Izsušeni predmet izgubi nekaj specifične teže, ohrani pa prvotno obliko. Celična struktura liofiliziranega predmeta je zelo krhka in lomljiva, predmet je občutljiv tudi za nihanje relativne vlage v prostoru in za UV-sevanje.

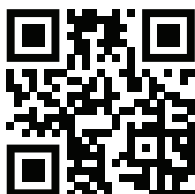
Liofilizacija: Anton Kambič, KAMBIČ, laboratorijska oprema, d. o. o.

Wooden vessel

wood, late 10th and early 11th centuries (510:LJU;0062777)

The wooden vessel was discovered during archaeological research in Krojaška ulica (Tailors' Street) in Ljubljana. Preserved old wooden vessels are rare because special circumstances are needed to ensure their preservation. This vessel was found in a wet condition. The wood's cell structure was waterlogged and natural drying in the air would have irreversibly deformed the object. We decided to desiccate the object through lyophilisation, namely, the freeze-drying of objects made of organic materials. In this procedure, the wet object is deep-frozen in a chamber and the pressure is lowered. When warmth is added, the frozen water does not evaporate but sublimates. The desiccated object loses its specific weight, yet retains its original shape. The cell structure of the lyophilised object is very fragile and breakable, the object is also sensitive to fluctuations in relative humidity and to UV radiation.

Lyophilisation: Anton Kambič, KAMBIČ, laboratorijska oprema d.o.o.



Voda v čevljih

Wet Shoes



Usnjena podplata

usnje, 12.–13. stol. (PG0025521)

Leta 2010 so potekala izkopavanja na Krojaški ulici, med katerimi so arheologi našli tudi številne odrezke usnja. Po obliki ostankov in nekaterih večjih kosih lahko z gotovostjo trdimo, da je na tem mestu potekala čevljarstva dejavnost. V konstantno mokrem okolju, v katerem so bili kosi usnja najdeni, se je ta organski material ohranil vsaj osem stoletij. V mokrem stanju je bil še vedno kompakten, prožen in gibljiv. Največja nevarnost za najdene predmete je bila izsušitev na zraku, ki bi lahko privedla do krčenja, deformacije, pokanja in drobljenja. Ker pa je hranjenje predmetov v mokrem stanju dolgoročno nemogoče, smo se odločili za sušenje z liofilizacijo. Po postopku sta osušena usnjena podplata še vedno gibljiva in prožna, a občutljiva za nihanje vlage v prostoru. Razstavljen sta v mikroklimatski vitrini s konstantno 55-odstotno relativno vlago.

Liofilizacija: Anton Kambič, KAMBIČ, laboratorijska oprema, d. o. o.

Leather soles

leather, 12th–13th centuries (PG0025521)

In 2010, excavations on Krojaška ulica (Tailors' Street) were taking place during which archaeologists found, among other items, numerous cuts of leather. The shape of these scraps and some of the larger pieces makes it clear that this was the workplace of a shoemaker. In the constantly wet environment in which the leather scraps were found, this organic material had been preserved for at least 8 centuries. In its wet condition, it remained compact, flexible and movable. The greatest danger for these finds was that they would dry out in the air, which could cause them to shrink, deform, crack and crumble. Since preserving the objects in wet condition was not possible in the long run, we decided to dry them using lyophilisation. After this procedure, the leather soles are dry, still movable and flexible, but sensitive to oscillations in relative humidity. This explains why they are exhibited in a microclimate showcase with a constant relative humidity of 55%.

Lyophilisation: Anton Kambič, KAMBIČ, laboratorijska oprema d.o.o.



Dama v skledi

A Lady in a Bowl



Skleda

glazirana keramika, 3,8 x 17 x 8,5 cm, druga polovica 15. stol.
(510:LJU;0034865)

Skleda z zaobljenim ustjem je bila najdena med izkopavanji na Gosposki ulici. Izdelana je iz prečiščene gline, v kateri kot pustilo prevladuje kremen. Oblikovana je bila na nožnem vretenu. Okrašena je s tehniko slikanja na belo podlago in glazirana. Ob prihodu v delavnico je bila umazana in razbita. Črepinje smo očistili z destilirano vodo in vato ter jih zlepili. Lepilo, ki smo ga uporabili, bo v prihodnosti mogoče odstraniti, ne da bi predmet poškodovali.

Konservatorica-restavratorka Alenka Drol, zunanja sodelavka MGML

Bowl

glazed ceramic, 3.8 x 17 x 8.5 cm, late 15th century
(510:LJU;0034865)

A bowl with a round opening was found during excavation on Gosposka ulica (Lords' Street). It was made of refined clay with flint stone as the prevalent additive, shaped on a kick wheel. It is ornamented with the technique of painting on a white surface and glazed. When brought to the workshop, the bowl was dirty and broken. The shards were cleaned with distilled water and cotton pads and glued together. The glue used can be removed in the future without damaging the object.

Conservator-restorer Alenka Drol, external associate of the MGML



Zlati vitez

The Golden Knight



Vitez

kosti, tkanina, železo, pozlata, bron, zlato, 16. stol.
(510:LJU;0063550, 510:LJU;0053589, 510:LJU;0055380
in 510:LJU;0055381)

Leta 2011 so na Njogoševi cesti odkrili človeški skelet z ostanki oblačila. Šest let po izkopu se je začelo raziskovanje njegove zgodbe. Na vitezu je bilo izvedenih več preiskav: standardne antropološke preiskave, analize tekstila in rentgenska radiografija. Konservatorsko-restavratorski poseg je bil dolgotrajen. Tkanino smo pod mikroskopom previdno očistili s skalpelom in drugim drobnim orodjem. Posamezne kose smo prenesli na novo podlago in jih nanjo začasno pritrdili. Kovinske spirale v tkanini so bile tako krhke, da jih je bilo treba pred čiščenjem utrditi. Srebrne sponke smo očistili in z njih izprali škodljive soli. Vitezove ostroge so bile skrite pod debelimi plastmi zemlje in korozije. Te smo mehansko odstranili s peskanjem in brušenjem. Kovinske dele smo po izpiranju soli zaščitili z več premazi.

Konservator-restavrator Matjaž Bizjak, MGML

Konservatorki-restavratoriki Alenka Drol in Mojca Zver, zunanji sodelavki MGML

Analiza tekstila: Barbara Golja, Inštitut za tekstilno in grafično tehnologijo ter oblikovanje, Naravoslovnotehniška fakulteta Univerze v Ljubljani

Vodja neporušnih preiskav (rentgenska radiografija): Janko Vodišek, Inštitut za metalne konstrukcije

Knight

bones, fabric, iron, gilding, bronze, gold, 16th century
(510:LJU;0063550, 510:LJU;0053589, 510:LJU;0055380
in 510:LJU;0055381)

In 2011, a human skeleton with the remains of a garment was unearthed in Njogoševa cesta (Njogoš Road). The research concerning its story began 6 years later. The knight was the object of several examinations: standard anthropological research, analyses of textile and X-ray radiography. The conservation-restoration intervention was time-consuming. The fabric was carefully cleaned under a microscope with a scalpel and small tools. Individual pieces were transferred and temporarily fastened to a new backing. The metal spirals in the fabric were so fragile that it was necessary to consolidate them before cleaning. Silver clips were cleaned and damaging salts were washed out. The knight's spurs had been concealed beneath thick layers of earth and corrosion. These were mechanically removed with sand blasting and abrasion. After the washing out of the salt, the metal parts were protected with several coatings.

Conservator-restorer Matjaž Bizjak, MGML

Conservators-restorers Alenka Drol and Mojca Zver, external associates of the MGML

Textile analysis: Barbara Golja, University of Ljubljana, Faculty of Natural Sciences and Engineering, Institute of Textile and Graphic Technology and Design – (ITGTO)

Head of non-destructive testing (X-ray radiography): Janko Vodišek, Institute of Metal Constructions, Testing Department



Čarovniki in demoni Wizards and Demons



Medaljon z zarotitvenim obrazcem

bron, papir, 1705–1733 (510:LJU;0053591, 510:LJU;0066198)

Med arheološkimi izkopavanji grobišča na Njogoševi cesti je bil odkrit bronast medaljon. Ko smo zanimivi predmet dobili v konserviranje-restavriranje, smo ga natančno preučili. Medaljon je bil izdelan iz dveh tankih bronastih ploščic z vtisnjenim figuralnim reliefom, ki sta bili povezani s tanko pločevinasto obrobo. V enem od vogalov, kamor je bil pripet obroček za obešanje (najden ločeno), se je obroba lahko iztaknila. Skozi luknjico se je videlo, da je bil v notranjosti medaljona večkrat prepognjen list papirja. Odločili smo se, da papirnati dokument ločimo od bronastega ohišja. Za papir in kovino, ki zahtevata zelo različni konservatorsko-restavratorski obravnavi, smo tako lahko ločeno ustrezno poskrbeli. Z rahlim upogibom stranice, ki je bila že ob začetku posega razprta, smo lahko papirnati dokument izvlekli iz medaljona. Papir je bil odlično ohranjen, saj razen obarvanosti z zelenim bakrovim oksidom na prvi in zadnji strani poškodb ni bilo. Da smo lahko tesno zloženo listino razprli, ne da bi jo poškodovali, smo papir rahlo navlažili v za to izdelani komori. Razkril se je zarotitveni obrazec (v latinščini napisan govor proti vsem napadom čarovnikov in demonov), natisnjen na obeh straneh papirja.

S kovinskega dela predmeta smo pod binokularno lupo z igličnim dletcem in skalpelom očistili sprijeto zemljo in nestabilno patino. Na vsaki strani medaljona smo odkrili relief: upodobitev sv. Jurija v boju z zmajem na eni in prizor s tremi figurami pod drevesom (morda pod angelovimi krili) na drugi strani.

Dokument iz medaljona smo izročili klasičnemu filologu za srednjeveško latinščino, ki je prevedel vsebino.

Konservatorica-restavratorka Katarina Toman Kracina, MGML

Konservatorica-restavratorka Alenka Drol, zunanja sodelavka MGML

Prevod: Matej Hriberšek, Oddelek za klasično filologijo Filozofske fakultete Univerze v Ljubljani

A medallion with a votive formula

bronze, paper, 1705–1733 (510:LJU;0053591, 510:LJU;0066198)

While archeologically excavating the cemetery on Njogoševa ulica (Njogoš Street) a bronze medallion was unearthed. When this interesting object was received for conservation-restoration, it was meticulously studied. It was made of two thin bronze plates with engraved figural reliefs. The two plates were interconnected with a thin sheet-metal trim. In one of the corners, where the ringlet (found separately) designed to hold the medallion was fastened, the trim could be removed a little. Through the hole you could see that inside the medallion there was a sheet of paper folded over several times. We decided that the paper document should be separated from the bronze case. This enabled us to adequately take care of paper and metal which call for two very different conservation-restoration treatments. With a slight bending of the side which was slightly open from the onset of the intervention, we were able to pull out the paper from the medallion. The paper was excellently preserved, and except for the green copper oxide stains on both sides of the folded document there were no other damages. To be able to unfold the tightly folded document without damaging it we slightly humidified the paper in a custom-made chamber. A votive formula was revealed (it was The Speech Against All Attacks, from Both Wizards and Demons, written in Latin) printed on both sides of the folded paper.

Compressed earth and unstable patina were cleaned off the object's metal part with a small point chisel and scalpel under a binocular magnifying lens. On each side of the medallion a relief was discovered: St. George fighting the dragon on one side and a scene with three figures under a tree (perhaps under an angel's wings) on the other side.

The document from the medallion was handed over to a classical philologist specialised in Medieval Latin who translated the contents.

Conservator-restorer Katarina Toman Kracina, MGML

Conservator-restorer Alenka Drol, external associate of the MGML

Translation: Matej Hriberšek, University of Ljubljana, Faculty of Arts, Department of Classical Philology



Naj ostane zvit

Keep it Crooked



Grb družine Auersperg

bron, pozlata, 17 x 15,3 cm, 18. stol. (510:LJU;0061626)

Med arheološkimi izkopavanji na Vodnikovem trgu je bil odkrit grb rodbine Auerspergov na pozlačeni bronasti plošči. Plošča je bila na zgornjem robu ukrivljena in počena. Motiv je bil v njeno površino vrezan oziroma vgraviran, a skrit pod umazanijo. Grb je na podlago pritrjevalo pet železnih žebličkov, razporejenih po obodu. Eden izmed njih je bil močno korodiran, zato je ob njem nastal večji sprimek s kamni in zemljo. Nečistoče smo odstranili s kombinacijo suhega čiščenja s skalpelom in drugim finim orodjem ter z uporabo kisle raztopine in destilirane vode. S smolo in ojačitveno armaturo smo prilepili odlomljeni del grba. Ponekod je bila pozlata poškodovana, zato smo jo na teh mestih dopolnili z novo. Za to smo uporabili zlate lističe in retuširne akrilne barve.

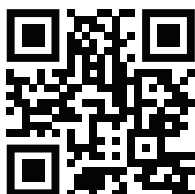
Konservatorka-restavratorka Mojca Zver, zunanja sodelavka MGML

Auersperg's family coat-of-arms

bronze, gilding, 17 x 15.3 cm, 18th century (510:LJU;0061626)

Archaeological excavations in Vodnikov trg (Vodnik Square) revealed the coat-of-arms of the Auersperg lineage on a gilded bronze plate. The plate was slightly bended at the upper rim and cracked. A motive was engraved on the surface, yet hidden under the grime. The coat-of-arms was attached to the base by five iron tacks, distributed along the brim. One of the tacks was highly corroded resulting in the formation of a large conglomerate of stone and soil in that place. Grime was removed using a combination of dry cleaning with a scalpel and other small tools, and the use of acid solution and distilled water. The part of the object that broke off was glued back with resin and reinforced. In some places the gilding was damaged and was thus filled in with new. For this purpose, we used golden leaves and retouching acrylic paints.

Conservator-restorer Mojca Zver, external associate of the MGML



Kar je ostalo od dvorca What's Left of a Mansion



Sopraporta s prizorom lovke s sokolom in pejsaž

Franc Jelovšek, fragment freske, 264 x 194 cm, 1725
(510:LJU;0063147)

Predstavljena freska je eden izmed fragmentov, ki so jih po drugi svetovni vojni sneli s sten uničenega dvorca Zalog pri Moravčah. V letih hranjenja v različnih klimatskih razmerah je poslikani omet začel odstopati, na površini pa je bilo tudi veliko umazanije in saj. Te smo previdno odstranili z mehкими ščetkami, različnimi vodnimi raztopinami in geli, kjer je bilo treba, pa tudi s toplili. V odstopajoče predele je bilo vbrizgano utrjevalno sredstvo, nato pa še masa, ki je zapolnila votla mesta. Nekaj koščkov, ki so med snemanjem freske odpadli, je bilo spet vstavljenih na svoje mesto. Kjer so delci manjkali, smo fresko dopolnili s kitom, nazadnje pa retuširali. Hrbtno stran smo ojačali z aluminijastim okvirjem.

Konservatorki-restavratorki Jelka Kuret in Saša Snoj, Oddelek za stensko slikarstvo Restavratorskega centra ZVKDS

Sopraporta with the scene of a lady hunter with a falcon and a landscape

Franc Jelovšek, fragment of a fresco, 264 x 194 cm, 1725
(510:LJU;0063147)

The presented fresco is among the fragments that after the Second World War restorers detached from the walls of the destroyed Zalog Manor located east of the town of Moravče. While stored in various climatic conditions for years, the painted plaster was starting to peel off, and the fresco's surface became covered in grime and soot. These were carefully removed with soft brushes, various water solutions and gels and, where necessary, also with solvents. A consolidating agent was sprayed over areas that were falling off, followed by a mass being applied to fill in the gaps. A few pieces that had fallen off as the fresco was being detached from the wall were re-adhered back into place. Where parts were still missing, the fresco was filled in with putty, and finally retouched. The back was stabilized with an aluminium frame.

Conservator-restorers Jelka Kuret and Saša Snoj, Department of Wall Painting of the Restoration Centre of the Institute for the Protection of Cultural Heritage of Slovenia



Les je lep. Skrbimo, da tak tudi ostane Wood is Beautiful, Let Us Keep it that Way



Tabernakeljska omara z intarzijami

orehov les, kovina, žamet, 195 x 143 x 77 cm, sredina 18. stol.
(510:LJU;0011673)

Pisalna omara je primer, kako se v muzeju lotimo konservatorsko-restavratorske obravnave pohištva. Prvi korak je vedno podroben pregled, med katerim preverimo tudi, ali je predmet okužen z lesnimi insekti. Če opazimo luknjice, svetel prah, ki se usipa iz njih, hroščke ali ličinke ali če slišimo praskanje v lesu, gre pohištvo takoj v dezinfekcijo. To izvajamo z metodo anoksi, ki namesto insekticidov škodljivce zatire z zamenjavo kisika z dušikom. Za uporabo kemičnih insekticidov se ne odločamo več, saj so škodljivi okolju – ne samo insektom, ampak tudi vsem, ki s temi strupi pridejo v stik (tudi več let po njihovi uporabi). Skupaj z odgovornim kustosom se odločimo, kako in do kolikšne mere bo pohištvo konservirano-restavrirano. V MGML delavnice za obdelavo pohištva nimamo, zato že dolga leta sodelujemo s stalnimi zunanjimi sodelavci. Delavnica, specializirana za restavriranje pohištva, poskrbi, da je to strokovno obdelano in da je v čim večji meri ohranjeno v originalnem stanju. Pri nadomeščanju manjkajočih delov pohištva se posvetujemo z odgovornim kustosom in navedemo, kakšnih rešitev si želimo za določen predmet. Zaradi stabilnosti je pogosto treba utrditi konstrukcijo, končni videz pa opredeli površinska obdelava predmeta. Če je le mogoče, površino obnovimo s postopki in materiali, ki so bili v uporabi v preteklosti (čebelji vosek, laneno in orehovo olje, šelakova politura, ribji, zajčji klej, naravni pigmenti, oljne barve ipd.). Poudarek pa je vseeno na ohranjanju originalnih lakiranj in patine, zato so na muzejskih kosih pohištva običajno vidne sledi uporabe. Tudi te so pomemben del zgodbe vsakega predmeta, ki jo je vredno ohraniti.

Konservator-restavrator Jože Zupan, Restavratorstvo Zupan



Cupboard with inlays

walnut, metal, velvet, 195 x 143 x 77 cm, mid-18th century
(510:LJU;0011673)

The writing cabinet is an example of how the museum tackles the conservation-restoration treatment of furniture. The first step always involves a detailed examination of the object, including looking for any infestations of the object by wood damaging insects. If little holes with bright dust falling out, bugs or larvae are observed or if scraping in the wood can be heard, the furniture item is immediately set aside for insect treatment. This is carried out with the Anoxia method whereby pests are suppressed by replacing oxygen with nitrogen, and which is now used instead of insecticides. Being poisonous and harmful not only to pests but also to the environment and any living being that comes in contact with them (even several years after being used), chemical insecticides are no longer used. The decision on how and to what extent the furniture will be conserved-restored is made together with the responsible curator. Since MGML does not have its own furniture treatment workshop, it regularly collaborates with external associates. A specialised furniture restoration workshop provides for the professional treatment of furniture to ensure the preservation of as much as possible of the original item. When it comes to replacing an individual missing part of an item, an authorised curator is consulted to find a common solution for that particular item. Stability is often provided by reinforcing the construction, while the item's surface treatment determines its final appearance. Preferably, the surface is renewed using procedures and materials from the past, such as beeswax, flax and walnut oil, shellac polish, fish or rabbit-skin glue, natural pigments, oil paints and others. However, emphasis is given to preserving the original varnishes and patina, explaining why museum furniture items often show visible traces of use. These also represent an important part of an item's story, which is worth preserving.

Konservator-restorer Jože Zupan, Restavratorstvo Zupan (Zupan Restorations)

Prismojena slika A Painting Scorched



Cesar Franc I.

Neznani avtor, olje na platnu, 94 x 79 cm, sredina 19. stol.
(510:LJU;0017408)

Portret cesarja je v preteklosti utrpel hude poškodbe zaradi požara. Konserviranje-restavriranje tako poškodovanih slik je zahtevno, saj barva postane krhka, na površini pa se naberejo umazanija in saje. Odstranjevanje nečistoč na način, ki je za občutljivo barvno plast varen, je težavno. Barva na cesarjevem portretu se je mehurlila in luščila, ponekod pa je tudi v celoti odpadla. Da bi preprečili njeno nadaljnje odpadanje, smo jo najprej utrdili. Previdno smo odstranili umazanijo, manjkajočo barvno plast pa smo dopolnili s kitom. Predele podobe, ki so bili zaradi odpadle barve izgubljeni, smo rekonstruirali in retuširali.

Konservatorica- restavratorka Maja Banović, MGML

Emperor Franz Joseph I

Unknown author, oil on canvas, 94 x 79 cm, mid-19th century
(510:LJU;0017408)

In its past, the portrait of the emperor suffered considerable fire damage. Conservation-restoration of such badly damaged paintings is demanding as the colour becomes fragile, and grime and soot accumulate on the surface. It is difficult to remove the grime safely without damaging the sensitive colour layer. The paint on the emperor's portrait was starting to bubble and peel, and had completely fallen off in some places. To prevent further peeling, it was first consolidated. The grime was carefully removed and the damaged colour layer was filled in with putty. The areas of the image that had been lost because the colour had detached were reconstructed and retouched.

Conservator-restorer Maja Banović, MGML



Rimsko mesto v malem

A Roman Town in Miniature



Maketa Emone

Neznani avtor, mešana tehnika, 110 x 120 cm, 1931.
(510:LJU;0013784)

Maketa je sestavljena iz različnih materialov, od kartona, papirja, lesa in plastike pa vse do mahu, peska in lišajev. To za konservatorje-restavradorje pomeni poseben izziv. Na prašni, od vode poškodovani maketi so nekateri deli (npr. gozdni iz mahu in lesni prah, ki je imitiral teksturo pokrajine) odpadli, na podlagi iz lesa in kartona pa so se pojavile razpoke. Konservatorki-restavradorki sta maketo previdno očistili z različnimi metodami suhega čiščenja. Razpoke v podlagi sta utrdili in dopolnili. Odpadle dele sta nadomestili z novimi, podobnimi originalnim. Motiče madeže, ki jih ni bilo mogoče odstraniti, sta retuširali. Maketa je sedaj razstavljen v stekleni vitrini, ki preprečuje nadaljnje prašenje in nove poškodbe.

Konservatorki-restavradorki Tadeja Kajzar Trajkovski in Helena Valentin Konjedic, Društvo Marmorinke

Scale Model of Emona

Unknown author, mixed technique, 110 x 120 cm, early 19th century (510:LJU;0017408)

The model is composed of different materials ranging from cardboard, paper, wood and plastics to moss, sand and lichen. This poses a special challenge for conservators-restorers. Some parts (such as the tiny forests made of moss and wood dust, which imitated the texture of the landscape) have fallen off of the dusty model damaged by water, with cracks appearing on the wooden and cardboard base. The model was carefully cleaned using different dry cleaning methods. Surface cracks were consolidated and filled in. Parts that had fallen off were replaced with new ones similar to the original parts. Stains which could not be removed were retouched. The model is now exhibited in the showcase, which prevents any further gathering of dust or fresh damage.

Conservators-restorers Tadeja Kajzar Trajkovski and Helena Valentin Konjedic, Društvo Marmorinke (Society Marmorinke)



Življenje predmetov v muzejskem depozju

Life of the Items in a Museum Depot



Pomemben del dolgotrajnega ohranjanja predmetov je shranjevanje po muzejskih standardih. Vsakemu predmetu glede na njegovo materialno sestavo zagotavljamo najprimernejše pogoje hranjenja. To vključuje ustrezno embalažo (v škatlah, brez kislinškem papirju in mapah, specialnih folijah, vrečkah itd.), vzdrževanje konstantne temperature in primerne relativne vlage, filtracijo zraka in zaščito pred škodljivimi vplivi UV-žarkov. Skrb za predmete vključuje tudi zaščito pred mehanskimi poškodbami pri transportu in nameščanju na razstave ter splošno previdnost pri ravnanju z njimi.

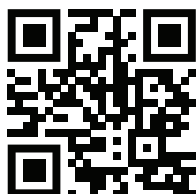
V muzejskem depozju MGML za hrambo predmetov uporabljamo natančen sistem številčnih oznak regalov in predalnikov. Vsak predmet ima svoje mesto.

Depoistka Bojana Zavodnik, MGML

An important part of the long-term maintenance of artefacts is to store them according to museum standards. Each artefact is provided with the most appropriate storage conditions depending on the materials from which it is made. This includes adequate packaging (in boxes, acid-free paper and folders, special foils, bags etc.), the maintenance of a constant temperature and suitable relative humidity, air filtration and protection from the damaging influence of UV radiation. Caring for artefacts also encompasses protection from mechanical damage during transport and while setting up for exhibitions as well as general caution while handling.

In the MGML museum depot, artefacts are stored according to a strictly maintained numerical system of racks and chests of drawers, where each artefact has its own place.

Depot manager Bojana Zavodnik, MGML



RAZSTAVA / EXHIBITION

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Strokovni sodelavci / Professional Assistants:
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Kustosinja / Curator: Bernarda Županek
Avtorji besedil / Texts by:
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